

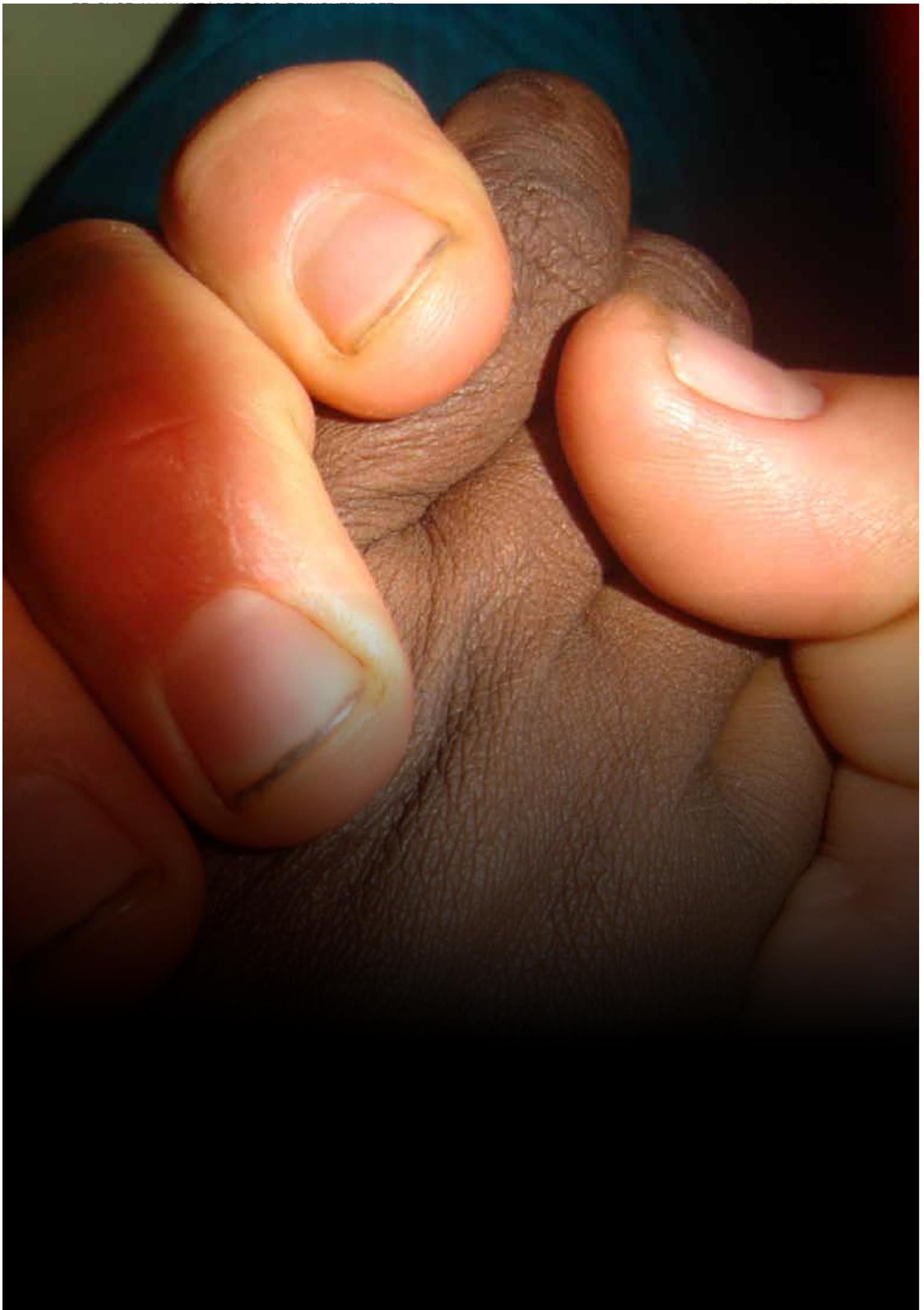
FROM PROJECTS TO PLACES — THE 2 CHALLENGES,
4 THEMES AND 10 PRACTICES OF HOW TO DO IT
PILBARA CITIES

Peter Newman, Curtin University Sustainability Policy (CUSP) Institute;
Darren Bilsborough and Paul Reed, Parsons Brinckerhoff; Mike Mouritz, HASSELL

HASSELL

Curtin 
University of Technology

 **PARSONS
BRINCKERHOFF**
125
YEARS



Introduction

This paper sets out to examine the prospect of transitioning the regional mining towns of the Pilbara (particularly Karratha and Port Hedland) into desirable, liveable and affordable cities. These mining towns bear all the hallmarks of being built around projects only, and need to transition into places for settlement in their own right. To do this we will discuss the two, four and ten of creating cities in the Pilbara: the two challenges to this transition — remoteness and resilience; the four themes for enabling the transition of project towns to good cities — economics, infrastructure, planning and placemaking, and governance; and the ten practical solutions to allow this transition to occur for the towns of the Pilbara.

Why build cities in the Pilbara?

The Pilbara is one of Australia's most important economic zones, with Dampier and Port Hedland being the two highest export tonnage ports in Australia. But despite covering over 506,000 square kilometres, representing approximately 19.7% of Western Australia's total area, just a little over 45,000 people live in the region (Pilbara Development Commission 2010).

Unfortunately, despite the economic activity centred in the region, the present Pilbara towns are not working as a serious option for families. They have been undermined by a 'project' mentality that has not seen them as having a long-term future. State governments and mining companies have historically focused on enabling projects without enabling places.

This project mentality has resulted in the adoption of fly-in/fly-out (FIFO) as the means for mining companies to meet the challenges of providing skills and labour (over 18,000 FIFO workers this past year compared to 12,000 local workers) to the remote Pilbara townships of Port Hedland, Karratha, Dampier, Tom Price, Paraburdoo and Newman (Pilbara Development Commission 2010).

FIFO is seen by many in the north as the problem, not only contributing to the small number of people staying in the region, but also potentially adding to Perth's growth problems. FIFO is clearly going to be an ongoing part of modern mining but its scale needs to be questioned (Department of Planning 2009; Haslam McKenzie 2010). FIFO has been shown to eat away at family life and thus to lead to serious social problems. Families need parents who are around for more than 10 days on and 10 days off (Watts 2004; Gallegos 2005).



FIFO is also based around cheap fuel for air transport that cannot be guaranteed beyond the next few decades. Oil prices are bound to keep rising because conventional oil production has already peaked and is beginning to decline. The head of Total Oil in France has confirmed that peak oil is now a reality and as the Prime Minister, Kevin Rudd, said last year: 'The days of cheap oil are over'. It is clear that the FIFO approach to sourcing most of the workforce will need to be scaled down to a much more manageable level (Newman, Beatley & Boyer 2009).

The lack of confidence in a long-term future for the economy, and hence development of permanent residence in the form of cities in the Pilbara, has meant that there has not been the attention to city planning necessary to develop attractive options for families. Without this fundamental sense of a long-term future, families and businesses have not had the confidence to invest in the Pilbara communities for the long term. Significant problems have resulted, such as lack of land development and house construction, leading to existing housing becoming unaffordable, community services and especially education and health opportunities being inadequate, and the whole amenity and security of the towns being undermined.

Continued FIFO is also unsustainable for Perth, which is growing unsustainably fast. Perth's growth rate of 3.2% in 2008–09 has made it the fastest growing capital city in Australia; forecasts now predict that its population will double to 3.4 million by 2044. A real option needs to be created — regional cities.

Australia's border security demands northern development. If the Pilbara commits to cities, Asian migration and interchange will continue, as it does in Darwin. The whole region needs cities for those who will continue to live there no matter what the economic situation (i.e. the Indigenous residents who have been there for 30,000 years and are the fastest growing part of the population).

The long-term economic future for Pilbara Cities based on mining and energy is now well established. The many mining and petroleum projects coming on stream and the good prices for commodities in China, Japan and elsewhere in Asia suggest that there will be many more jobs in the Pilbara region for generations to come. As Andrew Forrest of the Fortescue Metals Group stated in the 2008 Pilbara Plan (Pilbara Area Consultative Committee 2008):

The Pilbara is not a short term quarry. It will sustain major wealth generation for Australians for hundreds of years. The Pilbara therefore can and must host long term, fully sustainable and high quality living Pilbara communities.

The Western Australian Government has recognised the need for change in the Pilbara: in a state government initiative to encourage more people to live and settle in the Pilbara, the Premier, Colin Barnett, announced that Karratha and Port Hedland would become major cities of the future.

When launching the Pilbara Cities blueprint, the Premier said the framework was now in place to transform the region by creating modern higher density centres, supported by all the services and facilities enjoyed in other Australian cities.

'When the Pilbara was developed in the 1960s, the governments and the industries of the day tried to replicate Perth's suburbs — three-bedrooms, one bathroom, backyard, Hills hoist,' the Premier said. He acknowledged that this business-as-usual model is no longer the desirable option and went on to say, 'The Government's vision is to create places that people choose to settle on a permanent basis, a place to bring up families with access to high standards of education, health and diverse employment and career opportunities.' (Department of Premier and Cabinet 2009).

This paper will therefore explore how the Pilbara can go beyond projects to become places where people will want to go, stay, become members of the community and eventually call home.

A new name for a Pilbara City?

With the emerging awareness of Indigenous culture there is a growing use of Indigenous names to help create a sense of place. Indigenous geography goes back 30,000 years or so. The new Perth–Bunbury Highway uses Indigenous names on each of its new bridges. Thus the question was posed by the authors: what possible names could be applied to the new Pilbara Cities, taking into account that they include settlements from Karratha to Port Hedland.

We discussed with the Wangka Maya Pilbara Aboriginal Language Centre (and affiliates) the pro's and con's of certain names/words that may be applicable to the Pilbara Cities. They told us this story...

In the 1800s an 'old fella' who lived about 60 km out of Port Hedland (on Munda Station) had a dream or vision that one day Port Hedland, which at that time was home to only about 150 people, would be filled with many people, many of whom would have different-coloured skin.

His dream came true, with Port Hedland now being a populous multicultural town. Our vision would see this being substantially increased.

The Kariyarra word for dream/vision, a word which is widely known throughout the Pilbara, is *kapukarri* (roughly pronounced 'gub-ull-garri'). This word is very pertinent to what we are trying to do (i.e. Pilbara Cities – Dream a Little!) and represents a beautiful link to a culturally significant story associated with Port Hedland.

(Information contributed by Dr Ed Oldmeadow, Parsons Brinckerhoff, Manager of the PB-CUSP Alliance, with acknowledgements to Wangka Maya Pilbara Aboriginal Language Centre and Raylene Gordon, Fortescue Metals Group).



2 Challenges

The Pilbara is faced with two major challenges associated with the establishment of a planning and implementation framework that will lead to the development of successful cities within the region:

- challenge 1: the remote city
- challenge 2: the resilient city.

Challenge 1: The remote city

Many issues relate to cost, due to the sheer distance from Perth. But if Pilbara Cities are seen as extensions of Perth many of these issues will never be resolved. Pilbara Cities need to be more self-sufficient; for example, there are stories that sandwiches are sometimes flown in for events in Karratha. It is inappropriate for Pilbara Cities to depend on Perth for so many things. Remote locations such as the Pilbara face unique circumstances that demand unique solutions. A city's distinctive character need to develop out of its 'place'. This has not happened in the Pilbara to date.

Challenge 2: The resilient city

The second challenge is to build a city that responds to the new challenges and opportunities of the 21st century. The "business as usual" approach is not the ideal approach to forming a new city able to confront the challenges of a modern world — climate change, peak oil, water, food and biodiversity challenges. We need to create our own Masdar. Arabic for *source*, Masdar is a demonstration 'resilient city for the 21st century' being built in Abu Dhabi.

Such a city would demonstrate the use of renewable energy and reduced carbon, especially oil; it would utilise the new green infrastructure technologies for energy, water and waste; it would be heavily landscaped to enable buildings and public spaces to be cooled naturally; it would be eco-efficient in its industry; it would have a strong emphasis on its own place and Pilbara identity; and it would help to show the new ways that transport can be more sustainable, and where planning and placemaking can be incorporated in more productive and responsive ways (Newman, Beatley & Boyer 2009).



4 themes to building good cities

Four key themes, or fundamentals, must be addressed to allow the dream for our Pilbara Cities to overcome these challenges. These themes can enable the aspirations of all towns that want to become resilient cities, and are particularly relevant to helping project towns become good places for cities to grow. They are:

- *economic development and diversity: employment, Indigenous engagement, entrepreneurship, trade and economic supply chains.* A critical element for a lively, functional and desirable city is a strong local economy that provides employment and wellbeing for its residents, but that is also connected regionally to enable external trade, thereby allowing opportunity for growth and exploration beyond the city boundaries.
- *infrastructure (social and physical): health, education, justice, transport, waste, power and water.* The 'body' and 'organs' of a city rely on its essential physical and social infrastructure services; its ongoing operations need 'sustenance' in the form of energy, good metabolism, and the social infrastructure that enables a healthy, innovative, fair and secure city.
- *planning and placemaking: the creation of place — affordable, liveable, amenable, home.* People live in cities for lots of reasons; these might be historical, for employment or to maintain or pursue their relationships. But people stay in cities for their sense of place — that is, the way the city makes them feel and the ability it gives them to connect with their surroundings, whether physical or metaphysical. Planning systems are set up to enable this to happen beyond individual project plans.
- *governance: regional, state and federal.* Governance is the key to making the Pilbara Cities happen. Governance is needed at regional, state and federal level to ensure that confidence in developing cities with a long-term future is clearly enunciated and acted upon. This will particularly require a new emphasis on planning governance and some new regional governance structures.



10 mechanisms for the transition

1 Economics: federal intervention regarding diversity in economy

Towns don't grow into cities unless they develop a variety of drivers. Mining and petroleum will continue to provide huge employment opportunities, so this sector will always be well represented in the Pilbara. Tourism will also continue to grow as a major employer. And there will be a natural increase in diversity as the scale of the city grows. However, Pilbara Cities need another couple of interventions to help create the drivers to complement the resource and tourism industries already present. Darwin was given a great boost with its defence installation. Given the strategic location of the Pilbara relative to the populous nations of Asia, a strategic defence/migration function is obvious. Note that the Australian Government has just reopened Curtin Detention Centre after closing it in 2002. Perhaps a more community-based housing area for people in transition could be created, an area with much better facilities and services that are part of the city. This is a great platform for joint federal–state government cooperation under the banner of Pilbara Cities. It's a long-term problem that demands a long-term solution.

Another source of economic benefit to the Pilbara Cities project would be the situating of a state government department in the region. Below we expand on how this could be a new Department of the Pilbara.



2 Economics: resource taxes and re-investment

The resource companies decide the nature of the current and future economy by their decisions on residential/FIFO workforce mix and work shift structures. For the government to plan anything about a Pilbara city without these companies' agreement and cooperation is pointless and bound to fail. The need for re-investment in the region is obvious, and as governments seem set to take more taxes from these companies it behoves governments at all levels to integrate their use of these funds to help the local economy where the wealth has been generated. To be serious about a new city, the government needs to work with the present resource companies to develop ideas for re-investment in infrastructure and new industries, and to place their proposals on the table when discussing royalty arrangements, exploration licenses and other sources of revenue such as resource taxes. While such taxes are unpopular with some, there is a strong argument for hypothecation of a proportion of royalties or resource taxes back into the region to ensure that the proposed development programs are properly resourced and delivered.

3 Economics: local supply chains and food

Localised supply chains are a core economic driver. Only about 5% of the direct and induced inputs to its local economies are located in the Pilbara; the rest are imported from Perth and interstate/overseas (M. Chappell *pers.comm*). This level needs to reach about 20% to enable the economy to function as a regional city economy. Achieving this level will require concerted action by resource companies and by governments through procurement policies and actions to enable more localised economies to develop.

A possible area for increasing local economies is to find a way to grow food in the Pilbara region. There is no shortage of space and sunlight but enabling enough water and soil to create a local agricultural industry is more of a problem. However it is likely that dewatering of mines inland and desalination for coastal towns could provide the Pilbara with reliable and cost-effective water supplies. The cost of desalination has dropped dramatically and plants can be run on renewable sources as they do not need continuous supply. Recycled wastewater from the growing coastal cities can be used in a local agricultural industry. Soil can be created from organic sources, such as recycled sewage and composting of solid waste. Thus it may be possible, through an integrated response to water, waste and energy management, to create a new local agricultural industry that can support Pilbara Cities. Focusing on fruit and vegetables would be an obvious way to begin this industry. Strangely enough, the growth of cities in the Pilbara could facilitate the growth of Pilbara agriculture. Prefeasibility studies have been conducted on this possibility and demonstration projects on water, food and local employment are being funded by the Royalties for Regions program (Department of Regional Development and Lands 2009). Any project aimed at developing new cities in the Pilbara will require a partnership approach between federal, state and local governments with federal involvement from bodies such as Regional Development Australia and Infrastructure Australia.

Local economies can also be improved by better transport links (see below).



4 Economics: training and Indigenous community development

Employing local people in the many jobs that are being created in the Pilbara will enable money to be retained in the region. The most seriously economically disadvantaged are Indigenous people, who are ideal candidates for training within the local industries as they wish to stay in the area for the long term. Pilbara Cities will only thrive when they offer equal opportunities for Indigenous and non-Indigenous residents. Training programs for Indigenous workers have been run very successfully by a number of mining companies, especially the Argyle Diamond mine in the Kimberley. Similar success stories are beginning to emerge in the Pilbara – for example, Ngarda Civil and Mining, the Pilbara Aboriginal Contractors Association and the initiatives associated with GenerationOne which was established by Andrew Forrest. These need to be multiplied and given many more resources; otherwise, the booming economic opportunities of the area will by-pass many of the people who need them most. Any new business or new project should aim to at least 20% of its workforce local Indigenous workers.

There have been long-term shortages of skilled labour in the Pilbara so training facilities, such as TAFE, Australian Technical College and University (e.g. a School of Mines), need to be planned and built ahead of the demand instead of constantly being behind, as has happened over recent decades.



5 Infrastructure: transport

Transport is an enabler for both the economy and the sense of place.

As major trade gateways for Australia, Karratha and Port Hedland have well-established bulk port facilities that are connected to purpose-built and -operated railways that generally represent the best technology available for these large-scale operations. Reliance on FIFO-based operations means that both towns have well-developed airport facilities, albeit primarily focused on domestic air services. The towns are serviced by good roads, although these are long and can at times be disrupted by cyclonic rains and associated flooding.

In effect, Karratha and Port Hedland are both transport hubs. However, the transport focus is very significantly directed towards the movement of bulk commodities and of people servicing the resource industries. Nevertheless, the infrastructure that has been established provides a strong foundation from which to build transport services more commonly associated with cities and the servicing of a strong and stable resident population.

Part of anticipating the development of cities in the Pilbara is the opportunity to explore the possibilities associated with introducing public transport services that can service a resident population as well as workforce movements into and out of the various industrial facilities that exist close to the towns. This dual potential demand, if coordinated within the context of a long-term city development plan, could be used effectively to encourage the introduction of public transport.



Each region would need better and more resilient transport links for its cities to thrive. The Pilbara is 2,000 km from Perth and does not have a container port. Regional shipping and rail links to the Pilbara need to be pursued to ease the isolation and transport issues that will only worsen as fuel prices rise for road and air transport. Regional shipping can be vastly improved to enable cheaper movement of building supplies and consumables. The present resource company rail systems are among the most efficient in the world. It may be possible to extend such rail lines down to Geraldton or Kalgoorlie to enable heavy goods and general freight to be carried over long distances.

Diesel-based train systems in the Pilbara consume enormous quantities of diesel that is used mostly in slowing trains as they descend to the coast. Electrifying these systems makes sense as not only can regenerative braking save massive amounts of energy, but the rail systems can link to the region's huge solar energy resource. However this cannot occur until a proper electricity grid is built across the Pilbara region (see below).

One of the innovative solutions to the problem of declining diesel availability is to use natural gas for any diesel application. The conversion of diesel vehicles (and other machinery like power plants and heavy mining equipment) to natural gas is relatively easy and has happened, for example, in Perth buses. There is clearly an obvious source of natural gas in the Pilbara for many decades. Natural gas could be a very long term source if the abundant solar energy resource of the Pilbara were used to create renewable natural gas. This process is being researched to find the best photocatalysts, and the Pilbara is an obvious place for this to be trialled. Excess carbon dioxide (CO₂) from the production of natural gas and in particular LNG means that there is a source of CO₂ that needs to be dealt with for climate change reasons anyway. Turning it into a resource that can create renewable natural gas suitable for long-term transport and power needs can be a major long-term industry for the Pilbara Cities.

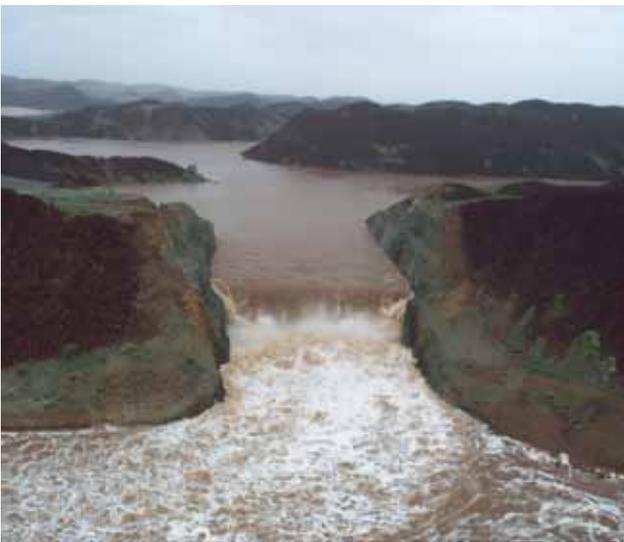
Pilbara Cities need transport options other than by car and, thus for their long-term growth, expansion of the present public transport options is a priority. LandCorp plans to build the city of Karratha around a public transport spine with walking/biking links to key centres and along greenways. This kind of planning needs to be translated into a statutory plan (see below) that can enable the city to grow in ways that support efficient and sustainable transport.



6 Infrastructure: Pilbara power grid and water supply

The Pilbara's plentiful natural gas and solar resources mean there is no shortage of an abundance of long term energy for the area. There are even geothermal hot spots that could be exploited some day. However, to make the most of these resources, future Pilbara Cities require effective regional electricity and gas grids. At the moment the electricity grid is highly inadequate and thus proposals for electrifying the iron ore railways, or for building new renewable energy plants like solar-thermal, cannot occur. Neither can the rail system be electrified, as discussed above. The long-term future of the Pilbara Cities demands that a true electricity grid be built linking the region's many parts. This would also give small towns and Indigenous settlements a better future.

Water supplies need to be assured and the Water Corporation plans for the area need to be implemented to provide a secure water system. Desalination and dewatering of mines seem to be preferred opportunities.



7 Planning and placemaking: urban planning

- (1) *Desert architecture for thermal comfort.* There is an obvious need to design Pilbara Cities to fit the landscape and climate of the Pilbara region. In the past the architecture of desert environments was unlike the architecture of temperate, cooler climates. It was generally medium density with narrow streets to enable buildings to shade each other and the street. The newly designed city of Masdar in Abu Dhabi is being built to make the most of these desert design characteristics. Pilbara Cities have mostly been based on the design of Perth buildings and streets. Desert design for the cities should be carefully examined and be incorporated in the newly designed sections of the existing settlements. Public engagement over Land Corp's new design for Karratha has found that people there want a more consolidated city rather than spread out urban sprawl so characteristic of Perth.
- (2) *Biophilic landscaping.* Developing a landscape that responds to the climate is critical to creating a place that derives from the 'nature of the place'. Within this framework it will be possible to cool the city through landscaping that makes the most of biophilic characteristics such as wind breaks, green roofs and green walls, and water-sensitive design — all cyclone-proof to suit Pilbara conditions. A key is to learn from the arid conditions and mimic oasis-type landscaping, which provides a cool place in the desert; the microclimate opportunities should be seen as a city-shaping process. These designs give the city the amenity of being green as well as having lower private consumption of water and energy.

It will be difficult to do this well unless the Pilbara Cities narrow their roads, especially in central areas, in order to provide complete tree canopy cover. Health and productivity gains from biophilic cities are beginning to emerge (Bilsborough 2010).

- (3) *Making the most of waterfront possibilities.* Coastal cities can increase amenity by linking to the coast. The marina in Darwin has provided significant improvements in amenity and opportunities for many people to live near the water or at least to visit the area for eating and other recreation. Water can be incorporated into parts of Karratha and Port Hedland through construction of canals and waterfront development, where appropriate.

These and other strategic planning ideas need to be investigated then built into statutory planning that can enable them to happen. This is discussed further in item 10 Regional Governance.



8 Planning and placemaking: public amenity and tourism

Placemaking needs to make the most of the local culture and identity. Thus Pilbara architecture needs to include Pilbara designs and colours and public spaces that allow stories of place to be told. Integrating Pilbara Indigenous art and culture into every element of the new cities is a wonderful design opportunity, particularly for community facilities. Tourists should want to visit Pilbara Cities because the places are distinctively and attractively Pilbara in style. A cultural centre should be built that explains the Pilbara landscape, history and current industries. The LNG and mining industries could be displayed through an internationally significant Museum of Mining and Petroleum. As in parts of Germany, coloured lighting of the massive industrial facilities on the Burrup Peninsula could become a feature of the Pilbara (Rossmann 2010). The Burrup Peninsula with its rock art ought to be the 'jewel in the crown' of the Pilbara. A cultural and tourism facility there could use Indigenous expertise in all its aspects. It should be an internationally significant building that does justice to the cathedral qualities of the rock art areas.

9 Planning and placemaking: housing affordability

To build Pilbara Cities, housing in the area must be affordable. Without a concerted effort to provide affordable housing for the essential workers, the economy of the Pilbara will never be normalised and the cities will never become long-term prospects (Haslam McKenzie et al. 2009). This will require a number of innovations, including:

- cheaper materials and structural forms that can be mass-produced or prefabricated
- more varieties in housing types, including denser housing that can achieve greater efficiencies on the one site
- governance arrangements that enable more market-oriented housing release
- requirements for affordable housing in all developments through social housing; this can be achieved by requiring that a certain proportion (e.g. 15%) be sold to a community housing provider like Foundation or Access Housing, or through funding support for any bid from a not-for-profit, accredited, affordable-housing provider. Some public housing also needs to be provided.

10 Regional governance: Pilbara Cities Development Corporation (PCDC), Department of the Pilbara and a Pilbara Cities Plan

A **Pilbara Cities Development Corporation (PCDC)** could be established to provide more substantial coordinating and planning for the cities. LandCorp has begun to play that role and has spent a lot of time and effort bringing a new focus to Pilbara Cities. But it now needs a management body that can deliver these cities. The PCDC could have powers (like East Perth Redevelopment Authority (EPRA)) to plan, finance and create developments at a very high level of quality and amenity (as EPRA has achieved in East Perth and Subiaco). It could conduct joint projects with mining companies on establishing public infrastructure like museums, concert halls and art galleries. It can capture the imagination of local people to ensure the values of the community are expressed in the development of these cities.

Major companies, local government associations and the community should be fully represented on the PCDC Board. Part of its powers would be to seek the underwriting of at least a third of the planned housing by major employers, like mining companies, to attract developers (like Darwin did with the Department of Defence). 'The challenges to normalise the market are significant,' Debra Goostrey from UDIA said after a recent trip to the Pilbara with the WA Premier.

The PCDC could begin by developing the announced marina and associated high-rise to ensure they are given a high priority in planning and financing as well as to ensure their design is locally sensitive.

The PCDC could also oversee the production of a major infrastructure plan based on full coordination and integration with the major mining companies. Such a plan would enable Infrastructure Australia to help fund the power, water and transport needs of the Pilbara Cities and Pilbara region with some confidence rather than the present ad hoc listing of individual projects.

A WA Government **Department of the Pilbara** located in Karratha with staff from all state government departments and its own budget would make a significant difference to the morale of the region and the prospects of a confident future for Pilbara Cities. The PCDC would be the development arm of this department. Bringing together people from all departments (such as Environment, Water, Community Development, Planning and State Development) would enable public servants to provide much more integrated and locally relevant decisions without needing to refer issues constantly to Perth. It would also enable public servants to move easily between different parts of the department. The WA Government has established an Office of the Pilbara to begin the kind of coordination suggested here; this should be monitored and, if found to be inadequate, upgraded to become a department.

Funding could be sought through the Department of the Pilbara from Australian Government bodies like Infrastructure Australia, Health, Education and Housing to support the development of Pilbara Cities as a real alternative to Perth. This funding would be needed at a proportion similar to Royalties for Regions until the cities are established.

The final piece of the puzzle to enable Pilbara Cities to function well is to produce a **Pilbara Regional Plan**. To date, WA Planning Commission powers — possibly the most significant of the present state legislative powers — have not been applied to the Pilbara Cities. Compare this with Perth: the Perth Metropolitan Region Plan is linked to all other aspects of government. This plan enables the city to set aside land for open space and for major infrastructure based on a land tax. The plan enables suburbs to be laid out well in advance of development and to take an integrated approach to the provision of physical and social infrastructure. It is the essential ingredient that has made Perth a good city to live and work in for over 50 years. It is the basis of Perth's confidence in its future. It is the basis of Perth's quality as a place that keeps people here well after any project that coaxed them to migrate may have moved on.

These planning powers have in recent years been extended to Bunbury, and the recognition of their value has given developers, business and households significant confidence that they can have a long-term future in the area.

They now need to be extended to the Pilbara; what is needed is a Pilbara Regional Plan with full statutory powers. The WA Government is beginning this process through its commitment to a Pilbara Regional Planning Committee and a Pilbara Framework that is being developed through the Department of Planning. The normalising of Dampier so that it can be drawn into the Plan for Karratha seems a necessary part of building a major city around Karratha and, especially, making the most of the waterfront.



Image courtesy of Finbar

Conclusions

The idea of the Pilbara Cities becoming a major focus for growth in Western Australia is one whose time has come. The region's economic boom needs to be directed towards such a goal. This paper has made a series of suggestions about what is needed to make modern, lively, sustainable and attractive cities in the Pilbara. But the most important need, the need that underpins all others, is the need to accept that the cities have a long-term future. That confidence must seep into the fabric of all the planning of buildings, infrastructure and landscaping, as well as the region's character and facilities. Pilbara Cities need to move from being good project towns to being good places in their own right.

The authors acknowledge the Pilbara Development Commission and LandCorp for their kind permission to use their images within the paper.



References

- Bilsborough, D 2010, 'The biophilic city can improve economic prosperity', PB-CUSP Alliance Discussion Paper, Parsons Brinckerhoff Australia Pacific, Sydney.
- Department of Planning 2009, Regional Profile Pilbara Framework, Department of Planning, Perth.
- Department of Premier and Cabinet 2009, 'State Government launches blueprint for Pilbara Cities', media release, Friday 27 November 2009, Department of Premier and Cabinet, Perth.
- Department of Regional Development and Lands 2009, *Pilbara Water Opportunities Project: royalties for regions*, Department of Regional Development and Lands, Perth.
- Gallegos, D 2005, 'Aeroplanes always come back', *Fly-in fly-out employment: managing the parenting transitions*, Centre for Social and Community Research, Murdoch University, Perth.
- Rossmann, A 2010, Change Through Culture – A Colliery of Ideas, *Deutschland Magazine 1/2010*, Berlin, pp. 11–16.
- Haslam McKenzie, F 2010 (forthcoming), 'Fly-in fly-out: the challenges of transient populations in rural landscapes', in G Luck, D Race & R Black (eds), *Demographic change in rural landscapes: what does it mean for society and the environment*, Springer (Landscape Series), London.
- Haslam McKenzie, F, Rowley, S, Phillips, R, Birdsall-Jones, C & Brereton, D 2009, *Housing market dynamics in resource boom towns*, Australian Housing and Urban Research Institute Report 135, viewed 15 April 2010, <<http://www.ahuri.edu.au/publications/p80370/>>.
- Newman, P, Beatley, T & Boyer, H 2009, *Resilient cities: responding to peak oil and climate change*, Island Press, Washington DC.
- Pilbara Area Consultative Committee 2008, *The Pilbara Plan: an urgent call to action to rescue Pilbara communities*, Pilbara Area Consultative Committee, Western Australia.
- Pilbara Development Commission 2010, Strategic Plan 2010–2015, Pilbara Development Commission, Port Hedland.
- Watts, J 2004, *Best of both worlds: seeking a sustainable regional employment solution to fly in – fly out operations in the Pilbara*, Pilbara Regional Council, Karratha.

For more information:

Dr Edward Oldmeadow
PB-CUSP Alliance Manager
Phone: +61 8 9489 9763
Mobile: +61 (0)42 882 8347
Email: eoldmeadow@pb.com.au

HASSELL

Curtin 
University of Technology

 **PARSONS
BRINCKERHOFF**
125
YEARS

www.pb.com.au