

Pilbara Population and Employment Study

Chamber of Minerals and Energy of WA
November 2012

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1 Introduction

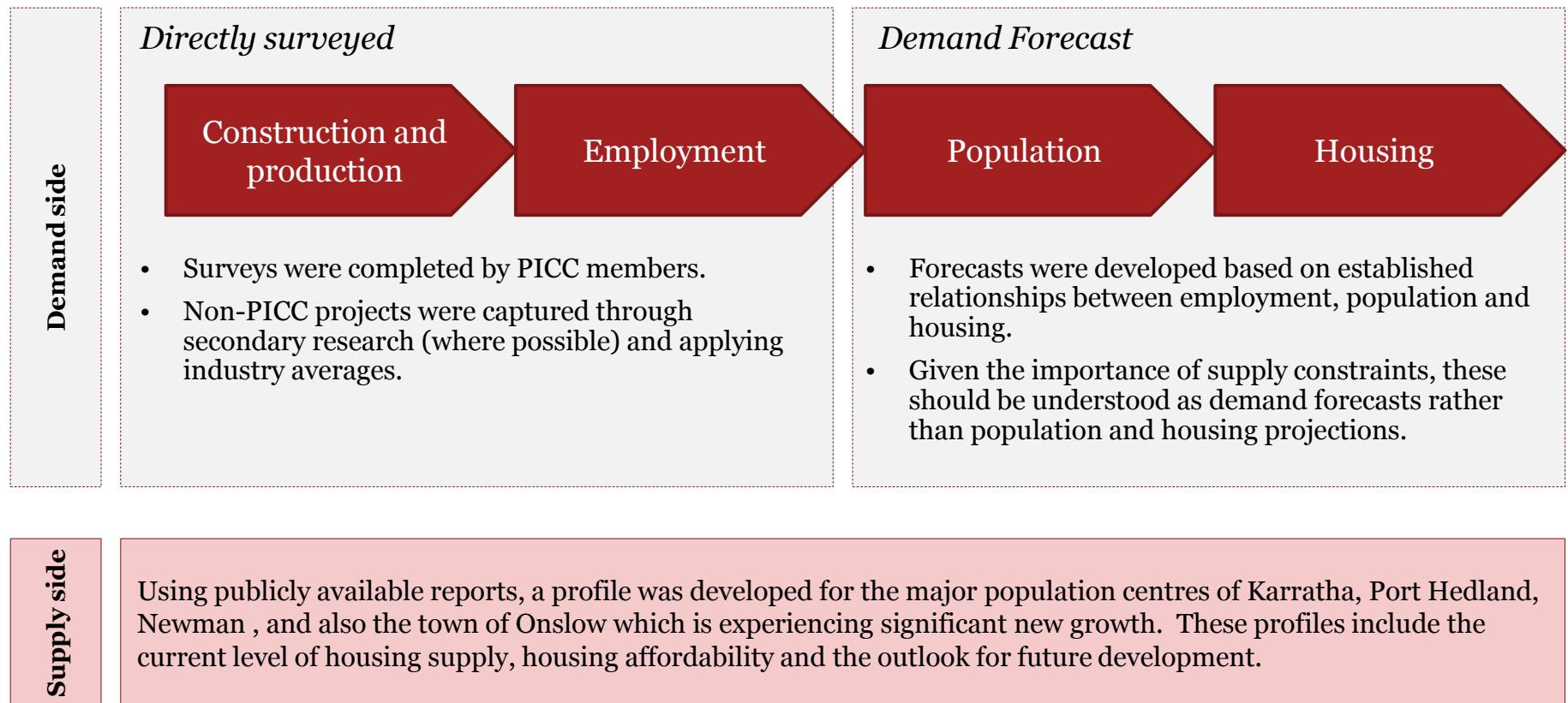
1 Introduction – 1.1 Background

The Pilbara Population and Employment Study was conducted by PwC in partnership with the Chamber of Minerals and Energy and the Pilbara Industry's Community Council.

- The Pilbara Industry's Community Council (PICC) was established in 2006 to develop shared visions and strategies in relation to two outcomes: indigenous employment participation in the Pilbara and the sustainability of Pilbara towns. PICC member companies are BHP Billiton Iron Ore, Chevron Australia, Fortescue Metals Group, the North West Shelf venture, Rio Tinto Iron Ore and Woodside.
- PICC recognised a need for an alternative to ABS population estimates, which it considered were not reflecting the rapid growth due to Minerals and Energy (M&E) development underway in the Pilbara. To address this, studies were commissioned in both 2008 and 2010 to assess the impact of the M&E workforce on the Pilbara population.
- PwC was engaged by the Chamber of Minerals and Energy (CME), on behalf of the PICC group, to conduct the Pilbara Population and Employment Study 2012.
- The 2012 study builds on the 2008 and 2010 PICC studies by:
 - revising and updating the methodology, including applying probability weighting and utilising updated multipliers;
 - reflecting companies' latest growth plans; and
 - using 2011 Census data as a starting point for population growth and dwelling numbers.
- The goal of the study is to develop an integrated population and employment outlook for the Pilbara to 2020. This has been achieved by developing a demand forecast, and identifying key supply constraints that will determine the extent to which this demand can be fulfilled.
- This report focuses on the larger population centres of Port Hedland, Karratha and Newman, where the majority of growth will take place. Onslow is also a focus, given the significant new development being experienced.
- With the exception of Wickham, which is continuing to grow to support port and rail expansion at Cape Lambert, the projections for other smaller inland towns such as Tom Price, Paraburdoo and Pannawonica remain consistent with the projections from the 2010 Report. These towns are not specifically examined in this report, however, they are incorporated in the breakdowns by Local Government region.

1 Introduction – 1.2 Approach

This study develops demand forecasts for population and housing based on employment plans.



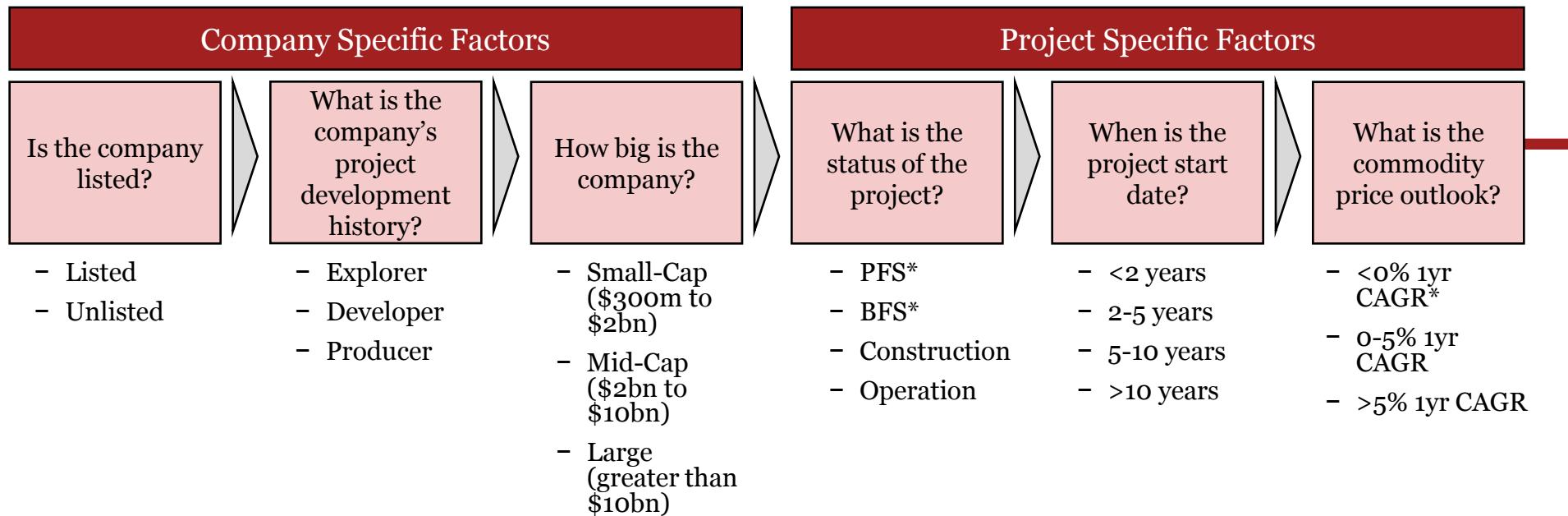
1 Introduction – 1.2 Approach

Surveys at a project-by-project level are used to develop a growth profile that starts from 2011 census data for population and housing.

- Our starting point for population and housing is the 2011 census, from which statistics have recently been released.
- Our surveys capture data at the level of individual projects. We use these to develop an incremental growth profile for population and housing demand that is added to the 2011 base year.
- In order to move from the raw survey data to growth profiles, we apply conversions as follows:
 - Survey data to employment plans: Projects are weighted by their probability of progressing to operations (this is explained further on slide 9). This provides the basis for our “weighted” case.
 - Employment plans to population demand: We use established multipliers (explained further on slides 10 and 11).
 - Population demand to housing demand: We apply a factor of 2.9 people per dwelling, which is the Pilbara-wide average from the 2011 census.
- Only projects that have reached the stage of a preliminary feasibility study (PFS) are included in our study. For this reason, the majority of projects identified intend to enter construction within the next 5 years, and there are relatively few projects entering construction in the later part of the survey period. There is the potential for new projects, which are not currently at PFS stage, to enter construction by 2020.
- In this report, unless stated otherwise, numbers are presented on a weighted basis. We also show an “All projects” case, which assumes that all planned projects proceed to operation, for consistency with past PICC studies.
- Numbers are typically shown rounded to nearest 100 people. This requires rounding, which can mean that the total value can diverge from the apparent sum of the component parts.

1 Introduction – 1.2 Approach

In the “weighted” case, each project is weighted by its probability of proceeding to operations, applying an approach used in the CME State Growth Outlook released in 2011.



- The overall probability of a project is determined through scaling (from an initial 100% probability) based on the above factors. Factor weightings are based on research for past State Growth Outlook studies, which calibrate the weightings based on a State-wide historical average success rate.
- Where projects have already reached construction or operation, they are not subject to probability weighting.
- In this report, unless stated otherwise, numbers are presented on a weighted basis. We also show an “All projects” case for consistency with past PICC studies. This assumes that all projects proceed to operations.

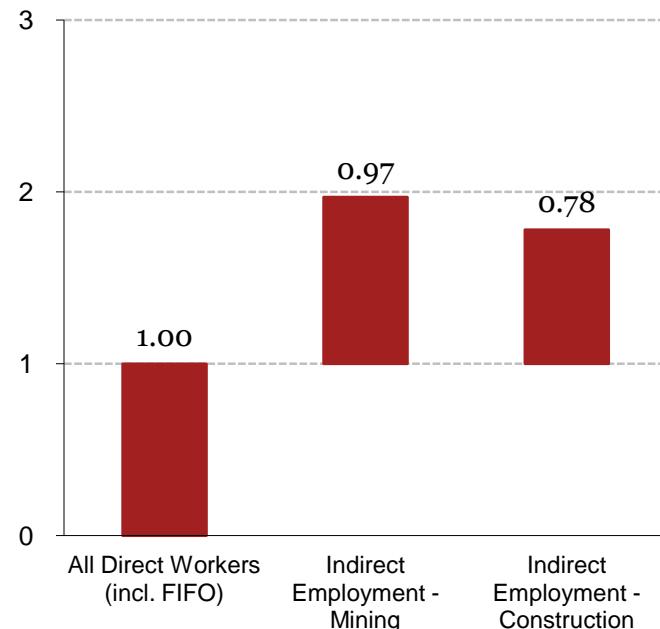
Source: State Growth Outlook 2011

Note: *PFS: Pre Feasibility Study, BFS: Bankable Feasibility Study, CAGR : Compound Annual Growth Rate

1 Introduction – 1.2 Approach

In order to convert employment plans into population demand forecasts, the study applies established multipliers.

Indirect Employment Multiplier

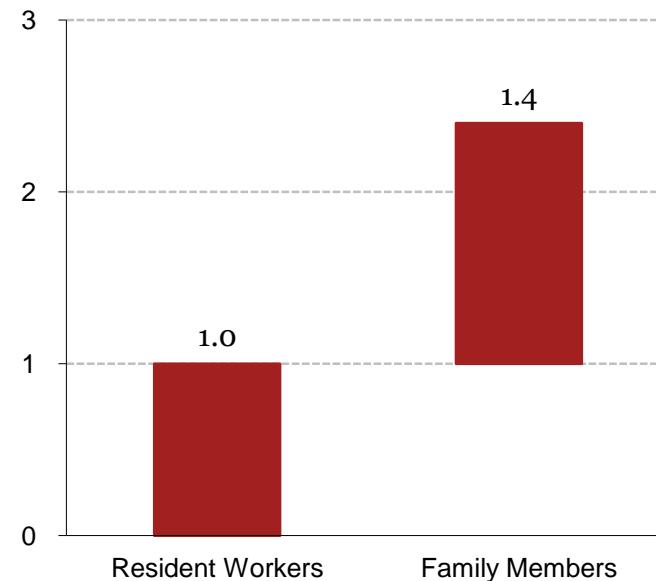


Each additional direct job creates an additional fraction of a job elsewhere in the Pilbara.

Note: FIFO = Fly-in fly-out workers

Sources: 1. Indirect employment multipliers: Pilbara Development Commission, The Pilbara Economy, November 2011
2. Family multiplier: PICC Projections 2010

Family Population Multiplier

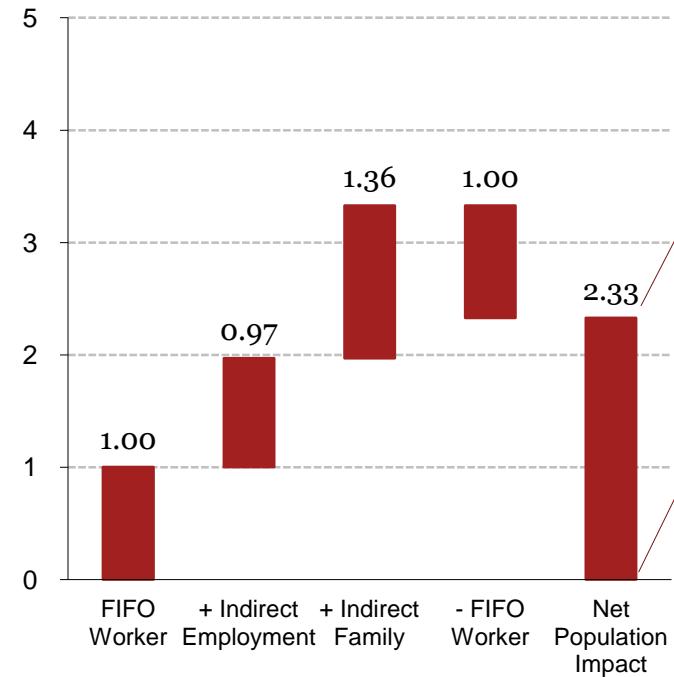


Each additional residential worker is assumed to bring an average of 1.4 family members to the Pilbara.

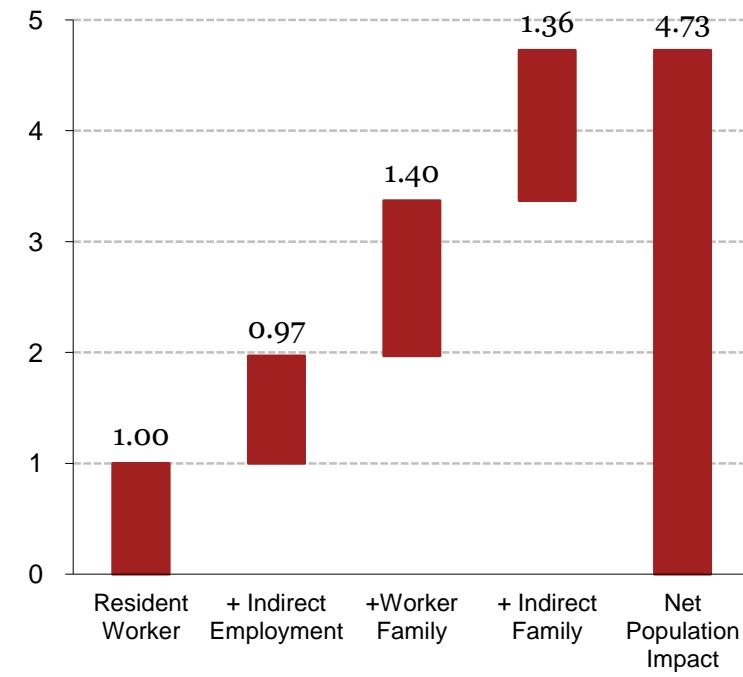
1 Introduction – 1.2 Approach

FIFO and resident workers have a different impact on the population, as FIFO workers are excluded from the resident population and have no local family population impact.

FIFO Worker Population Impact
(Mining worker example)



Resident Worker Population Impact
(Mining worker example)



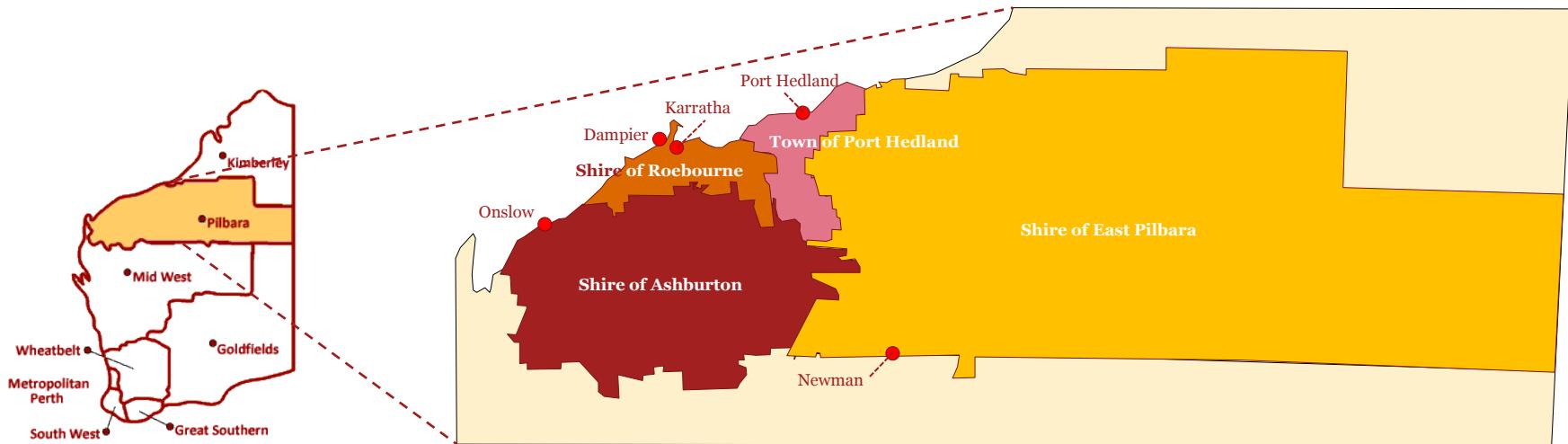
The relationship between FIFO workers and local populations varies. For this reason, we show a “Full indirect effect” case, which applies the full impact shown above. We also show projections based on the assumption that FIFO workers have no indirect effect on employment and population. A full indirect effect does not appear a realistic outcome under current conditions. We believe that applying multipliers only to the residential workforce represents a more realistic growth scenario.

1 Introduction – 1.3 Pilbara Shire Boundaries

Demand data was captured at the level of individual projects, but is generally aggregated to the level of local government areas.

The Pilbara Region contains four local municipalities:

- Town of Port Hedland
- Shire of Ashburton
- Shire of Roebourne
- Shire of East Pilbara



Source: Pilbara Framework: Regional Profile – Planning WA government website.



2 Key messages

2 Key messages – 2.1 Employment

The workforce required to meet current growth plans for the resources sector in the Pilbara is expected to peak at just over 65,500 in 2014, up from over 51,000 in 2011 - an increase of 28.4 per cent.

- The overall employment outlook is a function of construction and production activity. The construction workforce will begin to fall after 2012, but will remain above 2011 levels until 2015. The operations workforce will see sustained growth to 2020.
- The net effect is M&E employment peaking at just over 65,500 in 2014, up from over 51,000 in 2011. M&E employment settles at around 55,000 from 2018.
- At a local government area level, we forecast total employment to decline to 2020 in Ashburton and Roebourne as current major construction projects are completed. This fall is more than counteracted by growth in employment in Port Hedland and East Pilbara.
- The majority of new employment is fly-in fly-out (FIFO). The use of FIFO for operations varies markedly by region, with an average of about 80%. The net result, however, is a steady increase in the Pilbara residential M&E workforce as construction activity turns to operations.
- The operational workforce in 2020 is expected to be around 51,600, including nearly 43,000 FIFO workers. This compares to an operational workforce of around 31,600 in 2011.
- Our survey-based approach includes only projects that have reached preliminary feasibility stage. There is the potential for new projects, which are not recognised in this study, to enter construction by 2020.

2 Key messages – 2.2 Population

Based on member company forecasts for employment growth, the Pilbara resident population is expected to grow by between 12,700 and 16,300 on a weighted basis. This suggests a total Pilbara population of between 72,600 and 76,200 by 2020.

- M&E employment is a major population driver for the Pilbara. The Pilbara accounts for 35% of the State's minerals workforce, but has consistently accounted for around 2% of the State's population over the last decade.
- This study uses employment plans to develop a demand outlook for the Pilbara population. The extent to which this demand forecast converts into the residential population will depend on the role of supply-side constraints.
- We forecast demand for Pilbara population growth of between 12,700 and 16,300 (on a weighted basis) to 2020, from the 2011 Census base of 59,894. The level of indirect employment driven by FIFO growth is a key variable.
- The largest components of potential population growth are indirect workers and family members.
- Residential population growth does not include FIFO workers and as a result does not fully capture demand for accommodation and services.
- The extent to which the FIFO workforce (and associated activity) in the local area drives indirect employment will be a major factor in population growth at a local level. While the growth in the FIFO workforce near Port Hedland is expected to be roughly equivalent to growth in the residential workforce, in Newman the FIFO growth is far larger. In Karratha and Onslow residential workforces will grow while nearby FIFO activity declines from 2011 levels.

2 Key messages – 2.3 Housing

From the 2011 Census base of 20,700 private dwellings, there is anticipated to be demand for a further 4,395 to 5,640 dwellings in the period to 2020.

- Based on the projected population demand there will be a significant increase in housing demand in the Pilbara.
- From the 2011 Census base of 20,700 private dwellings, there appears to be demand for a further 4,395 to 5,640 dwellings to 2020.
- This would represent growth of between 21.2% and 27.2% in total, or between 2.2% and 2.7% p.a. to 2020.
- There will be a significant increase in demand for camp beds, particularly in the East Pilbara. Of the 50,400 camp beds presently in the Pilbara, around 20,400 are in the East Pilbara. We forecast demand for around 19,000 additional camp beds by 2015.

2 Key messages – 2.4 Supply Side

The most pressing supply constraint is a shortage of residential housing coupled with housing costs being significantly higher than those in larger population centres.

- Supply constraints are likely to hamper the growth of the population in the Pilbara relative to the growth in demand.
- The most pressing supply constraint is a shortage of residential housing. Housing costs are several times higher than those in larger population centres.
- Each population centre has its own outlook, but they share some common features, including:
 - a shortage of residential housing and very high housing costs;
 - significant land release and development projects identified; but
 - challenges in releasing land and developing residential housing.
- The State Government's Pilbara Cities initiative aims to address many of these constraints through investment in key population centres. The initiative has aspirational population targets of 140,000 by 2035 for the Pilbara as a whole, including cities of 50,000 people at Port Hedland and Karratha, and a population centre of 15,000 at Newman.

2 Key messages – 2.5 Implications

A significant amount of planning, investment and work is taking place in the Pilbara. It is imperative that we seize the opportunity to turn these actions into first-rate outcomes.

- This study has identified significant growth in demand for residential housing in the Pilbara driven by economic development and major resource projects.
- The conversion of demand into an increased Pilbara population will depend on the role of supply constraints, particularly:
 - available and affordable residential housing;
 - economic diversity; and
 - town amenity.
- There is a clear shortage of housing in the Pilbara. This appears driven by constraints to both land release and housing construction.
- Economic diversity and town amenity are important inputs into the quality of life in Pilbara towns. Availability of affordable commercial and light industrial land is a key factor.
- Residential staffing approaches rely on the ability of the local area to support increased population, and the willingness of the workforce to relocate.
- Current approaches to land release, development and housing construction appear unlikely to resolve critical constraints in the short term, suggesting that workforce preferences are likely to continue to favour FIFO rosters in many areas.



3 Demand Forecasts – 3.1 Employment

3 Demand Forecasts – 3.1 Employment – 3.1.1 Key Messages

The workforce required to meet current growth plans for the resources sector in the Pilbara is expected to peak at just over 65,500 in 2014, up from over 51,000 in 2011 - an increase of 28.4 per cent.

- The overall employment outlook is a function of construction and production activity. The construction workforce will begin to fall after 2012, but will remain above 2011 levels until 2015. The operations workforce will see sustained growth to 2020.
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- The majority of new employment is fly-in fly-out (FIFO). The use of FIFO for operations varies markedly by region, with an average of about 80%. The net result, however, is a steady increase in the Pilbara residential M&E workforce as construction activity turns to operations.
- The operational workforce in 2020 is expected to be around 51,600, including nearly 43,000 FIFO workers. This compares to an operational workforce of around 31,600 in 2011.
- Our survey-based approach includes only projects that have reached preliminary feasibility stage. There is the potential for new projects, which are not recognised in this study, to enter construction by 2020.

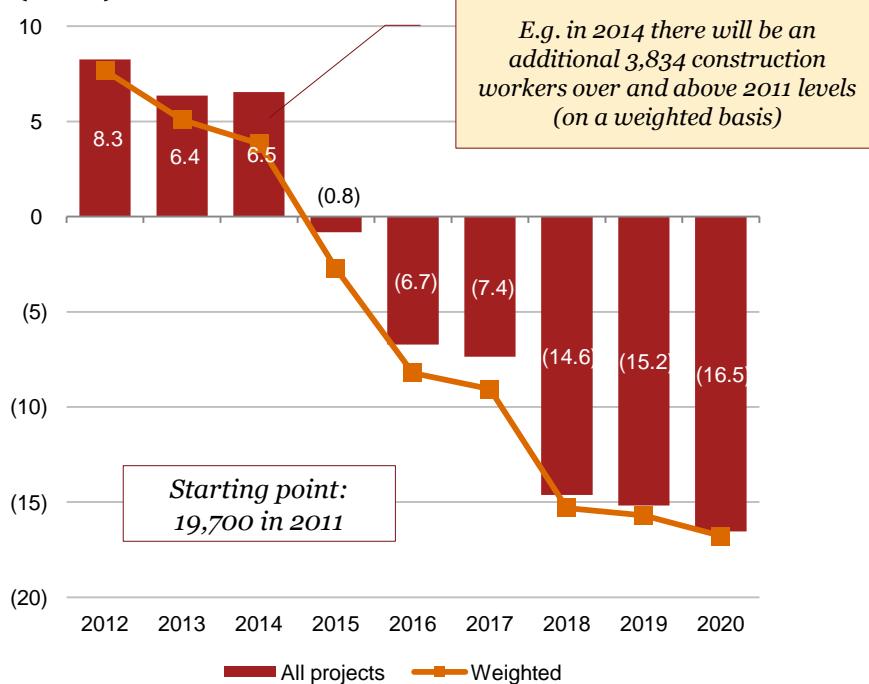
3 Demand Forecasts – 3.1 Employment – 3.1.2 Construction Workforce

The construction workforce will begin to slowly drop away after 2012, finally falling below 2011 levels in 2015.

Pilbara M&E Construction Workers

(Incremental to 2011)

('000s)



- Survey data shows that the construction workforce will begin to fall from 2012.
- By 2020 the construction workforce in the Pilbara will be nearly 17,000 lower than 2011 levels.

The magnitude of this reduction can be explained by the large number of Pilbara M&E projects already in their construction phase in 2011.

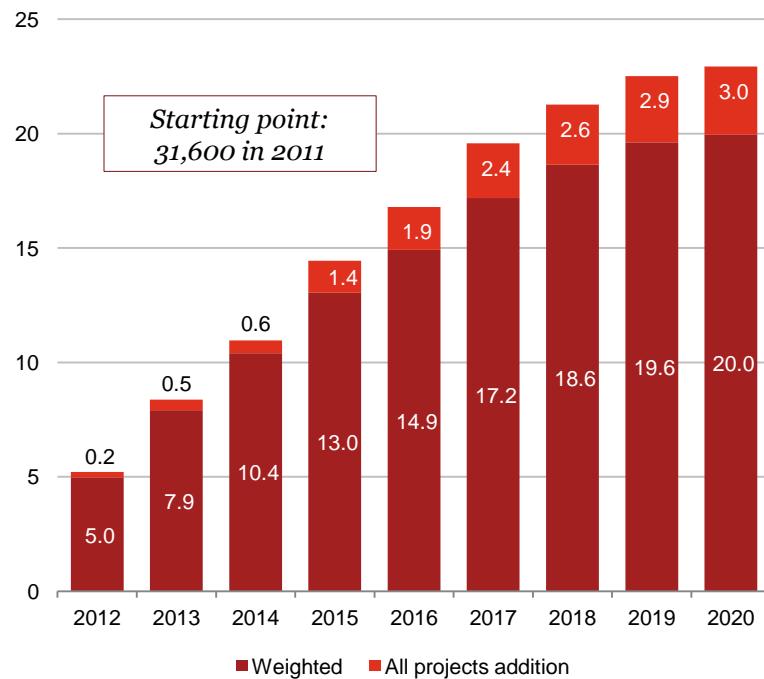
There is the potential for projects that are currently outside of the scope of this study (i.e. prior to pre-feasibility study stage) to enter into construction in the later part of this decade, which would counteract the forecast reduction in construction activity.

3 Demand Forecasts – 3.1 Employment – 3.1.3 Operations Workforce

The operations workforce will see a sustained pattern of growth.

Pilbara M&E Operations Workers

(Incremental to 2011)
(‘000s)



- In contrast to the Construction Workforce, the Operations Workforce will grow steadily over the next decade.

This sustained growth is a result of a succession of long-life projects moving into their operational phase over the next decade.

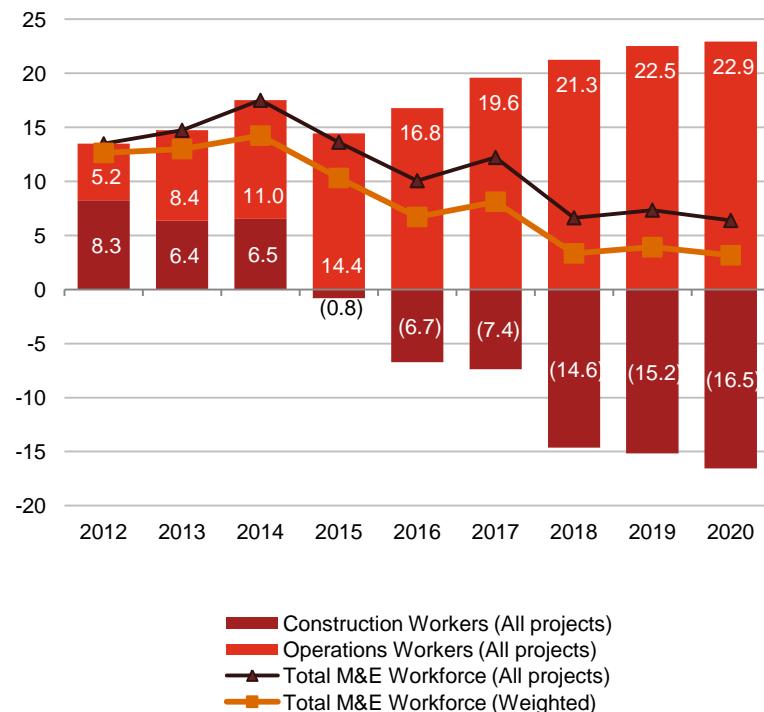
The long lifespan of resources projects means that there are very few planned reductions in the operational workforces of the surveyed projects.

Source: CME Pilbara Population and Employment Study 2012

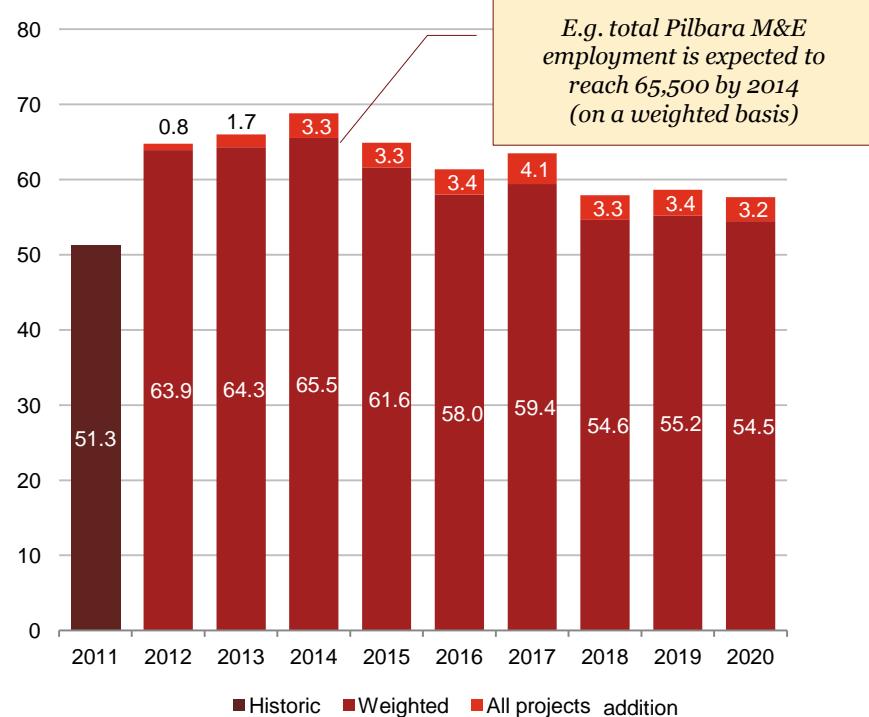
3 Demand Forecasts – 3.1 Employment – 3.1.4 Total M&E Workforce

The net effect on total employment is rapid growth in the short term, and a sustained increase over 2011 levels to 2020.

Pilbara M&E Workforce by Type
(Incremental to 2011)
(‘000s)



Total Pilbara M&E Workforce
(‘000s)



Note: Permanent company employees have been treated as operations personnel for this analysis

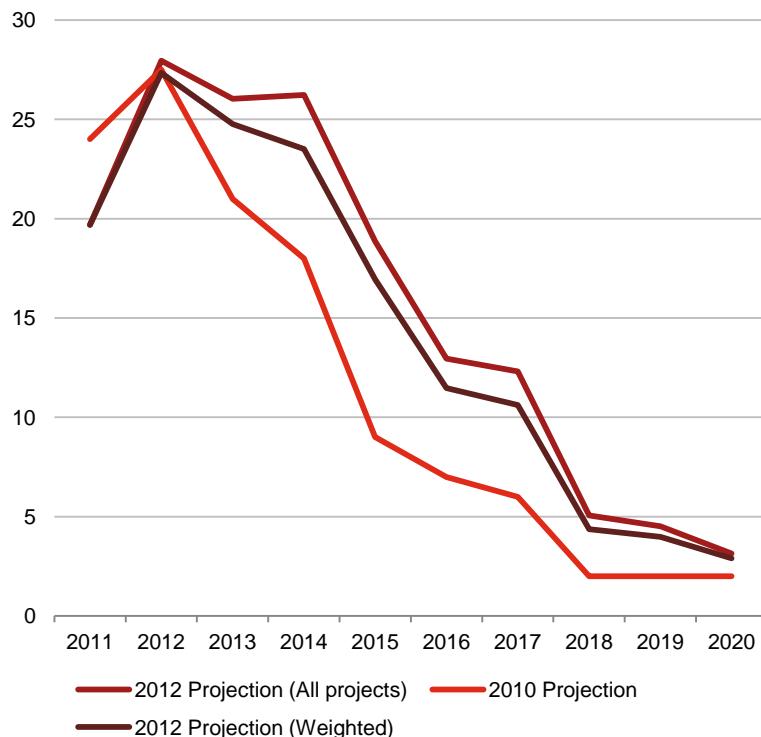
Source: CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.1 Employment – 3.1.5 Previous Projections

These updated projections indicate that the profile of the peak construction period has flattened relative to the PICC 2010 projections.

Total M&E Construction Workers

(‘000s)



- The updated projections indicate that the peak construction period occurred in 2012 and are largely in line with that predicted in the PICC 2010 projections.
- The 2010 study projected a sharp fall in the construction workforce following its peak in 2012, while the latest figures predict more sustained activity in the period from 2012 to 2014.

This sustained construction activity to 2015 compared to previous projections could be explained in part by delays in projects entering their construction phase as well as longer than planned construction phases.

The numbers have also been affected by projects announced since the publication of the last study.

Our survey-based approach includes only projects that have reached preliminary feasibility stage. There is the potential for new projects, which are not recognised in this study, to enter construction by 2020.

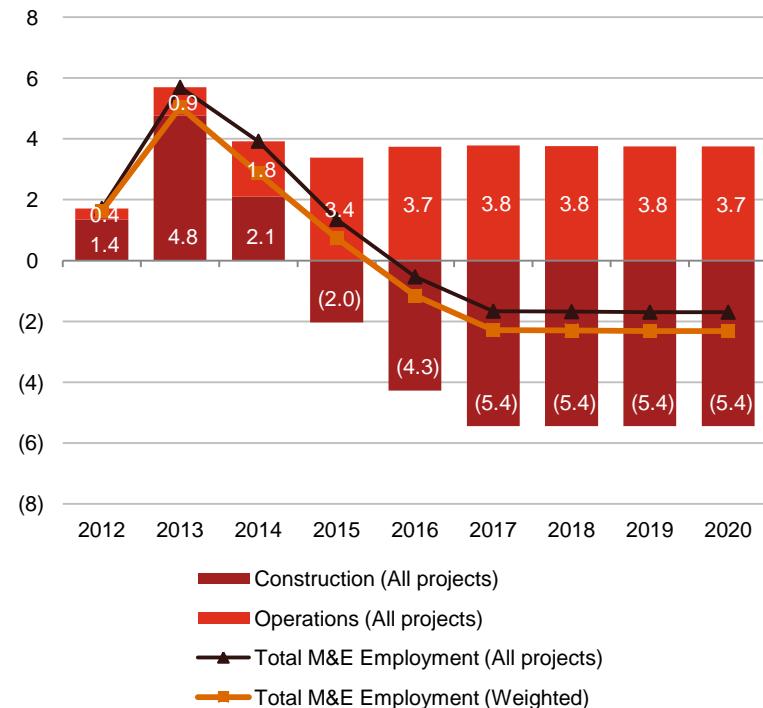
Source: CME Pilbara Population and Employment Study 2012, PICC Projections 2010,

3 Demand Forecasts – 3.1 Employment – 3.1.6 Workforce Profile by Region

The Shire of Ashburton will see a short term M&E workforce peak before an overall decline.

Ashburton: M&E Workforce by Type

(Incremental to 2011)
(‘000s)



- The M&E workforce in the Shire of Ashburton will see short term growth before declining relative to 2011.
- By 2015 the construction workforce will have dropped below 2011 levels as major projects begin operation.
- In contrast, the operations workforce will grow by more than 3,000 employees above 2011 levels (on an all projects basis).

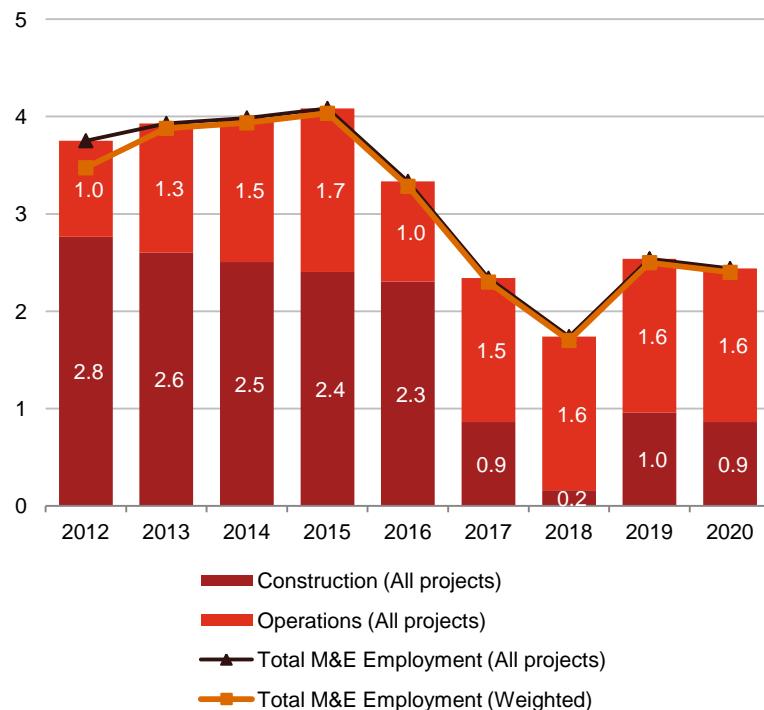
Source: CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.1 Employment – 3.1.6 Workforce Profile by Region

The Town of Port Hedland workforce will peak in 2015, and is forecast to remain above 2011 levels as far ahead as 2020.

Port Hedland: M&E Workforce by Type

(Incremental to 2011)
('000s)



- A number of significant projects completing their construction phases will see the overall workforce peak in approximately 2015.
- Both construction and operations staff numbers remain above 2011 levels out to 2020.
- The long term forecast may be affected if projects presently out of scope (prior to pre-feasibility study stage) move to construction within the forecast period.

Source: CME Pilbara Population and Employment Study 2012

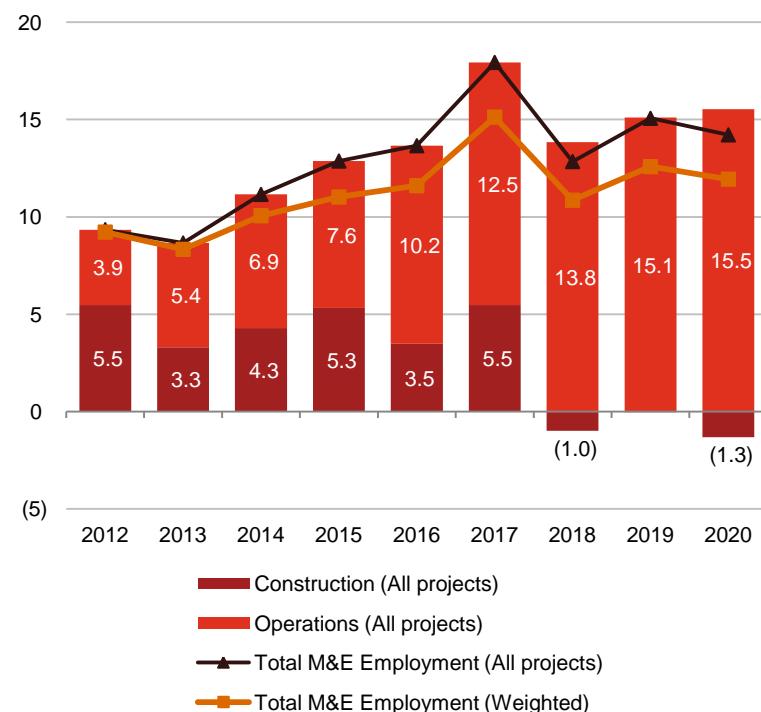
3 Demand Forecasts – 3.1 Employment – 3.1.6 Workforce Profile by Region

The Shire of East Pilbara will see significant growth in the M&E workforce over the next decade.

East Pilbara: M&E Workforce by Type

(Incremental to 2011)

('000s)



- The Shire of East Pilbara is expected to experience significant long term growth in the M&E workforce.
- This growth is initially driven by a combination of increased operational personnel and an increase in the construction workforce.
- As the construction projects are completed, the construction workforce gives way to a significant increase in the operations workforce, with growth of over 15,000 operational employees above 2011 levels by 2020 (on an all projects basis).

Source: CME Pilbara Population and Employment Study 2012

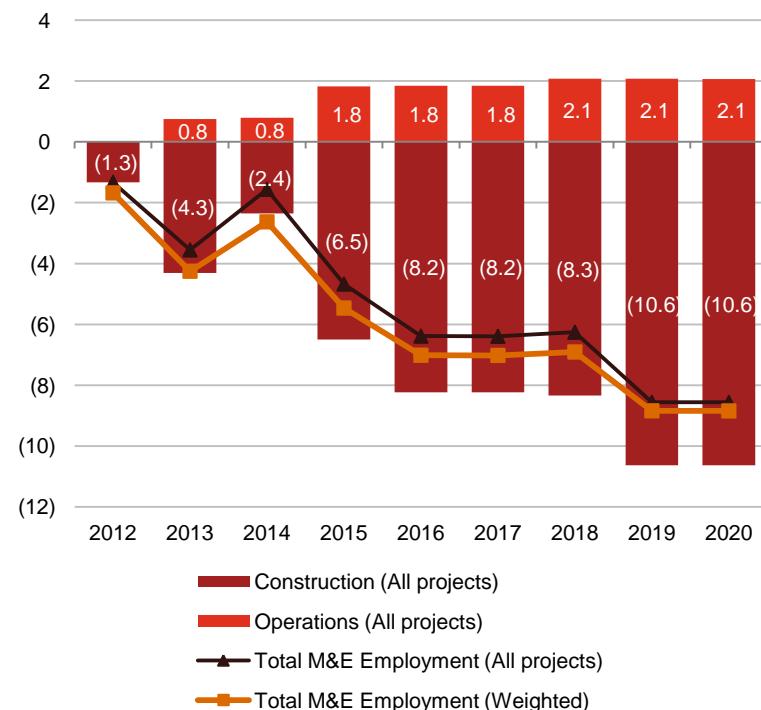
3 Demand Forecasts – 3.1 Employment – 3.1.6 Workforce Profile by Region

Finalisation of major project construction, will see an overall decline in the Shire of Roebourne M&E workforce.

Roebourne: M&E Workforce by Type

(Incremental to 2011)

('000s)



- The Shire of Roebourne will see a decline in the overall M&E workforce. This decline will increase through to 2020.
- A major driver of the decline is the large construction workforce already employed in the area in 2011. This workforce will decrease as the current set of projects are commissioned.
- Although there will be a corresponding increase in the operations workforce, it will not be large enough to offset the decline in construction personnel.

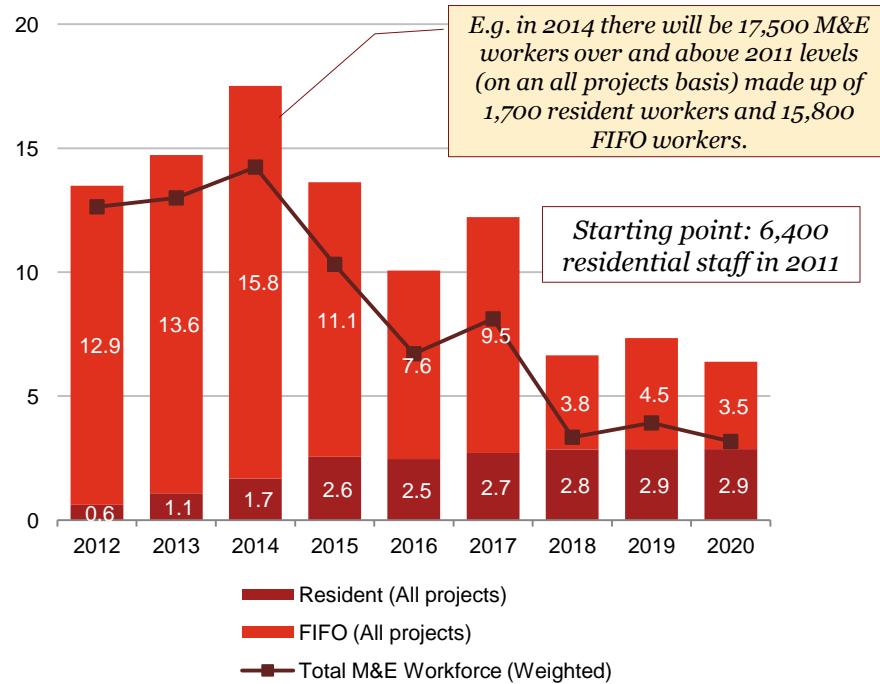
Source: CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.1 Employment – 3.1.7 Workforce Residence Profile

The majority of new M&E employment is FIFO, but this is accompanied by a steady and sustained increase in residential employees as construction activity turns to operations.

M&E Workforce by Residence

(Incremental to 2011)
(‘000s)



E.g. in 2014 there will be 17,500 M&E workers over and above 2011 levels (on an all projects basis) made up of 1,700 resident workers and 15,800 FIFO workers.

Starting point: 6,400 residential staff in 2011

- Whilst the reduction in construction activity will reduce the number of FIFO employees, there is still a significant FIFO employment baseline.

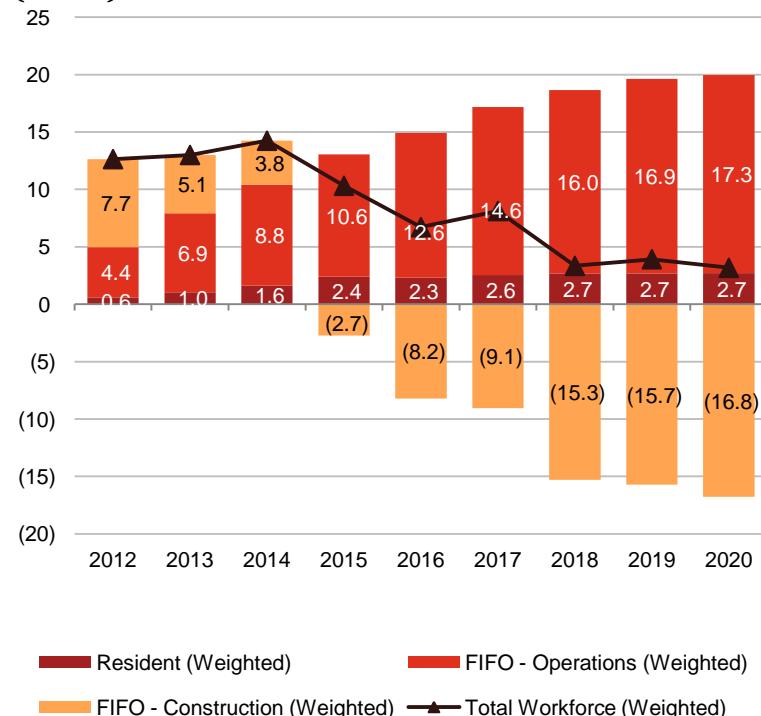
The underlying residential employment base grows steadily – this can be attributed to an increasing number of locally based operations workers as the various projects are commissioned and enter into a steady state of operations.

Source: CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.1 Employment – 3.1.7 Workforce Residence Profile

The new FIFO employment is a combination of changes in both construction and operations staff.

M&E Workforce by Residence
(Incremental to 2011 – Weighted)
(‘000s)



- While the overall number of FIFO workers will increase from 2011 levels, the FIFO numbers are made up of movements in both the operations and construction workforce.

For example, in 2016 there will be 2,300 more residential workers, 12,600 more FIFO operations workers but 8,200 fewer FIFO construction workers than in 2011 (on a weighted basis). The net effect of this is an overall M&E workforce increase of 6,700.

Source: CME Pilbara Population and Employment Study 2012

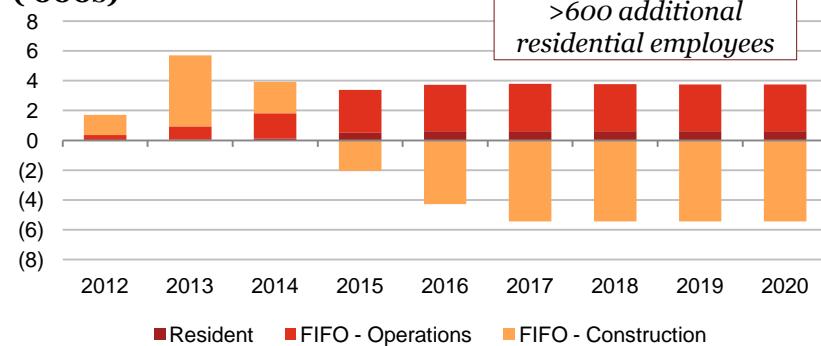
3 Demand Forecasts – 3.1 Employment – 3.1.7 Workforce Residence Profile

The residence profile of new workers varies markedly by region. Growth in the East Pilbara, and declines in Roebourne and Ashburton, are driven almost entirely by FIFO workers.

Ashburton: FIFO vs. Residential

(Incremental to 2011 – All projects)

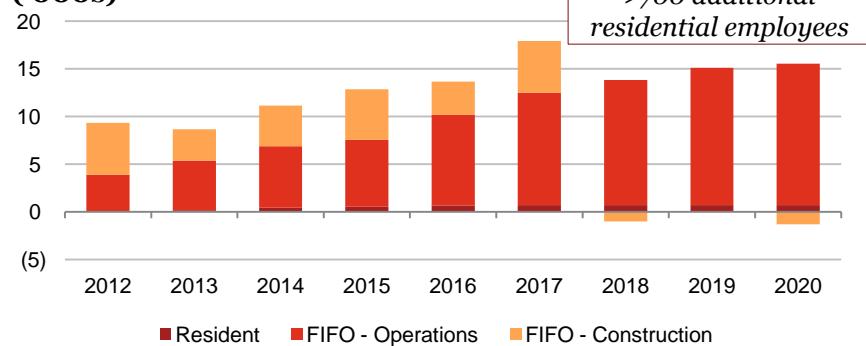
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East Pilbara: FIFO vs. Residential

(Incremental to 2011 – All projects)

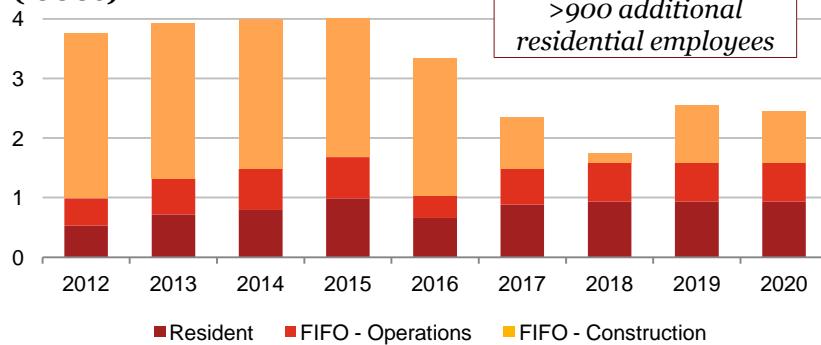
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Port Hedland: FIFO vs. Residential

(Incremental to 2011 – All projects)

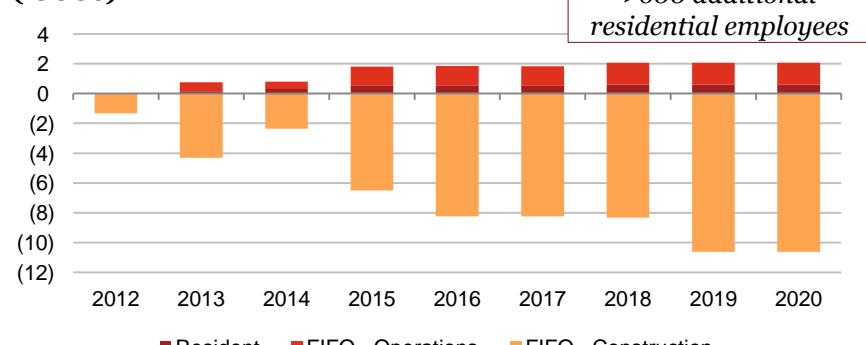
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Roebourne: FIFO vs. Residential

(Incremental to 2011 – All projects)

('000s)



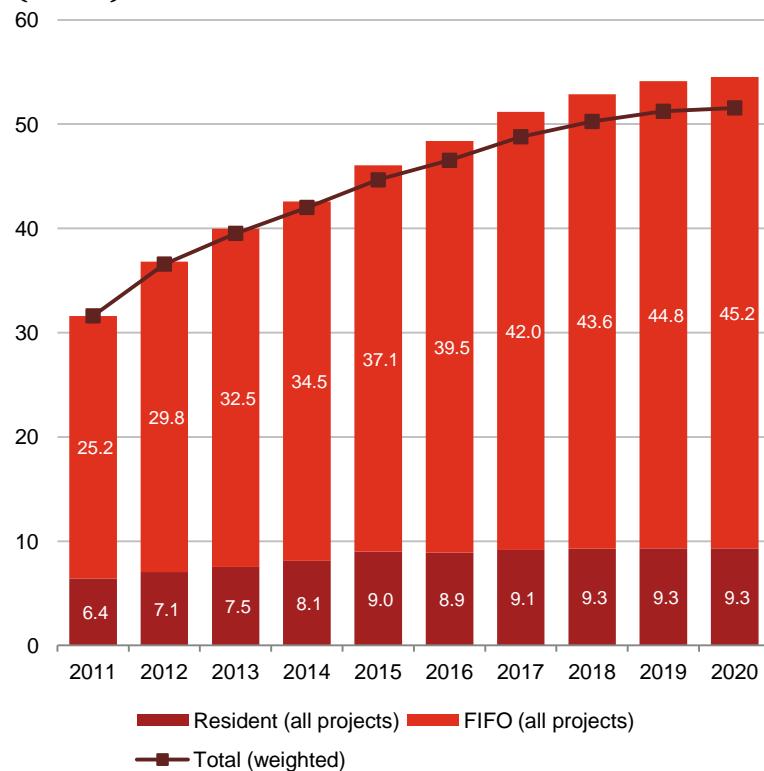
Source: CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.1 Employment – 3.1.8 Operations Residence Profile

FIFO employees continue to make up approximately 80% of the total operations workforce as both residential and FIFO employees increase.

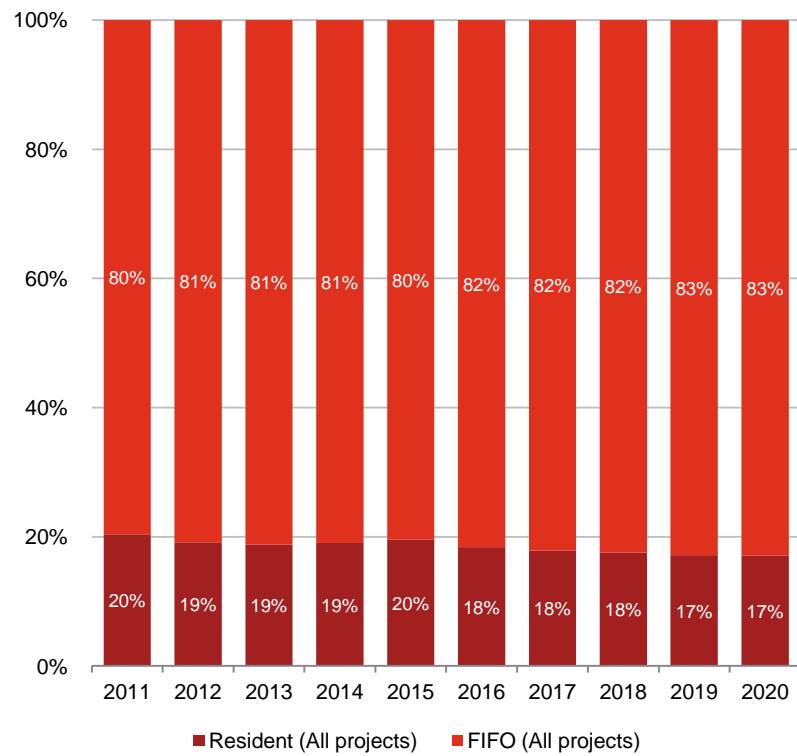
Total Pilbara M&E Operations Workforce

(‘000s)



Total Pilbara M&E Operations Workforce

Resident/FIFO Proportions



Note: The construction component of the M&E workforce is entirely FIFO

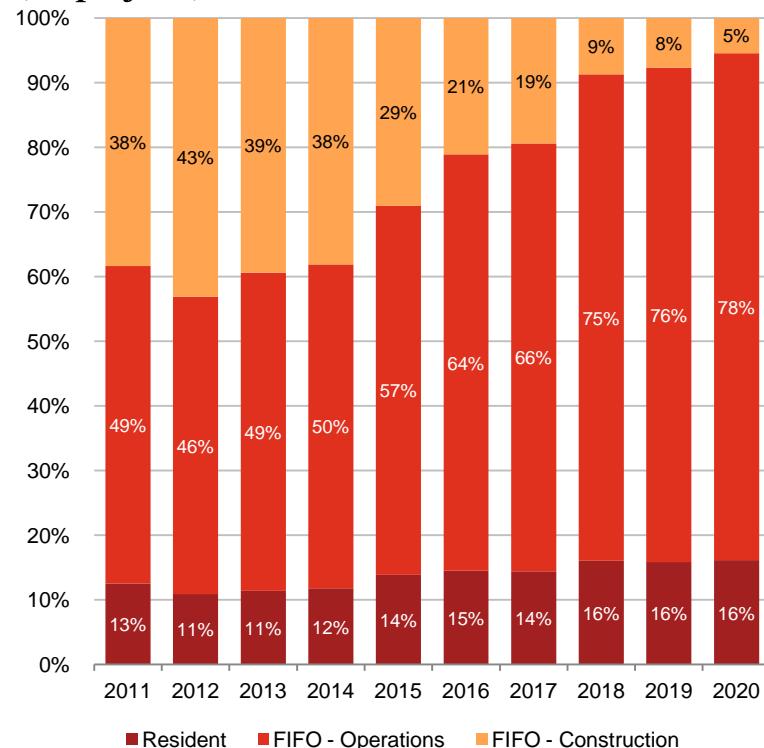
Source: CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.1 Employment – 3.1.9 Overall FIFO Proportions

By 2020, the overall percentage of resident workers will have increased to 16%, from the 2011 level of 13%.

Total M&E Workforce by Residence Type

(All projects)



- Although the impact of the impending construction phase is likely to recede, residential employees are still projected to grow to 16% of the Pilbara workforce by 2020, up from 13% in 2011
- The workforce will be increasingly dominated by FIFO Operations workers – by 2020 78% of the M&E workforce will be made up of FIFO Operations workers.

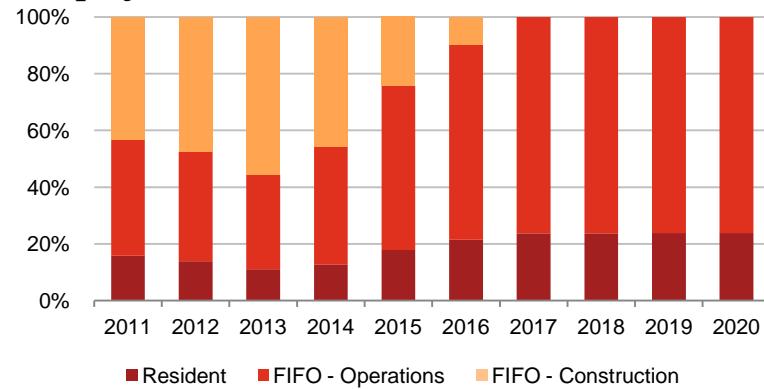
These percentages are highly sensitive to construction activity, which is generally staffed on an entirely FIFO basis. This study includes only projects that have reached at least the preliminary feasibility study stage. New construction projects, or cancellations of planned construction, would change these figures.

Source: CME Pilbara Population and Employment Study 2012

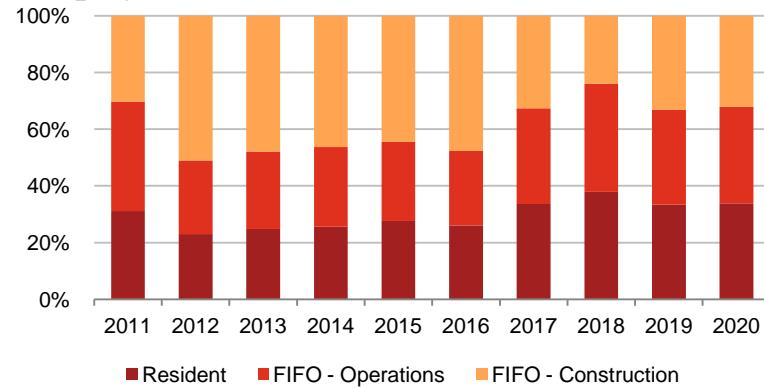
3 Demand Forecasts – 3.1 Employment – 3.1.10 Regional FIFO Proportions

The use of FIFO rosters varies markedly by region.

**Ashburton: FIFO vs. Residential
(All projects)**

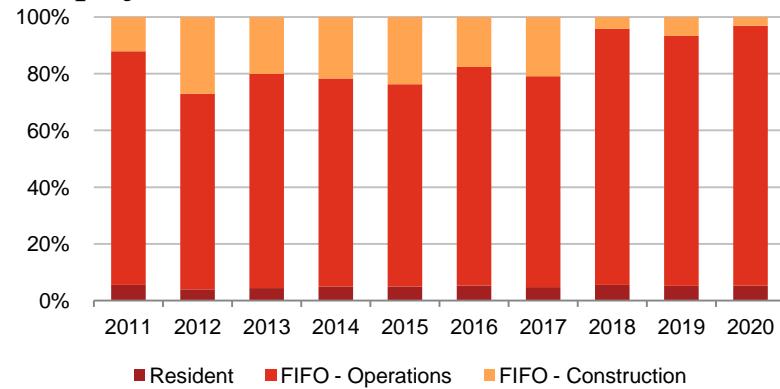


**Port Hedland: FIFO vs. Residential
(All projects)**

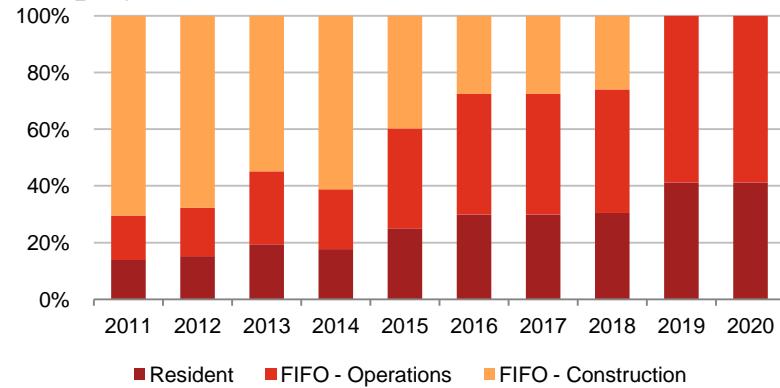


Source: CME Pilbara Population and Employment Study 2012

**East Pilbara: FIFO vs. Residential
(All projects)**



**Roebourne: FIFO vs. Residential
(All projects)**





3 Demand Forecasts – 3.2 Population

3 Demand Forecasts – 3.2 Population – 3.2.1 Key Messages

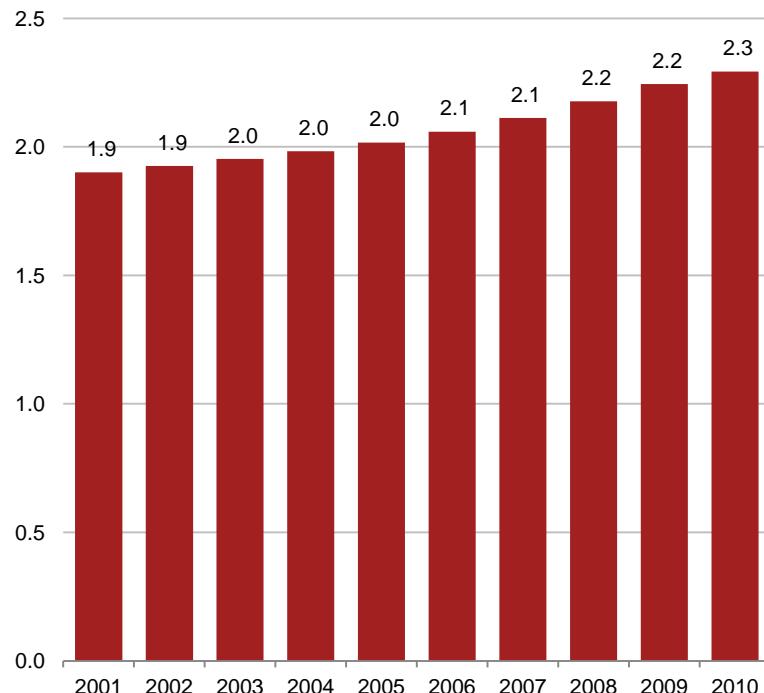
Based on member company forecasts for employment growth, the Pilbara resident population is expected to grow by between 12,700 and 16,300 on a weighted basis. This suggests a total Pilbara population of between 72,600 and 76,200 by 2020.

- M&E employment is a major population driver for the Pilbara. The Pilbara accounts for 35% of the State's minerals workforce, but has consistently accounted for around 2% of the State's population over the last decade.
- This study uses employment plans to develop a demand outlook for the Pilbara population. The extent to which this demand forecast converts into the residential population will depend on the role of supply-side constraints.
- We forecast demand for Pilbara population growth of between 12,700 and 16,300 (on a weighted basis) to 2020, from the 2011 Census base of 59,894. The level of indirect employment driven by FIFO growth is a key variable.
- The largest components of potential population growth are indirect workers and family members.
- Residential population growth does not include FIFO workers and as a result does not fully capture demand for accommodation and services.
- The extent to which the FIFO workforce (and associated activity) in the local area drives indirect employment will be a major factor in population growth at a local level. While the growth in the FIFO workforce near Port Hedland is expected to be roughly equivalent to growth in the residential workforce, in Newman the FIFO growth is far larger. In Karratha and Onslow residential workforces will grow while nearby FIFO activity declines from 2011 levels.

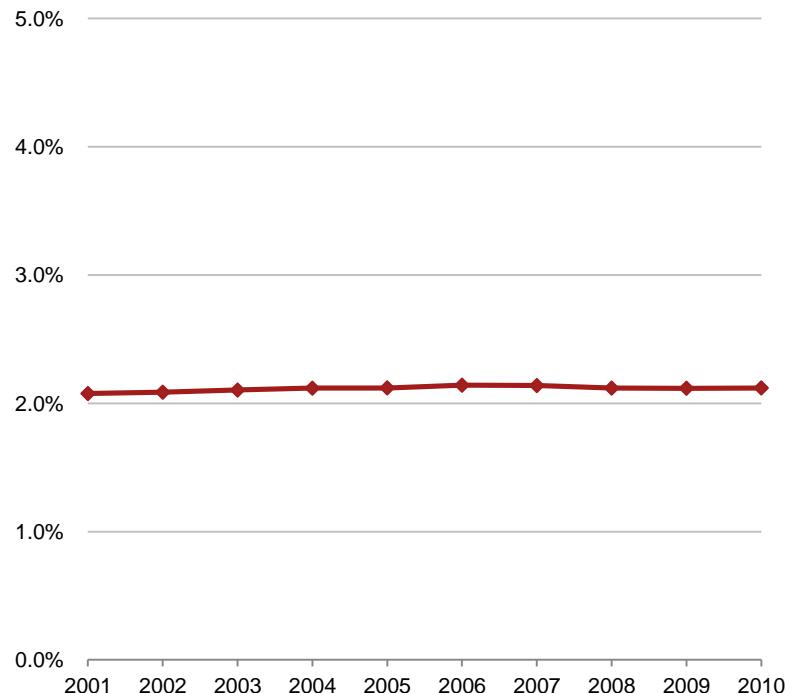
3 Demand Forecasts – 3.2 Population – 3.2.2 Historic Context

The Pilbara population grew in line with W.A.’s total population over the decade to 2010.

WA Population 2001-2010
(Millions)



Pilbara Share of W.A. Population

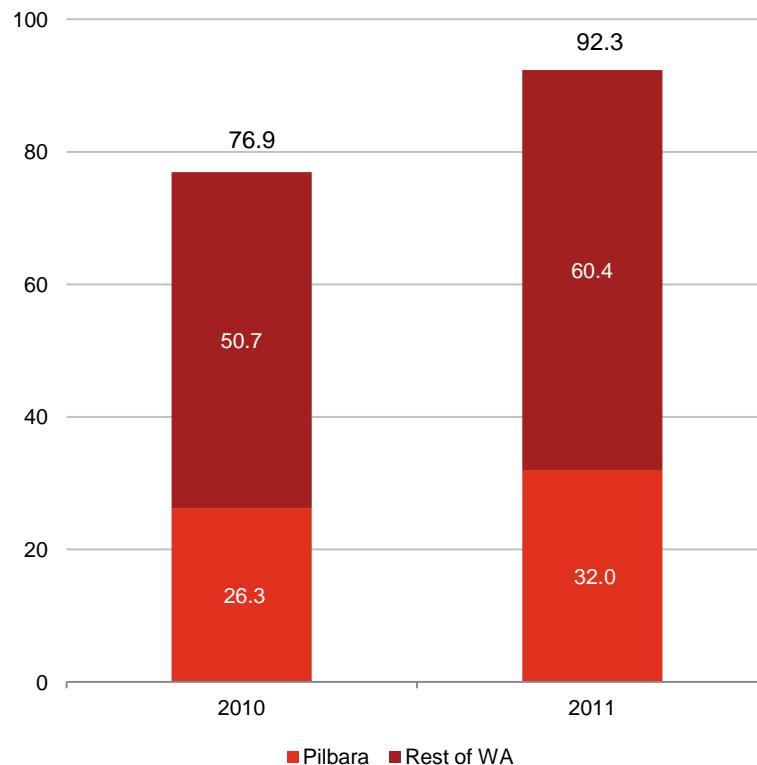


Source: ABS, 3218.0 Regional Growth Population Australia

3 Demand Forecasts – 3.2 Population – 3.2.2 Historic Context

Minerals industry employment is a major population driver for the Pilbara.

Minerals Industry Employment¹
(Employees)
(‘000s)



- Using the most recent estimates, the Pilbara accounts for almost 35% of the state's Minerals workforce.
- This compares to only 2.1% of the state's population residing in the Pilbara.

1. Gas and Energy workers not represented. Numbers represent average employees on site annually which may be significantly lower than peak.

Source: Government of WA, Department of Mines and Petroleum

3 Demand Forecasts – 3.2 Population – 3.2.3 Residential Population Forecast

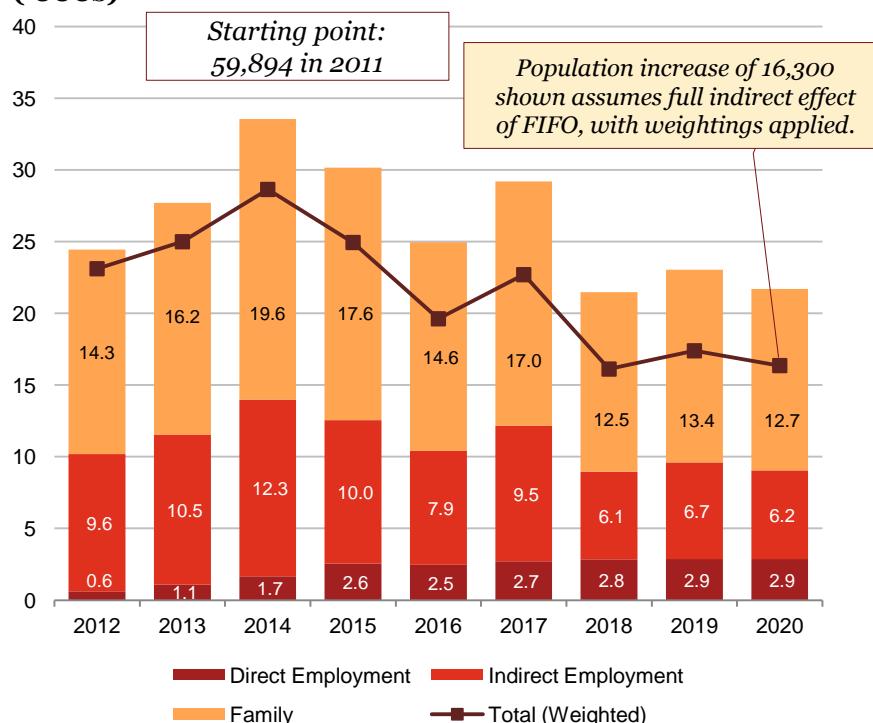
We forecast demand for a resident population increase of between 12,700 and 16,300 by 2020 on a weighted basis.

M&E Driven Residential Population Increase

Pilbara – By source of population

(Incremental to 2011)

('000s)



- This population increase is a demand-based view that does not take into account any supply-side constraints.

- The disproportionate size of the indirect employment and family contributions (relative to the direct employment) is due to the additional impact of FIFO workers on indirect employment (and associated family population).

In this chart, FIFO workers are a driver of indirect employment (and thus families), but do not appear as they are not resident in the Pilbara.

The population increase of 16,300 shown (on a weighted basis) would reduce to 12,700 if there were no indirect effects assumed from FIFO employees.

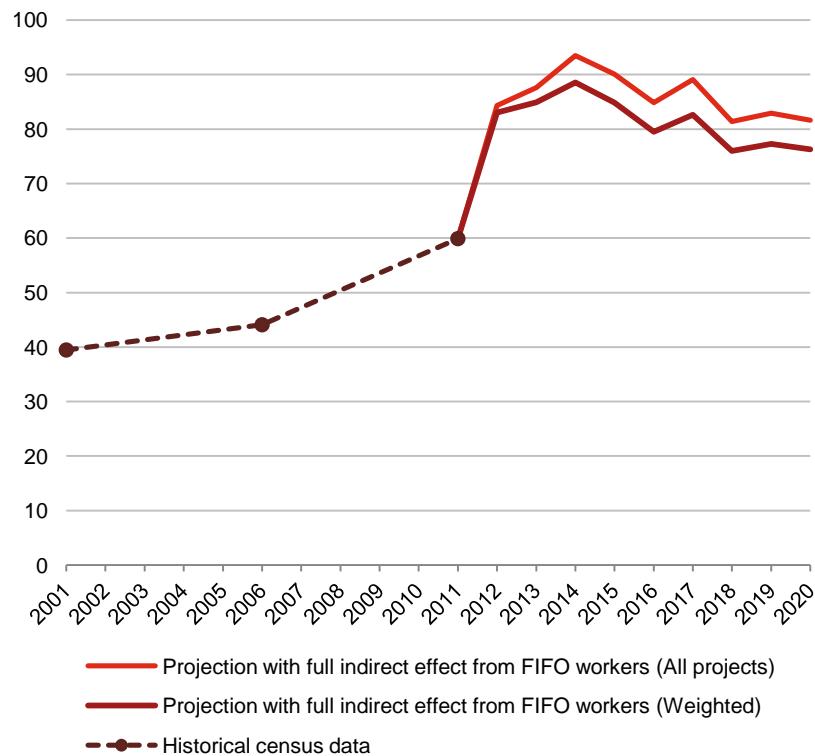
Note: This projection assumes that FIFO workers have a full indirect employment effect.

Source: CME Pilbara Population and Employment Study 2012; ABS 3218.0 Regional Population Growth

3 Demand Forecasts – 3.2 Population – 3.2.4 Historic Growth Rate

An unconstrained demand suggests a significant divergence from the W.A. population growth rate if FIFO workers drive indirect residential employment and population growth.

**Potential Pilbara Population
('000s)**



- The current expansion in M&E activity has the potential to further increase the residential population by over 15,000 by 2020.
- This is equivalent to a growth rate of over 2.7% p.a. for this time period.

The profiles to the left are an unconstrained demand view that assumes a full indirect effect from FIFO workers. This scenario should be considered as a potential opportunity rather than a realistic growth scenario.

The weighted and unweighted lines diverge approaching 2020, as projects beginning construction in later years have a lower probability applied in the weighted case.

Historical data is based on 2001, 2006 and 2011 Census data, with intermediate points averaged.

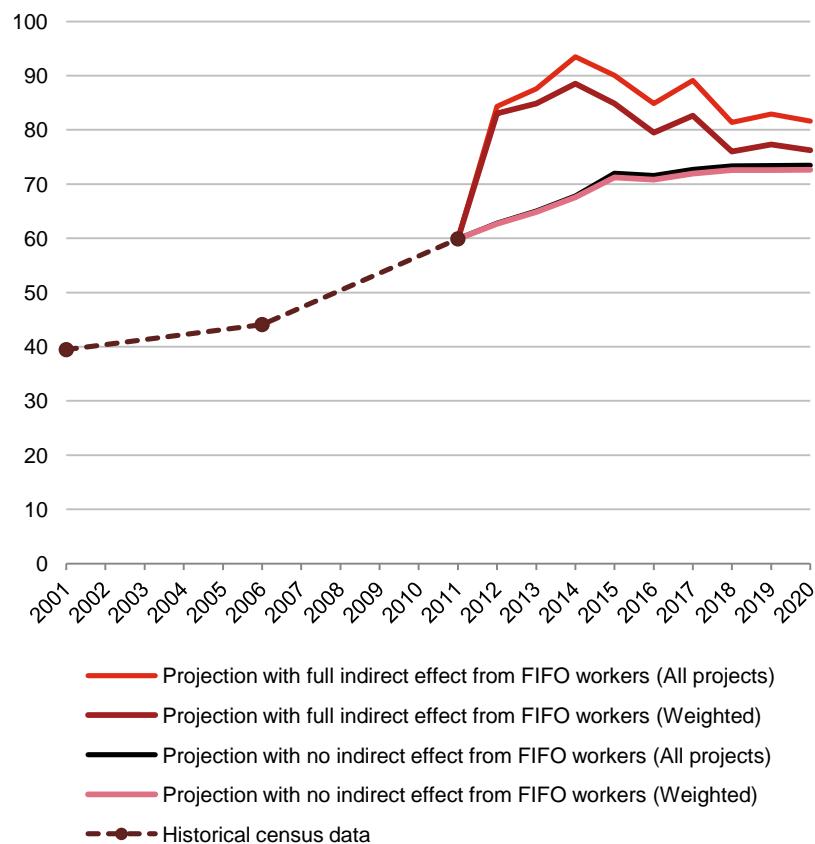
Source: ABS 3218.0 Regional Population Growth, Australia, CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.2 Population – 3.2.4 Historic Growth Rate

The level of indirect employment driven by FIFO workers is a key variable in the short term, but their importance in determining population decreases toward 2020 as the construction peak passes.

Potential Pilbara Population

('000s)



Source: ABS 3218.0 Regional Population Growth, Australia, CME Pilbara Population and Employment Study 2012

- In the short term, the influence of FIFO workers on projected population demand is significant, as there is a large increase in FIFO employment. This accounts for the difference between the “full indirect effect” and “no indirect effect” cases.
- On a weighted basis, there is potential for population to grow to between 72,600 and 76,200 by 2020.

The two sets of lines converge toward 2020, as the total number of FIFO workers falls to just below 2011 levels in the weighted case.

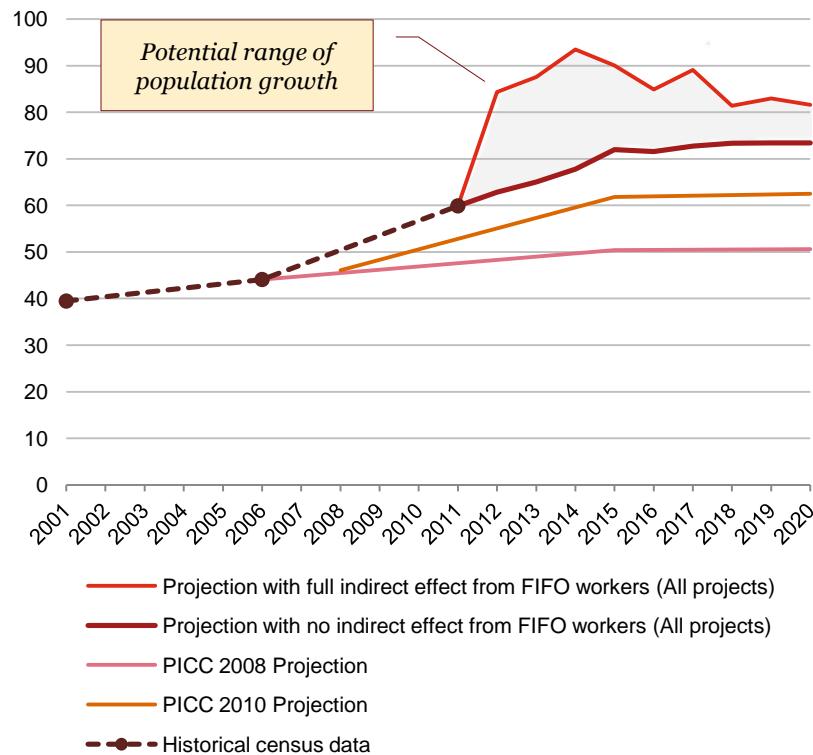
For the “no indirect effect” case, the weighted and unweighted cases do not diverge significantly. In this case all population growth is driven by residential (thus operational) workers. These workers are primarily attached to projects that are already under construction, thus are not subject to a probability weighting.

3 Demand Forecasts – 3.2 Population – 3.2.5 Previous Projections

The current projections show a demand for significantly increased population growth compared to the 2010 and 2008 studies.

Projected Pilbara Population¹

('000s)



- The result of the initial projection (no indirect FIFO effects) is a 2020 population of approximately 73,000 (on an all projects basis), up from 62,500 in the PICC Projections 2010.
- Factoring in full indirect employment demand from FIFO workers raises this estimate to over 81,000 (on an all projects basis).

For consistency with past studies, this graph is shown on an All Projects basis. We believe that the weighted approach is more realistic - this sets out a potential population range of 72,600 to 76,200 in 2020.

These projections reflect the latest Census information for the 2011 population. Data points between 2006 (the previous Census) and 2011 have been averaged.

1. Note – PICC Projections 2010 and PICC Projections 2008 are plotted from a limited number of data points. Population data between 2006 and 2011 census dates has been interpolated.

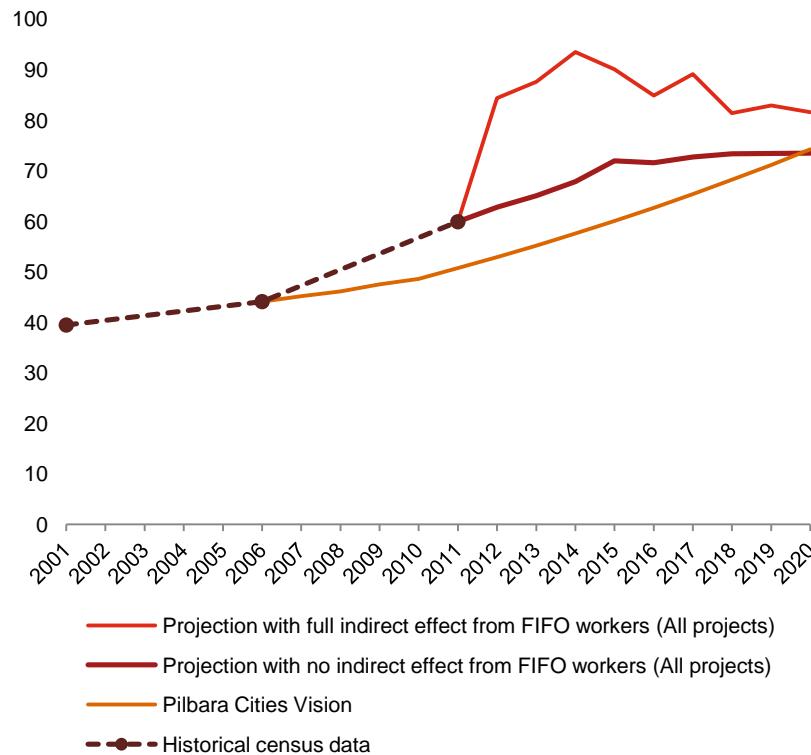
Source: ABS 3218.0 Regional Population Growth, Australia, CME Pilbara Population and Employment Study 2012, PICC Projections 2010, PICC Projections 2008

3 Demand Forecasts – 3.2 Population – 3.2.6 Pilbara Cities Vision

These projections are in line with the aspirational Pilbara Cities growth trajectory over the medium term.

Projected Pilbara Population

('000s)



- The Pilbara Cities aspiration of a Pilbara population of 140,000 by 2035 imagines significant growth in the short, medium and longer terms such that the population roughly triples from the 2006 Census figure.
- Plans that we have identified anticipate population growth in line with the initial stages of the Pilbara Cities vision.
- Our survey-based approach to population forecasting plateaus beyond currently identified project plans, and assumes a roughly constant makeup of the Pilbara economy.

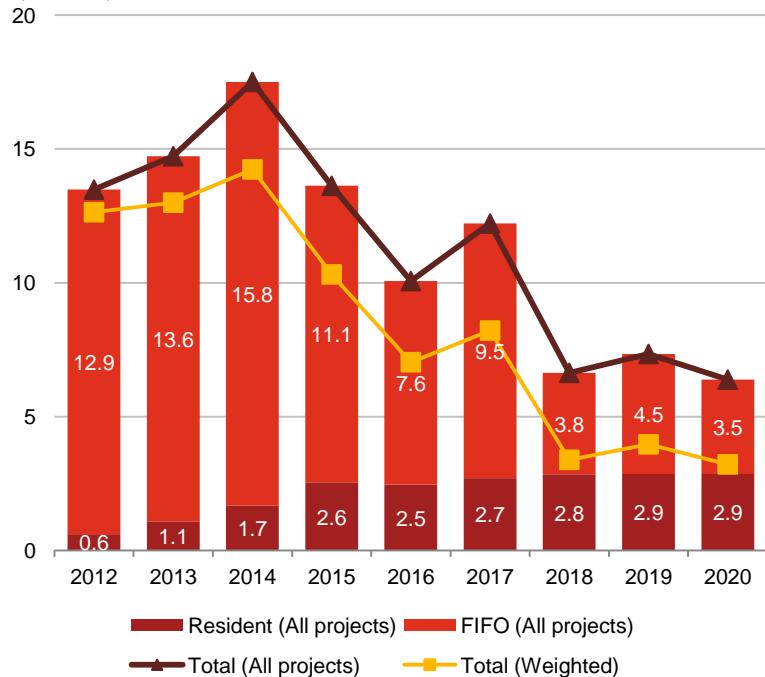
1. Note – Population data between 2006 and 2011 has been interpolated in lieu of published ERP data from the ABS.

Source: ABS 3218.0 Regional Population Growth, Australia, CME Pilbara Population and Employment Study 2012, Pilbara Planning and Infrastructure Framework 2012

3 Demand Forecasts – 3.2 Population – 3.2.7 FIFO Worker Effect

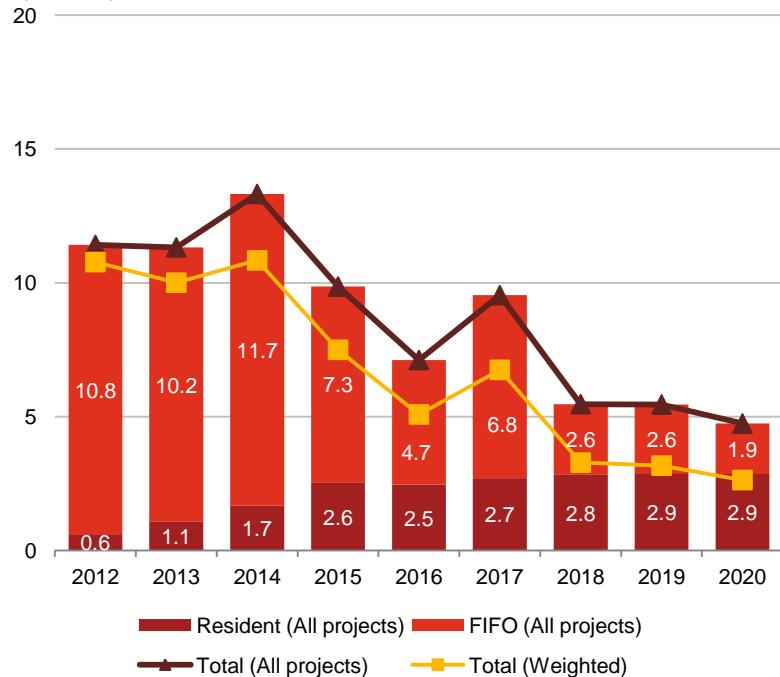
Residential population growth does not include FIFO workers, and consequently understates the growth in demand for accommodation and services to some degree.

Incremental Direct Workers
(Resident vs. FIFO – Incremental to 2011)
(‘000s)



There is growth both in the residential workforce and FIFO workforce. The FIFO workforce is not captured in measurements or forecasts of the resident population.

Incremental Service Population - Direct Workforce
(Resident vs. FIFO – Incremental to 2011)
(‘000s)



The infrastructure and public services required to support the Pilbara’s “service population” are greater than illustrated by residential population numbers, as there are a significant number of FIFO workers in the region at any one time.

Note: Scaled for time in region: E.g. FIFO workers on a 9-on, 5-off roster spend 65% of their time in the region, so out of 100 employees there will be 65 in the region at any one time.

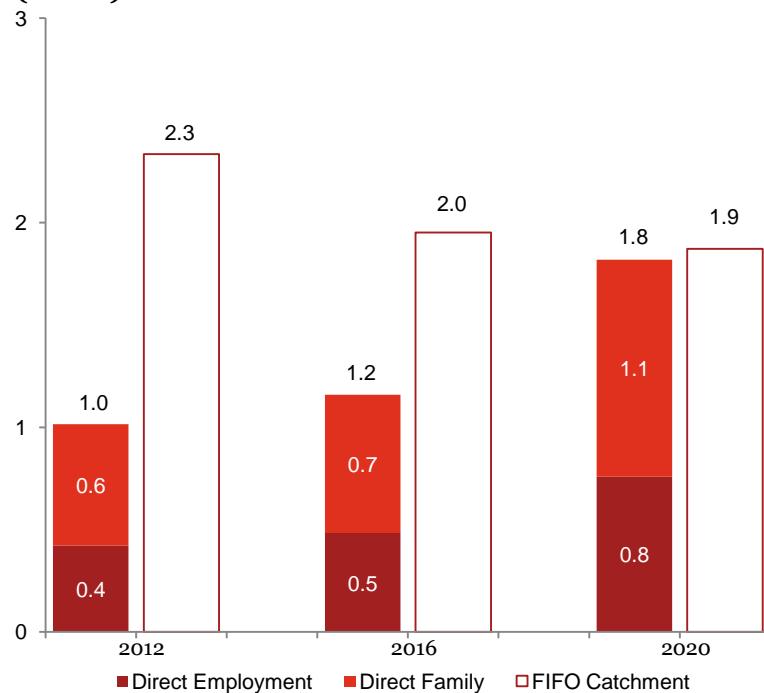
Source: CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.2 Population – 3.2.8 Towns – Port Hedland

Direct employees and their families are expected to contribute population growth of 1,800 to 2020. Further population growth is expected to be driven by indirect demand.

Port Hedland – M&E Employment Effects

(Incremental to 2011)
(‘000s)



FIFO catchment – growth in nearby resource sector activity creates potential indirect employment and population growth, though multiplier is considered to be lower than for residential employees

Note: Rounding means that totals can differ from apparent sum of components

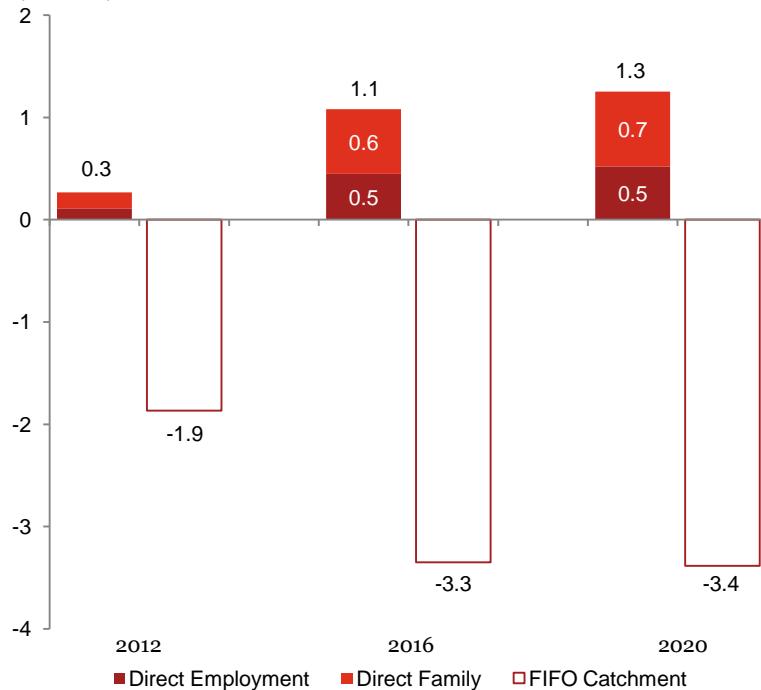
Source: CME Pilbara Population and Employment Study 2012

- The 2011 Census found that Port Hedland had a resident population of 15,044. Direct employees and family members are expected to account for population growth of 1,800 to 2020.
- Growth in the local population can be considered to have three components:
 - New residential employees based in Port Hedland
 - Families of new residential employees
 - Indirect employment generated by economic growth and growth in residential and FIFO employment in the local area
- The chart to the left shows direct employment and families. Direct employment plans are sourced from survey responses, with a multiplier of 1.4 times direct employment used to calculate families' contribution to population growth. Together these are expected to account for growth of 1,800 people to 2020.
- The chart also shows a FIFO catchment area as a proxy for growth in resource sector activity that could drive indirect employment in Port Hedland. The catchment area is defined as operations within 100km of Port Hedland. In this area around 2,000 extra FIFO workers (above 2011 levels) are expected out to 2020.

3 Demand Forecasts – 3.2 Population – 3.2.8 Towns – Karratha

An increase in Karratha's residential workforce could drive population growth. A reduction in local FIFO employment may counteract this effect.

Karratha – M&E Employment Effects
(Incremental to 2011)
(‘000s)



FIFO catchment – growth in nearby resource sector activity creates potential indirect employment and population growth, though multiplier is considered to be lower than for residential employees

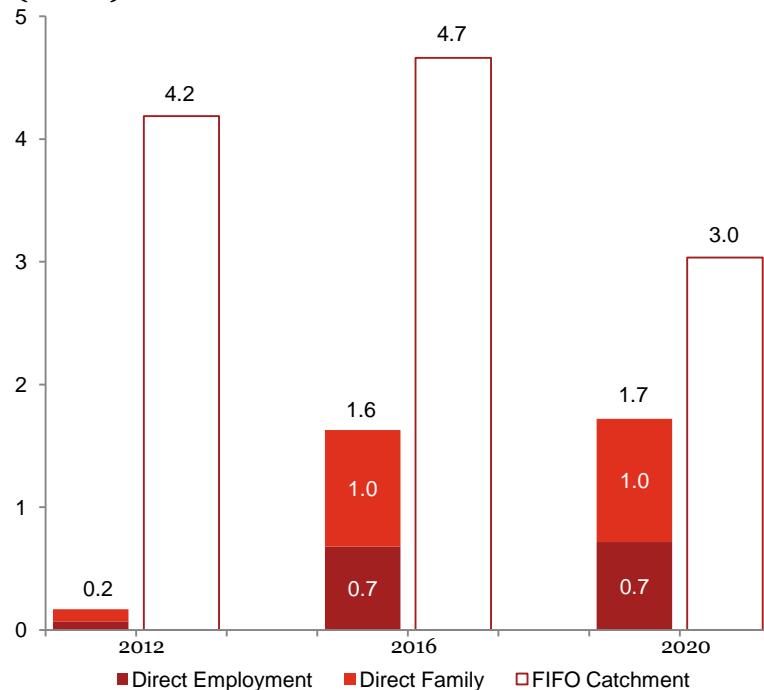
Note: Rounding means that totals can differ from apparent sum of components

Source: CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.2 Population – 3.2.8 Towns – Newman

Newman is expected to experience significant growth in the local residential workforce. In addition, significant growth in nearby FIFO activity could drive indirect employment and population growth.

Newman – M&E Employment Effects
(Incremental to 2011)
(‘000s)



FIFO catchment – growth in nearby resource sector activity creates potential indirect employment and population growth, though multiplier is considered to be lower than for residential employees

- The 2011 Census found that Newman had a resident population of 5,478.
- Growth in the local population can be considered to have three components:
 - New residential employees based in Newman
 - Families of new residential employees
 - Indirect employment generated by economic growth and growth in residential and FIFO employment in the local area
- Additional direct employees together with their families are expected to result in an additional 1,700 people to 2020. In addition, there is a significant increase in FIFO employment within 100km of Newman, representing an opportunity for indirect employment and population growth.

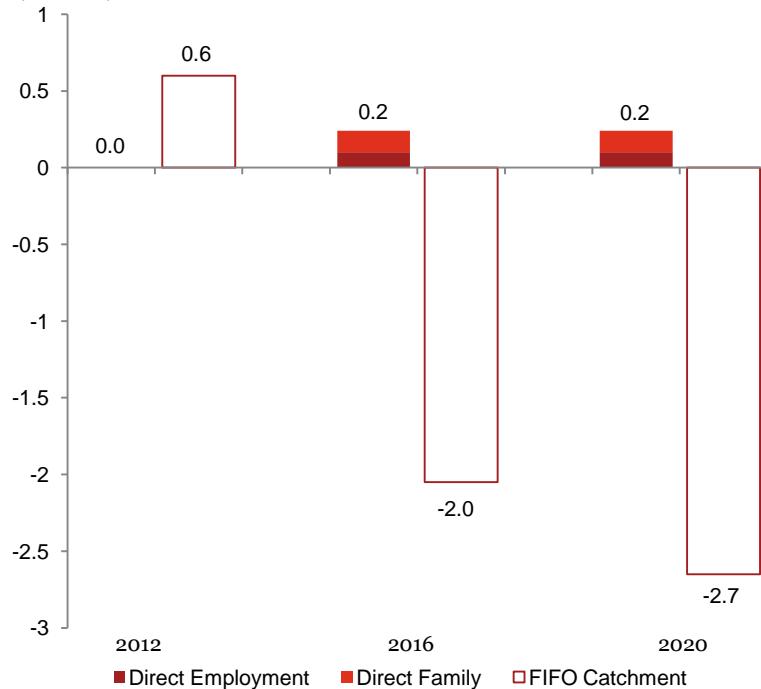
Note: Rounding means that totals can differ from apparent sum of components

Source: CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.2 Population – 3.2.8 Towns – Onslow

Onslow's residential workforce is expected to increase by around 200 people. This small growth represents a significant percentage change. FIFO employment in the area will fall over time as major construction projects are completed.

Onslow – M&E Employment Effects
(Incremental to 2011)
(‘000s)



FIFO catchment – growth in nearby resource sector activity creates potential indirect employment and population growth, though multiplier is considered to be lower than for residential employees

- The 2011 Census found that Onslow had a resident population of 667.
- Growth in the local population can be considered to have three components:
 - New residential employees based in Onslow
 - Families of new residential employees
 - Indirect employment generated by economic growth and growth in residential and FIFO employment in the local area
- Additional direct employees together with their families are expected to result in an additional 200 people to 2020. A significant decrease in FIFO employment in the local area is expected to 2020, which could reduce indirect employment and counteract the effect of the growing residential workforce on Onslow's population.

Source: CME Pilbara Population and Employment Study 2012



3 Demand Forecasts – 3.3 Housing

3 Demand Forecasts – 3.3 Housing – 3.3.1 Key Messages

From the 2011 Census base of 20,700 private dwellings, there is anticipated to be demand for a further 4,395 to 5,640 dwellings in the period to 2020.

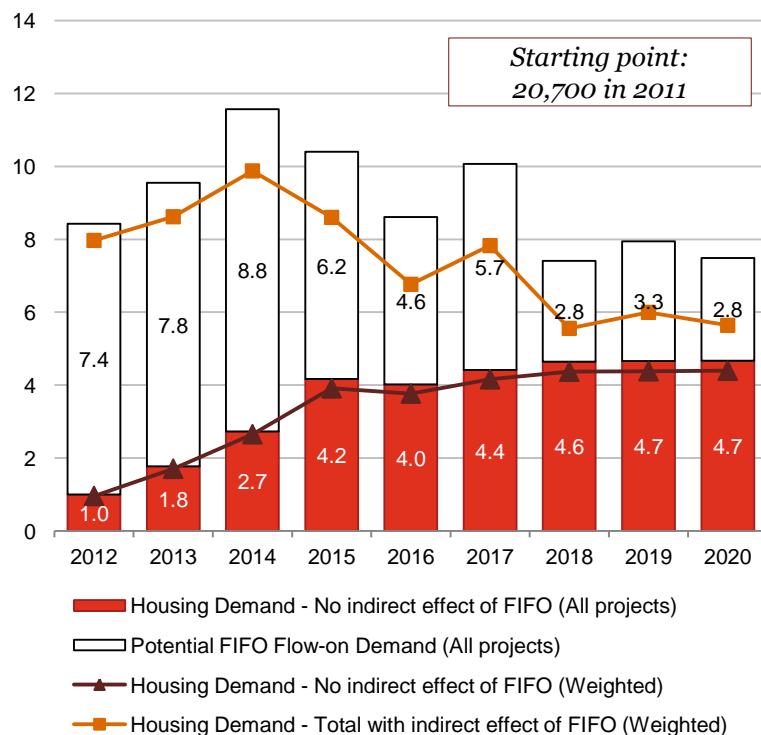
- Based on the projected population demand there will be a significant increase in housing demand in the Pilbara.
- From the 2011 Census base of 20,700 private dwellings, there appears to be demand for a further 4,395 to 5,640 dwellings to 2020.
- This would represent growth of between 21.2% and 27.2% in total, or between 2.2% and 2.7% p.a. to 2020.
- There will be a significant increase in demand for camp beds, particularly in the East Pilbara. Of the 50,400 camp beds presently in the Pilbara, around 20,400 are in the East Pilbara. We forecast demand for around 19,000 additional camp beds by 2015.

3 Demand Forecasts – 3.3 Housing – 3.3.2 Demand for Permanent Dwellings

Based on the projected population demand there will be a significant increase in housing demand in the Pilbara, particularly during the period to 2015.

Projected Demand for Permanent Dwellings

**Incremental to 2011 - Permanent Dwellings
(‘000s)**



- Overall housing demand is forecast to increase at an average rate of 3.6% p.a. through to 2020 based on projected population increases with no indirect FIFO effects.
- The majority of this growth is forecast to occur between 2011 and 2015.
- When potential indirect demand driven by FIFO workers is factored in, overall housing demand could grow by up to 4.6% p.a.
- From the 2011 Census base of 20,700 private dwellings, there is anticipated to be demand for a further 4,395 to 5,640 dwellings to 2020.

Note: Housing demand was projected using the population projection and a person-per-dwelling factor of 2.9 (as per ABS 2011 Census Pilbara QuickStats).

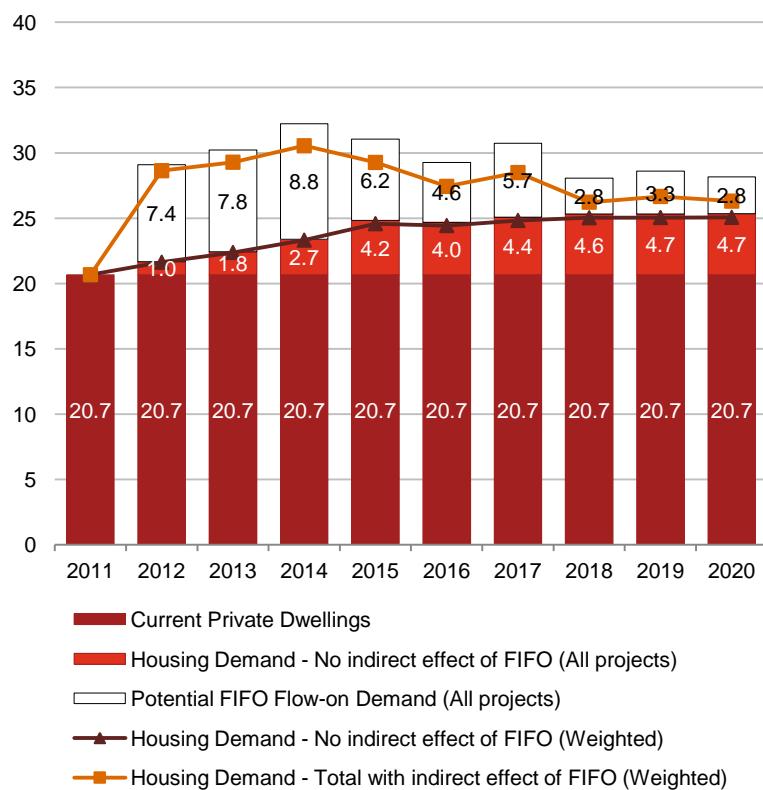
Source: CME Pilbara Population and Employment Study 2012

3 Demand Forecasts – 3.3 Housing – 3.3.2 Demand for Permanent Dwellings

If fulfilled, this additional demand could raise the number of permanent dwellings in the region to over 31,000 by 2014.

Potential Pilbara Permanent Dwelling Numbers

**Permanent Dwellings
(‘000s)**



Source: CME Pilbara Population and Employment Study 2012; ABS 2011 Census Quick Stats

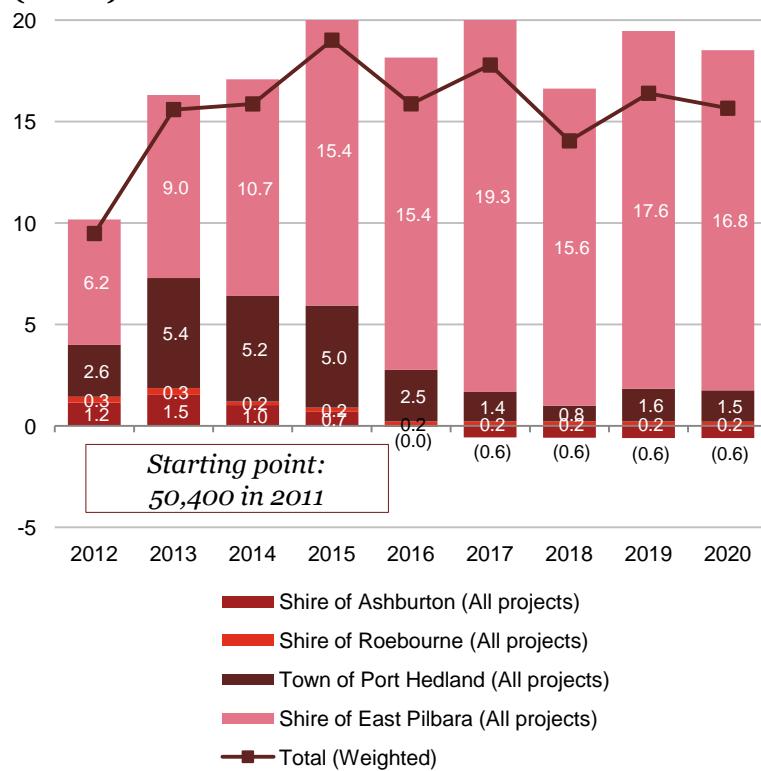
- Latest Census data indicates that there were almost 20,700 private dwellings in the Pilbara region in 2011.
- If the entirety of the projected demand was taken up, the number of permanent dwellings could increase to over 30,000 by 2014 if all planned projects go ahead, or 23,000 on a weighted basis. This would represent an increase of 45% (on an all projects basis) and an increase of 11% (on a weighted basis) over 2011 numbers.

3 Demand Forecasts – 3.3 Housing – 3.3.3 Demand for Camp Beds

There will be significant and increasing demand for camp beds, particularly in the Shire of East Pilbara.

Projected Pilbara Camp Beds

**Incremental to 2011
(‘000s)**



- Demand for camp beds in the Pilbara region is expected to increase significantly over 2011 levels with around 19,000 additional beds required by 2015 on a weighted basis.
- The vast majority of this demand is driven by projects in the Shire of East Pilbara. These projects will require over 17,000 additional camp beds by 2017, with subsequent demand diminishing slightly but remaining strong.
- Demand in Port Hedland will increase in the short term before levelling off after 2015.
- In contrast, camp bed demand in the Shires of Ashburton and Roebourne remains relatively flat, with Ashburton demand dropping below 2011 levels by 2016.

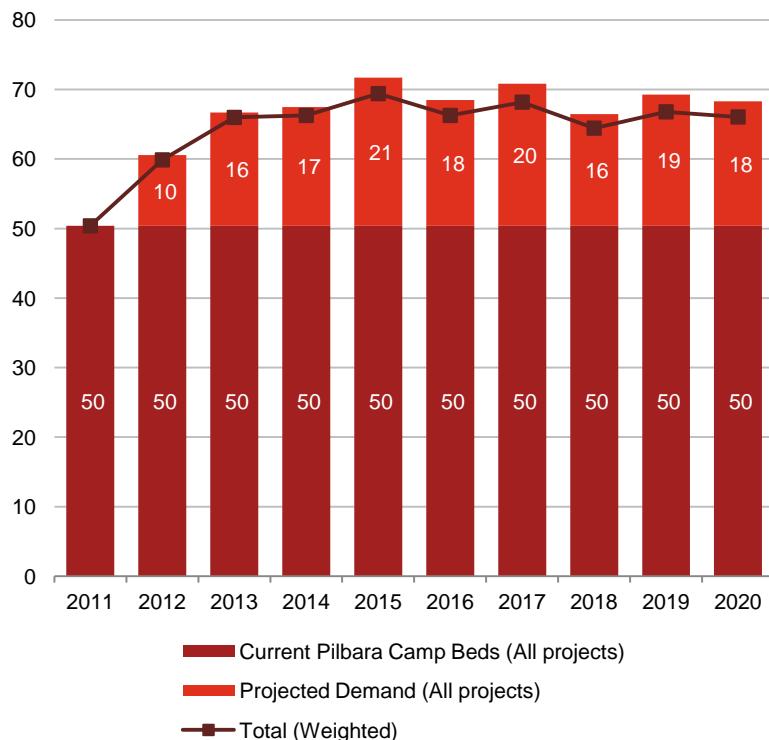
Source: CME Pilbara Population and Employment Study 2012, Transient Worker Accommodation in the Pilbara, PDC, 2012

3 Demand Forecasts – 3.3 Housing – 3.3.3 Demand for Camp Beds

There is likely to be demand for nearly 70,000 camp beds in the Pilbara by 2015.

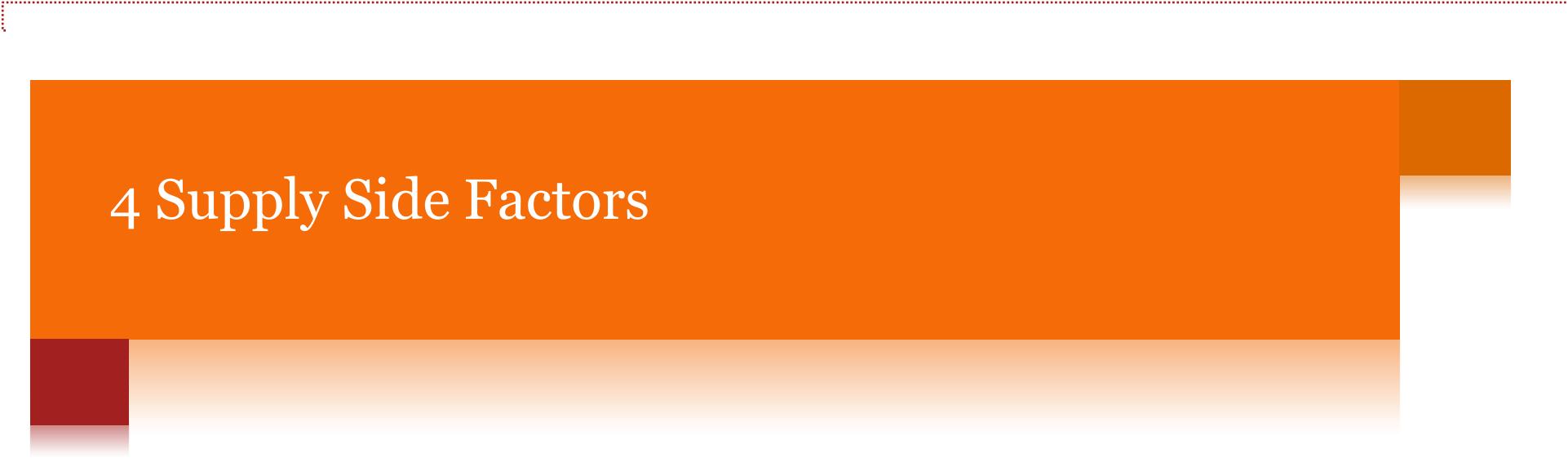
Total Pilbara Camp Beds

(‘000s)



- There are currently just over 50,000 camp beds in the Pilbara region. The largest volume is located in the Shire of East Pilbara (20,500 camp beds) with significant numbers also in the Shires of Ashburton (12,000) and Roebourne (13,000).
- If this incremental demand is met, it has the potential to raise the total number of camp beds to over 69,000 by 2015.

Source: CME Pilbara Population and Employment Study 2012; Transient Worker Accommodation in the Pilbara, PDC, 2012



4 Supply Side Factors

4 Supply Factors – 4.1 Key Messages

The most pressing supply constraint is a shortage of residential housing coupled with housing costs being significantly higher than those in larger population centres.

- Supply constraints are likely to hamper the growth of the population in the Pilbara relative to the growth in demand.
- The most pressing supply constraint is a shortage of residential housing. Housing costs are several times higher than those in larger population centres.
- Each population centre has its own outlook, but they share some common features, including:
 - a shortage of residential housing and very high housing costs;
 - significant land release and development projects identified; but
 - challenges in releasing land and developing residential housing.
- The State Government's Pilbara Cities initiative aims to address many of these constraints through investment in key population centres. The initiative has aspirational population targets of 140,000 by 2035 for the Pilbara as a whole, including cities of 50,000 people at Port Hedland and Karratha, and a population centre of 15,000 at Newman.

4 Supply Factors – 4.2 Pilbara Cities Overview

Pilbara Cities aims to build the population of Karratha and Port Hedland into cities of 50,000 people, and Newman to 15,000 people by 2035.

- The Pilbara Cities initiative is a group of programs that seek to “transform the Pilbara through building modern, vibrant cities and regional centres that can support and deliver a skilled workforce for major economic projects in the Pilbara.”
- The realisation of this vision rests on “the promotion of quality regional living with modern services and facilities that will encourage the development of strong local communities.”
- Accompanying the Pilbara cities vision are aspirational population targets of 140,000 by 2035 for the Pilbara as a whole, including:
 - Cities of 50,000 people at Port Hedland and Karratha; and
 - A population centre of 15,000 at Newman.
- These population targets require the Pilbara’s population to grow roughly nearly two and a half times from 2011 Census figures.
- Over \$1 billion in Royalties for Regions funding has been committed to projects linked to Pilbara Cities goals.

Source: Department of Regional Development and Lands

4 Supply Factors – 4.3 Town Overviews

We have developed profiles of the key population centres in the Pilbara.

Key Population
Centres

New Growth Town

Port Hedland
(Town of Port Hedland)

Karratha
(Shire of Roebourne)

Newman
(Shire of East Pilbara)

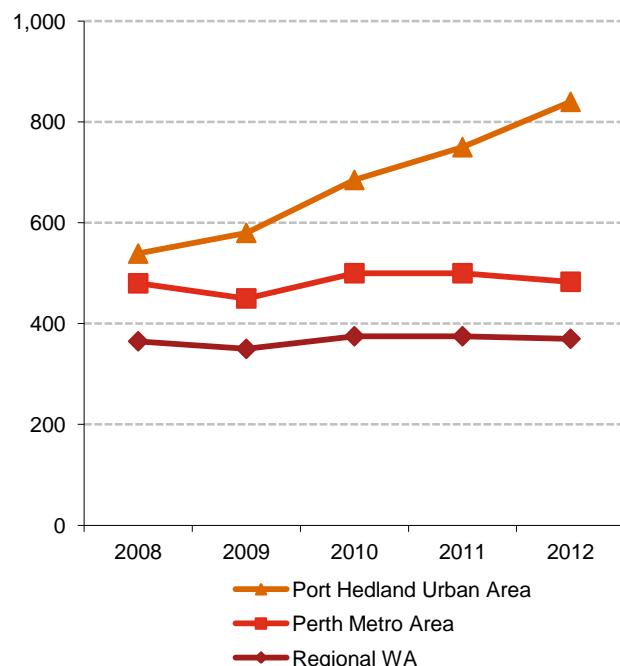
Onslow
(Shire of Ashburton)

- This report focuses on the larger population centres of Port Hedland, Karratha and Newman, where the majority of growth will take place.
- Onslow is also a focus, given the significant new development being experienced there.
- With the exception of Wickham, which is continuing to grow to support port and rail expansion at Cape Lambert, the projections for other smaller inland towns such as Tom Price, Paraburdoo and Pannawonica remain consistent with the projections from the 2010 Report.
- These towns are not specifically examined in this report, however, they are incorporated in the breakdowns by Local Government region.

4 Supply Factors – 4.4 Port Hedland – 4.4.1 Housing Market Snapshot

Port Hedland's housing prices are high and rising.

Port Hedland House Prices
(Annual Median Sale Price)
(\$'000s)



Advertised Residential Rental Prices
(Median Rental Cost per Week)
(\$)

	House (1 bedroom – 4 bedroom)	Apartment
Port Hedland Urban Area	\$1,450	\$2,500
Regional WA	\$250	\$390
Perth Metro Area	\$350	\$470

Note: Median sale prices for Port Hedland Urban Area and Regional WA cover 12 months to reference quarter. The median sale price for Perth Metro Area does not include Mandurah; the 2012 figure is preliminary.

Source: REIWA Regional Centre Profiles – Port Hedland (accessed July 2012)
Landgate Median House Price (accessed July 2012)

Note: The median rental costs for Port Hedland, Regional WA and Perth Metro Area are for Q1 2012.

Source: REIWA Regional Rental Data (accessed July 2012)
REIWA Property Market Indicators (accessed July 2012)

4 Supply Factors – 4.4 Port Hedland – 4.4.1 Housing Market Snapshot

There is the potential for significant new residential land to be released in coming years, which will alleviate current shortages.

Population and Dwellings

- The Town of Port Hedland estimated that the town's "Service Population" was approximately 18,650 in August 2010. This included a FIFO presence of around 3,500 workers at any time, as well as tourists and business travellers.
- 2011 Census data indicates a total Port Hedland Population of 15,044 (up from 11,957 in 2006).
- The Town of Port Hedland estimated that there were 5,550 dwellings in August 2010, plus accommodation for a further 4,200 people in rooms and camps. Census data indicates a growth to 6,015 dwellings in 2011.

Demand / Supply Balance

- Rental prices have risen at 13% p.a. over the past 2 years, reflecting a shortage of accommodation and rapid population growth.
- The Department of Regional Development and Lands assessed an unmet demand for 503 dwellings in Port Hedland as at late 2009, equivalent to a 10% shortage in dwelling supply.

Challenges

- Over 90% of vacant land identified for residential development is in public ownership.
- Around 75% of vacant land identified for residential development requires rezoning.
- Converting forecast land release into housing would require more than doubling the size of the local housing construction industry.

Major Projects and Considerations

- Significant investment in the transformation of South Hedland as part of the Housing Authority's New Living program.
- There are several high profile projects in planning and development including the redevelopment of the South Hedland Town Centre, East End and Spoilbank Marina.
- There is a significant area of land that has been identified as vacant, and suitable for residential development. Given likely zonings, this would support a "Pilbara Cities" level of population.

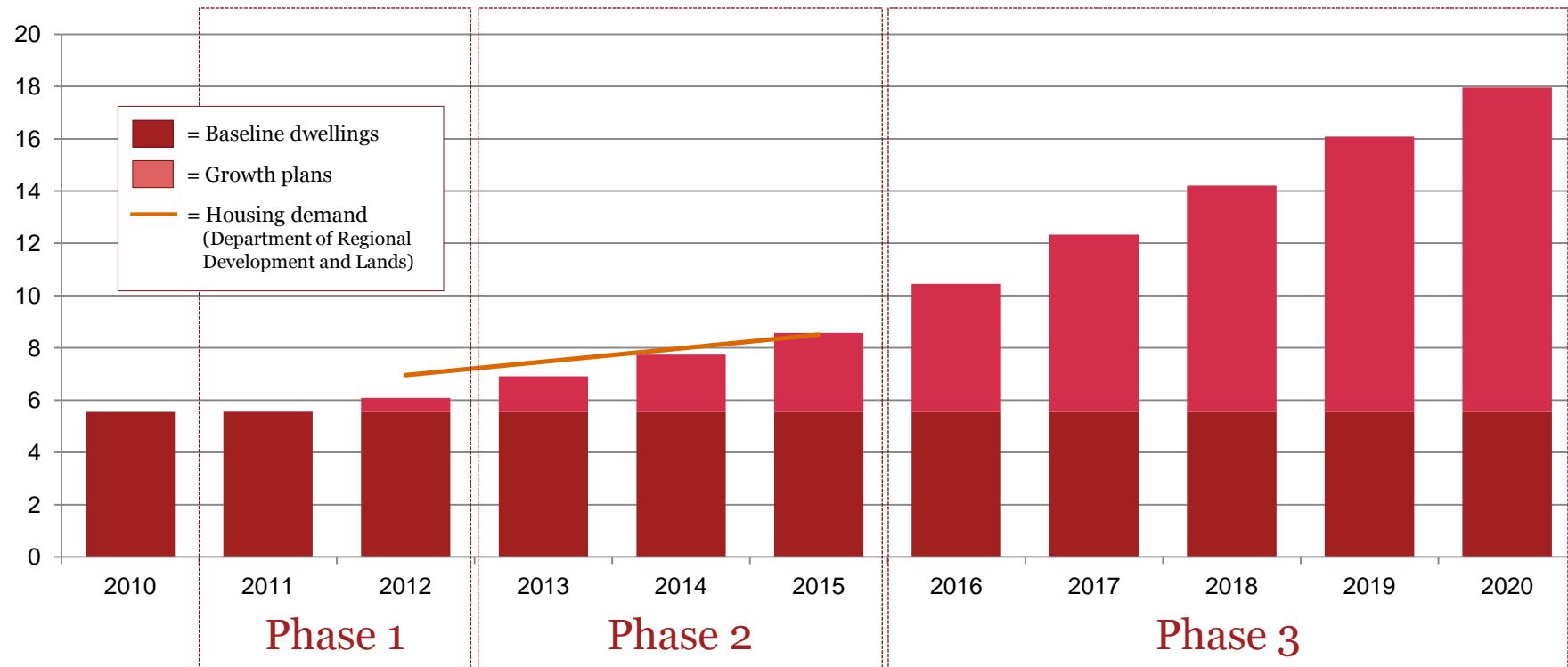
Source: Department of Planning - Regional HotSpots Port Hedland (2011); ABS Census QuickStats - Port Hedland SA (2006 and 2011)

4 Supply Factors – 4.4 Port Hedland – 4.4.2 Housing Supply Forecast

Port Hedland housing supply is projected to have a compound annual growth rate of 13.5% over the next decade. The market is likely to remain tight until after 2015.

Port Hedland Housing Supply (2010-2020)

**Number of Dwellings
(000's)**

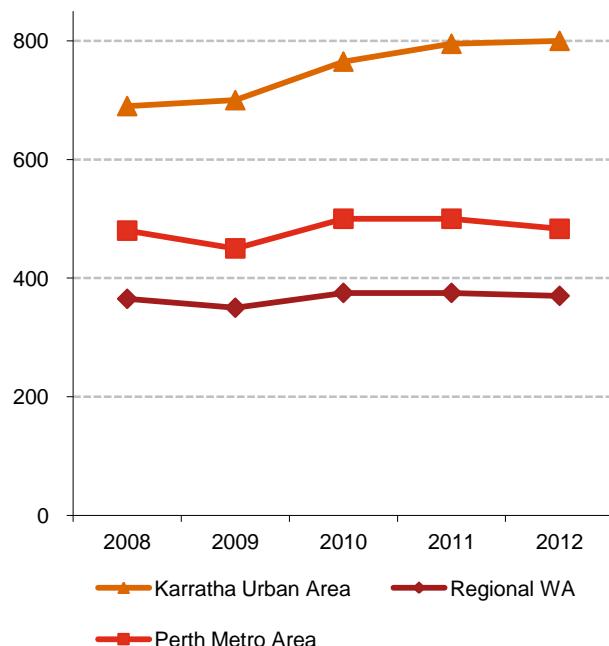


Source: Regional HotSpots Land Supply Update – Port Hedland (2010)

4 Supply Factors – 4.5 Karratha – 4.5.1 Housing Market Snapshot

Karratha's high housing prices are in part a reflection of the constraints to housing supply in the area.

Karratha House Prices
(Annual Median Sale Price)
(\$'000s)



Advertised Residential Rental Prices
(Median Rental Cost per Week)
(\$)

	House (1 bedroom – 5+ bedroom)	Apartment
Karratha Urban Area	\$1,200	\$2,150
Regional WA	\$250	\$390
Perth Metro Area	\$350	\$693

- Note: Median sale prices for Karratha Urban Area and Regional WA cover 12 months to reference quarter. The median sale price for Perth Metro Area does not include Mandurah; the 2012 figure is preliminary.
- Source: REIWA Regional Centre Profiles – Karratha (accessed July 2012)
Landgate Median House Price (accessed July 2012)

- Note: The median rental costs for Karratha Urban Area, Regional WA and Perth Metro Area are for Q1 2012.
- Source: REIWA Regional Rental Data (accessed July 2012)
REIWA Property Market Indicators (accessed July 2012)

4 Supply Factors – 4.5 Karratha – 4.5.1 Housing Market Snapshot

The region's inflated housing prices are a partial reflection on the constraints of housing supply in the area.

Population and Dwellings

- PICC estimated the 2010 service population Karratha/Dampier and Burrup locality at 22,000.
- Most recent Census data indicates a total private dwelling figure of 6,260 (up from 4,914 in 2006).

Demand / Supply Balance

- Current rental prices have risen at a 7% average over the past 2 years. This reflects a shortage of available housing to both the service and resident population.
- The Pilbara Towns Housing Study identified a latent demand of 918 dwellings for service workers and residential construction labourers in 2008.
- Current studies from the Department of Regional Development and Lands indicate a 2012 unmet demand of 1,531 dwellings in Karratha. This is estimated to increase by 86% over 3 years.
- PICC members report that there has been a recent slow down in demand in the Karratha housing market, which is beginning to put downward pressure on housing costs.

Challenges

- Inadequate housing infrastructure is restricting the development of lands in the region. The main concerns are surrounding potable water, wastewater and power/energy distribution networks.
- The high cost and difficulty of obtaining raw building materials makes construction projects less attractive.
- Long lead time and the complexities behind progressing government approvals.

Major Projects and Considerations

- The region south of Karratha hills has more than 800ha of undeveloped land zoned for residential/urban uses.
- A further 1156ha has been identified by the Karratha City Growth Plan. Development beyond that requires the resolution of issues such as native title, heritage and environmental concerns.

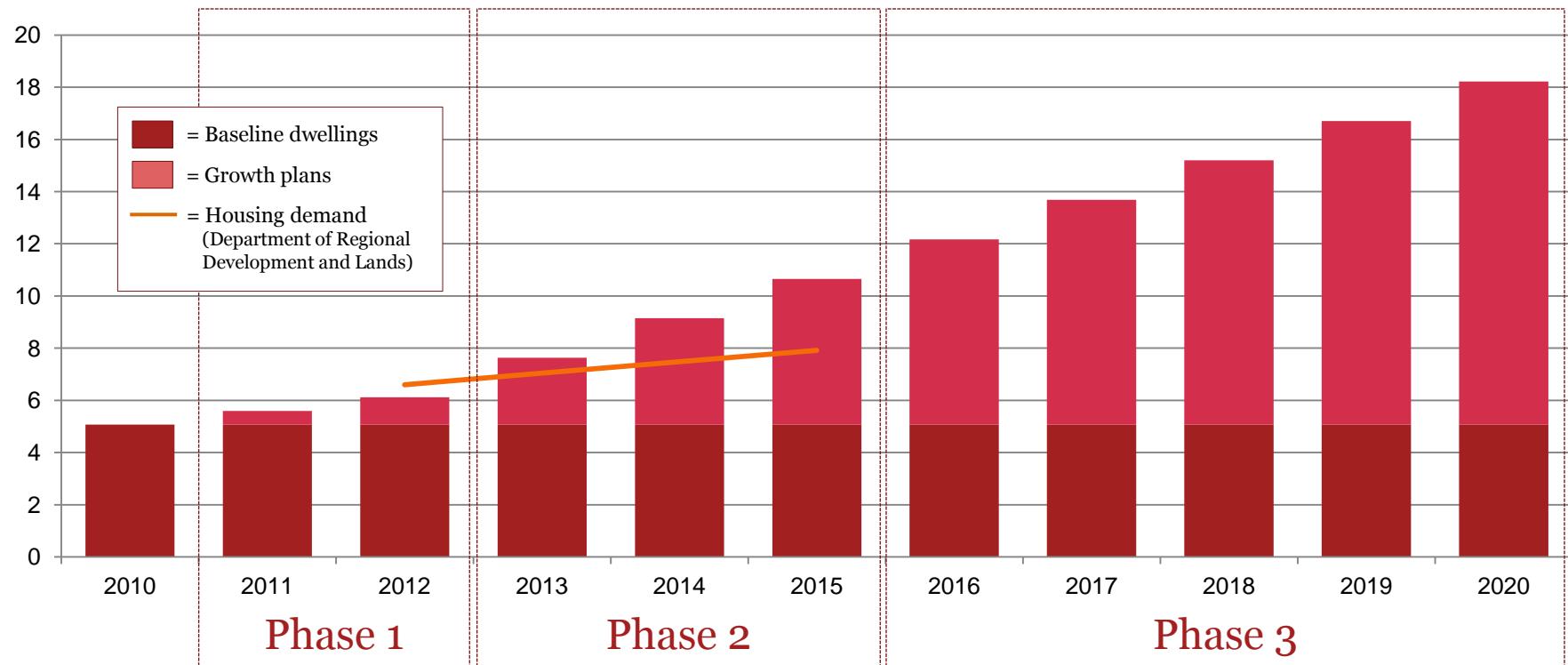
Source: Department of Planning - Regional HotSpots Karratha (2010); ABS Census QuickStats – Karratha SA2 (2006 and 2011); Department of Regional Development and Lands: The Hottest Show in Town - Water and Power in the Pilbara

4 Supply Factors – 4.5 Karratha – 4.5.2 Housing Supply Forecast

Karratha housing supply is projected to have a compound annual growth rate of 13.9% over the next decade. It appears that supply will be sufficient to meet demand in the medium term.

Karratha Housing Supply (2010-2020)

(Number of Dwellings)
(‘000s)

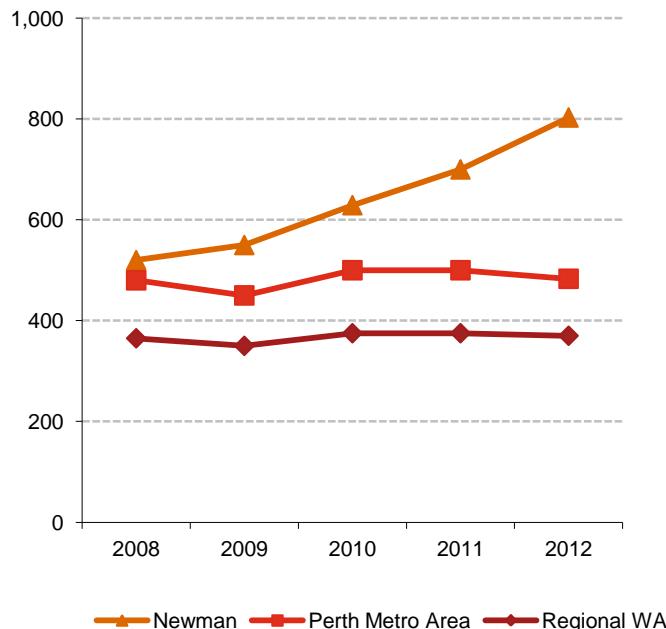


Source: Department of Planning - Regional HotSpots Karratha (2010)

4 Supply Factors – 4.6 Newman – 4.6.1 Housing Market Snapshot

Newman's median house price increased to be 40% higher than Perth's in 2012, from a roughly equal value in 2008.

Newman House Prices
(Annual Median Sale Price)
(\$'000s)



Advertised Residential Rental Prices
(Median Rental Cost per Week)
(\$)

	House (1 bedroom – 4 bedroom)	Apartment
Newman	\$950	\$2,500
Regional WA	\$250	\$390
Perth Metro Area	\$350	\$470

- Note: Median sale prices for Newman and Regional WA cover 12 months to reference quarter. The median sale price for Perth Metro Area does not include Mandurah; the 2012 figure is preliminary.
- Source: REIWA Regional Town Profiles – Newman (accessed July 2012)
Landgate Median House Price (accessed July 2012)

- Note: The median rental costs for Newman, Regional WA and Perth Metro Area are for Q1 2012.
- Source: REIWA Regional Rental Data (accessed July 2012)
REIWA Property Market Indicators (accessed July 2012)

4 Supply Factors – 4.6 Newman – 4.6.1 Housing Market Snapshot

Constraints in Newman appear strongest in housing supply rather than land release.

Population and Dwellings

- 2011 Census data estimated the Newman population at 5,478 people compared to 7,746 for the Shire of East Pilbara.
- The 2011 Census identified 2,212 dwellings in Newman, up from 1,561 in 2006.

Demand / Supply Balance

- Rental prices in the local market have been extremely volatile in recent years.
- The Department of Regional Development and Lands assessed an unmet demand for 283 dwellings in 2012. This value is set to rise to 832 dwellings by 2015 – this represents more than 35% of the current dwelling numbers.

Challenges

- The existing residential construction workforce is likely to be unable to meet building demands. In addition, access to a skilled labour force is restricted due to the competitive environment.
- Managing the safety and efficiency of the local road network for increased resource sector traffic.

Major Projects and Considerations

- There is significant Crown land available for use as residential housing, and potential to bring release forward to support development.
- The Newman townsite is clear of native title constraints.
- The Newman Revitalisation project has produced a Town Masterplan and Town Centre Plan that can guide development.
- East Newman residential development area (LandCorp) potentially increases housing supply by 384 lots.
- Residential lots at NEWMo4 are under conditional approval subject to demand.

Source: Department of Planning - Regional HotSpots - Newman (2008); Department of Regional Development and Lands presentation “Hottest Show in Town”; ABS Census QuickStats – Newman SA2 (2006 and 2011);

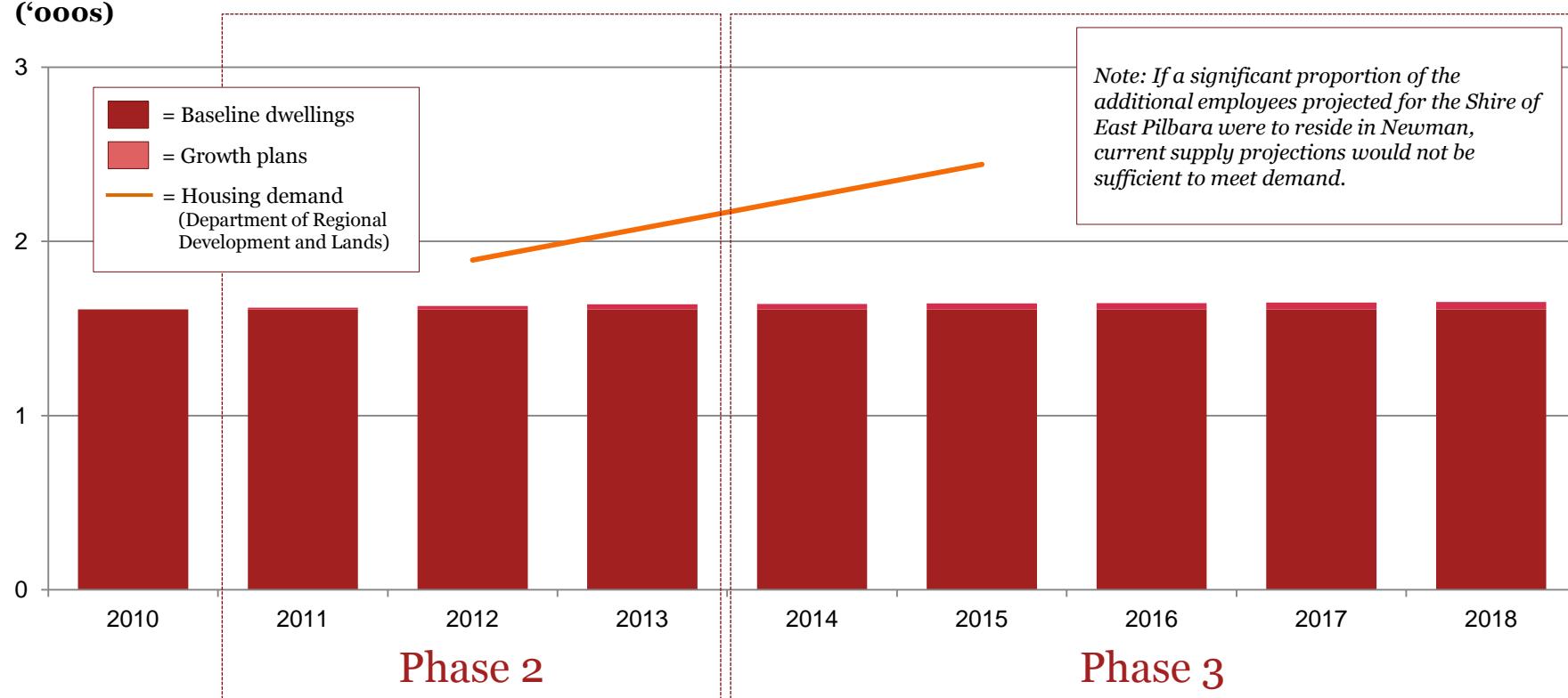
4 Supply Factors – 4.6 Newman – 4.6.2 Housing Supply Forecast

Limited information is publicly available on the future development pipeline in Newman. Significant construction is required to meet future population growth.

Newman Housing Supply (2010-2018)

(Number of Dwellings)

('000s)

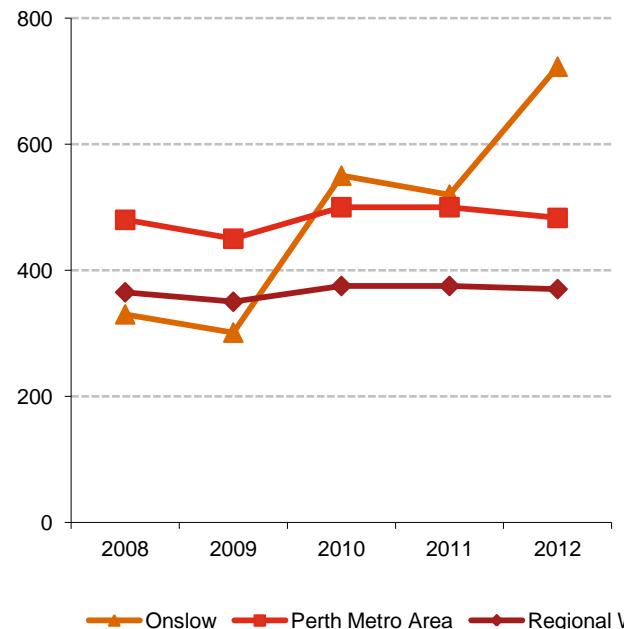


Source: Department of Planning - Regional HotSpots - Newman (2008); Department of Regional Development and Lands presentation “Hottest Show in Town”

4 Supply Factors – 4.7 Onslow – 4.7.1 Housing Market Snapshot

Onslow's median house price more than doubled from 2008 to 2012.

Onslow House Prices
(Annual Median Sale Price)
(\$'000s)



Advertised Residential Rental Prices
(Median Rental Cost per Week)
(\$)

	House (1 bedroom – 4 bedroom)	Apartment
Onslow	\$500	\$1,100
Regional WA	\$250	\$390
Perth Metro Area	\$350	\$470

- Note: Median sale prices for Onslow and Regional WA cover 12 months to reference quarter. The median sale price for Perth Metro Area does not include Mandurah; the 2012 figure is preliminary.
- Source: REIWA Regional Centre Profiles – Onslow (accessed July 2012)
Landgate Median House Price (accessed July 2012)

- Note: The median rental costs for Onslow, Regional WA and Perth Metro Area are for Q1 2012.
- Source: REIWA Regional Rental Data (accessed July 2012)
REIWA Property Market Indicators (accessed July 2012)

4 Supply Factors – 4.7 Onslow – 4.7.1 Housing Market Snapshot

There are significant challenges to providing the step-change in residential housing that will be needed in Onslow.

Population and Dwellings

- According to 2011 ABS Census data, the town of Onslow has a resident population of 667.
- The total town population increases to over 1,000 when FIFO workers and visitors are accounted for.
- Census data indicates Onslow has 548 private dwellings (up from 467 in 2006).

Demand / Supply Balance

- Recent rental data shows an increase in property rental prices of approximately 70% in the 6 month period from September 2010 to March 2011.
- The Pilbara Towns Housing Study estimated an apparent housing shortage of 34 dwellings in 2009.
- The Onslow Townsite Strategy (July 2011) indicates an increased permanent employment base of 500 people requiring an additional 570 dwellings.

Challenges

- The scale of population growth is several multiples of the current population of the town, requiring significant change.
- Much of the land required for an expanded residential housing footprint is yet to receive native title clearance.
- The provision of sufficient support infrastructure (water, waste water and energy) is a challenge for residential construction.

Major Projects and Considerations

- The Shire of Ashburton, along with the WAPC, have recently completed the Onslow Townsite Strategy and amendments to the Town Planning Scheme.
- LandCorp is developing a structure plan for the Onslow Town Centre.
- Population growth is underpinned by a relatively small number of key resource projects, and thus the town can be planned with a reasonable degree of certainty.
- Major residential development in between Watson Drive and Onslow Rd (ONS01B) potentially adds 1,362 lots to the area in the short to medium term.

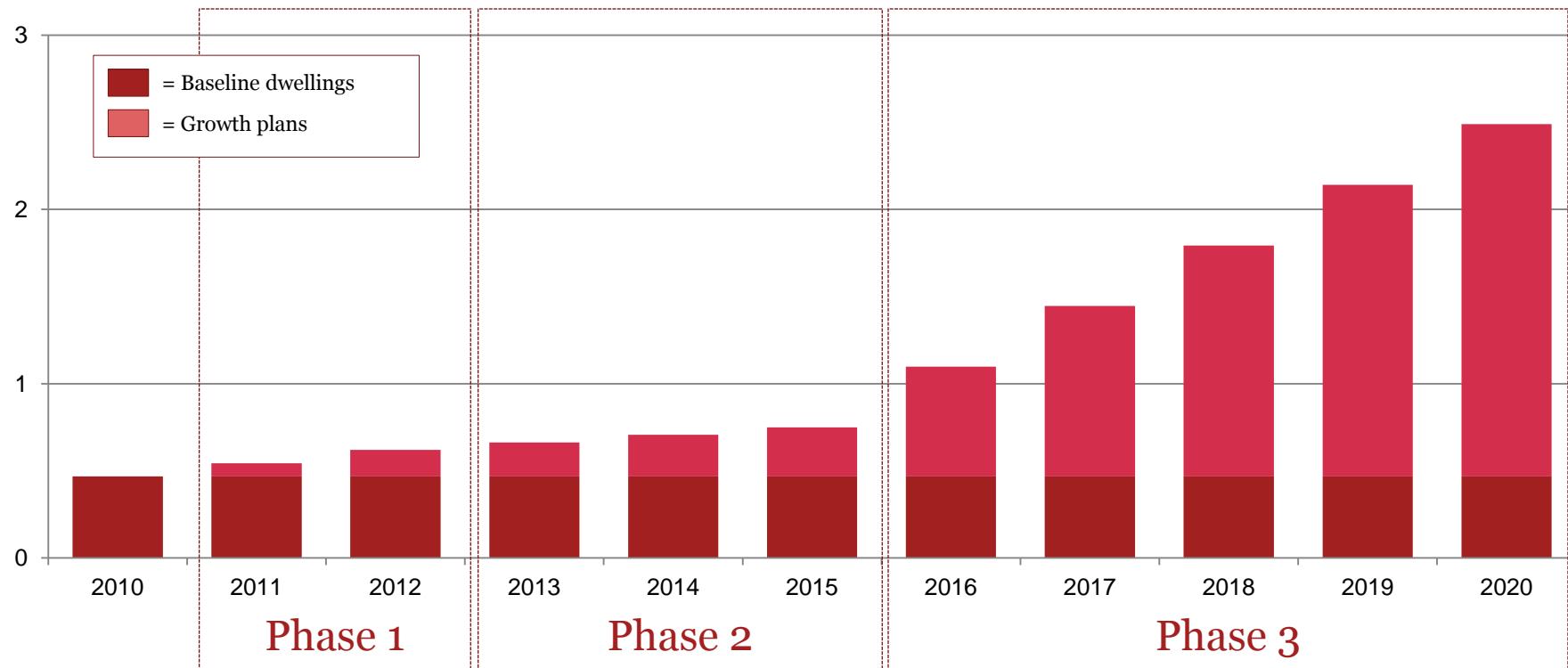
Source: Department of Planning - Regional HotSpots – Onslow (2011); ABS Census QuickStats – Onslow (2006 and 2011); Shire of Ashburton – Ordinary Council Meeting (May 2012); Pilbara Cities - Onslow Expansion Plan (2012)

4 Supply Factors – 4.7 Onslow – 4.7.2 Housing Supply Forecast

Onslow has a limited construction pipeline in the near term, but a large number of longer term projects are in planning.

Onslow Housing Supply (2010-2020)

(Number of Dwellings)
(‘000s)



Source: Department of Planning - Regional HotSpots Onslow (2011); Pilbara Planning and Infrastructure Framework

4 Supply Factors – 4.8 Key Supply Constraints

There are common bottlenecks at each stage of the housing development process.

Land release

- Land ownership is often highly concentrated – either in public sector ownership or a small number of private companies.
- The environmental, heritage and native title approvals required for rezoning can be onerous.

Housing construction

- The cost of new housing construction in the Pilbara is around twice the cost of an equivalent dwelling built in Perth (excluding land costs).
- Construction plans rely on small local labour forces, which will have to grow significantly in size.
- In some areas, the wet season presents a meaningful challenge to delivery of materials and an ability to progress construction projects.



5 Implications

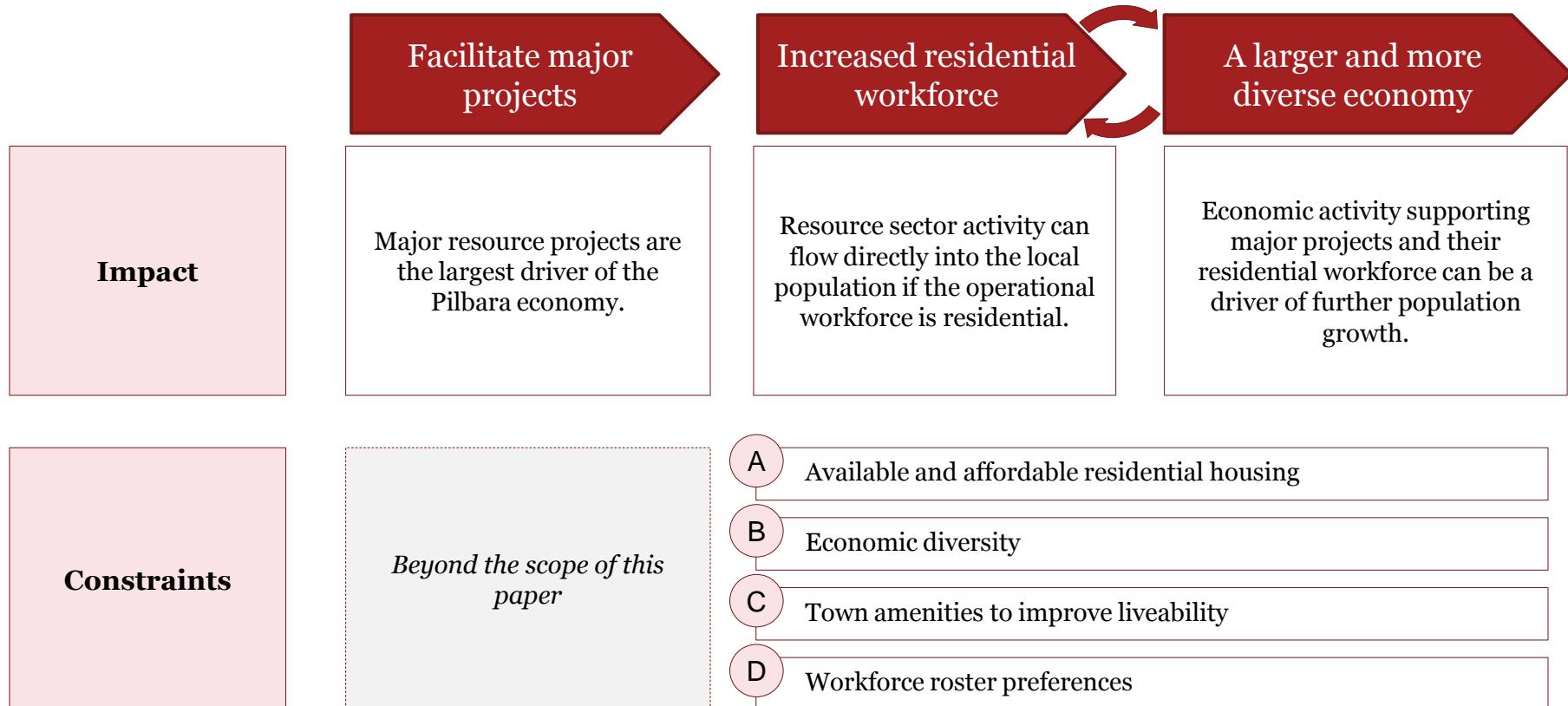
5 Implications – 5.1 Key Messages

A significant amount of planning, investment and work is taking place in the Pilbara. It is imperative that we seize the opportunity to turn these actions into first-rate outcomes.

- This study has identified significant growth in demand for residential housing in the Pilbara driven by economic development and major resource projects.
- The conversion of demand into an increased Pilbara population will depend on the role of supply constraints, particularly:
 - available and affordable residential housing;
 - economic diversity; and
 - town amenity.
- There is a clear shortage of housing in the Pilbara. This appears driven by constraints to both land release and housing construction.
- Economic diversity and town amenity are important inputs into the quality of life in Pilbara towns. Availability of affordable commercial and light industrial land is a key factor.
- Residential staffing approaches rely on the ability of the local area to support increased population, and the willingness of the workforce to relocate.
- Current approaches to land release, development and housing construction appear unlikely to resolve critical constraints in the short term, suggesting that workforce preferences are likely to continue to favour FIFO rosters in many areas.

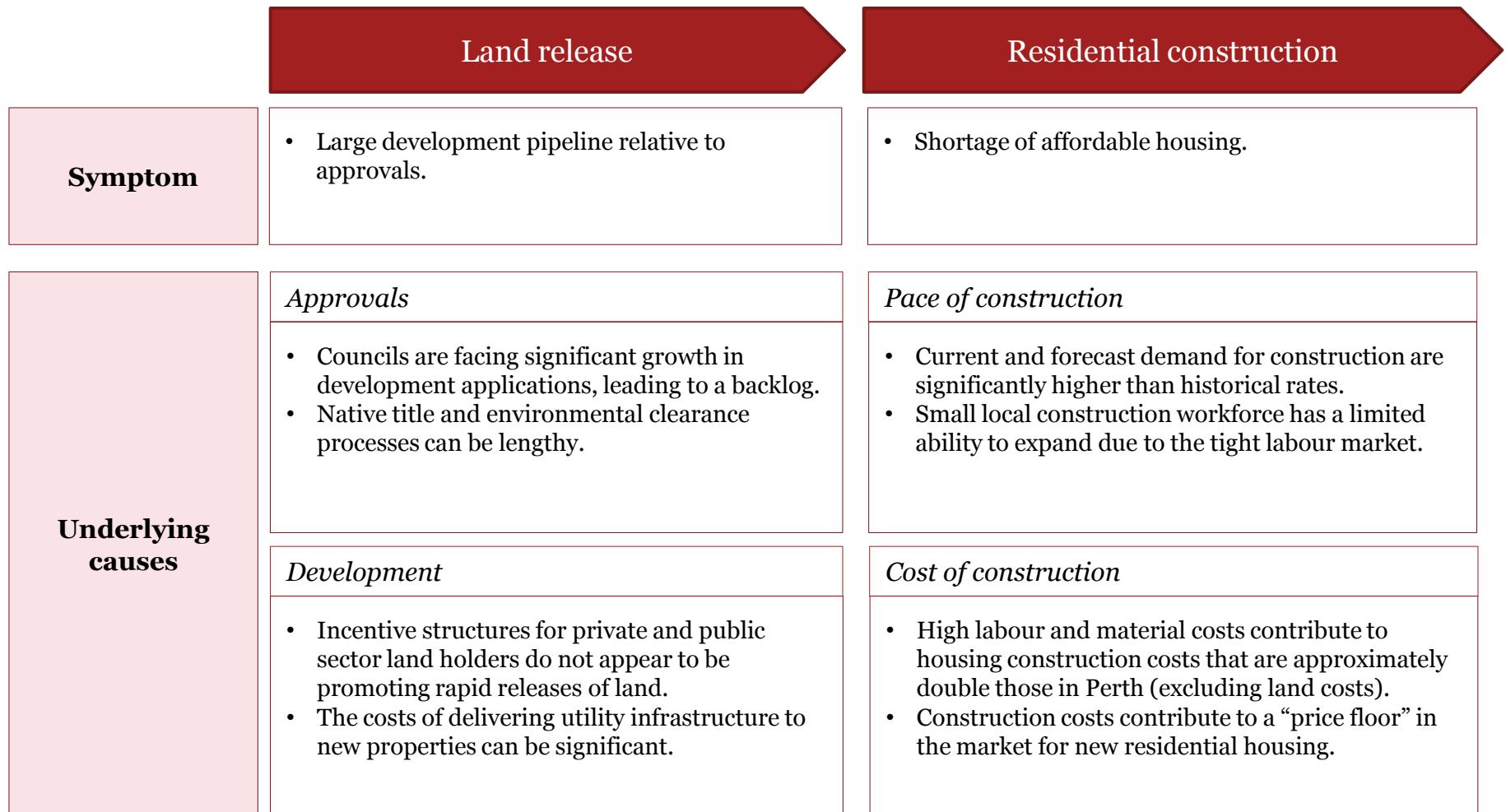
5 Implications – 5.2 Overview

Residential population growth can be driven by economic development, but only if key constraints and obstacles are addressed.



5 Implications – 5.3 Available and Affordable Residential Housing

There is a clear shortage of housing in the Pilbara. This appears driven by constraints to both land release and construction.



5 Implications – 5.4 Economic Diversity and Town Amenity

Economic diversity and town amenity are important inputs into the quality of life in Pilbara towns. Availability of affordable commercial and light industrial land is a key factor.

Economic diversity		Quality of life
Symptom	<ul style="list-style-type: none">The local economy has a limited range of small businesses providing essential goods, services and hospitality.	
Underlying causes	<ul style="list-style-type: none">PICC members report that a key constraint to economic diversity is a shortage of available and affordable light industrial land.Shortages of commercial land are contributing to significant increases in commercial rents. PICC members report that rents are threatening the viability of many locally-owned small businesses.	<ul style="list-style-type: none">Quality of life is a broad concept into which economic diversity and town amenity are two key inputs.Economic diversity is considered valuable not only for the additional employment opportunities that it brings, but also for the improved liveability that a “full service” local economy provides. This includes basic services such as hairdressing, car repair and a varied hospitality sector.
Town amenity		
Symptom	<ul style="list-style-type: none">Pilbara towns are perceived to lack quality healthcare and education options and community infrastructure.	
Underlying causes	<ul style="list-style-type: none">Pilbara towns are relatively remote, and although rapidly growing, remain small relative to W.A.’s regional cities.Health, education and community sectors find staffing difficult because of the high cost of living in the Pilbara.	

Implications – 5.5 Workforce Roster Preferences

Workforce preferences are a key driver of FIFO rosters in the resource sector. The key underlying drivers of preferences are the liveability and affordability of towns.

Drivers of employee preferences	
<ul style="list-style-type: none">• Affordable and available residential housing• Quality education and healthcare• Town amenities• Diverse “full service” local economy	<ul style="list-style-type: none">• The choice between a FIFO and residential workforce for the operational phase of a project is made well before production commences.• A critical consideration in the design of workforce rosters is the ability to attract and retain staff. PICC members report that employee preferences are a significant driver of their movement toward a greater use of FIFO.• Staff preferences are driven in large part by the perceived attractiveness of towns as a home for workers and their families – liveability and affordability are key drivers.• Current approaches to land release, development and housing construction appear unlikely to resolve critical constraints in the short term, suggesting that workforce preferences are likely to continue to favour FIFO rosters in many areas.

