

# Investing in Very Remote Aboriginal Communities

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A cost benefit analysis

Jointly commissioned by The Shire of East Pilbara, East Pilbara Independence Support, Kanyirninpa Jukurrpa, Martumili Artists, Mission Australia, Newman Women's Shelter, Puntukurnu Aboriginal Medical Service and World Vision Australia

October 2018

## Acknowledgements

Social Ventures Australia (SVA) and the commissioners of this work would like to acknowledge the Martu people, whose country, communities and livelihoods are the subject of this analysis. Martu are the traditional owners of a large tract of central Western Australia (WA) which extends from the Great Sandy Desert in the north to around Wiluna in the south. We pay our respects to Martu Elders, past and present.

## About this analysis

SVA was paid to undertake this analysis by eight organisations which are active in Newman and work closely with Martu people: The Shire of East Pilbara, East Pilbara Independence Support, Kanyirninpa Jukurrpa, Martumili Artists, Mission Australia, Newman Women's Shelter, Puntukurnu Aboriginal Medical Service and World Vision Australia.

The analysis benefited from data provided by a range of sources. In particular, it benefited from:

- the detailed knowledge of community context and dynamics provided by Kanyirninpa Jukurrpa staff and Advisory Directors who have worked with Martu for 15 years and lived in Parnngurr for extended periods; and
- extensive survey work conducted by the Newman Women's Shelter, of Martu living in Newman and in WA prisons.



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Pilbara**  
AUSTRALIA'S LARGEST SHIRE



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### Professional disclosure statement

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# 1. Executive Summary

## Purpose of the report

The purpose of this analysis is to consider the costs and benefits associated with investment in the very remote, East Pilbara Martu desert community of Parnngurr and those Martu living in Newman, the closest town. Costs associated with modest investment in housing and community development initiatives in Parnngurr are compared with the costs that would arise in Newman in the absence of such investment, in particular those associated with anti-social behaviour.

Kanyirninpa Jukurrpa has prepared a supplementary paper, titled '*The Case for Investment in the Martu Desert Communities*', which draws on the findings of this quantitative analysis and outlines a broader, qualitative case for a policy of investment in the Martu desert communities and key strategies to complement investment in housing (hereafter referred to as, the 'Supplementary KJ Report').

## The policy challenge of very remote communities

In the 1970s, many Aboriginal people chose to return to their traditional country as part of the Homelands movement, leaving the centralised towns and missions in which they were living. For the past decade, there has been significant uncertainty around Commonwealth and State government policy towards very remote Aboriginal communities and their perceived 'viability'.

## Martu people, their country and their communities

Martu are the traditional custodians of a vast area of the Great Sandy, Little Sandy and Gibson Deserts. The Martu desert communities of Parnngurr, Punmu and Kunawarritji were established by Martu seeking to return to their traditional country in the 1980s. Parnngurr is 370km away from Newman and is home to approximately 127 Martu people. Newman is a mining town of roughly 4,500 people, including approximately 305 Martu.

The Martu population is growing faster than the national population. As the Martu desert communities have no capacity to accommodate population growth, people are relocating to Newman. In the past ten years, the Aboriginal population in Newman has more than doubled (see figure 1.1 below).

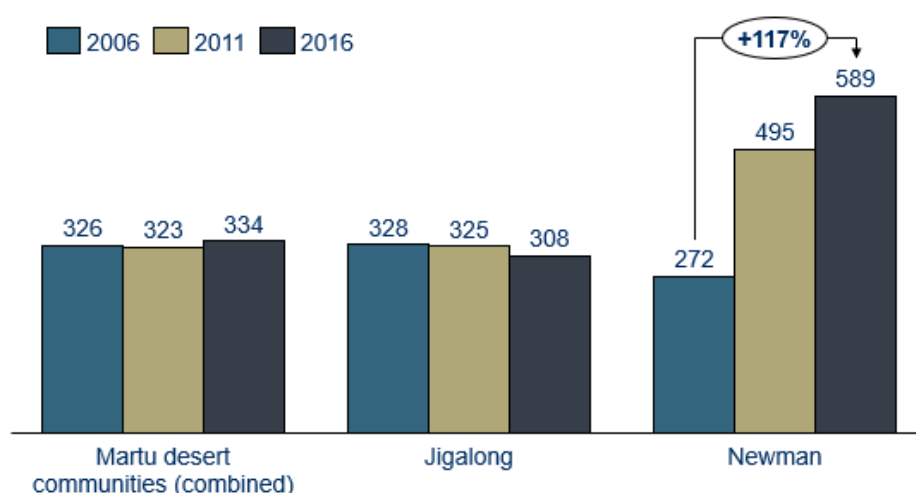


Figure 1.1: East Pilbara Aboriginal Population (ABS Census), 2006 – 2016

## Identifying and modelling costs

The analysis considers a period of 10 years from calendar year 2019 until calendar year 2028 inclusive. The geographical focus is on costs incurred in, or borne out of, Parnngurr and Newman only. The analysis is confined to costs that impact upon WA Government expenditure and specifically those impacted by shifting demographics between Parnngurr and Newman. Benefits are confined to consideration of avoided costs. The categories of cost included in the analysis are housing, education, health, municipal services, policing and imprisonment.

Costs are substantially driven by demographic change. Two demographic factors combine to create the potential for a substantial increase in the Newman population and associated WA Government costs over the analysis period.

1. Natural growth in the Martu population, which cannot be absorbed in the Martu desert communities (as per the historical trend); and
2. The significant risk that Martu will be forced to leave the community of Parnngurr because of the deteriorating condition of housing, leading to the effective closure of the community within the analysis period.

## Understanding the scenarios

The analysis compares a base case of no policy change with three alternative scenarios. Differences between the four scenarios primarily relate to:

- the level of investment in housing and community development in Parnngurr;
- which, in turn, drives assumptions around the population of Martu living in Parnngurr or moving to Newman;
- which further drives assumptions around the quantum of costs incurred in Newman, particularly those associated with an increase in the level of anti-social behaviour.

The base case assumes that, in the absence of investment in housing in Parnngurr, Martu will be forced to relocate to Newman, resulting in the community's closure by 2025. Scenario one considers the cost implications of a more abrupt community closure.

Scenario two envisages investment in existing housing and community development initiatives to sustain the current Parnngurr population. Scenario three builds on the assumptions of scenario two, but also includes provision for the construction of five additional houses in Parnngurr.

## Reporting the results

The cost associated with those two scenarios in which Martu stay in Parnngurr (scenarios two and three) is much lower than the cost associated with the two scenarios in which Martu leave Parnngurr (base case and scenario one).

Scenario	Incremental NPV (\$m) from base case	Benefit to cost ratio (avoided cost: investment vs base case in NPV terms)
Base case – no policy change	N/A	N/A
Scenario one – immediate closure	<b>+\$3.6m</b>	No benefit
Scenario two – minimal investment	<b>- \$38.3m</b>	3.1
Scenario three – sustainable investment	<b>- \$42.3m</b>	3.0

Compared to the base case, scenario three presents as the lowest cost option for the WA Government:

- Scenario three involves investment of \$27.7m over the analysis period (\$21.2m in NPV terms) in housing refurbishment and construction, health clinic and education services, additional community administration and development costs, and a Martu diversionary program.
- This investment generates \$84.9m (\$63.6m in NPV terms) of avoided housing, education, policing and imprisonment costs that would otherwise be incurred in Newman.
- A benefit to cost ratio of 3.0 is calculated with reference to the NPV of avoided costs (\$63.6m) and the NPV of investment (\$21.2m).
- Scenario three delivers a net saving to the WA Government of \$57.2m over the analysis period (\$42.3m in NPV terms), as illustrated by figure 1.2 below.

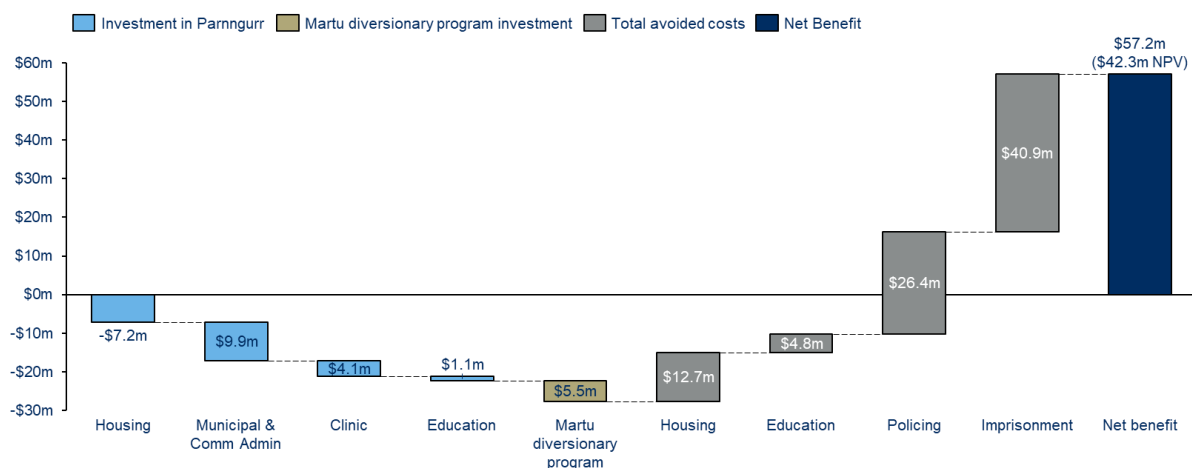


Figure 1.2: Investment compared with avoided cost over the analysis period for scenario three

Reduced policing and imprisonment costs account for 79% of the avoided costs. These costs have been calculated by applying historical police call out and imprisonment rates to the growing Martu population in Newman. There are three separate drivers of the \$40.9m imprisonment saving in scenario three when compared to the base case:

1. The lower Newman population;
2. The reduced number of transient Martu visiting Newman; and
3. The Martu Diversionary Program, which seeks diversion from court, prison and alcohol to employment, education and rehabilitative programs, and is contingent on the existence of the Martu desert communities.

The analysis indicates that, as a consequence of additional investment envisaged in scenario three, savings are realised immediately when compared to the base case (see figure 1.3).

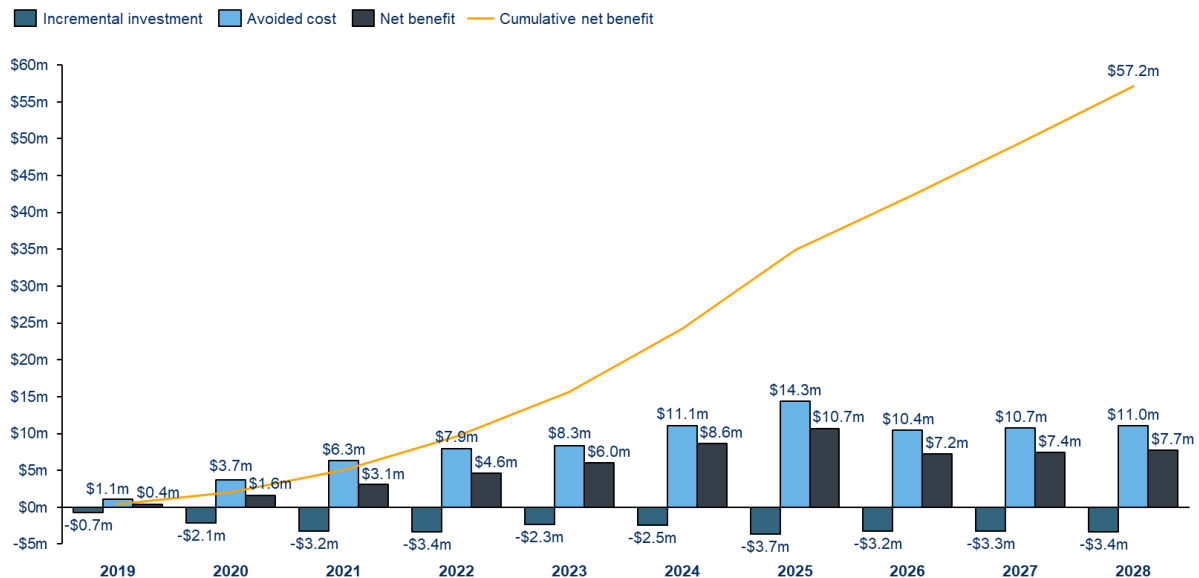


Figure 1.3: Comparison of base case and scenario three annual incremental investment, avoided cost and net benefit (annual and cumulative)

The reason that savings are realised so early is that, in scenarios two and three, Martu are assumed to stay in Parnngurr rather than relocating to Newman and incurring higher housing (in 2019) and policing and imprisonment costs (from 2020, in particular). The analysis period has been confined to ten years, but the trajectory of the cumulative net benefit indicates that savings to the WA Government will be far greater beyond the analysis period.

## Implications of the analysis

The following insights logically flow from the results of the analysis:

1. Relatively modest investment in the very remote Martu desert communities can lead to significant cost savings in Newman.
2. The achievement and recognition of anticipated cost savings requires the WA Government to adopt a place-based, whole of government approach, as the various categories of investment and avoided cost vest in different departments.
3. The greatest driver of savings lies in keeping the Martu desert communities open.
4. Even greater savings could be realised if more houses were constructed in Parnngurr or the other Martu desert communities. Each new house constructed in those communities will avoid the cost of procuring an additional house in Newman and deliver recurrent cost savings of around \$200,000 per annum.
5. Investment in the Martu desert communities, and in the people who live there, can allow Martu to reconnect with culture and country and simultaneously build their capacity to navigate the mainstream (explored further in the Supplementary KJ Report).
6. When making decisions about long-term investment in and around very remote Aboriginal communities, it is critical that the context of place, both at a regional and community level, is considered. At a minimum, we must understand the reasons why people have chosen to return to their traditional lands and the likely consequences of forcing those people back to centralised towns.

## 2. Introduction

### Purpose

The purpose of this analysis is to consider the costs and benefits associated with investment in a 'very remote'<sup>1</sup> Aboriginal community. This is achieved through a case study of the East Pilbara Martu desert community of Parnngurr and those Martu living in Newman, the closest town.

The scope of the analysis is limited to Parnngurr and Newman in order to ground the analysis in the experience of a specific community, and to simplify an otherwise complex undertaking. Parnngurr was selected in recognition of the detailed knowledge held by study participants about that community.

### Contents of the report

The analysis is largely quantitative, but is grounded in an exploration of:

- the policy challenge presented by very remote Aboriginal communities, borne out of the homelands movement, which saw Aboriginal people choosing to return to their traditional lands from around the 1970s (**section 3**); and
- the Martu people, their country and their communities, to contextualise the case study of Parnngurr and Newman (**section 4**).

**Section 5** describes the scope of the analysis and the relevant costs considered. The analysis compares a base case of no policy change with three alternative scenarios, involving various levels of investment with alternative outcomes ranging from community closure, to population growth in Parnngurr. These scenarios are described in detail in **section 6**.

**Section 7** summarises the critical assumptions underpinning the analysis, with further supplementary commentary in relation to assumptions provided in the **Appendices**.

Results of the quantitative analysis of each of these scenarios are set out in **section 8**. The quantitative analysis focuses only on the costs and benefits (in the form of avoided costs) that are understood to directly impact upon WA Government expenditure.

The implications of this analysis are briefly canvassed by way of concluding remarks in **section 9**.

### Further context

In basic terms, this analysis compares the costs associated with modest investment in housing and community development initiatives in Parnngurr, with the costs that would arise in Newman in the absence of such investment, in particular those associated with anti-social behaviour.<sup>2</sup>

This report should not be read as consigning Martu in Newman to a hopeless fate. There are many emerging Martu leaders who are demonstrating their capacity to navigate the "whitefella world" from their remote communities and make positive choices for themselves and for Martu. These are the leaders who can build sustainable communities grounded in respect for *Ngurra* (country), *Martu* (people) and *Jukurrpa* (culture).

But the report recognises that the current Martu experience of town is not positive and the challenge of building a sustainable future in that environment is immense. Remote communities provide Martu

<sup>1</sup> As defined by the Australian Statistical Geography Standard (ASGS): Volume 5 - Remoteness Structure, July 2016 (Cat. 1270.0.55.005)

<sup>2</sup> Definitions of the term 'anti-social behaviour' vary. The Western Australia Police define anti-social behaviour as any 'behaviour that disturbs, annoys or interferes with a person's ability to go about their lawful business' (see McAtamney A & Morgan A. 2009, Key issues in anti-social behaviour. Research in practice No. 5. Canberra: Australian Institute of Criminology, <https://aic.gov.au/publications/rip/rip05>). In this study, the term is used broadly to describe behaviour that demonstrates a disregard for community safety, as well as personal wellbeing.



with unique pathways to positive social, cultural and economic futures, integrating the mainstream world into their society in ways that work for them.

*"You can see the people who are on-country, doing something for themselves. They good. They feel at home. But when they're in town, it's like they're somewhere else."*

Dawn Oats, Martu woman

This report compares the relative cost of two divergent policies: investing in very remote communities or persisting in town.

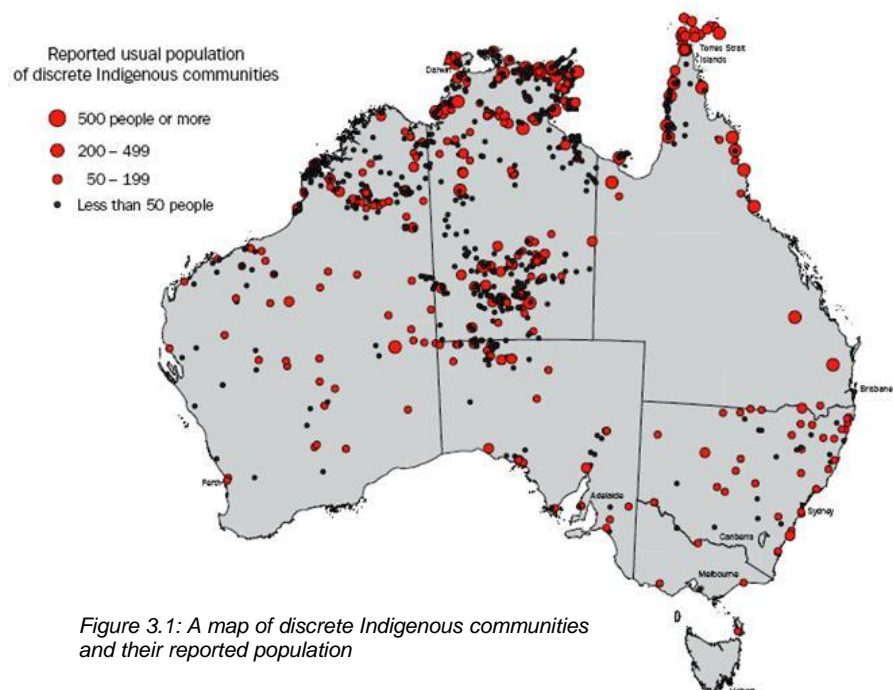
### 3. The policy challenge of very remote Aboriginal communities

In the 1970s, a shift in Australian Government policy from assimilation to self-determination of Aboriginal and Torres Strait Islander peoples precipitated the homelands movement. Many Aboriginal people chose to return to their traditional country, leaving the centralised towns and missions in which they were living. They returned to their homelands for a range of reasons, including to:<sup>3</sup>

- renew their connection to country, uphold their duty to care for country, maintain customs and culture and re-establish traditional authority structures;
- reassert their claims to traditional lands in light of the land rights movement; and
- escape high levels of social dysfunction in towns, often characterised by drug and alcohol dependence and growing incarceration rates.

Over subsequent decades, there was steady growth in homeland populations.

According to the 2016 census, 12% of Aboriginal and Torres Strait Islander people live in very remote Australia (around 100,000 people), compared with 0.5% of Australia's non-Indigenous population.<sup>4</sup> The majority of those people live in discrete Aboriginal and Torres Strait Islander communities, of which there are roughly 1000 in very remote Australia (see Figure 3.1).<sup>5</sup> The average population of these communities is under 100; the majority are home to fewer than 50 people.<sup>6</sup>



A 1987 report of the House of Representatives Standing Committee on Aboriginal Affairs, *Return to Country: The Aboriginal Homelands Movement in Australia* (hereafter, the Blanchard Report), defined “homelands or outstation centres” as “small decentralised communities of close kin established by the movement of Aboriginal people to land of social, cultural and economic significance to them”.<sup>7</sup> The definition remains pertinent today in describing the many discrete Aboriginal and Torres Strait Islander communities across very remote Australia.

In gathering evidence for the Blanchard Report, the House Committee visited more than 50 homeland communities, in addition to witnesses heard and submissions received.<sup>8</sup> The Blanchard Report correctly identified that the homelands movement would be a permanent fixture of Aboriginal Affairs. The Report contemplated that Aboriginal people would remain motivated to move to their homelands, including to “permanent communities in which Aboriginal people seek to build better lives for

<sup>3</sup> Jon Altman, An Anniversary Remembered: When Homelands Were Celebrated, Land Rights News, April 2017

<sup>4</sup> ABS, Estimates of Aboriginal and Torres Strait Islander Australians, June 2016 (Cat. 3238.0.55.001)

<sup>5</sup> ABS, Housing and Infrastructure in Aboriginal and Torres Strait Islander Communities, Australia, 2006 (Cat. 4710.0)

<sup>6</sup> Ibid.

<sup>7</sup> House of Representatives Standing Committee on Aboriginal Affairs, *Return to Country: The Aboriginal Homelands Movement in Australia*, March 1987

<sup>8</sup> Ibid, Appendix 4.

themselves”.<sup>9</sup> But the Report also recognised that the future of the movement would be “dependent to a significant extent on the continued support of government and the pursuit of appropriate policies and programs by government”.<sup>10</sup>

Among its 58 recommendations, the Blanchard Report identified the need for:

- better information about homeland locations and the number of people living in homelands;<sup>11</sup>
- funding for homelands and outstation resource agencies;<sup>12</sup>
- support for projects to promote economic independence;<sup>13</sup>
- equitable access to social security;<sup>14</sup> and
- basic infrastructure – water supplies, housing and transport – and access to education and health services.<sup>15</sup>

Most relevantly, the Report recommended that Commonwealth, State and Territory governments:

- develop appropriate policies and standards towards homeland centres, *which reflect the positive nature of the movement and the desire of governments to support the movement*;<sup>16</sup> and
- provide funding to homeland centres for the ‘essential’ facilities and services which they are obliged to provide to all their citizens, *with the level of funding to be increased in response to the growth of the homelands movement and the increasing needs of people living in homelands* (emphasis added).<sup>17</sup>

The Aboriginal and Torres Strait Islander Commission (ATSIC) sought to implement the recommendations of the Blanchard Report between 1990 and 2004 through its “National Homelands Policy”.<sup>18</sup> With the demise of ATSIC in 2004 came a perceptible shift in Commonwealth policy described by Jon Altman as moving “from resigned tolerance and limited support... to outright intolerance and hostility”.<sup>19</sup>

In 2007, a FaHCSIA review of the Community Housing and Infrastructure Programme recommended a shift away from building new housing on homelands and outstations. The ‘viability’ of very remote Aboriginal communities has been contested ever since.

The debate came to a head in 2014, when the Australian Government flagged its intent to cease funding essential services in very remote communities. The then WA Premier suggested that up to 150 of the state’s very remote communities might ‘close’.<sup>20</sup> Subsequent leaked documents indicated that a 2010 Australian Government assessment of the ‘sustainability’ of very remote communities divided 287 communities into four investment categories. Of those communities, 192 were deemed ‘unsustainable’.<sup>21</sup>

<sup>9</sup> Ibid, p.70

<sup>10</sup> Ibid, p.70

<sup>11</sup> Ibid, Recommendation 1, p. xvi

<sup>12</sup> Ibid, Recommendations 5-13, p. xvii

<sup>13</sup> Ibid, Recommendations 25-29, p. xii

<sup>14</sup> Ibid, Recommendations 22-24, p.xxii

<sup>15</sup> Ibid, Recommendations 33-58, from p. xxiv

<sup>16</sup> Ibid, Recommendations 2-4, p. xvii

<sup>17</sup> Ibid, Recommendation 8, p. xviii

<sup>18</sup> Jon Altman, An Anniversary Remembered: When Homelands Were Celebrated, Land Rights News, April 2017

<sup>19</sup> Ibid

<sup>20</sup> ABC News, Plan to close more than 100 remote communities would have severe consequences, says WA Premier, 12 November 2014, accessed on 29 August 2018 at <http://www.abc.net.au/news/2014-11-12/indigenous-communities-closures-will-have-severe-consequences/5886840>

<sup>21</sup> ABC News, Leaked document reveals 192 WA Aboriginal communities deemed unsustainable in 2010, 25 March 2015, accessed on 29 August 2018 at <http://www.abc.net.au/news/2015-03-24/federal-review-reveals-192-communities-deemed-unsustainable/6343570>

Four Martu communities were included in that analysis:<sup>22</sup>

- Jigalong was classified as a “Category A” community, “where the preconditions for sustainable development exist”;
- Parnngurr and Punmu were classified as “Category B” communities, “where many preconditions for growth exist and residents have access to most key services and limited opportunities”; and
- Kunawarritji was classified as a “Category C” community, “where there are constraints to sustainable development and opportunities for future growth are limited.”

Assessments of very remote Aboriginal community ‘viability’ or ‘sustainability’ are often premised on the assumption that the closure of those communities will reduce public expenditure, because Commonwealth, State and Territory governments will no longer be required to provide essential services and infrastructure to those communities. Such assessments have been criticised as being overly simplistic because they fail to consider the reasons why people chose to return to their traditional lands and the consequences of forcing those people back to centralised towns.<sup>23</sup>

Through consideration of costs incurred in both a very remote community and the closest town, the scenarios presented in this analysis will explore some of those consequences.

<sup>22</sup> Ibid.

<sup>23</sup> See, e.g. the critiques of Wayne Bergmann and Fred Chaney reported by the ABC News, Cost of closing remote communities greater than tackling issues, Aboriginal leaders say, 14 November 2014, accessed on 29 August 2018 at <http://www.abc.net.au/news/2014-11-13/closing-remote-aboriginal-communities-cause-chaos-leaders-say/5889278>

## 4. Martu people, their country and their communities

### Locating the Martu people

The Martu are the traditional custodians of a vast area of the Great Sandy, Little Sandy and Gibson Deserts in the Western Desert of the Pilbara. Their country stretches from the Percival Lakes in the north to south of Lake Disappointment, and towards the Western Australia-Northern Territory border to the east of the Canning Stock Route. This area of desert has been described as “the harshest physical environment on earth ever inhabited by man before the Industrial Revolution”.<sup>24</sup> Martu are among the last Aboriginal people to make contact with the European world, with many coming into stations and missions from a completely traditional desert life as late as the 1960s.

The Martu population is now chiefly spread across the Pilbara, predominantly in the desert communities of Parnngurr, Punmu and Kunawarriritji, the community of Jigalong (a former mission), the towns of Newman and Port Hedland and Roebourne prison. A Martu diaspora rings the desert, from Looma, Wangkatjunga and Fitzroy Crossing in the north to Wiluna in the south.

As depicted in Figure 4.1 below, the three desert communities sit within the Martu native title determination (in the case of Kunawarriritji), or in the Karlamilyi National Park (previously known as Rudall River National Park) which is surrounded by the determination (in the case of Punmu and Parnngurr). These three communities will be referred to throughout this report as the ‘Martu desert communities’.

The relationship between Newman and Jigalong is much more fluid than that of Newman and the Martu desert communities. The drive between Newman and Jigalong is less than two hours on an unsealed, but well-maintained road. It is on that basis (as well as on account of the divide between the “Jigalong mob” and other Martu, described further below), that this report distinguishes Jigalong from the Martu desert communities.

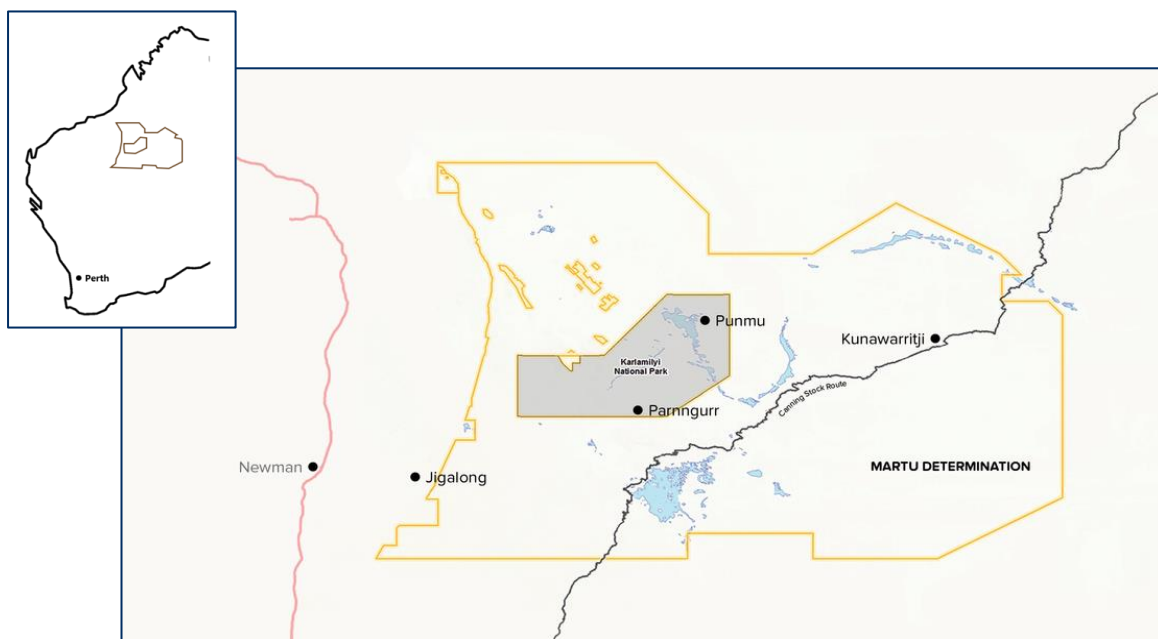


Figure 4.1: Map of Martu communities

<sup>24</sup> Richard Gould, edited by Thomas Trautmann and Peter Whiteley, Crow-Omaha: New Light on a Classic Problem of Kinship Analysis, 2012

## The Martu journey

It is important to understand the recent history of Martu people, characterised by their emergence from the desert and their return to country, in order to appreciate differences in the way Martu interact with each of the four Martu communities.

Jigalong is the largest of the four communities. It is far closer to Newman, a significant centre of population and services, than the Martu desert communities, but it is not located on Martu country. Jigalong was originally a maintenance and rations depot on the rabbit-proof fence and became known to Martu living on the western fringe of the Little Sandy Desert as a place where rations could be obtained to supplement their traditional, but often unreliable, diet. After an Apostolic Church mission was established at Jigalong in 1947, Martu began drifting into the mission, attracted by the easier access to food and water. By the time the mission was closed in 1969, Martu had been living there for up to 20 years, the population had grown and Martu had established their own community.

A second wave of Martu came out of the desert in the early to mid-sixties, largely in response to the declining desert population. The number of people remaining in the desert was inadequate to maintain a socially cohesive society. These people were born in the desert and their country was further north or east than those who had come into Jigalong in the early years.

By the late 1960s, there was a clash in Jigalong between the desert people and long-term residents of the mission. The desert people regarded themselves as being more culturally knowledgeable than people born and raised in Jigalong. The “Jigalong mob” regarded themselves as more sophisticated in dealing with the white world. This dynamic created a rift within Martu living in Jigalong, between the desert people, and those who had grown up in Jigalong: a divide that still exists today.

Because of this tension, many of the desert people left Jigalong in the early 1970s. They moved to several cattle stations, including Strelley and Warralong in the west Pilbara, where other Martu (“the Strelley mob”) were living and working. However, similar tensions existed between these later arrivals from the desert and those who had been part of the Strelley mob for many years. It was at this point that a group of desert people moved out of Strelley to establish their own community, on their country, and Martu people began to embark on their own homelands movement.

The Blanchard Report, published in 1987, stated that:<sup>25</sup>

The Punmu community, near Lake Dora, was established as a decentralised desert camp from Strelley in 1981. It grew rapidly in 1984 to a population of nearly 300 and now the community is supporting the development of further homeland centres. The development of homeland centres from Jigalong and Wiluna are also seen as 'staging points' and initial base camps for further decentralisation.

Desert people from Jigalong, Punmu and Strelley established a new community at Parnngurr and people from Punmu moved further east onto their country to establish the community of Kunawarritji.

The Martu who established these communities, many of whom still live there today, were highly independent, resilient and enterprising people. They initially lived in humpies, built their own schools and eventually secured funding to build houses. They have immense pride in the communities that they established and have strong ties to their traditional country. These communities are where their hearts are, where their old people are buried, where their children can grow up safely and learn about their country.<sup>26</sup> This is where they want to live.

<sup>25</sup> House of Representatives Standing Committee on Aboriginal Affairs, Return to Country: The Aboriginal Homelands Movement in Australia, March 1987, Recommendations 22-24, p.66

<sup>26</sup> Community consultations conducted by Kanyirninpa Jukurrpa, November 2017



## Understanding Parnngurr

The Martu desert community of Parnngurr is 370km away from Newman, in the south-east corner of Karlamilyi National Park. It is a five-hour drive along the unsealed Talawana track from Parnngurr to Newman. Parnngurr is home to approximately 127 Martu people.<sup>27</sup>

The community consists of 25 houses occupied by Martu, with an additional 5 sites on which there are derelict houses that are no longer occupiable but have, or are close to, existing service connections.<sup>28</sup> An additional 14 houses are occupied by non-Martu community staff, school teachers and service providers. A Community Coordinator occupies an open plan office with limited facilities and the office is not an efficient working environment. A satellite internet connection provides email services and limited access to other essential online services for community residents. There is only one incoming radio telephone line for the community office, and private phone calls within the office are not possible. A limited number of houses have private phone connections and there are two Telstra phone boxes in the community which are intermittently operational.

Municipal services for the community include 450 kW of diesel power generation capacity, a reverse osmosis water treatment plant that can provide 170kL per day of potable water extracted from bores and a combination of septic and sewage disposal to ponds.<sup>29</sup> A 1,200-metre, gravel, fenced airstrip enables weekly mail delivery, regular visits by medical staff, emergency medical evacuation by the Royal Flying Doctor Service and miscellaneous charter flights.

The community is serviced by a small shop that includes barely adequate refrigeration and freezer capacity for the current population (see figure 4.2). Under current arrangements, frozen and non-perishable supplies in the shop are replenished on an approximate three-month frequency, resulting in a limited range of goods. Fresh supplies of fruit and vegetables are obtained on an irregular basis by community staff who make the round trip to Newman by road. Both diesel and opal fuel supplies are sold to community members, service providers and tourists who visit the community on their way to, or from, the Canning Stock Route and Karlamilyi National Park.



Figure 4.2: Parnngurr community store

Many Parnngurr residents are regularly earning income through ranger work, the sale of art or employment at the school.

A purpose-built community ranger station, funded by Lottery West and managed by Kanyirninpa Jukurrpa, provides training facilities, offices and equipment storage for Martu ranger teams working on Martu country (see figure 4.3). In the 2018 financial year, Kanyirninpa Jukurrpa paid \$607,428 in wages to Martu residents of Parnngurr through its Ranger Program – funded by the Australian Government and BHP – and its Leadership Program – chiefly funded by philanthropic partners. Since the 2012



Figure 4.3: Parnngurr rangers working on country

<sup>27</sup> ABS Census, 2016, identified the Aboriginal and Torres Strait Islander population in Parnngurr as 122 (Code ILOC50600108). Growth in the population since 2016 has been assumed in line with the ABS' forecast growth rate for Aboriginal and Torres Strait Islander people in WA of 2.2%.

<sup>28</sup> Census of Martu living in Parnngurr, conducted by Kanyirninpa Jukurrpa, September 2017

<sup>29</sup> Correspondence received from WA Department of Communities, Housing Division Pilbara, 30 July 2018

financial year, wages paid by KJ to Martu residents of Parnngurr have grown by 71%, at a compound rate of 9.4% pa.

A large art shed, managed by Martumili Artists, supports a vibrant Aboriginal art culture in Parnngurr and provides a facility for other community activities and events. Many of the old people are notable artists, whose works are regularly sold for thousands of dollars.<sup>30</sup>

Parnngurr Community School is an independent, non-government school, governed by a Martu board, that provides a two-way learning curriculum for pre-primary, primary and secondary school students living in Parnngurr (see figure 4.4). The school currently has approximately 30 students enrolled. A shaded, outdoor basketball court has recently been constructed by the school as a facility for students and the wider community. The school is staffed by a Principal and three teachers, as well as five regular Martu staff, including three teaching aides, one cleaner and one groundskeeper. Other community members volunteer on a casual basis.



Figure 4.4: Parnngurr Community School

Puntukurnu Aboriginal Medical Service (PAMS) employs one resident nurse in the community, who is supported by regular fortnightly visits by a doctor and less regular specialist services. A new health clinic has just been constructed at a cost of \$2.3m, funded by the Australian Government, which will enable more effective health services to be provided to community residents.

Importantly, Parnngurr is a 'dry' (alcohol free) community. Each of Jigalong and the three Martu desert communities have regulations in place, banning alcohol. In Parnngurr, the *Liquor Control (Parnngurr Restricted Area) Regulations* were implemented in 2018, demonstrating a current commitment to retaining the community's dry status. Despite occasional lapses, the communities are effectively dry. This point is significant, as most of the anti-social behaviour that takes place in Newman is caused by alcohol.

## The complication of land tenure

As noted above, Parnngurr Community is located within Karlamilyi National Park. The National Park was created in 1977, before exclusive possession Native Title was granted to Martu over land surrounding the National Park in 2002. The National Park was excluded from the determination of Native Title because the creation of the park was deemed to have extinguished Native Title.

Investment in Parnngurr housing has been frustrated by the absence of Aboriginal owned title in Parnngurr. WA legislation prohibits the WA Government from entering housing management agreements in relation to communities on non-Indigenous held land such as National Parks.<sup>31</sup> A housing management agreement would ordinarily govern tenancy management and maintenance arrangements in a very remote Aboriginal community such as Parnngurr.

Consequently, the position of the WA Government is that no funding can be provided for the construction of new houses, nor for the maintenance of existing houses, under current land tenure arrangements. The only funds currently available for housing maintenance are those collected by the Parnngurr Aboriginal Corporation as rent from residents.<sup>32</sup>

<sup>30</sup> See artworks available for purchase online at: <http://gallery.martumili.com.au/>

<sup>31</sup> Commonwealth of Australia, Department of the Prime Minister and Cabinet, Remote Housing Review: A review of the National Partnership Agreement on Remote Indigenous Housing and the Remote Housing Strategy (2008-2018), at 4.12.2

<sup>32</sup> Advice from Andy Redden, Director, Keystone Support Pty Ltd, Accountant for Parnngurr Aboriginal Corporation



This analysis envisages scenarios where housing construction, repairs and maintenance might occur in Parnngurr. However, existing tenure arrangements would need to change before the necessary funds would be committed. A similar issue was recently resolved in Tjuntjuntjara Community in the Eastern Goldfields. The Community, under the *Land Administration Act 1997*, was located within a Class A Reserve and has now been excised from the Reserve. In preliminary discussions with WA Government Ministers and senior bureaucrats, representatives of Kanyirirpa Jukurrpa have been advised that there is no objection in principle to the excision of Parnngurr from Karlamilyi National Park and that the WA Government is willing to pursue this approach.

As described in section 7, this analysis accounts for the issue of land tenure by assuming that it will be resolved by 2020, at which point investment in the construction of new houses or the refurbishment and maintenance of existing houses can occur.

It should be noted that Punmu Community is also located within Karlamilyi National Park and so the same constraints with respect to land tenure apply and would have to be resolved before WA Government investment in that community.

## Understanding Newman

Newman is a town in the Pilbara region, situated on the Great Northern Highway (National Highway 95) with a population of roughly 4,500 people.<sup>33</sup> It was established in 1968 by a BHP subsidiary, Mt Newman Mining Co, following the discovery of rich iron deposits in the region. The population grew rapidly in the 1970s and 1980s. Management of the town was 'sold' to the Shire of East Pilbara in 1981 for \$1.00.<sup>34</sup>

Newman remains a mining town today, with 40% of the population in Newman working in the iron ore industry.<sup>35</sup> It services Mount Whaleback, the world's largest open-cut iron ore mine. All basic services and amenities are available in Newman, including schools, childcare services, a recreation centre, a swimming pool, sports ovals and clubs, an airport, medical facilities and a hospital. There are several hotels, bars, restaurants and a shopping complex that includes a liquor store and two supermarkets.

Around 600 Newman residents (13%) identify as Aboriginal or Torres Strait Islander people, with a median age of 20 years.<sup>36</sup> While Newman lies on the traditional lands of the Niyiyaparli People, it is now home to approximately 305 Martu.<sup>37</sup>

## The Martu demographic profile

Over the past ten years, the Aboriginal population in Newman,<sup>38</sup> Jigalong and the Martu desert communities of Kunawarritji, Punmu and Parnngurr has grown at a rate of 2.9% p.a. It is particularly instructive to consider where that growth has occurred. While the combined population in the Martu desert communities and Jigalong has remained virtually unchanged, the Aboriginal population in Newman has grown by 117% (see figure 4.5). This trend will be explained further below under the sub-section entitled, '*The challenges facing Martu*'.

<sup>33</sup> ABS Census, 2016 (Code UCL515027) reported the population to be 4,567

<sup>34</sup> Newman Visitor Centre, About Newman, accessed on 31 August 2018 at <http://newman.org.au/>

<sup>35</sup> ABS Census, 2016 (Code UCL515027)

<sup>36</sup> ABS Census, 2016 (Code UCL515027) reported the Aboriginal and Torres Strait Islander population in Newman to be 583.

<sup>37</sup> The Martu population in Newman was estimated through a door to door census conducted in early 2018 by the Newman Women's Shelter

<sup>38</sup> The majority of whom are Martu

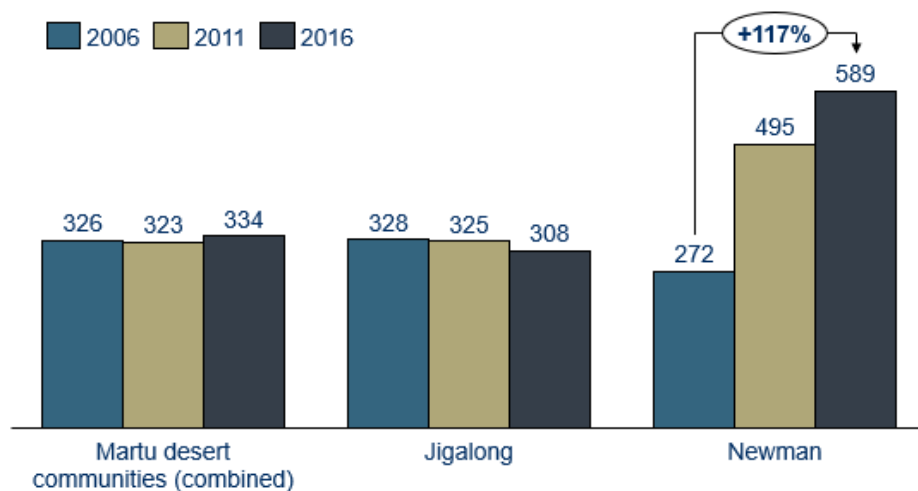


Figure 4.5: East Pilbara Aboriginal Population (ABS Census), 2006 – 2016

In 2018, there are an estimated 976 Martu living in Newman, Jigalong, Kunawarritji, Punmu and Parnngurr combined.<sup>39</sup> As is common to Aboriginal and Torres Strait Islander communities across Australia, the Martu demographic is younger and growing faster than the population nationally. When forecasting growth of the Martu population over the next ten years, this analysis adopts the ABS' forecast population growth rate for the Aboriginal and Torres Strait Islander population in WA of 2.2% p.a.<sup>40</sup> This is the higher of three ABS series growth rates, which range from 1.9% to 2.2%.<sup>41</sup> The use of this growth rate is justified, and arguably conservative, in light of the historical population growth amongst the predominantly Martu, Aboriginal and Torres Strait Islander population in the region (2.9%).

Applying the projected 2.2% annual population growth rate, the number of Martu people living in Newman, Jigalong and the three Martu desert communities will be 1,213 by 2028 (see figure 4.6 below).

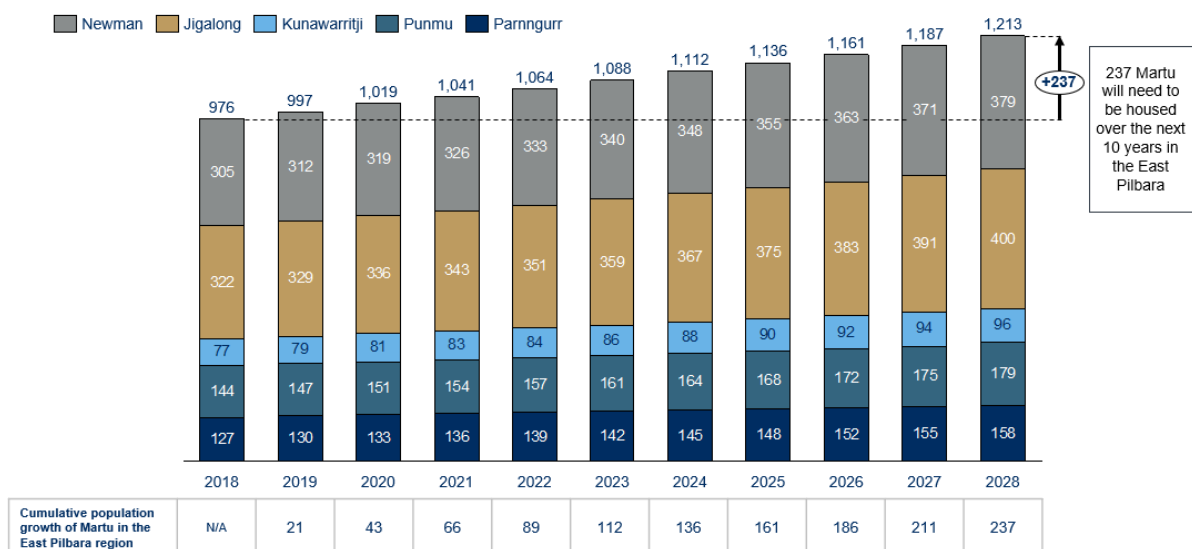


Figure 4.6: Forecast Martu population across the East Pilbara region from 2018 – 2028

<sup>39</sup> This figure has been calculated with reference to 2016 ABS Census data for Jigalong, Parnngurr, Punmu and Kunawarritji. The Martu population in Newman was estimated through an informal 2018 census conducted by the Newman Women's Shelter.

<sup>40</sup> ABS, Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001 to 2026 (Cat. 3238.0)

<sup>41</sup> Ibid

In the absence of any constraints on growth, the Martu population in Parnngurr – a community with 25 Martu occupied dwellings – would grow from the current estimate of 127 to 158 by 2028 (see figure 4.7 below).

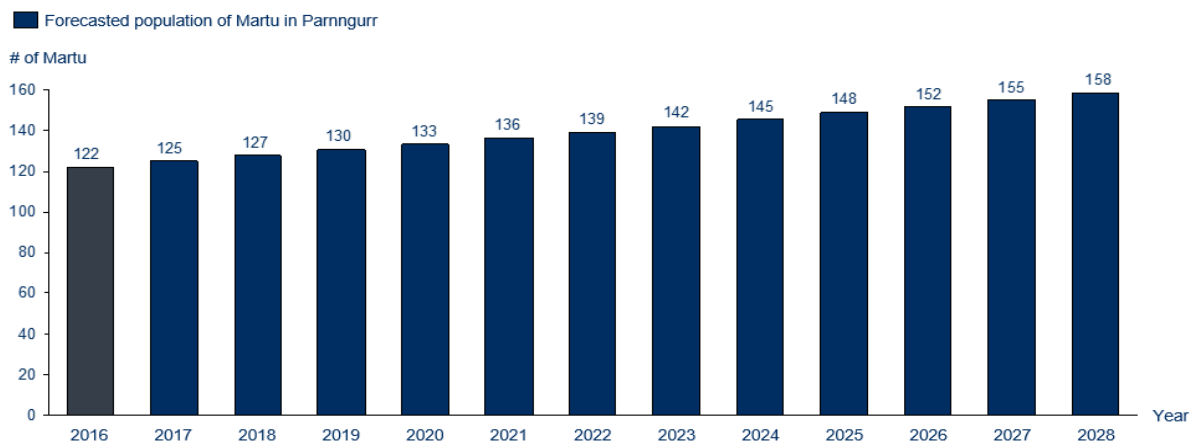


Figure 4.7: Forecast Martu population from Parnngurr, 2016 – 2028

The projected Martu population growth (24% over the ten-year period) has important implications for this analysis, both in terms of growing demands on service provision, but also the capacity of existing housing and infrastructure across the region. The challenges presented by this population profile are explored in the following subsection.

### The challenges facing Martu

One of the most pressing challenges in very remote Aboriginal communities across Australia is housing. In simple terms the challenge is twofold; there is insufficient public housing stock and the existing stock is in poor condition. The recent *Review of the National Partnership Agreement on Remote Indigenous Housing and the Remote Housing Strategy*, identified the need for an additional 5,500 dwellings in remote and very remote Australia to meet current and future demand by 2028.<sup>42</sup> Of the 5,500 houses, 1,300 (23%) are needed in WA.<sup>43</sup>

These national challenges are common to Martu.

The Martu desert communities have the lowest capacity to absorb the additional 237 Martu people who will require housing over the next ten years, as depicted in figure 4.6. There is an average of five occupants in each of Parnngurr's 25 existing dwellings, and as many as nine occupants in some family homes. It is unlikely that the community, in its current state, could absorb the growth projected in figure 4.7. Existing housing stock is similarly stretched in the other Martu desert communities of Punmu and Kunawarritji.

<sup>42</sup> Commonwealth of Australia, Department of the Prime Minister and Cabinet, *Remote Housing Review: A review of the National Partnership Agreement on Remote Indigenous Housing and the Remote Housing Strategy* (2008-2018), at 3.2

<sup>43</sup> *Ibid*, at 3.1 and 3.2

Without further investment in Martu desert community housing, projected growth in the Martu population will need to be absorbed in Newman. Figure 4.5 demonstrates that this has been the historic trend since at least 2006.

In addition to the need for more housing stock to accommodate population growth, the condition of existing housing stock in the Martu desert communities is rapidly deteriorating. Community consultations conducted by Kanyirrinpa Jukurrpa in November 2017 identified that housing was the number one concern for Martu living in those communities. People reported that, in some cases, they were forced to walk around the edge of rooms in their houses to avoid holes in the floor. Following a recent environmental health inspection of many houses in Parnngurr, PAMS identified that the houses were in a serious state of disrepair and that many were unfit for human habitation.<sup>44</sup>

There is a consensus amongst the staff of service providers operating in Parnngurr (including Kanyirrinpa Jukurrpa and PAMS), who have intimate knowledge of the community, that without further investment in housing, Martu will choose, or be forced, to leave Parnngurr and relocate to Newman. Such a decision would be driven as much by a lack of faith in the WA Government to support the community, as the physical state of housing. The concern of Parnngurr residents has grown over time due to perceived inaction on the issue of land tenure and the corresponding construction of new housing in Jigalong. Based on this advice, the closure of Parnngurr is considered the most likely outcome in the event of no policy change. As such, two of the four scenarios explored in this analysis contemplate that Parnngurr will close.

The base case in this analysis (described further in section 6 below), applies a 10% annual decline in Parnngurr's population from 2018 to 2023, at which point there would be an exodus leading to the effective closure of the community within two years (by 2025). In this scenario, 158 Martu who might otherwise have lived in Parnngurr, would be assumed to relocate to Newman by 2028.

Figure 4.8 depicts the profile of the Martu population transferring from Parnngurr to Newman in this scenario over the next ten years.

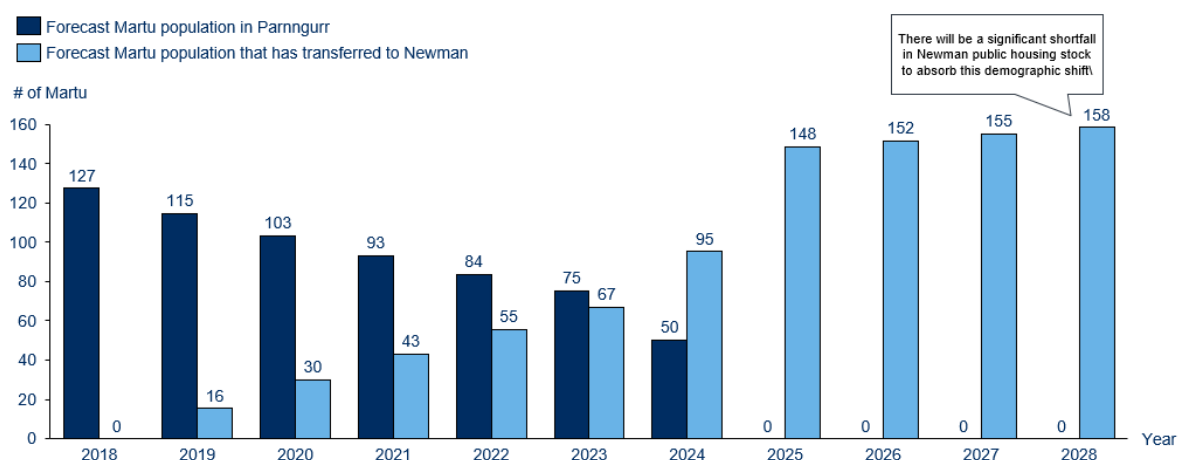


Figure 4.8: Martu population transferring from Parnngurr to Newman, as assumed in the base case analysis

<sup>44</sup> Advice from Robby Chibawe, CEO, Puntukurnu Aboriginal Medical Service

Two drivers of population growth in Newman over the next ten years have now been established above:

1. The Martu population across the East Pilbara region grows by 237 with no capacity for Jigalong and the Martu desert communities to absorb that population growth; and
2. An absence of investment in Parngurr housing precipitates the closure of that community, leaving a further 127 Martu to relocate to Newman.<sup>45</sup>

The implications for housing stock in Newman are dramatic. In the base case, approximately 365 additional Martu people are seeking residence in Newman over the next ten years.<sup>46</sup> The Martu population in Newman would be 670 by 2028, doubling over the next 8 years (see figure 4.9).

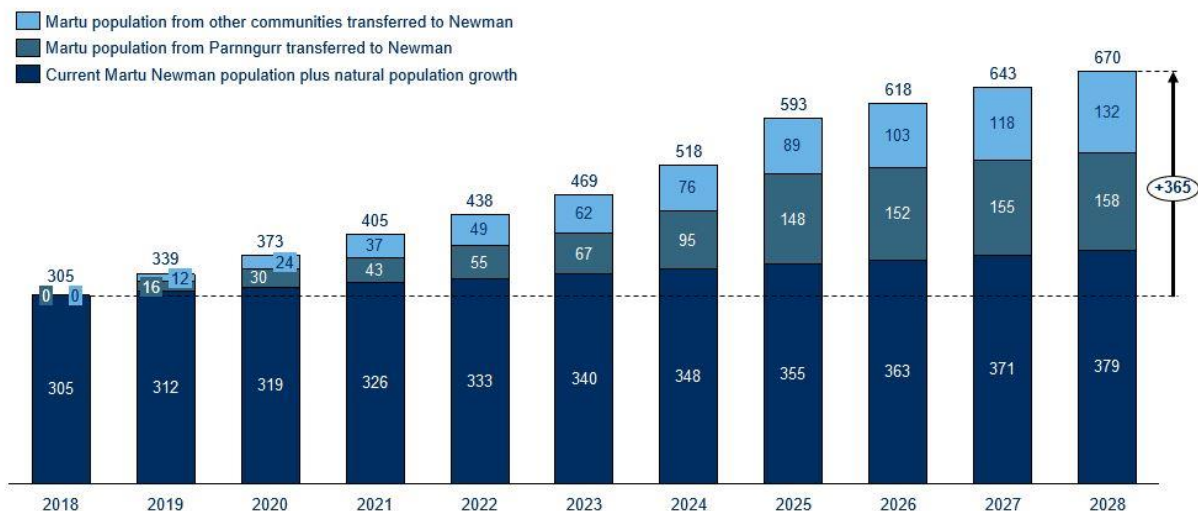


Figure 4.9: Forecast total Martu population in Newman, as assumed in the base case analysis

Dramatic growth in the Martu population in Newman gives rise to a further set of challenges.

Since their emergence from the desert, Martu have struggled to integrate a traditional life with a modern “whitefella” existence. As Martu are forced to move from the alcohol-free Martu desert communities to the town of Newman, these challenges are exacerbated, and Martu are further subject to the destructive effects of alcohol abuse in Newman. Through consultation conducted in the Martu desert communities, Martu consistently associated “lock-up, police, court, Martu parties, wama (alcohol), drugs, violence, fighting and jealousy” with their experience of town.<sup>47</sup>

According to Newman police in August 2018,<sup>48</sup> approximately 90% of the 3,813 police call outs in the 2018 financial year were in response to incidents involving Martu people.

In June 2018, the Newman Women’s Shelter conducted a detailed analysis of Martu in WA prisons.<sup>49</sup> The analysis identified each Martu person in prison and their normal place of residence. As at June 2018, there were 89 Martu in prison, 46 of whom were Newman residents, representing 17% of the adult Martu population ordinarily resident in Newman.<sup>50</sup> The remaining Martu in prison were typically

<sup>45</sup> The further 31 Martu – to make 158 in total – are accounted for in point one as part of the regional population growth

<sup>46</sup> It is important to note that the factors which could precipitate the closure of Parngurr – a lack of investment in housing and community infrastructure – are also present in the other Martu desert communities of Punmu and Kunawarritji. The closure of either or both of those communities would give rise to an even greater number of forced relocations of Martu to Newman, in line with the logic described above. However, as the scope of this analysis focuses on Newman and Parngurr, the potential closure of Punmu and/or Kunawarritji is not considered in this analysis.

<sup>47</sup> Community consultations conducted by Kanyirninpa Jukurrpa, November 2017

<sup>48</sup> Kanyirninpa Jukurrpa consultation with Newman police in August 2018

<sup>49</sup> Prison census conducted by the Newman Women’s Shelter in June 2018 includes Roebourne, Greenough, Acacia, Casaurina, Kalgoorlie, Derby

<sup>50</sup> Of the 305 Martu living in Newman, 227 are adults. The Martu population in Newman was estimated through a separate census conducted by the Newman Women’s Shelter.

those living in other communities, who have come into contact with the justice system through their visits to Newman, often to access essential services.

The Martu desert communities offer respite to Martu from the dysfunction of town. Importantly, these communities offer Martu the opportunity to live close to their traditional lands in a society which is still predominantly Martu, thereby enabling them to fulfil their deep cultural obligations to look after their country within an environment they can shape.

## 5. Identifying and modelling costs

### Scope of the quantitative analysis

It is important to understand the scope of the quantitative analysis on several dimensions:

- **Analysis period:** the period considered is the 10 years from calendar year 2019 until calendar year 2028 inclusive.
- **Geography:** the geographical focus is on costs incurred in, or borne out of (for example, in the case of imprisonment costs), Parnngurr and Newman only. While there has been discussion of Jigalong and the other Martu desert communities throughout this report, this has primarily been for the purpose of understanding the permanent and transient movement of Martu into Newman over the ten-year period.
- **Type of costs:** the quantitative analysis only considers costs that impact upon WA Government expenditure. Further, those costs considered in the analysis are confined to those that are impacted by shifting demographics between Parnngurr and Newman. The intent behind these limitations on scope is to make the most direct possible comparison between WA Government investment in Parnngurr, and other WA Government expenditure that is likely to be incurred in the absence of that investment.
- **Type of benefits:** because the quantitative analysis only considers costs that impact upon WA Government expenditure, benefits are confined to consideration of “avoided costs”.

Given the specific focus on WA Government expenditure:

- the report does not include a distributional analysis of costs and benefits accrued by other stakeholders, such as Martu people, the Australian Government or other third parties; and
- only limited qualitative commentary accompanies the results of the quantitative analysis presented below.

Each of these points is addressed more fully in the Supplementary KJ Report.

### Fixed and variable costs

Costs included in the analysis are both fixed and variable. Variable costs are almost entirely dependent on the movement of Martu people.

An example of a fixed cost is the cost of the Parnngurr Community Coordinator’s salary. Where the community is not closed, the salary of the coordinator appears in the analysis in full, inflated by CPI (assumed at 2%) over the course of the ten-year period.

An example of a variable cost is the cost of policing in Newman. This cost is directly linked to the forecast number of Martu people living, or spending time, in Newman and their historical propensity to cause an incident to which police must respond.

Some costs included in the analysis are both fixed and variable. Parnngurr health clinic costs, for example – to which the WA Government contributes approximately 40%, while the Australian Government contributes approximately 60% – can be divided into the fixed cost associated with operating the clinic and the variable health care costs for each Martu person living in Parnngurr.

The large number of variable costs included in the analysis highlights the importance of understanding Martu demographics, as described above. But demographics do not tell the whole story, as Martu travel to Newman on a regular basis to access essential services and their mobility must also be factored into the analysis.



## Accounting for Martu mobility

For the purposes of this analysis, there are five categories of Martu person, each with differing impacts on the analysis of demographics and costs (see figure 5.1 below). Brief commentary in relation to those five categories is set out below.

### 1. Martu people who live in Parnngurr

This category is critical to the analysis, given its geographic scope. The costs considered in relation to people living in Parnngurr include those costs required to service the community, including municipal services, housing, health and education. Being a dry community, incidents of anti-social behaviour are infrequent, and a police presence is rare. However, Parnngurr residents regularly visit Newman in order to access services that are not readily available in Parnngurr, which leads to consideration of category five (see further below).

### 2. Martu people who live in Newman

This category is also critical to the analysis, given its geographic scope. For people living in Newman, housing and education costs are included in the analysis, but health and municipal services have been excluded, in part because essential services in Newman exist to serve a broader population, but also due to an absence of accessible and reliable data. The primary difference between Parnngurr and Newman costs is the inclusion in Newman of costs associated with anti-social behaviour, including policing and imprisonment costs.

### 3. Martu people who live in Punmu or Kunawarritji (the other two Martu desert communities)

Costs incurred in Punmu and Kunawarritji are out of scope for this analysis, but the people living in those communities are relevant in two ways. As has been described above, these communities do not have capacity to absorb population growth, so any applied growth in population over the analysis period increases the size of category two (Martu people who live in Newman). While some may choose to move to Port Hedland or other towns, the cost impact is likely to be analogous, so for the purposes of this analysis, it is simply assumed that people move to Newman. People living in the other two Martu desert communities also need to visit Newman, which leads to consideration of category five (see further below).

### 4. Martu people who live in Jigalong

Costs incurred in Jigalong are also out of scope for this analysis and people living in Jigalong are treated in the same way as people living in Punmu and Kunawarritji. The only difference is that Jigalong is much closer to Newman so when it comes to consideration of category five below, a higher proportion of Jigalong residents are assumed to spend time in Newman than those of Punmu and Kunawarritji.

### 5. Martu people who do not live in Newman, but visit Newman (hereafter, referred to as the “transient” population).

Martu people who do not live in Newman still visit Newman on a regular basis to access essential services. When asked what takes people into town, Martu living in Parnngurr identified (among other things), the “bank, mechanic, health specialists, hospital, Woolworths (fresh food), car and gun licensing and Centrelink.”

When Martu visit Newman from the Martu desert communities, they often have little choice but to stay in Newman for several days, or even weeks, until the next opportunity to return to their community. Many Martu do not hold a valid drivers’ licence or own a reliable vehicle, so transport options are limited. During the time that Martu spend in Newman, they are vulnerable to the accessibility of alcohol and they or their families are equally likely to engage in anti-social behaviour as those living in Newman.



A 2011 WA Department of Indigenous Affairs Discussion Paper described “a migratory shift and transient movement of people from remote communities to regional centres”.<sup>51</sup> The Discussion Paper identified increasing issues for Aboriginal people visiting Newman, “including binge drinking and negative and risky behaviours”.<sup>52</sup>

In preparing the Discussion Paper, the Department of Indigenous Affairs conducted a survey of 105 visitors to Newman in October 2009. The survey established that:

- **Residence:** 41% of visitors were from Jigalong, while others were evenly distributed from the Martu desert communities
- **Gender:** 76% were male and 24% female
- **Age:** 79% were aged between 20 – 40 years
- **Frequency:** 69% stated that they visited town regularly
- **Length of stay:** 100% responded that they usually visited for 1-4 weeks
- **Accommodation:** 16% camped; 7% stayed in paid accommodation; 77% stayed with family / friends
- **Transport:** 100% stated that they found a lift.

While the data is old, the results of the survey remain broadly consistent with the present-day observations of service providers operating in Newman and have helped to inform assumptions adopted in this analysis.

In recent community consultation conducted by Kanyirninpa Jukurrpa, Martu living in the Martu desert communities were asked, “if [essential] services could be delivered in communities, would that mean that you would not go into town as often?” The overwhelming response from Martu was, “yes”.<sup>53</sup>

When accounting for the transient population, the base case assumes that Martu people who do not live in Newman, visit Newman for 60 days in a year. A distinction is made about the proportion of people who will visit Newman from each community, due to accessibility.

- 80% of Jigalong and Parnngurr residents are initially assumed to visit Newman.
- 50% of Punmu and Kunawarritji residents are assumed to visit Newman.

Other scenarios provide for additional investment in Parnngurr aimed at reducing the need for residents to visit Newman. In those scenarios, the propensity to visit, and the length of visits, will progressively decline over the period of analysis.

Figure 5.1 summarises each of the five categories of Martu and how they are treated in the analysis.

<sup>51</sup> WA Department of Indigenous Affairs, Newman Discussion Paper: A focus on the Impact of Alcohol, and Remote Visitors, 10 October 2011, at p.6

<sup>52</sup> Ibid, at p.6

<sup>53</sup> Community consultations conducted by Kanyirninpa Jukurrpa, November 2017

Population groups included in the analysis	Category	2018 pop.	Commentary	Costs included in the analysis			
	1 Martu living in Parnngurr	127	Primary focus of the analysis. Includes current costs associated with servicing the community and additional investment that may be required in alternative scenarios.	Housing	Education	Health clinic	Municipal costs
	2 Martu living in Newman	305	Primary focus of the analysis. Not as comprehensive in consideration of costs to service community on the basis that Newman essential services exist for a broader population, but greater focus on costs associated with anti-social behaviour.	Housing	Education	Anti-social behaviour: policing imprisonment	
	3 Martu living in other desert communities (Punmu & Kunawarritji)	221	Relevant for the purposes of informing growth in the Newman population (category two) and the number of Martu visiting Newman (category five). Otherwise excluded from the analysis.	Costs included in context of transients below			
	4 Martu living in Jigalong	322	Relevant for the purposes of informing growth in the Newman population (category two) and the number of Martu visiting Newman (category five). More fluid relationship with Newman than those in category three. Otherwise excluded from the analysis.	Costs included in context of transients below			
	5 Martu who do not live in Newman, but visit Newman ("transients")	Subset of 976 above, calculated as equivalent of 77 people	Martu living in other communities visit Newman to access essential services and in doing so, incurring costs associated with anti-social behaviour. Treated as an equivalent number of Newman residents based on propensity to visit and length of stay.	Anti-social behaviour: policing imprisonment			

Dry very remote communities
  Population groups in town with access to alcohol

Figure 5.1: Martu population groups and associated costs included in the analysis

## Categories of cost included in the analysis

Figure 5.1 identifies the categories of cost deemed to be material and in scope for the quantitative analysis. Further commentary in relation to those costs is set out below and in Appendix 3.

### Category One: Martu living in Parnngurr

Cost category	Description
<b>Housing</b>	<p>Includes:</p> <ul style="list-style-type: none"> <li>Recurrent annual maintenance expenditure</li> <li>Non-recurrent expenditure on refurbishment to bring deteriorating housing stock up to a reasonable standard</li> <li>Non-recurrent expenditure on construction of additional housing stock</li> <li>An assessment of power generating capacity and other infrastructure associated with the construction of five new houses on existing serviced lots.</li> </ul> <p><i>Note that:</i></p> <ul style="list-style-type: none"> <li><i>None of this expenditure is likely prior to resolution of land tenure issues identified in section 4.</i></li> <li><i>Any assumed construction of new housing is to occur on existing serviced lots, so land servicing costs have not been included.</i></li> </ul>
<b>Education</b>	<p>Recurrent WA Government expenditure associated with funding the Parnngurr Community School, which is variable (by students enrolled).</p> <p>The majority of the school's funding comes from the Australian Government, meaning that WA Government education expenditure in Parnngurr is heavily subsidised by the Commonwealth.</p>
<b>Health clinic</b>	<p>The WA Government's share (est. 40%) of the fixed and variable (by population) recurrent expenditure required to operate the Parnngurr Health Clinic, including additional costs for a second proposed remote area nurse in some scenarios and installation of recently purchased dialysis machines.</p>
<b>Municipal costs</b>	<p>The recurrent expenditure associated with power, water, sewerage and community administration.</p> <p>Non-recurrent capital expenditure has not been included in this analysis on the basis of advice from the Department of Communities that there is currently spare power and water capacity and the assumption that this will be sufficient to meet the demands of modest population growth assumed in one of the analysis' scenarios.<sup>54</sup></p>

### Category Two: Martu living in Newman

Cost category	Description
<b>Housing</b>	<p>Includes:</p> <ul style="list-style-type: none"> <li>Recurrent annual maintenance expenditure on all Martu housing</li> <li>Non-recurrent expenditure on construction or purchase of new housing stock to cater for projected Martu population growth.</li> </ul>

<sup>54</sup> Correspondence received from WA Department of Communities, Housing Division Pilbara, 30 July 2018

Cost category	Description
<b>Education</b>	Recurrent WA Government expenditure associated with educating Martu children in Newman, which is variable (by students enrolled).
<b>Anti-social behaviour: policing and imprisonment</b>	<p>Costs associated with anti-social behaviour amongst those Martu living in Newman over the analysis period (which includes people moving to Newman from other communities). Costs include those associated with:</p> <ul style="list-style-type: none"> <li>Increased police call-outs in response to incidents caused by Martu people; and</li> <li>Imprisonment of adult Martu people as a consequence of acts occurring in Newman.</li> </ul> <p><i>Note that costs associated with the following have been excluded from the analysis:</i></p> <ul style="list-style-type: none"> <li><i>Fetal Alcohol Spectrum Disorder (FASD), due to an absence of available prevalence data;</i></li> <li><i>Out-of-home care, due to an absence of available data; and</i></li> <li><i>Juvenile detention, based on a judgment that the number of Martu regularly in juvenile detention is insufficient to give rise to material costs.</i></li> </ul>

*Category Five: Martu who do not live in Newman, but visit Newman (“transients”)*

Cost category	Description
<b>Anti-social behaviour: policing and imprisonment</b>	Costs associated with anti-social behaviour amongst those Martu visiting Newman from other communities. Costs are the same as those described above in relation to category two.

## 6. Understanding the scenarios

### Introduction

The analysis compares a base case of no policy change with three alternative scenarios. Differences between the four scenarios primarily relate to:

- the level of investment in housing and community development in Parnngurr;
- which, in turn, drives assumptions around the population of Martu living in Parnngurr or moving to Newman; and
- which further drives assumptions around the quantum of costs incurred in Newman, particularly those associated with an increase in the level of anti-social behaviour.

The scenarios considered in this analysis are summarised in the table below.

Scenario	Summary
<b>Base case – no policy change</b>	<ul style="list-style-type: none"> <li>• No change to Parnngurr tenure arrangements</li> <li>• No investment in Parnngurr housing maintenance, refurbishment or construction</li> <li>• No additional investment in community development</li> <li>• Gradual population decline and closure of Parnngurr in 7 years</li> <li>• Increase in Newman population</li> </ul>
<b>Scenario one – immediate closure</b> <i>(Note: there is no suggestion that this scenario reflects current WA Government policy)</i>	<ul style="list-style-type: none"> <li>• Announced cessation of WA Government funding for Parnngurr infrastructure and services</li> <li>• Rapid population decline and closure of Parnngurr in 3 years</li> <li>• Increase in Newman population</li> </ul>
<b>Scenario two – minimal investment</b>	<ul style="list-style-type: none"> <li>• Parnngurr tenure arrangements resolved by the end of 2019</li> <li>• Investment in Parnngurr housing maintenance and refurbishment, but no new construction</li> <li>• An additional community administrator and modest investment in community development targeted at minimising the need for residents to travel to Newman</li> <li>• Parnngurr population remains constant</li> <li>• Newman population growth partially mitigated</li> </ul>
<b>Scenario three – modest investment</b>	<ul style="list-style-type: none"> <li>• Parnngurr tenure arrangements resolved by the end of 2019</li> <li>• Investment in Parnngurr housing maintenance and refurbishment</li> <li>• Construction of five new dwellings on existing serviced lots and associated assessment of power generating capacity and other infrastructure</li> <li>• An additional community administrator and modest investment in community development targeted at minimising the need for residents to travel to Newman</li> <li>• Parnngurr population grows, with some Newman residents attracted to relocate to Parnngurr</li> </ul>

The remainder of this section explores each scenario in more detail, with reference to the following questions:

1. What happens in this scenario?
2. What are the demographic implications of this scenario?
3. What costs, and avoided costs, are most relevant to this scenario?
4. Why is this a relevant scenario to consider?

Results of the analysis will then be presented with reference to each scenario in section 8 below.

## Base case – no policy change

### What happens in this scenario?

The base case scenario considers the trajectory for Parngurr and its residents if the status quo remains: there is no change to current policy or existing tenure arrangements. Due to the complication of tenure, there can be no provision for maintenance or refurbishment of existing housing stock, nor the possibility of new housing construction. Existing municipal and essential services are maintained but there is no further investment in infrastructure or other community development initiatives.

With the state of housing in decline and a community shop that is increasingly subscale, Parngurr residents progressively relocate to Newman, leading to closure of the community in seven years' time.

### What are the demographic implications of this scenario?

Parngurr's population is assumed to decline by 10% annually from 2018 to 2023, following which an exodus leads to closure of the community within two years (by 2025). For the purposes of this analysis, all Martu leaving Parngurr will be assumed to relocate to Newman where the Martu population grows to 670, driven by Parngurr's closure and regional population growth (see figure 6.1).

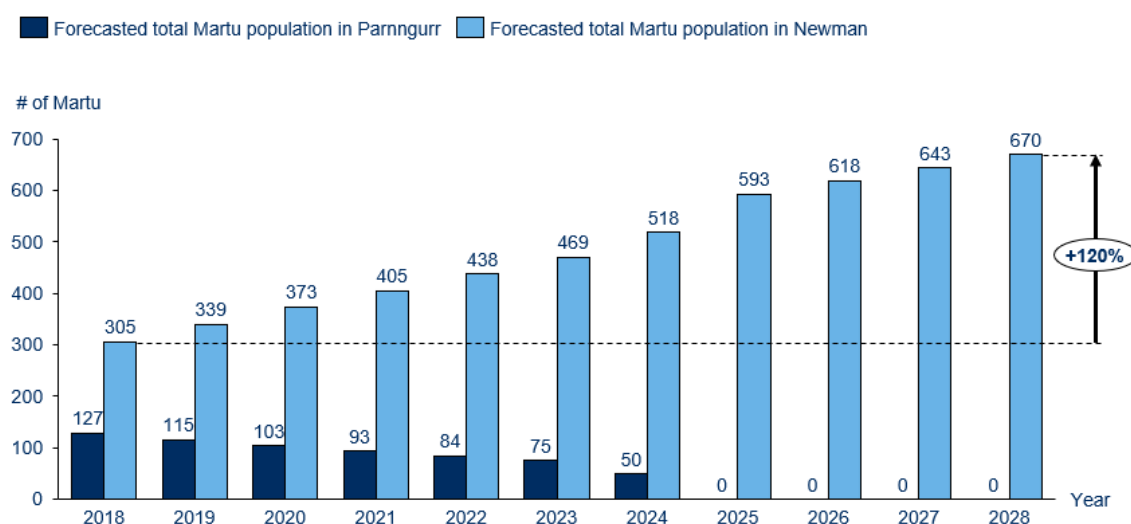


Figure 6.1: Martu population in Parngurr and Newman – base case

### What are the cost implications of this scenario?

The Parnngurr community school and health clinic will be operational until the assumed closure of Parnngurr in 2025. Recurrent municipal expenditure will be incurred while the community is in operation (until 2025) with no capital expenditure on infrastructure.

No housing expenditure can occur in Parnngurr, but it will need to occur in Newman to house a rapidly growing population. Other Newman costs will increase in line with population growth, including education, policing and imprisonment costs. The increased costs relating to anti-social behaviour are the largest costs associated with Martu moving to Newman.

### Why is this a relevant scenario to consider?

It is important to compare the impact of any proposed investment against a base case which assumes maintenance of the status quo. Due to existing policy and tenure arrangements, the likely trajectory of housing investment under the status quo scenario is a straight forward matter: there will be none. The more difficult matter to forecast is the likely response of Parnngurr's residents to a lack of investment.

Members of the communities of Parnngurr and Punmu have long been aware of the location of the communities in the Karlamilyi National Park and the effect this has on their ability to secure funding for housing construction, refurbishment and maintenance. The tenure issue has been a high priority for Martu for at least 10 years. It was to be addressed by a WA Government bill in 2008 (*Indigenous Conservation Title Bill 2007*), but an election was called immediately prior to its final consideration by the upper house.

This issue has a continuing, high profile in the communities, being raised in 2017 community consultations in both Parnngurr and Punmu and regularly in other meetings. Housing and tenure were the most pressing issues raised by Martu and discussed at length at the Kanyirninpa Jukurrpa Annual General Meeting held in Parnngurr on 19 September 2018. The WA Government is aware of these community concerns.

With deteriorating housing and an on-going failure to pragmatically apply housing policy while seeking to resolve tenure arrangements (or, at least, begin to address them), Martu are expected to leave Parnngurr, because of a sense of hopelessness and a belief that housing and other community facilities will never improve. It is critical that the costs of this scenario are well understood.

## **Alternative scenario one – immediate closure**

### What happens in this scenario?

This scenario contemplates a hypothetical decision in mid-2019 to cease WA Government funding for infrastructure and services in Parnngurr within two years. As a consequence of the imminent WA Government withdrawal, the Martu population of Parnngurr moves to Newman in the two subsequent years due to an impending absence of basic services.

### What are the demographic implications of this scenario?

The population in Parnngurr declines sharply from mid-2019 following the WA Government decision. By the end of 2021, all Martu are assumed to have relocated to Newman. The difference between the demographics of the base case and scenario one is simply the speed with which Martu relocate from Parnngurr to Newman (see figure 6.2).



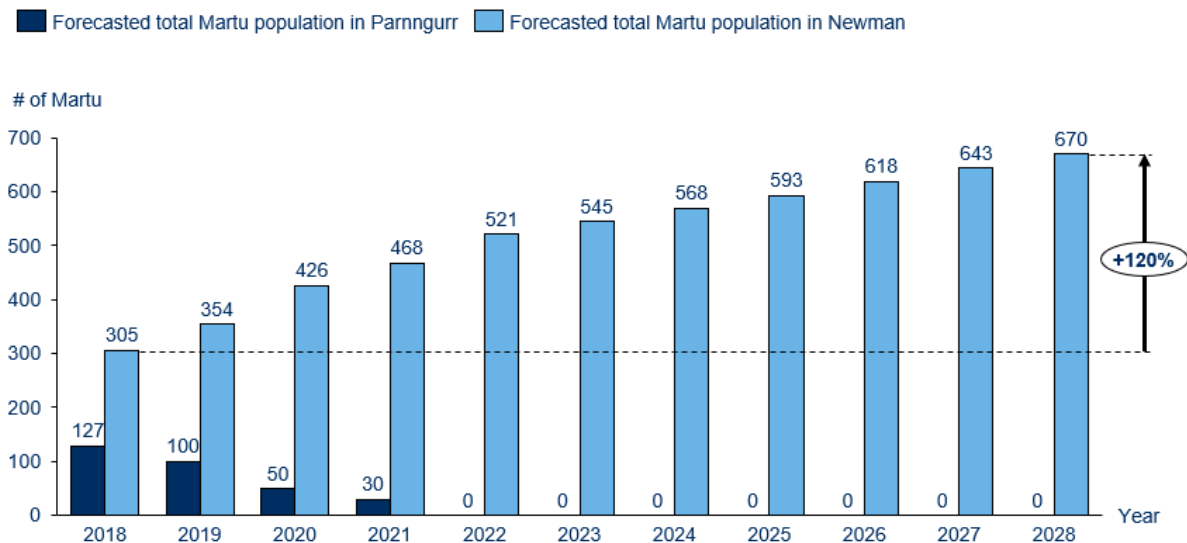


Figure 6.2: Martu population in Parnngurr and Newman – scenario one

#### What are the cost implications of this scenario?

In this scenario, WA Government expenditure in Parnngurr ceases four years earlier (end 2021) than it does in the base case (2025). However, expenditure in Newman will grow faster in this scenario with the influx of former Parnngurr residents earlier in the analysis period.

#### Why is this a relevant scenario to consider?

There is no suggestion that this scenario reflects current WA Government policy or is likely to occur. However, given the critical assumption adopted in this report that continuation of the current policy is likely to lead to closure of the community within the analysis period, this scenario is presented as a more radical alternative pre-empting that outcome on the basis that it is important to understand the impact of such a decision.

### **Alternative scenario two – minimal investment**

#### What happens in this scenario?

This scenario considers the level of investment required to sustain the current population in Parnngurr. The primary focus is on Parnngurr's housing stock, with an assumed need to refurbish all existing stock and establish a program of annual maintenance so that the current state of substantial deferred costs is not repeated. Such investment in housing would require resolution of tenure arrangements in Parnngurr and this is assumed to occur by 2020.

A further critical element of this scenario is investment in limited community development measures. This scenario envisages the appointment of a community administrator to work alongside the existing community municipal services coordinator. With this additional role, and the use of discretionary community development funds, Martu will have increased capacity to conduct transactions in Parnngurr (e.g. in their dealings with Centrelink, Medicare, banks, police, justice) and less reason to travel to Newman on a regular basis. An additional remote area nurse would be appointed in 2020 in response to existing demand. With this investment comes an assumed reduction in Martu transients incurring costs in Newman. These initiatives, together with the prospect of tenure resolution and housing investment is what prevents the 2019 population decline forecast in the base case.



However, in this scenario there is no provision for additional housing stock in Parnngurr and therefore, no potential for population growth.

What are the demographic implications of this scenario?

The population remains stable at current levels (127 people) with any net population growth overflowing into Newman (as has historically been the case). This means that the 2028 Martu population in Newman is considerably lower than in the base case or scenario one, but there is still considerable growth over the analysis period due to population growth across the region (see figure 6.3).

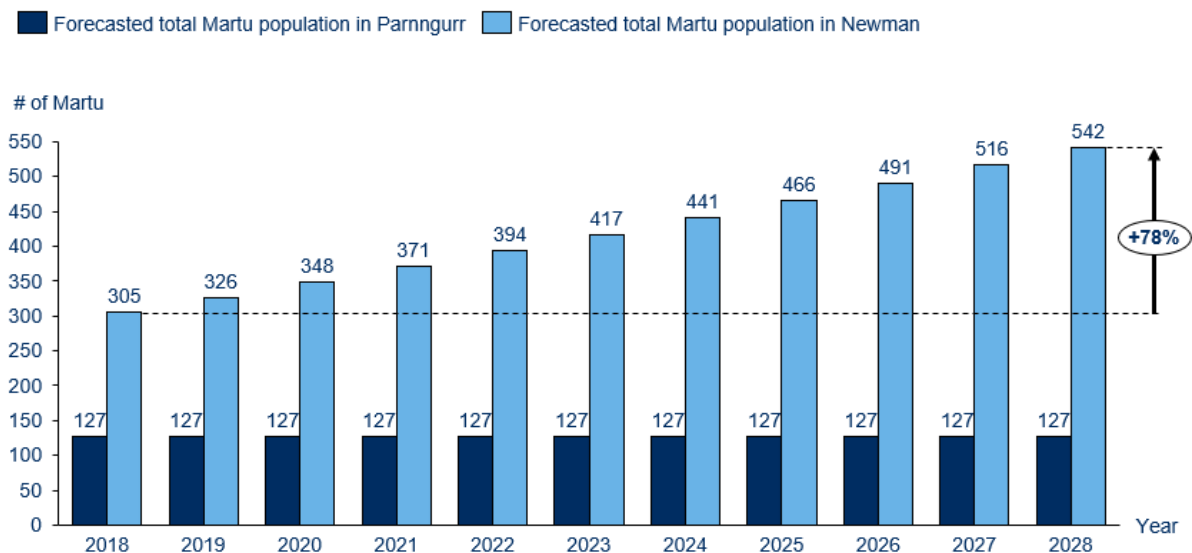


Figure 6.3: Martu population in Parnngurr and Newman – scenario two

What are the cost implications of this scenario?

Each of the 25 houses in Parnngurr would be refurbished at an estimated cost of \$150,000 per house, but otherwise, existing municipal service levels and associated costs in Parnngurr would be maintained. There will be additional recurrent costs for a second nurse and a second community administration position, plus an annual budget for community development initiatives to reduce the need for community residents to visit Newman.

With fewer Martu moving to Newman, costs incurred in Newman will be lower in comparison to the base case and scenario one.

Why is this a relevant scenario to consider?

The factor that is most likely to precipitate closure of Parnngurr is the condition of housing. It is important to understand the relatively modest cost associated with addressing these concerns and compare those costs with the corresponding benefits, or avoided costs, anticipated elsewhere.

**Alternative scenario three – modest investment**

What happens in this scenario?

This scenario considers the same modest investment envisaged in scenario two, through refurbishment of existing Parnngurr housing and further community development measures. Scenario three differs from scenario two on account of an additional five houses constructed on existing serviced lots, which attracts Martu to move from Newman to Parnngurr.

What are the demographic implications of this scenario?

The current Martu population continues to live in Parngurr and a small number of Martu are encouraged to relocate from Newman to Parngurr due to the construction of new housing stock. The Martu population in Parngurr reaches a limit of 150 in 2022, once the additional stock is filled, following which, population growth flows to Newman again. The 2028 Martu population in Newman is lowered in comparison with scenario two due to the additional housing Parngurr, but there is still considerable growth over the analysis period due to population growth across the region (see figure 6.4).

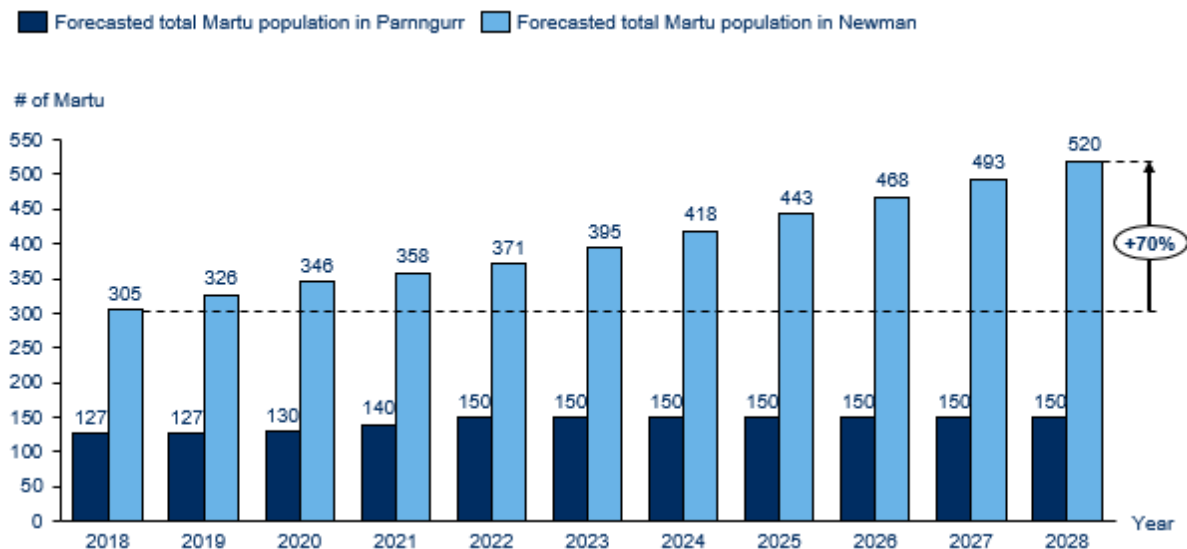


Figure 6.4: Martu population in Parngurr and Newman – scenario three

What are the cost implications of this scenario?

This scenario builds on the knowledge that there are five vacant, serviced housing lots in Parngurr available for new housing construction. There will be no additional infrastructure but additional education and health clinic costs will be incurred in Parngurr in proportion to school enrolments and population respectively. A reduction in the number of Martu living in Newman will reduce costs incurred in Newman.

Why is this a relevant scenario to consider?

While scenario two considers what would be required to stop people moving from Parngurr to Newman, it does not comprehend additional Martu moving to Parngurr. Scenario three considers the cost implications of a larger Parngurr population and a smaller Newman population. This scenario is instructive when considering where additional housing should be planned and constructed to meet the regional needs of a growing Martu population.

**Areas of investment by scenario**

When WA Government costs are considered in this analysis, there is an important distinction to be made between proactive investment that the WA Government may decide to apply in Parngurr and the downstream costs incurred on account of an increased burden on the service system. The table below summarises the nature of investment assumed in each scenario.

Cost category	Base case	Scenario 1	Scenario 2	Scenario 3
<b>Housing</b>				
<i>Annual maintenance</i>			✓	✓
<i>Refurbishment of existing stock</i>			✓	✓
<i>Construction of additional dwellings</i>				✓
<b>Municipal services</b>				
<i>Additional community administrator</i>			✓	✓
<i>Discretionary community development funds</i>			✓	✓
<b>Education</b>				
<i>Provision for additional students (compared with base case)</i>			✓	✓
<b>Health services</b>				
<i>Additional remote area nurse</i>			✓	✓
<i>Provision for additional health costs (compared with base case)</i>			✓	✓

The table above demonstrates the similarities between:

- the base case and scenario one – where Parnngurr is assumed to close; and
- scenario two and scenario three – which provide for investment in Parnngurr.

The principal difference between the base case and scenario one is the speed with which Martu relocate from Parnngurr to Newman.

The principal difference between scenario two and scenario three is the provision for additional housing and commensurate population growth in Parnngurr.

Section 7 will compare the investment envisaged in scenarios two and three with the associated return in the form of avoided social cost in Newman.

## 7. Critical assumptions

In forecasting demographic movements and costs incurred by Martu over the next ten years, there is a high level of inherent uncertainty in the results of this analysis. Throughout sections 4-6, several critical assumptions have been introduced. The results of the analysis are, to varying degrees, reliant on the accuracy of these assumptions.

In each instance, assumptions are grounded in the best available evidence drawn from desktop research, consultation with Martu, advice from WA Government departments and the observations and experiences of service providers working with Martu in Parnngurr and Newman over an extended period.

The purpose of this section is to summarise those assumptions that are critical to the logic of the scenarios presented in this analysis, along with the rationale and the source of evidence relied upon. This summary appears in the table below.

Assumption	Rationale	Source of evidence
There are 976 Martu people living in Newman, Jigalong, Parnngurr, Punmu and Kunawarritji and the population is growing by 2.2% annually.	<p>Service providers working in the East Pilbara believe the ABS census data to be reliable for the communities.</p> <p>Not all Aboriginal people living in Newman are Martu, so the Newman Women's Shelter conducted a door to door census to determine the Martu population in Newman.</p> <p>Historical growth in the Aboriginal population across these communities is 2.9%; adoption of the ABS projected population growth for Aboriginal and Torres Strait Islander people in WA of 2.2% is conservative but appropriate.</p>	<p>ABS Census 2016</p> <p>Census of Martu living in Newman, conducted by Newman Women's Shelter, April 2018</p> <p>2018 ABS Aboriginal and Torres Strait Islander Population Projections, Western Australia</p>
No funds will be allocated to housing maintenance, refurbishment or construction under current tenure arrangements. Tenure issues could be resolved from 2020 onwards.	<p>WA legislation prohibits the WA Government from entering housing management agreements in relation to communities on non-Indigenous held land such as National Parks.</p> <p>There is precedent for the WA Government resolving similar tenure issues (Tjuntjuntjara) and a political will to do so in relation to Parnngurr.</p>	<p>Remote Housing Review: A review of the National Partnership Agreement on Remote Indigenous Housing and the Remote Housing Strategy (2008-2018).</p> <p>Preliminary discussions between representatives of Kanyirirpa Jukurrpa and WA Government Ministers and senior bureaucrats.</p>

Assumption	Rationale	Source of evidence
There is no capacity to absorb population growth in Jigalong or the Martu desert communities. Without further investment in Martu desert community housing, projected growth in the Martu population will need to be absorbed in Newman, or other towns in which costs are analogous (e.g. Port Hedland).	Historical data (2006-2016) demonstrates that the Aboriginal population in Jigalong and the Martu desert communities has remained constant, while the population in Newman has grown dramatically (117% in 10 years).	ABS Census 2006, 2011, 2016
Martu living in the desert communities will not move to Jigalong, even if there is surplus housing stock in Jigalong.	Due to the long term, complex social and cultural reasons described in section 4 of this report, which cannot be resolved by administrative actions.	Statements by Martu living in Parnngurr over a number of years.  A lack of precedent for families from the Martu desert communities moving to Jigalong.
In the absence of further housing investment, Parnngurr's population will decline by 10% annually from 2018 to 2023, followed by an exodus and effective closure of the community by 2025.  The prospect of imminent tenure resolution and housing investment could prevent the 2019 population decline forecast in the base case.	Martu will leave Parnngurr by necessity due to the state of housing in community. But they will also leave on account of a lack of faith in the WA Government to support the community. This perception has grown over time due to perceived inaction on the issue of land tenure and the corresponding construction of new housing in Jigalong.  Indications that change is imminent may be sufficient to stave off the likely decline in Parnngurr's population in the next two years, before tangible housing works can commence.	Consultation with Martu in Parnngurr.  Observations by Kanyirninpa Jukurrpa of Parnngurr families already deciding to leave Parnngurr.
Refurbishment of existing housing and modest investment in community development initiatives will be sufficient to prevent Martu from moving back to Newman.  If additional houses are constructed in Parnngurr, Martu will be attracted to move to Parnngurr to fill those houses.	One family has recently relocated from Newman to Parnngurr after waiting almost a year for a house to become vacant. Other families say that they want to move to Parnngurr. The case study of Kunawarritji (see section 8 below), demonstrates that incremental investment in the desert communities can attract Martu to return to live on their country. Service providers operating in Newman see a reverse population flow as realistic if Parnngurr living conditions are improved.	Consultation with Martu in Parnngurr, identifying their preference to live in Parnngurr and their perception of town as dangerous.  Observations by service providers working in Parnngurr and Newman.

Assumption	Rationale	Source of evidence
Modest investment in community development initiatives will reduce the number of Martu who need to visit Newman from Parnngurr.	<p>Martu have little choice but to visit Newman to access essential services. If those services were accessible in Parnngurr, the need to travel to Newman would be reduced.</p> <p>In recent community consultation conducted by Kanyirninpa Jukurrpa, Martu living in the Martu desert communities were asked, “if [essential] services could be delivered in communities, would that mean that you would not go into town as often?” The overwhelming response from Martu was, “yes”.</p>	Consultation with Martu in Parnngurr.
The 'dry' status of Parnngurr is unlikely to change in the analysis period.	Regulations in relation to the consumption of alcohol in Parnngurr were introduced in 2018.	<i>Liquor Control (Parnngurr Restricted Area) Regulations 2018</i>

The summary above is supplemented by further commentary in Appendix 3 in relation to granular quantitative assumptions that have informed the modelling (e.g. assumptions in relation to specific costs and propensity). The sensitivity of the analysis to certain quantitative assumptions is tested in section 8 below.

With these assumptions understood, the following section reports the results of the analysis.

## 8. Reporting the results

### Summary of results

Scenario three presents as the lowest cost option for the WA Government with a \$42.3m saving (in NPV terms) compared to the base case. Scenario one presents as the most expensive option for the WA Government, costing \$3.6m more than the base case (in NPV terms).

The immediate insight to draw from these results is that the cost associated with those two scenarios in which Martu stay in Parnngurr (scenarios two and three) is much lower than the cost associated with the two scenarios in which Martu leave Parnngurr (base case and scenario one).

Scenario	Incremental NPV (\$m) from base case	Benefit to cost ratio (avoided cost: investment vs base case in NPV terms)
Base case – no policy change	N/A	N/A
Scenario one – immediate closure	+\$3.6m	No benefit
Scenario two – minimal investment	- \$38.3m	3.1
Scenario three – sustainable investment	- \$42.3m	3.0

This section of the report will consider:

- the drivers of cost in each scenario;
- relevant insights in relation to each of the key issue areas – housing, policing, imprisonment and education;
- the profile of investment and avoided cost; and
- key sensitivities in the analysis and their impact on the results.

### Drivers of cost by scenario

#### Base case – no policy change

The base case envisages a scenario of no policy change. It anticipates that a lack of investment in housing will lead to closure of the Parnngurr community in 5-7 years' time and Martu living in Parnngurr will relocate to Newman (see section 6 for further commentary in relation to this scenario).

Annual costs incurred by the WA Government grow at a rate of 8.0% annually from \$21.8m in 2018 to \$46.9m in 2028 (see figure 8.1 below). There are three primary reasons for this growth:

- CPI of 2% has been applied to all costs;
- The Martu population is growing at 2.2%, as described in section 4 above; and
- Most importantly, the Martu demographic profile is changing.

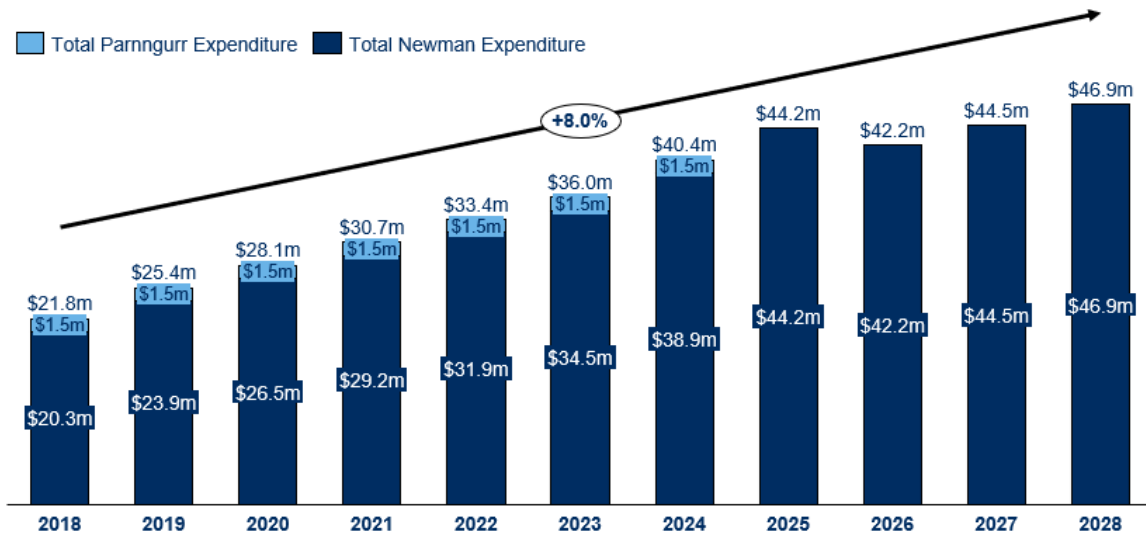


Figure 8.1: Total base case expenditure in Parngurr and Newman from 2018 – 2029<sup>55</sup>

Over the period, costs are increasingly incurred in Newman and not Parngurr, as the number of Martu living in Parngurr declines. Martu living in Newman incur a higher cost than those living in Parngurr. The higher cost is driven by additional policing, imprisonment, housing and education costs. The largest driver of cost is the additional justice costs related to police call outs and imprisonment (see figure 8.2 below), which represent over 80% of total costs in 2028.

These costs will be analysed further below.

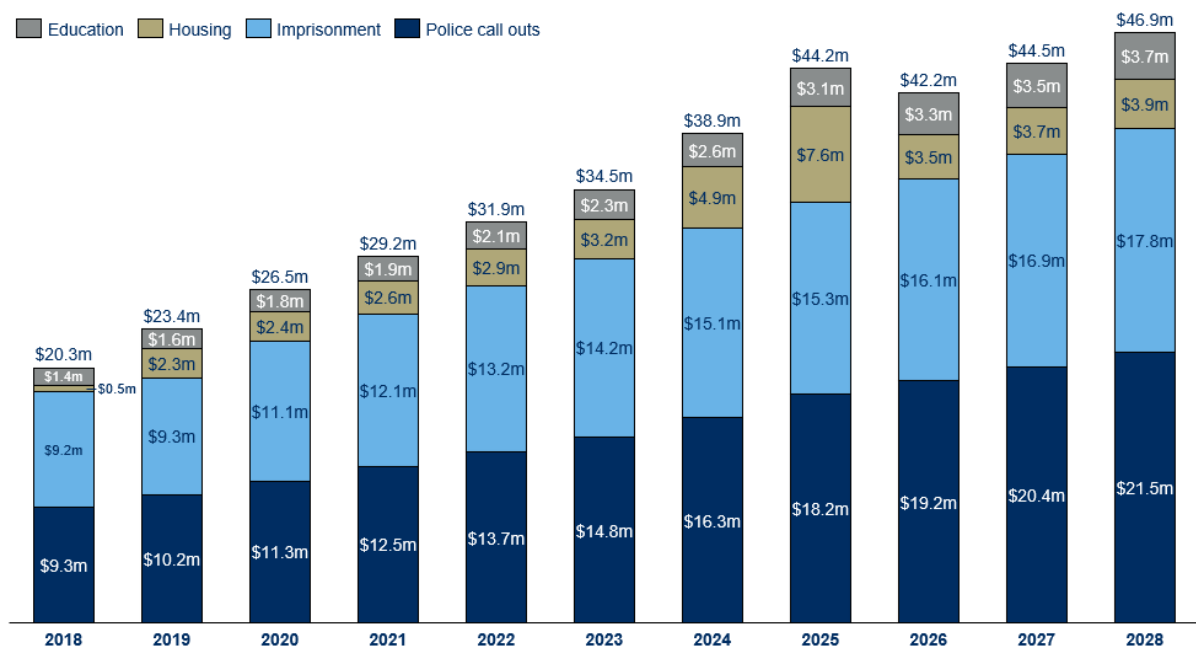


Figure 8.21: Total base case expenditure in Newman from 2018 – 2029 by category

<sup>55</sup> Note that Newman costs include costs incurred by transients (those visiting Newman but living in other communities). Per capita costs should be treated with caution, as the costs modelled in this analysis are not exhaustive.



### Scenario one – immediate closure

Scenario one presents as the most expensive option for the WA Government, costing \$3.6m more than the base case (in NPV terms). The drivers of cost in scenario one are the same as those in the base case, except that higher Newman based costs are incurred earlier due to the more immediate closure of the Parngurr community (see figure 8.3).

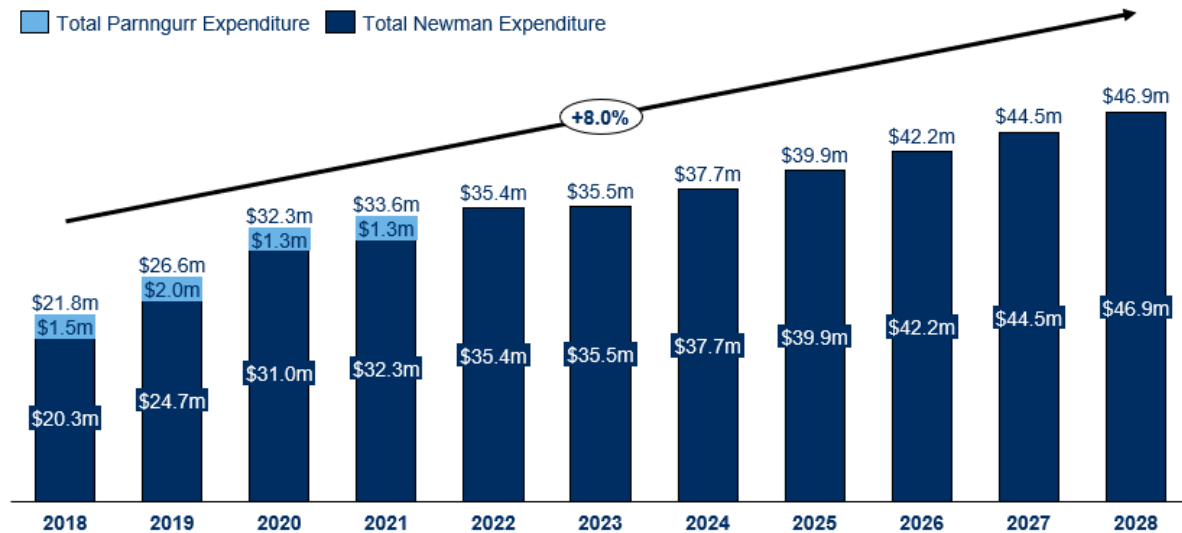


Figure 8.3: Scenario one expenditure in Parngurr and Newman from 2018 – 2029<sup>56</sup>

As the more costly and less palatable alternative to the base case, scenario one is not considered further in this report.

### Scenario two – minimal investment

In scenario two, the minimum necessary investment is made to keep the Parngurr population steady at its 2018 level of 127 people. In comparison to the base case, scenario two requires an investment of \$24.2m over 10 years (\$18.2m in NPV terms) which generates avoided costs in Newman of \$75.7m (\$56.6m in NPV terms), with a net saving of \$51.4m over the analysis period (\$38.3m in NPV terms). The profile of annual net savings is presented in figure 8.4 below.

<sup>56</sup> Note: these total costs include 'transients' (those who live in Parngurr but visit Newman)

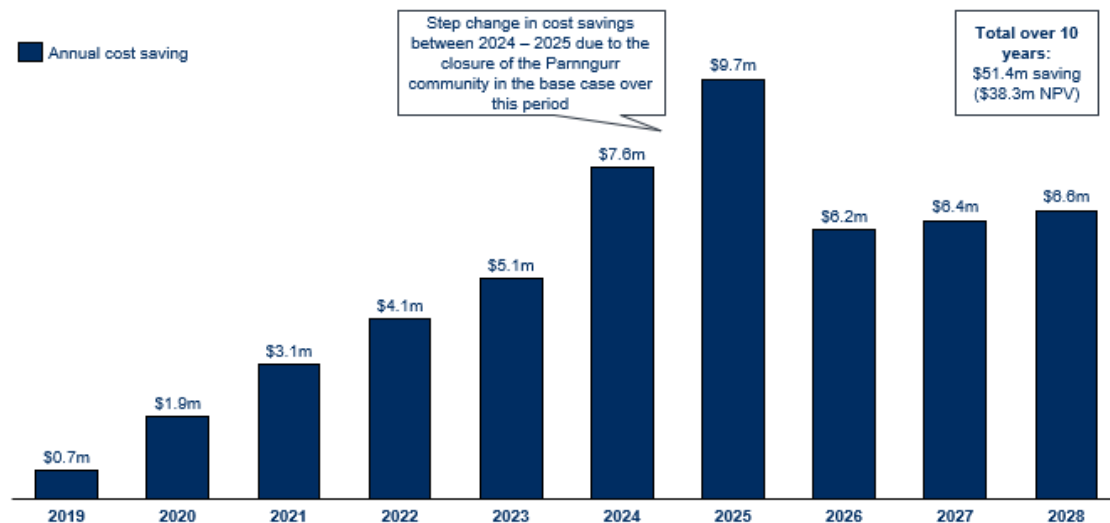


Figure 8.4: Annual net savings against the base case from 2018 – 2029 for scenario two

Compared to the base case, scenario two envisages additional expenditure of \$24.2m over the analysis period (or \$18.2m in NPV terms) in Parnngurr municipal and administrative services, health services, education, the Martu diversionary program and, most critically, refurbishment and on-going maintenance of the existing 25 Martu dwellings in Parnngurr (see section 6 for further commentary in relation to this scenario).

This expenditure provides Martu people with the choice to stay in community and prevents the community's closure. With Martu people choosing to remain in Parnngurr, lower costs are incurred in Newman, which generates net savings for the WA Government in the form of avoided housing, education, policing and imprisonment costs. Compared to the base case, the additional investment envisaged in scenario 2 results in \$75.7m of avoided costs in Newman over the analysis period, for a net saving to the WA Government of \$51.4m (\$38.3 in NPV terms).

The categories of investment and avoided costs are presented in figure 8.5 below.

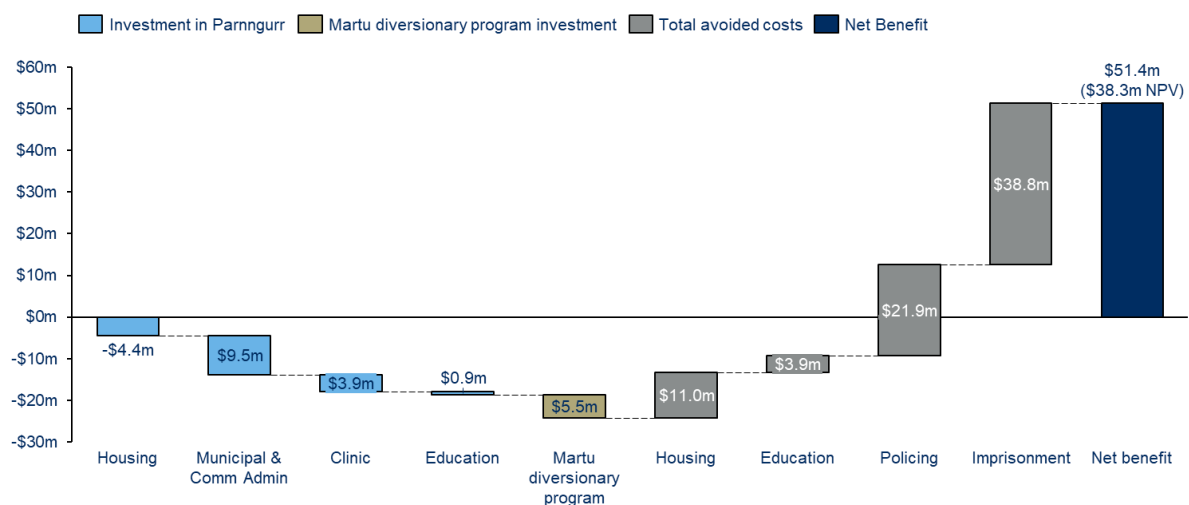


Figure 8.5: Investment and avoided cost in scenario two

Among other categories of investment, figure 8.5 identifies \$9.5m in municipal and community administration over the analysis period. The purpose of this investment is to reduce the need for Martu to visit Newman and incur costs as transients. Those investments include:

- A second community administrator: \$150,000 annually, commencing in 2019;
- A second remote area nurse: \$205,000 annually, commencing in 2020;
- Recurrent funding for the Martu diversionary program: \$550,000 annually, commencing in 2019 (described further below); and
- Discretionary community development costs: \$250,000 annually, commencing in 2019.

The final item, “discretionary community development costs,” is included to support a range of initiatives that might allow Parnngurr residents to deal with matters such as health, licensing, police appointments, Centrelink, court, banking and shopping in Parnngurr rather than in Newman. These initiatives could include:

- Video conferencing facilities, to enable remote court appearances, participation in meetings of community organisations and to facilitate licensing and police engagements;
- Improved access to Centrelink services, with specific attention to the needs of people who speak English as a second or third language and who have low levels of numeracy and literacy;
- Improved internet access to facilitate banking and other transactions; and
- More frequent delivery of perishable goods to the community shop, to minimise the need for people to shop in Newman.

These initiatives could be complemented by transport services, to enable people who do need to travel to Newman, or elsewhere (for specialist medical attention, for employment activities or to attend meetings of community organisations), to return promptly to the community.

### Scenario three – modest investment

Scenario three incorporates the same investment made in scenario two to maintain the current Parnngurr population and reduce the need for Parnngurr residents to visit Newman. The difference between scenario two and scenario three is the construction of five additional houses to attract Martu to relocate from Newman to Parnngurr. This leads to an increase in the Parnngurr population from 127 to 150 people.

Compared to the base case, scenario three envisages additional investment of \$27.7m over the analysis period (\$21.2m in NPV terms). The higher level of investment generates higher avoided costs of \$84.9m (\$63.6m in NPV terms). In comparison to the base case, scenario three delivers net savings to the WA Government of \$57.2m over the analysis period (\$42.3m in NPV terms). The profile of annual net savings is presented in figure 8.6 below.

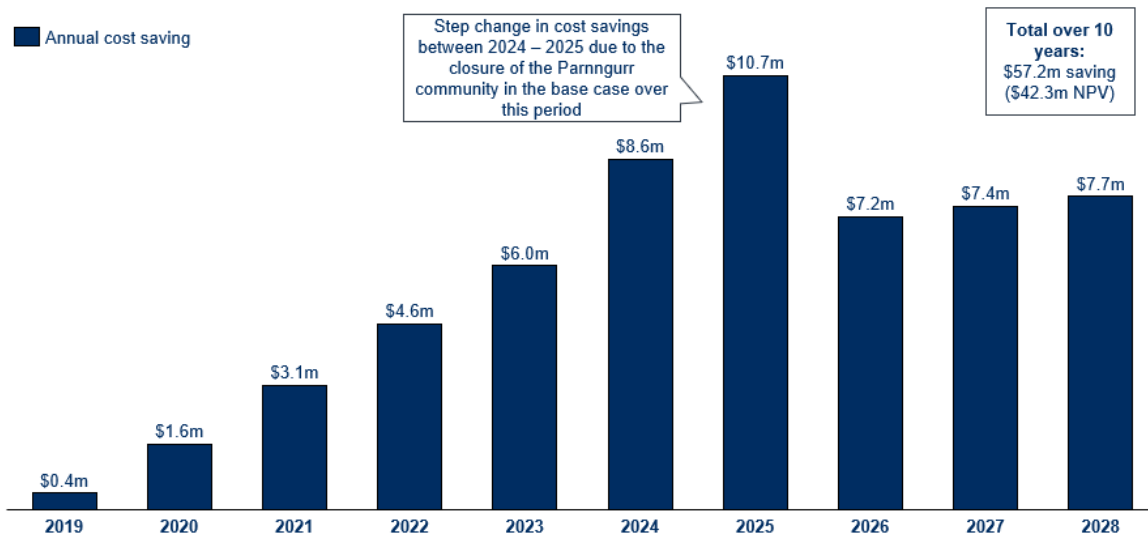


Figure 8.6: Annual savings against the base case from 2019 – 2028 for scenario three

In scenario three, an additional \$2.8m is invested in housing over the analysis period when compared with scenario two (predominantly non-recurrent expenditure), due to the construction of five additional Martu dwellings in Parnngurr. As with scenario two, investment in Parnngurr results in avoided housing, education, policing and imprisonment costs that would otherwise be incurred in Newman. Avoided costs are greater in each of those categories in scenario three, when compared to scenario two, due to the higher number of Martu living in Parnngurr.

The categories of investment and avoided costs are presented in figure 8.7 below.

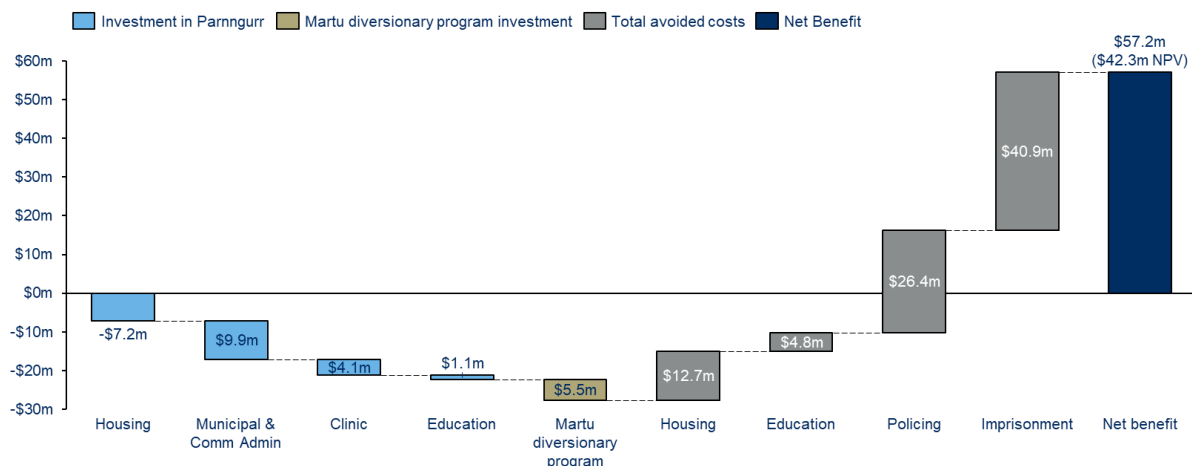


Figure 8.7: Investment compared with avoided cost over the analysis period for scenario three

A critical assumption driving higher net savings in scenario three (when compared to scenario two) is that Martu will choose to relocate to Parnngurr if additional housing is provided. In the community of Kunawarritji, Martu have previously demonstrated their willingness to return to the desert communities where there is an opportunity to reengage with country and culture, and to access realistic opportunities for meaningful employment. The case study of Kunawarritji (below) demonstrates that those opportunities can be created through targeted but modest investment, providing a precedent for the assumptions underpinning scenario three.

### Case Study – Kunawarritji

In 2015, a small number of Martu families lived in Kunawarritji, a very remote community located near Well 33 on the Canning Stock Route. The community had a store and health clinic and a single primary school class was run by a teacher from the community of Punmu, two hours away. There was little employment in the community, other than working the petrol bowsers for occasional, seasonal tourists on the Canning Stock Route and CDP.

In early 2016, Kanyirninpa Jukurrpa started delivering the ranger program in Kunawarritji. Within months, several families had moved back to the community from Port Hedland, Newman and Warralong, occupying all the vacant housing. Almost all of the men and women who returned had been serious drinkers in town. The average attendance at the school jumped from 8-12 children to 20-24 children. Fifteen men and three women started work with the ranger team. Several of these men and women joined the Martu Leadership Program and took places on the community council.

The provision of engaging activity and employment led to a revitalisation of one of Australia's most remote desert communities.

Given the scale of costs associated with Martu living in Newman, scenarios two and three demonstrate that only modest investment by the WA Government is required to generate significant savings.

### Implications by issue area

There are four categories of avoided cost which drive the results of this analysis: housing, education, policing and imprisonment. In this sub-section, each of these categories will be considered through a comparison of the base case and scenario three, in which the greatest savings (or avoided costs) are anticipated. Additional commentary is also provided in relation to the likely avoided costs associated with FASD, which have been excluded from the quantitative analysis due to an absence of reliable data, but which are expected to be substantial.

#### Housing

Scenario three presents a housing cost saving of \$5.5m when compared to the base case (\$4.0m in NPV terms), which includes both recurrent and non-recurrent expenditure. The total housing cost under the base case is \$37.0m over the analysis period compared to \$31.5m in scenario three. Non-recurrent housing expenditure is \$3.7m lower in scenario three.

This saving is driven by the avoided cost of new housing that is required in Newman under the base case to house 150 Martu who would otherwise be housed in existing (25) and new (5) Parnngurr housing under scenario three. As shown in figure 8.8 below, there is a significant increase in housing costs in the base case in the years 2024 and 2025 when Parnngurr is assumed to close.

In scenario three, an additional \$7.2m is spent on housing in Parnngurr, primarily in construction of five new dwellings and refurbishment of the existing 25 dwellings. This additional investment is overshadowed by the additional \$12.7m spent in Newman in the base case, when compared with scenario three. The principal issue is that, by allowing Parnngurr to close – as is assumed in the base case – the WA Government would lose the 25 existing Martu houses in Parnngurr (although offset in part by their need for refurbishment).

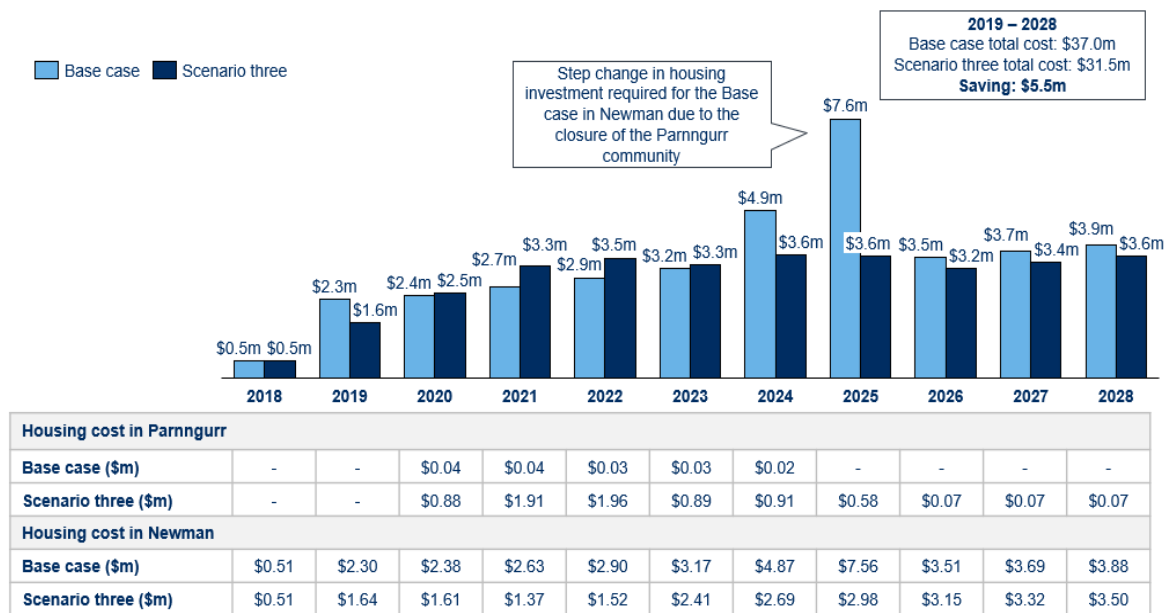


Figure 8.8: Comparison of base case and scenario three annual housing costs (maintenance, refurbishment, procurement of new housing) in Parnngurr and Newman

The most significant consideration in relation to housing, though, is not the \$5.5m of forecast savings over 10 years, but the projected savings in other domains that flow from a decision to invest in housing in the community of Parnngurr, rather than in Newman.

### Education

Scenario three presents an education cost saving of \$3.8m (\$2.7m in NPV terms) when compared to the base case. The total education cost under the base case is \$26.5m (\$20.2m in NPV terms) over the analysis period compared to \$22.8m (\$17.5m in NPV terms) in scenario three.

Throughout this report, only WA Government costs have been included in the analysis. The majority of the Parnngurr Community School's funding comes from the Australian Government (84% over the past five years). In effect, the cost to the WA Government of educating a child in Parnngurr is heavily subsidised by the Australian Government. The current WA Government contribution to education in Parnngurr is \$4,483 per child in Parnngurr.<sup>57</sup> The cost to the WA Government of educating a child in Newman is comparatively far higher, as there is no Australian Government subsidy. The cost has been estimated at \$36,577 per child, on the basis that all Martu school children will be eligible for a High Support Needs grant, available to children from pre-primary to Year 12.<sup>58</sup>

As depicted in figure 8.9 below, an additional \$1.1m is spent by the WA Government on education in Parnngurr in scenario three. But with fewer children living in Newman in scenario three when compared to the base case, there is a saving of \$4.9m on Newman education costs, resulting in a net saving for the WA Government of \$3.8m (\$2.7m in NPV terms).

<sup>57</sup> Advice of Todd Flanagan, Principal, Parnngurr Community School, June 2018; Myschool.edu.au

<sup>58</sup> Ministry of Education and Training, 2018, High Support Needs Grant Schedule

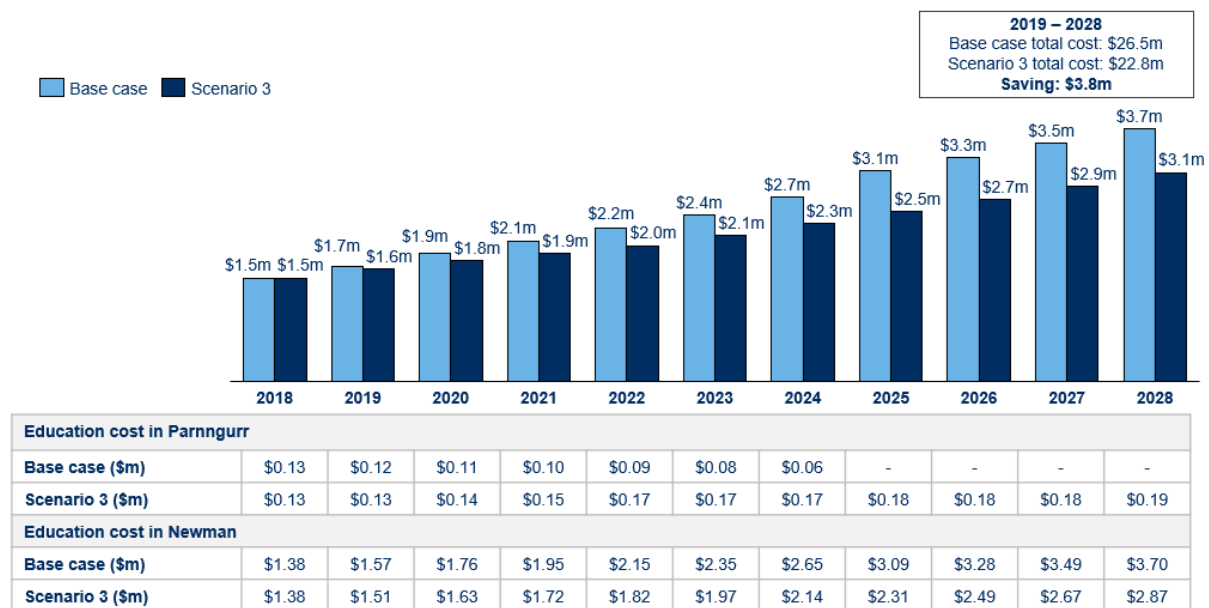


Figure 8.9: Comparison of base case and scenario three for annual education costs

### Policing

As described in section 4 above, when considering challenges facing Martu, significant growth in the Martu population in Newman is likely to precipitate a significant increase in anti-social behaviour in Newman. As Martu are forced to move from alcohol-free, Martu desert communities to the town of Newman, they will be more vulnerable to the destructive effects of alcohol abuse in Newman.

According to Newman police in August 2018,<sup>59</sup> approximately 90% of Newman police call outs are in response to incidents involving Martu people. In 2017, there were 3,813 police call outs in Newman, of which 3,431 can be assumed to be attributable to Martu. This implies approximately 9 call outs annually for each Martu person living in Newman (this calculation also accounts for an assumed number of transient Martu visiting Newman).

Considering the demographic implications of the scenarios described above and the propensity of Martu living in Newman to be the subject of police call outs, the base case analysis forecasts a dramatic increase in the number of police call outs and the associated cost. Over the analysis period, the annual base case policing costs are assumed to grow by 133%, from \$9.3m in 2018 to \$21.5m in 2028. The total cost of base case police call outs in response to Martu people in Newman over the analysis period is estimated at \$158.2m (\$120.8m in NPV terms). This cost is calculated with reference to an assumed cost per call out of \$2,697.<sup>60</sup>

By comparison, in scenario three, policing costs are assumed to grow to a lower level of \$17.3m in 2028, totalling \$131.7m over the analysis period (\$101.4m in NPV terms), a difference of \$26.4m when compared with the base case (\$19.4m in NPV terms).

The profile of these costs is illustrated in figure 8.10 below.

<sup>59</sup> Kanyirninpa Jukurrpa consultation with Newman police in August 2018

<sup>60</sup> Kanyirninpa Jukurrpa consultation with Newman police in August 2018. The average state-wide cost of "Response to and investigation of offences" was reported in the 2013/14 WA Police Annual Report as \$2,637 per incident. This figure has been inflated in line with growth in the average regional cost of policing, at a conservative rate of approximately 0.6% (below CPI).



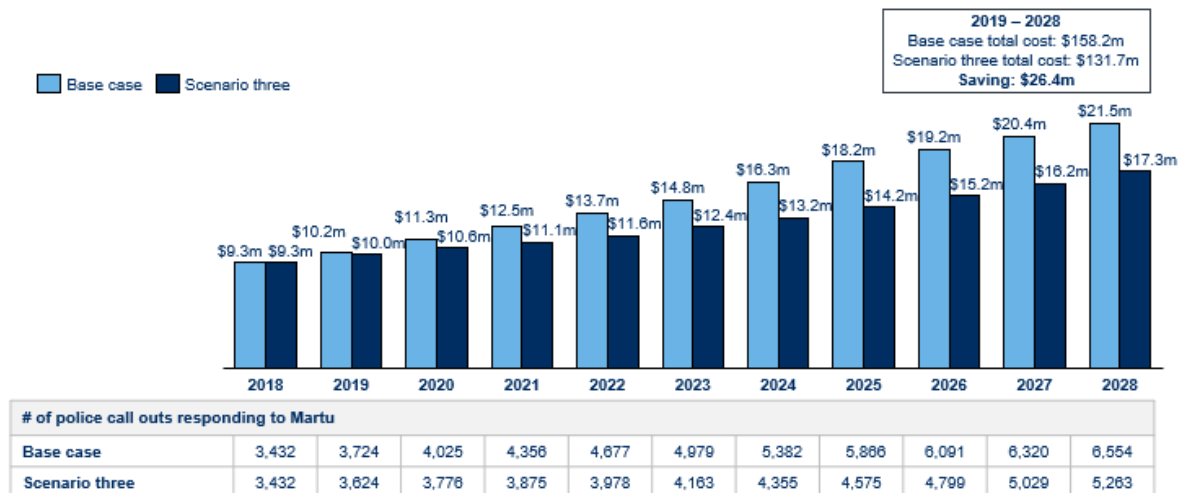


Figure 8.10: Comparison of base case and scenario three annual police call out costs

### Imprisonment

As explained in section 4 of this report, there were 89 Martu in prison in June 2018, accounting for 17% of the adult Martu population ordinarily resident in Newman.<sup>61</sup> The remaining Martu in prison are those described in this report as transients, visiting Newman (or other analogous towns) temporarily from other communities.

As described above in relation to policing costs, projected growth in the Martu population in Newman will precipitate an increase in the number of Martu in prison. When the current rate of imprisonment for Martu in Newman is applied to the projected increase in the Martu population, the number of Martu in prison in the base case – without investment in intervention programs – can be expected to increase to 135 by 2028 (see figure 8.11).

Associated annual imprisonment costs are forecast to grow in the base case from \$9.2m in 2018 to \$17.8m in 2028. The total base case cost over the analysis period is estimated at \$141.0m (\$108.5m in NPV terms). This cost is calculated with reference to the WA average cost of keeping an offender in custody of \$297/day.<sup>62</sup>

In contrast, in scenario three, the number of Martu in prison in 2028 is forecast to be substantially lower at 92 (a reduction of 32% compared to the base case). As a result, the annual imprisonment cost in 2028 is projected to decline from \$17.8m in the base case to \$12.2m in scenario 3. The total cost over the 10 year analysis period in scenario 3 is projected to be \$100.1m (\$77.8m in NPV terms), generating a \$40.9m saving (\$30.7m in NPV terms) when compared with the base case.<sup>63</sup>

<sup>61</sup> Of the 305 Martu living in Newman, 227 are adults. The Martu population in Newman was estimated through a separate census conducted by the Newman Women's Shelter.

<sup>62</sup> 2018/19 Western Australia Budget Paper, Part 7, pg. 354. Note that we understand the cost of imprisonment in Roeburne to be higher than the WA average, but we have not used those higher costs in our calculations as we have been unable to verify figures.

<sup>63</sup> Note that the \$40.9m saving is partially offset by the cost of delivering the Martu Diversionary Program and therefore represents a gross saving on imprisonment costs.

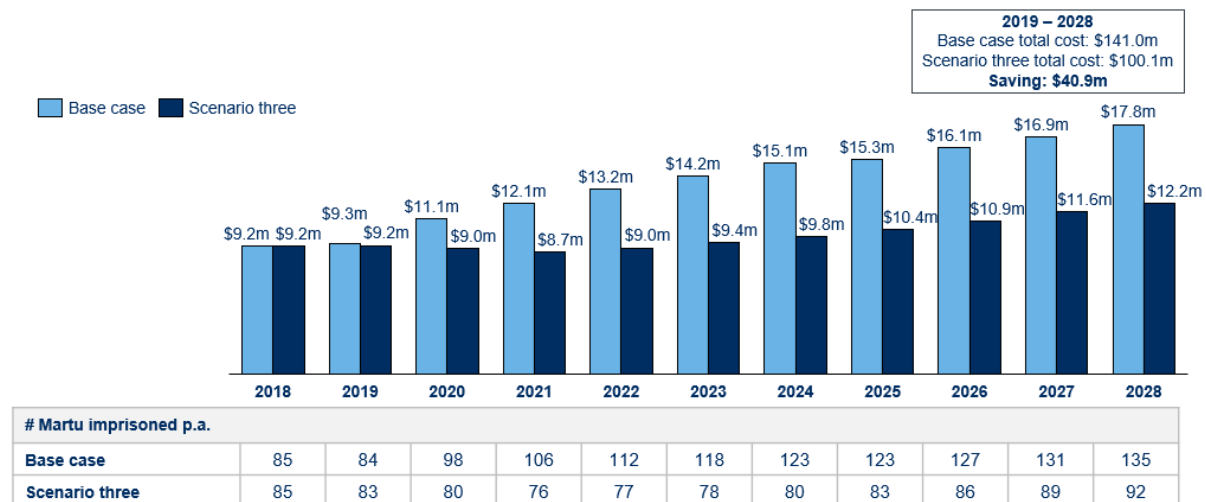


Figure 8.11: Comparison of base case and scenario three annual imprisonment costs

Given the scale and significance of these projected savings, it is instructive to disaggregate the projected \$40.9m saving on imprisonment costs in scenario three, compared to the base case. There are three separate drivers:

1. The lower Newman population in scenario three, when compared to the base case, delivers \$17.4m in savings over the analysis period.
2. The reduced number of transients visiting Newman in scenario three, when compared to the base case, as a result of community development and administration initiatives, leads to savings of \$1.4m (higher when policing savings are added).
3. The remaining \$22.1m in savings are generated by the Martu Diversionary Program, which seeks diversion from court, prison and alcohol to employment, education and rehabilitative programs in the Martu desert communities and on-country. (Note that the savings generated by the Martu Diversionary Program are contingent upon the investment of an additional \$5.5m over the analysis period for operation and administrative support of this program.)

The Martu Diversionary Program is an initiative of the Martu Leadership Program, delivered by Kanyirninpa Jukurrpa. It has emerged as a priority for Martu communities from discussions over the past two years. It is a response to community concern about high levels of imprisonment of Martu men and women.

The program has been designed in conjunction with the Pilbara magistrate and police, who support the creation of sentencing options, and with those managing the transitional program at Roebourne Regional Prison, which seeks to reduce recidivism.

Scenario three assumes that 20% of Martu who may potentially face imprisonment will participate in the Martu Diversionary Program in 2028, resulting in a lower rate of imprisonment. The Diversionary Program relies on the existence of the Martu desert communities as it can only be run on-country. In that way, projected imprisonment savings are directly referable to the health and sustainability of communities like Parnngurr.

### Fetal Alcohol Spectrum Disorder (FASD)

An additional consequence of Martu relocating to Newman and the associated increase in prevalence of alcohol abuse is the likely increase in incidences of FASD in children born in Newman. The Telethon Kids Institute describes FASD in the following terms: <sup>64</sup>

FASD is characterised by severe neurodevelopmental impairment resulting from an unborn child's exposure to alcohol during pregnancy. The effects of prenatal alcohol exposure are life-long and may not be seen at birth. Problems include brain damage leading to delayed development, social, behavioural and learning problems. These problems can lead to secondary outcomes such as poor school performance, unemployment, substance abuse, mental health problems and early engagement with the justice system.

FASD related costs impact directly on WA Government expenditure, particularly in relation to education, health and justice. And those costs are substantial. Thanh and Jonsson conducted a study into the life time costs of FASD in Canada in 2009, concluding that the average annual cost of FASD to the State is CAD\$12,808 per child (AUD\$14,295 per child).<sup>65</sup> Various US and Canadian studies have estimated the lifetime costs of FASD as being up to \$2m per child, including costs to the individual and the broader economy (e.g. loss of productivity).<sup>66</sup>

FASD is a growing problem in WA and particularly in the East Pilbara. In a workshop conducted by the WA Department of Indigenous Affairs with 12 old Martu women in Newman, participants identified that alcohol is “making babies born with deformities – not right, little size, sick.” They said they wanted “more education for them and other Martu... in the community, in the park, with families and big mob meetings... using local flip charts, drawing pictures and looking at what is going on inside the body when people drink.”<sup>67</sup>

But the prevalence of FASD in the Martu population remains unclear. Some service providers operating in the region believe that incidences may be as high as 50% amongst school age children in Newman. But in the absence of more reliable data, costs associated with FASD have been excluded from this analysis. On-going research by the Telethon Institute is likely to provide greater clarity around the prevalence and associated cost of FASD in Martu communities.

### **The profile of investment and avoided cost**

In order to realise the benefits (or avoided costs) described in scenarios two and three, investment is required in Parngurr. For the purposes of this analysis, “investment” is the additional non-recurrent and recurrent expenditure in Parngurr, and on the Martu Diversionary Program, compared to the base case; while “avoided cost” is the reduction in costs in Newman compared to the base case.

It is important to further describe the nature of non-recurrent and recurrent expenditure that is characterised as “investment” in this analysis. Scenario three includes \$27.7m of investment, but only \$6.8m of this is non-recurrent expenditure (housing refurbishment and construction in Parngurr). The remaining \$20.9m comprises:

- recurrent expenditure in Parngurr that is linked to demographics and would otherwise be incurred in Newman (e.g. housing maintenance, education and health services); and

<sup>64</sup> Telethon Kids Institute, New project to make FASD history in the Pilbara, 10 October 2016, accessed on 8 September at <https://www.telethonkids.org.au/news--events/news-and-events-nav/2016/october/new-project-to-make-fasd-history-in-the-pilbara/>

<sup>65</sup> Thanh NX, Jonsson E. (2009), Costs of Fetal Alcohol Spectrum Disorder in Alberta, Canada

<sup>66</sup> Lupton, Burd, and Harwood (2004), *Cost of Fetal Alcohol Spectrum Disorders*; Stade et al. (2009), *The burden of prenatal exposure to alcohol: revised measurement of cost*; Popova, Lange, Burd, and Rehm (2016), *The economic burden of Fetal Alcohol Spectrum Disorder in Canada in 2013*; Popova, Lange, Burd, and Rehm (2014). *Canadian Children and Youth in Care: The Cost of Fetal Alcohol Spectrum Disorder*.

<sup>67</sup> WA Department of Indigenous Affairs, Newman Discussion Paper: A focus on the Impact of Alcohol, and Remote Visitors, 10 October 2011, at p.6

- new recurrent expenditure in Parnngurr (e.g. additional community administration, community development expenditure and a remote area nurse) and the Martu Diversionary Program.

Much of this additional recurrent expenditure does not constitute an absolute WA Government commitment and can be subject to on-going assessment of effectiveness.

The table below summarises the level of investment and forecast avoided costs over the analysis period for each of scenarios two and three (presented visually in figures 8.5 and 8.7 above).

Category	Incremental investment and avoided cost compared to base case (\$m)	
Investment	Scenario 2	Scenario 3
<b>Non-recurrent expenditure</b>		
<i>Housing (refurbishment and construction)</i>	\$4.1m	\$6.8m
<b>Recurrent expenditure (total over 10 years)</b>		
<i>Housing (maintenance)</i>	\$0.3m	\$0.4m
<i>Health</i>	\$3.9m	\$4.1m
<i>Municipal services</i>	\$9.5m	\$9.9m
<i>Education</i>	\$0.9m	\$1.1m
<i>Martu diversionary program (note: only a small proportion will be incurred in very remote communities)</i>	\$5.5m	\$5.5m
<b>Total investment</b>	<b>\$24.2m (\$18.2m NPV)</b>	<b>\$27.7m (\$21.2m NPV)</b>
<b>Avoided cost (total over 10 years)</b>	<b>Scenario 2</b>	<b>Scenario 3</b>
<i>Policing</i>	\$21.9m	\$26.4m
<i>Imprisonment</i>	\$38.8m	\$40.9m
<i>Housing</i>	\$11.0m	\$12.7m
<i>Education</i>	\$3.9m	\$4.8m
<b>Total avoided cost</b>	<b>\$75.7m (\$56.6m NPV)</b>	<b>\$84.9m (\$63.6m NPV)</b>

Category	Incremental investment and avoided cost compared to base case (\$m)	
<b>Net saving</b>	<b>\$51.4m</b> <b>(\$38.3m NPV)</b>	<b>\$57.2m</b> <b>(\$42.3m NPV)</b>
<b>Benefit to cost ratio</b> <i>(avoided cost: investment vs base case in NPV terms)</i>	<b>3.1</b>	<b>3.0</b>

The table above highlights differences between scenarios two and three. In scenario three, a higher level of investment – predominantly non-recurrent expenditure on the construction of five additional houses in Parnngurr – realises avoided costs across each of the relevant categories. The benefit to cost ratio of the two scenarios is comparable, at 3.1 and 3.0 respectively.

Scenario two identifies the level of investment required to stave off the closure of Parnngurr and the costs that will be avoided as a consequence, with an attractive rate of return for the WA Government.

Scenario three identifies that the WA Government could achieve further savings, at a similar rate of return, with each additional house that is constructed in Parnngurr.

A common challenge when considering the need for government investment in social outcomes is that savings are often realised well after the investment is required. In the context of place-based initiatives in very remote Aboriginal communities, a high level of investment is often required in long-term capacity building initiatives, with outcomes anticipated at a population level over a period of decades.

In the case of the Martu desert communities, much of the required capacity building has already been implemented successfully over the past 10 years, and the governance and program management structures necessary to achieve further gains are already in place. Further details of this progress are set out in the Supplementary KJ Report.

The modest WA Government investment envisaged in scenarios two and three builds directly upon these initiatives, leveraging third party investment from the Australian Government and private funders.

The analysis indicates that, as a consequence of additional investment envisaged in scenarios two and three, savings are realised immediately when compared to the base case.

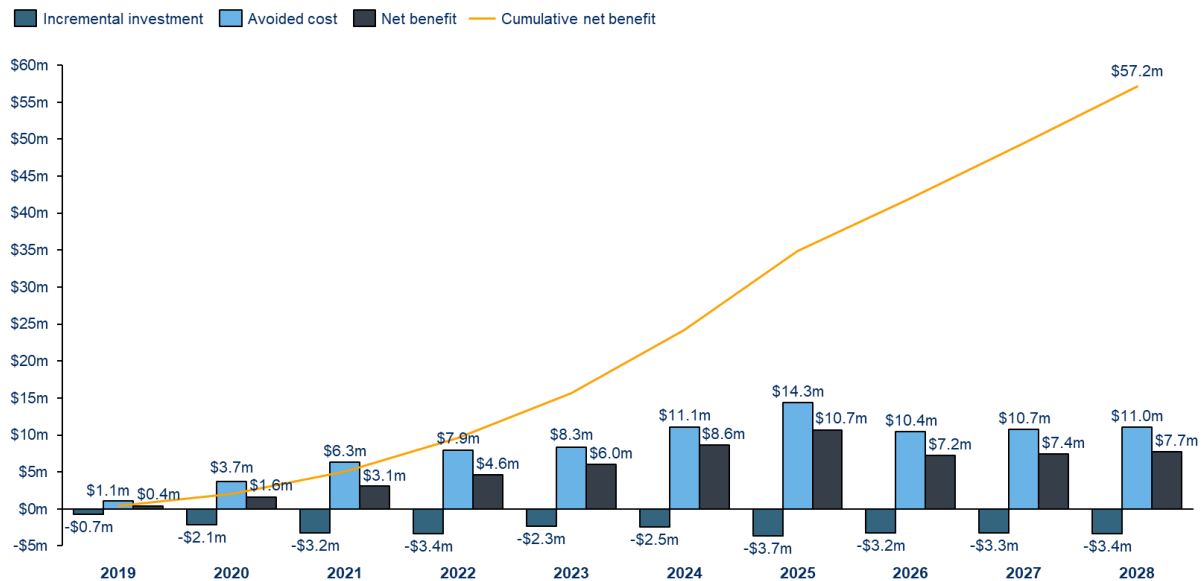


Figure 8.12: Comparison of base case and scenario three annual incremental investment, avoided cost and net benefit (annual and cumulative)

The reason that savings are realised so early is that, in scenarios two and three, Martu stay in Parnngurr rather than relocating to Newman and incurring higher housing (in 2019) and policing and imprisonment costs (from 2020, in particular). For the scenario three assumptions to hold, it will be important for Martu to see that progress is being made on tenure issues and that investment in housing will immediately follow.

The analysis period has been confined to ten years, but the trajectory of the cumulative net benefit indicates that savings to the WA Government will be far greater beyond the analysis period.

The WA Government would need to adopt a place-based, whole of government approach to achieve and recognise the anticipated returns, as the various categories of investment and avoided cost vest in different departments. At its most basic, the Department of Communities would need to invest in housing and community development in Parnngurr to realise savings for the WA Police and the Department of Justice in Newman.

## Sensitivity analysis

In any complex modelling exercise there is inherent uncertainty in the results, so it is important to consider sensitivities in the analysis. In many instances, historical data has been provided by government agencies and service providers operating in Parnngurr and Newman, allowing for the projection of costs with a relatively high degree of confidence.

Assumptions included in the analysis that give rise to uncertainty include the following:

- **Demographics:** Demographic changes are a critical driver of the analysis and should be tested on several dimensions:
  - The analysis assumes the Martu population growth rate across the region to be in line with ABS forecasts for growth in the WA Aboriginal and Torres Strait Islander population. As this forecast is not specific to the East Pilbara, this assumption should be tested.
  - The analysis assumes a proportion of the population living in communities will need to visit Newman and in doing so, will incur costs related to alcohol consumption (referred to as transients). Actual data related to transients (i.e. length of stay,

proportion of community visiting) is very difficult to obtain and the applied assumptions are based partly on old survey data and the observations of service providers operating in Newman and Parnngurr. Given this uncertainty, the sensitivity of these assumptions should be tested.

- **Costs assumptions:** the major costs assumed are those associated with new housing, police call outs and imprisonment. These costs have been sourced from government agencies and validated by community contacts to ensure relevance to the local context. But residual uncertainty remains in these data points.
- **Propensity assumptions:** the rate at which Martu are likely to engage in anti-social behaviour when living in Newman has been best calculated based on current volume data provided by government agencies and checked through both community consultations and the experience of local service providers. These assumptions carry a lesser degree of confidence, due to the limitations of reliable, historical data and the rates assumed in the analysis have a significant bearing on the results.

In the table below, we have considered the impact of each sensitivity on the scenario three result, being the scenario that generates the greatest benefits and is therefore the most highly affected.

Key sensitivity	Assumption		Rationale	NPV of scenario three compared to base case and assessment of sensitivity (low to high) <sup>68</sup>
<b>Demographics</b>				
<b>Population growth rate</b>	Current	2.2%	ABS forecast for Aboriginal and Torres Strait Islanders in WA (Projection series A: high case)	-\$42.3m (No change)
	High	4.0%	Although higher than the historical 2.9% rate for Aboriginal people in the region, this rate is more consistent with the expectations of service providers operating in the region	-\$45.4m (-\$3.1m) (Medium sensitivity)
	Low	1.9%	ABS forecast for Aboriginal and Torres Strait Islanders in WA (Projection series C: low case)	-\$42.2m (+0.1m) (Low sensitivity)

<sup>68</sup> Low sensitivity: <10% change; Medium sensitivity: 10-15% change; High sensitivity: 15%+ change



Key sensitivity	Assumption		Rationale	NPV of scenario three compared to base case and assessment of sensitivity (low to high) <sup>68</sup>
Transients	Current	<p><u>Parnngurr:</u></p> <p>Base case: 80% of Martu in Parnngurr spend time visiting Newman increasing to 100% from 2022 as the community has less investment</p> <p>Scenario three: 80% of Martu in Parnngurr spend time in Newman, reducing to 50% by 2024</p> <p><u>Punmu, Kunawarritji:</u></p> <p>50% spend time visiting Newman in both the base case and scenario three</p> <p><u>Jigalong:</u> 80% spend time visiting Newman in both the base case and scenario three</p>	<p>WA Department of Indigenous Affairs Survey, 2009</p> <p>Community consultations and observations</p>	<p>-\$42.3m</p> <p>(No change)</p>
	Alternative	<p>“Transients” are not included in the analysis</p>	<p>Conservative scenario – excluding all ‘transients’ from the analysis due to the difficulty in verifying assumptions</p>	<p>-\$34.2m (+\$8.2m)</p> <p>(High sensitivity)</p>
<b>Cost assumptions</b>				
Cost of procuring Newman housing	Current	\$250k	Estimates from BHP (major property owner of housing in Newman) for the average house purchase and necessary refurbishment	<p>-\$42.3m</p> <p>(No change)</p>
	High	\$500k	Estimated cost of building houses in very remote Australia	<p>-\$47.0m (-\$4.7m)</p> <p>(High sensitivity)</p>
	Low	\$170k	Current market value of 3-4 bed house in Newman	<p>-\$40.8m (+\$1.5m)</p> <p>(Low sensitivity)</p>

Key sensitivity	Assumption		Rationale	NPV of scenario three compared to base case and assessment of sensitivity (low to high) <sup>68</sup>
Imprisonment	Current	\$297/day	Cost from the 2018/19 Western Australia Budget Paper, however does not account for the high proportion of Martu in Roebourne prison, which is understood to be higher than average cost per capita	-\$42.3m (No change)
	High	\$356/day	+20% from the current average cost	-\$48.5m (-\$6.1m) (High sensitivity)
	Low	\$238/day	-20% from the current average cost	-\$36.2m (+\$6.1m) (High sensitivity)
Police call outs	Current	\$2,697/call out	Cost sourced from Newman police	-\$42.3m (No change)
	High	\$3,236/call out	+20% of costs sourced from Newman police	-\$46.2m (-\$3.9m) (Medium sensitivity)
	Low	\$2,158/call out	-20% of costs sourced from Newman police	-\$38.5m (+\$3.9m) (Medium sensitivity)
<b>Propensity</b>				
Police call outs	Current	3,413 Martu call outs in FY18	Police call out volumes sourced from the Newman Police with an estimate that 90% of the total 3,813 call outs in FY18 were for Martu (3,413 Martu call outs)	-\$42.3m (No change)
	High	3,813 Martu call outs in FY18	If police call outs were 100% attributed to Martu	-\$44.5m (-\$2.2m) (Low sensitivity)
	Low	2,669 call outs in FY18	If police call outs were 70% attributed to Martu	-\$38.0m (+\$4.3m) (High sensitivity)
Imprisonment	Current	15% of Martu in prison per Newman resident	Based on actual data	-\$42.3m (No change)

Key sensitivity	Assumption		Rationale	NPV of scenario three compared to base case and assessment of sensitivity (low to high) <sup>68</sup>
<b>(Newman residents)</b>	High	18% of Martu in prison per Newman resident	+20% from current imprisonment rate	-\$47.0m (-\$4.6m) (High sensitivity)
	Low	12% of Martu in prison per Newman resident	-20% from current imprisonment rate	-\$37.7m (+\$4.6m) (High sensitivity)
<b>Imprisonment (transients to Newman)</b>	Current	56% of transients in prison (where transients are calculated as equivalent full-time residents)	Based on actual data	-\$42.3m (No change)
	High	67% of transients in prison	+20% from current imprisonment rate	-\$43.9m (-\$1.6m) (Low sensitivity)
	Low	45% of transients in prison	-20% from current imprisonment rate	-\$40.8m (+\$1.5m) (Low sensitivity)

The biggest sensitivity in the analysis is the inclusion of transients, contributing \$8.2m to the overall savings in scenario three. However, this is an important cohort to include in the analysis, as evidenced by the 2011 Department of Indigenous Affairs Report. The only reason to exclude this cohort would be due to the relative uncertainty around appropriate assumptions.

Other key sensitivities include the propensity and cost assumptions related to imprisonment and policing costs. This is unsurprising, given that these two cost components account for 79% of the avoided costs in scenario three.

It is important to note that a conservative position has been adopted in relation to many other cost categories that could have been included in this analysis. Costs associated with FASD and out-of-home care, for instance, have been excluded on account of unreliable data.

If all four of the highly sensitive, low assumptions were adopted, scenario three would still deliver a \$25.9m NPV saving for the WA Government, when compared with the base case, at a benefit cost ratio of 2.2.

If all three of the highly sensitive, high assumptions were adopted, scenario three would deliver a \$58.7m NPV saving for the WA Government, when compared with the base case, at a benefit cost ratio of 3.8.

## 9. Understanding the implications

### Summary of implications

1. Relatively modest investment in the very remote Martu desert communities can lead to significant cost savings in Newman.
2. The achievement and recognition of anticipated cost savings requires the WA Government to adopt a place-based, whole of government approach, as the various categories of investment and avoided cost vest in different departments.
3. The greatest driver of savings lies in keeping the Martu desert communities open.
4. Even greater savings could be realised if more houses were constructed in Parnngurr or the other Martu desert communities. Each new house constructed in those communities will avoid the cost of procuring an additional house in Newman and deliver recurrent cost savings of around \$200,000 per annum.
5. Investment in the Martu desert communities, and in the people who live there, can allow Martu to reconnect with culture and country and simultaneously build their capacity to navigate the mainstream.
6. When making decisions about long-term investment in and around very remote Aboriginal communities, it is critical that the context of place, both at a regional and community level, is considered. At a minimum, we must understand the reasons why people have chosen to return to their traditional lands and the likely consequences of forcing those people back to centralised towns.

Investment in Parnngurr akin to that described in scenarios two and three offers the best returns for the WA Government. The analysis demonstrates that relatively modest investment in the Martu desert communities can lead to significant cost savings in Newman.

But the achievement and recognition of anticipated cost savings requires the WA Government to adopt a place-based, whole of government approach, as the various categories of investment and avoided cost vest in different departments. The Department of Communities would need to invest in housing and community development in Parnngurr to realise savings for the WA Police and the Department of Justice in Newman.

In scenario two, investment of \$24.2m (\$18.2m in NPV terms) delivers \$75.7m in avoided costs over the analysis period (\$56.6m in NPV terms) when compared to the base case.

In scenario three, investment of \$27.7m (\$21.2m in NPV terms) delivers \$84.9m in avoided costs over the analysis period (\$63.6m in NPV terms) when compared to the base case, at a benefit to cost ratio that is comparable with scenario two.

The calculation of avoided cost in this analysis is subject to demographic change, with three relevant drivers:

1. The community of Parnngurr staying open;
2. The flow of transients into Newman being reduced; and
3. Martu being attracted to relocate from Newman to Parnngurr.

The first two drivers are common to both scenarios two and three. The purpose of including scenario three in this analysis is to understand the impact of the third driver, which is not relevant to scenario two.

Of these three drivers, the first – keeping the community of Parnngurr open – has the most significant bearing upon the analysis, accounting for almost \$70m in avoided costs over the analysis period. It is also a necessary precondition to achieving the savings associated with the second driver – reduction of the flow of transients into Newman. The analysis clearly demonstrates that the long-term health of the Martu desert communities should be a priority for the WA Government.

A comparison of scenarios two and three reveals savings associated with the third driver – attracting Martu to relocate to Parnngurr – of around \$10m. These savings are generated through the construction of five additional houses in Parnngurr. But there is strong demand for additional housing in the Martu desert communities, driven by Martu population growth and a desire amongst Martu living in Newman to relocate to the Martu desert communities. Additional very remote housing need not be capped at five houses. Even greater WA Government savings could be generated if more houses were built in Parnngurr, or the other Martu desert communities.

Scenario three envisages construction of five new Martu dwellings because there are five serviced lots in Parnngurr. Each new house constructed in those communities will avoid the cost of procuring an additional house in Newman and deliver recurrent cost savings of around \$200,000 per annum. These recurrent savings offset any difference between the cost of very remote housing and housing procured in Newman in the first year. Recurrent cost savings then accrue in all subsequent years, including beyond the ten-year analysis period.

Housing is clearly a threshold issue in enabling Martu to stay in Parnngurr, but it is not the only issue requiring attention. Further measures identified in scenario two and three will be instrumental in improving the lives of Martu living in Parnngurr and reducing the rate of Martu visitation to Newman. While the identified measures offer a starting point, investment decisions should be made in partnership with Martu to ensure that money is well spent.

It is important that this report is not interpreted as consigning Martu to a life of segregation. Rather, scenarios two and three have been constructed in response to clear Martu priorities, grounded in a strong desire to live on country. The recent experience of Kanyirninpa Jukurrpa is that this can create the space to invest in people, allowing them to reconnect with culture and country and simultaneously build their capacity to navigate the mainstream. These aspects are considered in more detail in the Supplementary KJ Report.

In time, this investment may enable development of a sustainable and viable Martu economy on country. Long term investment in capacity building initiatives has been occurring on Martu country in the past decade, funded by the Australian Government and private funders. An absence of investment by the WA Government in Parnngurr housing and community development would put the value of that co-investment at risk.

It is tempting to think that the results of this analysis could inform investment decisions about very remote Aboriginal communities across the country. But this would be unwise. The geographic, demographic, socio-economic and cultural context of Martu living in Parnngurr and Newman is unique. No two Aboriginal communities in Australia have the same set of conditions; a critical reason for the historical mixed success of blanket national policies and programs in Indigenous Affairs.

However, the results of the analysis highlight a broader learning of relevance beyond Martu country. When making decisions about long-term investment in and around very remote Aboriginal communities, it is critical that we consider the context of place, both at a regional and community level. At a minimum, we must understand the reasons why people have chosen to return to their traditional lands and the likely consequences of forcing those people back to centralised towns.

Without an appreciation of this context, we will not be able to make good decisions about the future of very remote communities, thus undermining the priorities of Aboriginal and Torres Strait Islander peoples and their long-term health and wellbeing.

## Appendix 1 – List of abbreviations

ATSIC	Aboriginal and Torres Strait Islander Commission
ABS	Australian Bureau of Statistics
BHP	BHP (global resources company)
CAPEX	Capital expenditure
COAG	Council of Australian Governments
FaHCSIA	Department of Families, Housing, Community Services and Indigenous Affairs (Commonwealth)
FASD	Fetal Alcohol Spectrum Disorder
kL	Kilolitre
kW	Kilowatt
OPEX	Operating expenditure
PAMS	Puntukurnu Aboriginal Medical Service
PM&C	Department of the Prime Minister and Cabinet
SROI	Social Return on Investment
SVA	Social Ventures Australia
WA	Western Australia

## Appendix 2 – List of advisers, consultations and surveys

### Advisors

- Andy Redden, Director, Keystone Support Pty Ltd, Accountant for Parnngurr Aboriginal Corporation
- Maggie Lewis, CEO, Newman Women's Shelter
- Mark Fleskens, Officer in Charge, Newman Police Station
- Melanie Croke, Regional Manager, Housing Division Pilbara, WA Department of Communities
- Peter Johnson, Manager, Strategy and Governance, Kanyirninpa Jukurrpa
- Richard Taylor, Advisory Director, Kanyirninpa Jukurrpa
- Robby Chibawe, CEO, Puntukurnu Aboriginal Medical Service
- Terry Bailey, Consultant to Kanyirninpa Jukurrpa
- Todd Flanagan, Principal, Parnngurr Community School

### Consultations and surveys

- Census of Martu living in Newman, conducted by Newman Women's Shelter, April 2018
- Census of Martu living in Parnngurr, conducted by Kanyirninpa Jukurrpa, September 2017
- Consultations with Martu living in Parnngurr, Punmu and Kunawarritji, conducted by Kanyirninpa Jukurrpa, November 2017
- Martu prisoner numbers provided by Newman Women's Shelter, June 2018 (included Roebourne, Greenough, Acacia, Casaurina, Kalgoorlie, Derby)
- Newman police consultation, conducted by Kanyirninpa Jukurrpa, August 2018



## Appendix 3 – Assumptions and sources list

Data category	Data point	Approach and rationale	Data sources
Population	Population across each community	<ul style="list-style-type: none"> <li>Population estimates were sourced from 2016 ABS Census data for Jigalong, Parnngurr, Punmu and Kunawarritji.</li> <li>The Parnngurr population was validated by a door to door census of houses and residents conducted by Kanyirninpa Jukurrpa in September 2017.</li> <li>Census data cannot be used to ascertain the number of Martu living in Newman, as a broader Aboriginal and Torres Strait Islander population lives in Newman. The Newman Martu population estimate is based on a door to door census conducted by the Newman Women's Shelter in 2018.</li> </ul>	<p>2016 ABS Census, Aboriginal and Torres Strait Islander population for Parnngurr, Jigalong, Punmu and Kunawarritji</p> <p>2017 Parnngurr Census, Kanyirninpa Jukurrpa</p> <p>2018 Newman Census, Newman Women's Shelter</p>
	Forecast population growth rate	<ul style="list-style-type: none"> <li>The analysis applies the ABS' forecast population growth rate for the Aboriginal and Torres Strait Islander population in Western Australia of 2.2% p.a.</li> </ul>	2018 ABS Aboriginal and Torres Strait Islander Population Projections, Western Australia.
	Transients	<ul style="list-style-type: none"> <li>Martu people who do not live in Newman still visit Newman on a regular basis to access essential services.</li> <li>During the time that Martu spend in Newman, they are vulnerable to the accessibility of alcohol and are equally likely to engage in anti-social behaviour as those living in Newman.</li> <li>A 2009 WA Department of Indigenous Affairs survey offers insight into Martu visitation to Newman.</li> <li>When accounting for the transient population, the analysis assumes that Martu people who do not live in Newman, visit Newman for 60 days in a year. A distinction is made</li> </ul>	<p>WA Department of Indigenous Affairs, Newman Discussion Paper: A focus on the Impact of Alcohol, and Remote Visitors, 10 October 2011</p> <p>Community consultations</p> <p>Advice of local service providers</p>

		<p>about the proportion of people who will visit Newman from each community, due to accessibility.</p> <ul style="list-style-type: none"> <li>○ 80% of Jigalong and Parnngurr residents are assumed to visit Newman</li> <li>○ 50% of Punmu and Kunawarritji residents are assumed to visit Newman</li> <li>• There is no existing data set that can be used to verify these assumptions.</li> <li>• The sensitivity analysis shows little impact on overall results if costs associated with transients are excluded.</li> </ul>	
<b>Costs general</b>	<b>Consumer Price Index (CPI)</b>	<ul style="list-style-type: none"> <li>• Average CPI rates over the past ten years are 2.0%</li> <li>• Forecast CPI rates to 2020 are also 2.0%</li> <li>• Accordingly, costs have been inflated with reference to an assumed CPI of 2%</li> </ul>	<p>ABS historical CPI rates</p> <p>Average of Trading Economics' forecast inflation rate to 2020</p>
<b>Housing</b>	<b>Parnngurr housing</b>	<ul style="list-style-type: none"> <li>• A September 2017 census conducted by Kanyirnipa Jukurrpa shows that there are 25 existing dwellings in Parnngurr.</li> <li>• The absence of existing maintenance arrangements was confirmed by the Parnngurr Aboriginal Corporation.</li> <li>• Estimated housing costs were informed by consultation with the Pilbara Housing Division of the WA Department of Communities: <ul style="list-style-type: none"> <li>○ \$2,000 annually for maintenance per dwelling</li> <li>○ \$150,000 per house for major refurbishments</li> <li>○ \$500,000 for new construction</li> <li>○ \$250,000 for an assessment of power generating capacity and other infrastructure associated with the construction of five new houses on existing house sites</li> </ul> </li> <li>• Community consultation by Kanyirninpa Jukurrpa in November 2017 identified that housing was the number one concern for Martu living in Parnngurr and provided further data in relation to the state of housing observed by service providers working in Parnngurr.</li> </ul>	<p>Parnngurr housing census (housing stock)</p> <p>Parnngurr Aboriginal Corporation</p> <p>Housing Division of Pilbara, WA Department of Communities (costs)</p> <p>Community consultations conducted by Kanyirninpa Jukurrpa, November 2017 (state of housing)</p>

	<b>Newman housing</b>	<ul style="list-style-type: none"> <li>The current estimate of 49 Martu houses in Newman is based on the 2018 Newman census conducted by the Newman Women's Shelter.</li> <li>Public housing waitlists are currently at capacity. Martu people relocating to Newman from Jigalong and the Martu desert communities are assumed to require additional housing in Newman.</li> <li>The assumed purchase cost of housing in Newman is \$250k per house. This is based on an estimated market value of \$100k plus an additional \$150k required for refurbishment, given the poor quality of this housing. To account for the variability in housing prices, the sensitivity analysis considers house purchases across a range of \$170k to \$500k and shows that there is low sensitivity of the analysis to housing prices.</li> <li>Other estimated housing costs were informed by consultation with the Pilbara Housing Division of the WA Department of Communities: <ul style="list-style-type: none"> <li>\$10,389 annually for maintenance per dwelling</li> <li>\$150,000 per house for major refurbishments</li> <li>\$500,000 for new construction.</li> </ul> </li> </ul>	2018 Newman Women's Shelter Census  Housing Division of Pilbara, WA Department of Communities
	<b>Jigalong, Punmu and Kunawarritji housing</b>	<ul style="list-style-type: none"> <li>Assumed transfers of Martu in Jigalong, Punmu and Kunawarritji to Newman are assumed to need incremental housing</li> </ul>	Community consultations
<b>Costs and incidences associated with anti-social behaviour</b>	<b>Police call outs</b>	<ul style="list-style-type: none"> <li>The estimated number of police call out incidences attributed to Martu was sourced from the Newman police (90% of the 3,813 call outs in 2017 were attributed to Martu: 3,413 call outs).</li> <li>This represents an estimate of 9 call outs per Martu in Newman (including transients).</li> <li>This incidence rate was then extrapolated to the forecasted population in Newman to estimate the future volume of police call outs.</li> <li>An estimated cost per call out was sourced through consultation with Newman police in August 2018. This figure was triangulated with the average state-wide cost of "Response to and investigation of offences", reported in the 2013/14 WA Police Annual Report as</li> </ul>	2018 Newman police consultations  2013/14 WA Police Annual Report

		<p>\$2,637 per incident. This figure has been inflated in line with growth in the average regional cost of policing, at a conservative rate of approximately 0.6% (below CPI).</p> <ul style="list-style-type: none"> <li>The assumed daily cost used was \$2,697 per incident.</li> <li>Inflation was applied to this cost over the 10 years.</li> </ul>	
	<b>Imprisonment</b>	<ul style="list-style-type: none"> <li>The Newman Women's Shelter counted the number of Martu in prison.</li> <li>As at June 2018, there were 89 Martu in prison, 46 of whom were Newman residents, representing 17% of the adult Martu population ordinarily resident in Newman. The remaining Martu in prison are typically those living in other communities, who have come into contact with the justice system through their visits to Newman, often to access essential services.</li> <li>This rate was then extrapolated to the forecasted population in Newman to estimate the number of imprisonments over the analysis period.</li> <li>The cost/day used was \$297/day which is sourced from the 2018/19 Western Australia Budget Paper. Note that the cost of imprisonment in Roeburne (where the majority of Martu are imprisoned) is understood to be higher than the WA average, but it has not been possible to verify figures.</li> <li>Inflation was applied to the daily cost of \$297/day.</li> </ul>	<p>2018 Count of Martu prisoners, Newman Women's Shelter</p> <p>2018/19 Western Australia Budget Paper, Part 7, pg. 354</p>
<b>Education</b>	<b>Costs in Parnngurr</b>	<ul style="list-style-type: none"> <li>Education costs in Parnngurr have been calculated by dividing the WA Government funding contribution by the number of students enrolled.</li> <li>In 2018, Parnngurr Community School received \$130,000 in WA Government funding as a contribution to the cost of educating 29 enrolled Martu students (\$4,483 per student).</li> <li>The majority of the school's funding comes from the Australian Government, meaning that WA Government education expenditure in Parnngurr is heavily subsidised by the Commonwealth.</li> </ul>	<p>MySchool.edu.au</p> <p>Advice of Todd Flanagan, Principal, Parnngurr Community School, June 2018</p>
	<b>Costs in Newman</b>	<ul style="list-style-type: none"> <li>Education costs in Newman have been calculated on a per student basis, derived from Ministry of Education and Training data.</li> <li>All Martu students in Newman have been assumed to be eligible for High Support Needs Grants in 2018, which represents a cost of \$36,577 per child.</li> </ul>	<p>Ministry of Education and Training, 2018, High Support Needs Grant Schedule</p>

		<ul style="list-style-type: none"> <li>The Newman Women's Shelter census has then been used to estimate 54 Martu student enrolments in Newman in 2018.</li> </ul>	2018 Newman Women's Shelter Census
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The analysis excludes some categories of cost, primarily due to an absence of reliable data. Commentary in relation to FASD appears in section 8 of this report. Another such category of cost is WA Government expenditure on Out of Home Care (OOHC), for which comparable Martu incidence rates in Newman and Parnngurr are unknown. It is expected that OOHC costs, if included, would increase the savings associated with scenarios two and three, as Martu families moving from Parnngurr to Newman would be more likely to be subject to child protection reports and orders.