West Musgrave Copper and Nickel Project

December 2020

EPA Section 38 Referral Supporting Document Appendix J Social Surroundings

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Appendix J5. Social-cultural Context of the Ngaanyatjarra People

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BRIEFING REPORT ON THE NGAANYATJARRA SOCIO-CULTURAL CONTEXT
FOR USE IN THE PREPARATION OF THE WMP SIOA
David Brooks, Ngaanyatjarra Council, 5 April 2020

INTRODUCTION

A key theme running through this report is that a deep and wide gulf exists between the Ngaanyatjarra orientation to the world and that of mainstream Australia. By 'orientation' I mean to include the gamut of their practices, beliefs, attitudes and priorities.

The existence of this gulf in orientations is paralleled by a gulf in understanding. With the Ngaanyatjarra being so different in so many ways, mainstream Australia finds it very difficult to understand them, to interpret what they say and how they act. Similarly, the Ngaanyatjarra are often mystified by the people they refer to as 'whitefellas'.

Many of the differences are rooted in the differing deep histories of the two groups of people. The Ngaanyatjarra were a hunter-gatherer society - who lived in the most demanding of environments even by Australian standards - when they were first confronted by the industrialised European immigrants. The orientations to the world of two such groups were vastly different. The encounter between them has been a relatively low impact one, and the amount of interaction between the Ngaanyatjarras and the whitefellas has been quite limited. Thus the differences attributable to deep history have not been swept away by the colonial encounter to the extent that they have in many other places.

To the above observations another may be added – that it often seems as though over the past 20 years or so the gulf has not been narrowing, as perhaps it was before, but has actually been widening again. This is because, while the Ngaanyatjarra might be slowly moving closer towards what the Australian mainstream used to be like 20 years ago, the mainstream itself is now changing so rapidly that it is spinning away from the Ngaanyatjarras' grasp. It also seems as if the capacity of the whiteflla world to comprehend the difference of a people like the Ngaanyatjarra is narrowing rather than expanding.

Preliminary note: the basic 'facts and figures' applying to the Ng Lands communities are not presented in this Briefing Report, as that material in itself could take up most of the available space, and in any case is readily discoverable by researchers. The thrust of this Report is to alert researchers to what they would not be able to easily discover.

A1: General life and culture of Ngaanyatjarra people.

The Ngaanyatjarra comprise a group of around 2000 indigenous people renowned for their 'traditional' orientation who live in one of the remotest parts of Australia. They identify as Ngaanyatjarra and as desert people, and have a powerful sense of their collective presence in and ownership of their country, from which they have never been removed. Generally speaking, they are all inter-related kinship-wise and think of one another first and foremost as kin; and they are all known to one another.

They live in a vast area of country, which even today they have largely to themselves. Their way of life for millennia consisted of hunting game and gathering plant foods. The climate and environment here were so harsh that they lived in a very dispersed manner, at a population density that was one of the lowest known on Earth. Today, after a very recent transition from the completely independent and very different way of life they followed for so long, they occupy a group of what are known as 'remote Aboriginal communities', that are articulated with the Australian state. There are ten of these communities in the Ngaanyatjarra Lands, under a complex system of administration and governance that is described elsewhere. The largest and oldest of the communities is Warburton, with a population of 400 plus - the others have populations ranging between 80 and 200. They are on average over 100 km apart. While these communities are tiny and widely separated by most standards, they often seem overly large to the people, who after so many millennia of highly dispersed and mobile living have not fully accustomed themselves to some of these new arrangements.

LESSON 1

The people as yet are far from fully 'acclimatised' to the community mode of living. They have not yet invested themselves fully in these communities, and find it difficult, for example, to live indefinitely in houses at close quarters with multiple neighbours. This helps to account for why the people do not necessarily subscribe to values such as 'showing ownership of the community' and 'taking pride in the way it looks'. This needs to be realised when considering how investment from a project like West Musgrave might occur. (Note that poverty is also a factor in this issue – see section A3.)

As desert people they have a tough culture that is oriented to surviving in harsh conditions. The emphasis is on personal autonomy: they say, 'no one can tell another person what to do.' Hierarchies and specialised roles or occupations were traditionally absent from their social world. They have never had chiefs or even permanent 'leaders'. (Leadership may be displayed, but it is contextual in nature rather than fixed.)

LESSON 2

It is counter-productive for outside interests to try and pick out individuals who they imagine might be able to speak for the group or influence them. The people tackle important decisions through discussion and negotiation within the collective, leading to consensus.

As hunter-gatherers their model for living was the small family group, in which a man and his wife and their dependents could together perform all the life-functions necessary on a day-to-day basis. These small groups, or 'bands' of up to a dozen people, had to be on the move most of the time to survive in the harsh environment.

LESSON 3

The people needed to be highly mobile, and more than this, their culture came to incorporate a love of being on the move.

The high value they place on mobility and 'freedom' is evidenced in recent times by their particular passion for the motorcar.

The emphasis on autonomy and small group living was counter-balanced by their sense of a collective identity and inter-relatedness across the broad area of their country. Social linkages over broad areas were critical for survival and prosperity in the long term, for while the small hunter-gatherer bands normally lived on their own they could not survive separately indefinitely. Cooperation was necessary in times of shortage; marriages needed to be transacted across a broader field. There was a need to be part, somehow, of a larger whole. Doubtless the most significant institution engendering interlinkage and a sense of cohesion was the Tjukurrpa, the desert 'religion'. The Tjukurrpa is too big a subject to discuss fully in this report, but the main point to note here is that it works over large areas of country to tie people and country together in a highly elaborate system of belief and meaning. As a system of meaning, it is centred around 'stories' (also known as '*tjukurrpa*'). These stories involve the travels and deeds of powerful supernatural beings; but beyond this, the stories actually reveal a characteristic Ngaanyatjarra way of thinking and reasoning about many things, including even everyday events. I have described this characteristic way of thinking about the world as 'Tjukurrpa-thinking'.[1] A classic example is the propensity of Ngaanyatjarra people to fully expect mining companies to discover mineralisation at important Tjukurrpa-related sites. They reason that since the creative power of the Tjukurrpa beings resides at such sites, why would valuable material such as minerals not be found there too?

The counter-balancing of the small group emphasis would also occur when people would gather together in large numbers, as necessary, for funerals and for Aboriginal Law 'business' (itself an integral part of the Tjukurrpa). Such activities have a 'spread' that today can embrace all the Ngaanyatjarra communities and often places in neighbouring and even distant parts of the desert. The Ngaanyatjarra Lands is known far and wide as a major focal point for Aboriginal desert Law. As well as being occasions for the affirmation of shared values, co-participation at 'business' times and funerals helps cement the social ties between the normally far flung groups.

LESSON 4

Secure in their identity as Ngaanyatjarra, the people do not tend to experience an internal conflict between Aboriginal and 'whitefella' parts of themselves. Generally speaking, they do not exhibit the anger or resentment towards whitefellas, arising from such internal conflicts, that is found in some other regions.

By the same token, they are noticeably only marginally interested in the wider Australian world, its priorities, values and even its opportunities. While not particularly hostile to the wider world, they make a strong distinction between their own ways and 'whitefella ways'. There is a tendency to regard all externally arising ideas, values and behaviours as alien and incomprehensible, and to put them in the 'whitefella' box.

Complementing this lack of interest in the wider world, they have an intense interest in themselves and in their own affairs. They are endlessly fascinated by the state of play of the

[1] Brooks, D. 2011, 'Organization within disorder: The present and future of young people in the Ngaanyatjarra Lands' paper In U. Eickelkamp (ed.) *Growing Up in Central Australia: New Anthropological Studies of Aboriginal Childhood and Adolescence* (pp. 183–212). Oxford: Berghahn Books.

eventful social life that goes on within their families and communities and across the Lands. [2]

Though their country was a harsh place to live in, the people have invested its sites and the overall landscape with layers of meaning, and treasure it accordingly. Just because it is so big, and to the outside eye often so barren and monotonous, they do not have any the less affection for it, down to its smallest part. As one senior man put it, 'every rock and hill and tree has a human connection.' People have been known to ask what the miners did with the samples they took to Perth, after they finished testing them. Tiny and disposable as these small amounts of sand and rock might seem to the outsider, the Ngaanyatjarra consider them to have value, and tend to think that once finished with, they should be returned to where they came from.

LESSON 5

It is important to understand how highly the Ngaanyatjarra love and value their country - and the Tjukurrpa stories that animate it. They regard the 'handing over' – or perhaps they consider it the 'lending' – of a part of their country for the purpose of mining as a matter of the utmost gravity.

We have referred to the approximately 2000-strong Ngaanyatjarra population, its presence on the Lands and its collective identity with it. This applies to the great majority of people who identify as Ngaanyatjarra. But there are also some people who moved to the Eastern Goldfields and elsewhere from the 1890s onwards, as a result of European impacts. Though they and their descendants became distanced from the main flow of life on the Lands and are not part of many of the structures and processes described in this report, some of them maintain strong connections. As such they need to be given due consideration in relation to issues raised by the WMP.

A2: Land use, connection and ownership

Land use

The people lived for millennia on what they hunted and gathered from the country. The conditions in this part of the desert were extreme: the climate was harsh, the soil infertile and the rainfall low and unpredictable. The people were often short of food, which manifests even today in a prevailing orientation that may be called 'living in survival mode'. This translates into having a constant awareness of the issue of resources; that the usual state is one of scarcity; and that 'you'd better be ready to take what you can when you can'.

Not only was the desert's food and water frequently in short supply, but when a good season did occur it was not possible, with the existing material culture, to store up the surplus.

[2] It is worth mentioning that while there is this lack of interest in the outside world as such, they do like to establish personal contacts, where they can, with representatives of this outside world. This reflects the age-old desert survival tactic of creating additional connections wherever possible, because they might be useful in the future.

LESSON 6

The orientation of the people is not to try and accumulate resources when they do become abundant, but to use them quickly (even to the point where it can look like wastefulness).

A favoured way of 'getting rid of' surplus resources in one's possession is to give them away to others. Observers of the desert people have identified this 'sharing' as a basic strategy, one that is concerned with keeping one's social relationships in good order in expectation that a time will come when you yourself are in need. Such an orientation has huge implications for Ngaanyatjarra participation in the modern world, including engaging in employment. If personal accumulation is not only an alien concept but is actually contra-indicated by the priorities built into the social system, we are looking at a world far removed from that in which 'individual aspiration' is considered a fundamental driving force.

Thus the people were not possessive about the food and water resources of the land - they did not maintain exclusive territories within which resources were guarded from others. Though it might seem paradoxical, their ethic of sharing actually stemmed from the shortage of resources and in turn the difficult environment. Such was the importance attached to sharing, that it was 'protected' by the institution of sorcery. That is, a person who did not share was seen as likely to be the target of sorcery, which could make them ill or kill them. Though no one admits to being a sorcerer themselves, the belief is that sorcery practices are rampant. The fear of being targeted ensured that for the most part, people did in fact share.

It might be thought that these orientations would have lost much of their power by now, given that the people now live in communities and are no longer dependent on hunting and gathering. But firstly, such orientations die hard, and it is only fifty years since the people were still living the full independent, hunter-gatherer way of life. To a great extent the approach as described above still prevails. Even now their preference is to hunt and gather for bush foods when they can, and they still see the world largely through the hunter-gatherer's eyes. Secondly, while the new conditions have reduced the unpredictably of basic resource availability in some respects, they have not ushered in a secure, reliable way of life that might have encouraged the people to abandon their basic hunter-gatherer standpoint. In fact in many ways the state of their security has deteriorated, particularly in the last decade or so. At any rate the people still largely display the 'survival mode' orientation. – with all that this term implies.

Another question to be considered is whether or not a sustained, significant intervention like the West Musgrave mine (should projections for the project be successful) could improve the material conditions to such an extent that the 'survival mode' imperative would lose its force, and the trajectory of the people be transformed? The short answer is that a major change of this sort could not be expected in the short term. But it could be hoped that seeds sown at the outset of the project might be bearing fruit by later in the lifetime of the mine.

Connection and ownership
The nature of the connectedness of the Ngaanyatjarra people to their country is complex, but it is important for anybody working on the WMP and on the SIOA to have some understanding of it.

For the Ngaanyatjarra, their connection to country is among the most important considerations in their lives. Apart from anything else, the value that their country holds for them is clearly demonstrated in the way they continue to live in this remote and under-serviced region despite the material difficulties of doing so.

As we glimpsed in the words of the senior man who spoke of the human connection to every rock and tree, the bonds to country of the Ngaanyatjarra go far beyond material considerations. They are bound up with the Tjukurrpa, which is the basis of their ownership of their land, or their 'rights and interests' in land, as the Native Title Act expresses it.

Their connection to the country is partly a collective matter, which is what we are thinking of when we say something like 'the Ngaanyatjarra people live tenaciously on, in their own country.' But connectedness also works at a more specific level for individuals and family groupings.

Individuals are 'traditional owners' (TOs) for particular sites and areas within the overall country. Birth at a site is the most pivotal and undeniable element in establishing ownership, but other compelling factors that give rise to rights and interests include residency, knowledge, descent and actively caring for the country and its Tjukurrpa. The rights we are speaking of include dimensions of identity and spiritual connectedness as well as property rights. It is important to note that birth at a site, or any of the other criteria, do not confer *exclusive* rights to that place. Anybody born somewhere has ownership rights there, along with anyone who has ancestral connections there, has resided there a long time, knows and cares for the Tjukurrpa, etc.

It was the 'owners' of an area that would give permission to the travelling bands of their desert fellows to enter and use the area's resources (food, water, stone tools, shelter etc). In principle no compatriot would be allowed to go short - access would always be given and the resources shared. But the owners did need to be asked.

LESSON 7
The desert was not a free and neutral domain to be traversed at will by whoever had a mind to go somewhere.

Far from a neutral place simply of rocks, sand and trees, it was a sacred landscape with powers. The powers – the Tjukurrpa beings - could act beneficially, continuing to ensure a supply of the very food and water and other resources that the desert people depended on. Or they could be destructive. An uninformed person could stumble into something like a sacred stone arrangement and disturb it, triggering an angry reaction from the powers residing there. Only the local senior TOs would have the knowledge of how to avoid the dangers and harness the beneficence. Hence the need for them to both give their permission to, and exercise supervision over, those wishing to access the country. The same

principle applies today, though the contexts and the reasons for desiring access may be different.

LESSON 8

The rule of the desert is that unless you yourself are a traditional owner you should 'always ask' if you want to access an area. In the traditional setting, permission to access would entail permission for you and other band members to use the simple resources of the country. Today, if you intend to extract resources of a different kind and on a much greater scale – and in fact to transform the landscape in the process – the kind of permission required is obviously of a far more serious nature.

It is relevant to this study to consider the patterning of ownership among the desert people. The kinds of connections, indicated above, that impart ownership can create very dispersed and unique land ownership profiles for individuals. A person will often have been born in one place, but have connections of descent in two or three other places, and reside somewhere else. But in the way it has worked out in the Ngaanyatjarra Lands, there is a strong patterning whereby a set of siblings of an earlier generation share a connection with a particular area of country, and for this connection to have flowed on through the descendants of these siblings, creating an enduring 'family' connection with a given area. In the era since the transition from the bush life to community life, this has translated into a situation in which there is a particular set of families associated with each community. Taking the case of Jameson, the closest community to the WMP, there are six main families who comprise the bulk of the residents. These are the McLeans, Lanes, Jacksons, Mitchells, Woods and Murrays. These families have ownership rights for areas in and around the community and nearby. Together they comprise the core of what is known as the 'Jameson mob', and there is a sense that this overall grouping has a kind of ownership or at least a managerial responsibility for the country that extends outward for some tens of km in every direction from Jameson as the central point. About 40 km to the west of the community, there is a 'hand over' point and beyond this the country is looked after by the 'Warburton mob'. At about the same distance to the east of Jameson, the 'Blackstone mob's' country begins. In this way the whole of the area from the western side of Warburton to the South Australian border is under the managerial control of Warburton, Jameson, Blackstone and Wingellina respectively, with unofficial boundaries lying roughly mid-way between each of these communities.

Thus both families and communities are country-connected entities. Their presence in a given location is not purely a matter pf physical residence but has ownership implications. A community is composed of a kind of matrix of families. And the Lands overall is like a matrix of communities. By the term matrix we mean that the units all fit together in a meaningful way. Embedded in these matrices are rights that are based in the traditional ownership system, albeit adapted to the modern situation. Just as in pre-contact times, this indicates the presence of rules and restrictions on access to and use of land that apply both to immediate community areas and to the entire landscape of the Lands.

LESSON 9

If individuals or family groups were to move into say Jameson community from elsewhere – even from nearby communities - to take up employment opportunities in the WMP, it would

represent a disturbance to the existing matrix of connectedness and residence. As such, even though increasing the scope for Ngaanyatjarra employment may be considered a desirable objective, there is a potential risk here to the socio-cultural domain. (Alternatively there may be community resistance to in-migration occurring for employment purposes, in which case the risk is to the achievement of employment targets.)

To conclude the discussion about connection, we have indicated that in the traditional system there are various grounds upon which rights and interests in country can arise – and in saying that these grounds are part of the traditional system we mean ipso facto that they are in principle acknowledged and accepted by the people. But this does not mean that the particular claims made by individuals and even families are always accepted. Sometimes they are hotly contested. Alternatively, a party's claim may be acknowledged as valid, but the party may be regarded as being 'too greedy' because they have made claims to other places as well. Things do not always run smoothly. Nevertheless:

LESSON 10
There is a general preference for the avoidance of conflict, and so it is often felt to be best to accept the claims of others (at least in public), even if one is sceptical about them.

These kinds of issues arise more frequently in the modern situation than they did in the past, because now with the arrival of mining companies and the like, there are new kinds of benefits at stake.

A2(a) A brief note on 'social impact' and connection to the WMP area
In a conventional situation, for example where a mine was being developed near one or more centres populated by non-indigenous Australians (with no indigenous overlay present), the key consideration in terms of assessing degree of 'social impact' would be residential proximity. That is, people living close by would be considered most affected, and others living more distantly less so. This will also be largely true in the case of the WMP, but here there is the additional factor that people can be affected in a cultural sense even if they are not residing close to the physical mine development area. This cultural affect involves spiritual connectedness, identity and property rights.

How does this issue of people being potentially affected at the 'cultural' level - specifically because their land is being used or impacted by the WMP - relate to the other domains to be addressed in the SIOA? It probably can be eliminated from consideration when tackling the following domains: Education issues and services (B3 below), Health issues and services (B4), Crime and safety (B7) and Infrastructure and community and regional services (B8). In the case of B5, the Economic domain, it may need to be borne in mind for some aspects of the Study. There will also be some implications for B6, Employment and Business. (We have already mentioned how the attraction of new people to live at Jameson will potentially disturb the existing matrix of connection and residence.) There could also be questions about how the locally resident people might react to the possible competition for employment and business opportunities posed by people who up to this point have lived elsewhere.

LESSON 11

It is not just residential proximity that defines the degree to which people can be considered to be 'affected' by the WMP mine, as it probably would be in a non-indigenous setting. Here there is an impact that arises out of culturally-defined rights and interests. Some of the people affected on this basis live quite distantly from the mine site, particularly those whose connections are based on ancestry alone. Just who these people are, where they live, and the extent to which they might be affected is a matter that can only be determined by consultation and anthropological research. (A Genealogy Project has been carried out in order to address these issues.)

For the sake of completion, we need to tease out the further point that emerges logically from our consideration of how 'being affected' by the WMP is not just a matter of where people are now living in relation to the project. *There is also a social impact that arises through the physical impact on the area of the mine itself.* Even if there were no people currently living within a wide radius of the project, there could still be people affected through their cultural relationship with that particular country.

Having said this, the WMP footprint area is in fact reasonably close to the Jameson community. The footprint in total is in an arc to the south of Jameson, the 'development envelope' being 30 – 40 km distant , while ancillary areas such as water borefields surround this and extend another 50 – 80 km further south. Recalling the earlier discussion of the 'managerial' responsibility taken on by communities for their respective hinterlands, it is Jameson that takes on this role for the entire footprint area

A3: Overview of contemporary Ngaanyatjarra people's way of life (including overview of what community looks like today)

We have indicated how the Ngaanyatjarra people as a group have an unbroken connection to their country. The present stock of people are unquestionably the descendants through many generations of those who lived here in the distant past. The only people living in the Lands today who are not members of these ancestral families are some non-indigenous people (mainly community staff), as well as those other indigenous persons who have come from outside. The latter category have come almost entirely to transact marriages, and they have mostly originated from places in other parts of the desert. They typically arrive as individual young people (mostly young men) to get married to a local person. In time they are usually absorbed into the Ngaanyatjarra world. Notably, there are almost no cases where a pre-existing husband and wife, nuclear family or larger unit has migrated to the Lands and set up residence here.[3] If this sort of thing *had* been common, we would not find the almost seamless 'matrix' of ancestral occupation of the country that we have spoken of. Instead, as we looked across the social terrain of the communities, we would be seeing something much more similar to the secular kind of society that prevails in non-indigenous Australia – with many separate families living side by side in 'neighbourhoods' but with little connection between them. That the Ngaanyatjarra social world is not a secular one is partly

[3] There are some exceptions in the case of Warburton, where a few families from the Goldfields (but with ancestral links to the Lands) moved in, particularly in the 1990s. However, their cases have little bearing on the issues we are considering here.

demonstrated by the way it is comprised of an inter-locking set of people and families that fits together in the matrix we have spoken of.

As discussed, Ngaanyatjarra country is invested with the ties and ownership rights of the people. Generally speaking, a Jameson person is likely to 'own' and feel connected with the ground where his house sits, and with the community area and out into parts of the surrounding hinterland. Although today he lives in a house on a 'quarter acre block' with a fence around it that faces on to a street, the ties of ownership that he feels are not particularly specific to and certainly not restricted to this individual block of land. Moreover, in a mainstream legal sense he does not 'own' the block or the house. What he may have is tenancy agreement, which is a means by which the state Department of Housing attempts to make the people more responsible for their houses. All the housing stock is 'public'. There is no private housing, whether it be a matter of owner-occupation or rental. There is also no real estate market, so the houses have no investment value as such. Each person pays rent by way of an income deduction.

Although tenancy agreements and other arrangements exist, the people occupy housing in a way that reflects their own socio-cultural realities rather than on the mainstream Australian model. Many Ngaanyatjarra people frequently move from one house to another (and often back again).

There are frequently several adjacent houses that are utilised by a large extended family. Members of such an extended family may 'shuffle themselves around' within this group of houses in the short term as conflicts and reconciliations occur, and in the longer term as older people die and as children grow into adults and form their own nuclear families. On the whole, people do usually remain long term within a given community.

Although there is a lot of movement between houses of the kind just described, when it comes to the person considered to be the primary householder (this usually being the person with the tenancy agreement) there is a remarkable continuity over time. In Jameson for example, there are 25 'Aboriginal' houses and from year to year, over the last ten years, essentially the same list of 25 names has appeared as 'main householder' in surveys that I have carried out for the Ngaanyatjarra-ku Shire. This mirrors the constancy that we have seen displayed in the 'matrix' of families within a community - and in the matrix of connectedness across the Lands as a whole. Yes, the people move around a lot, and treasure their mobility, but it is best described by the term 'coming and going'. They do not go away permanently or shift communities very often. A given community may often be almost empty for days on end when ceremony business or funerals or even football carnivals are on elsewhere – but in turn it will have its own times of influx.

What do the communities look like? Their appearance starkly reflects the prevailing extreme material poverty and the low standard of service provision. The houses and other buildings and structures have been built from basic materials. They are largely unadorned and in poor repair, and they do not last long. Buildings that look as if they are decades old may in fact be much newer. As mentioned in Point 1, there is (with a few exceptions) little sign of a sense of pride in the houses or the community, and some reasons of a cultural nature were suggested for this. But it is clearly also a function of extreme poverty and the

prevailing ‘survival mode’ in which the people are trapped (Point 3). This state of poverty is perhaps as much of a defining characteristic of the people’s condition as the cultural ‘difference’ that we explore in many sections of this report.

The communities are physically oriented around the store, the office and the health clinic. The stores are community owned and articulated with a Ngaanyatjarra-owned supply chain with its headquarters in Perth. The store is not only the key community site in a functional sense, but it has a powerful symbolic role as well. For the old people, having a store represented what we would call ‘food security’ of a kind they had never experienced in their hunter gatherer past. Today, the people typically visit and make their purchases in their store on a daily basis. It is not the practice to buy a supply of food intending it to last for a few days. Their houses and appliances do not tend to be well enough set up to allow this, but more importantly the people (a) rarely have the money to purchase more than a minimum of goods at one time, and (b) anything they might purchase surplus to immediate requirements will be subject to the demands of ‘sharing’ and will rapidly disappear.

The office is the place where most transactions are undertaken that are necessary to maintain one’s income entitlements and other requirements imposed by the modern world. With the people lacking their own equipment (computers and the like), and the associated knowledge to deal with these matters themselves, the Community Development Advisor (CDA) spends much of his or her time helping the people with such issues as they stream in and out of the office during office hours. The CDA will also be dealing with multiple other matters including distress calls from residents who are temporarily away and who frequently get ‘stranded’ in distant locations.

Frustration and conflict often arise at the office and also at the clinic (and the store) where again there is a clash of understandings and expectations, which is discussed in section B4. The clinic is basically a small nursing station, with periodical visiting GPs, specialists, dentists and the like. With the many health issues that the people have, it is a busy place on most days.

In the various contexts in which Ngaanyatjarra people are interacting with ‘whitefellas’, the lack of shared language fluency is a glaring issue. Barely any of the whitefella staff speak more than a word or two of the desert language, while Ngaanyatjarra people have limited English. Communication necessarily takes place in a modified type of English, providing frequent opportunities for misunderstandings to occur, but beyond this, it is rarely possible for either party to pursue a discussion in depth and enlarge their appreciation of the other’s world and point of view. To a long term observer like myself, it often seems that there has been little substantial improvement in the level of mutual comprehension over the years. The same old misunderstandings and false assumptions repeat themselves over and over. The fact that there is a fairly rapid turnover in most staff positions does not help. It is particularly sad when one sees the overall Ngaanyatjarra insight into the whitefella perspective remaining almost static.

The school is the other main institution present in each community. Whereas the store, the office and the clinic are all run as part of the Ngaanyatjarra Council group of entities, the school is administered by the state Department of Education. The premises tend to look

slightly more well cared for, and there is usually a green lawn, but the buildings are demountable, giving a temporary or provisional feel. It might be reasonable to expect the school to be one site where the local language is used or at least strongly promoted, but although many of the school's educators have tried hard, this is not really the case. The teachers are all whitefellas from different places and they speak no more of the local language than any other of the community staff. They, too, turn over fairly rapidly.

The other infrastructural elements of the community include the power station, the water bore structures, the airstrip and the sewage treatment facility. There will usually be a community hall and other outbuildings, and perhaps a women's centre, art centre and/or youth centre. The Council runs an Environmental Health program which gives attention to the people's overly large and unruly dog population and to the health threats posed by the extremes of the climate, particularly the perennial dusty conditions. (It is sanitation problems associated with the dust that preclude the use of rain water tanks fed by rooftop collection.)

Apart from the 'Aboriginal' houses, there are 'whitefella' (staff) houses, in Jameson around ten in number, occupied by the local staff. These are always found grouped together at one end of the community. In some communities, such as Jameson, the presence of protective wire 'cages' and padlocks is noticeable. This can make it seem as if there is a particular alienation between the staff and community members, and/or that violence is endemic, but none of this is necessarily so. The cages and other such measures are more the result of some zealous efforts at protecting staff and their houses having occurred at times in the past, in response to particular flare-ups. (See section B7 below.)

A4: Daily Life; and social and family structures

Daily Life

The Ngaanyatjarra are a sociable people. They live their lives almost entirely in the presence of others. Even the more reserved among them do not share the 'whitefella' desire for spells of privacy. In fact as a people they have difficulty coping with being separated from their fellows for any length of time. (Despite their love of movement, they also quickly feel 'homesick' when away from the desert, particularly if confined to a whitefella-only environment. Thus they can cope more readily in a place like Laverton or Kalgoorlie where they are surrounded mainly by extended family, than in a city like Perth.)

Let us consider the rhythms of the daily round. At Jameson or any of the Lands communities, the day starts with breakfast. People gravitate to the veranda of their house or perhaps the one next door. A fire will be going there, with a large billy of tea which is shared, along with some food, the remains of last night's kangaroo meat or some damper or perhaps Weetbix. It is an entirely outdoor scene. Some people will be lazing on the bedframes and swags where they've spent the night, while the visitors sit on the ground or on a battered fold-up chair. There is smoke from the fire, which keeps the flies at bay, though it may get in people's eyes. There is easy conversation. To the outsider, the really striking feature, apart from the absence of rush and stress, is the amazing economy of movement. Despite the absence of organised storage places, people seem to have everything they need at hand - there is no fussing and getting up and down to find things.

Breakfast is generally over by around 9:00 a.m, and now the 'busy' time of day begins. People will head to the store and the office as these open. Others will need to go to the clinic. A few men will be seen getting back under the bonnets of their cars to resume fixing them. The kids (or some of them) will have gone to school, and the young adults will go to the CDP shed for 'work-like activities' or back in pairs or trios to the interiors of houses to pursue their own amusements. For the senior people, there may be a meeting to attend – in the open public spaces outside the store - or another activity like a heritage clearance. If there is anything interesting like this latter to do, they'll all join in and do it. Any prior individual plans are readily abandoned in favour of the collective activity. The rule is to 'go with the flow'. This is also the time of day when 'fighting' and displays of anger are most likely to occur.

As mid-day approaches and the store and office close, the flurry of activity dies down. People will be back in or around their houses and a quietness will descend. Lunch is an extended 'rest' time that lasts till around 2:00 pm when the store and office re-open. There will now be a minor resurgence of activities similar to the morning's, but with fewer people seen and the business done more quickly. Now the 'lucky' ones, those with access to a vehicle, will go out into the bush in the community hinterland for hunting or gathering bush foods. This is also the favoured time for card schools, when up to twenty or so people will gather in a shady and inconspicuous spot for the game.

The evening scene is similar in character to breakfast, with the same peacefulness, the ease and even grace of the movements, the air of a people who are comfortably doing what they've been doing for centuries. At such moments, at breakfast and dinner time, it is possible for the observer to see how little meaning the trappings of the community have in the people's lives - the buildings, the fences, the paved roads and the rubbish. It becomes apparent that we are looking at a people who are essentially still bush 'campers' rather than house and town dwellers, a people living close to the earth, making their fires, sharing their food.

Social and family structures

We have seen that Ngaanyatjarra society lacks hierarchies and specialisations. There is no 'political' organisation consisting of units at different levels integrated into a whole across a geographical area, with power and influence radiating down from a leader at the centre. There is what we have described as a 'matrix' of inter-locking family groupings connected with their own parts of the landscape, but these are all at the same level: there is no central point to the matrix and no power and influence up and down the line. The matrix feature is a structure, but not a political structure.

There are other structures in this world, also of a non-political nature, that help to establish frameworks and define relationships. These include the structures of kinship, the 'sun side/ shade side' system and the 'skin' system.

It is beyond the scope of this report to describe these systems at all fully, but very briefly:

1. Sun side/shade side: This is a simple division of the entire population into two, that works on logical principles. Every person belongs to one side or the other. You are

born into your side, such that if your parents are sun side you will be shade side (and if they are shade you will be sun). From this it follows that your siblings are on the same side as you. The person you marry must also be on your side. Everyone in your grandparents' and your grandchildren's generations is on your side, while everyone in your parents' and your children's generations is on the other side. The sun side/ shade side division is crucial for specifying what role you play in ceremony and where you sit at the ceremony ground. It is an 'ancient' desert structure, that takes its reference from the fundamental natural cycle of day/night and the movement of the sun from east to west across the sky.

2. The skin system: This system is not quite so archaic, having been adopted at some point from other groups located to the west of the Lands. Its introduction was facilitated by the fact that it fits with the logic of the sun side/ shade side structure. Essentially, it divides the sun side group into two equal parts (we'll call them A and B), and the same with the shade side group (divided into C and D). Thus there are four 'skin' divisions altogether. Each person is born into one of these. The skin system is mainly about defining **marriage** partners. As indicated, the ancient system goes on to dictate that if you are shade side you must marry another shade person. But the skin system further stipulates that if you are a C you can only marry a D; and if you are a D you can only marry a C. Similarly if you're an A you must marry a B, and if you are a B you must marry an A. This means that your marriage partner must come from half of one half (i.e. a quarter) of the population.
3. Kinship: There is much more detail involved with this, as there are all the terms for the many categories of relatives that you have, but the key point is that again it all fits with the logic of the two systems considered above.

The people of the Lands still subscribe to these structures and follow their rules. In regard to marriage, according to my research, almost every marriage was contracted in accordance with the rules until the turn of this century (the C21st). This almost universal compliance with 'tradition' – referred to by the people as 'marrying right way' - is starting to taper off, but even now at least two thirds of young people are still marrying 'right way'. It should be noted that in the Lands, at least since the 1960s, marriages have not been 'arranged' as such, with a person being required by their elders to marry a particular partner. It is simply a matter of marrying someone from the correct 'skin' category – with the additional proviso that they should not be too 'close' in a family (and residential) sense. For instance, you shouldn't marry your actual first cousin, even though that person would be in the correct skin category. (In earlier times many men would have two or even three or four wives concurrently, and it was also common for older men to take wives much younger than themselves, but they still needed to observe the 'skin' rules. Nowadays there are very few of these multi-partner marriages remaining. Almost all marriages now are between similar-age persons.) The telling thing about the high level of compliance with the 'right way' marriage rule is that it has ensured that nearly all members of the Ngaanyatjarra population comprise a seamless whole when it comes to their roles in ceremonial practice. Everybody knows exactly where they 'fit' when they assemble at ceremony time and what their role is. It all proceeds like clockwork. Thus while the Ngaaanyatjarra world might seem quite disordered and even chaotic in some ways, there is a strong backbone of orderliness within it. This, however, is largely out of view to whitefellas (see below).

Further observations about marriage: (1) as the above comments about 'right way' compliance suggest, almost all marriages have been and are with other desert people. (2) very few people are 'officially' married. Not only do people not legally register a marriage but they do not celebrate a 'wedding' (in either a 'traditional' or a Western form). Nevertheless they usually use the terms husband and wife. Similarly to the state of play in the mainstream whitefella world, 'husband and wife' usually live together for the long term. Sometimes they 'separate' and take up with another partner. (3) a point of difference with the whitefella world is that if the new relationship founders, a party will very often return to their earlier partner – there is much less of an idea that when a relationship ends, it 'ends for good'. This is because if they can help it, desert people avoid living alone – that is, outside of a 'husband-and-wife' relationship. This is in accordance with the avoidance of solitariness that we see in all aspects of Ngaanyatjarra life. (4) an older man who has no 'wife' will usually live with or be looked after by his daughter and son-in-law. An older widowed woman – and there are many widows, with men dying younger – will often be found living in a household with other widows of a similar age who are related to her as 'sister'. But a man who is a widower will not live with other widowers – because it is women who do the 'looking after'. (5) there are no same-sex partnerships in the Lands, certainly not any that comprise a basis for living together. Nor are there any cases of people living together as 'house mates' – that is, for reasons of convenience, saving on expenses, etc, as is common in the mainstream. All living-together arrangements centre around the marital bond of 'husband and wife' and associated kinship relationships.

On the theme of tradition and compliance with it, it is a key feature of desert society that boys are actively initiated into men. This is a huge matter involving physical practices, ceremonial dances, singing and other activities carried out by large gatherings that assemble for weeks for the purpose, instruction in the sacred Law, and the sealing of bonds of loyalty between participants. It is at this time in a young male's life that fundamental orientations like respect for the authority of the senior people are engendered. There is no equivalent process undertaken for girls, whose instruction and transition to womanhood occurs with less pomp and circumstance. Almost every desert person across the Lands participates in at least a minor way in some part of the ceremonial cycles for the boys, that are usually held during the summer months. There is a shroud of secrecy over all these matters, with women and uninitiated men forbidden from viewing, talking about or even knowing about many of the aspects and components. Although this 'ceremony business' is the biggest activity in the Ngaanyatjarra calendar and absorbs a huge amount of their energy and interest, the people keep it all separate from the whitefella world just as they do from their own women and children, with the result that it is almost entirely an unknown quantity to the whitefellas associated with or interested in the Lands, including (almost all of) the staff who live and work among them.

LESSON 12

It is essential that everyone associated with he WMP respects the separation and secrecy that surround the 'law business", and does not attempt ever to talk about these matters.

There has been some attenuation in the parts of initiation devoted to detailed instruction in the Law, which used to extend over many months, but no decline in the overall staging of the cycles. Virtually all boys continue to go through the process. If they

did not do so, their future in the adult desert world would be very limited. They would probably not be able to find a marriage partner.

We have indicated that the people are still strongly oriented to their own indigenous culture. But the great majority are now also ardent Christian. Christianity was introduced into the Ngaanyatjarra world by the UAM missionaries at Warburton, beginning in the early 1930s. Almost everybody became a Christian in time, and so it continues today. Overall, it has not meant a diminution in their traditional religious life centred around the Tjukurrpa. A few individuals have experienced a conflict between the two belief systems, but most people have fitted them together seamlessly. The local church was handed over by the missionaries to Ngaanyatjarra pastors in the 1970s, and it remains non-denominational and locally controlled. Its orientation, like that of the former missionaries, is evangelical.

A5: Language and communications (including non-verbal communication and linkages with other language groups)

A dialect of the 'Western Desert language' is the first language of the great majority of the people of the Lands. In pre-contact times there was a spread of dialects across the Lands. As the linguists Amee Glass and Dorothy Hackett explain in their dictionary, the dialects 'Ngaanyatjarra', 'Ngatatjarra; and 'Pitjantjatjara' were spoken in adjacent areas. There has been some burring of the geographical boundaries between these dialect areas in recent times, but roughly speaking, Pitjantjatjara is the main dialect in Wingellina, with Ngatatjarra in Blackstone and Ngaanyatjarra in Jameson and Warburton. The differences between the dialects are fairly minor and they are completely mutually intelligible. The spread of the Western Desert language extends to places as far away as the Stuart Highway to the east, the Eastern Goldfields and Wiluna, Newman and the Rudall River to the west, Balgo to the north and Tjuntjuntjara to the south.

The desert people have an extensive 'sign language', with a repertoire of finger and hand movements that reference the elements of the natural environment and their traditional hunting and gathering practices. These skills enabled them to communicate silently with one another in the course of a hunt, or perhaps in threatening situations involving other people. We might note that whereas 'sign languages' familiar to us in the modern world employ hand movements only, the desert people also utilise other parts of the body for communication. For example, they will push the lips out, and from side to side or up and down, to indicate direction. Some of these practices are not just about functional communication; the people treat them as an art and enjoy themselves in the process.

An important point to note about communication in this social world is that not only the obvious, intentional forms of communication but every aspect of a person's demeanour potentially communicates a message to others. What people 'read' from these messages is taken extremely seriously. At one time this could often be a matter of life and death. Nowadays, if you are a whitefella in a Ngaanyatjarra setting, for example at a meeting, you need to be aware that people will be discreetly observing everything about your behaviour and demeanour and making interpretations of it.

Some examples that relate to communication in the cross-cultural setting:

- When addressing someone – or a group of people at a meeting - you need to say exactly what you mean to say. Whitefellas commonly make two sorts of mistakes here. The most obvious one is phrasing your message in a way that is too difficult to be understood by a people whose first language is not English. The more subtle one is expressing yourself loosely or in a colloquial way. What might be fine among a group of mates or even in a board room will not work here. The guiding principle to remember is that people will take your words and your speech literally.
- If you whisper to your colleague on the fringe of an on-going meeting or otherwise fail to be attentive, especially while a Ngaanyatjarra person is speaking, you might think no one will notice, but they will notice and it will be regarded as rude behaviour.
- If you dress inappropriately, such as too casually, or if a woman wears revealing clothes, it will be regarded as showing disrespect for the norms of the people whose country you are in. You might be used to seeing such a matter as your own prerogative, but in this setting this would be a misjudgement.
- Do not point at someone. You may be doing it with completely inoffensive intent, but it is a serious breach of manners.

Clarity of expression is always important in a cross-cultural context, but here it is not only a matter of avoiding the cross-cultural traps. As members of an 'oral' society the desert people always took the greatest care to be clear about what they said and particularly about what commitments they made. In a world that lacked writing, there could be no 'back-up', no enduring record of the promises people made to one another. 'One's word was one's bond'. Thus one's statements had to be carefully formulated, and once made they needed to be honoured. With mining personnel, living largely in their own world, there is a tendency to make predictions on the basis of the current position. If this position changes, so do the predictions. This seems normal to those in this world - but it is not 'normal' to the desert people. It may be hard to avoid this practice and mindset, but it is important to bear in mind the pitfalls.

A6: Social behaviours, cohesion and relationships (including what constitutes social and antisocial behaviour)

Ngaanyatjarra culture does not value acquisition (whether of money or possessions), the chalking up of achievements, and 'tall poppy' behaviour in general. It does not value the following of routines such as those required in the work place as we know it. One of the things that it does believe in and value positively is the idea that wisdom and authority come with age. It also attaches great value to 'being there' for one's people, having an attentive presence, and caring for kinsfolk in need (which can involve a person in an inordinate amount of trouble, such as being absent from their home community for a protracted period when caring for a sick relative). It places a huge value on the giving of *recognition* to all of one's fellow Ngaanyatjarra.

Working with the Ngaanyatjarra, it is crucial to understand the central importance that the culture places on the matter of recognition. There is almost nothing worse for a

Ngaanyatjarra person than to feel that they are not being recognised by their fellows. This is not about recognition for their achievements or for any special qualities or capacities – on the contrary, to be seen to stand out is a problem. It means being recognised for one's place in the kin network, for one's birthright in the country, for one's 'slot' in the Ngaanyatjarra social world. It is about *belonging*.

Thus it will be observed that people, even senior people, are careful to show this kind of recognition towards their fellows – and this means to all of them, irrespective of sex or age, personal standing, past record, character, personality or any other characteristic. This is very evident in meetings, when protocol demands ultra-inclusivity, requiring speakers to give careful attention to the recognition of the place and the legitimate involvement of others present. In the early stages of meetings, it often seems that some participants are poised ready to take offence if they are not so recognised. These considerations can make meetings seem excessively tense and formal.

Particularly in a public setting, the culture values giving others a 'long leash' in terms of expressing their wants, their complaints and the like. If someone has a grievance, people will allow them to express their emotions and even their aggression while minimising their own reations to this. It is understood that many people have a 'short fuse' to their anger. At the same time there is an oft-expressed expectation that a burst of anger will normally be followed rather quickly by a return to normal. Thus the focus is on not inflaming an angry person further. Also, confronted by a show of emotion, the Ngaanyatjarra inclination is to be swayed by it and to empathise with the concerns being expressed. No matter that to the non-Ngaanyatjarra observer these concerns might in some cases seem preposterous and the behaviour petulant. Whatever the merits of the case might be, the Ngaanyatjarra inclination is to give the upset person whatever time they need to say their piece and calm down. For the Ngaanyatjarra, 'patience is a virtue', especially when it comes to kinsfolk. Being prepared to 'hear the other person out' is most important. If somebody has an axe to grind with you, you need to let them have their full say, even if you know exactly what is coming, and even if you disagree with them or know they are mistaken. The rule is: 'avoid cutting in and putting your own case - you need to save that for later'.

The tolerance that the Ngaanyatjarra display towards disruptive and anti-social behaviour can be confusing to a non-Ngaanyatjarra observer. However this tolerance makes more sense when we understand the Ngaanyatjarra viewpoint as outlined above. It is also important to realise that when an angry incident occurs, the situation will be closely monitored by others present. If the aggravated person starts to veer into physical threats or violence, others will intervened to restrain them – but these peace-makers make sure they are seen to be acting for the initiator's benefit as much as for the benefit of anyone targeted or likely to suffer in a fracas. And if the perpetrator persists or others should respond angrily, a complete uproar will ensue , with everyone gesticulating and loudly drowning out the antagonists. Again, the intention is to defuse the conflict and the method is usually effective.

LESSON 13

Ngaanyatjarra recognise and accept that their fellows are likely to get upset about various things and to express their anger loudly, openly and in public. Rather than thinking that

people should suppress these kinds of emotions and behaviour, they regard it as acceptable, and maybe even beneficial, for this behaviour to be acted out before others. They are often prepared to concede that the aggressor may have a valid point, but beyond this, the underlying assumption is that what the person is basically looking for is empathy – and recognition. At the same time, they have collective strategies for ensuring that it is very rare for anyone to be actually hurt in these displays.

What other things do the people value? We referred in section A4 to the area of male initiation. This is something that the people place an enormous value on. After the completion of one of these initiatory cycles, the older men and women will express their huge pride in having done their bit to ensure the 'growing up' of the next cohort of young males. When, at a later time, they may be seen showing inordinate tolerance to what seems like a spoiled young man behaving badly in public, we should remember that what is before their eyes is not so much an objectionable young neighbour or stranger, but a close kinsperson and someone in whom they will have invested much effort through the initiatory process. They may rue the behaviour, but they deeply 'recognise' and care for the person.

As these characteristics illustrate, the Ngaanyatjarra are not a judgemental people. Aggressive and violent behaviour is certainly not approved, but when it happens they do not react with a show of shock or disapproval. Rather they try to contain it, and in this they are bolstered by their adage that a show of anger will normally be short-lived. In effect, what this adage is saying is that when a person expresses their anger they 'get it off their chest' and can then settle down. Again, the idea is that whatever the overt reason for the anger might be, its underlying cause is likely to be a feeling of not being given due recognition and acceptance by the group. When the group shows this recognition – and they are actually likely to genuinely empathise with the aggrieved party when he 'shows his pain' – the problem is on the way to being solved.

A7: European settlement and its influence on societal norms, and contemporary interaction with mainstream society

European 'settlement' as such has never occurred in the Ngaanyatjarra Lands, for the small number of Europeans who have ventured here have never 'occupied' the country, never turned it into a permanent home for themselves.[4] Of course, however, European settlement of the continent as a whole remains a very relevant concept for the Ngaanyatjarra. Their lives have been fundamentally changed by it, even if most of the direct impact has largely occurred a long way from their desert homeland. From a life of completely autonomy in the stateless society that pre-colonial Australia was, they have become completely encompassed by and enmeshed in the modern Australian polity.

But apart from inexorably turning the Ngaanyatjarra from an independent group of hunter-gatherers into an effectively sedentary society of 'remote community' dwellers - and in the process undermining their ability to support themselves and ultimately rendering them

[4] As with most generalisations, there are a few individual cases that represnent exceptions to this.

dependent on the welfare state – what are the specific influences that 'European settlement' has brought to bear on them and how have they responded?

1. In a brief report like this, we can afford to ignore the early explorers, prospectors, dingo scalpers and the like who started to trickle through the Lands in the late C19th. While some incidents of conflict (and of friendship) occurred, these intruders were too few in number and their presence too fleeting to affect the trajectory of the people significantly.
2. The gold rush of the 1890s in the Eastern Goldfields affected the people insofar as it drew some of them down to that region, which resulted in a significant number of Ngaanyatjarra remaining there permanently. These people, or their descendants, subsequently diverged in many ways from the bulk of the Ngaanyatjarras who remained in their country, but some still identify as Ngaanyatjarra and have a part to play in developments such as the WMP that are located in the Lands.
3. The first significant impact on the Lands themselves began with the arrival of the UAM missionaries in Warburton in the early 1930s. They stayed for 40 years, formed very close relationships with the people, and are remembered fondly. But though they affected the people profoundly, they actually instigated less change than might be expected. This was because they were few in number, poorly resourced and a very long way from support structures – and because they happened to be placed amongst a culturally strong and 'intact' group of people. Whether from their own leaning or because of their relative powerlessness there was very little that could be called 'coercion' exercised on the people by the missionaries.
4. These missionaries were evangelical and their primary focus was to 'save souls' (i.e. make Christian converts), though they also did what they could with health care, schooling and the like. While progress with making converts was slow, it came eventually. As mentioned before, the majority of the Ngaanyatjarra consider themselves Christian. However if what we are looking at is the people's social circumstances today, and in the context of the WMP, it cannot be said that the adoption of Christianity altered the people in a way we need to take particular note of.
5. The missionaries found some elements of the people's ceremonies objectionable, and tried to persuade them to change these, but with little success. They also took aim at some of the practices around inter-sexual relations, particularly the forceful taking of young women by older men that was a common practice. In this case their intervention was appreciated, at least by the young women themselves. The men who were the perpetrators in this regard were obviously not happy, but interestingly they seem not to have been defended by the people as a whole. Several battles around this issue went on around the 1950s, after which the practice, which presumably had been age-old, disappeared. Perhaps the missionaries had a decisive influence in this, though no doubt the change would have happened eventually anyway.
6. The transition of the people to a settlement mode of life occurred during the course of the mission era. As it happened, the presence of the mission facilitated a 'softer landing' for the people in this monumental change than might have otherwise been the case. The people were able to 'stage' their adjustment to the new reality over an extended period (up to 30 or 40 years), by means of a fortuitous accommodation

that hinged around the dingo scalp bounty. The people 'cycled' in and out of the mission once or twice a year to trade their scalps with the missionaries for a supply of the whitefella items that they were coming to desire, but continued to spend most of their time in the bush going about their lives in an almost unchanged way. Meanwhile the mission was able to earn crucial funds by cashing in the scalps. The resulting prolonged and 'easy' adjustment period has stood the Ngaanyatjarra in good stead in terms of their cohesion as a people. Perhaps it could be argued, though, that a 'harder' experience at this time might have made things easier for them in the long run.

7. The late 1960s saw the end of the 'honeymoon period', as the inevitable happened. More and more people had been spending longer and longer periods at the settlement of Warburton, and the bush life had become unviable for the remainder. Simultaneously, the desert people became weighed down by the whitefella baggage they were acquiring, and were losing the physical fitness and 'sharpness' that the old way of life demanded. They spent the next decade crowded into a Warburton that was hopelessly ill-equipped to cope with them. There was deprivation, and a pressure-cooker atmosphere that sparked much conflict. Still, the people retained most of their social cohesion and at this stage the outside world's most corrosive influences remained largely at bay.
8. It was in the 1970s and 80s that the scourges of alcohol abuse and petrol-sniffing arrived, along with a deterioration in relations between the older and younger generations of a hitherto unknown kind. The phenomenon emerged of the teenage 'peer group', something that had been impossible in the hunter-gatherer band way of life. 'Consumerism' and 'materialism' took something of a hold, for the first time. The desert people were acquiring their own money, and with the paternalistic oversight of the missionaries swept away, their stores began to stock 'faddish' items, and more insidiously the high sugar soft drinks that the people have found it so hard to resist and that have done so much to destroy their health.
9. Petrol-sniffing, particularly with the old 'red' (leaded) petrol, decimated the younger generations in these decades. Some parents who are now in their sixties or so, lost all their children, maybe three or four of them, during this time. The carnage was most severe among the boys. The deaths were mostly a result of car crashes and other accidents that happened because of extreme levels of intoxication. The inhalation itself also caused deaths directly, and resulted in brain damage in users who might live on for years in a severely impaired state. Apart from the deaths and damage to the users themselves, there were huge flow-on effects on the morale of the people and on the functionality of community life. The substitution of unleaded petrol for the leaded variety blunted the problem to some extent, but this fuel was still inhalable and the social problems persisted. It was only with the introduction of the non-aromatic fuels, first Avgas (in the early 1990s) and then Opal, that the scourge of sniffing declined.
10. Alcohol has also ravaged the people, though its effect has been greatly mitigated in recent generations, through the banning in the 1980s of alcohol on the Lands Apart from the health benefits, the elimination of the community disruption created by drunkenness has greatly benefited the quality of life in the Lands. However, many Ngaanyatjarras periodically go 'to town' to binge drink, causing problems not only for themselves but for the residents of in those places.

11. Overall, the physical and health effects, as well as the flow-on social effects, of these white-fella-introduced substances (to which tobacco should also be added) has been catastrophic. The effects of sugar, consumed in dangerous quantities largely through soft drinks, is perhaps the most pervasive of all. It is a major cause of diabetes and renal disease. Many Ngaanyatjarra people lose limbs and die very early from these diseases. Diet and general health is also at poor levels, as discussed further in section B4.
12. Off-setting the downturns of the 1970s, was the relief to the over-crowding at Warburton provided by the arrival of government funding for the new 'outstation' (or 'homeland') movement. The 70s was the era of a national optimism about Aboriginal affairs, with land rights and self-determination on the agenda, along with a desire to put an end to the discrimination and racism of the past. In the Lands, the new communities of Blackstone, Wingellina, Warakurna and Jameson started up, allowing different groupings to re-locate away from Warburton and closer to their own particular traditional areas. There was Aboriginal 'governance' for the first time, and a range of new freedoms, many of which proved to be double-edged swords. For a while, the coveted Toyotas seemed almost to be on tap. Moving into the 80s, the optimism began to lose momentum, and the funding slowed. There was a 20 year period of more or less marking time, until 2007, when the tide turned strongly against remote Aboriginal communities. The federal government now began its attempts at the 'social engineering' of the people, pushing them to become more like the mainstream – or more precisely, its vision of the mainstream. This push coincided with a quantum escalation in the use of 'IT' systems for communication and for accessing welfare benefits and the like. The knowledge and the equipment to manage all these new conditions has become increasingly out of the reach of the Ngaanyatjarras.
13. How can we summarise in a few sentences the 'influence' of the European world on these desert people as it has played out across a century or more? Until the 1970s they were basically ignored and left to fend for themselves, except by the missionaries. Then, for a brief time in the 70s and 80s they, along with other Aboriginal people, became the object of much well-intentioned admiration and interest which brought them some benefits, but probably set up some unrealistic expectations, and in any case did not last. Now the purse strings have tightened again, they are no longer 'flavour of the month'. Their 'difference' is no longer celebrated but rather a cause for concern and a justification for policies to force their compliance. They are struggling to cope with the mainstream world which seems to be getting further and further away from them. Even their security on their own Lands appears threatened, with politicians periodically suggesting that their communities may cease to be supported.

A8: Contemporary expectations and aspirations of Ngaanyatjarra people

AT PRESENT THIS SECTION IS BRIEF. IT DISCUSSES THE PEOPLE'S PERSPECTIVE ON TIME, THEN CONSIDERS IN GENERAL TERMS SOME OF THE DIFFICULTIES THEY HAVE IN EVEN ADDRESSING THE IDEA OF WHAT MIGHT HAPPEN IN THE FUTURE

The thrust of the Ngaanyatjarra orientation to the world, as sketched out in preceding sections, shows the people as having lived for millennia very much 'in the here and now'. We have seen how, for example, the conditions of the environment coupled with the hunter-gatherer economy contra-indicated any attempts to store for the future in a time of plenty.

Digging a little deeper, we find that the very notion of time itself is different in this world. In Ngaanyatjarra as in other Western Desert dialects, there is a word (*kuwarri*) that means 'now', 'today' or 'directly'. There is a word (*mungarrtji*) meaning 'afternoon', but it can also mean 'yesterday', depending on the context. There are not many other words that refer to chronological time – no days of the week are named, or months, and no sequence of years is identified. Most of the terminology around time reflects a cyclical view - there are many words for the seasons. These limitations of vocabulary did not mean that the people couldn't remember particular past events. They did remember those that were important enough, but most of the happenings of life were essentially repetitive and came eventually to blend into one another in a cyclical past punctuated by the seasons. (NB, In recent times the people have become reasonably familiar with the English names of the week days, months etc. They have been a bit slower to take on board the years, with, for example, only a few people being able to refer back to specific past years or decades, like '1985' or 'the 1970s'. Their increasing familiarity with and usage of the full calendar system as we know it is a work in progress.)

With their long background in which a chronological perspective was absent, it is unlikely that there would be a strong orientation towards seeing things like chains of cause and effect relationships over time. (This does not mean that people in such a society would be unable to see *individual* cause and effect linkages, but rather that they would be unlikely to bring a paradigm of cause and effect to bear when thinking about the nature of the happenings in the world in general.) In turn, one would expect a general lack of focus on the future and what it holds, how one could influence the future by doing or not doing certain things in the present, and so forth.

LESSON 14

The people find it difficult to project their minds into the future. It is hard enough for most people anywhere to do things like envisioning a hypothetical future situation and being able to consider and discuss it, but it is a particularly foreign task for the desert people with their basically cyclical orientation to time. This makes it difficult when it comes to the question of what their aspirations are. It is probably realistic to say that they are so enmeshed in their own present reality that it is almost impossible for them to step outside it and view future options from a different perspective, or even to see that they might have options.

Having said this, they do have *expectations* both about their current circumstances and about their futures. For example, they will often say that they want more houses, and they want them better equipped, like those they see the staff having. And they will say that they want their children to learn English, so that they can do the jobs around the community that are currently being done by whitefella staff.

It is important that during the process of preparing the SIOA careful attention is giving to eliciting the people's expectations and aspirations, and to their views on these matters.

A9: Young people in a changing Ngaanyatjarra world.

First a few general points about young people and ideas and practices about maturation:

- The Ngaanyatjarra world was one in which authority was acquired with age and with the 'trappings' of age – a grey or white beard in the case of a man, and in the case of a woman the bearing of two or more children. However, just having these outward signs would not get a person the respect and deference due to age if they did not also display qualities such as maturity and cultural competence. Venerated old men are known as *tjilpi* or *wati yirna* and old women, *minyma pampa*. People younger than these venerable ones will defer to them in public, saying things like, 'I can't speak, this old lady has to speak first.' If a younger person breaks this etiquette in front of an old man, the latter might say sarcastically, 'Oh, I must be just a young fella, I have to wait to speak until that bloke has finished!' A man is not likely to 'earn his stripes' until he is in his late 50s or so, and with relatively early mortality it often seems that there is a small window for the attainment of real seniority.

LESSON 15

- *Point 15: Young people have always had to wait a long time in their lives before they are listened to and taken seriously in the public domain. In the days of the 'bush life' they could at least see a pathway ahead, leading to the point where they would 'have their turn'. Now, however, any such pathways are much less clear, for when they look at their elders, they see them often floundering under the many challenges of present-day life.*
- While the attainment of senior rank is so long delayed, young males are catapulted into the category of 'man' (Ngaanyatjarra: *wati*) at a particularly early point, when they are as young as 14 or 15. In the traditional Ngaanyatjarra worldview, the initial attainment of *wati* status was only the first step in being regarded as a mature man. A long period of instruction had to follow, after which the young man would be expected to marry, have children and show the capacity to support these dependents as a hunter and good decision-maker. Nowadays, however, the post-initiation instruction period is much shortened, and the other markers of a youngfella's subsequent development have tended to evaporate. By any objective assessment – including in the eyes of most Ngaanyatjarra adults - today's youngfella of 14 of 15 who has just come through his initiation is very far from a mature man, and yet he will be encouraged by many to think of himself as such. 'You're a man now!' some community members will say, arguably rather thoughtlessly, and in so doing often will create confusion in the individual's mind. This phenomenon of very young males seeing themselves as men can create a problem for their schooling – arguing that school is for children, not for men, they often reject the idea of continuing to attend.
- A related problem arises from the pride that the older people take in 'putting the youngfellas through' (see above). There have been cases of youngfellas who have actually wanted to defer their intiation and continue secondary schooling, but have been pushed by a grandfather (the relative with authority in such matters) to enter

the next round of ceremonies. The inevitable result has been discontinuation of schooling.

In trying to address the situation of 'young people' in a changing Ngaanyatjarra world we are first of all faced with the question of which young people are we talking about – which generation – and what changes are most relevant?

There have obviously been many changes since the first significant incursion by whitefellas in the 1930s, but as indicated in A7 above, it is since the 1970s that many real internal challenges arose for the Ngaanyatjarra, including the development of an unprecedented divide between young and old, associated with the emergence of a youth 'peer group'. This began mainly among those born from about the mid 1950s - the cohort that was decimated by petrol-sniffing and other destructive new influences. This cohort and their successors born through to the 1970s are no longer young, and in fact many of them have passed away. For the purposes of the WMP, it is really the generation born in the 1980s that we need to begin with: that is, people who today are up to 40 years old.

These young people – i.e. the people of the Lands who are now 40 years old or younger – are nearly all second-generation 'remote community residents'. You have to go back to their grandparents (or beyond) to find the full bush-dwellers. Their parents grew up in a new unsettled world, and have struggled to give them much guidance about how to navigate it. They themselves have grown up - or are growing up - with things no more settled, and with the world of the old certainties even more distant.

Despite this, all indications are that the core values of these young people of today still reside in the traditional world as we have sketched it out in this report. They are not revolutionary or even particularly rebellious. While having the peer group associations, they still live within and respect all the kinship and related structures that we have referred to. They are enmeshed in family. They almost universally 'go through the Law' and they get married (mostly following the 'skin' rules) and live in family-centred households. Though their behaviour at times may seem to contradict this, they fundamentally respect their elders. They implicitly regard the Lands as their home. When asked if they would like to live elsewhere, they consistently indicate that such an idea could not be further from their minds.

In many ways, also, they still think along the same kinds of lines as the older people. In A1 we referred briefly to 'Tjukurrpa-thinking' - the characteristic Ngaanyatjarra way of thinking and reasoning about many things, that is derived from the realm of Tjukurrpa stories. This way of thinking is still very much alive. For example, an eleven year old schoolgirl drew a picture in which she depicted some unusual noises emanating from caves near her community as the sounds of the Seven Sisters Tjukurrpa women sitting inside watching their TV sets.

Having pointed out these continuities, it is also true that there are many ways in which the young people inhabit a quite different world to their elders. In 2005, researcher Inge Kral wrote about the Ngaanyatjarra young people born in the 1980s with whom she had been working. She speaks of the other influences, apart from the local ones, that have attracted

their interest and moulded them, particularly the black American hiphop style. She comments that the iconography of this 'globalised contemporary youth culture' is evident in their clothing, ornaments, speaking style and body movements.

She acknowledges that most had had disrupted schooling and had left school early. Their experience in the work force has been very limited. However during the preceding decade, from about the mid 90s, they had participated in a range of activities including accredited VET (Vocational Education and Training), youth development recreation activities, playing in bands and recording music, Ngaanyatjarra Media training, and informal training through CDEP, women's centres and art centre programs.

Then during 2004 and 2005 there was a confluence of overlapping, self-regulated projects and events. These were facilitated by sympathetic professionals who were based in the communities and had got to know the young people. The approach of these professionals was to identify and 'fit in with' the interests and way of life of the young people, rather than trying to set up structures and processes on externally-derived models. That is to say, they tailored the initiatives to take account of the interests that young people had in football, bands, getting married, having children, fixing cars, hunting, playing cards and the like. The programs led to festivals and an exhibition of young people's multimedia work. Young people initiated, negotiated and participated in a variety of events that required various skills such as the use of computers, video and still cameras, musical instruments and recording equipment and the like. They held fashion parades, painted sunglasses for sale and produced art glass plates.

As Kral argues, these developments, which come under the heading of 'community-based learning', show that the young people of the Lands are not stuck in a lost generation, lacking in capacity. Instead, 'they are exploring and defining who they are and displaying a broad range of competencies and talents'. Significantly, as she also points out, in undertaking these activities they consistently indicated a desire for the approval of their elders. Their exhibitions and festivals gave them the opportunity to obtain this approval. They displayed their skills, products and 'style' publicly – and for their part the senior people responded very positively.

As all this shows, there was a considerable 'push' in this period for youth support programs, both in terms of more conventional government funding and through less structured, innovative 'community-based' initiatives. Unfortunately much of this support seems to have declined in the period since around 2007 – which was the time when the commonwealth also changed to a more punitive, hard-line approach to Aboriginal affairs generally. The notable exception that has survived and flourished is Wilurarra Creative, a home-grown Warburton product that is funded by the community (and by an Australia Council and Country Arts WA grants). There could well be an opportunity, with the WMP, to investigate and possibly support some of these kinds of possibilities.

However, it is important not to underestimate the scale of the problem when we are considering possibilities of workforce participation for young people. The advent of globalisation and technology in recent decades has changed the expectation of the work environment. While some young people, as we have seen, have shown their capacities in

relation to some applications of ICT, in the new world of work that now dominates the Lands as much as it does the mainstream, very few types of work, even manual labour, can be done without an extensive range of skills, largely literacy-related. This skill set is beyond the capacity of most members of the young generations of the Lands.

B1: Core Ngaanyatjarra characteristics overview

In A3 I referred to the people's state of poverty as being something that defines them perhaps as much as their 'different' cultural characteristics. They are not prospering particularly well under the economic conditions in which they find themselves.

The desert people's strength lies in their collectivity, which is fostered by their egalitarianism. But while the collective provides cohesion and security about one's place in the world, it is more of a conservative force than one oriented to change and to the grasping of new opportunities.

The lack of leadership roles, which has persisted into the post-contact era, has been a double-edged sword for the desert people. While it has helped them avoid the manipulation and corruption that has bedevilled Aboriginal leadership in some areas, it has blunted their capacity to respond quickly to new conditions, and has meant an absence of spokespersons and advocates to the outside world who might have brought more outside attention to the area and more support services. There is a marked contrast in this respect with the Kimberley region, for example.

In the following sections we look at the Ngaanyatjarra people's 'approach' to various subject areas. By approach we mean to include the gamut of their relevant practices, beliefs, attitudes and priorities.

B2: Ngaanyatjarra people's approach to modern settlement, habituation and movement, and demography

At various points in the preceding sections we have discussed how Ngaanyatjarra people are still far from fully comfortable with the kind of 'settled' life that has become their reality. They retain a preference for movement over stasis, for 'going with the flow' rather than routine, and they seem to conduct themselves more like campers than householders in the spaces in and around the houses and other community structures that they have been provided with.

On the other hand, despite this orientation towards mobility there is also, as we have seen, a stability around the distribution of families across the Lands and within the communities. But the telling factor here appears to be connection to country. People live in Jameson, say, because of their feeling of ownership of the country in and around it, and because this country holds stories and associations for them. They do also see themselves as a community of *people,* e.g. 'the Jameson mob'.

What they do not feel much commitment to is the 'bricks and mortar', as it were, of the community. They are not very interested in what their own house looks like or whether the community has a prosperous appearance and a nice park, nor do they pursue any initiatives such as forming anything in the nature of 'progress associations' like Rotary. They are not concerned about the community's financial standing.

If they do have a sense of 'building a community', I would suggest it has as yet very shallow roots. I have found it interesting that when I've asked people about the history of the communities that began in 1975 they mainly refer to the very beginnings. They will talk about living in *wiltjas* or humpies while waiting for a water bore to be drilled and for the first CDA to arrive with the generator. In the case of Jameson, they mention their innovative Warburton relative Tommy Simms who used to bring them a truckload of goods from the Warburton store. They speak of taking a load of rabbits (for which the Jameson locality is famous) back to family members dragging their heels in Warburton, to induce them to come and join them in the new place. There was plenty of enthusiasm for the 'homeland movement' but it was for *where they would live*. It was not about *anything they might build*. This is completely consistent with their hunter-gatherer heritage, for as hunter-gatherers they did not build things.

In those history discussions, if they do go on to speak of the subsequent years of community life, the subject is mainly about particular family members who, say, worked in the office for a long time, or about a long-serving CDA with whom they formed a close relationship. They might mention with a wry smile the earliest houses and how tiny and basic they were. But they do not communicate a sense of a *development* of the community over time, whether it be tangible or intangible. And indeed even to the outside observer there does not seem to have been much development during the 45 years we are speaking of. The current crop of houses are bigger and there are more of them, the power stations are more substantial, fences have been put in and roads have been sealed, but otherwise they are remarkably similar to how they were then.

The fact that the idea of 'community building' has as yet barely taken root is surely because Ngaanyatjarra people have not been able to gain much purchase on it. None of their number have been able to participate very much in the actual building of the houses (or other buildings) that have been erected, or in the design of them, and they know very little about the processes or technology involved in such matters. They have not created a Rotary Club or anything like it partly because such things lie outside their social parameters but also because nobody knows the first thing about such associations and what could potentially be achieved through them. In the typical whitefella Australian town, only a portion of the population knows about each of these things and is able to go ahead and make them happen, but this is all it takes – not everybody has to have such knowledge or even see the importance of it. Only a few know about finance and get involved in local budgetary and town planning affairs. Only a few have the time and motivation to volunteer at the local thrift shop. But in all of these areas the few are enough. In the case of doctors, plumbers, electricians and the like, if none have grown up in the local ranks some will come from elsewhere, but having arrived they 'settle in' and become an organic part of the local life. (In the Lands, all these skilled practitioners are from 'the other side', the whitefella world, to which in the course of time they return. They do not 'settle in' among the Ngaanyatjarra

and become an organic part of their world.) A functioning community as known in the Australian whitefella world is an amalgam of the contributions of many varied people, and with this kind of core it is able to embrace even those who don't contribute much at all, except as consumers. (Lest it be thought that I am invoking the rural Australian community as some kind of ideal that the Ngaanyatjarra should aspire to, this is not so. I am only using it as a familiar example. All enduring communities in settled societies, whether in medieval Europe or C19th Africa or anywhere at any time, have had comparable amalgams of contributors. It is out of this amalgam that the community 'glue' comes, and the possibility of building towards a different future. What the Ngaanyatjarra need to do is to find their way into this kind of process. It is not easy for them to do and they need a great deal more help than Australia has so far been prepared to give them.)

The thrust of this discussion has been to try and convey the Ngaanyatjarra people's orientation to these matters, in order to shed some light on the observable realities and circumstances pertaining to the communities; and also in order to establish a realistic baseline for what could be envisaged as achievable through initiatives that might arise from the WMP. As with the rest of this report, it is written with the objective of elucidating 'where the people are at', and stems from the conviction that there is no point in anybody devising proposals based on a false picture of this.

Having said all this, it might be that the tenor of the commentary gives the impression that there is little care at all that goes into the communities and that they are perhaps unsafe places in which to live. This is definitely not the case. Yes, the facilities and the service provision are basic. There are the many difficulties that go with the servicing of an area that is so geographically remote. But it needs to be emphasised that there is a professional foundation in place here. There are high safety standards applied across the board, in the areas of health care (including environmental health), monitoring of the water supply, safety around electrical equipment and around the food that is sold in the stores. There is a continuous police and child welfare presence. The schools, while arguably deficient in regard to promoting the desert language, are run professionally and with a strong commitment to the care of the children.

While a variety of agencies are at work in these areas, there is an ethos within all the agencies that they are working for the Ngaanyatjarra people and that in some sense they are aligned with the people and 'what they want'. As I have been at pains to point out, in actual fact 'what the people want' is a very difficult matter to determine, and my judgement would be that they don't necessarily 'want' what the agencies think they do. But at the same time, I don't think the agencies are wrong, either in feeling that they are aligned or in the belief that they have in what they are doing. They are doing good work, and they need to have that faith in it. But the country as a whole should be doing so much more.

A note on demography:
The obtaining of accurate demographic information, and the interpretation of whatever demographic data might be available, are difficult and complex matters in the Lands context. Factors here include the mobility of the people and confusions that arise over identities. For example, school record-keeping is afflicted by the fact that children, in turning up at different times at different school campuses, often identify themselves by different names –

not only first names but surnames too. (It is quite common for young people in particular to alternate between the surnames of their mother and father, and possibly even others. Their choice will be governed by which surname has the most cache among their fellows in whatever community they are in.

More substantively, if we consider Jameson for example, we might see a particular set of population figures, broken down by sex and age. But some of the things we need to know, if we are to work meaningfully on SIOA issues with such figures, are:

- Who among these people are members of the 'Jameson families' as discussed in section A2?
- Why at a given time do we often find many more – or less – people in Jameson than the population figure indicates? When the numbers are up, who are the 'supernumeraries'? Obviously at such times there are some present who are normally based elsewhere, but should we be considering them as having an impact in various ways on Jameson?
- Research into movements of people within the Lands has shown that the smaller the community the greater amount of 'come and go' mobility its residents display. Jameson being one of the smaller communities, its population is 'hypermobile' in comparison with say, Warburton. There is also greater movement between adjacent communities than between more distant ones. Jameson happens to be a 'central' community in the Lands context and is accessible via a fairly short drive to five other places - Blackstone, Wingellina, Wanarn, Warakurna and Warburton. This again means that mobility is more of a consideration in assessing the situation of Jameson than it is for some of the other communities. What might be the relevance of such matters for the assessment of the social impact of something like the WMP?

B3: Ngaanyatjarra people's approach to education and schooling

We made the point earlier (section A1) that the Ngaanyatjarra have a limited interest in the wider Australian world, its priorities, values and even its opportunities. This in itself would suggest that they are unlikely to give the kind of support for the schooling of their children that we take for granted in the mainstream population. If we think of all the monumental things that lie behind and give support to the institution of schooling as we find it in today's Western world – the history over several centuries, the development of a teaching tradition, the financial investment, the ideas about childhood, the linkages with the world of work – we can begin to appreciate the magnitude of the gap that exists here.

The lack of this kind of background to schooling does not mean that the Ngaanyatjarra are not concerned about the education of their children or are negative towards the school as it exists in the Lands. On the contrary, they consistently say that they want their children to go to school, and to learn the things that will help them to survive and prosper in today's world. A few years ago, following much consultation with the people, the Ngaanyatjarra Lands School formulated its primary purpose as being to educate the students 'for a good life on the Lands'. This statement firstly acknowledged that the majority of students expect and want to live their lives on the Lands; and secondly it expressed the school's broad commitment to supporting this and to helping them maximise their potential here.

Naturally enough, the statement is open-ended about what the 'content' of a good life would be – this is for the students and the people to determine according to their ideas and the circumstances. In addition to this primary purpose, the school is also committed to assist any students and their families who may wish to attend a school beyond the Lands and who may hope for a different kind of future.

Attendance rates at the Lands school (which is run in an integrated manner with campuses in each community) have been the subject of much attention by government and the media. While the national benchmark for attendance is 92 – 93% of the school age population, the WA Education Department's published overall figure for the Lands school in recent years is somewhere in the 50s. Attendance is highest – in the 60s - for Years 2 to 5. This probably covers the age group when kids are most compliant about going to school, and where there is a bit of a 'critical mass' effect with kids being drawn in because most of their age-mates are there. For Pre-primary and Year 1, parents have a little more trouble getting the kids to 'get started'. Secondary attendance is listed as around 34%, as against 87% for the benchmark.

For a multitude of reasons that have to do with the radically different nature of the social world as we have been describing it here, it is actually extremely difficult to come up with accurate figures for Ngaanyatjarra school attendance. Hardly any students will have attended one campus for a full school day, day in and day out, week after week, and year after year. If this is the expectation that the person reading about a '55% attendance rate' has, then they are sorely misled. The difference between Ngaanyatjarra and the mainstream is not merely the difference between 55% and 92%. It is much greater. Further, very few students will have attended for a full day at any time in a given year, or even throughout their school career. Very few will have attended, even for a short time, every day during a given week. So it is actually difficult to know what we are seeing when we look at the official figures. The compiler of the figures will necessarily have had to compromise in some way or other, probably by recording as 'present' a student who has turned up at any point (maybe for as little as two hours) on a given day.

Some people argue that attendance in itself is the main issue, on the grounds that if kids are in school, they might be learning something, but if they're not there they certainly won't be. However there is also plenty of evidence to indicate that simply attending more regularly does not guarantee improved results. This could be partly a function of the measuring process – with 'regular' attendance as measured here falling far short of the full-day, week after week ideal. But there is also the issue of disruption. Poor results in education here are not purely attributable to a low level of attendance, they are also related to other factors, such as a frequently unfavourable learning environment. This may be caused by one or more other kids entering or leaving the classroom at random times during the day, and it may also arise through children being noisy, undisciplined and not focussed on the task. Another factor that is often overlooked is that particularly once they reach adolescence, the students' minds are full of the different perspectives and different knowledge associated with the socio-cultural world of the Lands. This 'Tjukurrpa thinking' is incomprehensible to teachers and incompatible with the content of much of the curriculum.

This bleak picture comes before we even start to look at issues such as (1) the fact that teaching takes place in a language which is not used in the students' home environment, (2) there is a minimal amount of local content in the syllabus, content that might give students a better early purchase on what school education is all about.

The School has not been inactive in the face of all these challenges. In the period since 2014, it has pursued a number of strategies. These have included strategies to engage the broader community in the life of the school, and in its aims and activities. A School Board has been formed, together with individual 'campus councils' in the various communities. Local seniors have been supported, with the help of an anthropologist, to undertake 'Tjukurrpa School Bush Trips' in which both students and teachers have been taken to Tjukurrpa sites to be told the stories and experience the way in which traditional teaching took place (and still does). Each campus has become identified with a particular local Tjukurrpa which is represented in the campus logo and in signage at the school complex. In such ways the school has been embedded to a greater degree than before into the Ngaanyatjarra world. The school has also actively encouraged the role of its locally-based AIEOs (Aboriginal and Islander Education Officers).

Some people have suggested that no matter what the school does and how hard it tries, it cannot supply what the Ngaanyatjarra people need. This, it is argued, is because of the ultimate inflexibility of the bureaucracy associated with the school and its inability to mould into the Ngaanyatjarra environment. The alternative model that has been proposed is based on the concept of 'community-based' learning. Proponents suggest that a learning centre that can be attended by all community members, young and old, would be more likely to succeed in terms of both attendance and real learning. The WMP SIOA could possibly explore some options along these lines.

B4: Ngaanyatjarra people's approach to health

The people's health status is acknowledged to be poor, a fact largely traceable to European impacts. High sugar intake, an unbalanced diet and lack of exercise have contributed to obesity and other health problems. The people's diet leans heavily towards meat, sugar and 'fast food' when available. Also, the habits of opportunism inherited from hunter-gatherer days are on display, as people eat perhaps more than they need to when food is plentiful: such occasions will inevitably be followed by times there is little or nothing to eat. Thus an individual will rarely have three regular meals per day. Many Ngaanyatjarras are also extremely addicted to cigarette smoking, and again the degree of addiction is probably partly attributable to the 'feast and famine' syndrome that is so deeply part of their experience and their culture. It does not help that they have had little exposure to the many health awareness campaigns of the past few decades that have often been so effective in mainstream Australia. The Ngaanyatjarra Health Service has done its best in this area, with some tailored information initiatives, as it has with its overall delivery of clinical and other types of health care to the communities, but it experiences the same kinds of challenges that beset all agencies operating in the region – challenges related to remoteness and costs, and to the cultural differences and material poverty of the people.

The Ngaanyatjarra have a different theory of disease, ill health and death to that of Western medical practice. As alluded to in section A2, the Ngaanyatjarra have a strong belief that disaffected persons may use sorcery techniques to bring sickness and death on an enemy, and this belief was a significant underlying factor behind the attention that the people give to keeping their relations with others in good repair. So central were beliefs around sorcery that it was considered the most likely cause whenever sickness or death occurred. Thus the health of the human individual was linked, in Ngaanyatjarra theory, to the health of their social relationships: the less conflict and feuding that occurs, the theory implies, the less sickness there will be.

Sorcery is understood to be perpetrated by the 'firing' of a small but deadly *warta* (stick) into a person's body, usually their upper torso. (The attacker is typically hundreds of km distant and the whole process happens 'supernaturally'.) Anybody can attack a person in such a way. Just as there are no specialised occupational groups of teachers or hunters or anything else, the practice of sorcery is not a matter of being a member of any kind of 'sect' or group with restricted knowledge. It is about harnessing 'magical' powers (called *maparn*). *Maparn* is conceived of as an actual substance, that can be found at certain sites (most of which lie to the west of the Lands). Individuals who are so inclined can visit these places and 'load themselves up' with *maparn,* after making a payment to the owner of the site. So equipped, a person can be a potent sorcerer. They can also apply their power in the opposite direction, for healing purposes. A person's *maparn* can dissipate over time, or be stolen by someone else.

When a Ngaanyatjarra person becomes sick they and other interested parties will first look for possible reasons in terms of who the sufferer might have upset in the past – and it could be the distant past. As with many other aspects of life (such as the approach to schooling discussed in B3), the orientation to sorcery is likely to lessen the credence that the Ngaanyatjarras might give to a Western medical diagnosis. However, again as with schooling, they are not hostile or dismissive towards medical explanations. If there is something in what the nurse or doctor says or offers that they can see might help them, they will take it on board. Plenty of people go to the clinic when they are sick. On the other hand, as a group they have not been quick to adopt the medical emphasis on 'prevention rather than cure', for example. Thus they have been slow to stop smoking, give attention to diet, physical exercise and so forth. Despite these measures being so important a part of the medical approach. As we have seen many times, projecting oneself into the future and adjusting present behaviour accordingly is not a strong Ngaanyatjarra characteristic.

Incidentally, many Ngaanyatjarras are aware that whitefellas who hear about their beliefs around sorcery will likely disparage them. But as one man commented to me, 'whitefellas don't know about many of the things that happen [in our world].'

There are many conundrums in the health domain that arise because of the gaps between the two worlds in fundamental understandings, expectations and lines of reasoning. There is also the ever-present problem simply of faulty communication. I can only briefly summarise some of these conundrums here. In doing so I draw upon a study in which I participated in

2001[5]. Please note that nothing said here should be taken to reflect on the performance of the current Health Service (or even the Health Service as it was in 2001). The study focussed on exploring Ngaanyatjarra interpretations, and offered recommendations about how to alleviate some problems that regularly arise. It is also possible that some issues mentioned here no longer apply or have been overcome.

- As alluded to already, in their own world Ngaanyatjarra people were very careful around communication issues. It was critical for them to get their message right, in a world that was purely oral (i.e. without paper back-up to verify what has been agreed to), and where a misunderstanding could have serious consequences (through sorcery or other forms of retaliation. We've also (in A3) considered how miscommunications are rife between the people and the staff on a day-to-day basis in the community. In the course of our research into health issues, informants would say thing like, "The story is hidden all the time." We noted that 'people feel that there is a whole sphere of activity around health care that is concealed from them. This is not surprising, since in their own world there is a great deal of secrecy.' There is fear that health staff might have nefarious motives, particularly staff not known personally, and particularly when the setting is a large hospital in an unfamiliar place. We in the mainstream know that when health professionals speak in low voices to one another a little away from a patient, don't fully explain what they are doing, or answer questions perfunctorily it does not mean that they have malicious intent. But to the Ngaanyatjarra this would be an absolutely logical interpretation.
- The issue of the availability of information can come into conflict with one of the treasured principles of the health profession, 'patient confidentiality'. While there are good and ethical reasons for a health service to be concerned about confidentiality in regard to a person's details, when a Ngaanyatjarra person is, say, refused information about a relative's condition, they tend to get upset. They themselves do not have the same concept of privacy, hence they have difficulty understanding the whitefella's reasons for it. Another way we could express the issue that is revealed here is to say that they do not have the same boundaries around individual personhood. Their whole existence as a people is more 'collective' in nature and they do not give the prominence to the individual person that the Western world does, This feature is part and parcel of many of many of the other 'different' characteristics of the Ngaanyatjarra that we are teasing out in this report.)
- Having made this point about confidentiality, it must be acknowledged that it is often difficult for health staff to know who they should be talking to when they need to discuss issues about a patient. It often happens that there is an existing feud between relatives on different sides of the family, and the staff person may attract wrath whoever they approach. There are not necessarily any reliable rules about who should be consulted – for example, spouse, paternal kin, maternal kin, or whatever. It is often just a matter of strong personalities, prior grievances, or just plain cantankerousness.
- There are conundrums in regard to interaction between Ngaanyatjarras and whitefellas that can occur in many domains but are maybe more likely , and the consequences more serious, where health is concerned. Some of these have to do

[5] 'Cultural Security for the Ngaanyatjarra Health Service', report by Gill Shaw and David Brooks, May 2001

with the pervasive emotion of 'shame' (*kurnta*) that young people feel when put on the spot, and a widespread embarrassment that the desert people of all ages have in speaking about personal, especially bodily matters. In our study, informants told us, 'a lot of people don't know how to talk' to the nurse or doctor. They are also liable to interpret comments by health staff as rebukes. If they are acting tongue-tied, or the nurse can't understand them, she might tell them to 'bring someone to help you explain.' Then they feel ashamed, and don't return. Because of these barriers, health problems may not be reported at all, or not until it is too late. It was also reported that some people fear they have a terrible sickness growing inside them, and don't want to go and find out. On the other hand, people who are diagnosed with a serious problem may not believe, or choose not to believe the diagnosis if they do not actually feel too unwell. This is a frequent occurrence with renal problems. People are told that their kidneys are on the point of collapse and they need to get on to dialysis, but often they ignore this, saying that their kidneys don't hurt – and no doubt daunted by the life-changing prospect of spending three days a week, for several hours, sitting in a dialysis chair (and often having to move down to a regional city to get access to the treatment).

The Ngaanyatjarra tend not to take a preventative orientation to the question of their health, and thus they are often at odds with what health professionals are trying to do. They are also often mystified as to the reasons why the clinic can treat some maladies but not others. They are given tablets for headaches from the clinic, so why can't they get a tablet for their kidney failure in the same way? And if a child is crying in the middle of the night, why does the sister get upset when they wake her up at her house for some Panadol?

The common and preferred stance of the Ngaanyatjarra is to show compassion to a sick person and be prepared to give them a lot of care. But this is while they are in a sick condition. Once they are up and about again, even if they have lost a limb or an eye or whatever it might be, they need not expect many expressions of sympathy. Others will openly refer to them as a 'cripple', or they might say, 'well you're finished now, you've just got to sit down (until you actually die).' Such things will not be said unkindly, but just as expressions of fact, perhaps with a bit of a laugh. The afflicted ones themselves will not feel slighted or dwell on the problems. The desert culture is a tough one. We might note from this also, that in contrast with narratives about sickness or injury followed by recovery in the modern mainstream, this world lacks the stories of people 'fighting their cancer' and 'recovering to run another marathon' and the like. The desert people do not have these vast expectations of themselves and belief in their ability to conquer this kind of adversity. They are far more accepting of what life serves up to them.

B5: Ngaanyatjarra people's approach to money, wealth and spending (economics)

The following discussion does not attempt to specify what types of information need to be gathered - nor the questions and issues that need to be pursued - in order to undertake the 'economics' study for the SIOA. Its goal is to provide a socio-cultural context against which the economic issues to be found in the Lands can be better understood.

We begin with a brief discussion of the Ngaanyatjarra economy as it was pre-contact, as this will make a useful background to an understanding of many features that are observable today.

1.The hunter-gatherer economy and currencies of exchange

The desert people in their independent 'stateless' world had a 'hunter-gatherer' economy. It was essentially an example of what has sometimes been called a 'domestic economy', reflecting the fact that most of the production, distribution and consumption of goods (mainly food, but also tools, items used for shelter, etc) went on at the household (or extended nuclear family) level and there was little or no integration of these economic functions with any larger framework. However the people did not lead their lives solely at this 'household' level – they formed part of a larger grouping (or society) within which they shared a language, beliefs and values, and within which they knew one another, maintained relationships, sometimes helped one another and sometimes fought. If this larger level of cohesion was not knitted together through the dynamics of the domestic economy as such, how *was* it created and maintained? The answer is through various forms of exchange.

We have seen how the desert people followed an ethic of sharing, and of showing consideration and concern for others. We have argued that these values and practices, underwritten by the fear of sorcery, were and are a significant driving force in the desert world. They helped to reduce conflict and maintain good relationships across a broad span. Another way in which a 'knitting together' occurred was through 'trade' involving desirable goods that were peculiar to particular localities, such as bush tobacco and different types of spearwood or ochre for decoration. But trade of this sort was of limited importance in the desert, since surpluses were rarely accumulated and most items could be obtained freely in any case.

The main way in which a larger level of integration of people can be achieved in a world that has only a domestic economy is through an accepted *currency* of exchange. Among the desert people, a very significant such currency was knowledge. Knowledge (that is, knowledge of the Tjukurrpa) was the key to the belief system that underpinned all the values, rules of behaviour and the like, and even the very language that the people spoke.

Older men were the fonts of Tjukurrpa knowledge and they doled it out carefully, bit by bit, to younger men in return for being provided with the food that with advancing years they found it increasingly hard to obtain for themselves.

There were other currencies as well, but this one was probably the most significant. The critical point is that there was no abstract, single currency, no medium into which all other items of value could potentially be converted – money. All transactions between people were concrete, particular and personal.

2. The coming of money to the Lands

The introduction of money to the Lands came in fits and starts during the C20th. The people did not really see a significant amount of money until the mid 70s, when there was a sudden big inflow in the form of unemployment benefits. As we've seen, this was a turbulent and

traumatic decade for them in multiple ways. The people had a lot of difficulty in working out how to handle this new medium of money.

Just as with the other sorts of changes that they have been required to deal with in a short space of time, the change from their past world of concrete currencies – themselves so limited in number and so well-defined in their rules and application – to the abstract, open-ended currency of money, with its almost unlimited possibilities and potentials, was enormous.

Today, money continues to pose many challenges for the people. One area has to do with the personal management of money. Similarly to other aspects of life, people do not take a long term view with money. Rather, it 'burns a hole in the pocket' and is quickly gone.
At a broader level, they do not share with the mainstream West that history of familiarity with money which leads most whitefellas to have an awareness of where money 'comes from' and how it is generated. The desert people have not acquired what is often referred to as a 'respect' for money – and considering their history and how they are placed, there is little reason why they should have done so. Even more significantly, they do not recognise money for what it is in the modern world – the currency that eclipses all other possible media of exchange and 'makes the world go round'.

3.The Ngaanyatjarra perspective on money
A simple example of this is the way that when buying a car, a Ngaanyatjarra person will typically either pay the price the seller quotes (If they have that amount available), or if they do not, will offer whatever cash they do have. For them, the transaction has nothing to do with the 'market value' of the vehicle. They barely recognise the existence of such an abstract measure, and if they have heard of it, they consider it irrelevant. They are not concerned with such things as 'paying a fair price', 'getting a bargain', or 'not getting 'ripped off'. The issue for them is simply that they want the car, and to get it they will hand over whatever they can, or whatever is asked. Whether the car is 'worth the money' does not enter their calculations. This results in the people regularly being exploited by used car dealers, and indeed by unscrupulous business operators generally. One of the contributors to poverty among the desert people at present, is getting hooked into exploitative financial arrangements in order to obtain credit that is desperately wanted at the moment, or to make a purchase they can't do without. The increasing ubiquity of the 'on-line' realm is causing this problem to balloon enormously.

For another example of the discrepancy in views, we could consider how the Ngaanyatjarra are likely to react to the following scenario involving an exploration company that has been working its tenements on the Lands. Let us suppose that this company has got to the point where it no longer wishes to proceed further. During its time, it has spent money on the tenements by way of state government charges and exploration costs. These costs represent an investment, which it would now like to try and recoup. Of course the investment may be lost if nothing prospective has been discovered (and announced to the ASX); or if there is no interested buyer for the tenements. But if there is a chance of a return, the company wants and expects to be able to pursue it. *The point is, that it is an integral part of the whole enterprise of exploration that a company will be able to sell its tenements if it wishes to and if there's a buyer.* This is an example of how the capitalist system works. If

such a sell-on was not permitted, it would mean that if a company did not find a minable resource and actually proceed all the way to mining, it would ipso facto lose the entirely of its investment. If the rules were like this, nothing would happen at all, and we would not have an exploration industry, or indeed a capitalist economy (or any other imaginable large scale economy) at all. But to the Ngaanyatjarra eye, a company that winds up its exploration should simply vacate its tenements, Then, if another company comes along, discussions can start again with a fresh slate.

The Ngaanyatjarra line of reasoning is that the first company will have been undertaking its exploration work on the basis of an agreement with the traditional owners, through the Ngaanyatjarra Council. (The negotiation of such an agreement is in fact a precondition under state law, of a company's presence on the Lands.) As far as the Ngaanyatjarra are concerned, such an agreement is specifically between the traditional owners and that particular company. To be fair, this perception is far from unreasonable, since the meetings at which the original agreement is negotiated are attended in person by senior company representatives and have a 'face to face' character. These representatives themselves typically emphasise ideas like 'trust' between the parties, and talk about such things as behaving in a respectful manner and maintaining continuity of personnel so that personal relationships can develop. It is hardly surprising if the desert people believe that the agreement that is struck is something unique and concrete, peculiar to the parties that have met and got to know one another. To find out later that all the personal stuff apparently meant nothing because the agreement can simply be sold on to another, unknown party can be deflating to say the least. As in the case of the car purchases, the people have no interest in the economic issues discussed in the last paragraph. If these are brought up, they are like to dismiss them as 'whitefella ways' in the way discussed earlier in the report.

It should be emphasised that while most Ngaanyatjarra views in this matter are as described, this does not mean that the people would generally go so far as to refuse to accept the sell-on of tenements to a new company, and in fact the Council ensures that all agreements contain clauses that guarantee that these transactions can occur.

4.A carry-overs from the old economy?

Despite the now pervasive presence of money in the Lands, the idea that knowledge is currency retains its place. And herein lies a problem, because in reality, knowledge does not any longer have its unquestioned place as currency within the lived Ngaanyatjarra world as it once did. Not everyone subscribes to it, or necessarily cares about it. As a medium that can get you the things you want and that you cannot do without out, it, like other old, concrete forms of currency, has been replaced by money.

For the older people, who still deeply subscribe to the value and primacy of knowledge, and who consider that, on the male side, holding a substantial amount of it is a pre-condition of being regarded as a mature, authoritative man, it is a great disappointment when they find that young men are not impelled to seek it from them with the same urgency and single-mindedness that they themselves showed when they were young. But in fact, since Tjukurrpa knowledge and knowledge of country is no longer the key to the young men's future as was the case before, it is completely unsurprising that their attitude is different. (This is not to say that the youth do not respect this knowledge or want to have it, but

simply that the nature of the reality in which they now live does not drive them to gain it as a matter of necessity.)

Apart from this loss within the internal Ngaanyatjarra world, there is also the fact that the newcomers, the whitefellas whose world now dominates the Ngaanyatjarra one in so many ways, also do not have a reason to treat Ngaanyatjarra knowledge as a vital currency. If whitefellas give credence to Tjukurrpa-related knowledge, it is essentially because they want to be respectful - or to signal an attitude of respectfulness - not because having the knowledge is important for them in the world they inhabit. There is a bit of uneasiness between the two sides over these matters, because of the inequality involved.

There are several sorts of phenomena that commonly arise out of these changed circumstances and resulting mismatches:

1. For the older people, the difference that they see in the youngfellas in regard to the acquisition of Tjukurrpa knowledge is not only about the youth showing a less vital interest in it. There is also the evident discrepancy between the amount of effort that they, the seniors, had to put into prising the precious resource out of their own elders, and how nowadays, as elders themselves, they feel they almost have to coax the youngfellas into taking an interest. Then on top of this, they witness younger people – despite lacking both Tjukurrpa knowledge and the senior standing that goes with it - being given undue attention and rewards by whitefellas. For example, it can happen that a young person is treated as a focal point by a mining company that comes to negotiate over land access, leaving the elders feeling side-lined. (From the company's perspective, such a choice may be mainly based on who they can best communicate with or other similar considerations.) While the young person may know that his elders will be unhappy with what is happening, he may comply with the whitefella approaches because there is a route here to a career for him – an inducement that cannot be supplied by the elders. In this way, tensions arise or are exacerbated within the Ngaanyatjarra polity. (NB, we pointed out in A1 that there are problems in any case with outsiders seeking out 'leaders', because in the desert world the whole idea of people being leaders is suspect. The old vs young dimension merely adds to this.)
2. A variation on the above theme arises in the employment area through the now-common division of function between 'heritage related work' and 'land management work'. Heritage work is agreed by all to be under the aegis of the elders, but such work typically occurs in the context of mining exploration and is funded by whatever company is involved. Hence, while the daily pay rates are good , the work is usually fleeting and temporary in nature. Land management activities, on the other hand, are deemed suitable for younger people – those youngfellas, again, who are unlikely to be fully versed in the Tjukurrpa. Their lack of such learning, and lack of seniority, is not considered a problem by the (whitefella-controlled) funding agencies, given that the work is oriented to physical environmental matters and not to the 'cultural values' of the landscape. But these sorts of jobs, being generally funded by government programs, are more on-going and permanent, hence the elders come off second-best again. Moreover, the work takes the participants out into the 'bush', the same domain in which lie the 'cultural values', that are the province of the elders. This is a further source of resentment among these senior people, who may also

experience genuine anxiety that Tjukurrpa places may be unknowingly impinged upon.

3. Going to a deeper level, issues can arise over why exactly it is that people think they should be paid when they express the expectation that they will be. For example, an elder might ask a whitefella friend or staff person to take them on a bush trip to Tjukurrpa sites in their country and then expect to be paid for it, even though the trip is occurring purely at their request. In the Ngaanyatjarra perspective the payment in such circumstances is in return for the owner revealing – or 'passing on' – their knowledge in the course of the visit, which is something that has to be paid for, and would have been paid for in the old days by the young people participating in the site visit. These young people would have been desperate for what they were receiving. As indicated above, this is how the cycle worked then.
4. In a similar vein, it can sometimes be unclear – in the minds of both the Ngaanyatjarra and the whitefella parties – what people are being paid for when they *are* paid. Is it for their time, or for their cultural knowledge as whitefellas understand it, or something else? This can be illustrated by a particular example. Unlike in the previous case where the instigator was a Ngaanyatjarra person, this time the affair involved a cultural show in which a troupe of Ngaanyatjarra ladies went to sing and dance at the Sydney Opera House at a celebrity event. In this case there was of course no question about the fact that payment would occur. The whitefella promoters in this case were happy enough with the concept that they were paying partly for the time (including the attendance) of the people, and partly for their cultural performance – and were not going to split hairs about how much was for each. But when the time came it was apparent that there was an issue. The ladies understood what the whitefellas were prepared to pay for, but this didn't satisfy them. They wanted more. The whitefellas were completely mystified, and the ladies had trouble explaining it – because, similarly to our last example, it was bound up with the issues, relevant to their own world, about revealing knowledge. This wasn't something that translated easily across the cultural divide at the Opera House. The ladies tried to put a name on it, and called it 'special money'. "We need to get some special money," they said. Again, they were not 'trying it on' but were simply being Ngaanyatjarra. However, to the promoters and the audience the performance was entertainment and a 'dose of culture'. Its substance – the Tjukurrpa details that it revealed – was beyond their comprehension and held no currency value for them.
5. Native title work: In the early 2000s the people participated with their Council anthropologists in a great deal of research for the Ngaanyatjarra Lands Native Title Claim. Much of it involved bush trips to Tukurrpa sites, and the same kind of pressure arose for payment as in our previous examples. In this case, the resistance to such payment was particularly strong among most of the whitefellas involved, on the grounds that as the people stood to benefit from gaining native title they should be prepared to go unpaid not only for trips to sites, but for all their work on the claim (never mind that only some of the people were working whereas the benefit would come to the many.) The outrage displayed by the Council's own lawyers illustrates how difficult some of the points we have been making are for whitefellas to understand.

Against the background of the various factors mentioned here, it is important that economic issues, including those to do with monetary payments and with the economic relationship that is established with the company, be considered in depth in the SIOA study.

The main thrust of the considerations raised here is to provide a caution to any idea that an engagement with the Ngaanyatjarra people in relation to economic matters will be an easy matter. The brief 'case studies' provided, that could be multiplied manyfold, illustrate the shallowness of the penetration of some key global economic realities into the Ngaanyatjarra consciousness, stemming from the very short history of money as a currency here, along with the pervasive cultural 'difference' that we have identified again and again in this report.

B6: Ngaanyatjarra people's approach to employment and business

As with the other topics that we have examined, the Ngaanyatjarra orientation to employment and business 'opportunities' is constrained by their limited interest in the wider Australian world, its priorities, values and so forth.

The concept of work is a key area for questions of employment and business, and there are some particular issues that apply here. For example, was there a concept, or activity, comparable to work in the hunter-gatherer past of the people that would have facilitated their understanding of what whitefellas meant by the term and what they expected from a person who was given a job? The simple answer is, not really. The people certainly worked hard when they hunted and gathered and did all the other things necessary for their survival in the bush way of life, but these activities were undertaken opportunistically and were oriented to a clear and immediate return to themselves and the family members around them at the time. There is a huge difference between this situation and one where they (a) have to turn up regularly and continue working, and not so much to complete a task but for a fixed amount of time; and (b) are engaged in activity that is usually not oriented to something meaningful in the Ngaanyatjarra world but has been devised by a whitefella.

The other point to be made here is that in the old hunter-gatherer world, there were many other activities apart from those related to survival that were required to keep life orderly and prosperous. Many of these were essentially 'social'. (We have referred previously to the consequences of failing to maintain positive social relationships far and wide.) There were also the activities associated with the maintenance and transmission of Tjukurrpa knowledge, and the performance of the knowledge-related ceremonies required to keep the human world in balance with the supernatural world. All these activities took up a great deal of time, probably more time than was devoted to physical survival, including food provisioning. In many ways, the desert people saw the more mundane work associated with obtaining 'the necessities of life' as less central, and less important than the other kinds.

These orientations and priorities are still very much in evidence in their present-day world. People will work, but usually only for a limited time. One often sees a person being attracted to a particular job or type of employment that has recently caught their imagination. But because it is 'in the moment' – and also because people's efforts to get into or stay in the workforce are undermined in so many ways by the realities of Ngaanyatjarra life – the attraction usually soon fades away. Very few people consistently

maintain a determination to chase or hold on to a job, let alone subscribe to an idea that 'having a job' in itself is something to be aspired to. While it is possible to hear people expounding views about the merits of work from time to time, this is usually a matter of a temporary enthusiasm and/or a desire to impress a whitefella listener.

It is useful to do a brief survey of the Ngaanyatjarra record in relation to work and employment, as this will provide some lessons relevant to the WMP case.

Types of work in the Lands

From the time the missionaries arrived in the early 1930s, a small number of people worked at the little mission settlement. It was hard manual work - for the men, cutting and carting wood and stone and sometimes tending the mission sheep flock. For the women it was washing clothes in the laundry, and dishes in the extremely basic kitchen. There was 'no nonsense' allowed and little pay. Most employees came and want fairly rapidly – there were always others to replace them – but some stayed for longer, usually in cases where they formed a warm personal relationship with a particular missionary.

During the 1950s and 60s a significant number of Ngaanyatjarras (mainly men) went down to the Eastern Goldfields to work (for spells) in the pastoral industry. This was even more of a 'school of hard knocks' experience than the mission work but it had many resonances with the hunter-gatherer life, and the men enjoyed the work with horses and stock. But most stuck it out only for a season or two. Again, those that lasted longer usually spoke of a 'boss' that they highly admired and stayed with. Stock work for Aboriginal people mostly dried up with the introduction of equal pay in the pastoral industry in the late 1960s.

On the Lands, in the decades since the 60s, the following types of employment have been available, or potentially available:

- Rubbish collection and similar unskilled work in the community. This no longer involves the heavy labour of the 'mission time' work, but is typically a matter of going around in the Shire or local community truck, emptying the bins and taking the rubbish to the tip. Mostly young men are employed. This is probably the largest employment 'sector' in the Lands.
- Work in the community offices and stores and in the school. (At assistant rather than managerial level.) Such jobs require varying levels of literacy and other skills. There are only maybe two or three possible positions of this type per community. In the past, some persons might occupy a position like this for a number of years – again usually in conjunction with a particular whitefella. (Note that in all cases the persons concerned would have been working in their 'home' community, that is the community of their own family, where they would have been living anyway. People did not relocate to other communities for these jobs, or any other ones.) There appear in recent times to be less people in these roles – but this is something that needs to be checked.
- Executive or governance level positions. Only a handful of such positions exist across the Lands, and they are for senior people (aged in their 50s or more.) This category includes some 'chairperson' positions, although these are not always paid.
- A category similar to the last, though with slightly less prestige, is 'liaison officers'. Ngaanyatjarra Health Service may have one such role – and it could be filled by a

relatively young person. (The NHS also employs health workers.) Senior people are required for 'mining liaison officers' because much of the work is heritage (Tjukurrpa) related.

- 'Ranger' positions – more significant from a numbers point of view, and very popular with both men and women. Rangers work in 'teams' (facilitated by whitefella coordinators) and a mixture of senior and more junior persons is possible. At present there are three teams, one each at Warburton, Wakakurna and Blackstone. Funding comes from the commonwealth 'Working on Country' program. A source of tension, sometimes, is that the commonwealth has two goals with this program – undertaking substantive land management, and the social engineering goal of fostering 'working habits'. This means that whereas the people might prefer to have a flexible arrangement with different persons slotting into the positions at different times (in response to personal and community requirements and pressures), the government agency pushes for continuity in the employment of particular persons.(As flagged in B5, there are also sometimes problems that arise between older and younger people in regard to these jobs.)
- There are art centres (mostly for dot painting, sometimes also for spinifex weaving and crafts) in most of the communities. These do not provide 'jobs' as such, but the artists can make money by selling the paintings they produce. As with the Ranger work, whitefella coordinators ensure that the enterprise keeps going. The facilities are mainly for older people, who are the ones with the greatest freedom to work with cultural designs. The art centre arrangement greatly suits many of the senior ladies, who can sit and work with their fellows in a congenial setting, and have the flexibility to come and go not only during the day, but also over longer time spans.
- As discussed in A9, at times there are programs that are oriented to the young people that involve art, music and other creative activities. These have sometimes included things like hairdressing, fashion, cooking and hospitality. There were more of these programs some years ago when government was keen to fund these types of activities. One such program that has been particularly successful and enduring is Wilurarra Creative, based in Warburton. Wilurarra has its own facility and a long-term whitefella coordinator. With external funding so limited now, it has been funded largely by the community out of its own reserves. (This has become very onerous, but the community is determined to keep the facility.) Warburton has also at different times employed young people in tourist-related roles at the Tjulyuru Arts Centre and Gallery. The Ngaanyatjarra College at Warburton operated for some years and taught courses for young people, while also employing some locals.
- Some people produce '*purnu*' (wooden artefacts such as shields, digging bowls and spears). This is done independently by individuals, specifically for sale to the '*purnu* man', a representative of the Uluru Arts and Crafts shop at Ayers Rock, who drives out to the Lands periodically to collect and pay, on the spot, for the items that people have got ready. The *purnu* man keeps people advised of the timing of his next visit; and seems to be able to take as much as has been produced (while applying quality control standards that the people are familiar with). The arrangement has been going on for years and with good prices apparently being paid, the people are happy with it.
- In the time of CDEP, it was common to see various community 'projects' such as garden developments (for vegetables and produce such as watermelons that were

popular locally). There are far less of these since the end of CDEP. While the individual projects did not stand the test of time in themselves, they represented a positive experience for as long as they lasted. They became part of community and personal memories, and helped to slowly build a sense of the possibilities and benefits that work and 'enterprise' can provide.

Issues affecting the success of employment initiatives

It is evident from this brief survey that two of the key components for success are (a) flexibility in the employment arrangements and in the expectations surrounding the project or program, and (b) a coordinator who is committed, who preferably stays in the job for a long time, and who is willing and able to develop personal relationships with the workers.

In most cases success is best achieved if the coordinator is a whitefella. This avoids the common pitfall whereby a community member in that role will fall prey to local politics, to pressure for favouritism from family members, and the like. There is also the simple fact of the shortage of locals with the skills, particularly in literacy, to perform this type of role. The latter problem is exacerbated by two factors. One is the increasingly complex reporting and other requirements that are now placed around even small programs and projects. The other stems from the fact that many Ngaanyatjarras, given their background, have very little identity documentation. This can be an extremely difficult hurdle that must be overcome before an individual can even get started on their own employment pathway, let alone assist others. Whitefella coordinators spend a huge amount of time obtaining birth certificates, drivers licences and similar documentation for potential Ngaanyatjarra workers.

Note the point made above about the people having always only worked in their 'home' communities. This brings us back to the issue we considered in section A2, where we discussed how, because of the principles of land connection, the people do not normally relocate between communities, which consequently have stable populations (even though there is a lot of 'coming and going' on a short term basis).[6] It is fair to say that, until now, there have been very few drawcards that might have attracted people to consider relocating and thus breaking the existing pattern in this regard. But the mine, with its unprecedented number of job opportunities, brings in a new factor that will maybe change the equation here, causing a departure from the existing norms. However this works out, forethought will need to go into this issue. If people do give indications of wanting to come from other communities to work at the mine and there is an expectation that they will be housed at Jameson, the potential 'jolt' to the stability of the community will need careful consultation and management. On the other hand if they do *not* look like they will come (possibly for the very reasons of land connections as flagged here) this might cause a problem with underachievement in relation to employment targets, which will also need to be addressed.

[6] The exception to this pattern is that in recent years, because of a 'bright lights' syndrome, some young people have been attracted to Warburton from other communities,. (However this is usually temporary and they would not be considered to be 're-settled' there.) Warburton, as the regional centre, is to some extent different to the other communities, in that there is a greater degree of freedom of movement in and out than with the smaller communities.

Another worthwhile point is illustrated by the case of the '*purnu* man'. When devising plans for the engagement of Ngaanyatjarras in work activities, it is important to 'cover all the bases'. If all likely problems and opportunities for failure are detected and pre-empted, the likelihood of success increases dramatically. Most of these problems are not mysterious in nature but are actually quite predicable – if one knows the Ngaanyatjarra. The *purnu* man knows that (1) if he wants the goods he had better come and get them himself – the people do not have the wherewithal to send them to him; (2) the best arrangement for payment is that he pays cash on the spot – other options are too complicated; and (3) he needs to be very attentive to the timing and in getting the message out about when he is coming, otherwise the goods and/or the people will not be there when he arrives. The situation and details will be different with other endeavours, but the point is to think it all out carefully and be sure to 'plug the gaps'.

The case with the art centres is much more complex. These centres represent a kind of 'business' for the people, who are able to make and sell their products through them. But they are not 'free enterprise'. There is a heavy social welfare component. Their existence is dependent on an agency based in Alice Springs that is involved at multiple levels and is itself reliant on external funding sources (mostly government). This agency handles the administration, the hiring of the staff, etc - and does things like organising selling exhibitions in cities, thereby enhancing the value of the art. The local coordinators diligently document the provenance of the paintings for the same purpose. They also try to ensure that all art produced in the community is handled through the art centre, on the basis that the artists will get the best value this way in the long run, and because the whole operation will be undermined otherwise. (The alternative model, which rears its head sometimes, is the one where artists sell individually to private dealers. This can benefit the more well known artists and is more like 'free enterprise', but it usually accompanied by some blatant exploitation.)

Employers 'on the Lands' and 'for the Lands'

The following comments are not strictly speaking within the brief of this report, which is to address the Ngaanyatjarra socio-cultural context relevant to the various SIOA subject areas – in this case 'employment and business' – and not to research the subject areas per se. However we feel that there are some substantive matters in this subject area that it is important to flag. One is that the issue of the employment of Ngaanyatjarra people needs to be considered not simply on its own, but in the context of the fact that there are a large number of jobs essentially associated with the servicing of the Ngaanyatjarra people, the great majority of which are held by non-Ngaanyatjarra people (whitefellas). Many of these jobs are based in Alice Springs and Perth, as well as on the Lands themselves.

The main employers 'on' as well as 'for' the Lands are:

- The Ngaanyatjarra Council group (the Council itself; Ngaanyatjarra Health; Ngaanyatjarra Services; the housing division NCRHP).
- The communities, the staffing of which is integrated within the Council staffing structure.
- The community stores and roadhouses, which are also articulated with the community and Council structures.

- The Shire of Ngaanyatjarra-ku (part of the mainstream local government system, but senior staff have close links with the Ng Council as well as other relevant agencies. The Shire employs youth workers, some of whom are locals, and also the people who work on rubbish collection etc, as mentioned.)
- The WA Department of Education (Runs the School. Staff are mostly professionals who are employed through central office, but local people are employed as AIEOs and sometimes in other roles such as yardworkers.).
- Ngaanyatjarra Media originated as Irrunytju (Wingellia community) Media in the early 90s, before becoming part of the Ngaanyatjarra Council and later separately incorporating itself. It employs a small group of professional media people, mainly at its large complex in Wingellina. It maintains smaller premises in some of the other communities, and engages locals in a variety of ways, especially through training programs. It undertakes a wide range of media-related activities.
- The art centres (discussed above).
- One or two state government agencies like those involved with child protection. As with the School, the bulk of their workforce employment occurs via their central office, but sometimes a local person may be engaged in a liaison role or similar.)
- The Police (No local persons are employed by them).
- The commonwealth Dept of NIAA (formerly PM &C) has officers frequently on the Lands, their main role being to invigilate the government's 'welfare reform' agenda. They probably employ no local people.

Several hundred people are employed across these agencies, and the environment is quite cooperative and 'tight-knit'. To the extent that this is so, it is a generally beneficial thing. In the 1960s and 70s multiple agencies were present with competing agendas and with staff who didn't know one another. There was a good deal of chaos. This is much less the case in recent times.

(There is virtually no private enterprise as such here - private businesses and the like - although one or two possibilities are in the pipeline.)

The comment above about the great majority of employees being whitefellas is not made in order to be critical of the employers, particularly the ones that are part of the Council group. They welcome Ngaanyatjarra employees when these are available and able to do the job.

The latter point is the critical one. The great majority of the Ngaanyatjarra people lack not only particular job-related skills but general work-readiness. Many, including today's young adults will realistically never be able to be employed.

The Council and other agencies on the Lands often receive criticism about the poor record of local employment. One of the questions frequently asked is 'why don't the (whitefella) workers do on-the-job training of Ngaanyatjarra people, who would eventually be able to take over from them?' But, counter to this, it has many times been pointed out that, 'there isn't enough time in a day to mentor, supervise, train and develop an Indigenous workforce when core services (e.g. water, power, waste management, maintenance etc) need to be delivered.' It must be realised that the whitefella workforce itself is usually under-staffed

and hard pressed, particular in regard to essential services such as those just mentioned – which are the sorts of work areas that might theoretically be most suited to locals.

B7: Ngaanyatjarra people's approach to crime and safety

1.Offending that occurs in and affects the 'public' and the 'whitefella' domains

In terms of impact on community life as a whole, the most significant type of 'crime' on the Lands involves young people in 'break and enter' types of offences. These are extremely prevalent, though as offences they are definitely at the minor end of the scale. Community stores are often the target, and it is when this occurs that the impact broadens out to the whole community. This is because in the wake of a break-in (which will happen in the night) the store-keeper will typically respond by closing the store for a period of time and calling a community meeting. Closing the store has an immediate effect, since as we have seen, people do not keep supplies at home, but rely on getting food from the store on a daily basis. Also, the holding of community meetings of this sort can be quite distressing for the people. The storekeeper will often push for some agreement from the meeting about repercussions for the break-in. There will have been some loss of stock (usually not much), some 'trashing' of the premises, and a mess to clear up).

A few preliminary points can be made here:

1. Sometimes one or more of the senior people in the community will support the store-keeper's actions in closing the store. In some cases the senior people give their support willingly, while in others there might be less enthusiasm due to particular community politics.
2. The 'community politics' will usually arise from the fact that the locals will be well aware of who the offenders are. They are almost always the children of a local family. With most people being very sensitive about their children being criticised, there will be careful attempts by all community players to avoid appearing to 'name and shame' those involved.
3. It is understandable that the storekeeper is upset. He has probably put a lot of work into the functionality of the store and will also be the one who does most of the work in the clean-up, the balancing of the books, re-ordering of stock, etc. On top of this he often does not get much satisfaction from the community meeting, because of the community politics factor (which leads the people who could speak up to remain quiet), and maybe because the locals anyway do not care as much as he does about such matters. He is likely to have morale problems, particularly if the break-ins are repeated. Such morale problems can have flow-on effects, for example in hastening staff turn-over, and in intensifying the phenomenon that occurs of negative stories about the Lands circulating among whitefellas (see below).
4. There are police on the Lands to whom these matters are reported but it is rare that anything comes of this.

The store is obviously a particularly popular target because it is a 'treasure trove' of desired goods - food, cigarettes and the like. It is likely often the case that the thieves are actually hungry and that this was a direct motive. In some cases 'sniffable' products including various sorts of solvents may be sought. But often, while the 'pickings' are an inducement,

the activities occur in the context of boredom and the pursuit of excitement. The number of offences increases during the summer holiday times when there less things than usual for these young people to do, and when many of the whitefella staff are away.

Other community facilities other than the store are sometimes targeted, like the office, the youth centre (if there is one) and the school. In most cases these are even 'softer' targets than the store, with rarely any repercussions occurring. The school, for example, is likely to absorb a lot of vandalism due to concerns about its popularity in the community if it complains.

Whitefella houses are another popular target (since these are quite likely to contain desired items and also because experience shows there will be even less come-back on the offenders). Again these are more vulnerable at holiday times when the occupants are away. In Warburton, for example, almost every whitefella shouse will be broken into during the summer if no one is staying in it, particularly if it is in a spot where there is little surveillance.

Whitefellas vehicles are often broken into when parked at night, but it must be noted that this is often abut stealing only particular things, like tins of 'touch up' paint for sniffing, The offenders do not usually 'take everything' nor do they usually damage the vehicles much – except for breaking a window in order to get in! They do not attempt to steal the vehicle. This all reflects the fact that the offenders are very young – aged from perhaps 10 to mid-teens.

The preceding matters refer to 'crime' (1) as it affects the community – through damage and losses at stores and other community facilities, and through subsequent unpleasant community meetings and reprisals such as store closures, and (2) as it affects whitefella staff. To conclude this section, what other impacts can we say that Ngaanyatjarra crime has, or potentially has, on the lives of the whitefella staff?

As noted, break-ins and similar offences, while they are a nuisance and a drain on resources, are committed by very young offenders and are not of a serious nature. These kids do not carry weapons other than perhaps some crude break-in tools, They do not intend harm to persons and they very rarely inflict it. However the fact that the offences occur and that there is sometimes the feeling that 'they are always occurring and no one does anything about it' can feed into loss of staff morale and into larger fears about the safety of living and working on the Lands.

This brings us to other much more serious types of offence against whitefellas that sometimes occur. These would mostly come under the category of assault. Whitefellas, particularly female staff, are sometimes subject to assaults. These almost always involve perpetrators who are older than the 'break-and-enter' crowd. There are some distinctions that must be noted. There are the cases of men attacking women, with sexual intent, surreptitiously and usually in an isolated spot or perhaps in the victim's house in the middle of the night (if the victim lives alone). In rare cases, in neighbouring regions of the desert, full-scale rape and murder of a white person has occurred – but I am not aware of this happening in the Ngaanyatjarra Lands. The other sort of offence is a more public form of assault, usually as part of a burst of anger. The typical case here would be where a local

woman attacks a whitefella staff woman in a workplace, because of some dispute. A local man would rarely perpetrate this type of offence against a whitefella, whether if be a woman or a man. Indeed whitefella men rarely experience physical assaults, or at least not serious ones.

The break-ins, together with these kinds of assaults, and combined with observations that whitefellas make about intra-Aboriginal conflict and violence, and general community disturbances (which are discussed below), lead some staff to form views that the region is a bad and unsafe place. (It is in response to these views, or after particular flare-ups' that heavy steel cages and other protective infrastructure have been installed around the whitefellas houses in some communities.) The forming and spreading of such views is most unfortunate. I would argue that it is less of an objective assessment than a reflection of an underlying orientation that leads some people to interpret various events and dynamics in a certain way. Other staff, who have experienced the same setting and perhaps have experienced more personal challenges, do not draw these conclusions. To the extent that the negative views contribute to a detrimental narrative about the Ngaanyatjarra that gets broader currency in the outside whitefella world, one would hope that staff would appreciate the danger for the Ngaanyatjarras and not promulgate them.

Ngaanyatjarra internal conflict and violence

I do not intend to say much under this heading, because to the extent that it is about dynamics that are only 'internal' to the Ngaanyatjarra world it has limited relevance to the issues we are concerned with for the WMP.

However, it does need to be said that there is a considerable amount of internal conflict and violence. It mostly occurs in an emotionally charged atmosphere where anger is freely vented (see section A6) . To be clear, I am referring here to the realms of Ngaanyatjarra family and community life in which whitefellas play no part, except sometimes as (usually uncomprehending) observers. Thus, there is often shouting and sometimes the exchange of blows, occurring either in or around people's houses, or in the more open areas of the community. They are quarrelling about matters old and new, deep-seated and superficial. This, as we have indicated before, is a people who conduct their affairs on the principle of continual negotiation, rather than by establishing rules and codes of conduct that are to be adhered to across different situations. The conflict and drama is part and parcel of this principle and this way of life, and for the most part it does not lead to serious consequences in terms of injury.

The exception to the latter statement is in the case of domestic violence. This occurs almost universally in the case of younger couples, but tapers off as people get older.

B8: Overview of challenges related to Ngaanyatjarra Lands infrastructure and services

While there are many challenges in relation to infrastructure and services most of these are not particularly influenced by the socio-cultural context, except in some obvious ways such as the lack of an ethic, among the people, of ownership in regard to common property, which has already been mentioned and does not need further elaboration.

There is one area to which the relevant Study team's attention might be drawn, as its importance could otherwise be missed, particularly since in this report we have painted a picture of a people predominantly still oriented to traditional values and practices. This is the ICT area.

Although very few Ngaanyatjarra households have their own computer, the existence of internet-connected devices in community offices and in the homes of whitefella staff and friends is now critical to the life of the Lands and its people. Like people everywhere, the Ngaanyatjarras cannot do without access to internet communication. At all levels – personal, community and regional – it is via the internet that banking, the receipt of income, the ordering of goods and the obtaining of documentation of many kinds occurs. In addition, Ngaanyatjarra have taken up mobile phone usage with a vengeance, and it is now normal practice to keep in contact with other persons both nearby and afar through constant calls. Facebook and other social media platforms have become immensely popular.

All this depends on the optic fibre network that has been installed across the Lands, along with supplementary forms of connectivity including by satellite and telecommunication towers. The history of the development of this network in the Lands is itself a case study in the kind of self-help that this region has displayed over the years. Telstra and the federal government have made their contributions, but so have the communities and the Ngaanyatjarra entities, and the push to make it all happen has come substantially from the local end. Also, there are still gaps in the system. There is a world of difference here from the way in which these facilities and functions have rolled out for most city-dwellers. It would be worthwhile for the study team to some research into how it has happened, to reveal the kinds of factors and dynamics involved in bringing infrastructure to a region like this.

B9: Overview of the importance of heritage to Ngaanyatjarra people

Conundrums with the heritage clearance process

We have indicated in preceding sections how what the world calls 'heritage' - which in the Ngaanyatjarra region means the Tjukurrpa and all things related to it - is of foremost importance to the people. For them, the Tjukurrpa is to be revered as an original 'source' of things and as the basis of most of the meaningful aspects of life. They see the results of past creative activities of the Tjukurrpa beings embedded in and punctuating the landscape, and they also see and feel the beings as a living presence, today, in the same landscape. As one man said, 'if you look closely enough you can see them (the beings) there. Not just see them but maybe hear and feel them. If you see a circle of round stones sitting there, they're not just stones – it's those Tjukurrpa men sitting there, and they're maybe singing and dancing right now. What looks like a bent tree might be one of them bending to reach something.'

Because the Tjukurrpa has this on-going, living presence for the people, the procedures that are intended to achieve the 'protection of heritage' in the context of proposed land-impacting activities like mining actually present them with conundrums. The very concept of 'heritage' implies something that is of the past. The greater problem, however, lies in the fixity of the heritage protection process. Definite boundaries have to be created around the

'heritage areas' that are identified. With the completion of the exercise, mining activity can occur outside the bounded areas.

There appears no way around this conundrum. Ultimately, short of not undertaking activities like mining at all, what else can be done except create boundaries around the sites as defined by the people at the time?

But for the people, even as they are out on the heritage survey, it can happen that they feel the Tjukurrpa beings there 'alive and kicking'. They are not sitting still, they are moving out from the places that are the 'sites' where they are supposed to be. Even as the boundaries are being delineated as faithfully as possible according to what has always been known, they are proving inadequate. Or alternatively, the various bounded areas may have been meticulously mapped across a large landscape, and later the people go out again to this landscape and see some stones that they never saw (or noticed) before, but that they 'recognise' as Tjukurrpa items. But already, perhaps, the planning for the mine has earmarked this new place for destruction. It wasn't identified when the heritage survey was done, so there is no recourse.

In most cases, these kinds of clashes will not happen – but it is always a possibility that they will. This is part of the reason why, particularly in the context of a complex development proposal, the people will say to the company, 'show us on your maps where you want to go, what things you want to put in different places on the country, and then we will try and work out how we can accommodate you with the least likely impact on our Tjukurrpa environment.' By contrast, the company is likely to want as much freedom and flexibility as possible, and so will say, 'tell us where your sites are, so we can do all our planning in a way that avoids them.'

Negotiating around these different starting points is likely to be a major part of the 'heritage protection' process for a big development. Even if they get their way and their starting point is accepted, the people will still struggle to come up with solutions that will minimise the chance of conflict with their Tjukurrpa environment, particularly if the latter is a complex one. In the case of the WMP, it is extremely complex, with many Tjukurrpa beings travelling in different directions in and around the region in question, sometimes interacting with one another, sometimes avoiding one another, according to their natures and their 'stories'. It is a fortunate happenstance that at least the immediate development envelope, as proposed, is relatively free of this Tjukurrpa presence.

The above considerations apply to the Tjukurrpa proper, the one with the capital T. But there are also tjukurrpa with a t in the lower-case . These are the stories that are more modest, the stories of the lives and doings of the people themselves, as opposed to those of the Tjukurrpa beings. They are also stories of the land. The people will have left 'marks' on the land in a similar way to the Tjukurrpa beings have. In the past, they buried their dead in places. While their burial sites are covered by the Aboriginal Heritage Act, many of the other 'sites' that retain meaning for them may not be. Even though not attracting protection under legislation, the people may in some cases have similar feelings about their destructions as they would have for the Tjukurrpa sites. In any case, ultimately the two

'levels' of Tjukurrp and tjukurrpa are not neatly divisible. Many deceased people, and even some living ones, are identified with the Tjukurrpa beings.

Sharing a cultural landscape with the miners

Drilling and digging holes in the ground, building mine infrastructure, having a large workforce present – all these major intrusions into the physical shape and the age-old 'peace and quiet' of this landscape – will not only be apprehended directly by the Ngaanyatjarra people themselves, but will also, in their understanding, be apprehended by the Tjukurrpa beings present in the surrounding landscape. The Tjukurrpa beings may react on their own account to the physical disruptions and even to the large scale presence of 'strange' (non-Aboriginal) people in the shape of the mine workforce. They may become slightly (or perhaps greatly) changed in their nature and in their behaviour. As a result of this, the balance of the relationship that Ng people have with these local Tjukurrpa beings may change.

NB – THE ABOVE SECTION IS NOT FINISHED, IN THAT IT NEEDS A MORE 'FACT-ORIENTED' SECTION THAT DESCRIBES THE SPECIFIC HERITAGE-RELATEED ACTIVITIES THAT HAVE TAKEN PLACE, THE SPECIFIC CONCERNS OF THE PEOPLE THE MEASURES AND PROCEDURES PROPOSED FOR PROTECTION. THERE ALSO NEEDS TO BE REFERENCE TO THE NEED FOR A HERITAGE PROTECTION PLAN TO BE IMPLEMENTED ON AN ON-GOING BASIS.

B10: Overview of key government and other social development programs on the Ngaanyatjarra

With the Ngaanyatjarra having only been in significant 'contact' with the whitefella world for less than 90 years (since 1934), it is possible to sum up the entirety of their experience of externally initiated 'programs' by identifying five main sequential phases.

- **Phase 1: the Warburton Mission agenda**
  The UAM did not use such terms as 'program', but they certainly had an agenda, which as briefly described in A7, was to 'save souls' in the Christian manner and to try to socialise the people as into Christian-based values, behaviours and capabilities as the missionaries understood these to be. We may say that they were moderately successful with this agenda, mainly inasmuch as the people did eventually come to be Christian believers. Their efforts to re-socialise the people were for the most part less successful. They did not get very far in transforming the Ngaanyatjarras' basic approach to life. As an institution, the mission was important in the people's history in that, at a time when frontier conditions prevailed in the world beyond, it functioned to hold the people in the 'safety zone' of the desert, limiting their naïve wanderings into places where they frequently encountered violence, disease and exploitation. (This function, it should be added, was a conscious intention of the UAM in locating the mission so far out in the desert.) Lastly the mission, surviving as it did for forty years, also influenced the 'fate' of the people by enabling many of them to experience a slow adaptation to the conditions of the whitefella world. In this, as discussed, various factors were telling, including the precarious circumstances of the mission (which limited whatever 'social engineering' aspirations it harboured), and the fortuitous symbiosis with the dingo scalp trade . To

paraphrase a Warburton elder who recently summed up the mission era, "The missionaries came and went. They brought us the word of God, they helped us in some ways, and they didn't do too much damage. We are grateful to them."

- **Phase 2: Government and 'assimilation'**
  Although the assimilation policy is a massive part of the history of 'Aboriginal Affairs' across Australia from the late 1930s through to the 60s, it had only a limited effect in the Lands. It could be said that the missionaries were pursuing assimilation, but they were independent of government, and this was not quite how they saw it themselves. Governments (and by this we mean, at this stage, state governments, since the commonwealth only gained its brief to be involved as of 1967) were the main overt and direct implementers of the assimilation policy as such, and the WA government was largely 'AWOL' on the Lands during the years in question. It only became any kind of player in the Lands during the 1960s, when it reluctantly took up the reins of administration as the mission's influence waned. The ten year period, from the mid 60s to the mid 70s, when the government was 'in charge', is best characterised as shambolic. Reluctant to put in money, it demonstrated little in the way of any coherent policy or plan at all, including assimilation – though, if asked, the latter would no doubt have been what it said its policy was.

  (For the record, the 'Stolen Generation' phenomenon, which later became seen as the signature - and infamous- component of the assimilation policy, is (except in the case of one or two individuals) of little relevance to the Lands. This was chiefly because there were very few mixed race people born in the Lands, though the general lack of a government presence played its part also.)

- **Phase 3: Land Rights, Self-determination and Homeland movement**
  The next phase arose predominantly as a reaction to, and rejection by the Australian public of, the preceding national policy of assimilation. As a flagship part of the new Whitlam government's legislative agenda to right historical wrongs, the provisions relating to Aboriginal land rights and self-determination were passed in 1972, although the effects did not fully reach the Lands until 1975. How it rolled out here was briefly described in A7. One of the intentions of the suite of new provisions was to give Aboriginal people ownership and control of their own lands, where possible and feasible (and this was a big question). Full land rights under the commonwealth legislation only came about in the Northern Territory. The WA Labor government of the day was implacably opposed to land rights, particularly as it would allow significant controls over mining. However, in 1988 the Ngaanyatjarra achieved leasehold tenure over their Lands, and this is mainly attributable to the momentum begun by the commonwealth legislation sixteen years earlier. These leases fell not too far short of the commonwealth 'freehold' schema, albeit being symbolically less stirring. The control over the use of their lands that the Ngaanyatjarra have gained in this way (which has since been buttressed further by their achievement of native title rights) is something they consider to be of great, and indisputable value.

  A second goal of the policy initiatives was to give Aboriginal people control, or greater control over their own affairs – and at the same time to give them

opportunities for paid employment, particularly in their own communities. While the basic intent here was clear and laudable, there were many ambiguities involved in the application. In the case of the Ngaanyatjarra Lands, it is apparent enough that many or most of the jobs, particularly the skilled ones, are even today still carried out by whitefellas. The hoped-for takeover has not materialised. It is a little different with decision-making, or 'governance' as it is now called. This was placed firmly in Aboriginal hands in the 70s, at least in principle – and the principle remains generally unchanged even now, despite the major recent shift within Aboriginal affairs. (In reality, quite a lot of whitefella guidance occurs, but ultimately the decision-making *does* lie with the people.) All this appears to be on the right track. To the extent that the goals are far from fully realised, we can put this down to insufficient support and commitment by successive governments, combined with the kinds of obstacles internal to the Ngaanyatjarra world that we have identified in this report.

A third goal of the Whitlam-era reforms was to facilitate Aboriginal people in moving 'back to their own lands' from places to which they had been displaced since the arrival of Europeans – such as missions, ration stations and pastoral properties. The circumstances were slightly different in the Lands – the mission at which they came to be settled was within their own country, not distant from it. They had not experienced the kind of wrenches and emasculations as the people of the more settled areas that the policy was mainly aimed at. The 'homeland' movement in the Lands nevertheless was hugely welcomed by particular groups who had in the last few years found themselves 'marooned' at Warburton and were now able to live closer to their own individual areas. This meant, also, a relief in the over-crowded 'pressure-cooker' situation that had arisen at the mission. In hindsight, although the support for outstations (as they were called in the Lands, rather than homelands) was so happily accepted, it can be seen in some ways to have sent the people off in a tangential direction for the next few years. At the least, it probably stalled the process of gradual acclimatisation to the whitefella world that they'd been embarked on for the previous few decades. The homelands movement contained a strong dose of nostalgia (among both Aboriginal people and their supporters). It extolled the idea of small-group life, and of living 'according to the old ways'. This was all certainly anti-assimilationist but it was maybe also anti a sensible and necessary adaptational process. The other detriment was that resources and services were forced to stretch more widely. This was notably the case with schooling – for several years there was only a bare-bones 'itinerant service' available for school age children in the new outstations.

- **Phase 4: CDEP and the 'high water mark' for remote communities**
  The Community Development Employment Projects program was commenced by the commonwealth in 1977, and in the Ngaanyatjarra Lands it is associated with the three decades of the 80s, 90s and 00s. This must be judged as a period of some kind of stability in the Lands. The turbulence and excesses of the 60s and 70s did not disappear but some aspects of the new 'remote community' reality were sorted out and ways of doing things were established. For example, the sudden influx of welfare payments in the 70s had created chaos. Being unused to money, people spent it rapidly and unwisely and then had nothing left for the rest of the fortnight. The idea

behind CDEP was to allow the people in such areas as the Lands to pool their unemployment benefits at a community level and to use some of the money, on their initiative, for community projects, while making their own decisions (within limits) about the level of cash payments that individuals would receive to live on. The merit of CDEP, then, was that it was oriented to the key realities of community life. While the normal, nation-wide welfare system is 'one size fits all', with everyone receiving the same amount, the CDEP arrangements catered for the fact that some people in a community will have very few financial obligations and needs, while others will have many. The latter have the opportunity to draw a larger income through regularly contributing to the community by working, while the former can remain inactive and draw little, though without needing to be drastically deprived. (They will still get some payment.) The other huge merit of the system was that it 'empowered' a community to think out and implement their own projects, rather than forcing welfare recipients to go through the morale-sapping motions of seeking non-existent jobs or undertaking 'work-like activities' in order to justify their payments. While at work, they could feel that they were doing something useful and creative, and that had the community's support. In the Lands, apart from the intangible benefits of the CDEP era in terms of these human aspects, and in terms of the contribution that the program made to the consolidation of an orderliness within (at least some aspects of) community living, there is a lasting tangible legacy. The Warburton and Warakurna roadhouses, the Warburton swimming pool, the Ampol/Caltex service station in Alice Springs, NATS (the Ngaanyatjarra Agency and Transport Service), Ngaanyatjarra Air, and many other developments received seeding funding and/or were worked upon under the auspices of CDEP. Life was not perfect, but these three decades were the high water mark for the Lands – and the CDEP program had a lot to do with it, along with the general tenor of Aboriginal Affairs policy during this time, which was still in overall sympathy with the Whitlam-era initiatives of the 70s.

- **Phase 5: Welfare reform and the shift to CDP: the downhill slide**
  In 2007 after the release of the "Little Children are Sacred" report pertaining to the Northern Territory, the Howard government, with Mal Brough in the Aboriginal Affairs portfolio, dramatically altered its policy approach towards remote Aboriginal communities. Under the Northern Territory Emergency Response (aka 'The Intervention') Bill introduced in 2007, many radical changes were introduced. These included even the setting aside of the generally-honoured principles of self-determination and self-management as the commonwealth sent in Government Business Managers (GBMs) to run communities. Among other changes, welfare payments were partially quarantined; and the permit system whereby community councils normally authorised access to their areas was suspended and these powers transferred to government officials. The police and army were mobilised into the communities to undertake actions deemed necessary, and to carry out surveillance and enforce law and order. Restrictions on pornographic material were introduced.

  The Intervention legislation did not apply to the Ngaanyatjarra Lands, which are in WA, and no comparable legislation was introduced in this state. But the 'shockwaves' of what was happening just across the border were strongly felt by the

Ngaanyatjarras. Moreover, the underlying ideas and some of the measures associated with the Intervention came to form part of the commonwealth's approach to the Lands (as well as to other indigenous remote community regions). The ideas included a ramped-up mistrust and suspicion of what was 'going on' in these places; and a willingness to take a hard line in rooting out and dealing with the perceived problems. Apart from the suggestions about widespread child abuse and related behaviour that was associated with the "Little Children" report, there were a number of other inter-related ideas, the most important ones from a Lands perspective being that (1) the communities were stagnating economically and socially, (2) the people were not progressing in relation to developing 'work-like habits' and (3) both communities and people were out of line with the intent of welfare payments, particularly unemployment benefits, which were supposed to be a temporary measure but had been turned into a permanent source of support. One of the main targets of the last point was CDEP.

The welfare-related ideas in this censorious mix were to be the ones that came to bear most heavily on the Lands. Over the next few years, the CDEP program in the Lands (and elsewhere) was progressively dismantled. In 2017 it was replaced with what was now called CDP (Community Development Program), at which point the whole edifice described in Phase 4 (above) collapsed. Everyone was now back on their own individual welfare payments received direct from the government (Centrelink). There was no more community control or community-devised projects, no more flexibility to pay people according to their needs and their contributions in a way that reflected community values. The 'bottom up' approach was replaced by a 'top down' one. Concurrently with this huge shift in the whole system of how welfare is handled in remote communities, the Government became much more demanding in regard to the individual's obligations, and much more punitive towards breaches and failures to comply with the myriad rules. There is now a complex system in which the individual has to undertake 'work-like activities' at specified times on a daily basis. These activities, being devised and forced on recipients under government instruction, tend to lack the kind of meaning that the community devised projects had under CDEP. They tend to be like 'make-work'.

This current approach represents 'social engineering' of a kind never experienced before in the Lands within the various externally introduced programs and agendas that we have grouped into the five 'phases'. It remains to be seen whether any benefits will emerge from the approach over the long term – at present all that is visible is detriment.

(To make things even more difficult, this 'fifth phase' has coincided with the emergence of complex IT systems. This, and the associated shift to the requirement for everyone to do their transactions 'on line' has severely tested the capacity of the people and the communities to simply continue receiving their payments, let alone to deal with problems and 'glitches' as they occur.)

B11: Other key considerations

THIS SECTION WILL BE COMPLETED ONCE FEEDBACK HAS BEEN RECEIVED FROM OTHER PARTICIPANTS IN THE SIOA PROCESS

At this stage, we merely include the following two points:

1. The main overall risk for all the potential impacts and opportunities is that they will not be mitigated/taken advantage of, because while the barriers will be pointed out, the true extent of them will not really be comprehended by the JV parties.
2. A Genealogy Project has been carried out in order to identify the people (several hundred of them) who possess, or may validly claim, rights and interests in the mine footprint area, and who consequently have a right to have a say in the project as well as receive a share of the benefits of it. This was a complex process that fortunately was able to draw on detailed records in the prior possession of the Ngaanyatjarra Council. Achieving a smooth process of obtaining consent to the WMP will depend on the completeness and accuracy of the data, hence the matter constitutes a significant risk factor for the Project. A system will need to be implemented for the reliable and timely distribution of benefits payable to eligible recipients, and records will need to be upkept over time.
3. A SIMP will be required to address all matters required for the distribution of compensation payments, the maintenance of records and their on-going updating.

XXXXXXXXXXXXXXXXXXXX

Appendix J6. Demographic Study of the West Musgrave Project Area

Centre for Social Responsibility in Mining
Sustainable Minerals Institute

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

07 April 2020

DRAFT

OZ Minerals West Musgrave Project SIOA – Demographic study

Executive summary

This demographic study has been commissioned by OZ Minerals as part of a social impact and opportunities assessment (SIOA) for the West Musgrave Project (WMP). The main purpose of the study is to provide foundational data for subsequent SIOA studies.

To this end, the study extracts and synthesises demographic data from the Australian Bureau of Statistics (ABS) and other publicly available data. The study also addresses a key observation by Brooks and Kral (2007), which noted discrepancies between the 2006 ABS Census and those authors' locally collected population data.

Key demographic statistics

The two infographics overleaf provide a summary of ABS demographic data, for each of the areas of influence (AOI) as follows. Note that the diagrams for AOI-2 include Jameson (i.e. AOI-1) – in many cases, AOI-1 could not be analysed separately due to unavailability of data; as such, AOI-1 and AOI-2 are collapsed for the purposes of this study except otherwise stated.

AOI #	Area of Interest	Communities	
AOI-1	Nearest residential communities	Mantamaru (Jameson)	
AOI-2	Ngaanyatjarra Native Title communities	Irrunytju (Wingellina) Kiwirrkurra Blackstone (Papulankutja) Patjarr Kanpa (Pira Kata)	Tjirrkarli Tjukurla Warakurna Wanarn Warburton
AOI-3	Great Central Road communities	Laverton Leonora Esperance Tjukayirla Kalgoorlie	
AOI-4	Primary service centers	Perth Adelaide Alice Springs Kalgoorlie Esperance	

In general, AOI-1 and -2 communities are predominantly Aboriginal, younger than the Australian average, and speak Indigenous languages at home. The unemployment rate is significantly higher than the other AOIs (nearly 30% compared to less than 10%). Approximately 16% of the adult population has completed Year 12 (compared to 44% and 61% in AOI-3 and -4 respectively). AOI-1 and -2 are in the lowest quintile of disadvantage in Australia. Health outcomes are considerably worse than the Western Australian average.

AOI-3 is a predominantly mining-focused region, with the top industry being mining. AOI-4, which encompasses primary service centres, has a wider diversity of industries.

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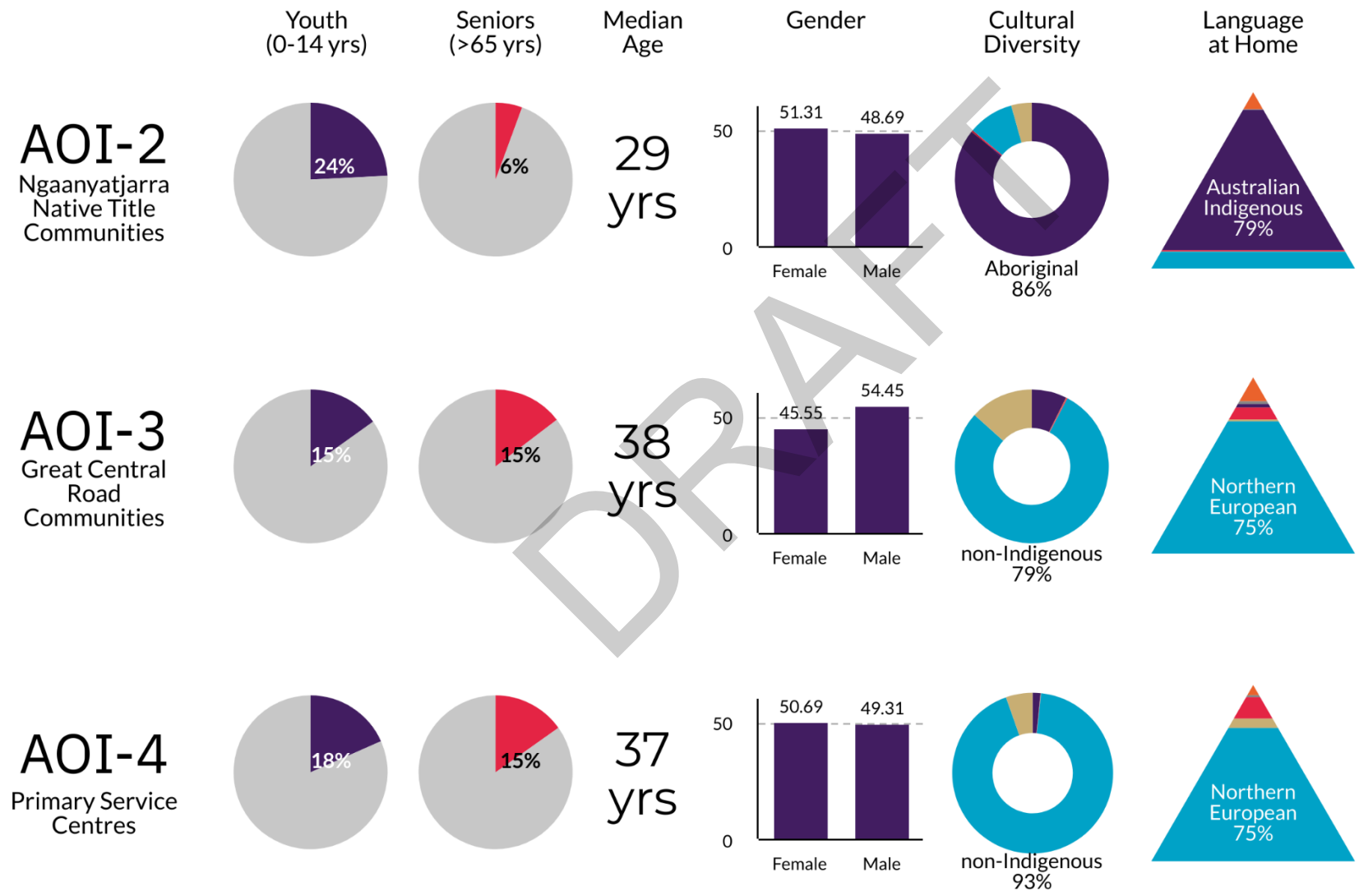
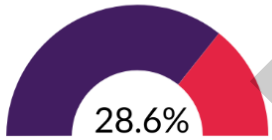
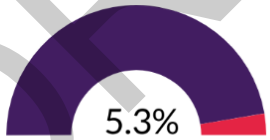
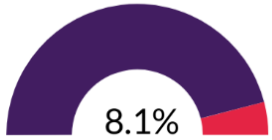
Demographic Profile of Areas of Interest



Socio-economic Profile of Areas of Interest

	Year 12 attainment	Unemployment rate	Top industry of employment
AOI-2 Ngaanyatjarra Native Title Communities	16 %		 public administration & safety
AOI-3 Great Central Road Communities	44 %		 mining
AOI-4 Primary Service Centres	61 %		 health care & social assistance

Calculating the Aboriginal population in AOI-1 and AOI-2

Brooks and Kral (2007) conducted a months-long study into the population of the Shire of Ngaanyatjarraku (i.e. AOI-1 and AOI-2, except Kiwirrkurra which is in East Pilbara Shire). They argued that the 2006 ABS Census does not account for mobility and transience in Ngaanyatjarra settlement patterns, and as such the Census undercounts the true Aboriginal population in the Ngaanyatjarra lands.

This study provides a qualified confirmation of Brooks and Kral's finding. We similarly find that the ABS Census data provides an undercount, but we also noted that the ABS corrects for this undercount, to create an 'estimated resident population' measure. This measure is comparable to Brooks and Kral's own population count of residents in Ngaanyatjarraku Shire.

We find that the bigger challenge is not the methodology of ABS counts, but their coverage. Not all AOI-1 and AOI-2 communities are delineated in the ABS data. As such, in some cases, only high-level datasets (e.g. Shire-level rather than community-level) could be ascertained.

Recommendations

Recognising that this study is both (a) the first iteration of a chapter of the SIOA, and (b) a precursor to other SIOA studies, we make the following recommendations:

- **Introduce into subsequent studies' scopes of work the following requirement**: 'Contractors should review the demographic study and assess to what extent current demographic data is sufficient for the analyses proposed. To the extent current data is insufficient, contractors should propose a data collection program. In consultation with the SIOA Steering Committee, OZ Minerals reserves the option to streamline each studies' data collection program to avoid duplication of work and research fatigue among the community'.
- **Source primary data for Kiwirrkurra**: To determine whether Ngaanyatjarraku LGA statistics are applicable to Kiwirrkurra, primary data for Kiwirrkurra should be identified and analysed.
- **Whether AOI-1 and AOI-2 should remain separate**: This study was generally unable to disaggregate demographic findings between AOI-1 and AOI-2. While the impacts felt in these groups of communities are likely to be different, for SIOA purposes, it may be neater to collapse them into a single area of influence, but different the impacts experienced discursively.
- **Employment study**: Include the following requirement in the relevant scope of work: 'The contractor for this scope of work should address the employment and education findings of the demographic report. In particular, the contractor should determine the degree of work-readiness of AOI-1 and AOI-2 communities for (a) employment at WMP; (b) employment or business elsewhere within the Ngaanyatjarra lands; and/or (c) what social programs could assist AOI-1 and -2 communities create opportunities arising from development of the WMP?'

CSRM is open for discussion of any aspect of this report with the SIOA Steering Committee.

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1. About this report

1.1 Scope and objectives

This demographic study has been commissioned by OZ Minerals as part of a social impact and opportunities assessment (SIOA) for the West Musgrave Project (WMP). The immediate purpose of the study is to provide foundational data for subsequent SIOA studies. It is intended to avoid duplication of work (since other SIOA studies will need to consider demographic data). This study is also expected to facilitate integration across the SIOA studies. Longer-term, the data analysed in this study will be used for monitoring and evaluation of socioeconomic changes over the life of mine.

The objectives of the study are to:

- Extract and synthesise demographic data from the Australian Bureau of Statistics (ABS) and other publicly available data
- Assess the extent to which publicly available data is consistent with locally collected sources of demographic data (principally work done by the Ngaanyatjarra Council and the Shire of Ngaanyatjarraku)[1]
- Produce a report that can be used as a basis for inclusion as a chapter in the SIOA
- Inform the scope of other SIOA studies – this includes raising questions for subsequent studies to address where they cannot be addressed using publicly available desktop data alone.

The scope extends to descriptive statistics and analytical comparison with data supplied by the Ngaanyatjarra Council and the Shire of Ngaanyatjarraku. It does not extend to primary data collection.

1.2 Structure

The structure of this report is as follows:

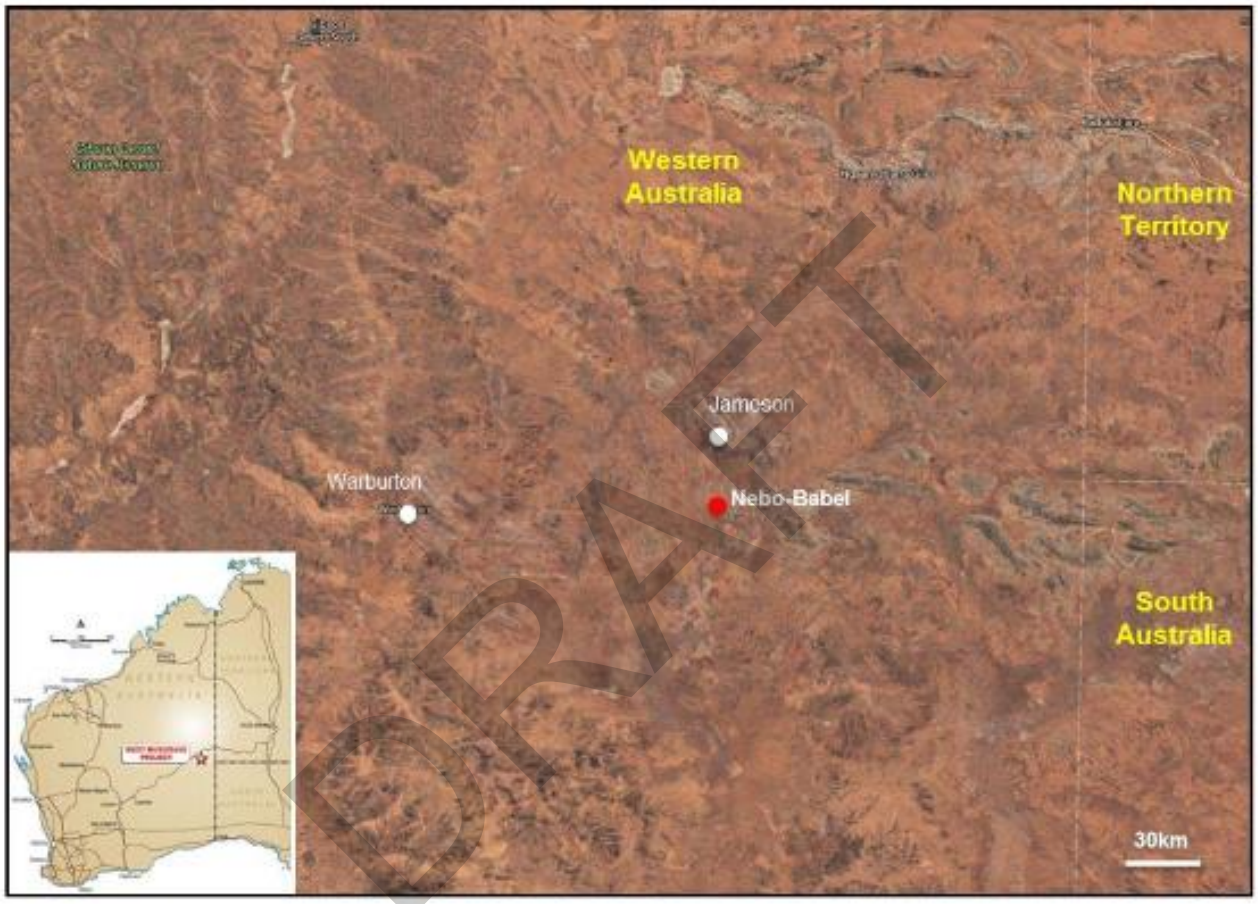
- Section 2 defines the study area with reference to the four Areas of Interest (AOI) defined in the study brief. Data sources are also listed.
- Sections 3, 4 and 5 report the key findings of this study, and respectively relate to population demographics, social and economic characteristics, and health. Where data availability allows, results for the AOIs are reported alongside each other to facilitate comparison.
- Section 6 discusses the implications of the study findings for the SIOA and for the WMP more broadly.

[1] The Shire of Ngaanyatjarraku is also referred to herein as the Ngaanyatjarraku Local Government Area (LGA).

1.3 Project context

The WMP concerns the potential development of the Nebo and Babel copper and nickel deposits, located near Jameson in in the north-eastern corner of the Goldfields-Esperance Region of Western Australia, and near to the Northern Territory and South Australian borders (Figure 1).

Figure 1 West Mulgrave Project location



Source: https://www.ozminerals.com/uploads/media/190412_ASX_Release_-_OZL_Nebo-Babel_Mineral_Resource_Statement.pdf

The WMP is situated in the Shire of Ngaanyatjarraku (alternatively, Ngaanyatjarraku local government area or LGA) on the traditional lands of the Ngaanyatjarra people. The impacts of the mine – both positive and negative – are likely to be experienced more broadly in the Goldfields-Esperance region (encompassing the nine LGAs as shown in Figure 2), as well as the urban centres of Alice Springs, Perth and Adelaide. The WMP is envisaged to be an open-pit operation, and will involve the transport of product to Esperance by road, procurement from primary service centres such as Kalgoorlie and Laverton, and a largely fly-in, fly-out workforce commuting from Perth.

Figure 2 Local government areas located in the Goldfields-Esperance region of Western Australia

Source: https://www.rdage.com.au/regional-information/

Traditional owner interests are represented by the Ngaanyatjarra Council, an Aboriginal Corporation incorporated under the *Corporations (Aboriginal and Torres Strait Islander) Act 2006* (Cth), also known as the CATSI Act.[2] The Ngaanyatjarra Council describes itself as 'the principal organisation in a large conglomerate of Ngaanyatjarra service delivery organisations', with members comprising eleven communities: Irrunytju, Kanpa (Pira Kata), Karrku, Mantamaru, Papulankutja, Patjarr, Tjirrkarli, Tjukurla, Wanarn, Warakurna and Warburton.[3] Figure 3 shows the relative location of these communities, plus the non-member community of Cosmo Newberry (also known as Yilka).

Figure 3 Ngaanyatjarra Council member communities, plus Cosmo Newberry

Source: https://www.ngaanyatjarra.org.au/communities/warburton

[2] The Ngaanyatjarra Council was incorporated in 1981 under the *Aboriginal Councils and Associations Act 1976* (Cth), which was replaced by the CATSI Act. Incorporation documents for the Ngaanyatjarra Council are available here: https://register.oric.gov.au/PrintCorporationSearch.aspx?corporationName=&icn=101

[3] Ngaanyatjarra Council. Undated. 'Ngaanyatjarra Council'. Last accessed 24 March 2020 at https://www.ngaanyatjarra.org.au/ngaanyatjarra-council

2. Method

2.1 Study area

The report provides a summary of a range of demographic indicators for the four areas of interest (AOIs) as listed in Table 1. Where the data allows, information is disaggregated by AOI and/or by community. In many instances data is only available or meaningful in aggregated form. In particular, community-level data for AOI-1 and AOI-2 are frequently not reported. This report therefore reports AOI-1 and AOI-2 data collectively as the Ngaanyatjarraku Local Government Area where necessary.

Table 1 Areas of interest (AOIs) for the WMP SIOA demographic study

#	Area of Interest	Communities		Rationale
AOI-1	Nearest residential communities	Mantamaru (Jameson)		This community is closest in physical proximity to the proposed mine, and therefore greatest potential to be affected by project activities. This community is generally the primary rights holders or Traditional Owners of the land where mining is proposed.
AOI-2	Ngaanyatjarra Native Title communities	Irrunytju (Wingellina) Kiwirrkurra Blackstone (Papulankutja) Patjarr Kanpa (Pira Kata)	Tjirrkarli Tjukurla Warakurna Wanarn Warburton	These communities are those comprising the Ngaanyatjarra Native Title area, and are under the administration of the Ngaanyatjarra Council. This Area of Interest reflects the administrative area of the Ngaanyatjarra Council, and recognizes these Ngaanyatjarra communities' connection to land. Project benefits administered by the Council are likely to affect these communities.
AOI-3	Great Central Road communities	Laverton Leonora Esperance Tjukayirla Kalgoorlie		These communities are located along or near the Great Central Road, outside Ngaanyatjarra lands. They are likely to experience indirect economic impacts, and impacts related to the WMP's use of transport infrastructure.
AOI-4	Primary service centers	Perth Adelaide Alice Springs Kalgoorlie Esperance		These cities and towns will likely be the main points of hire for the WMP workforce. WMP procurement of goods and services will also likely be from businesses located in these cities and towns. Perth is included because it is the capital city of Western Australia, where the proposed mine is located. OZ Minerals is based in Adelaide. Ngaanyatjarra Council headquarters is located in Alice Springs. Kalgoorlie is the epicenter of gold mining in Western Australia.

2.2 Data sources

The results are based on the publicly available demographic, social and economic data.

2.2.1 ABS Census of Population and Housing

Census data from the ABS (principally from the 2016 Census) is compiled to construct a demographic profile of the AOIs. Indices were extracted for personal and household characteristics, education, employment, cultural and language diversity. 'Place of usual residence' counts were used.

As noted in section 1.1, we were notified of a degree of inaccuracy within the ABS data, and we acknowledge local-level studies conducted in Ngaanyatjarra Lands that provide further discussion on the degree and possible causes of such inaccuracies (Brooks and Kral, 2007).

ABS Census data has been selected as the primary data source because it remains the default by which government decision-makers are likely to make policy decisions. The WMP SIOA must therefore engage with the ABS data and indicate its degree of reliability. Where appropriate, the SIOA could offer improved data through primary data collected in the course of SIOA studies.

In compiling ABS data, the ABS's TableBuilder Pro tool was used. The AOI communities corresponded to the Australian Statistical Geography Standard (ASGS) classifications shown in Table 2. The ASGS classifications standardised statistical areas used by the ABS and other organisations to enable the publication of statistics that are comparable and spatially integrated.

Table 2 ASGS classifications used to access ABS data

Area of Interest	Towns or Communities	ASGS classification	ASGS name
AOI-1 and AOI-2	Irrunytju (Wingellina) Kanpa (Pira Kata) Mantamaru (Jameson) Papulankutja (Blackstone) Patjarr Tjirrkarli Tjukurla Wanarn Warakurna Warburton	Local Government Area (LGA)	Ngaanyatjarraku
AOI-3	Laverton Leonora Kalgoorlie Esperance	State Suburb (SSC)	Laverton Leonora Kalgoorlie Esperance
AOI-4	Kalgoorlie Esperance	State Suburb (SSC)	Kalgoorlie Esperance
	Perth Adelaide	Greater Capital City Statistical Area (GCCSA)	Perth Adelaide
	Alice Springs	Local Government Area (LGA)	Alice Springs

In nearly every instance in this report, data for individual towns/communities in AOI-1 and AOI-2 are small or unavailable. In these instances, AOI-1 data is not given and AOI-2 data is given collapsed across the 10 communities that make up the Ngaanyatjarraku LGA. The corresponding ASGS classifications used to characterise the Ngaanyatjarraku LGA are shown in Table 3.

The necessity of collapsing this data meant that Kiwirrkurra was mostly excluded from AOI-2 analyses. While Kiwirrkurra is a member community of the Ngaanyatjarra Council, it is in the East Pilbara LGA not the Ngaanyatjarraku LGA. Kiwirrkurra has an estimated population of 165 people (according to the 2016 Census), which represents about 9 per cent of the total population of AOI-2 communities. It is likely that, in broad terms, the demographic profile of Kiwirrkurra is similar to those of other AOI-2 communities – but this cannot be confirmed using publicly available data alone.

Table 3 ASGS classifications for Ngaanyatjarraku LGA (AOI-2)

Geography Type	Year	ASGS Name	ASGS Code
Local Government Area (LGA)	2019	Ngaanyatjarraku	56620
State Electoral Division (SED)	2019	North West Centra (Mining & Pastoral)	54203
Commonwealth Electoral Division (CED)	2018	O'Connor	511
Remoteness Area (RA)	2016	Very Remote Australia	54
Tourism Region (TR)	2016	Australia's Golden Outback	5R130
Natural Resource Management Region (NRMR)	2016	Rangelands	504
Australian Drainage Division (ADD)	2016	South Western Plateau	D11
State Suburb (SSC)	2016	Gibson Desert South	50539
Postal Area (POA)	2016	872	872
Mesh Block (MB)	2016		50391701100
Indigenous Location (ILOC)	2016	Laverton-Ngaanyatjarraki - Surrounds	50300404
Indigenous Area (IARE)	2016	Laverton-Ngaanyatjarraki	503004
Indigenous Region (IREG)	2016	Kalgoorlie	503
Statistical Area 1 (SA1)	2016		51103128302
Statistical Area 2 (SA2)	2016	Leinster - Leonora	511031283
Statistical Area 3 (SA3)	2016	Goldfields	51103
Statistical Area 4 (SA4)	2016	Western Australia - Outback (South)	511
State/Territory	2016	Western Australia	5

2.2.2 ABS Socio-Economic Indexes for Areas (SEIFA)

Socio-Economic Indexes for Areas (SEIFA) rankings were also calculated for the AOIs. SEIFAs rank areas in Australia according to relative socioeconomic advantage and disadvantage. There are four indices in the SEIFA; of these, we report the Index of Relative Socio-economic Advantage and Disadvantage (IRSAD). An interactive map was used to identify IRSAD quintile rankings for the AOIs.

2.2.3 WA Department of Planning, Lands and Heritage, Aboriginal Communities & Town Reserves

The source of individual communities' population data for AOI-1 and AOI-2 was the WA Department of Planning, Lands and Heritage, Aboriginal Communities and Town Reserves (DPLH-002) population dataset, which was last reviewed in 2017. The dataset also provided information about the types of facilities available in each of these towns – a useful summary that appears overleaf as Table 4.

2.2.4 Australian Early Development Census (AEDC)

The AEDC is a measure of childhood development in Australia, at the time when children start their first year of full-time school. The AEDC looks at groups of children in the community, not individuals. Of all children in Australia starting their first year of full-time school, 96% contributed to the AEDC 2018 dataset.

The data comes from children's teachers. Teachers complete a research tool – the Australian version of the Early Development Instrument (AvEDI) – based on their knowledge and observations of the children in their class. The AvEDI measures five important areas of their early childhood development: physical, social, emotional, language, and communication. These five areas (or 'domains') are closely linked to the child's health, education and social outcomes as they grow into adulthood.

Using the AEDC Data Explorer on their website, a profile[4] for the Ngaanyatjarraku LGA constructed. Data dates back to 2018, and findings appear in this report. Responses were gathered from 7 teachers across 6 schools (both government and non-government).

2.2.5 Health data: multiple data sources

A regional profile of health indicators was constructed for this report. AOI-1, AOI-2 and AOI-3 fall within the Goldfields region (Figure 4). Health outcomes and facilities the Goldfields regions was drawn from:

- The Goldfields Health Profile Nov 2018 (http://www.wacountry.health.wa.gov.au/index.php?id=981)
- A WA state government document, published by WA Country Health Services (WACHSs), which provides an annual overview of the health of Goldfields residents, to inform evidence-based health service planning and delivery.
- WA Country Health Service Annual Report 2018–2019[5]
- WA Country Health Service online publications page[6]
- ABS Life tables for: States, Territories and Australia (2016-2018); Aboriginal and Torres Strait Islander Australians (2015-2017, 2010-2012)[7]
- The Australian Institute of Health and Welfare (AIHW) Aboriginal and Torres Strait Islander Health Performance Framework 2017 report for Western Australia

[4] The Ngaanyatjarraku LGA profile is available online: https://www.aedc.gov.au/data/data-explorer?id=135595

[5] http://www.wacountry.health.wa.gov.au/fileadmin/sections/publications/Publications_by_topic_type/Corporate_documents/WACHS_Annual_Report_2018-19.PDF

[6] http://www.wacountry.health.wa.gov.au/index.php?id=981

[7] ABS 2019. Life tables, States, Territories and Australia, 2016-2018, ABS cat. no. 3302055001DO002; ABS 2018. Life Tables for Aboriginal and Torres Strait Islander Australians, 2015–2017. ABS cat. no. 3302.0.55.003; ABS 2013. Life Tables for Aboriginal and Torres Strait Islander Australians, 2010-2012. ABS cat. no. 3302.0.55.003.

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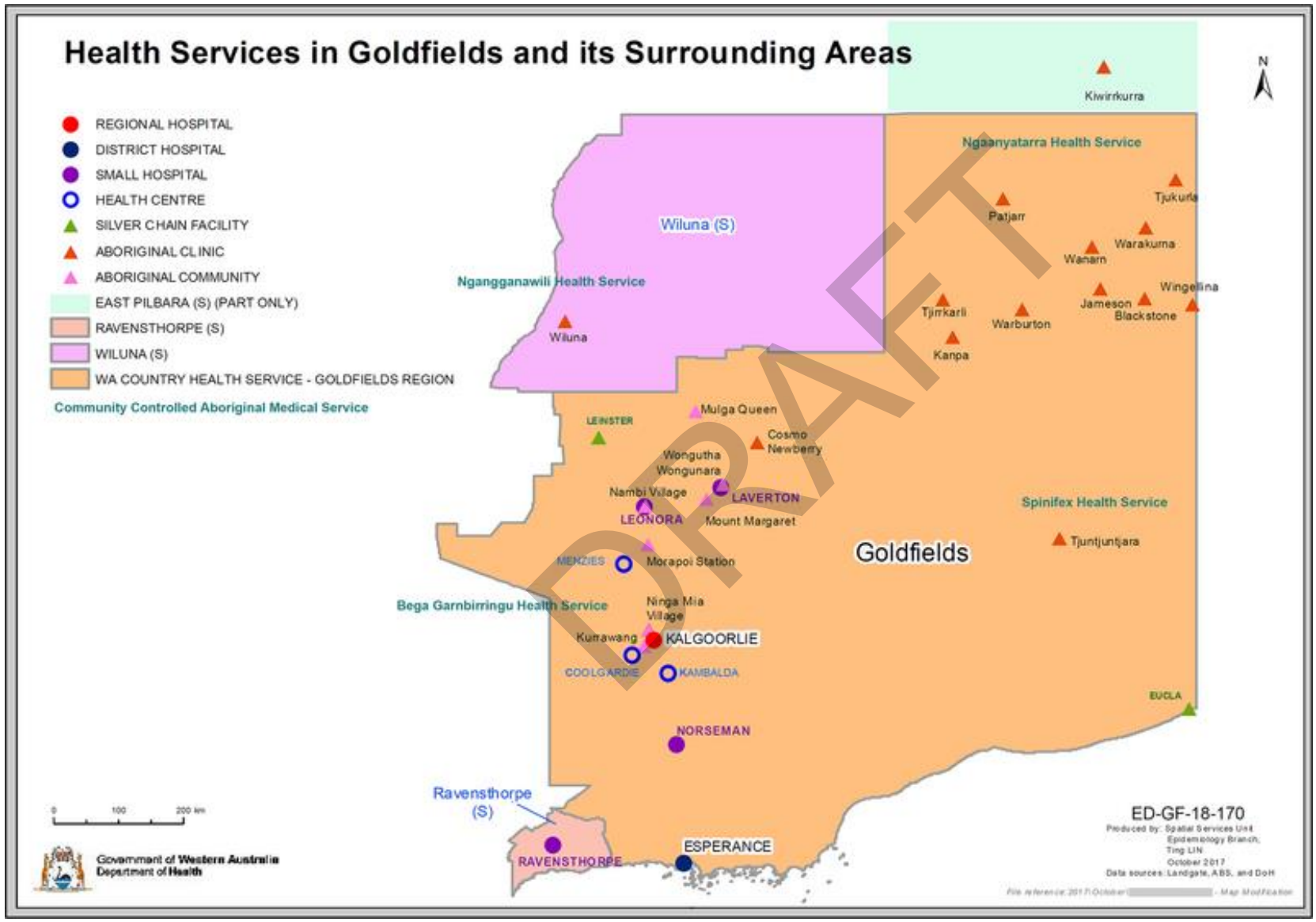
Table 4 Overview of AOI-1 and AOI-2 community facilities

Area of Interest	Common Name	Secondary Name	Other Names	Corporation	Local Government Authority	Locality	Postcode	Nearest town	KMs to nearest town	Nearest airstrip	Regional development Commission	Nearest School	Nearest Health Clinic	Nearest Police Station	Nearest Store	Nearest Community Resource Centre	KMs to Nearest Police Station
AOI-1	Mantamaru	Jameson	Jamieson	Mantamaru Community Incorporated	Ngaanyatjarraku	Ngaanyatjarra-Giles	0872	Laverton	719	On community	Goldfields - Esperance	On community	On community	Warakurna	On community	TBC	50
AOI-1 AOI-2	Papulankutja	Blackstone		Papulankutja Community Incorporated	Ngaanyatjarraku	Ngaanyatjarra-Giles	0872	Laverton	791	On community	Goldfields - Esperance	On community	On community	On community	On community	TBC	0
AOI-1 AOI-2	Warburton		Warburton Ranges	Warburton Community Inc.	Ngaanyatjarraku	Warburton	6431	Laverton	553	On community	Goldfields - Esperance	On community	On community	On community	On community	TBC	0
AOI-2	Irrunytju	Wingellina	Irrunuytju	Irrunytju Community Incorporated	Ngaanyatjarraku	Ngaanyatjarra-Giles	0872	Laverton	863	On community	Goldfields - Esperance	On community	On community	Warburton	On community	Wingellina	150
AOI-2	Kanpa	Pira-Kata		Pira-Kata Aboriginal Corporation	Ngaanyatjarraku	Gibson Desert South	0872	Laverton	477	Not on community	Goldfields - Esperance	-	-	-	-	TBC	
AOI-2	Karrku	Tarku		Karrku Homeland Aboriginal Corporation	Ngaanyatjarraku	Ngaanyatjarra-Giles	0872			Not on community	Goldfields - Esperance	-	-	-	-	TBC	
AOI-2	Patjarr	Karilywarra		Patjarr Aboriginal Corporation	Ngaanyatjarraku	Gibson Desert South	0872	Laverton	779	On community	Goldfields - Esperance	On community	On community	Warakurna	On community	TBC	100
AOI-2	Tjirrkarli			Tjirrkarli (Aboriginal Corporation)	Ngaanyatjarraku	Gibson Desert South	0872	Laverton	614	On community	Goldfields - Esperance	On community	On community	-	On community	TBC	
AOI-2	Tjukurla			Tjukurla Community Aboriginal Corporation	Ngaanyatjarraku	Ngaanyatjarra-Giles	0872	Laverton	930	On community	Goldfields - Esperance	On community	On community	-	On community	TBC	
AOI-2	Wanarn		Wannan	Wanarn Community (Aboriginal Corporation)	Ngaanyatjarraku	Ngaanyatjarra-Giles	0872	Laverton	704	On community	Goldfields - Esperance	On community	On community	Warakurna	On community	TBC	100
AOI-2	Warakurna	Giles		Karrku Homeland Aboriginal Corporation	Ngaanyatjarraku	Ngaanyatjarra-Giles	0872	Laverton	781	On community	Goldfields - Esperance	On community	On community	On community	On community	Irrunytju	0
AOI-2	Kiwirrkurra			Kiwirrkurra Council Aboriginal Corporation	East Pilbara	Gibson Desert North	0872	Halls Creek	772	On community	Pilbara	On community	On community	-	On community	TBC	2

Source: WA Department of Planning, Lands and Heritage, Aboriginal Communities and Town Reserves (DPLH-002) population dataset

Figure 4 Health services in Goldfields region, WA



Source: http://www.wacountry.health.wa.gov.au/index.php?id=981

2.3 Discussion: difficulties ascertaining Aboriginal population in AOI-1 and AOI-2

This section discusses the difficulties in estimating the Aboriginal population in AOI-1 and AOI-2. Data from the ABS are presented, and then compared with locally collected demographic statistics reported in Brooks and Kral (2007). A preface to 2007 report was written in 2019 by Brooks, who noted that the original report 'stands up in its essentials', notwithstanding 'some contextual changes in the Ngaanyatjarra setting that have arisen in the intervening years'.

The argument raised by Brooks and Kral (2007) is that census methods of enumeration do not reflect Ngaanyatjarra cultural nuances. They write that Ngaanyatjarra people 'have a high degree of mobility' – their populations exhibit a 'transience' that is not accounted for in the 'snapshot' of an ABS census (Brooks and Kral, 2007, pp.15-16). The objective of this section is to critically compare the degree of discrepancy between the locally collected data and the ABS data.

This study, as a desktop-only extraction of data, is unable to ascertain the true count of Aboriginal people in AOI-1 and -2. The takeaway points for the SIOA are:

- Caution should be exercised when using ABS data to estimate Aboriginal populations in AOI-1 and -2.
- The ABS Census data is likely to be an undercount of the actual population resident in AOI-1 and -2. However, the ABS adjusts the Census data to provide an estimated residential population of Aboriginal and Torres Strait Islander people – in Western Australia, this adjustment is approximately one-third higher than the Census count.
- Subsequent SIOA studies should consider carefully whether (and to what extent) such uncertainty in the population data affects their findings.

Noting these difficulties, approximate population counts are put forward as a starting point for this SIOA.

2.3.1 Aboriginal population – count

Brooks and Kral (2007) note discrepancies between the ABS Census data collected in 2006, the data collected by the Ngaanyatjarra Health Service (NHS) in 2003, and data collected by Brooks and Kral. The recorded Aboriginal population by each data source is shown in Table 5. Data was not available for all communities. The table shows that the NHS data records the highest Aboriginal population, followed by Brooks and Kral. The 2006 ABS Census records the lowest. Some of the discrepancies can be explained with reference to methodological differences between the three datasets, as follows.

Table 5 Comparing estimates of Aboriginal population in Ngaanyatjarraku LGA

Community	Ngaanyatjarra Health Service (2003)	Brooks & Kral (2007, Table 6)	ABS Census (2006)
Irrunytju (Wingellina)	293	131	68
Kanpa (Pira Kata)	-	26	-
Mantamaru (Jameson)	182	93	-
Papulankutja (Blackstone)	245	165	125
Patjarr	89	35	32
Tjirrkarli	114	36	-
Tjukurla	193	74	60
Wanarn	150	144	-
Warakurna	265	141	70
Warburton	660	579	521

NHS data

The NHS data indicates significantly higher population than either the 2006 ABS Census or Brooks and Kral (2007) – in some cases more than double. This data comprises all patients who ever used the NHS, including visitors to the region and people who had not used the service in the last 2-3 years. As Brooks and Kral (2007, p. 28) observe, the NHS data 'included all the names on the database with little refining of the figures according to transience and mobility. This figure would undoubtedly also include a large "non-resident" component.' The NHS data are likely overestimate the Aboriginal population.

Brooks and Kral

Table 6 of Brooks & Kral's report records the Aboriginal population present Ngaanyatjarraku LGA during the 2007 survey. 'Present' excludes people who have a connection to Ngaanyatjarra Lands but were: in prison, known to be temporarily absent during the survey (e.g. visiting another town), deceased, or otherwise known to be absent from the Ngaanyatjarra Lands long-term.[8] Brooks and Kral's survey was conducted over four months, and involved three months' collation and one month of community and household engagements.

ABS data

The population count in the **2006 ABS Census** produces the demographic measure, 'place of usual residence'. The ABS acknowledges that this measure requires adjustment (usually upwards) to reach the estimated resident population in a given geographic area. Estimated resident population is the official measure of population. Figure 5 provides an example of how the estimated resident population is calculated from the census data. In 2006, the estimated Indigenous resident population for Western Australia was adjusted upwards by 33% (see Table 6).

Table 6 Adjustments required to calculate estimated resident population for Aboriginal & Torres Strait Islander people, Western Australia

Census	Place of usual residence count	Estimated resident population	Adjustment upwards	Reference
2006	58,710	77,928	32.7%	www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/377284127F903297CA25733700241AC0/$File/47050_2006.pdf
2011	69,664	88,270	26.7%	www.abs.gov.au/ausstats/abs@.nsf/Products/3238.0.55.001~June+2011~Technical+Note~Estimated+Resident+Aboriginal+and+Torres+Strait+Islander+Population+–+Method+of+Calculation+(Technical+Note)
2016	75,978	100,512	32.3%	www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/3238.0.55.001Technical%20Note1June%202016

[8] Note: Brooks and Kral ultimately take a higher total to represent the Aboriginal population in Ngaanyatjarraku LGA – namely people who were present during the survey, *and* people who were in prison but would ordinarily reside in the community, *and* people who were known to be temporarily absent ('transient'). This report only reproduces the numbers of those 'present' in their survey, because the ABS Census similarly only records people who were present at the time of the census.

Figure 5 How estimated resident population is calculated – example from Queensland

Components at 9 August 2016	Persons ('000)
Census count, actual location	*4,844.5*
plus - residents absent interstate	56.2
less - interstate visitors	113.6
less - overseas visitors	83.9
equals - Census count, place of usual residence	*4,703.2*
plus - allowance for undercount (a)	60.6
plus - demographic adjustment	-2.0
plus - residents temporarily overseas	94.3
equals - estimated resident population at 9 August 2016	*4,856.1*
Backdating components to 30 June 2016	
less - births (b)	6.6
plus - deaths (b)	3.6
less - net interstate migration (b)	1.5
less - net overseas migration (b)	2.7
equals - final estimated resident population at 30 June 2016	*4,848.9*

(a) Includes Census net undercount from the 2016 Post Enumeration Survey and minor adjustments to address additional data coherence and quality matters.

(b) Component data calculated for the period 1 July to 9 August 2016.

Source: https://www.qgso.qld.gov.au/about-statistics/analysing-data/understanding-population-statistics

Discussion: Aboriginal population in Ngaanyatjarraku LGA

As discussed above, the NHS data from 2003 is known to be an over-estimate of the Aboriginal population in Ngaanyatjarraku LGA. Both the ABS and Brooks and Kral (2007) acknowledge that the census data – based on place of usual residence – leads to a likely undercount of the Indigenous population in Western Australia. The ABS's response to this undercount is to calculate the estimated resident population, based on multiple adjustments shown in Figure 5, above.

As Table 7 shows, when the state-wide adjustment of +32.7% is applied to the 2006 Census data, the estimated resident population is comparable to the counts recorded by Brooks and Kral (2007). For example, the estimated resident population for Blackstone, Patjarr, Tjukurla, and Warburton equal or exceed the count by Brooks and Kral. The estimated resident population for Wingellina and Warakurna remain lower than the count by Brooks and Kral.

Table 7 Comparison of Brooks and Kral (2007) with ABS estimated resident population (2006)

Community	Brooks & Kral (2007, Table 6)	ABS estimated resident population (2006)
Irrunytju (Wingellina)	131	90
Kanpa (Pira Kata)	26	-
Mantamaru (Jameson)	93	-
Papulankutja (Blackstone)	165	165
Patjarr	35	42
Tjirrkarli	36	-
Tjukurla	74	79
Wanarn	144	-
Warakurna	141	93
Warburton	579	691

Considering *only* the communities with available ABS data, the estimated resident population is slightly higher than the estimate by Brooks and Kral. That is, the combined population of Wingellina, Blackstone, Patjarr, Tjukurla, Warakurna, and Warburton is estimated at 1,160 people according to the ABS, compared to 1,125 in Brooks and Kral – a difference of approximately 3%.

The key messages from this analysis are:

- Estimating the Aboriginal population in Ngaanyatjarraku LGA is not straightforward.
- Using the *estimated resident population* (as opposed to the place of usual residence reported in the Census) is a reasonable starting point for estimating the Aboriginal population in Ngaanyatjarraku LGA.
- Community-level population estimates are more difficult than LGA-level estimates because of incomplete ABS data means.

Investigation in the SIOA may provide further clarity. Notwithstanding these difficulties, Table 8 presents a constructed estimate of the Aboriginal population of Ngaanyatjarraku LGA across the three census years 2006, 2011, and 2016. Based on 2016 data, the estimated Indigenous resident population in Ngaanyatjarraku LGA is 1,831 persons.

Table 8 Estimated resident population (Aboriginal) – Ngaanyatjarraku LGA (2006, 2011, 2016)

Year	Census (place of usual residence)	Adjustment (WA)	Estimated resident population (Aboriginal)
2006	1,166	32.7%	1,547
2011	1,211	26.7%	1,534
2016	1,384	32.3%	1,831

Community-level estimates of the Aboriginal population remain difficult to state with certainty. 2016 ABS data is not available for all AOI-1 and AOI-2 communities. A composite estimate is shown in Table 9, based on multiple sources of data. Where data is sourced from the census data, the relevant adjustment rate is applied to calculate the estimated resident population. Where other sources of data are used, no adjustment rate is applied because we do not know whether such adjustment is methodologically applicable.

Table 9 Estimates of Aboriginal population in AOI-1 and AOI-2 – constructed

Community	Estimated Aboriginal population	Source
Irrunytju (Wingellina)	239	a
Kanpa (Pira Kata)	18	c
Kiwirrkurra	197	a
Mantamaru (Jameson)	113	c
Papulankutja (Blackstone)	202	a
Patjarr	41	c
Tjirrkarli	82	d
Tjukurla	68	b
Wanarn	168	a
Warakurna	315	a
Warburton	638	a
total	*2,081*	-

Sources:

a. Estimated resident population (2016 Census place of usual residence + 32.3% adjustment)
b. Estimated resident population (2011 Census place of usual residence + 26.7% adjustment)
c. WA Department of Housing Property Tenancy Management System 2013
d. DAA Environmental Health Needs Survey 2008

2.3.2 Aboriginal population – growth rate

A community-level estimate of population change over time cannot be constructed on available data, because of the gaps in ABS data, and because no other data sources are available (Brooks and Kral's data was collected in 2007, and does not indicate more recent changes in population).

At the LGA-level, Table 10 presents the Census data and the estimated residential population for Ngaanyatjarraku LGA, in 2006, 2011, and 2016. On this basis, population change from 2006 to 2011 was negligible. By 2016, the population had increased by nearly 20%. These data points do not provide a clear trend of population growth, raising an opportunity for the SIOA to conduct further research in this area.

Table 10 Estimated resident population (Aboriginal) – Ngaanyatjarraku LGA (2006, 2011, 2016)

Year	Census (place of usual residence)	Adjustment (WA)	Estimated resident population (Aboriginal)
2006	1,166	32.7%	1,547
2011	1,211	26.7%	1,534
2016	1,384	32.3%	1,831

3. Population demographics

This section presents ABS data on the overall population, Aboriginal population, and demographic data on gender, age, and language across the AOIs. This section is largely descriptive reporting from publicly available data. As a general qualification, we note the uncertainty of estimating Aboriginal populations as discussed in section 2.3.

3.1 Total population (Aboriginal and non-Aboriginal)

Table 11 presents the population of each of the communities in AOI-1 and AOI-2, according to the 2016 ABS Census. These figures represent total population – Aboriginal and non-Aboriginal. The corresponding LGA is also listed. The total population of AOI-3 and AOI-4 are presented in Table 12 and Table 13, as recorded in the 106 Census – no adjustment has been made for estimated resident population.

Table 11 Total population of AOI-1 and AOI-2

Community	LGA	Estimated Aboriginal population*	Non-Aboriginal population‡	Total
Irrunytju (Wingellina)	Ngaanyatjarraku	239	0	239
Kanpa (Pira Kata)	Ngaanyatjarraku	18	n/a	18
Kiwirrkurra	East Pilbara	197	16	213
Mantamaru (Jameson)	Ngaanyatjarraku	113	0	113
Papulankutja (Blackstone)	Ngaanyatjarraku	202	23	225
Patjarr	Ngaanyatjarraku	41	n/a	41
Tjirrkarli	Ngaanyatjarraku	82	n/a	82
Tjukurla	Ngaanyatjarraku	68	n/a	68
Wanarn	Ngaanyatjarraku	168	0	168
Warakurna	Ngaanyatjarraku	315	30	345
Warburton	Ngaanyatjarraku	638	94	732
total		2,081	163	2,244

* See Table 9, above.

‡ If available from the 2016 Census. Zero (0) population recorded where Census only lists Aboriginal and/or Torres Strait Islander population; 'n/a' recorded where community is not recorded at all in the Census. Adjustment for estimated resident population not applicable for non-Indigenous counts.

Table 12 Population of AOI-3 according to 2016 ABS Census

	Community	LGA	Population (ABS, 2016)
AOI-3	Laverton	Laverton	876
	Leonora	Leonora	777
	Kalgoorlie	Kalgoorlie-Boulder	3,906
	Esperance	Esperance	2,142
	total		7,702

Table 13 Population of AOI-4 according to 2016 ABS Census

	Town / City	State	Population (ABS, 2016)
AOI-4	Kalgoorlie	WA	3,906
	Esperance	WA	2,142
	Perth	WA	1,943,861
	Alice Springs	NT	24,751
	Adelaide	SA	1,295,712
	total		3,270,372

3.2 Aboriginal population – percentage

According to the 2016 ABS Census, at least 85% of the population of AOI-1 and AOI-2 are Aboriginal and/or Torres Strait Islander (Figure 6). AOI-3 and -4 are predominantly non-Indigenous. Table 14 records numerical data from the ABS Census, with Australia-wide percentages provided for comparison. Given that Indigenous populations are adjusted upwards to form the estimated resident population, the true percentage is likely to be higher.

Figure 6 Indigenous status of AOIs according to 2016 ABS Census

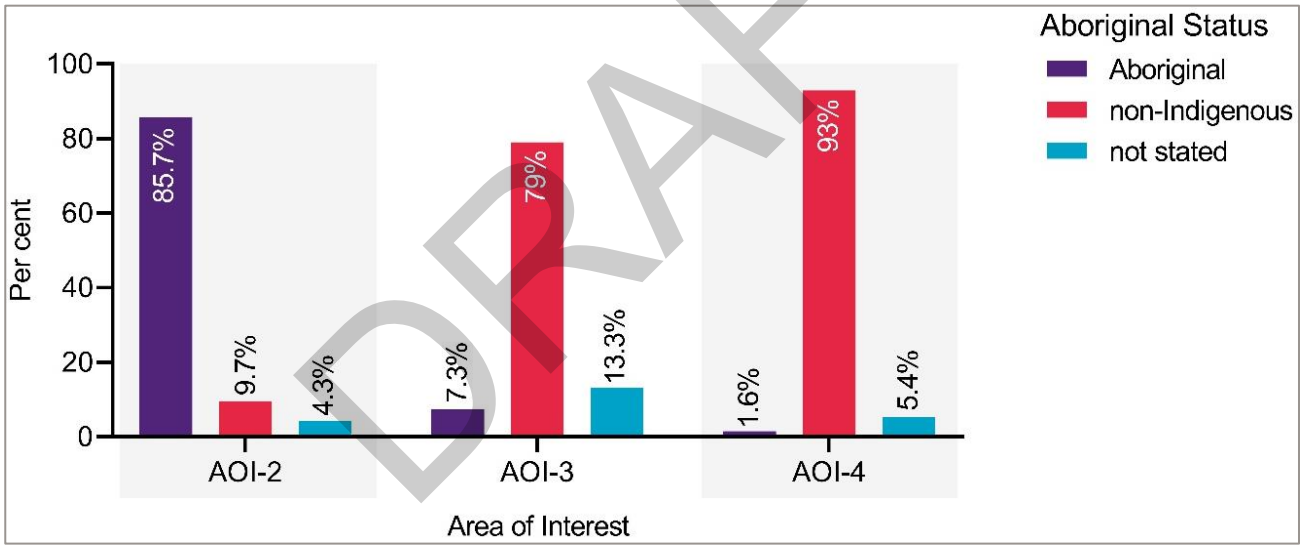


Table 14 Indigenous status of AOIs according to 2016 ABS Census

Indigenous status	Area of Interest			
	AOI-1 & -2	AOI-3	AOI-4	Australia
Aboriginal	85.7%	7.4%	1.6%	2.5%
Torres Strait Islander	0.0%	0.1%	0.0%	0.1%
Aboriginal *and* Torres Strait Islander	0.4%	0.2%	0.0%	0.1%
Non-Indigenous	9.7%	79.0%	93.0%	91.2%
Not stated	4.3%	13.3%	5.4%	6.0%

3.3 Age / sex distribution

The male/ female distribution for all AOIs is given in Table 15. AOI-3 shows a greater proportion of men, compared to the other AOIs and to the Australia-wide figures. This is possibly because AOI-3 includes population centres with industry that service the mining industry (see employment statistics in 4.3), which tends to be male-dominated.

Table 15 Male / female distribution, all AOIs

Gender	Area of Interest			
	AOI-1 & -2	AOI-3	AOI-4	Australia
Female	51.3%	45.6%	50.7%	50.7%
Male	48.7%	54.5%	49.3%	49.3%

Age / sex pyramids for AOI-2, -3 and -4 are presented below. Figure 7 indicates that AOI-2 has a proportionally younger population than the Australian average. Life expectancy would be a contributing factor – as noted in 5.2.1, the life expectancy of Indigenous Australians in remote or very remote areas of Western Australia is considerably lower than the Western Australian average – a difference of 14.4 years for men, and 11.3 years for women. In AOI-2, nearly 70% of the population is younger than 39 years of age (approximately 1,500 people).

Table 16 Age-sex distribution, all AOIs

Age category	Area of Interest			
	AOI-1 and -2	AOI-3	AOI-4	Australia
0-4 years	8.1%	5.8%	6.3%	6.3%
5-9 years	8.7%	5.2%	6.3%	6.4%
10-14 years	7.7%	4.2%	5.8%	6.0%
15-19 years	8.8%	4.7%	6.2%	6.1%
20-24 years	9.5%	7.8%	6.9%	6.1%
25-29 years	8.1%	10.6%	7.4%	7.1%
30-34 years	10.6%	8.4%	7.6%	7.3%
35-39 years	6.9%	6.0%	6.8%	6.7%
40-44 years	7.2%	6.8%	6.8%	6.8%
45-49 years	5.5%	7.0%	6.9%	6.8%
50-54 years	5.4%	7.1%	6.5%	6.5%
55-59 years	4.5%	6.6%	6.1%	6.2%
60-64 years	3.3%	5.3%	5.4%	5.6%
65-69 years	2.8%	4.1%	4.9%	5.1%
70-74 years	1.3%	3.2%	3.5%	3.8%
75-79 years	1.2%	2.8%	2.7%	2.8%
80-84 years	0.2%	2.2%	2.0%	2.0%
85-89 years	0.3%	1.5%	1.3%	1.3%
90-94 years	0.0%	0.8%	0.6%	0.6%
95-99 years	0.0%	0.1%	0.2%	0.1%
100 years and over	0.0%	0.0%	0.0%	0.0%

Figure 7 Age-sex distribution for AOI-2

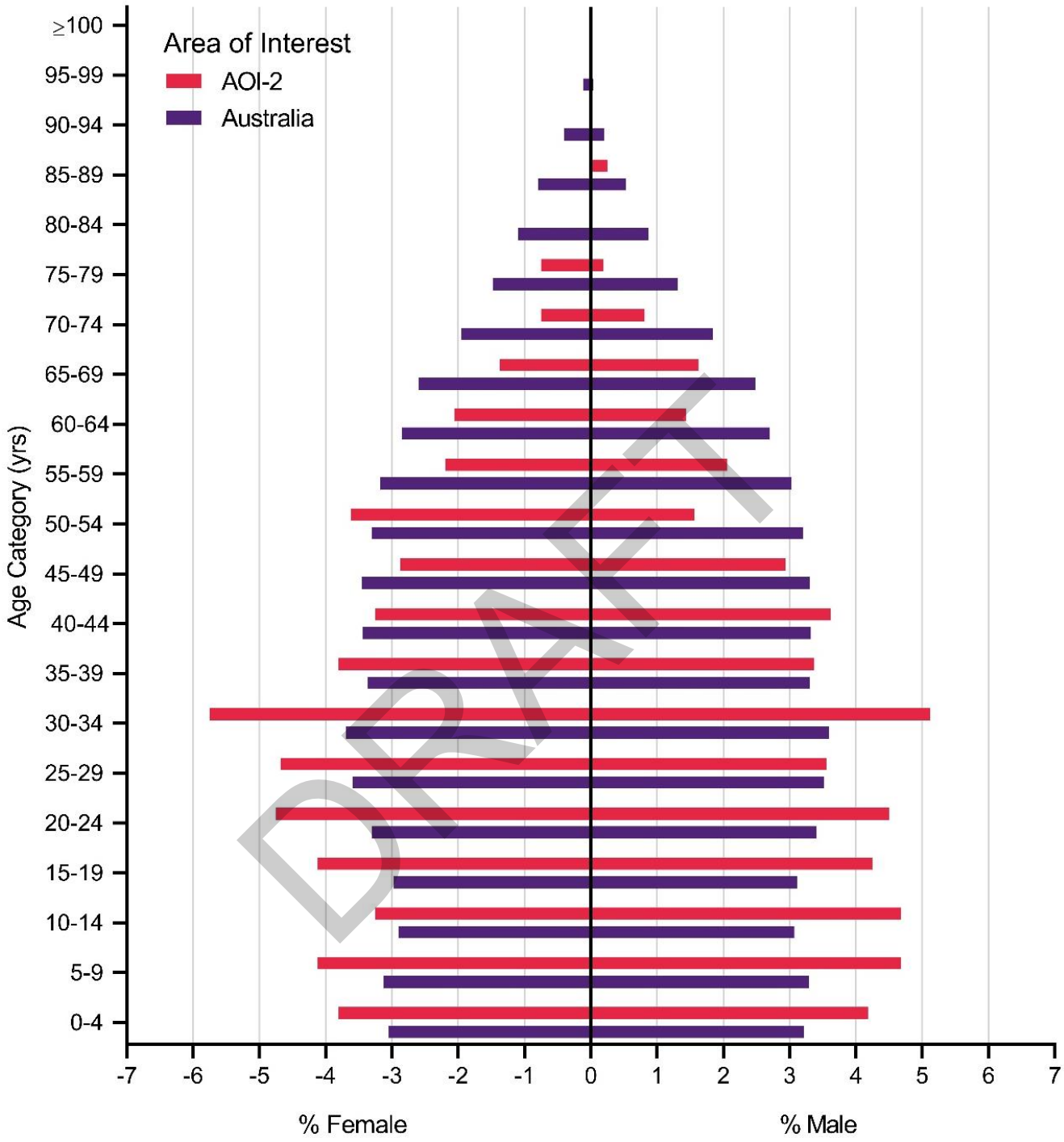


Figure 8 Age-sex distribution for AOI-3

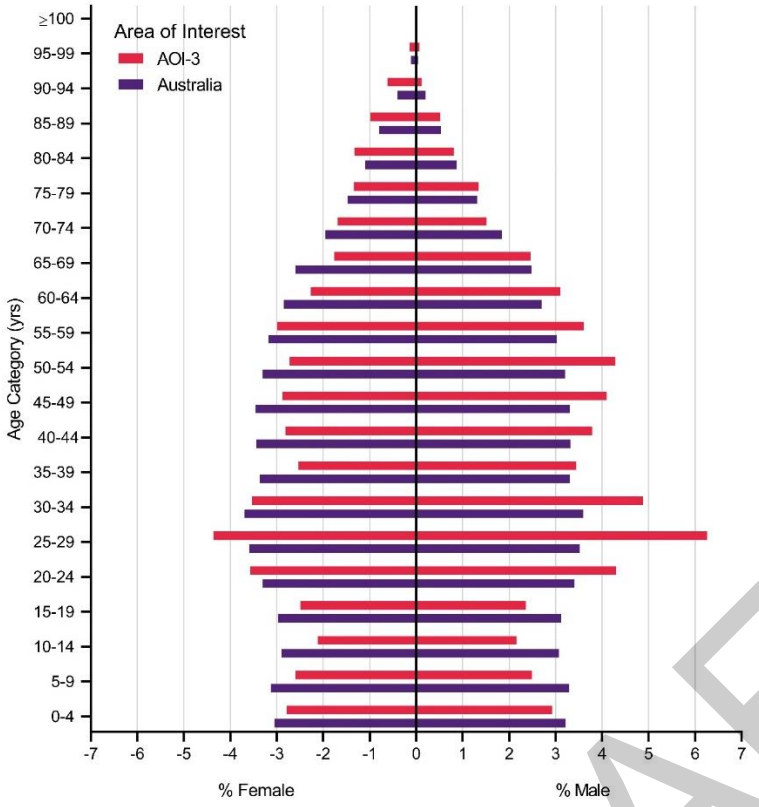
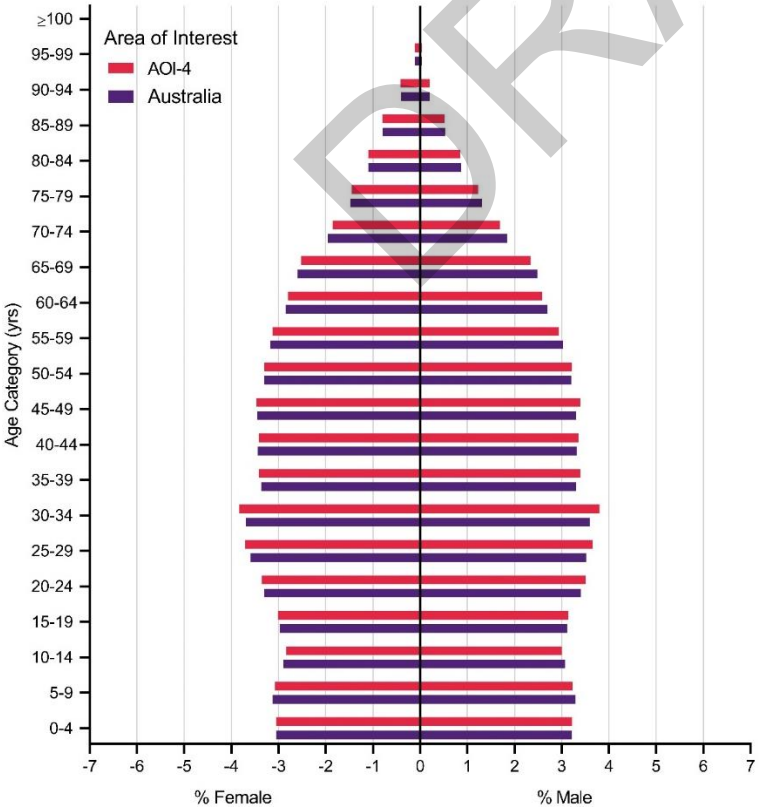


Figure 9 Age-sex distribution for AOI-4



3.4 Language spoken at home

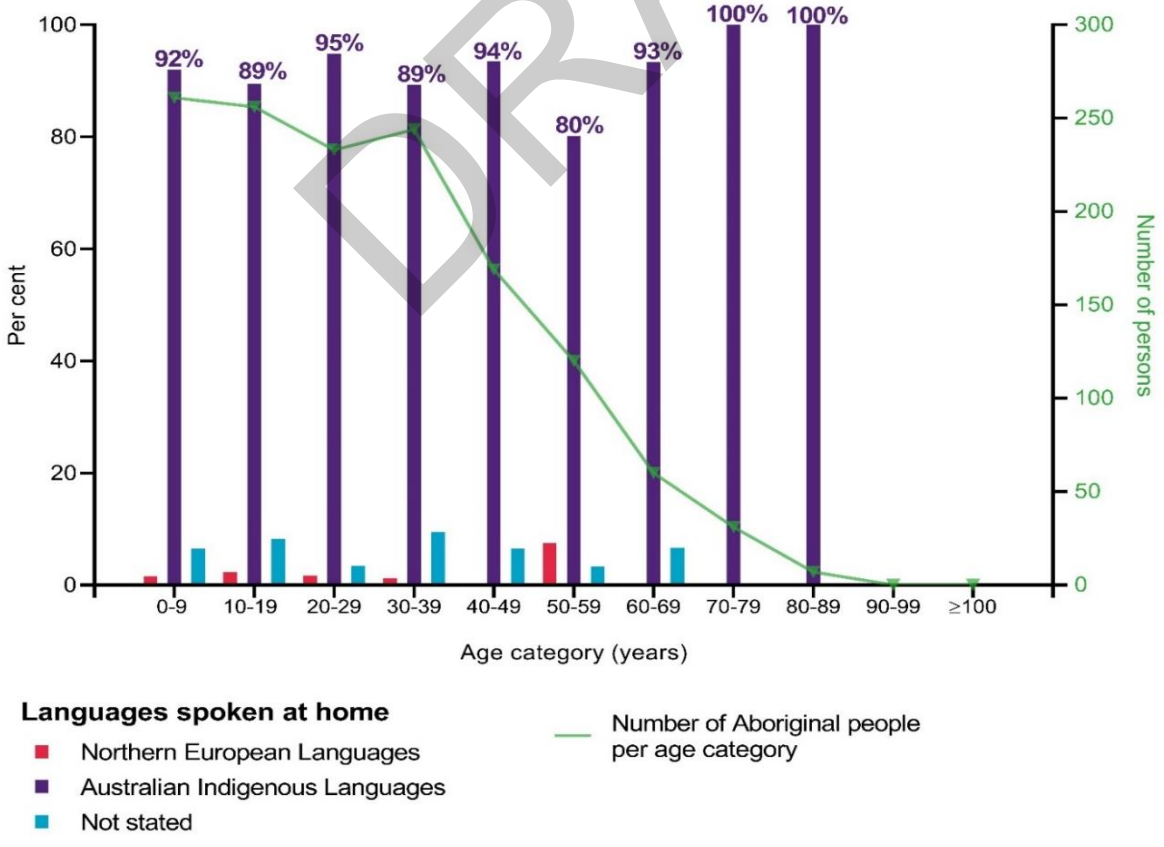
The ABS Census asks respondents to nominate the language(s) spoken at home. Table 17 presents results for AOI-1 and -2, AOI-3, and AOI-4. For AOI-3 and -4, English is the predominant language spoken at home.

Table 17 Language spoken at home, all AOIs (ABS Census, 2016)

Language spoken at home	Area of Interest			
	AOI-1 & -2	AOI-3	AOI-4	Australia
Northern European Languages	9.5%	**75.0%**	**75.4%**	**73.5%**
Southern European Languages	0.2%	0.5%	3.6%	3.4%
Eastern European Languages	0.0%	0.4%	1.7%	1.6%
Southwest and Central Asian Languages	0.0%	0.3%	1.6%	2.5%
Southern Asian Languages	0.0%	1.8%	3.3%	3.4%
Southeast Asian Languages	0.4%	3.5%	3.3%	3.0%
Eastern Asian Languages	0.2%	1.4%	3.9%	4.7%
Australian Indigenous Languages	**79.4%**	2.0%	0.1%	0.3%
Other Languages	0.3%	1.5%	1.1%	0.9%
Not stated	9.6%	13.4%	5.9%	6.5%

For AOI-1 and -2 – the Ngaanyatjarra communities – Aboriginal languages are spoken at home for the vast majority of households. When disaggregated by age bracket (Figure 10), the ABS Census data shows that this trend holds for younger and older people alike.

Figure 10 Languages spoken at home (AOI-2, disaggregated by age)



4. Social and economic capital

This section draws data from beyond the ABS. It provides foundational information for characterising the social wellbeing of the AOI communities, as a basis for further SIOA studies. Childhood development, schooling, employment, and socioeconomic disadvantage are reported.

4.1 Childhood development

The Australian Early Development Census (AEDC) is a survey that involves teachers of children in their first year of full-time school. In Western Australia, children who reach 5 years of by 30 June each year are required to start school.

The AEDC is based on a survey tool known as the Early Development Instrument. The survey consists of approximately 100 questions. It collects data relating to five key 'domains' of early childhood development:

- Physical health and well-being
- Social competence
- Emotional maturity
- Language and cognitive skills (school-based)
- Communication skills
- General knowledge.

Teachers complete the survey based on their assessment of the children they teach. In that sense, the data is subjective; the survey does provide an indicator of childhood development and vulnerability that can be compared across Australia.

Table 18 shows data submitted in 2015 by 7 teachers in 6 schools, within Ngaanyatjarraku LGA.[9] (While a survey was undertaken in 2018, there were too few respondents for the AEDC to generate data.) These responses show that teachers consider over 80% of children to be vulnerable in two or more domains of childhood development. Although the sample size is small (17 children), the survey shows a significantly higher proportion of vulnerable children compared to the rest of Australia and Western Australia (11% each).

[9] https://www.aedc.gov.au/data/data-explorer?id=135595

Table 18 Australian Early Development Census – Ngaanyatjarraku LGA compared to Australia and Western Australia

Community	**# of children**	**Domains** Number and Percentage of children developmentally vulnerable						
		Physical health & wellbeing	Social competence	Emotional maturity	Language &cognitive skills (school-based)	Communication skills & general knowledge	Vulnerable on **one** or more domains of the AEDC	Vulnerable on **two** or more domains of the AEDC
Australia	302,003	27,711 (9.7%)	28,351 (9.9%)	23,866 (8.4%)	18,533 (6.5%)	24,475 (8.5%)	62,960 (22.0%)	31,754 (11.1%)
Western Australia	33,819	3,206 (9.9%)	2,721 (8.4%)	2,751 (8.5%)	2,153 (6.6%)	2,612 (8.0%)	6,895 (21.3%)	3,403 (10.5%)
Ngaanyatjarraku community	17	9 (60.0%)	10 (66.7%)	12 (80.0%)	10 (66.7%)	6 (40.0%)	**13 (86.7%)**	**12 (80.0%)**

4.2 Highest level of schooling

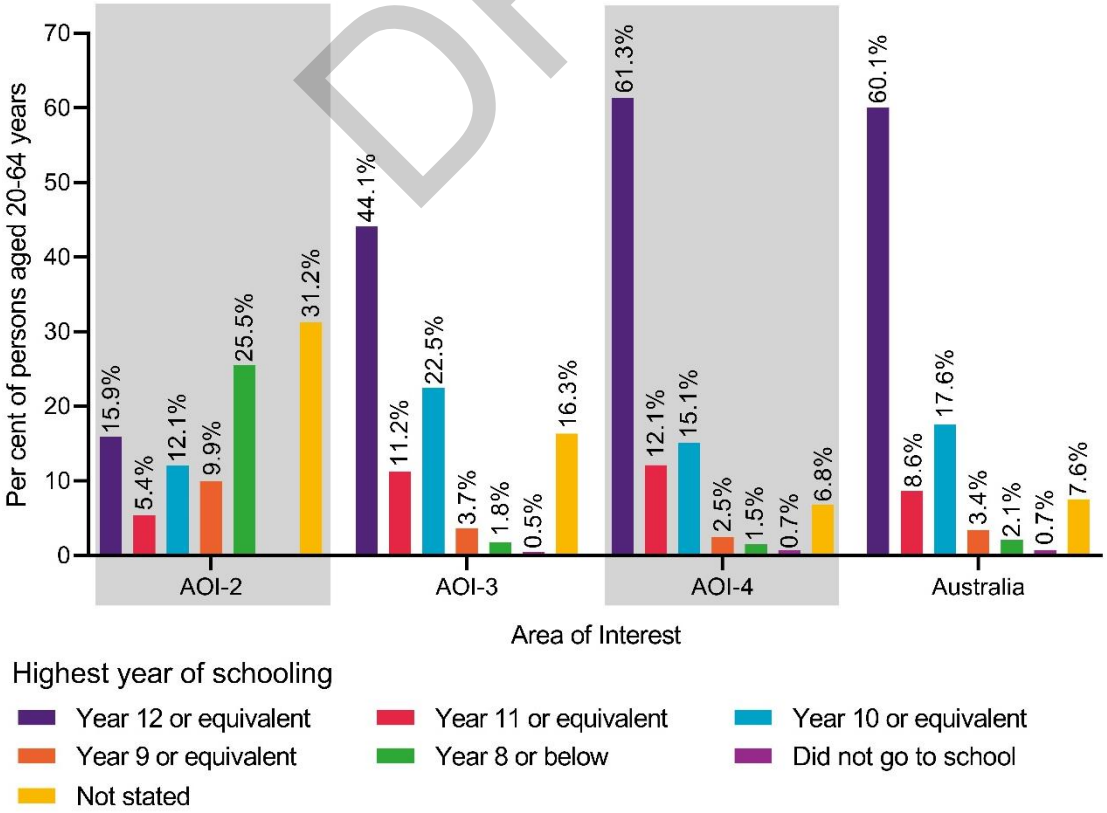
Table 19 and Figure 11 present ABS data for highest level of schooling completed in each of the AOIs. The sample is restricted to persons aged 20-64 years, to exclude those currently in school. AOI-4 has a comparable proportion of people completing Year 12 compared to the Australian average (approximately 60%). In AOI-3, fewer than 45% of people had completed Year 12.

In AOI-1 and -2, less than 20% indicated having completed Year 12. None indicated never having gone to school, but a quarter did not progress beyond Year 8, compared to 1-2% in AOI-3 and -4.

Table 19 Highest level of schooling, all AOIs (ABS Census, 2016)

Highest level of schooling	**Persons aged 20-64 years**			
	Area of Interest			
	AOI-1 & -2	AOI-3	AOI-4	Australia
Year 12 or equivalent	15.9%	**44.1%**	**61.3%**	**60.1%**
Year 11 or equivalent	5.4%	11.2%	12.1%	8.6%
Year 10 or equivalent	12.1%	22.5%	15.1%	17.6%
Year 9 or equivalent	9.9%	3.7%	2.5%	3.4%
Year 8 or below	**25.5%**	1.8%	1.5%	2.1%
Did not go to school	0.0%	0.5%	0.7%	0.7%
Not stated	31.2%	16.3%	6.8%	7.6%

Figure 11 Highest level of schooling, all AOIs (ABS Census, 2016)



4.3 Employment

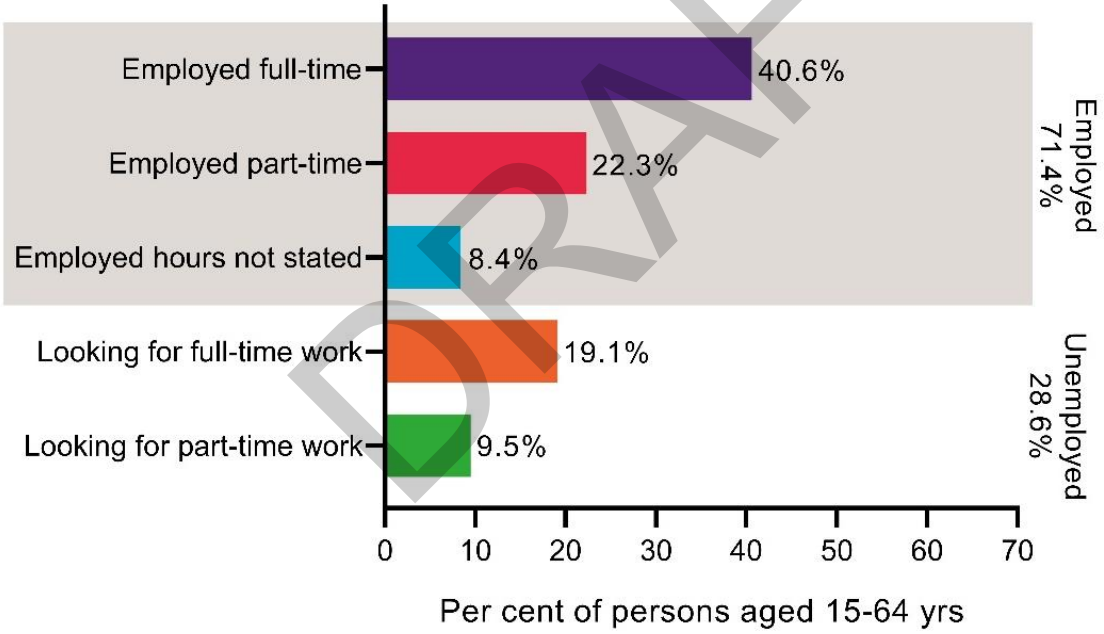
ABS data provides an estimate of the labour force for the AOIs. The labour force includes people who are employed, or otherwise willing and able to work. Specifically, the 2016 Census defines 'labour force' as including people aged 15 years and over who:[10]

- Work for payment or profit, or as an unpaid helper in a family business, in the week prior to the Census
- Have a job from which they are on leave or otherwise temporarily absent
- Are on strike or stood down temporarily, or
- Do not have a job but are actively looking for work and available to start work.

The labour force includes employed and some unemployed people. It excludes those who were either not seeking work, or not available to work at the time of the census.

Figure 12 shows that the majority of people in AOI-2 indicate that they employed. Of those employed, the majority indicate being employed-full time. Table 20 indicates the top three industries of employment for AOI-2 were public administration and safety, healthcare and social assistance, and education and training. Given that a large proportion of people in AOI-2 had not completed high school, further inquiry in the SIOA may seek to understand further the nature and extent of current employment in Ngaanyatjarra communities.

Figure 12 Labour force status, AOI-1 and -2 (ABS Census 2016)



[10] ABS. 2016. Census of Population and Housing: Census Dictionary. 23 August (document 2901.0). Accessed 18 January 2019 at http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2901.0Chapter38502016.

Figure 13 Labour force status by age, AOI-1 and -2 (ABS Census 2016)

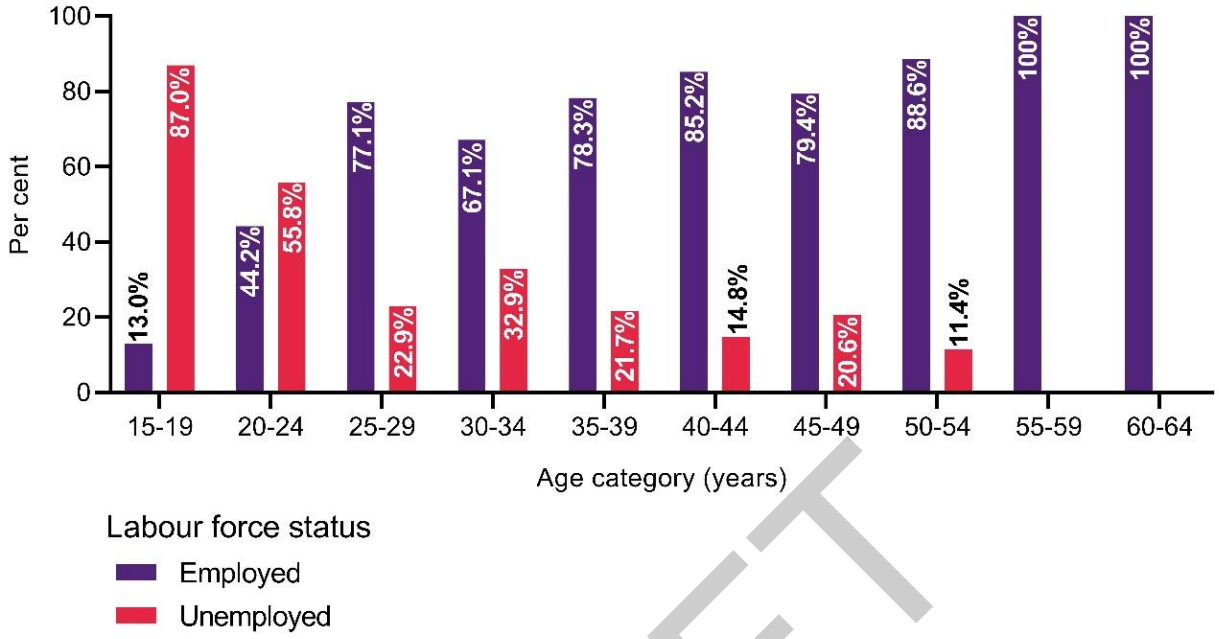


Table 20 Top industries of employment (ABS Census, 2016)

Rank	Persons aged 15-64 years		
	Area of Interest		
	AOI-1 and -2	AOI-3	AOI-4
1	Public Administration & Safety	Mining	Health Care & Social Assistance
2	Health Care & Social Assistance	Health Care & Social Assistance	Retail Trade
3	Education & Training	Retail Trade	Construction

Table 20 also shows that the top industry of employment for AOI-3 is mining. When disaggregated by AOI-3 community, Table 21 shows that Kalgoorlie, Laverton, Leonora are mining 'hubs in the Goldfields region. Mining is not a top-three industry of employment in Esperance, which instead provides health care and social assistance services via government agencies, as well as leisure/recreational facilities and retail trade is the hub, with infrastructure including shops, schools, a university, and government agencies.

Table 21 Top industries of employment: AOI-3: Esperance, Kalgoorlie, Laverton, Leonora

Rank	Persons aged 15-64 years			
	AOI-3 Area of Interest			
	Esperance	Kalgoorlie	Laverton	Leonora
1	Health Care & Social Assistance	Mining	Mining	Mining
2	Accommodation & Food Services	Health Care & Social Assistance	Public Administration & Safety	Public Administration & Safety
3	Retail Trade	Retail Trade	Education & Training	Education & Training

The labour force status of AOI-3 and AOI-4 appear as Figure 14 and Figure 15 respectively.

Figure 14 Labour force status, AOI-3 (ABS Census 2016)

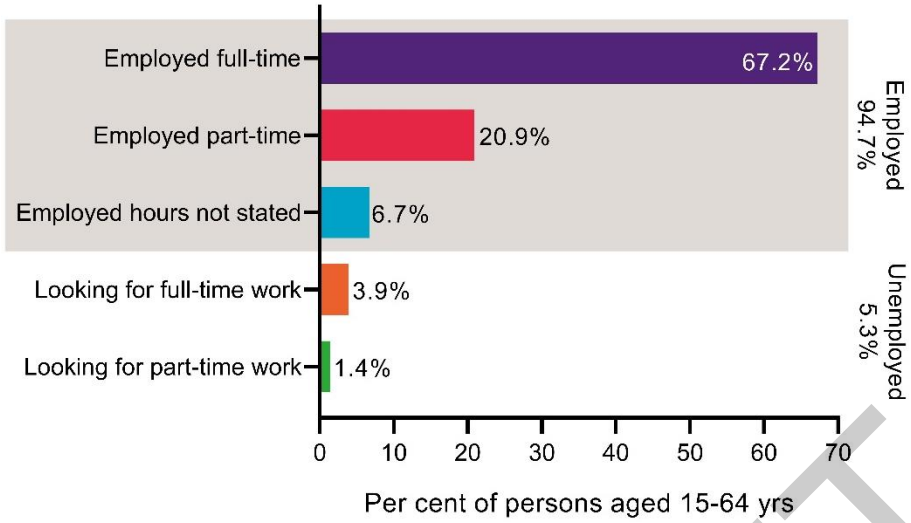
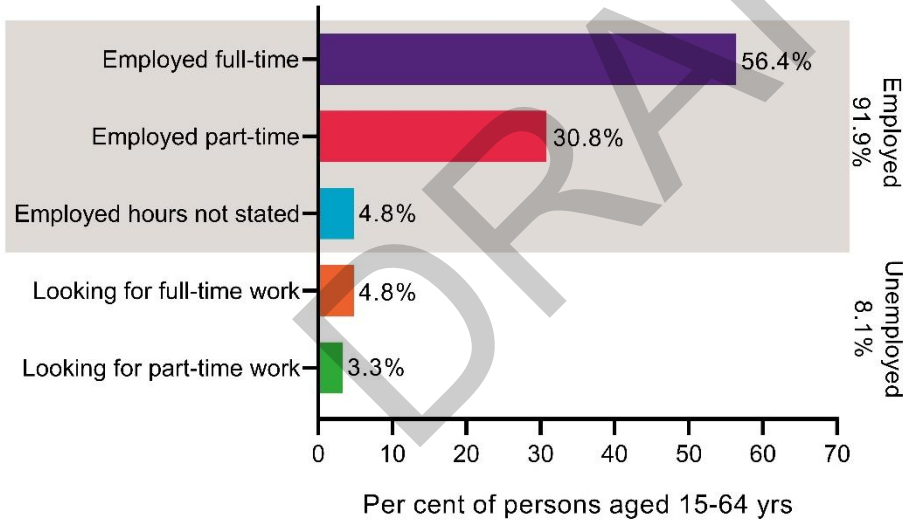


Figure 15 Labour force status, AOI-4 (ABS Census 2016)



4.4 Socioeconomic advantage and disadvantage

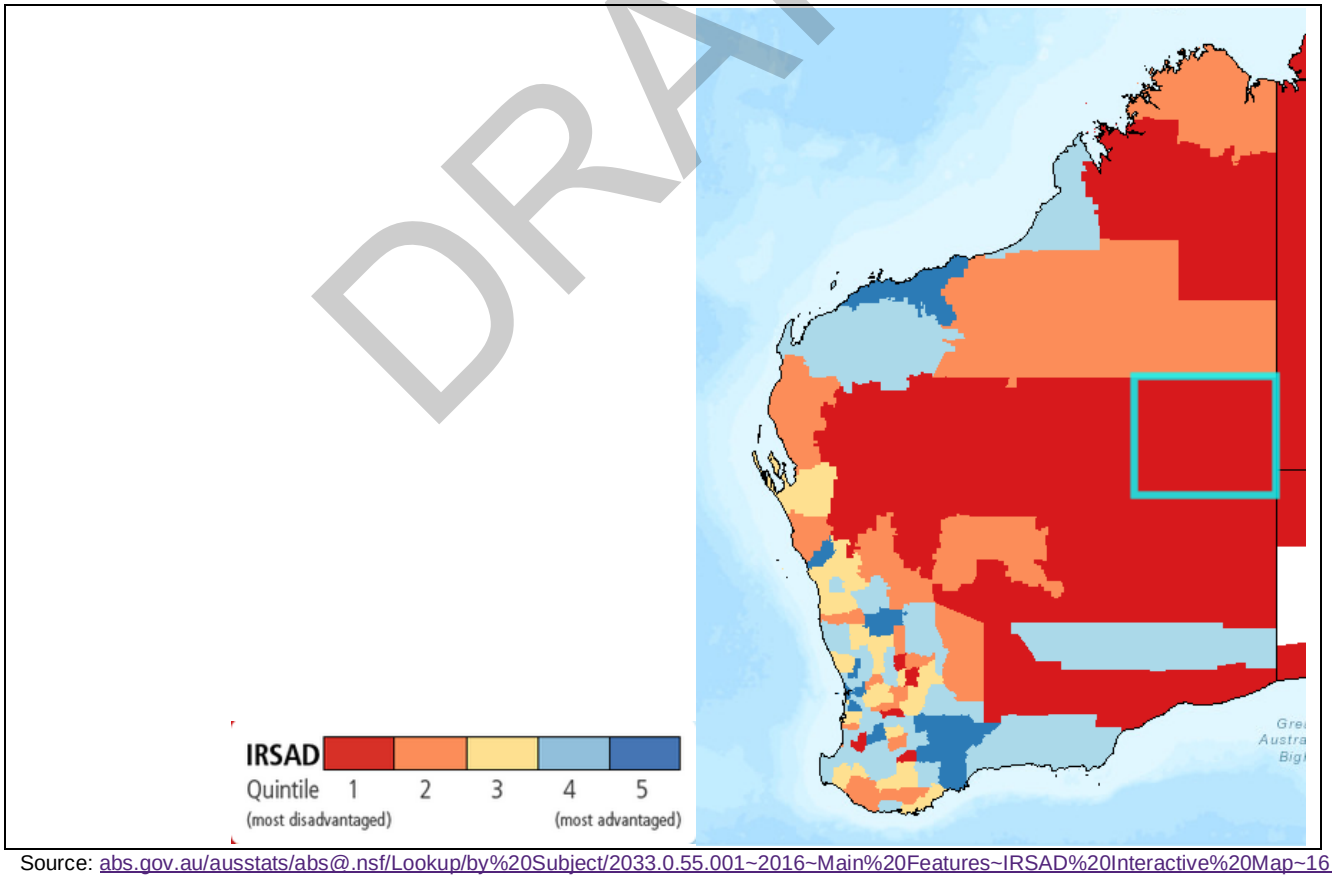
Socio-Economic Indexes for Areas (SEIFA) is an ABS product that ranks areas in Australia according to relative socio-economic advantage and disadvantage. The indexes are based on information from the five-yearly ABS Census of Population and Housing. One of the indices of the SEIFA is the Index of Relative Socio-economic Advantage and Disadvantage (IRSAD). It provides a general measure of advantage and disadvantage.

The IRSAD rank for the Ngaanyatjarraku LGA is in the first quintile. That it, it is among the lowest-scoring 20% of areas in Australia (Figure 16). This score indicates 'relatively greater disadvantage and a lack of advantage in general'. The variables that indicate disadvantage and advantage are listed in Table 22.

Table 22 Index of Relative Socio-economic Advantage and Disadvantage – variables

Indicators of disadvantage	Indicators of advantage
• Annual household income between $1 and $25,999 • Highest level of education is Year 11 or lower, or Cert III / IV or lower • Employment classified as labourers, machinery operators, and drivers • Lack of internet connection • Families with jobless parents • Long–term health condition or disability • Unemployment • One-parent families with dependent offspring • Rent less than $215 per week • Separation / divorce • Employment classified as Low Skill Sales, or Low Skill Community and Personal Service Workers • Lack of car ownership • Dwellings requiring one or more extra bedrooms	• Annual household income greater than $78,000 • Mortgage greater than $2,800 per month • Rent greater than $470 per week • Dwellings with four or more bedrooms • Employment classified as Professionals or Managers • Education attainment is a diploma qualification, or university or other tertiary qualification

Figure 16 IRSAD rank for Ngaanyatjarraku LGA



Source: abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2033.0.55.001~2016~Main%20Features~IRSAD%20Interactive%20Map~16

5. Health

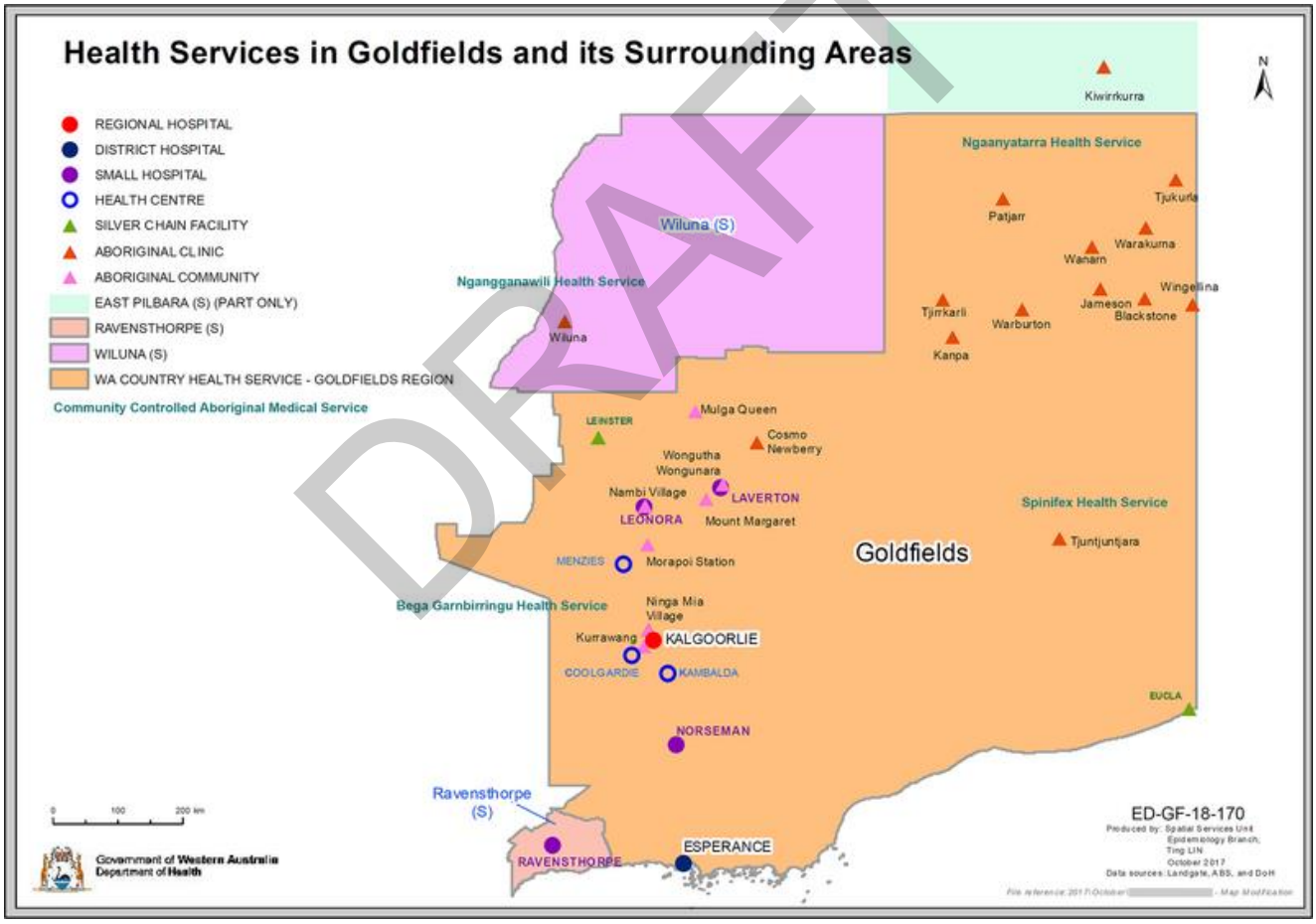
This section provides health statistics drawn from publicly available data and media statements, as a starting point for further health studies undertaken for the SIOA.

5.1 Health services

5.1.1 Goldfields region

The WA Country Health Service is responsible for the delivery of public health services to residents and visitors in the Goldfields and Esperance regions (AOI-1-3), which consists of the following local government areas: Shire of Coolgardie, Shire of Dundas, Shire of Esperance, City of Kalgoorlie-Boulder, Shire of Laverton, Shire of Leonora, Shire of Menzies, Shire of Ngaanyatjarraku. It is a diverse and sprawling population with widely varying health needs. Figure 17 maps the health services available in the Goldfields and surrounding areas.

Figure 17 Health services, Goldfields and surrounds



Source: http://www.wacountry.health.wa.gov.au/index.php?id=981

The region's largest hospital, the Kalgoorlie Health Campus, is located in Kalgoorlie, which is approximately 900 km driving distance from Warburton, or about 12 hours travelling time. The 106-bed inpatient facility is the hub for the region's health services, and provides a range of clinical services for more complex care. In 2015, it underwent a $60 million redevelopment, with a quarter of the funds coming from the State Government's Royalties for Regions program. The modernisation included a facility with telehealth specialists, doctors, nurses and allied health staff, which the then State Health Minister Kim Hames reported

was important when considering that the region's residents included a "large number of fly-in, fly-out workers, plus residents of surrounding areas."[11]

In the period 2016/17, ten per cent of the total number of Emergency Department (ED) attendances of all Goldfield's hospitals were for patients who were not residents of the region.[12]

The Emergency Rescue Helicopter Service, known as RAC Rescue, provides two dedicated emergency rescue helicopters providing critical care medical services to Western Australia.[13] The helicopters are based at Perth and Bunbury and have the ability to cover 95 per cent of the State's population.

5.1.2 Near proposed WMP site

Closer to the proposed WMP site, Laverton and Leonora each have small, eight-bed public hospitals. In 2019, the Federal and WA State Governments allocated funds for the replacement of the Laverton Hospital.[14] Federal representative Rick Wilson commented that the redevelopment was important due to mining development: 'Demand for quality health services in the region is increasing due to the expanding workforce of fly in/fly out workers through mining and resource investment'.[15] The WA Country Health Service are currently working through the process of planning, design and costing of the new hospital.[16]

There are volunteer St John Ambulance sub centres at Laverton and Leonora which are responsible for the delivery of ambulance services in their communities. The nearest St John service with a career paramedic is Kalgoorlie. Community health centres are located in Leonora, Laverton and Leinster and they deliver a wide range of primary health care services that address child health, school and youth health, immunisations, and chronic disease and prevention.

The Ngaanyatjarra Health Service is an Aboriginal Community Controlled Health Service (ACCHS) providing a range of primary health care to indigenous people living in communities in Ngaanyatjarra Lands. The communities cared for by the service are scattered across the Great Victorian and Gibson Deserts. The service is governed by an indigenous Board of Directors[17]. It has 11 community Primary Health Care Centres. Eight of these are permanently staffed by experienced Remote Area Nurses, Aboriginal Health Workers and allied health staff while the remaining three (Patjarr, Tjirrkarli and Tjukurla) are visited by health staff from nearby communities. Clinical specialists from a variety of areas visit the clinics, including Ophthalmology, Paediatrics, Ear, Nose and Throat, Physician, Obstetrics and Gynaecology, Sexual Health and Cardiology.

5.2 Health outcomes

5.2.1 Life expectancy

In the period 2015 to 2017, the life expectancy at birth for Aboriginal and Torres Strait Islanders living in remote or very remote communities was estimated to be 65.9 years for males and 69.6 years for females. By comparison, the life expectancy at birth for all Western Australians was 80.3 years for males and 80.9 years for females. This represents a gap of 14.4 years for males and 11.3 years for females.

Table 23 shows that while there has been a slight improvement in life expectancy for the Western Australian general population 2010-2012 and 2015-2017, this is not the case for Aboriginal and Torres Strait Islanders

[11] https://www.mediastatements.wa.gov.au/Pages/Barnett/2015/08/Goldfields-celebrates-hospital-redevelopment.aspx

[12] WA Country Health Services, 2018

[13] https://www.dfes.wa.gov.au/aboutus/operationalinformation/helicoptersandaircraft/Pages/racrescuehelicopter.aspx

[14] https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/government-funding-for-new-laverton-hospital; https://www.ourstatebudget.wa.gov.au/2019-20/regions/goldfields-esperance.pdf

[15] https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/government-funding-for-new-laverton-hospital

[16] https://www.laverton.wa.gov.au/documents/54/2019-mining-liaison-meeting-presidents-presentation

[17] https://www.nghealth.org.au/

living in remote or very remote communities, such as those living in the Ngaanyatjarraku LGA, whose life expectancy has dropped.

Table 23 Life expectancy: Aboriginal people in remote and very remote areas compared to WA

	Sex	2015-2017	2010-2012
Aboriginal & Torres Strait Islander Peoples living in remote or very remote locations	Males	65.9 years	67.3 years
	Females	69.6 years	72.3 years
All people living in non-metropolitan areas of Western Australia	Males	78.9 years	78.9 years
	Females	83.6 years	81.1 years
All people living in Western Australia	Males	80.3 years	80.1 years
	Females	84.9 years	84.8 years

Sources:

- ABS 2019. Life tables, States, Territories and Australia, 2016-2018, ABS cat. no. 3302055001DO002. Canberra: ABS., 2016-2018.
- ABS 2018. Life Tables for Aboriginal and Torres Strait Islander Australians, 2015–2017. ABS cat. no. 3302.0.55.003. Canberra: ABS., 2015–2017;
- ABS 2013. Life Tables for Aboriginal and Torres Strait Islander Australians, 2010-2012. ABS cat. no. 3302.0.55.003. Canberra: ABS., 2010–2012. Canberra: ABS., 2010-2012.

5.2.2 Causes of mortality

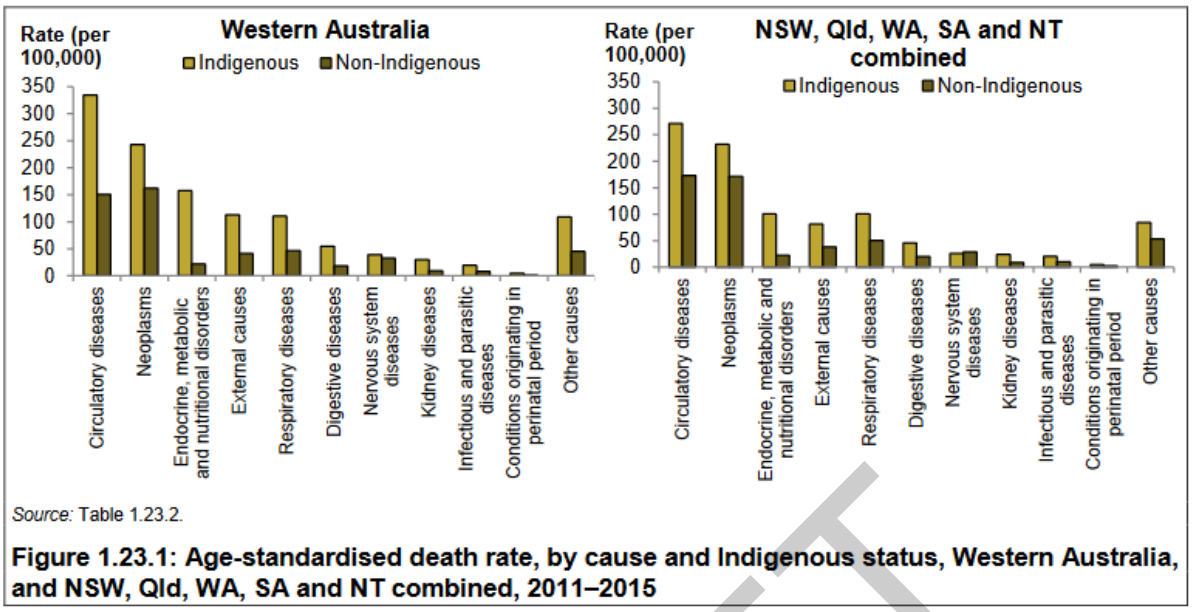
In 2011–2015 in Western Australia, the age-standardised rates for the most common causes of death were higher Indigenous people than non-Indigenous Australians:

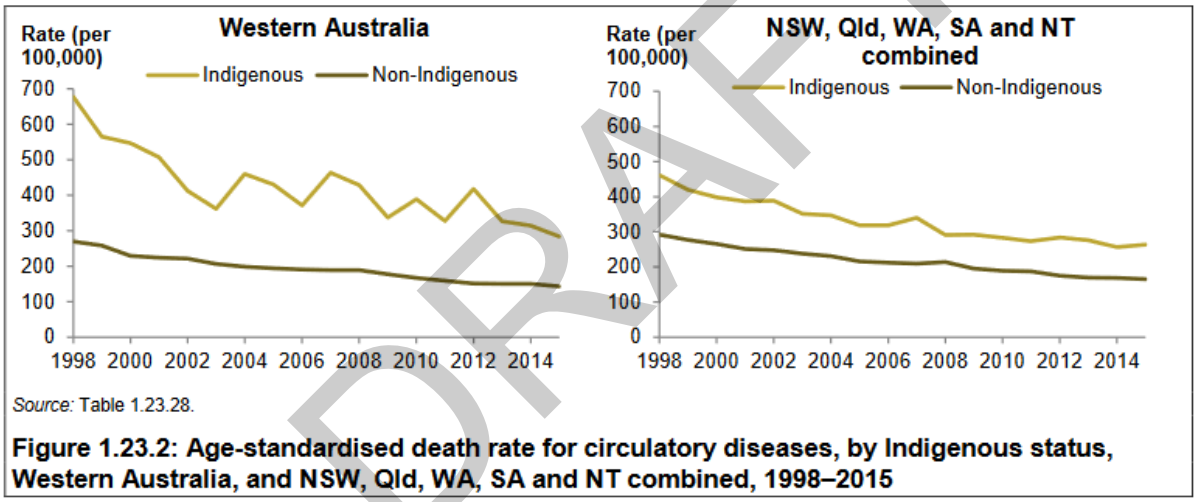
- Circulatory diseases (335 per 100,000 Indigenous people compared with for non-Indigenous)
- Neoplasms (243 compared with 162 per 100,000)
- Endocrine, metabolic and nutritional disorders (157 compared with 22 per 100,000)
- External causes (113 compared with 41 per 100,000)
- Respiratory diseases (110 compared with 47 per 100,000).[18]

Figure 18 presents two charts drawn from the Australian Institute of Health and Welfare.

[18] https://www.aihw.gov.au/getmedia/95635b94-4345-44e9-a57b-3d8414ce5762/aihw-ihw-185-wa.pdf.aspx?inline=true

Figure 18 Cause of death, Indigenous vs non-Indigenous populations in WA and Australia





Source: https://www.aihw.gov.au/getmedia/95635b94-4345-44e9-a57b-3d8414ce5762/aihw-ihw-185-wa.pdf.aspx?inline=true

5.2.3 Need for assistance with core activities

The ABS Census in 2016 recorded the extent to which respondents needed assistance with core activities. The results for AOI-1 and -2 are slightly higher than those for AOI-3, AOI-4, and Australia on average (Table 24).

Table 24 Need for assistance with core activities

Need for assistance with core activities?	**AOI-1 & -2**	**AO1-3**	**AOI-4**	**Australia**
Yes	6.96%	4.37%	4.69%	5.14%
No	71.18%	81.07%	88.85%	87.75%
Not stated	21.86%	14.56%	6.46%	7.11%

5.2.4 Aboriginal Health in the Goldfields region

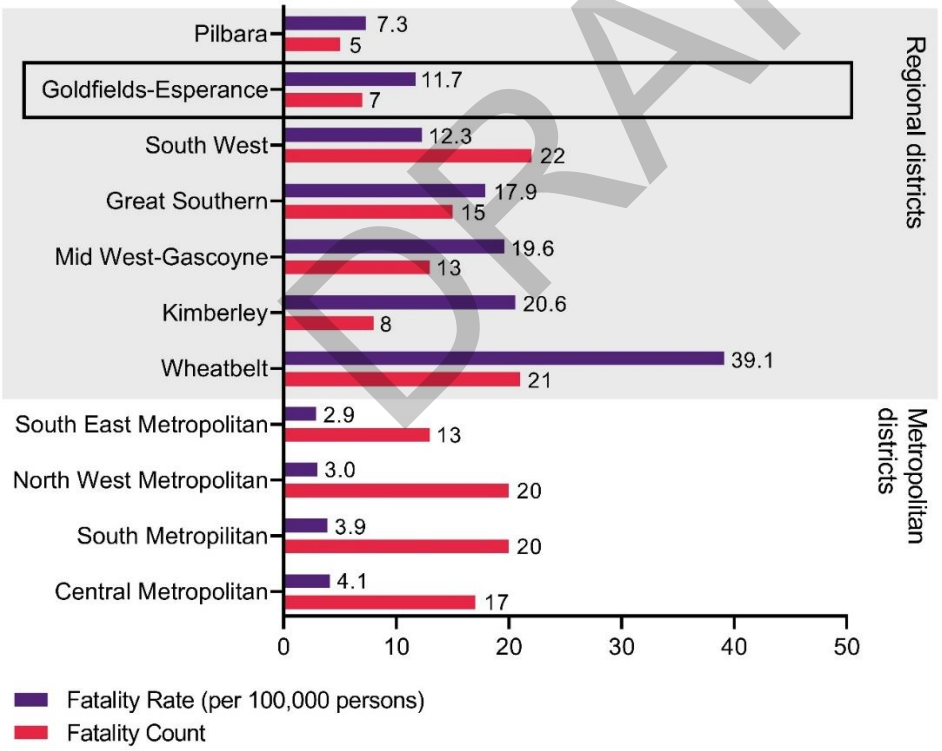
There is a considerable disparity in the health of Aboriginal and non-indigenous people living in the Goldfields region. According to the WA Department of Health, [19] in 2016/17, Aboriginal people were over-represented in hospital emergency department attendances. While making up 12 per cent of the Goldfield region's population, they accounted for 25 per cent of admissions in all ED attendances. There was a 48% decline in deaths from circulatory diseases for Aboriginal people in Western Australia. The age-standardised rate decreased from 677 per 100,000 in 1998 to 283 per 100,000 in 2015. Despite this decrease, circulatory diseases remain the leading cause of death for Indigenous Western Australians, and the rates for Indigenous Australians remain double the rate for non-Indigenous Western Australians.[20]

Leinster–Leonora had admission rates for vaccine-preventable conditions 6.4 times the state average. Leinster–Leonora included the Ngaanytjarra Lands. Goldfields condition hotspots included COPD, diabetes complications, CCF and vaccine-preventable conditions.[21]

5.3 Traffic fatalities in the Goldfields region

Traffic data – including fatalities – will likely be required to assess socioeconomic impacts arising from the WMP's use of public roads. WA Police publish indicative fatality rates per 100,000 persons by district, as shown in Figure 19. Figure 20 maps the locations of fatalities and hospitalisations. While the majority of incidents are concentrated in urban areas, there are some recorded for the Goldfields Highway and the Laverton-Leonora Road, both of which lie between the proposed WMP site and Esperance.

Figure 19 Indicative fatality rates per 100,000 persons and fatality counts by WA Police district, 2017



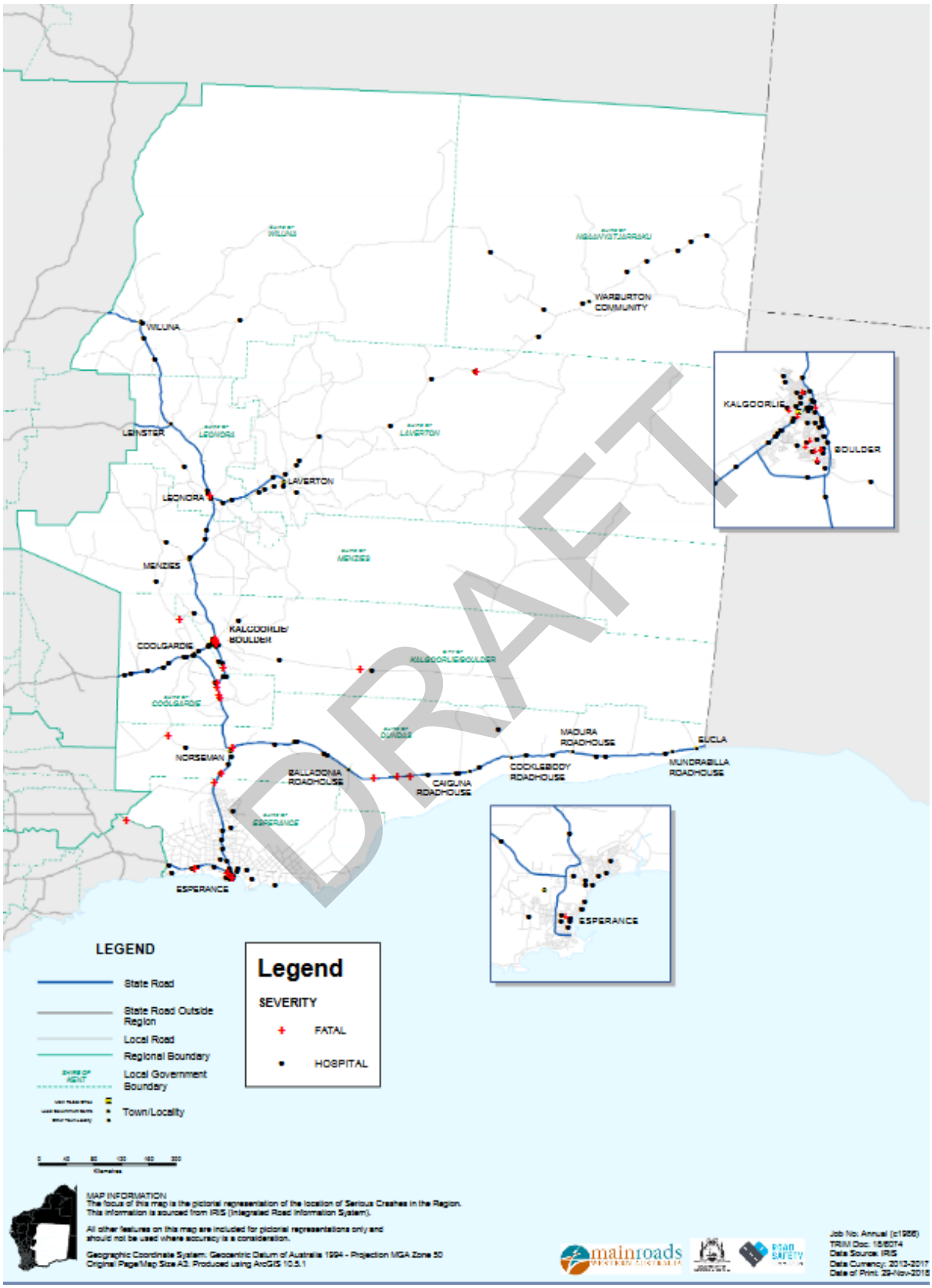
Source: www.rsc.wa.gov.au/RSC/media/Documents/Road%20Data/Statistics/Annual%20crash%20statistics/annual-prelim-crash-statistics-2017.pdf

[19] https://www.aihw.gov.au/getmedia/95635b94-4345-44e9-a57b-3d8414ce5762/aihw-ihw-185-wa.pdf.aspx?inline=true

[20] https://www.aihw.gov.au/getmedia/95635b94-4345-44e9-a57b-3d8414ce5762/aihw-ihw-185-wa.pdf.aspx?inline=true

[21] https://ww2.health.wa.gov.au/~/media/Files/Corporate/Reports%20and%20publications/Lessons-of-Location/Lessons-of-Location-2017.pdf

Figure 20 Goldfields–Esperance Region serious crashes (fatalities and hospitalisations), 2013-2017



Source: https://www.rsc.wa.gov.au/getattachment/Statistics/Annual-Statistics/Goldfields-Esperenace-Serious-Crashes-2013-to-2017.pdf.aspx?lang=en-AU

6. Implications for SIOA and WMP

This demographic study aimed to extract and synthesise demographic data from the ABS and other publicly available sources. Demographics relating to population, social and economic capital, and health have been the focus. The intention of this data extraction is to provide a source document from which other SIOA studies can draw. This section provides summary points relating to methodological challenges of demographic data in Ngaanyatjarra lands, further questions for subsequent SIOA studies, and implications for the WMP.

6.1 Demographic data in Ngaanyatjarra lands

The study highlights key uncertainties relating to the count of Aboriginal population in Ngaanyatjarra lands. Brooks and Kral (2007) argue that the ABS Census data does not account for settlement characteristics of the Ngaanyatjarra people, and as a result provides an undercount of the Aboriginal population. We find that the Census data does undercount the Aboriginal population - but the ABS acknowledges this as a methodological flaw. It provides an adjusted estimate of resident population, based on the post-enumeration survey and other data sources. This adjustment leads to an official population estimate of the Indigenous population up to one-third higher than the Census data. When the estimate of resident population is taken into account, the population counts reported in the ABS and in Brooks and Kral's report are comparable.

There remain key challenges to using ABS data to ascertain the current population of AOI-1 and AOI-2 communities:

- **Availability / coverage:** Not all Ngaanyatjarra communities are represented as census units in the ABS data. Community-by-community analysis of ABS data is not possible. Since AOI-1 and AOI-2 data were not able to be disaggregated in most cases, OZ Minerals may consider collapsing these two AOIs into the one area for reporting purposes.
- **Outdated data:** Community-level data can be compiled using other WA government data to supplement ABS data. But the WA government data often dates back more than five years.
- **Inconsistent growth rates:** Sometimes, it is possible to extrapolate current population sizes from past data, by applying an annual growth rate to the last known population. This option is not open for Ngaanyatjarra communities because the growth rate - according to the 2006, 2011, and 2016 Censuses, have been inconsistent.
- **Differing boundaries:** Ngaanyatjarraku LGA is represented in the ABS data, but Kiwirrkurra is in East Pilbara LGA. Using Ngaanyatjarraku LGA as a proxy for AOI-1 and AOI-2 communities requires assuming that Kiwirrkurra has the same overall demographic profile as the Ngaanyatjarraku LGA.

Together, these challenges make it difficult to determine the actual population in Ngaanyatjarra lands.

6.2 Implications for SIOA and WMP

The difficulty of estimating Aboriginal populations will have implications for the SIOA. The nature and extent of these implications will vary from study to study. For some studies, a ball-park estimate will be sufficient for analysis. For others, more precise data may be required.

As such, we recommend an inclusion in all scopes of work for the SIOA: that contractors should assess the available demographic data and determine whether the existing data is sufficiently granular to carry out the scope of work. Proposals should be written accordingly.

This study went on to extract and comment on ABS statistics, notwithstanding the difficulties articulated above. A number of observations arose, which would be considered in subsequent SIOA studies (and in the development of the WMP more broadly).

6.2.1 Issue: Who is work ready?

The key implication arising from this study is to pose the question: Who is work ready? In AOI-1 and AOI-2, over 70% of the population older than 15 years indicated being employed - a high proportion compared to other remote and very remote Indigenous communities. The population profiles show a relatively young population, compared to the Australian average. Together, these figures suggest a degree of work-readiness over the life of mine that could be the basis for employment and economic development collaborations between the WMP and Ngaanyatjarra people.

At the same time, only a third of adults aged 20-64 completed Year 10 schooling. Nearly 80% of the Aboriginal population in AOI-1 and -2 do not speak English at home. Childhood development data suggests that the majority of children are developmentally vulnerable, and Ngaanyatjarraku LGA as a whole is in the lowest quintile of disadvantage in Australia.

As such, the nature of employment signalled in the ABS data should be interrogated more closely, to ascertain whether the current labour force has the aspirations, skills, and interest to work in a mine-related economy (and if not, then to ascertain what industries would be sustainable). This knowledge would have implications not only for considering the impact of employment on AOI-1 and -2 communities, but also determine the feasibility of social programming aimed at economic development.

6.2.2 Education and health statistics are foundational only

In addition to work-readiness, we emphasise that the health and education data reported herein represent starting points for more specialised studies in those domains. This report is not intended to constitute a systematic desktop study of either health or education, in any of the AOIs.

6.3 Next steps

In summary, the following recommendations for the SIOA arise from this study:

- **Introduce into subsequent studies' scopes of work the following requirement**: 'Contractors should review the demographic study and assess to what extent current demographic data is sufficient for the analyses proposed. To the extent current data is insufficient, contractors should propose a data collection program. In consultation with the SIOA Steering Committee, OZ Minerals reserves the option to streamline each studies' data collection program to avoid duplication of work and research fatigue among the community'.
- **Source primary data for Kiwirrkurra**: To determine whether Ngaanyatjarraku LGA statistics are applicable to Kiwirrkurra, primary data for Kiwirrkurra should be identified and analysed.
- **Whether AOI-1 and AOI-2 should remain separate**: This study was generally unable to disaggregate demographic findings between AOI-1 and AOI-2. While the impacts felt in these groups of communities are likely to be different, for SIOA purposes, it may be neater to collapse them into a single area of influence, but different the impacts experienced discursively.
- **Employment study**: Include the following requirement in the relevant scope of work: 'The contractor for this scope of work should address the employment and education findings of the demographic report. In particular, the contractor should determine the degree of work-readiness of AOI-1 and AOI-2 communities for (a) employment at WMP; (b) employment or business elsewhere within the Ngaanyatjarra lands; and/or (c) what social programs could assist AOI-1 and -2 communities create opportunities arising from development of the WMP?'

CSRM is open for discussion of any aspect of this report with the SIOA Steering Committee.

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Appendix J7. Noise Characterisation and Effects Assessment

West Musgrave Copper and Nickel Project

May 2020

Noise Characterisation and Effects Assessment

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1 INTRODUCTION

OZ Minerals Exploration Pty Ltd (OZL) has entered into a Joint Venture (JV) with Cassini Resources Limited (CZI) to develop the West Musgrave Project (WMP or 'the Project'). The Project will involve the mining and processing of the Nebo-Babel Ni-Cu-PGE sulfide deposits.

1.1 Project Location

The Project area is located approximately 1,300 km northeast of Perth near the border with South Australia and Northern Territory, 29 km south of Jameson and 110 km southeast of Warburton (Figure 1).

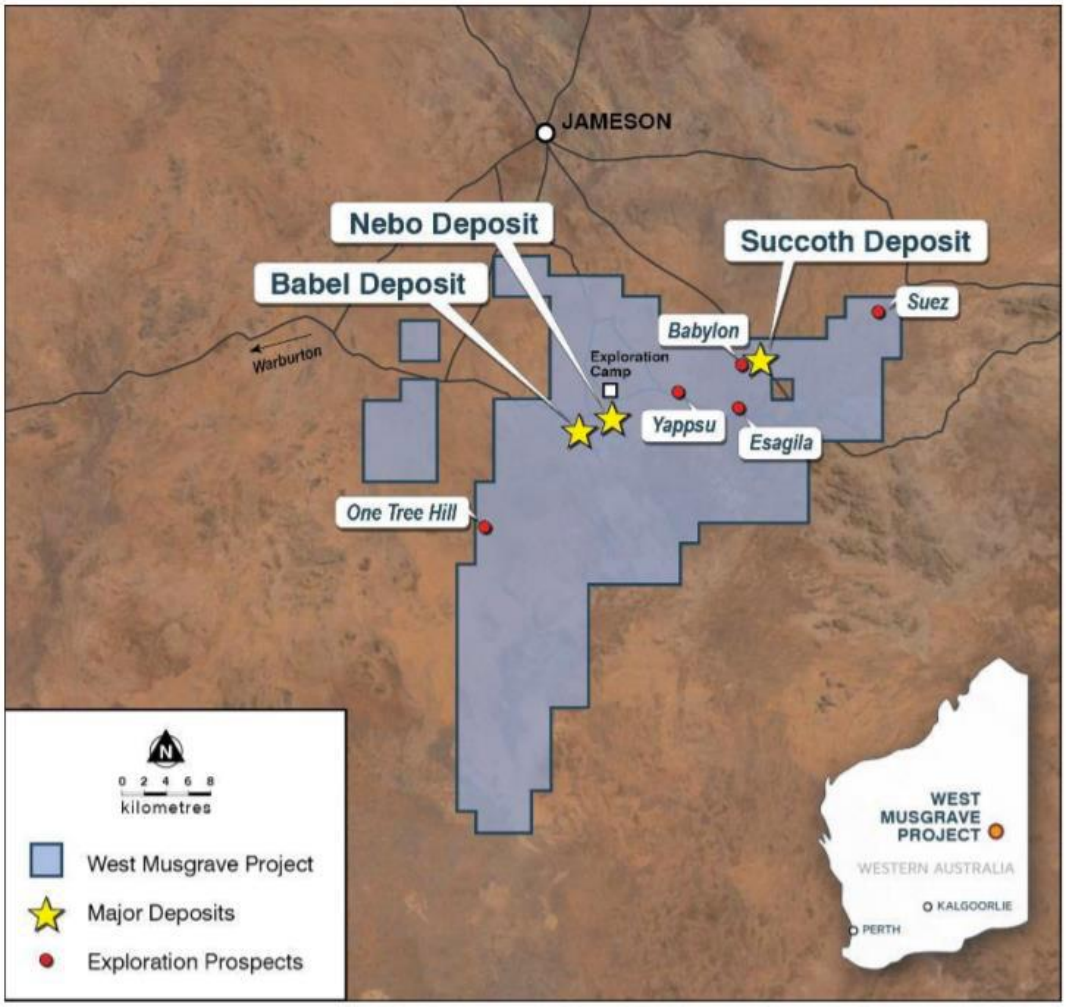

Figure 1: Location of the West Musgrave Project

1.2 Key Project Characteristics

A summary of the key Project information is presented in Table 1.

Table 1: West Musgrave Project Key Project Characteristics

Activity	Aspect	Description
Mining	Resource	342 Mt at 0.33% Ni and 0.36% Cu
	Pits	Nebo and Babel
	Ore Reserve	229 Mt at 0.33% Ni and 0.36% Cu
	Mining Rate	10 Mtpa Ore, Average 32 Mtpa Waste
	Life of Mine	26 Years
	Operations	Conventional open pit mining from two pits (Nebo and Babel) (drill and blast, load and haul)
Processing	Flowsheet	Crushing, Vertical Roller Mill, Flotation producing separate Nickel and Copper concentrates
	Recoveries	69% Ni and 78% Cu LOM
	Concentrate Grades	10-11% Ni in Ni Con, 25-26% Cu in Cu Con.
	Nickel Production	~26,000 tpa (Y1-5) ~22,000 tpa (Y6-LOM)
	Copper Production	~33,000 tpa (Y1-5) ~27,000 tpa (Y6-LOM)
Infrastructure	Roads	Upgrade of existing 30 km road to Jameson 80 km north to the Great Central Road (via Jameson), 700 km along Great Central Road to Leonora.
	TSF	Two cells with water recycle back to process. Upstream raises with downstream buttressing with mine waste rock
	Village and Airstrip	400 person operations village and airstrip located at site
	Water	7 GL/yr Northern borefield from local paleochannels (approx. 150m deep aquifer) 15 km from site
	Power	55 MW Power Purchase Agreement, Hybrid Renewables (Wind, Solar, Battery and Diesel)
	Logistics	Containerised Quads to Leonora, Rail to Esperance for bulk shipping to customers
	Customers	Nickel and copper smelters in Australia, Asia and Europe
Workforce	Workforce	Potentially 1,000 people construction, 400 during operations.

2 REGULATORY ENVIRONMENT

The Western Australia Environmental Protection Authority (EPA) produce guidance related to the assessment of noise via the *Environmental Factor Guideline – Social Surroundings* (December 2016). The EPA's objective for social surrounds is "*to protect social surroundings from significant harm*". The objective recognises the importance of ensuring that social surroundings are not significantly affected as a result of implementation of a proposal or scheme.

The EP Act states, "*noise includes vibration of any frequency, whether transmitted through air or any other physical medium*". As described within the Guideline, noise has the potential to unreasonably interfere with the health, welfare, convenience and comfort of people. Amenity values can be highly subjective. What may have amenity value for one person, may not be valued by another. Similarly, people have different levels of perception or tolerance for things that may impact amenity, such as noise, noting that most issues to do with amenity relating to noise can be avoided with appropriate separation distances.

Where Social Surroundings has been identified as an environmental factor to be addressed in an Environmental Review Document required to be prepared under Part IV of the *Environmental Protection Act 1986* (WA), the EPA may require the proponent to provide information or studies within the following broad topics:

- analysis, modelling and predictions of impacts from odour, dust and noise, including likely impacts during, worst, best and most likely case scenarios
- characterisation of proximity to sensitive receptors
- summary of proposed technologies, emission reduction equipment and management practices
- description of proposed management and monitoring arrangements
- analysis of cumulative impacts, including existing and reasonably foreseeable emission sources.

The *Environmental Protection (Noise) Regulations 1997* (the Regulations) operate as a prescribed standard under the EP Act and set limits on general noise emissions from industrial (and other) premises, with noise from road and rail traffic regulated under the *State Planning Policy 5.4: Road and Rail Noise* (2019).

A referral to the EPA for the WMP has not been submitted and no determination has been made by the EPA as to whether Social Surrounds will be a designated factor for future impact assessment under Part IV of the EP Act.

3 PROJECT CONTEXT

3.1 Receiving Environment

The WMP is situated in a remote location of Western Australia within the Shire of Ngaanyatjarraku. The nearest town is Warburton (approximate population of 580 people) located approximately 110 km south east. Two remote Aboriginal settlements, Jameson (Mantamaru, approximate population 160 people) and Blackstone (Papulankutja, approximate population 153 people) are located approximately 26 km north and 46 km east of the project area respectively.

The WMP is situated within the 98,000 km^2 Ngaanyatjarra Indigenous Protected Area (IPA Reserve No. 17614), which forms part of the National Reserve System under the Commonwealth Department of Prime Minister and Cabinet. The Reserve is categorised under International Union for Conservation of Nature (IUCN) Category VI (Managed Resource: Protected area managed mainly for the sustainable use of natural ecosystems).

The pattern of existing land use within the Ngaanyatjarra Lands is complex and varied, though traditional practices continue to predominate. There has never been a pastoral industry in the Shire, although the United Aborigines Mission at Warburton managed sheep, cattle, goats and horses until the mid-1980s. The only export industries have been sandalwood harvest, collection of dingo scalps, and prospecting.

The WMP area has an arid, desert climate with distinct summer and winter rainfall patterns. The Project area experiences a broad temperature regime. Average daily maximum temperatures exceed 34°C between November and March. Average daily minimum temperatures range from 23.1°C to 5.7°C (BoM 2018). Rainfall is of variable nature with the average annual rainfall being approximately 181 mm/yr. Evaporation rates are estimated to be greater than 20 times the mean annual rainfall. Analysis of wind speed and direction data for the Warburton and Giles Bureau of Meteorology Stations (BoM 2019) indicate that prevailing winds are predominantly from the east (north east to south east) in the morning, becoming more evenly spread throughout the day, although maintaining a bias from the east to south-east. Measurements from the on-site wind monitoring station confirms these trends, with the dominant wind direction being from 135 degrees (i.e. from the south east). Average wind speeds at 10 m are consistent with those of other areas of arid Australia at around 4.1 m/s.

3.2 Sensitive Receptors

Sensitive receptors are defined as living things that can be adversely impacted by exposure to pollution or contamination. In relation to noise and the EPA factor, these are typically those humans who are at heightened risk of negative impacts due to exposure to noise pollution. This may include annoyance, dissatisfaction, interference with activities such as concentration, sleep and learning and physiological

impacts such as hearing loss. Given these effects, some land uses are considered more sensitive than others. Sensitive receptors locations for noise typically include residences, schools, hospitals, elderly housing areas.

The nearest non-project area potential sensitive receptor locations are those in Jameson. This may include the non-residential clinic facility and the combined pre-school and primary school facility (approximately 24 students). The only project area sensitive receptor is the Project accommodation village that will house the FIFO workforce.

3.3 Baseline Noise Environment

Project-specific noise monitoring has not been undertaken due to the remoteness of the Project site and the lack of anthropogenic emission sources. No other sources of noise data are available for the project area or its immediate surrounds.

The closest location where noise monitoring has been undertaken is at Wingellina which is also located in the Ngaanyatjarra lands, approximately 120 km east of the project area. The Wingellina site is considered highly analogous to the West Musgrave project area as it is in a climatic and geologically similar are within the West Musgrave Province and has the same land use (traditional land management by Traditional Owners).

Noise monitoring was undertaken at Wingellina as part of baseline environmental studies for the proposed Wingellina Nickel Project (Lloyd George Acoustics 2014), Monitoring included:

- Measurement of ambient noise between 15-29 September 2014
- Point source noise measurements in the Wingellina townsite including the existing power generation facility

Results found that the general night ambient noise level was 30.4 dB(A) (L_{A90}) with the closest residence to the existing power station having a L_{A90} of 33 dB in worst case (southerly wind) conditions. These values are considered typical of remote areas with no significant anthropogenic noise sources.

It is noted that assigned baseline noise levels are defined in the *Western Australia Environment Protection (Noise) Regulations 1997* and are summarised in Table 2.

Table 2: Assigned Baseline Noise Levels at West Musgrave

Type of premises receiving noise	Time of day	Assigned level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises: highly sensitive area	0700 to 1900 hours Monday to Saturday	45	55	65
	0900 to 1900 hours Sunday and public holidays	40	50	65
	1900 to 2200 hours all days	40	50	55
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	35	45	55
Noise sensitive premises: any area other than a highly noise sensitive area	All hours	60	75	80

4 ASSESSMENT OF EFFECT AND IMPACT

4.1 Pollutant-Generating Activities

4.1.1 Mining and Processing

Mining and processing operations involve the use of a variety of noise-generating plant and equipment, including but not limited to the following:

- Drilling rigs
- Haul trucks
- Dozers and graders
- Water carts
- Excavators and/or shovels
- Front end loaders
- Processing plant slurry pumps
- Crushers and grinding mills
- Conveyors and stackers
- Reversing alarms and conveyor start alarms

The overall sound power levels from this plant and equipment varies between around 109 dB(A) up to 121 dB(A).

In addition to the above, open pit mine blasting will also result in noise emissions as a part of the Project.

4.1.2 Airport Operations

An aerodrome would be established to support the fly in / fly out workforce. Through consultation efforts and the project's goal of codesigning the project with Traditional Owners, discussions with the community were had around the location of the airstrip, and specifically whether there was a preference for upgrading the existing Jameson airstrip or constructing a new airstrip to be located on site. It was identified through consultation efforts that the preference was to have the project airstrip outside of Jameson to avoid nuisance noise. As such, the airstrip is proposed to be located to the north of most of the mining and processing infrastructure, with the airstrip aligned broadly east west.

4.1.3 Wind Turbines

Approximately 20-30 wind turbines would be installed to the west of the mining and processing infrastructure as a component of the site electricity generation system (that also comprises solar and diesel generation).

4.1.4 Reagent and Product Transport

Construction materials, reagents, general consumables and concentrate product would be transported to/from site via the existing cutline road between the Great Central Road and Jameson, and subsequently on an upgraded (unpaved) road between Jameson and site. In consultation with the community at Jameson, a bypass road will be constructed around Jameson to maintain a minimum separation distance of 1.5 km from the nearest residence to the road.

4.2 Assessment of Effects and Impact

As a result of the separation distances between noise-generating activities and the nearest sensitive receptors (generally over 25 km, with the nearest heavy vehicles passing more than 1.5 km from the nearest residence), the EPA objective will be met and noise from mining-related activities is unlikely to be audible at Jameson. This is detailed further in the following sections.

4.2.1 Mining and Processing

Due to the remoteness of the site and the lack of nearby sensitive receptors, detailed noise and vibration modelling was considered not to be necessary. OZ Minerals have however applied simplistic mathematical modelling to validate assumptions regarding the potential for noise emissions that may result in unacceptable impacts on sensitive receptors. The mathematical concepts used were:

- That noise levels decrease by 6 dB with every doubling of distance from a point source
- That the sound level at a given distance will change by 20 Log_{10} (distance 1/distance 2) decibels

Based on other similar projects, it is assumed that the loudest noise on site is the 121 dB(A) associated with surface crushing activities, this equates to a sound pressure level at 1m of approximately 110 dB. Using the above mathematical model, it is estimated that noise from the mining and processing operations would approach the nighttime baseline noise level within approximately 8-10 km of the noise-generating activities. This is conservative when benchmarked against the outputs of detailed noise modelling for similar operations (e.g. Wingellina Nickel Project) which predict noise levels to approach background within approximately 5 km of the noise-generating activities. This is likely due to the influence of waste rock stockpiles and other aspects of local topography and meteorology that are not considered in the simplified mathematical model applied here.

Airblast and ground borne vibration as a result of mine blasting activities are expected to dissipate to below levels required under *AS 2187.2-2006 Explosives - Storage and use - Use of explosives* within one or two kilometres of the source (e.g. Lloyd George Acoustics 2014). Amenity is typically less affected by extremely short-term, irregular noise events such as blasting compared to continuous emissions sources like ore crushing.

The extent of changes to the baseline noise environment is conservatively predicted to be less than approximately 10 km from the noise-generating sources. The nearest residences are located at Jameson,

29 km from the Project area. As a result, there are predicted to be no changes to baseline noise at Jameson and therefore the Project will result in no human health or amenity impacts.

4.2.2 Airport Operations

The proposed aerodrome at West Musgrave would be similar in form and function to airports constructed and operated at other remote mining operations. The final approach and departure flightpaths are yet to be determined, and so the proximity of these to the townships cannot be determined. Benchmarked noise modelling data (e.g. BHP Billiton 2009) suggests that the 65 dBL_{Amax} noise contour (representing the relevant Australian Standard *AS 2021:2000 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction*) would occur approximately 2 km each side the runway centerline, and extending approximately 10 km from the runway ends. As the airstrip is located more than 25 km from Jameson, noise from aircraft operations would meet the Australian Standard within the township.

4.2.3 Wind Turbines

Studies (e.g. Hansen *et al* 2019, Victoria Department of Health 2013) have indicated that noise from wind turbines becomes inaudible against background noises at distances of between 1 – 3.5 km, with no audible noise observed at distances of 7.6-8.8 km. Given the separation distances of more than 30 km from Jameson, noise from the operation of wind turbines would not be audible at Jameson and has therefore not been modelled for the purpose of this assessment.

4.2.4 Reagent and Product Transport

Table 1 of the State Planning Policy 5.4: Road and Rail Noise (2019) provides trigger distances, where, when any part of the lot is within the specified trigger distance, an assessment against the policy is required to determine the likely level of transport noise and management/ mitigation required. These trigger distances vary between 300 m (for strategic freight and major traffic routes with over 500 heavy vehicle movements per day and/or 50,000 total movements per day) to 200 m (for other significant freight or traffic routes). Given the distance between the bypass road to the nearest residence at Jameson will be approximately 1.5 km, it is considered that there will not be a significant adverse impact on noise amenity within Jameson as a result of product transport noise emissions.

5 MITIGATION, MANAGEMENT AND MONITORING

5.1 Mitigation

Noise has been demonstrated to be unlikely to negatively impact the nearest sensitive receivers for the West Musgrave Project, however there are several mitigation measures that may be employed should they be deemed necessary or desirable, examples include:

- Strategic placement of waste facilities, stockpiles and infrastructure to screen noise
- Modifying the design and use of surface equipment air horns and reversing alarms (e.g. restricting use, use of alarms of different frequencies, ambient noise sensor horns etc.)
- Prescribed maintenance of all mobile and fixed plant and equipment, including maintenance of the fitted noise attenuation equipment.
- Restriction on the dumping of waste rock at elevated locations within the waste rock stockpiles at night
- Limiting blasting to daylight hours only and/or use of meteorological monitoring to inform blast locations
- Fitting noise attenuation kits to mobile fleet
- Partial or selective enclosure of conveyors and transfer points

The mitigation measures to be applied will be determined during detailed design and during initial operations, as required.

5.2 Management

Management of noise to comply with occupational exposure requirements for onsite personnel will likely address the majority of localised noise emission issues. Management of environmental noise would be largely based on a reactive complaints management system and an operational response plan for situations where noise levels were demonstrated to exceed the environmental compliance criterion. This may include actions such as relocation of haulage operations to areas further from receivers or other measures as required.

5.3 Monitoring

Due to the remoteness of the Project from human health and amenity receptors, no specific environmental noise monitoring is proposed. Occupational noise monitoring will be conducted in compliance with regulatory requirements, and product transport vehicles will be monitored for compliance with relevant noise standards during required inspections undertaken at Authorised Inspection Stations

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Appendix J8. Landscape and Visual Impact Assessment

WEST MUSGRAVE PROJECT
LANDSCAPE VISUAL IMPACT ASSESSMENT

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MAY 2020

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WEST MUSGRAVE PROJECT
LANDSCAPE VISUAL IMPACT ASSESSMENT

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Document Control for Job Number: OZMPM

Document Status	Prepared By	Authorised By	Date
Draft Report	Michael Dufty	Kristy Sell	31 January 2020
Final Report	Michael Dufty	Kristy Sell	5 May 2020

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1. INTRODUCTION

1.1 BACKGROUND

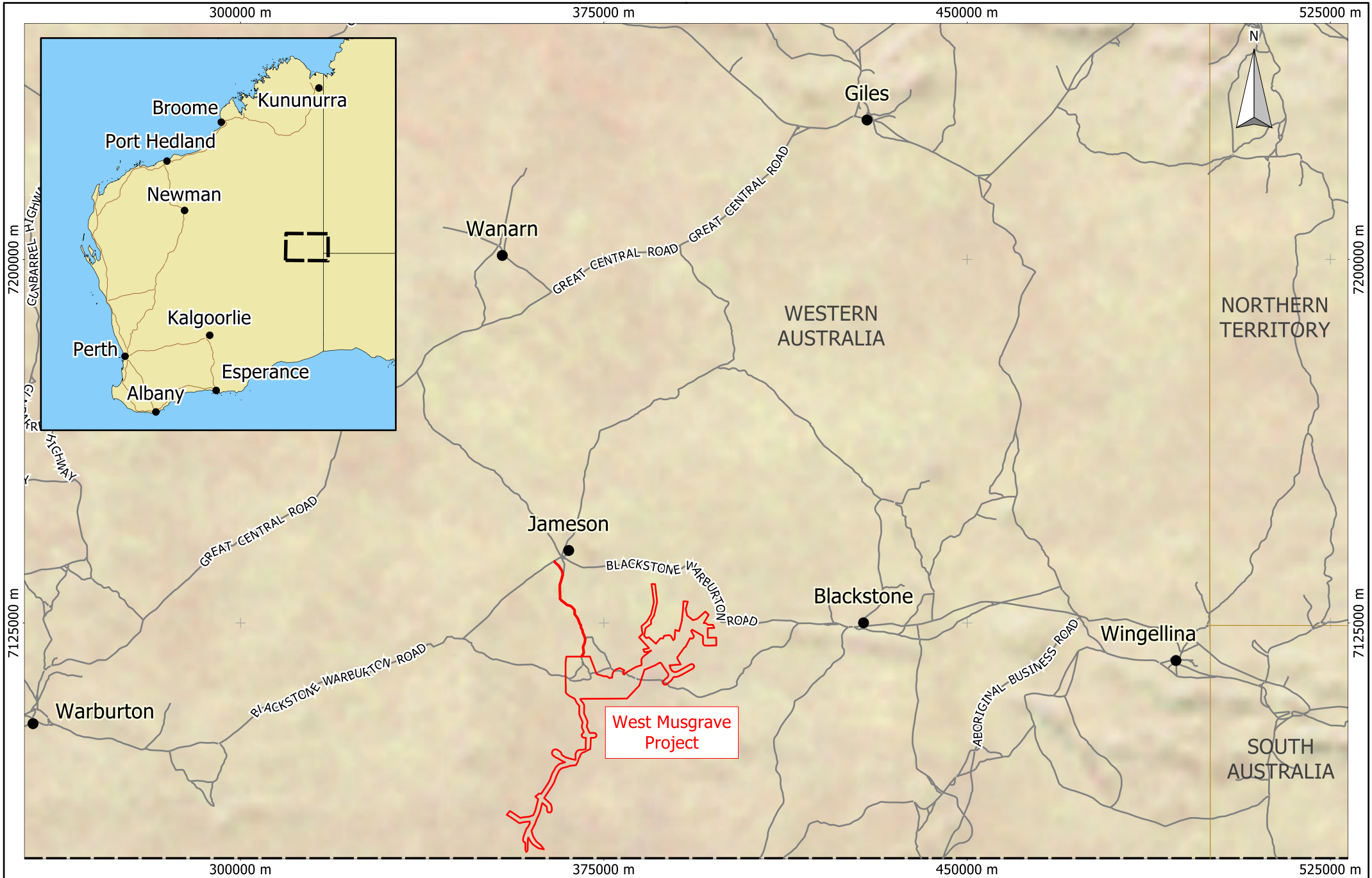
OZ Minerals Limited (OZ Minerals) and Cassini Resources Limited (Cassini) (the Joint Venture) are assessing the West Musgrave Copper and Nickel Project (the West Musgrave Project (WMP or the Project)) in the West Musgrave Ranges of Western Australia. The WMP is located approximately 1,600 km north east of Perth near the border with South Australia and Northern Territory; 30 km south of Jameson and 110 km south east of Warburton (Figure 1).

The WMP area is within the Musgrave Geological Province (also known as the Musgrave Block), a relatively-recently discovered mineral district where mineralisation occurs at multiple locations. The WMP consists of a number of prospective copper and nickel deposits known as Nebo, Babel, Succoth and Yappsu, with Nebo and Babel (referred to as Nebo-Babel) being at the most advanced stage of mineral evaluation.

The Nebo-Babel copper-nickel deposits were discovered by WMC Resources in 2000. Cassini purchased the Project from BHP in April 2014 and completed a significant infill drilling campaign. A Scoping Study was announced and completed in December 2017 (OZ Minerals 2017), which concluded that the WMP presented a viable opportunity for development. OZ Minerals subsequently signed an earn-in and Joint Venture agreement with Cassini, achieving 70% ownership of the Project to date. The project Pre-feasibility Study (PFS) is underway to define the key characteristics of the Project and determine its technical and economic viability. The PFS is scheduled for completion in 2020, hence key project characteristics such as life of mine, processing rate, waste handling and storage and water requirement will be defined as the PFS progresses.

The WMP will consists of the development of two open pit nickel and copper deposits (Nebo and Babel), a processing plant which will utilise floatation methods, process and mine waste disposal to a Tailings Storage Facility (TSF) and several Waste Rock Dumps (WRDs), borefield and a combination of renewable power infrastructure (photovoltaic solar panels and wind turbines) supported by backup diesel. The project will be supported by an onsite Accommodation Village and Airstrip to house and get the work force to site. The proposed site layout is shown in Figure 2.

MBS Environmental (MBS) were engaged by OZ Minerals to undertake a landscape visual impact assessment (LVIA) for the WMP to inform project design, environmental impact assessment and closure planning.



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0 50 km

OZ Minerals
West Musgrave Project

Figure 1

Location of the West Musgrave Project

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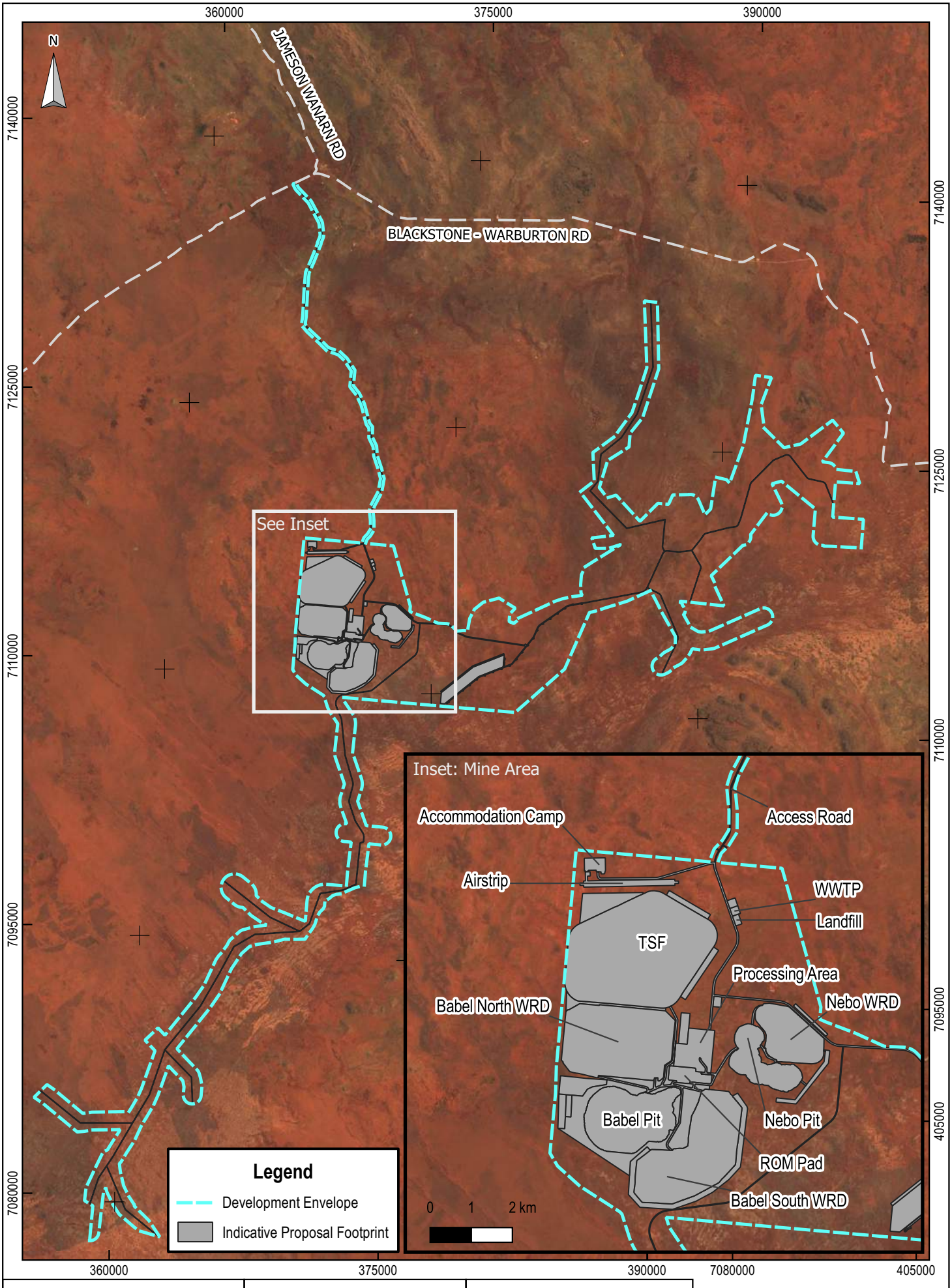
W:\OZ Minerals\West Musgrave\GIS-Common\Location Plan.map 16/01/2020 F1 Location Map Layout



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Grid: MGA 94 (52)

0 1 2 3 km

OZ Minerals
West Musgrave

Figure 2

Site Layout

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1.2 LEGISLATIVE CONTEXT

1.2.1 Federal

Under Section 528 of the *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act 1999*), the term 'Environment' is defined as (Austlii 2018):

- Ecosystems and their constituent parts, including people and communities.
- Natural and physical resources.
- The qualities and characteristics of locations, places and areas.
- Heritage values of places.
- The social economic and cultural aspects of a thing mentioned in paragraph (a), (b) or (c).

Under this definition, impacts to visual amenity can be considered an 'environmental' impact, as it falls within the third definition.

1.2.2 State of Western Australia

When a proposal is assessed under Part IV of the *Environmental Protection Act 1986* (EP Act 1986), the EPA may consider a proposal's impacts under its guidance framework for environmental factors. The 'Statement of Environmental Principles, Factors and Objectives' released by the EPA in June 2018, states that 'environmental factors are those parts of the environment that may be impacted by an aspect of a proposal or scheme'. The EPA has 13 environmental factors, organised into five themes which include 'Sea, Land, Water, Air and People' and has identified an environmental objective for each environmental factor (EPA 2018). The environmental factors and objectives relevant to landscape and visual impacts are shown in Table 1.

Table 1: Relevant EPA Environmental Factors and Objectives

Theme	Factor	EPA Objective
Land	Landform	To maintain the variety and integrity of significant physical landforms so that environmental values are protected.
Air	Air Quality	To maintain air quality and minimise emissions so that environmental values are protected.
People	Social Surroundings	To protect social surroundings from significant harm.
	Human Health	To protect human health from significant harm.

There are also a number of State policies that highlight the need for visual impact assessment to be considered during the planning phase of developments with the most important being the Western Australian State Planning Strategy 2050 (DPLH & WAPC 2014).

The Western Australian Planning Commission's (WAPC) State Planning Policy No. 2: Environment and Natural Resource Policy' for Western Australia (WAPC 2003) states that the objective for planning is to:

- Identify and safeguard landscapes with high geological, geomorphological or ecological values, as well as those of aesthetic, cultural or historical value to the community, and encourage the restoration of those that are degraded.
- Consider the level or capacity of the landscape to absorb new activities and incorporate appropriate planning and building design and siting criteria to ensure that new development is consistent and sensitive to the character and quality of the landscape.

- Consider the need for a landscape, cultural or visual impact assessment for land use or development proposals that may have a significant impact on sensitive landscapes.

The WAPC also encourages proponents to develop appropriate management strategies that can contribute to the maintenance and enhancement of high value landscapes. DPLH & WAPC 2014 highlights the need to:

- Safeguard and enhance significant natural landscape assets and cultural heritage values.
- Protect and manage the region's cultural heritage, arts including indigenous significant places, and landscapes of significance.

1.3 SCOPE AND OBJECTIVE

MBS Environmental (MBS) was engaged by OZ Minerals to undertake a landscape visual impact assessment (LVIA) for the WMP to inform project design, environmental impact assessment and closure planning. The LVIA has been undertaken to assess the impact of the project on the social surroundings, in the context of the Social Surroundings Key Environmental Factor detailed by the West Australian Environmental Protection Authority (EPA, 2016).

The Department of Planning, Lands and Heritage (DPLH) Visual Landscape Planning in Western Australia: A Manual for Evaluation, Assessment, Siting and Design' (DPLH 2007) has been used to develop the visual impact assessment methodology.

The scope of the LVIA is to:

- Describe the existing visual landscape character.
- Describe the proposed development and identify the visually significant components
- Describe and evaluate the potential visual impacts.

These objectives are considered in line with DPLH 2007.

2. EXISTING VISUAL LANDSCAPE CHARACTER

Information on regional context is provided to assist with assessing the visual impact of the WMP. Consideration of environmental, social and economic factors and how the surrounding landscape contributes to each of these is important where assessing the value the landscape holds and the contribution of this to visual impact.

2.1 LANDSCAPE UNITS

The WMP area is situated within the Western Desert Ranges Province soil-landscape region of the Western Australian Department of Industries and Regional Development (previously Department of Agriculture and Food WA) system. The Desert Ranges Province has been described at the regional level as sandplains and dunes (with hills and ranges surrounded by wash plains) on granitic and volcanic rocks of the Musgrave Complex and sedimentary rocks of the Amadeus Basin (Tille 2006).

Soils typically present include red sandy earths, red deep sands and red loamy earths, with some stony soils.

The regional sandplains support low open woodlands of either Desert Oak (in the east) or Mulga (in the west) over *Triodia basedowii* hummock grasslands (Graham and Cowan 2001). Vegetation being predominantly low means many locations will have unobstructed visibility over long distances.

2.2 TOPOGRAPHY

The WMP area is gently undulating with sand dunes providing sporadic relief up to 15 metres relative height. Landforms of the Project area are dominated by sand sheets, low sand dunes, low calcrete outcrops and clayey hardpan plains. Internally draining claypans are common in low lying areas and gilgai (calcareous) soils are expected to be widely occurring in these low lying areas. Colluvial slopes and outwashes occur adjacent to elevated areas where they occur.

The elevation range of the project site is approximately 18 m; varying from approximately 485 metres Australian Height Datum (m AHD) at the north down to 467 mAHD to the south (Figure 3).

350000

400000

7150000

7100000

N

Jameson

Blackstone

Legend

- Communities
- Roads
- Wind Turbines
- WRD
- TSF
- Other Infrastructure

Scale: 1:350000
Original Size: A3
Base Map: ESRI Satellite
Grid: GDA94 / MGA zone 52 (EPSG:28352)

0 5 10 15 20 km

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Figure 3

Topographic Setting

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2.3 LANDFORMS

2.3.1 Regional Landform Context

A local assessment unit (LAU) was defined in order to capture the regional landform context for the WMP (MBS 2019). The LAU extends from the maximum Project area extent by between 25 and 37 km. At the LAU scale, landforms were identified using a digital elevation model (DEM with 2 m resolution) as shown in Figure 4.

The major landforms (i.e. obvious landscape features) within the LAU that rise approximately 200 m above the plain are:

- Cavenagh Range 3 km southwest of the potential Northern Borefield (≤ 700 mAHD).
- Jamieson Range (up to 700 mAHD) 5 km northeast of the potential Jameson Access Road. It is noted that this range is lower than the other regional ranges (50 to 100 m above the plain).
- Blackstone Range 12 km east of the potential Northern Borefield location (elevation up to 728 mAHD).
- Barrow Range (up to 550 mAHD) immediately to the west of the potential Western Access Road route. It is noted that this range is lower than the other regional ranges (50 to 100 m above the plain) and that this road is no longer being proposed as part of the project.

It is noted that none of these major landforms will be directly impacted by the Project. The ranges are however considered to be significant in the visual landscape due to their visibility from greater distances and as such are considered as part of this assessment.

Other notable landforms (i.e. referenced in regional scale maps) include low stony hillocks such as the Mulaggora Hills, Milyugal Hills and Borrows Hill, which are respectively located 7, 18 and 28 km east of the potential Southern Borefield location. To the west of the Southern Borefield are Round Hill (2 km) and Hacking Range (10 km). Small stony hillocks located closer to the potential Nebo-Babel pits and potential locations of the key mining infrastructure (within 5 km) include Cohn Hill, Minnie Hill and Red Rock. None of these notable landforms will be impacted by the Project.

2.3.2 Landforms in the Project Area

The project area lies on the Kadgo Palaeovalley plain with elevation typically varying between 465 and 485 mAHD. This area comprises flat or gently undulating sandplains, featuring sequences of low linear aeolian dunes that are typically between five and ten metres above the level of the interdune planes. Some of these low linear dunes may be impacted by the Project.

345000 m 360000 m 375000 m 390000 m

7140000 m 7125000 m 7110000 m 7095000 m 7080000 m

N

Jamieson Range

Jameson Access Road

Barrow Range

Red Rock

Winburn Rocks

Minnie Hill

Northern Borefield

Western Access Road

Cohn Hill

Cavenagh Range

Barrow Range

Milyugal Hills

Mulaggora Hills

Round Hill

Borrows Hill

Hocking Range

Southern Borefield

Legend

- Detailed Study Area
- Development Envelope
- Aboriginal Heritage Sites
- **Regional Elevation (m)**
- Heights
- 700
- 650
- 600
- 560
- 520
- 460
- 400

345000 m 360000 m 375000 m 390000 m

Scale: 1:230000
Original Size: A3
DEM: SRTM 2000
Grid: MGA94(52)

0 10 km

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Figure 4

Regional Landform Context

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2.4 SOCIAL SURROUNDINGS

The WMP is located within the Shire of Ngaanyatjarraku. The WMP is also located within the approximate 170,000 km^2 Yarnangu Ngaanyatjarraku Parna (Aboriginal Corporation) Native Title determination, and within the 98,000 km^2 Ngaanyatjarra Indigenous Protected Area (IPA Reserve No. 17614), which forms part of the National Reserve System under the Commonwealth Department of Prime Minister and Cabinet. The Reserve is categorised under International Union for Conservation of Nature (IUCN) Category VI (Managed Resource: Protected area managed mainly for the sustainable use of natural ecosystems).

2.4.1 Population

The Shire of Ngaanyatjarraku has a population of 1,606 as of the 2016 census (ABS 2019), with the population spread between 10 individual communities.

The nearest town to the project area, Warburton, is located approximately 110 km south east. Two remote Aboriginal settlements, Jameson (Mantamaru) and Blackstone (Papulankutja) are located approximately 26 km north and 46 km east of the project area respectively (Figure 1).

2.4.2 Infrastructure

Infrastructure at Jameson and Blackstone communities includes community halls, women's centres, community kitchens, community stores, mechanical workshops, fuel depots and recreation facilities.

The unsealed (gravel) Warburton Blackstone Road is the main road within the Study Area and links Warburton to Jameson and Blackstone. Jameson is approximately 125 km east of Warburton by this road and Blackstone is 72km further east.

The Great Central Road, which is promoted as a tourism route between Uluru and Western Australia passes through the northern edge of the Study Area, approximately 50 km northwest of the Warburton Blackstone Road.

2.4.3 Land Use

The pattern of existing land use within the Ngaanyatjarra Lands is complex and varied, though traditional practices continue to predominate. There has never been a pastoral industry in the Shire, although the United Aborigines Mission at Warburton managed sheep, cattle, goats and horses until the mid-1980s. The only export industries have been sandalwood harvest, collection of dingo scalps, and prospecting.

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3. DESCRIPTION OF PROPOSED DEVELOPMENT

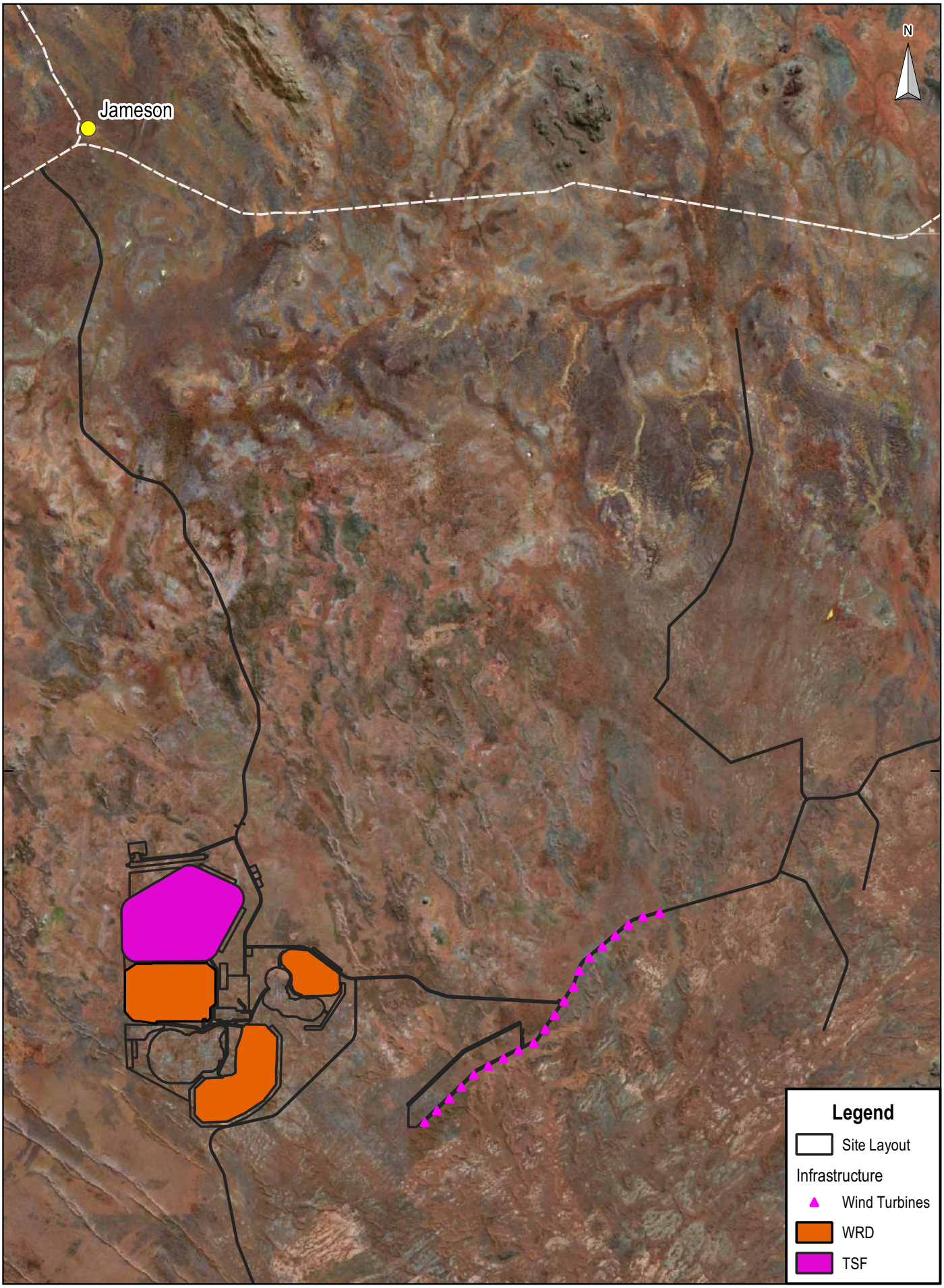
The WMP will consists of the development of two open pit nickel and copper deposits (Nebo and Babel), a processing plant which will utilise floatation methods, process and mine waste disposal to a Tailings Storage Facility (TSF) and several Waste Rock Dumps (WRDs), borefield and a combination of renewable power infrastructure (photovoltaic solar panels and wind turbines) supported by backup diesel. The project will be supported by an onsite Accommodation Village and Airstrip to house and get the work force to site. The proposed site layout is shown in Figure 2.

The majority of the proposed infrastructure is considered to be likely to have very little visual impact due to the remoteness of the site. Very few people other than those involved in the project will come close enough for low infrastructure such as buildings, roads and pits to be visible from the nearest roads and settlements, which are over 15 km away. Only the WRDs, TSF and Wind Turbines are considered to have sufficient height to make them potentially visible from such distances.

This assessment focuses only on these "visually significant" components, details of which are provided in Table 2. Proposed location of these elements is shown in Figure 5.

Table 2: Visually Significant Project Components

Component	Height (m)	Description
Babel North WRD	60	Landform composed of waste rock with a flat top and sloped embankments. Fresh rock colour will cause it to stand out visually during construction but will be rehabilitated with topsoil and vegetation in the long term, reducing impact. The TSF is an integrated landform and will appear similar to the WRDs from ground level.
Babel South WRD	60	
Nebo WRD	60	
TSF	60	
Wind Turbines (20)	220	20 turbines are proposed, each with a 180 m hub height with 40 m blades.



Scale: 1:150000
Original Size: A4
Base Map: ESRI Satellite
Grid: GDA94 / MGA zone 52

0 1 2 3 4 km

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Baseline LVIA

Figure 5

Proposed Visually Significant Project Infrastructure

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4. VISUAL IMPACT ASSESSMENT

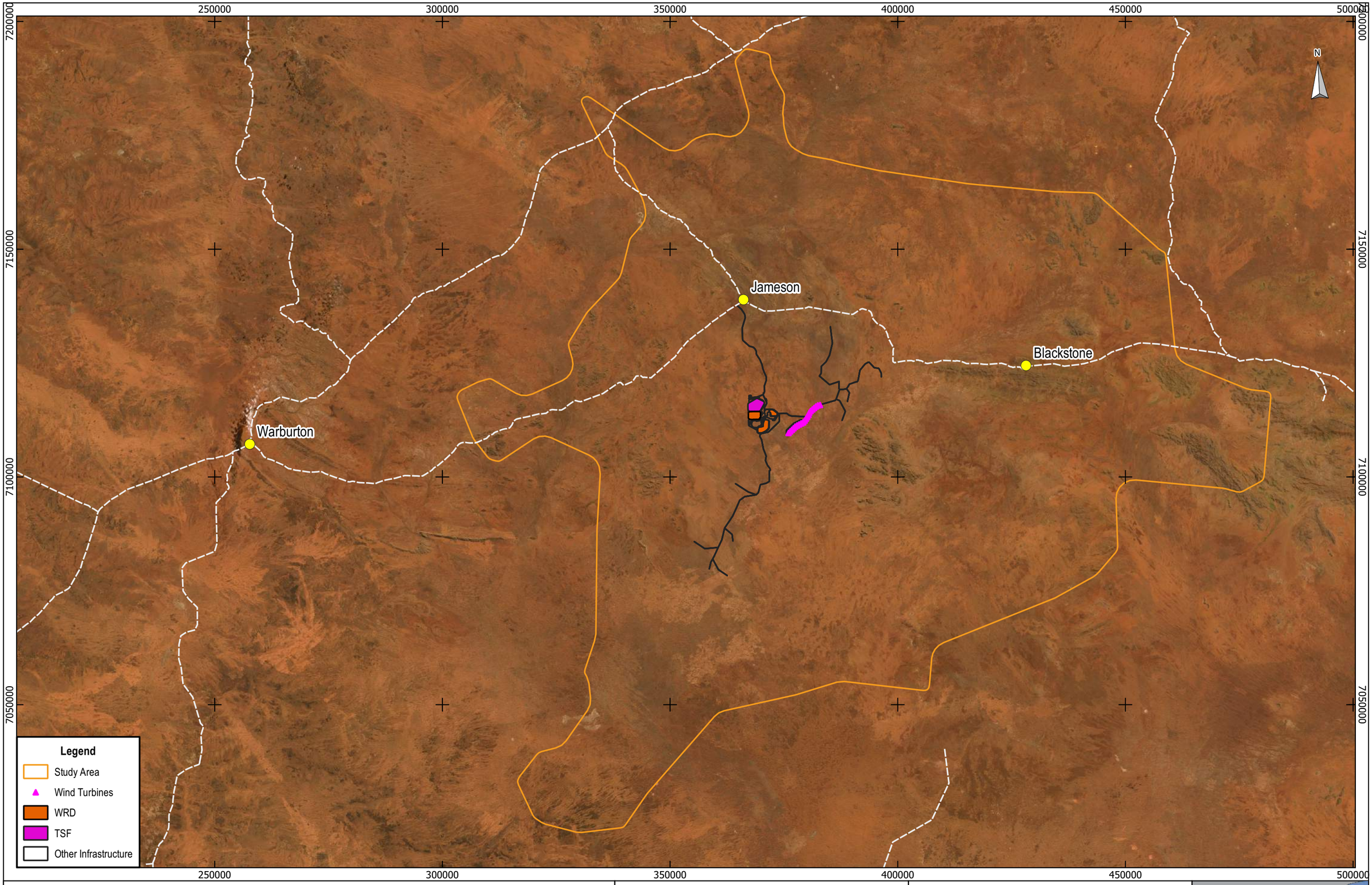
4.1 STUDY AREA

The Study Area for the purpose of this assessment was selected to cover all locations from which infrastructure elements of the WMP could potentially be seen. This was done by calculating the viewshed of project components as described in Section 4.2.1, applying a 1 km contingency buffer and connecting into a continuous area. The boundary of the selected Study Area is shown in Figure 6. It is approximately 175 km across at the widest points, so although the furthest extents have a line of site to the WMP, actual visibility will be very limited due to the distance.

The key locations in the Study Area in which visual impacts were considered were:

- The township of Warburton.
- Remote Aboriginal settlements of Jameson (Mantamaru) and Blackstone (Papulankutja).
- The Warburton Blackstone Road which links Warburton to Jameson and Blackstone.
- The Great Central Road which is the route between Uluru and Western Australia and passes through the northern edge of the Study Area.

These are shown in Figure 6.



Scale: 1:750000
Original Size: A3
Base Map: ESRI Satellite
Grid: GDA94 / MGA zone 52 (EPSG:28352)

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Baseline LVIA

Figure 6

LVIA Study Area

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4.2 VIEWSHED ANALYSIS

Viewshed analysis was carried out using GIS software to calculate potential seen areas based on line of site calculations. This is a basic analysis that does not take into account potential screening or diminishing visibility due to distance. In practice both these factors will reduce visibility within the calculated viewsheds.

4.2.1 Significant Infrastructure Viewshed

The viewshed for the visually significant infrastructure detailed in Section 2 was calculated using parameters and methods detailed in Table 3. The results were calculated for individual infrastructure items and the combined results are shown in Figure 7.

Table 3: WMP Significant Infrastructure Viewshed Calculation Details

Infrastructure Component	Infrastructure Height (m)	Viewer Height (m)
Babel North WRD	60	1.7
Babel South WRD	60	1.7
Nebo WRD	60	1.7
Tailings Storage Facility	60	1.7
Wind Turbines	220	1.7
Processing Parameters		
DEM Resolution		30 m x 30 m
Earth curvature taken into account		Yes
Atmospheric refraction		0.13
Method		QGIS (Visibility Analysis plugin)

From Figure 7 it can be seen that the limit of visibility for the WRD and TSF in unobstructed areas is around 27 km. Jameson is within the zone of visibility, at around 20 km distant. The highest points of the wind turbines are theoretically visible to a distance of around 60 km where unobstructed, and out to over 80 km if the viewer is positioned on hill tops.

None of the WMP will be visible from Blackstone as the nearby Blackstone Range obstructs the view.

A 36 km stretch of the Warburton Blackstone Road from Jameson toward Warburton for 26 km and towards Blackstone for 10 km will have similar visibility to Jameson, although the road runs perpendicular to the WMP so nothing will be visible while looking along the road driving. Further toward Blackstone, visibility from the road is more limited and only the wind turbines are likely to be visible.

250000 300000 350000 400000 450000 500000

7200000 7150000 7100000 7050000

N

Jameson

Blackstone

Legend

- Wind Turbine (220 m high) Viewshed
- WRD & TSF (60 m high) Viewshed
- Study Area
- Wind Turbines
- WRD
- TSF
- Other Infrastructure

Scale: 1:750000
Original Size: A3
Base Map: ESRI Satellite
Grid: GDA94 / MGA zone 52 (EPSG:28352)

0 5 10 15 20 km

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Figure 7

WMP Viewshed

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4.2.2 Viewing Points

Due to the remoteness of the WMP area, there are very few people exposed to the view. The only areas within the viewshed with frequent human presence are the remote settlements and their access roads.

Tourist access to the West Musgrave area is restricted and as such sensitive receptors are relatively limited. The Great Central Road, which is promoted as a tourism route between Uluru and Western Australia passes through the northern edge of the LVIA Study Area but is over 65 km from the proposed Project infrastructure. The road is not within the Zone of Theoretical Visibility (ZTV) and the nearest locations within the ZTV are hill tops over 5 km from the road, so the project will have no visual impact on travellers on the Great Central Road.

The viewshed analysis indicates the WMP is not visible from Blackstone as the Blackstone Range south of the settlement obstructs the view.

This leaves Jameson and portions of the Warburton Blackstone Road as the only viewpoints requiring analysis. As the Warburton Blackstone Road is a similar distance from the WMP as Jameson (20 km) and both are at a similar elevation, visibility from the road will be similar to that from Jameson. It is noted that visibility to occupants within moving vehicles is typically less than that of people standing outside and this can reasonably also be anticipated to reduce the visual impact of the project on road users.

Further analysis in this assessment has therefore been limited to a Jameson viewpoint. As Jameson is a small settlement in flat topography, there will be little difference in visibility across the settlement other than local obstruction from vegetation and buildings. A single viewpoint on the side of the settlement closest to the WMP to represent maximum visibility is therefore considered sufficient to represent viewpoints at Jameson.

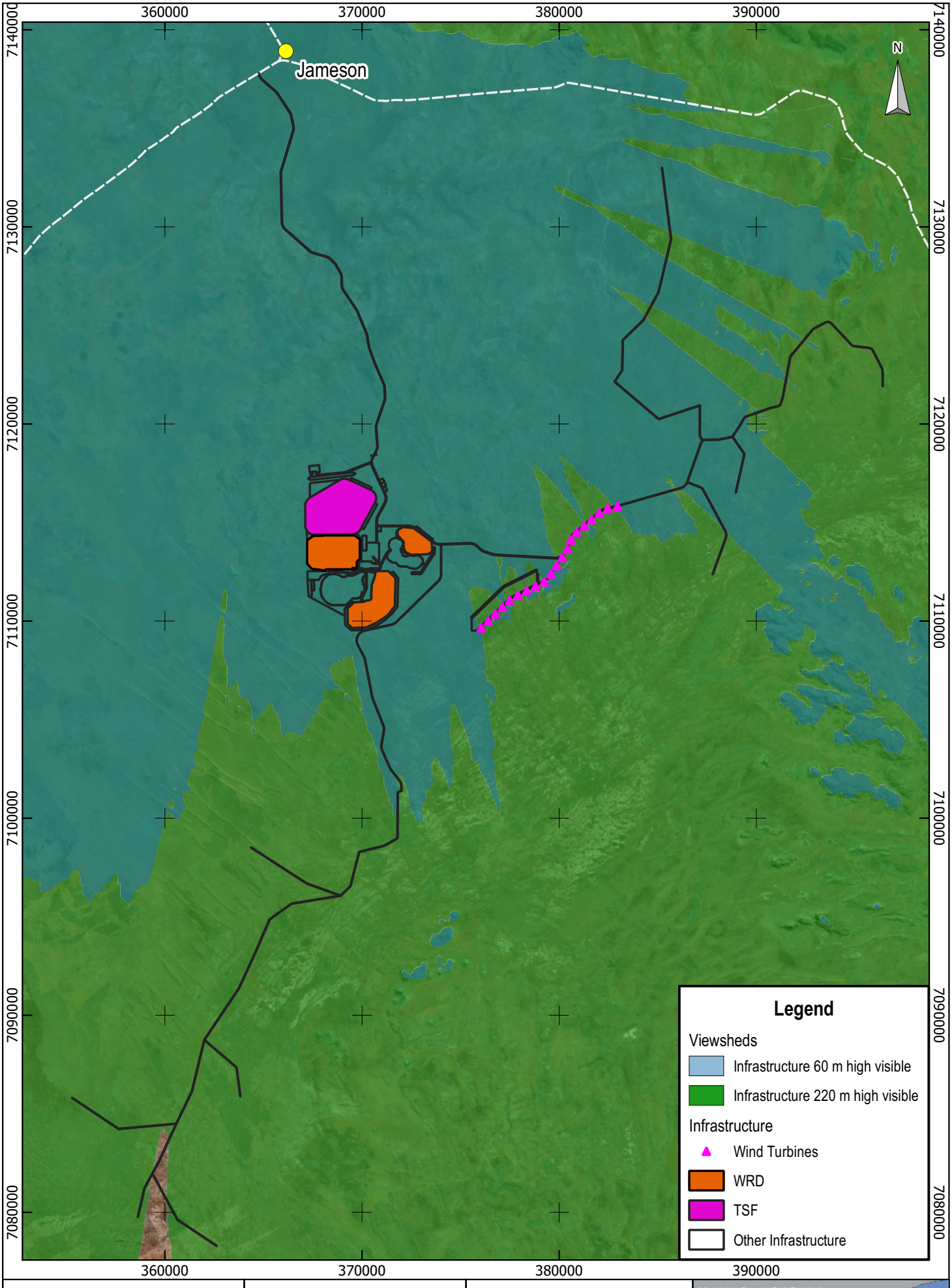
4.2.3 Jameson Viewpoint Viewshed

An additional viewshed analysis was completed to calculate the extent to which infrastructure for the WMP would be visible from Jameson if its location were to be altered. Two unique viewsheds were calculated using the parameters and methods detailed in Table 4 with the first having a target height of 60 m (maximum design height of WRDs and/or the TSF) and the second having a target height of 220 m (maximum height of wind turbine blade above ground level).

Table 4: Jameson Viewshed Calculation Details

Viewshed ID	Location (GDA 94 MGA Zone 52)		Observer Height (m)	Target Height (m)
	Easting	Northing		
Heights and Locations				
Jameson 60 m Viewshed	366132.8	7138917.7	1.7	60
Jameson 220 m Viewshed	366132.8	7138917.7	1.7	220
Processing Parameters				
DEM Resolution			30 m x 30 m	
Earth curvature taken into account			Yes	
Atmospheric refraction			0.13	
Method			QGIS (Visibility Analysis plugin)	

The results are shown in Figure 8. These indicate that there are no suitable alternative locations for infrastructure that would result in them not being visible from Jameson, as WRDs would need to be moved approximately 5 km and wind turbines 40 km.



Scale: 1:250000
Original Size: A4
Grid: GDA94 / MGA zone 52

0 5 10 km

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Musgrave Range Project

Figure 8

Jameson Viewpoint Viewshed

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4.3 SIMULATED VIEWS

To assess the likely visual impact from Jameson, 3D models of the proposed infrastructure were generated and used to create simulated views using Blender 3D visual effect software.

The simulated views were created for the selected viewpoint at the edge of Jameson representing a standing adult (eye level 1.7 m) looking toward the WMP area. The camera settings used simulate a 35 mm camera with a 50 mm focal length lens which is the recommended setting to simulate the perspective of the human eye. The recommended viewing distance for these images printed at A4 (or displayed at 100% on a monitor) to reproduce a realistic perspective is 32 cm.

3D models of the infrastructure were placed on a model terrain generated from the same 30 m resolution topographic data as the viewshed analysis. Vertical displacement was corrected from the projected data to represent the curvature of the earth correctly. Aerial photography was draped over the terrain surface. A suitable smooth white material was applied to the wind turbines. WRDs and/or the TSF were modelled with both a grey rock cobble texture to represent maximum visual impact when rock is freshly placed, and with aerial images from nearby locations to represent ideal completed rehabilitated colours blending with the surrounding landscape.

Figure 9 is a composite image showing the simulated view of completed wind turbines, WRDs and/or the TSF with a bare rock (grey) texture from the Jameson viewpoint. The photographic foreground texture has been added to simulate the real foreground complexity which would be observed. The foreground image is not from Jameson, but is a photo taken within the Project area and is considered a reasonable representation of the landscape.

At the recommended viewing distance, the wind turbines are barely visible in the render. This is due to the large distance (28 km) and the thin structure of the turbines. The image indicates the turbines will likely only be visible if specifically looked for. This lack of visibility is consistent with published work by Wróżyński *et al* (2016) which concluded that visual assessment of 150 m turbines was not worthwhile at distances greater than 12 km due to low visibility.

The WRD and/or TSF are more visible despite lower height due to their bulk. The profile at the horizon indicates visibility comparable to the Cavenagh Range (visible to the left of the image) which is larger, but considerably more distant.

For reference Figure 10 has been included showing the simulate view render output used to generate the composite image without the added foreground image. This figure has also been annotated to assist with identifying the project infrastructure. An additional render was also produced applying soil and vegetation texture from aerial imagery to the waste rock dumps to simulate appearance following rehabilitation (Figure 11). This indicates the WRDs and/or TSF will be less visible after rehabilitation, however the impact on the skyline is still visible.

The simulated views from the Jameson viewpoint show very little detail of the modelled infrastructure due to the accurate portrayal of distance. Additional figures have therefore been provided to better illustrate the detail included in the model. Figure 12 is a similar composite view of the wind turbines from the site in the WMP area that the foreground image was sourced from, approximately 8 km from the nearest wind turbine. Figure 14 shows the complete original foreground photo, including the range on the horizon, and Figure 13 is the simulated view for the same site without foreground image.

Figure 9: Composite Image of WRDs and/or TSF (Bare Rock Surface) and Wind Turbines from the Jameson Viewpoint

Figure 10: Simulated View of WRDs and/or TSF (Bare Rock Surface) and Wind Turbines from the Jameson Viewpoint

Figure 11: Composite Image with Rehabilitated WRDs and/or TSF from the Jameson Viewpoint

Figure 12: Composite Image of Wind Turbines View from the WMP Area

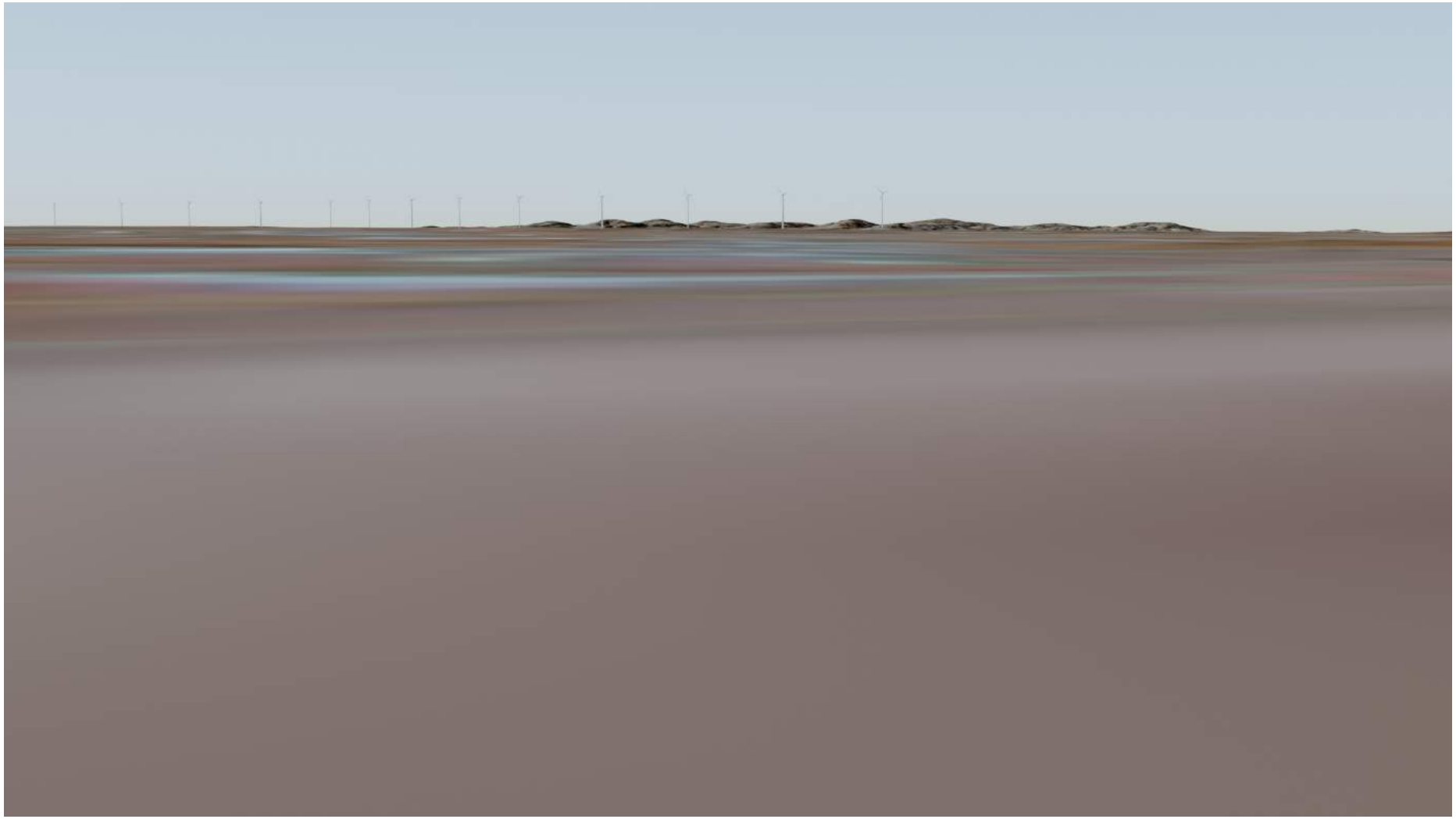

Figure 13: Simulated View of Wind Turbines from the WMP Area

Figure 14: Photograph of the Wind Turbine Site from the WMP Area

4.4 LIMITATIONS AND ASSUMPTIONS

This report provides a baseline assessment of the visual impact of the WMP on nearby observers. The calculations are based on relatively low-resolution elevation data (30 m spacing), but this is expected to have no significant impact on the results as both the viewpoints and the infrastructure are in areas of reduced topography.

The assessment has not taken into account the effect of obstructions to view other than terrain, for example vegetation and buildings. These will have the effect of reducing the visual impact.

The simulated views have been generated for a selected time of day similar to that of the aerial photography used. There is potential that slightly greater visual impact may occur in specific lighting conditions that have not been assessed.

The foreground image used in the composite simulated views has not been sourced from the exact location the view was generated for. Local photos would give an improved representation. The photo used is considered reasonable as it is from the local area and has been selected for a viewpoint with no obstruction to give the maximum impact.

5. DISCUSSION

The results of the visual impact assessment indicate that the project will have a very low visual impact. Specifically, the LVIA indicates that:

- There will be very few observers within 15 km of the WMP infrastructure.
- Due to flat terrain, the taller infrastructure components are potentially visible from greater distances, but the impact is small due to the long distance.
- Wind turbines and WRDs and/or the TSF may be visible from Jameson and the Warburton Blackstone Road in good conditions, however these will constitute a very small percentage of the landscape and they will likely only be visible if specifically looked for from these locations.
- The flat landscape of the project area means there is little potential to reduce visual impact by relocation of infrastructure. Relocation distances would be significant (5km for WRDs and/or the TSF and 40 km for wind turbines), are impracticable for project operation and are highly likely to render the project uneconomic.
- The most visible element of the WMP is the sharp profile of the WRDs and/or the TSF on the horizon. Although this is a minor impact, there may be potential to reduced it by implementing a smoother profile on relevant edges of the dump. It is recommended that this is considered as part of project design recognising that achievement of long term physical and chemical stability is of greater priority than visual impact.

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Appendix J9. Jameson Hub Consultation and Ideation Project

Ngaanyatjarra Community & WMP JV session

18-21 March 2019

CASSINI RESOURCES LIMITED
ABN 50 149 789 337

OZ MINERALS
A modern mining company




Ngaanyatjarra Community Engagement Session

Delivery team

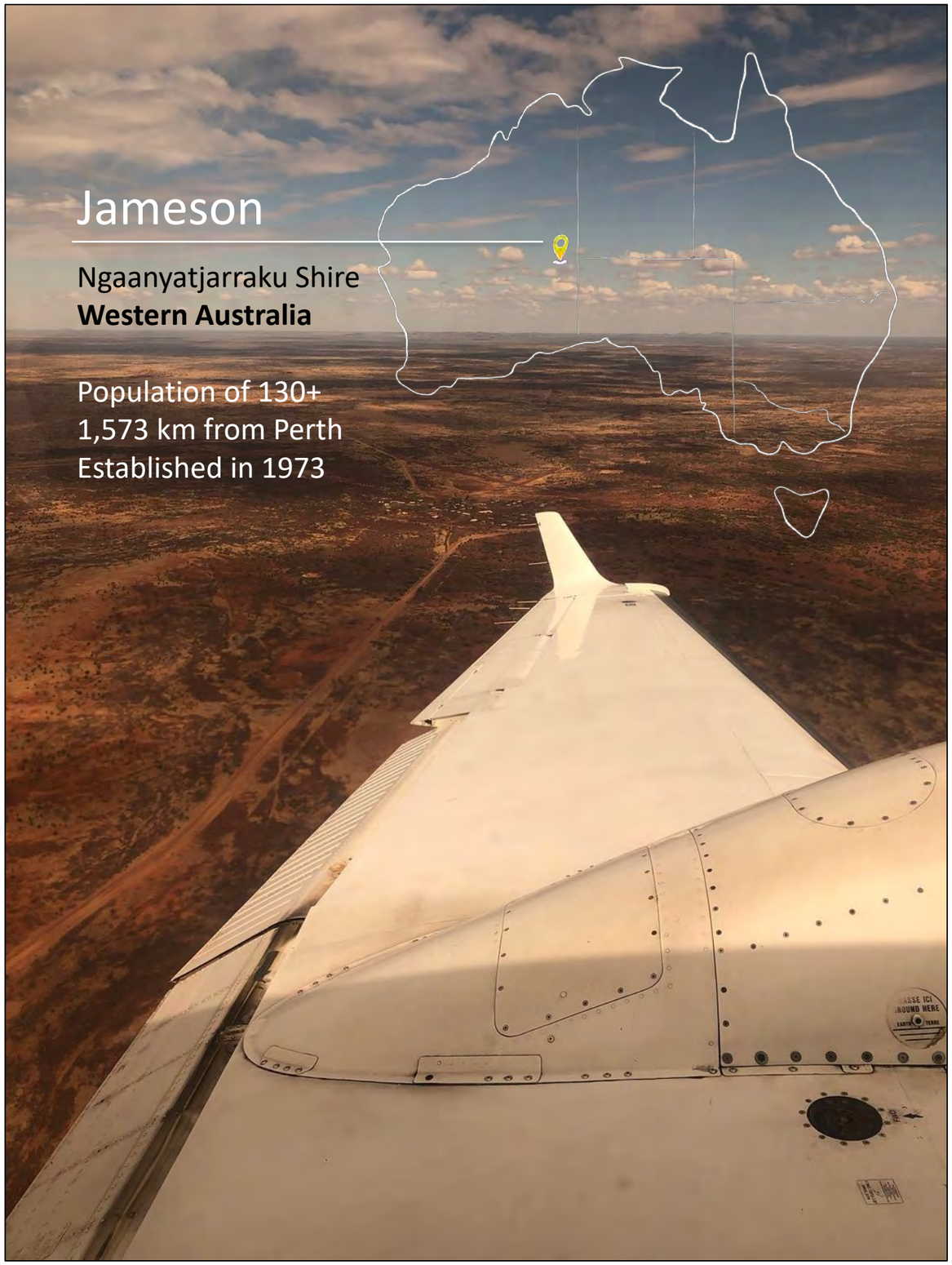
Alex	Knight	Ngaanyatjarra Council
Brett	Triffett	OZ Minerals
Bryony	Nicholson	Ngaanyatjarra Council
David	Brooks	Ngaanyatjarra Council
Greg	Miles	Cassini Resources
Jim	Hodgkison	OZ Minerals
John	Thurtell	Ngaanyatjarra Council
Justin	Rowntree	OZ Minerals
Rebecca	Leach	PriceWaterhouse Cooper
Sandy	Pitcher	OZ Minerals
Tania	Simcic	PriceWaterhouse Cooper
Zoran	Seat	Cassini Resources

Attendees

Steering Committee – 19 of the 36 members of the Steering Committee who are the legitimate representatives for the Ngaanyatjarra Traditional Owner Group

Wider Community – Approximately 100 people from Jameson and the surrounding towns within the region including children

Total – Approximately 120 people



Scope

Engage with the Traditional Owners who speak for the land (Steering Committee) and the other residents from the community

Objectives

- Provide an update on the project
- Align on expectations and uncertainty with project risks
- Understand the community aspirations and concerns
- Agree on the way we will communicate on this project.

WEST MUSGRAVE HUB

Timeline of engagement activities

Preparation

Intent:
Prepare for meetings and engage main participants about community sessions

WA GOVT 1 ON 1'S

Intent:
Undertake Early stakeholder engagement to foreshadow Gov session.

17th March

PREP DAY

Intent:
See space and set up inputs and tech

Participants: Hub team and Sponsors

18 – 19TH March

COMMUNITY SESSION

Intent:
To give an update and work on a shared vision

Day 1 : Camp
Day 2 Jameson

Participants: Sponsor Team, NG Steer Co, TOs community members.

21ST March

BOARD MEETING

Intent:
Introduction to the board and provide update

TBC

WA GOVERNMENT SESSION

Intent:
Demonstration of what has been achieved and work to date. Engage stakeholders around approvals, fast track the road and issues on environment.

Monday 18 March 2019
West Musgrave Camp Session

DAY 1

Welcome & Introduction

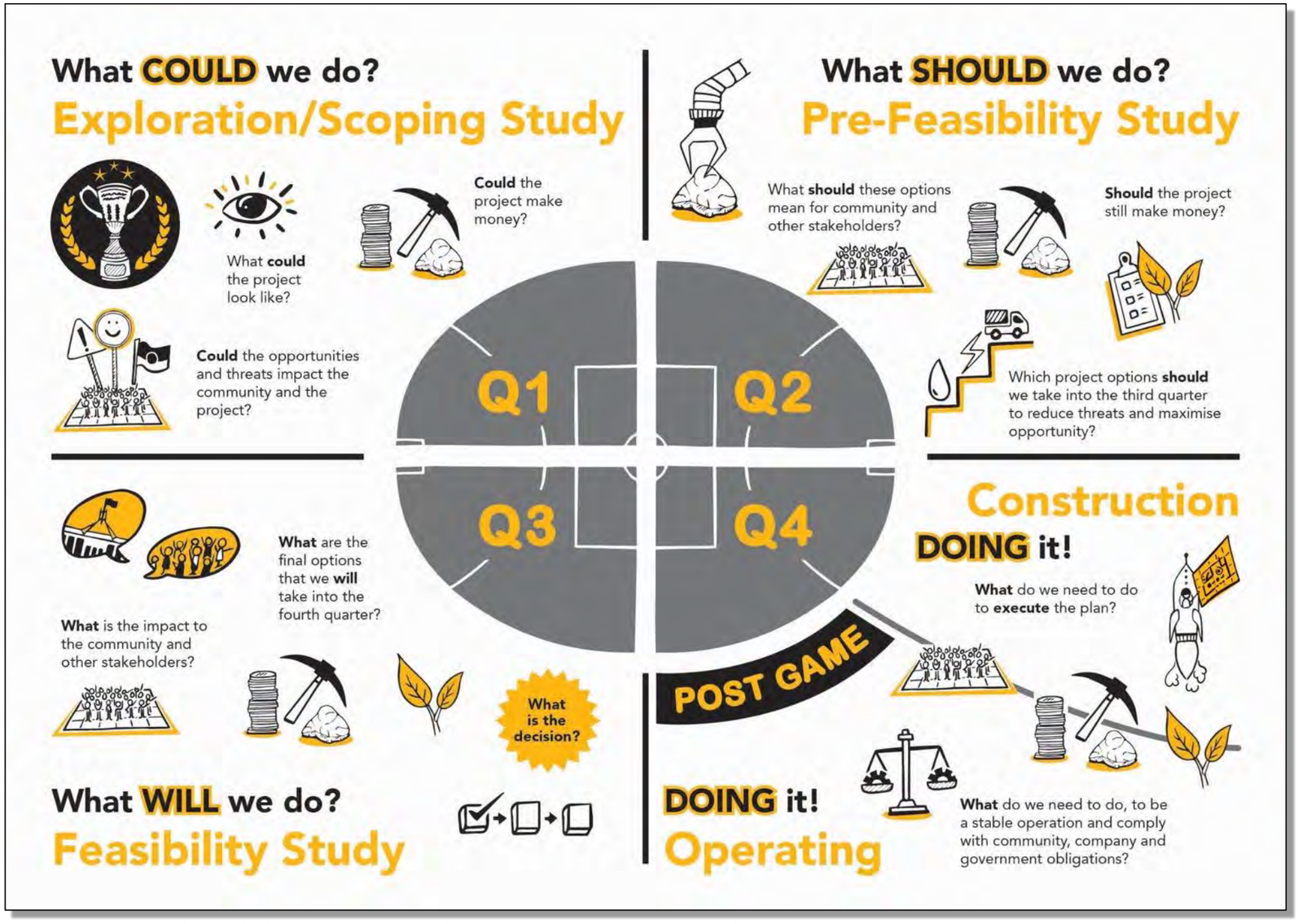
Mr Reggie Smith (Jameson NgC Chairperson) opened the session and welcomed everyone to the meeting. Principal Anthropologist David Brooks spoke to the group about the important role the steering committee plays in the process.

Jim Hodgkison (OZ) introduced the team to the group, setting out the roles and purpose of everyone attending today. Jim also stressed the importance of working together for heritage protection. Greg and Brett shared the OZ Minerals and Cassini story as well as their personal enthusiasm for the project thanking the community for allowing us to work on their land.

4 Quarters

Jim took the participants through the football analogy of the 4 quarters or 4 phases of the project. Providing a detailed view of the where the project was up to (2nd quarter) and what it would take to win the game. The interest in the project was huge. The group was very interested to understand what each quarter might mean for the community and what impact it would have.

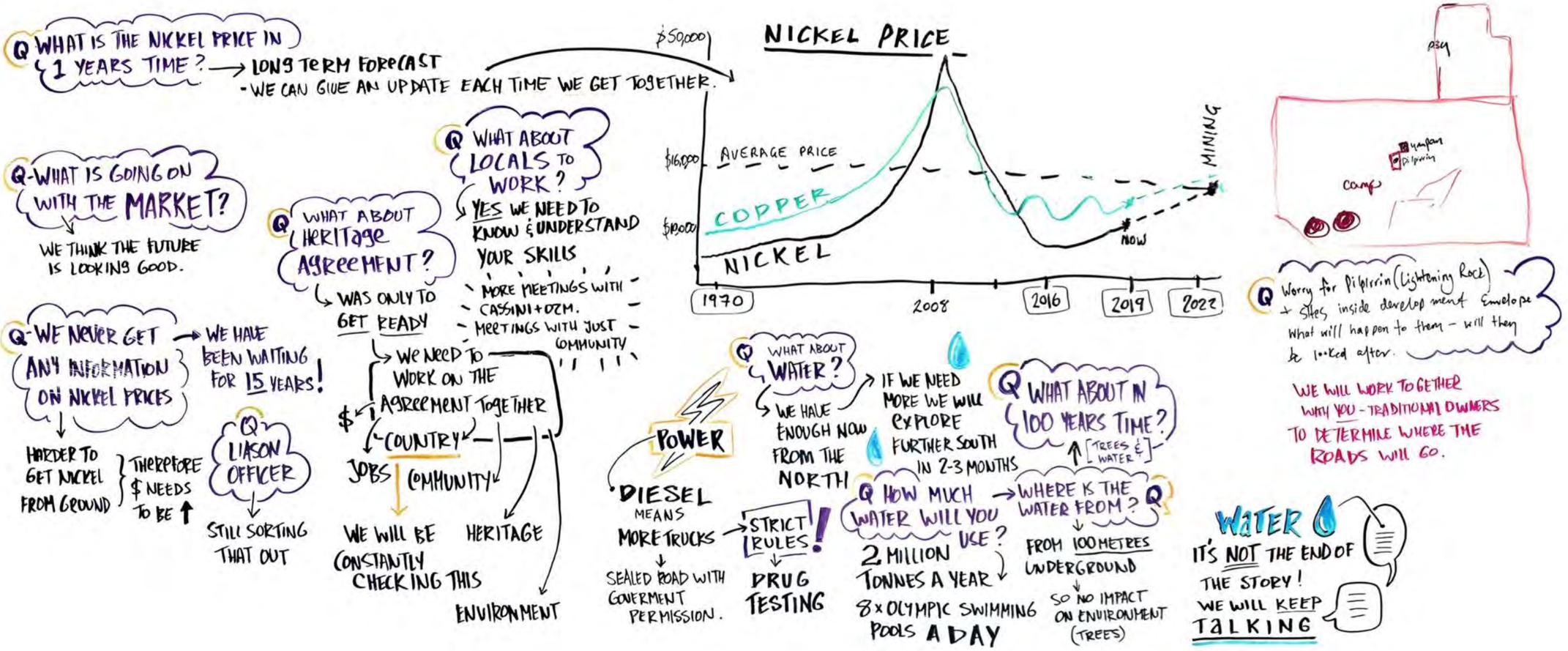
Jim ran through the list of activities that occur in each quarter. Unlike football, we need to be in a winning position at the end of each quarter in order to progress to the next. The number one activity for each quarter is stakeholder engagement with the community



Jim shared the status of each activity and outlined the project challenges and the plans to address them.

The participants spent some time in small groups connecting and discussing the project update before coming together again for a Q&A Session.

Q & A



Jim invited questions from the group about the project to enable lively and meaningful discussion and debate. The project team each in turn took the opportunity to answer questions within their field of expertise.

Before we broke for lunch Jim asked the group to consider the following questions. Reminding the group they had heard from us now it is time to hear from you.

- If the project becomes a mine, what changes would you like to see in your community in 5-10 years?
- What would you like to see for your kids and Grand kids?
- What are you worried about?
- How will we share information?

Monday 18 March 2019
West Musgrave Camp Session

DAY 1

BBQ Lunch

Lunch provided a great opportunity to engage and connect with all participants and particularly the quieter group, including young people and women.
The project team asked these groups to reflect on the vision questions noting we would be in town the next day as well should anyone think of anything to discuss further.

Monday 18 March 2019
West Musgrave Camp Session

DAY 1

Shared Vision

The questions gave rise to an energetic conversation about what the community was worried about and gave the project team an opportunity to understand much more about the traditional owners concerns.

IF THE PROJECT BECOMES A MINE WHAT CHANGES WOULD YOU LIKE TO SEE IN YOUR COMMUNITY IN 5-10 YEARS?

HOW LONG WILL THE PROJECT LAST?

CURRENTLY 16 YEARS

↳ WANT TO LOOK FOR 20 - 30 YEARS

↓

EXPLORATION WILL DETERMINE A LONGER TIME

WE WOULD LIKE TO CONTINUE

WE HAVE NO PLANS TO SELL TO ANOTHER COMPANY

WILL IT BE DIFFER..T OR STILL THE SAME

WHAT ARE YOU WORRIED ABOUT?

- ROAD ACCIDENTS BECAUSE OF A POSSIBLE NEW HIGHWAY.

THE HIGHWAY WILL BE WAY OUT FROM THE COMMUNITY - 1KM AWAY

- CHEMICALS - WHAT DO WE NEED TO KNOW?

CHEMICALS CAN COME OUT OF THE ROCK.
WE NEED TO ANALYSE & FIND A SAFE PLACE TO STORE IT

WILL THEY HARM THE KIDS?
WE NEED SAFETY PROTOCOLS.

WASTE - DUMPING EXPERIENCE FROM 1968

THINGS HAVE CHANGED
GOVERNMENT + ENVIRONMENTAL AUTHORITIES HAVE WORKED TOGETHER.
STRICT REGULATIONS TO KEEP THINGS SAFE.

WHAT WOULD YOU LIKE TO SEE FOR YOUR KIDS AND GRAND KIDS?

HOW WILL WE SHARE INFORMATION?

Tuesday 19 March 2019
Jameson Town Centre Session

DAY 2

On day 2 we transported the hub session…

We met with community leaders and members of the SteeringCo in an open session to continue our discussions on the shared vision questions.

This was an opportunity to get further details in small group conversations on the needs and concerns of the community. It was also an excellent relationship building opportunity to introduce the team to some of the strong voices in the community ahead of the mining agreement negotiation.

…to Jameson

WEST MUSGRAVE HUB

Tuesday 19 March 2019
Jameson Town Centre Session

DAY 2

What we heard in Jameson:

WEST MUSGRAVE HUB

Tuesday 19 March 2019
Jameson Town Centre Session

DAY 2

WEST MUSGRAVE HUB