

November 2022



MAPPING THE DIGITAL GAP

Measuring Digital Inclusion and Media Use in Remote Aboriginal and Torres Strait Islander Communities 2021-24

**TENNANT CREEK,
BARKLY REGION, NORTHERN TERRITORY
COMMUNITY OUTCOMES REPORT 2022**



Acknowledgement of Country

We respectfully acknowledge the Warumungu people, and pay our respect to their Ancestors and Elders, past and present. We also acknowledge the Traditional Custodians and their Ancestors of the lands and waters across Australia where we work, live and undertake our research.

About the Mapping the Digital Gap Research Project

Mapping the Digital Gap is a 4-year research project working in partnership with local organisations in 12 remote First Nations communities, to generate a detailed account of digital inclusion and uses of digital services including news and media, track changes over time, and inform appropriate local strategies and services enabling informed decision making by remote Aboriginal and Torres Strait Islander people. It is being undertaken through RMIT University as part of Centre of Excellence for Automated Decision Making and Society, in partnership with Telstra.

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The 'Mapping the Digital Gap' project received funding support from Telstra and the Australian Research Council Centre of Excellence for Automated Decision-Making and Society (CE200100005).

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Suggested citation: Featherstone, D, Ormond-Parker, L, Holcombe-James, I, Hawkins, L, Thomas, J & Kennedy, J (2022) Mapping the Digital Gap: Tennant Creek, Barkly NT Community Outcomes report 2022. ARC Centre of Excellence for Automated Decision Making and Society: RMIT University, Melbourne. DOI: 10.25916/ad1n-mw04

Acknowledgements

We would like to thank the following key contributors to this research:

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Julalikari Council Aboriginal Corporation
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JCAC Operations Manager: David Curtis

Community Co-Researcher

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Research Participants and Stakeholders:

Thank you to all the community residents and local agency staff who generously participated in the surveys and interviews, providing the personal experience to make this research meaningful. As well as 44 community residents surveyed, we undertook 11 interviews with local residents and 2 interviews with stakeholder agencies including:

- + Barkly Regional Council
- + Central Land Council
- + Julalikari Aboriginal Corporation
- + Nyinkka Nyunyu Art and Culture Centre
- + Papulu Apparr-Kari Language Centre
- + Barkly Backbone
- + Barkly Regional Arts
- + Anyinginyi Health

Tennant Creek research trip dates:

27 April to 4 May 2022

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CONTENTS

1.	Executive Summary	4
	Key Findings	5
	What is Digital Inclusion? How is it measured?	7
2.	Introduction	8
3.	Media & Communications in Tennant Creek	12
	Existing Telecommunications Services.....	12
	Media Services	13
	Access and Support Facilities	13
4.	Communications in the Barkly Region	14
5.	Case Study: Wi-Fi Network for Tennant Creek Community Living Areas	17
6.	Key Findings from Data Analysis	22
	Communications Access.....	22
	Access to IT devices, Wi-Fi or shared facilities	25
	Service Delivery and Use of Online Services	26
	Access to media and new services	27
	Affordability	29
	Digital Ability	29
	Local Digital Media Content Production, Archiving and Sharing.....	33
7.	Considerations for Local Digital Inclusion Plan	37
	Appendix 1: Summary of Survey results	40
	Appendix 2: Community Communications Audit	45
	Appendix 3: Coverage Maps	49
	Appendix 4: Ali Curung Wi-Fi Hotspot Usage Analytics	51
	Appendix 5: Photos of Research Activities	53

1. EXECUTIVE SUMMARY

Tennant Creek is the regional centre of the Barkly Region of the Northern Territory (NT), located on the Stuart Highway, 508km north of Alice Springs and 990km south of Darwin. The traditional owners of Tennant Creek are the Warumungu people. According to the 2021 Australian Bureau of Statistics (ABS) Census, the population of Tennant Creek is 3,080 with more than half the population (1,707, 55%) identifying as Aboriginal and/or Torres Strait Islander people¹.

There are seven Community Living Areas (CLAs), known colloquially as town camps, that encircle the town. These include Ngalpa Ngalpa (Mulga) in the north, Wuppa and Tingkarli in the east, Karguru in the south-east and, Blueberry Hill, Village and Marla Marla in the west. Historically, these town camps were managed by the Julalikari Council Aboriginal Corporation, however the town camp leases were taken over by the Australian Government under the NT intervention in 2007. With the end of the NT Intervention in July 2022, the leases for the CLAs were returned to Julalikari, along with housing management.

Our first research visit to Tennant Creek was undertaken from 27th April to 4th May 2022. The RMIT University team worked with community research partner Julalikari Council Aboriginal Corporation (Julalikari) and co-researcher Sheana Sampson, supported by Julalikari Chairperson Linda Turner and Operations Manager David Curtis. The team had a highly productive week engaging with local residents and agencies discussing telecommunications use, digital inclusion, and media use in Tennant Creek and across the Barkly region. We thank all residents and agency staff who participated in the research and made us feel very welcome.

Based on 44 surveys and 13 interviews with residents and stakeholders, this report outlines the findings from our initial 2022 visit and highlights the current access and use of media, communications and online services and the digital inclusion challenges in Tennant Creek and across the Barkly region.

This report is intended to assist local and regional agencies, including Julalikari, Central Land Council, Northern Land Council and Barkly Regional Council, to better understand the key barriers to digital inclusion in Tennant Creek and the region. It is designed to provide a basis for a local digital inclusion plan. This report will assist in identifying infrastructure and program needs to enable a targeted approach for advocacy with government and industry stakeholders. The report will be updated following research visits in 2023 and 2024.

This report is also part of our commitment to Indigenous data sovereignty, to ensure data collected and research findings from this project are available to the participating communities to use for their own analysis, planning and advocacy. Please note that, in line with our commitment to Indigenous data sovereignty, this report provides initial findings from the raw survey data collected during our fieldwork. It is likely that, following data cleaning and weighting, the final results may differ from that presented here. All Mapping the Digital Gap survey results, including Tennant Creek, will be made available via the Australian Digital Inclusion Index website and data dashboards, and it is this data that should be treated as authoritative.



44

surveys conducted



13

interviews conducted
(11 agency representatives and 2 community residents)

¹ An additional 241 (8%) did not state their identity.

Key Findings

Pre-paid mobile is the primary means of phone and Internet access.

- + 82% of survey respondents indicated they used their own mobile phone for making phone calls, with 16% using someone else's mobile phone.
- + 80% of respondents said they owned a mobile phone, with 83% of these using pre-paid mobile services.
- + Only 3% of survey respondents had a fixed line home telephone and 3% had no phone access.
- + 11% reported using the public phone regularly, with 66% using it at some time.

There is limited fixed line internet in households despite having NBN available.

- + 84% of respondents surveyed do not have any form of fixed home Internet. 9% have NBN fixed line services and 7% use a portable 4G modem.
- + Most agencies use NBN fixed line services for their primary internet, with 4G for mobile phone and some internet use. Some said the fixed line speeds did not always meet their needs, especially with multiple users online and for higher bandwidth applications like videoconferencing.

4G coverage is relatively good in Tennant Creek but *remains* limited in most Barkly communities and homelands.

- + The 4G mobile coverage in Tennant Creek was described as mostly reliable with only occasional outages in recent times. There was good coverage of households within the town, and good data speeds during non-peak hours.
- + Mobile coverage has been installed in most larger remote communities in the Barkly region in the last decade, with 4G/3G mobile coverage available in Arlparra, Ampilatwatja, Alpurrurulam, and Ali Curung. 4G/3G mobile coverage is also available in the town of Elliott on the Stuart highway. There is currently small cell 4G services in Owairtilla (Canteen Creek) and Wutunugurra (Epenarra), with both sites scheduled for upgrades by mid-2023. Northern Territory Government are currently working on a project to provide coverage to several sites in the Barkly (see Section 4).
- + Following extended outages in Arlparra and Ampilatwatja over the last two years, Telstra have committed to upgrade these services by March 2023.
- + The Barkly region's six minor communities and 70 family outstations are all without coverage. There is presently a NT Government project underway to install Wi-Fi small cells in two of the region's small communities: Mungkarta and Arawerr.
- + There is concern about whether the switch-off of 3G mobile coverage planned for June 2024 will further reduce mobile coverage available to outstations, homes and roads surrounding Tennant Creek and the large communities.

There is a moderate level of digital usage and ability in Tennant Creek.

- + 68% had used the Internet in the last week, with a further five people (11%) having used it within the previous one to three months. 77% of regular users use a smartphone primarily for Internet access.
- + 80% of respondents had used the Internet within the last three months. Of those:
 - o 83% used the internet at least once a day, with 17% saying they used it almost constantly.
 - o 91% had accessed a government service online in the previous six months and 89% had used online banking or apps.

- 89% had used the Internet to keep in touch with family or friends in the previous six months, and 94% had used entertainment services (e.g., streaming video/music, playing online games).
- 57% responded that the statement ‘I know how to send and receive emails’ is ‘very true’ of them (31% ‘mostly true’); 74% chose ‘very true’ to the statement ‘I know how to open a new internet browser tab’, and 71% chose ‘very true’ to ‘I know how to complete online forms’.
- + The primary reasons given by the 20% of low Internet users surveyed for not using the Internet was not needing to use it (89%). This low level of usage may be due to having face-to-face or telephone services readily available, or a family member or support person to help access online services.

Affordability constrains Internet access and use of digital services.

- + 43% of regular Internet users indicated the main reason they do not use the Internet more often is because “The Internet is too expensive for me”.
- + 48% reported sacrificed essential household costs, such as food and bills, to afford Internet access within the past six months.
- + There is an average 3.2 mobile phones per household. Of the 35 responses on household mobile expenditure, the average household cost for mobile services is \$158/month, with 29% paying over \$200/month.
- + Those households with fixed broadband services are paying an average monthly cost of \$54 per month for these.

The full survey results are available in Appendix 1. A detailed audit of community demographics, relevant information, and communications and media services available in Tennant Creek at the time of this research is provided in Appendix 2.

Figure 1: Photo of research team - JCAC Chair Linda Turner (LT), co-researcher Sheana Sampson, Fungisai Siggins, Lyndon Ormond-Parker, JCAC Executive Manager David Curtis, and Daniel Featherstone outside the Julalikari Community Hub.



What is Digital Inclusion? How is it measured?

Digital inclusion refers to equitable and reliable access to and use of information and communication technologies for participation in social and economic life.

The Australian Digital Inclusion Index (ADII, Thomas et al., 2021) is an annual national survey that measures three dimensions of digital inclusion: Access, Affordability and Digital Ability. ADII scores range from 0 to 100. The higher the score, the greater the level of digital inclusion. ADII scores are relative: they allow comparisons across different social groups and geographic areas, and over time.

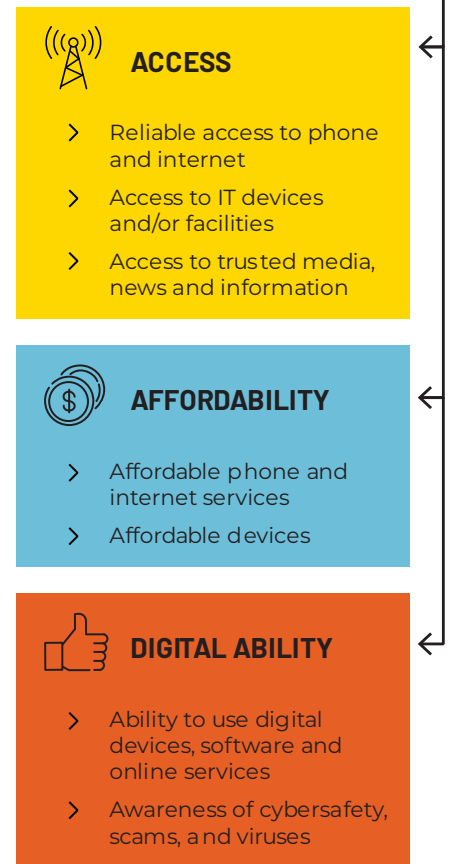
People living in Australia's 1100 remote Indigenous communities are likely to be among the most digitally excluded Australians. The ADII has previously found that people in remote communities often have extremely limited access to digital infrastructure and services and encounter very high costs for Internet access, especially in relation to their income (Thomas et al., 2018; Thomas et al., 2019).

The Mapping the Digital Gap project uses an amended version of the survey that underpins the ADII (the Australian Internet Usage Survey) to collect digital inclusion data. The Mapping the Digital Gap survey results will be available on the ADII website, with interactive charts that will provide insight into community-specific results as well comparison with other participating communities and national results collected by the ADII.

In 2021, access to information and services enabling participation in informed decision making regarding their own lives was introduced as a new Closing the Gap outcome (17). This new target 17 includes a goal of equal levels of digital inclusion for Aboriginal and Torres Strait Islander people by 2026.

The Mapping the Digital Gap project is targeted at remote First Nations communities and does not include digital inclusion of First Nations people living in urban and large regional centres. However, it is hoped this project will provide data that will help in measuring the scale and nature of this digital gap over time, as well as insights into strategies to address key obstacles and reduce the digital gap for all First Nations people.

DIGITAL INCLUSION



2. INTRODUCTION

Tennant Creek is reasonably well serviced by communications infrastructure due to being a regional service centre on the Stuart highway, a main transport route between Adelaide and Darwin, and having a comparatively large population. Communications services currently available within the town include Telstra, Optus and Vodafone mobile services and NBN fibre-to-the-node. The town is serviced by two Telstra 4G/3G mobile towers that provide good coverage in town and relatively reliable broadband speeds. Installation of a third tower is planned for early 2023 to improve coverage to Tennant Creek's eastern side. The full suite of Freeview television services are broadcast in town, along with 10 radio channels, including the CAAMA² 8KIN FM First Nations service and community station 8CCC (see full list of services in Section 3).

Most First Nations people in Tennant Creek are pre-paid mobile-only users, with only a small proportion of First Nations households reporting access to fixed internet or landline phone services. Some people still rely on public phones, however there are only approximately six public phones remaining within the region (both in town and the seven surrounding CLAs).



"Gradually mobile phones have changed a lot of things in terms of communications. It's a lot quicker ... Mobile phones, you know texting, social media sites, yeah, chat rooms ... [that] a lot of the younger people are using to communicate ... they're use streaming services, like YouTube ... to record stuff, post stuff, view stuff ... it has changed a lot in that way. Before it used to be landlines, you know phone boxes. ... they used to be everywhere. But because people using mobile phones ... they got rid of the phone boxes."

- *David Curtis, Executive Manager Operations, Julalikari Council 2022*

There is currently no public Wi-Fi available in the seven CLAs. In lieu, young people access Wi-Fi at local caravan parks, motels and businesses in the town centre at night. Participants shared that in some instances, this has led to anti-social behaviour and young people out away from home late into the night.

To address this issue, Julalikari are currently installing a Wi-Fi network that will provide public Wi-Fi services in four of the seven CLAs, and are seeking funding to expand the network to the other three and for ongoing operations costs (see Section 5 for overview of the Wi-Fi project). Barkly Regional Council (BRC) are also planning to install six Wi-Fi hotspots along the main street for use by tourists and locals. Some interviewees suggested that the Julalikari and BRC Wi-Fi projects would benefit from a coordinated approach to avoid working at odds to each other.



Figure 2: Jurnkkurakurr volunteers' group undertake night patrol in the main street of Tennant Creek.

² Central Australian Aboriginal Media Association is the regional First Nations media network based in Alice Springs.



“I think having access to Wi-Fi is something that should be a staple for everyone in this day and age ... [Wi-Fi access] will definitely allow people to do a lot more things that they need to do, and possibly a bit of self-learning as well with the internet, and whether it be banking ...or anything like that.”

- *Kate Riethmuller, Manager, Nyinkka Nyunyu 2022*

Beyond Tennant Creek, 4G services are available in the Barkly region only in Elliott and the six larger communities - Ampilatwatja, Arlparra, Elliott, Ali Curung and Alpurrurulam. Most smaller homelands are reliant on public phone services, NBN Sky Muster, or a Wi-Fi service. Some homelands have no communications infrastructure. Interviewees described the impact of limited communications access and quality on people's ability to continue residing in small communities and homelands in the region (see section 6, Key Findings).

- + “Phone and Wi-Fi access [on homelands] are really important issues for older people [and] younger people as well ... a lot of the grandparents and parents [say] ‘We’d really like to take the kids back to the homelands, so that we can keep them safe during the holidays and they can go hunting and really connect more with their land and different cultural practices.’ And having Wi-Fi would be a key drawcard, of course, for the kids to get them back there, and for them to stay there for two weeks.” (Lucy McGarry, Monitoring, Evaluation and Learning Officer, Barkly Backbone 2022)

Government, banking, retail and other key services are increasingly moving to online delivery, along with communications and entertainment. Reliable Internet access and digital literacy are no longer optional, but are necessary. While Tennant Creek has most services (e.g., medical, banking) available for walk-in and face-to-face access, surrounding remote communities and homelands are reliant on online access if they are unable or unwilling to travel into town.

- + “There’s nowhere actually for people even to go and do their personal stuff on the internet. There’s no internet cafés ... that I’m aware of.” (Linda Turner, Julalikari A.C. Chairperson, 2022)

Consequently, accessing services from health to education is now a user-pays model. This presents an affordability barrier for the low income and vulnerable people that these services are intended to support.



“[It’s] almost a basic human right now, for everybody in Australia, to have access to basic information through the internet ... It’s like a data justice issue ... If you’re already marginalised ... [for] all kinds of reasons - age, disability, poverty, class - you’re not necessarily accessing the potential that’s out there ... Digital isolation is a part of social isolation, in that way.”

- *Geoff Evans, former Community Programs Manager, Julalikari, 2022*

The COVID-19 lockdown period was not as prolonged in Tennant Creek as it was in most remote communities. Nonetheless COVID-19 did have an impact, with many First Nations school students unable to engage effectively in home learning due to limited home Internet access and devices. Likewise, many adults were unable to work from home. For local agencies, there was an increased reliance on videoconferencing for tele-health, meetings, professional development, and inter-agency communications, which has largely continued since the lifting of lockdown restrictions. The increased

demand for data during and following lockdown restrictions has led to congestion levels on 4G and NBN fixed line services rising during peak use periods.

Local agencies such as Anyinginyi Health played an important role in addressing misinformation spread via social media about COVID-19 and vaccinations through locally targeted campaigns. Information was shared via flyers, face-to-face communications, Facebook, and on CAAMA's 8-KIN FM and 8CCC community radio.

During the period of COVID-19 restrictions there has been an increase in demand on Internet data, particularly for accessing online entertainment. Young people are especially becoming heavy users of social media, streaming services and online gaming. In tandem with increased use of such platforms is increased data consumption. This is leading to affordability issues due to the primary reliance on pre-paid mobile data, which typically costs more than three times the rate of post-paid services. Despite costing more, many are unwilling to give up their prepaid services because the model allows greater control over income flows, with additional data purchased when there is money available. This preference has ensured that even with changes made to the array of plans available (for instance, the introduction of month-by-month plans), there has been little movement towards use of post-paid services. As noted above, restricted access to home internet connections, combined with the high cost of pre-paid mobile data, has led to some young people seeking Wi-Fi service from local businesses in town at night, which interviewees report has resulted in social issues (see section 5).

While survey respondents indicated an array of digital skills, most online access in Tennant Creek occurs through mobile devices and applications. With few home computers and limited community access facilities, residents likewise have limited opportunities to learn and use computer-based applications. Residents participating in the research called for more digital skills training and mentor support, including for elders and those needing to improve or develop digital skills for the workplace.

The closure of TAFE and Batchelor Institute campuses from Tennant Creek has reduced the opportunities for locally delivered training, requiring students to either learn online or travel to Alice Springs or Darwin³. Research participants told us that they hoped workplace skills development options would become available and that the new CLA community centres (under construction) will provide a space for digital skills development. Our research has found that in many cases, one-on-one mentor-style learning, using a 'just-in-time' approach of targeted support as needed can be most effective, however group workshops where training is relevant, hands-on, and culturally appropriate are also of benefit.



"When I started [28 years ago] we worked on typewriters ... everything was paper formed ... [Now] everything is these memory sticks and things like that ... We are changing. The modern technology, the kids cannot be without their phones. I've got members of staff here that can text and talk at the same time. I mean, that's just amazing to me ... We seem to be more reliant on the digital format than reading a book ... Facebook, all the other web pages ... You don't even buy a newspaper anymore, you read it online, you know. So we are changing to a digital age. The more the mobile coverage goes out, the more we've got."

- Karen Hayward, CEO, Papulu Apparr-Kari Language and Cultural Centre, 2022

There is also demand for awareness-raising around cyber-safety issues and scams, particularly for young people. Research participants reported significant concerns about the impact of negative social media

³ Students can undertake Vocational Education and Training (VET) or higher education courses through Batchelor Institute of Indigenous Tertiary Education or Charles Darwin University, through a mix of remote delivery and on-campus training in Alice Springs, Darwin or Batchelor.

posts, including bullying and fight videos, and associated conflict and mental health issues⁴. Concerns were raised by interviewees about online gambling, access to inappropriate content, and a growing 'addiction' to online use by young people leading to school truancy and disengagement from cultural and social activities. Negative social media content such as fight videos is also seen to be impacting on tourism to the town.

- + “The digital stuff is a double-edged sword ... [it creates] a lot of problems. You know, anti-social problems is one, where they communicate mischief making quite quickly and to really get a large volume of people involved. Taunting people, you know the bullying, creating problems. So this goes from kids into the adults and then you get big problems. We’ve seen that everywhere.” (David Curtis, Executive Manager Operations, Julalikari 2022)
- + “We see the damaging side of digitalisation as well, which is the Facebook and all the rest of it. The majority of our fights and arguments and disruption in family and community life is because of your Facebooks, your YouTubes, all that kind of stuff and that. Look you’re never going to control those kind of things ... [but we want other stories such as] someone learning how to do their language.” (Karen Hayward, CEO, Papulu Apparr-Kari Language and Cultural Centre, 2022)

There are a number of digital media production and archiving activities in Tennant Creek. Papulu Apparr-Kari Language and Cultural Centre are archiving language records and developing apps and teaching resources to retain and revitalise the 16 Aboriginal languages of the Barkly region. Nyinkka Nyunyu Art and Culture Centre manage the Mukurtu archive project and are increasingly working with digital media and photography in their arts practice and exhibitions. The art centre has also received funding to expand their facilities to promote local arts, cultural knowledge and hospitality with visitors and community members. Barkly Regional Arts are supporting arts, music and digital media development and events across the region. With local musicians and artists sharing their work on digital platforms like Facebook, YouTube and Spotify, and a new generation of TikTokers emerging, there is demand for more skills development and support in these areas.



Figure 3: Papulu Apparr-kari Language Centre

To address the media and communications needs identified in this report, and support improvements in digital inclusion and service delivery, it is recommended that a Digital Inclusion Plan be developed for Tennant Creek. Based on the audit of existing media and communications infrastructure and services outlined in section 3 (and Appendix 2), current planning (section 4) and analysis of surveys and interviews with community residents and stakeholders in section 5, a list of potential strategies for consideration for a Digital Inclusion Plan are included in section 6. As part of our ongoing research work with the Tennant Creek community in 2023-24, the Mapping the Digital Gap team can assist with developing this plan.

⁴ Rennie, E., T. Yunkaporta & I. Holcombe-James (2018). Cyber Safety in Remote Aboriginal Communities: Final Report. Melbourne: Digital Ethnography Research Centre, RMIT University. DOI: 10.4225/50/5afcbbe7c4833

3. MEDIA & COMMUNICATIONS IN TENNANT CREEK

Existing Telecommunications Services

Backhaul to community: Tennant Creek is located on the Stuart Highway, the central route between Darwin in NT and Port Augusta in SA. The backhaul for both mobile and NBN fixed line services is provided through fibre optic cable.

Mobile coverage: There is both Telstra 4G/3G and Optus 4G mobile coverage available in Tennant Creek, with Vodafone services also available using the Optus network (see Appendix 3 for coverage maps). There are currently two Telstra mobile towers on the west side of town with plans for a third 4G tower to be installed near the Barkly Regional Council office in the first half of 2023⁵.

Landlines: The copper network is available to most houses, enabling the option of landlines and NBN services, however most surveyed residents do not have landlines and use mobile for primary phone use.

NBN services: Tennant Creek has NBN fibre-to-the-node fixed line services (see Appendix 3 for coverage map), however the rest of the Barkly region is satellite only under NBN zoning. However, as NBN fixed line services are post-paid only, there is limited take-up by First Nations households.

Community networks: All agencies and office/workshop buildings have independent services with no sign of local networks in place. The planned Julalikari Wi-Fi network to the CLA's will be a point to multi-point microwave network from Julalikari-managed buildings.

Public Phones: There are reportedly six public phones left in Tennant Creek. At least two of these were not working during our visit, with reports of vandalism causing phones to be regularly out of service. The public phones are now free to use and are still required by people without mobile phones or credit.

Wi-Fi: There is currently only public Wi-Fi available at the library in Tennant Creek, which is operated by Barkly Regional Council, with daily data limits per device. As outlined in Section 5, Julalikari are installing Wi-Fi into four CLAs, with plans for an additional 3 CLAs in the future. Barkly Regional Council are also planning to install 6 Wi-Fi hotspots along the main street.

HF / UHF Radio: There is no information about the use of HF or UHF radio by service providers in Tennant Creek or communities and homelands in the region.

Telemetry: PowerWater is the NT government-owned corporation responsible for transmission and distribution of electricity and providing water and sewerage services across the Northern Territory. PowerWater use System Control for monitoring, operation and control of regulated power systems⁶ using telemetry and on-site personnel.



3080

(ABS Census 2021)



55.4%

Aboriginal and/or Torres Strait Islanders



7

Community Living Areas (CLAs)



508km

To nearest regional centre - Alice Springs



331

Private dwellings



2.8

Average people per household

⁵ Source: NT Government 15/10/22

⁶ Source: <https://www.powerwater.com.au/market-operator/system-control>

Media Services

Radio services: CAAMA's 8-KIN Radio is the popular regional First Nations radio service, broadcasting from Alice Springs on 102.9FM. CAAMA's Tennant Creek radio studio is not currently staffed. 8CCC is a community radio station, also based in Alice Springs with a studio in Tennant Creek, which broadcasts on 102.1FM. 8CCC plays a lot of First Nations music including local recordings from Winanjikari Music in Tennant Creek. There are three ABC radio services- Radio National (684AM), Triple J (107.7FM) and ABC Classic (98.1FM). There are two commercial radio stations, Flow FM (100.5FM) and Tourist Gold (88.0FM), and Vision Christian Radio (104.5FM) and TAB Radio (103.7FM).

TV services: Free to air TV is available via local broadcast within Tennant Creek, with most households having TV access as a result. Houses outside the local broadcast footprint require Viewer Access Satellite Television (VAST) direct-to-home satellite. Subscription to online streaming services (e.g. Netflix, Stan, Binge) have become popular as an alternative to free-to-air content. ICTV is not currently available in Tennant Creek⁷, however ICTV are planning to broadcast there in the future.

Regional and Local news: Regional news is shared via CAAMA radio, ABC Alice Springs and 8CCC, all based in Alice Springs. Local news is shared via the Tennant and District Times, Barkly Regional Council and Julalikari websites and Facebook pages. Local news, including upcoming events and training and jobs information, is shared via flyers and notices posted in local agency windows and community noticeboards.

Newspaper: The IGA store sells the daily NT News. The Land Rights News, with versions produced by both Central Land Council and Northern Land Council, is produced three times a year. The Tennant and District Times moved from a weekly printed edition to online only in 2021.

Access and Support Facilities

Community Access facilities: There is very limited public access facilities for computer use in Tennant Creek. The Centrelink office has one computer available for accessing Centrelink and other government services.

IT Support: Basic support in accessing and using online government services is available at the Centrelink office. Other local agencies provide some support upon request.

Mobile phones and recharge sales: A range of smartphones and flip phones (calls only), as well as pre-paid recharge vouchers for Telstra and Optus, are available from the IGA supermarket and the post office.



Figure 4: Stuart Highway traffic passes through the centre of Tennant Creek

⁷ ICTV is available on VAST Channel 601 for those outside Tennant Creek with direct-to-home satellite TV services, or online via [ICTV Play](#).

4. COMMUNICATIONS IN THE BARKLY REGION

The Barkly region covers 322,713 square kilometres and has a population of 6,316 people (ABS 2021), with 16 Aboriginal language groups spread across the region. Barkly Regional Council is the second largest local government area in Australia, and fourth in the world. Elliott as the second largest town under the Barkly local government’s purview, along with six major First Nations communities including Ampilatwatja, Arlparra (Urapuntja), Alpurrurulam (Lake Nash), Wutunugurra (Epenarra), Ali Curung and Canteen Creek (Owairtilla). In addition are eight minor communities and 70 family outstations that are supported by the Northern Territory Government’s Chief Minister’s Department and Minister for Local Government. The region is covered by Aboriginal lands, pastoral stations and mining leases. One of the key communications challenges for the Barkly region is providing services to many dispersed communities over a vast region.

While Tennant Creek is well serviced for communications infrastructure, there are many other communities and homelands across the Barkly that are less well serviced. The Barkly region was one of the most digitally disconnected regions in Australia up until the 2010s, but over the last decade mobile coverage has been installed in most larger communities. These services, however, remain patchy, congested or unreliable in several sites. Some interviewees talked about the impact of poor communications quality in small communities and homelands in the region (see section 6).

Since the early 2010s, 4G mobile services have been installed in the larger communities in the Barkly region, with small cell and 3G services to some smaller communities and homelands as shown in Table 1.

Table 1: List of communities with mobile coverage in the Barkly region 2021.

COMMUNITY	COMMUNITY TYPE	POPULATION (ABS 2021)	3G/4G MOBILE
Ali Curung	Major	394	4G/3G
Alpurrurulam	Major	350	4G/3G
Ampilatwatja	Major	439	4G/3G
Arlparra / Utopia	Major	443	4G/3G
Canteen Creek	Major	147	4G small cell
Elliott	Village	287	4G/3G
Jemelke	Family Outstation	8	3G
Newcastle Waters	Village	122	3G
Tara	Minor	62	4G small cell
Tennant Creek	Town	3080	4G/3G
Wakurlpu	Family Outstation	13	4G small cell
Wunara	Family Outstation	5	4G small cell
Wutunugurra	Major	143	4G small cell

As telecommunications are not a local government responsibility, NTG have taken the primary role in auditing telecommunications needs in remote NT communities and co-investing or seeking funding to install services needed. Since 2013 \$6 million has been invested through NTG/Telstra co-investment programs to deliver new and improved telecommunication services to Barkly communities including Ampilatwatja, Arlparra, Elliott, Jemelke (Davenport), Ali Curung, and Alpurrurulam. NTG are currently working on projects to provide coverage in the Barkly region’s smaller communities, with \$7 million via the Co-investment program to deliver seven sites within the next 12 months finishing Q4 2023.

NTG have several programs in development under the Australian Government’s Regional Connectivity Program, including three projects approved under the first round in July 2020. These include the \$1.3

million Telecommunications for Remote Aboriginal Communities (TRAC) project to install Wi-Fi in four small communities including two in the Barkly region, Mungkarta and Arawerr in the Utopia homelands.

There are 74 outstations in the Barkly Region, with just 57 of these having access to a public phone service⁸. There are also six Centre for Appropriate Technology (CfAT) HotSpots⁹ locations in the region, including Imangara, Iyentye, Tara, and three roadside rest areas.

The federally funded Mobile Black Spots Program have planned works for the Barkly region, with Optus to deliver a small cell service to one site, and Telstra to install small cell services in two, however none of the identified sites are in Aboriginal communities.

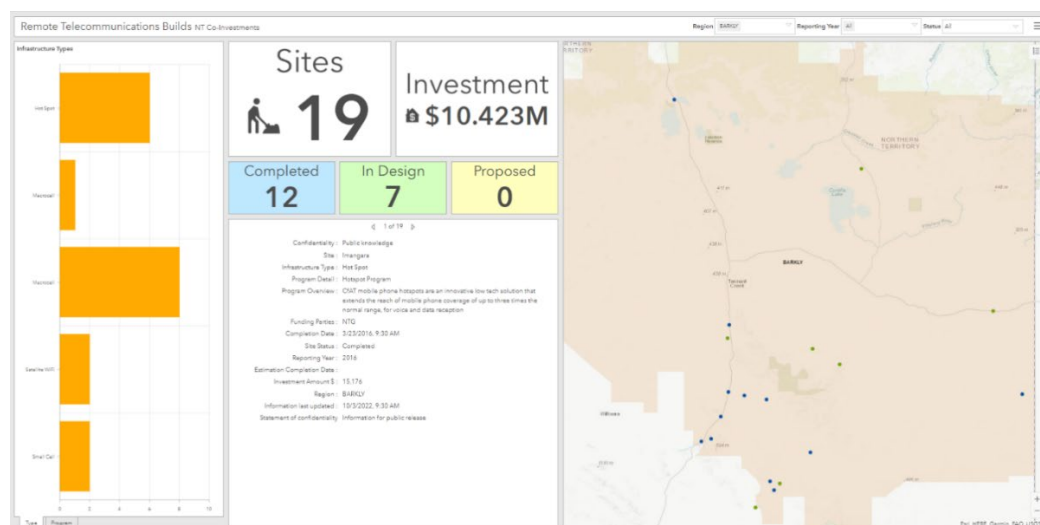


Figure 5: NT Government Co-investment projects undertaken in the Barkly region (Source: NT Government 2022)

While the planned switch-off of the 3G network in June 2024 is unlikely to impact most people living in Tennant Creek, some residents were concerned about the likely impact this will have for some small communities and outstations surrounding larger communities and remote roads in the region where there is currently only access 3G. Telstra have committed to upgrade 3G services to equivalent levels of 4G coverage before closure¹⁰.

Dot Com Mob¹¹ and the Central Australian Youth Link Up Service (CAYLUS) have supported the development of computer rooms and installed free Wi-Fi hotspots in several remote communities in the Barkly region: Ali Curung¹², Alpurrurulam (Lake Nash), Ampilatwatja and Arlparra. Through COVID-19 emergency funding from Central Land Council (CLC), Dot Com Mob installed a free Wi-Fi hotspot in Arlparra in 2020, with extensive use reported¹³. In Appendix 4, CAYLUS have provided an example of a WiFi hotspot usage report for Ali Curung from June 2021 to June 2022, to demonstrate the value of free Wi-Fi services in remote communities.

⁸ Source: Northern Territory Government

⁹ The CfAT hotspots are a passive mobile signal concentrator, using a satellite dish to focus the signal to enable basic reception. NT Government have funded the installation of these in some roadside stops and homelands located beyond standard mobile range. See: <https://cfat.org.au/telecommunications-1>

¹⁰ Source: <https://www.telstra.com.au/support/mobiles-devices/3g-closure>

¹¹ Dotcom Mob <https://www.dotcommob.org/> & CAYLUS <https://caylus.org.au/>

¹² According to a 2021 CAYLUS report, the Ali Curung Wi-Fi hotspot had extensive use during the COVID-19 restriction period with 8027 sessions and over 630GB of traffic from July 2020 to May 2021.

¹³ According to a 2021 CAYLUS report, the Arlparra Wi-Fi hotspot had very extensive use during the COVID-19 restriction period with 56,408 sessions by 833 devices with 1.5TB of data use in 13 months from June 2020 to July 2021. There was a spike in use over the Christmas school holidays.

Norther Territory Library have also provided free Wi-Fi services in several larger communities in the region, including Ali Curung, Alpurrurulam (Lake Nash), Ampilatwatja, Arlparra and Elliott. These allow access to library services with a limited daily data allowance per device. CLC have also installed a Wi-Fi system at Karlu Karlu (Devil’s Marbles) south of Tennant Creek for visitors to access cultural information and the Internet more generally.

NBN have installed Wi-Fi hotspots in four of the Utopia homelands - Soapy Bore, Irrultja, Apungalindum, Urapuntja - since 2021 under its Communities in Isolation project, initially established as a COVID-19 program to enable access to online schooling and services. The operational costs of these services will be covered by NBN until June 2024, after which the option to manage the ongoing operations will be offered to local organisations.

An Australian Digital Inclusion Index (ADII) case study, undertaken in Ali Curung in 2018, found that:

- + “Members of the Ali Curung community have a very low level of digital inclusion. The digital inclusion score for the community (42.9) is 17.3 points lower than the Australian average (60.2) and 11.5 points lower than that recorded by Indigenous Australians in urban and regional areas. The very low Access score recorded for Ali Curung (47.3) is primarily a result of a reliance on mobile connectivity. Although nine in ten respondents maintained an internet connection, not one of these people had fixed broadband despite the local availability of satellite services. Respondents also predominately used pre-paid mobile services.”¹⁴

The comparative Index results are outlined in the table below:

2018	Ali Curung survey respondents (n = 112)	ADII national	Gap between Ali Curung survey respondents and ADII national	ADII Indigenous Australians	Gap between Ali Curung survey respondents and ADII Indigenous Australians	ADII mobile-only	Gap between Ali Curung respondents and ADII mobile-only
ACCESS							
Internet Access	64.3	87.1	-22.8	82.4	-18.1	74.8	-10.5
Internet Technology	40.5	78.7	-38.2	73.5	-33.0	60.0	-19.5
Internet Data Allowance	37.2	54.4	-17.2	49.6	-12.4	29.7	7.5
	47.3	73.4	-26.1	68.5	-21.3	54.8	-7.5
AFFORDABILITY							
Relative Expenditure	39.6	54.3	-14.7	48.1	-8.5	55.3	-15.7
Value of Expenditure	12.1	60.9	-48.8	51.3	-39.2	10.7	1.4
	25.8	57.6	-31.7	49.7	-23.9	33.0	-7.2
DIGITAL ABILITY							
Attitudes	47.7	51.0	-3.3	53.4	-5.7	43.2	4.5
Basic Skills	64.5	56.7	7.8	47.2	17.3	46.1	18.4
Activities	44.8	41.0	3.8	34.3	10.5	31.5	13.3
	52.3	49.5	2.8	45.0	7.3	40.3	12.0
DIGITAL INCLUSION INDEX	42.9	60.2	-17.3	54.4	-11.5	42.7	0.2

Source: ADII Supplementary Survey – Ali Curung remote Indigenous community, 2018; Roy Morgan, April 2017–March 2018

Figure 6: Ali Curung digital inclusion survey, page 19, 2018 ADII report.

The national digital inclusion landscape has changed significantly since 2018, particularly due to the completion of the NBN rollout and the COVID-19 pandemic. The current Mapping the Digital Gap research will provide up to date that will enable comparison with the ADII for participating remote communities in 2023 & 2025.

¹⁴ Page 19, Thomas, J, Barraket, J, Wilson, CK, Cook, K, Louie, YM & Holcombe-James, I, Ewing, S, MacDonald, T (2018), Measuring Australia’s Digital Divide: The Australian Digital Inclusion Index 2018, RMIT University, Melbourne, for Telstra.

5. CASE STUDY: WI-FI NETWORK FOR TENNANT CREEK COMMUNITY LIVING AREAS

Julalikari are establishing a Wi-Fi network to provide Wi-Fi hotspots in the seven CLAs. Equipment has been installed for the first stage to four of the CLAs with plans for a second stage to connect the remaining three. The aim was to provide free Internet access for CLA residents, however the cost model is still being worked out. The project also aims to provide young people with access to Internet near their homes in the hopes of mitigating against late night gatherings. It will also enable connectivity for digital learning and projects in the CLA community centres, which are currently being renovated or built.

Why the Wi-Fi project was developed

The Julalikari Wi-Fi project was initiated in response to the increased demand for Wi-Fi services and community concerns about young people leaving the CLAs and gathering at business premises in the town centre at night to access Wi-Fi hotspots, in some instances leading to anti-social behaviour:

- + “Young people were accessing Wi-Fi from [local businesses at night] ... it just created other problems with them hanging around ... and basically just getting up to mischief. So they [elders] asked if we can have a Wi-Fi back on the CLAs ... where we can monitor them, it would probably alleviate ... the social behaviour.” (David Curtis, Executive Manager Operations, Julalikari Council 2022)

The project was also developed to provide a level of free Internet access to residents within the CLAs to access online services, undertake study or research, and support digital skills development.

- + “A lot of the people here are disadvantaged with technological skills ... [kids] are now getting mobile phones [but] they haven’t got internet at home ... By putting the Wi-Fi back into [town] camps, one, it’s more likely to keep the kids at home. Two, it gives them internet access and hopefully they can pass those skills onto the adults ... [The Wi-Fi will help to] keep them in an area where they’re more likely to be watched over by parents.” (Andrew Duxorth, Julalikari Community Patrol Coordinator, 2022)

Project development

Julalikari asked Easyweb Digital, an Australian company with extensive experience in installing and managing Wi-Fi services in remote communities, to design the network and quote for setup and operational costs. As there was no fixed line internet in the CLAs, the project involved setting up point to multi-point links from Julalikari facilities in the town centre to the Wi-Fi hotspots in each CLA. The project was broken into three stages, covering the clusters of CLAs to the north-east, south-east and western sides of town:

- + Stage 1 - Mulga, Wuppa and Tingkarli Camps
- + Stage 2 - Karguru Camp
- + Stage 3 - Village, Marla Marla and Blueberry Hill Camps

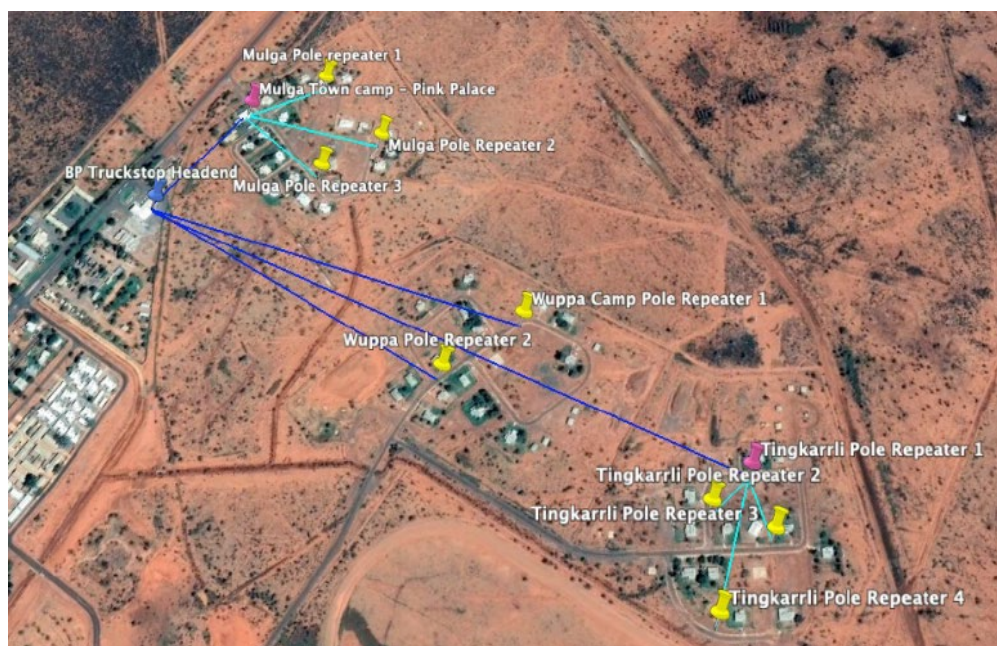


Figure 7: Stage 1 network diagram with point to multi-point links to supply Internet to repeaters within CLAs (Source: Easyweb Digital)

Julalikari successfully applied for COVID Emergency funding of \$104,000 through Central Land Council to purchase the Wi-Fi hardware needed for the three stages as well as operational costs for the first year¹⁵. However, The CLC Covid Emergency Fund was insufficient to cover all installation¹⁶ and operational costs for 7 CLAs, particularly after delays due to Covid, and additional funding was needed to complete the project. It was decided to initially proceed with installing Stages One and Two, with the equipment being installed at the time of our visit (April 2022). Additional funds will be sought to complete installation and operational costs across the remaining 3 CLAs (Village, Marla Marla and Blueberry Hill).

- + “[Soon] they’re actually going to fire it up so people know it’s here ... [we’ve] still got Village, Marla Marla and Blueberry Hill [to connect].” (David Curtis, Executive Manager Operations, Julalikari Council 2022)

Community Centres in CLAs

Following the design of the Wi-Fi project, Julalikari received funding through an Aboriginal Benefit Account (ABA) grant to build four new community centres and renovate two other community centres in the seven CLAs. The Community Centres are planned for use as hubs for learning, youth activities, computer access, community meetings, and for digital content creation. Renovation work on the existing community centres was underway during our visit.

Julalikari Chairperson Linda Turner said that the Centres will provide a safe space for young people to gather near their homes, and could also be used for school breakfast programmes, after school activities and local events. Each community will have ownership to decide how they use their community centres.

¹⁵ This amount was based on a quotation from Easyweb Digital for the cost of the hardware for Stages 1, 2 and 3 and the first year of service.

¹⁶ Cost of the installation was estimated at around \$30K for the 3 stages, to be undertaken by a local electrical installer (Source: Easyweb Digital)

Ongoing operational costs and management of the Wi-Fi network

The need for an ongoing management plan to ensure the Wi-Fi network is sustainable is an ongoing challenge for Julalikari. While the CLC funding has enabled the project, it covers only the first year of data use with no recurrent funding for operational costs. Sustainability is a common challenge for community-managed Wi-Fi projects, particularly as monthly data use increases. Easyweb Digital (and other companies) provide a service to manage the Wi-Fi network, including managing traffic, daily data allocation per user, content filtering and providing the option of vouchers for data use, as well as equipment maintenance and usage analytics. However, this management cost, as well as a high-capacity Internet service, requires resourcing. Mechanisms for doing this seen in other sites include seeking recurrent funding, charging users to generate the needed funds. Julalikari are currently considering these options. While their preference is to keep the Wi-Fi free, the operational costs are unavoidable.

Daniel Sacchero from Easyweb Digital reports that for some organisations it can be simpler and more cost-effective to cover Wi-Fi service costs from operational budgets or dedicated funding than it is to manage a 'user-pays' model of revenue generation through voucher sales. Easyweb Digital has publicly urged for government funding to enable free Internet access in economically disadvantaged communities to help address the digital and economic gap.

Former Julalikari Community Programs Manager Geoff Evans, who supervised the project development, suggested funding could be readily sourced because of the strong community benefits:

- + “[Julalikari could apply for] even \$30,000 a year to contribute to a community safety program, because it keeps kids closer to home and accessing safer internet, then that seems like a relatively small investment.” (Geoff Evans, former Community Programs Manager, Julalikari Council, 2022)

Another funding option would be the Aboriginals Benefit Account (ABA), now managed by a new Aboriginal-controlled body called the Northern Territory Aboriginal Investment Corporation to support self-determination for Traditional Owners and First Nation people across the Northern Territory. The new grants process is expected to open in March 2023.

Julalikari Council now have responsibility for tenancy management, repairs, and maintenance for CLA housing, recently returned from the NTG. Another option proposed to fund the service was through a small weekly rental levy from residents.

Equitable sharing of bandwidth and available data is another issue that requires consideration.

- + “How many users are there? If you’ve got a few users using huge amounts of data that takes data away from everybody else. You’ve got contention ratios ... It’s not a simple little thing at all.” (Andrew Duxorth, Julalikari Community Patrol Coordinator 2022)

These traffic management issues can be addressed by Wi-Fi management platforms like Encapto used by companies such as Easyweb Digital and Activ8Me, which enable a range of functions including content filtering, setting of curfew times, daily data limits, remote monitoring and usage analytics reports.



Figure 8: Wi-Fi Outdoor access point (Photo courtesy Easyweb Digital)

The research team suggest that the project would benefit from a management plan which outlines an ongoing model for sustainability, such as the funding models, data and user management, staff resources, as well as equipment maintenance and general costs of operations.

Regulatory considerations

The ongoing operations and management of the network must take into consideration Federal regulatory compliance, in particular the Telecommunications Act 1997¹⁷ and the Telecommunications (Interception and Access) Amendment (Data Retention) Act 2015¹⁸.

While there are some exceptions, the Telecommunications Act regulates the provision of communications to the 'Public'. If an organisation owns a 'communications network' that provides 'Public' Internet access, they can then be considered an 'Internet Service Provider', a 'Carriage Service Provider' or a 'Carrier' under the legislation. While the 'Internet Service Provider' or 'Carriage Service Provider' do not require a license, 'Carriers' require a license from the Australian Communications and Media Authority (ACMA).

In addition, Providers or Carriers may be required to comply with the Telecommunications (Interception and Access) Amendment (Data Retention) Act 2015. Under this Act, communications sessions metadata must be collected and retained for a minimum of 2 years, protected from unauthorised access, and if required, able to be provided to law enforcement and security agencies. If the Wi-Fi service operator collects users' personal data it may also be regulated under Federal, state or territories privacy legislation.

As such, it is highly recommended that organisations managing a public Wi-Fi service engage a licensed carrier to ensure full compliance with the Federal regulations.

Local decision-making over use

Compared with 4G mobile coverage, a critical benefit of community-controlled Wi-Fi network is the ability to have local decision making over the system, including daily data limits and content filtering of websites the community may wish to ban, including violent or pornographic content, and gambling websites. There is also the ability to set curfew times or switch off the service to address local issues or disputes.

- + "[Elders may want the Wi-Fi] turned off, probably say midnight, except on say Saturday, where it might stay open until 2 [am] ... [they may want] to put a block on Netflix, or maybe YouTube, so that the bandwidth can be used for emails or Google or data gathering, or even educative curriculum type things ... It has to be a balance struck between what's appealing to the target audience, which is probably mainly younger people and teenagers, young parents, and what's necessary for community information." (Geoff Evans, former Community Programs Manager, Julalikari Council, 2022)

Andrew Duxorth, who has experience in managing public Wi-Fi services in tourism venues, said content filtering is a complex aspect of managing a Wi-Fi network. Filters need to be constantly updated to block ever-changing IP addresses of pornography or malware sites, and users may also be able to get around filtering systems¹⁹.

¹⁷ See: <https://www.oaic.gov.au/privacy/other-legislation/telecommunications>

¹⁸ See: <https://www.homeaffairs.gov.au/about-us/our-portfolios/national-security/lawful-access-telecommunications/data-retention-obligations>

¹⁹ Easyweb Digital use the Cisco Umbrella system in the back-end of their Encapto system due the complexity of managing content filtering.

Digital skills and projects

Once the community Wi-Fi network is operational and the community centres re-built, Julalikari are hoping to set up a digital learning and awareness program, with computers available for use when the facility is open during the day and Wi-Fi available on the premises at night. The aim is to provide a space for learning, accessing services, and creating local digital content.

Karen Hayward encouraged that the community centres be a creative and healing space:

- + “Where they can set up computers and help the kids to do little animations ... Dreamtime Stories or even it’s just a story [about] why they feel depressed at some stages ... develop it as a space that they can create themselves, will make ownership and maybe have respect.” (Karen Hayward, CEO, Papulu Apparr-Kari Language and Cultural Centre, 2022)

Barkly Regional Council Wi-Fi hotspots plan

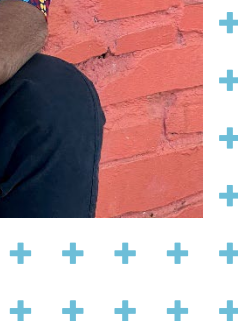
Currently Barkly Regional Council are also looking to set up free Wi-Fi hotspots in six sites along the main road through Tennant Creek (the Stuart Highway) to enable access for tourists and locals. They are currently undertaking community consultation regarding the location of the hotspots and whether they should remain on constantly or be switched off at night.

While these hotspots will provide much needed free Internet access in the town for residents and visitors, they are likely to attract young people to these locations late at night, potentially working against Julalikari’s objective of keeping young people close to home at night.

Interviewees pointed out that the success of both Wi-Fi projects will depend on effective joint planning and co-operation between Barkly Regional Council and Julalikari Council Aboriginal Corporation to ensure the objective of both projects can be achieved.



Figure 9: Dr Lyndon Ormond-Parker (left) interviewing Linda (LT) Turner (right)



6. KEY FINDINGS FROM DATA ANALYSIS

This section provides key findings from the 13 interviews undertaken with community leaders and stakeholders, as well as observational data and survey results. We have included the role that interviewees were in at the time of the interview, however some people have since left these positions.

See Appendix 1 for the full set of unprocessed survey results, based on initial analysis of 44 surveys undertaken. As outlined in the Executive Summary, the finalised survey results may differ from those presented here once data cleaning and weighting has been completed. These will be available via the Australian Digital Inclusion Index website and data dashboards in mid 2023.

Communications Access

Mobile coverage is relatively fast and reliable in Tennant Creek

The Telstra 4G mobile service in Tennant Creek provides relatively good broadband speed, reliable phone and Internet services and good signal strength across most of the town. The 3G services available extend this range slightly further to the west and south along the Stuart Highway (See Appendix 3 for coverage maps).

- + “[The mobile coverage] goes a fair way. Like if you’re going north to the dam, you can’t pick up anything because of the hills. But to the south, you can get up to 30 kilometres away ... [There’s quite good coverage in town, including] for the Community Living Areas.” (David Curtis, Executive Manager Operations, Julalikari Council 2022)

There are currently two Telstra 4G mobile towers in Tennant Creek, located in Maloney Street and on the hill south of Irvine Street. A third 4G tower is planned for installation in early 2023²⁰ on the Barkly Regional Council property on Peko Road. This is intended to improve coverage to the eastern side of town. There is also an Optus mobile service in Tennant Creek which provides a good quality service, however interviewees said that the coverage is not as extensive as Telstra (see coverage map in Appendix 3)



Figure 10: Mobile phone tower on Maloney Street, Tennant Creek.

Pre-paid mobile is the primary means of phone and Internet access, with few fixed line or public phones

82% of the 44 survey respondents said they used their own mobile phone for making phone calls, with 16% using someone else’s mobile phone. Of the 80% of respondents who owned a mobile phone, 83% use pre-paid mobile services. Only 3% had a fixed line home phones and 3% had no phone access.

11% of those people surveyed regularly use a public phone for calls, with 66% using it at some time. There are reportedly six public phones remaining within Tennant Creek and the CLA’s, with at least two of these not in working order during our visit:

- + “[There are] hardly any public phones around either ... six I can count off the top of my head that’s in Tennant Creek that’s still working ... when they first took the phones

²⁰ Source: NT Government, email correspondence 14/10/22

out of the town camps, there was a bit of a stink up about it.” (Linda Turner, Julalikari Chairperson, 2022)]

Barkly region communications have improved but services are limited or unreliable in many sites

As outlined in Section 4, there are 4G mobile macro-cell services in the larger remote communities in the Barkly. Upgrades to the 4G small cells (to macro-cells) in Canteen Creek and Wutunugurra are planned to be completed by March 2023. There are three other small communities scheduled to have small cell mobile services installed (Mungkarta, Arawerr, Tara). Beyond these communities, most other small communities and homelands in the region have no mobile coverage.

- + “[Most] homelands still have [public] payphones ... a few of the communities do have Wi-Fi on the payphones ... [Many of these homelands are] hundreds of kilometres away from the nearest community (Eleanor Dixon, Governance Coordinator, Barkly Backbone 2022)

Where there is 4G coverage in the larger communities outside of Tennant Creek, it tends to be patchy and unreliable:

- + “[In] the remote communities, the internet is still so unstable ... they put [4G] in Canteen Creek [but] It just doesn’t work, you’ll have like this little moment where suddenly your phone’s working and then it just drops out ... and Epenarra ... the same things happening.” (Catherine Lynch, Art Centre Manager, Barkly Regional Arts, 2022)

During extensive flooding in Central Australia in late December 2020, mobile and landline communications were down in Arlparra for nearly two weeks²¹. This followed a similar incident in January 2020 where services were down for 12 days due to a power outage. The Ampilatwatja Health Centre claimed this was the fifth extended outage that had affected the clinic in the 12 months to January 2020²². An ABC article published in June 2022 reported that “due to a range of factors such as cloudy weather and hardware issues, Ampilatwatja has been without fixed line and mobile services six times in the past nine months.”²³

Impact of network outages

Some interviewees referred to network outages in Tennant Creek, although these were described as being less frequent in recent times. As David Curtis explained, these outages were often linked to infrastructural failures that were at a great distance to Tennant Creek itself.

- + “The network ... is vulnerable. Say there’s a line break in northern Western Australia somewhere, we lose services ... [It] happens once or twice a year, but a couple of years ago it was happening quite a bit. [On one occasion] a vehicle got bogged on the fibre optic line ... that blew services for a few days.” (David Curtis, Executive Manager Operations, Julalikari Council 2022)

Residents rely primarily on mobile connectivity for day-to-day communications and online services and applications. Where there is no backup system (e.g., NBN Sky Muster), network outages interrupt the online systems used for retail and service provision:

- + “[When there are network outages] you can’t access those services, particularly EFTPOS or any of the banking stuff, and the Basics card ... [if] that goes down, it does make it very hard for people to access their funds and do their shopping and stuff like that.” (David Curtis, Executive Manager Operations, Julalikari Council 2022)

²¹ Source: <https://www.abc.net.au/news/2020-12-29/utopia-homelands-isolated-after-heavy-rain/13019190>

²² Source: <https://www.abc.net.au/news/2020-01-24/ampilatwatja-arlparra-mobile-outage-nt-telstra-remote-community/11898266>

²³ Source: <https://www.abc.net.au/news/2022-06-09/ampilatwatja-loses-phone-ad-internet/101129526>

Network outages can have a significant impact on remote communities and homelands in the region, as outlined in the section on Barkly region communications above. Small communities and homelands reliant on public phones are less likely to have backup communications systems in place and equipment repairs can take weeks, or even months, on occasion:

- + “[Phones and Wi-Fi] don't last, they need to be repaired and stuff. So, yeah fixing the payphones usually takes a bit longer for people, so they're cut off for periods of time ... one of the biggest barriers is having to communicate and have that access to the internet or just service.” (Eleanor Dixon, Governance Coordinator, Barkly Backbone 2022)

Lack of coverage in communities and homelands makes it challenging to continue living on country

It is increasingly difficult for people to remain on their homelands without mobile coverage or reliable internet. While some health and social services are provided through outreach support from regional centres, service delivery is increasingly moving online.

The Barkly Backbone is a support organisation established to undertake a community-led process to direct and evaluate funding initiatives under the Barkly Regional Deal, a 10-year Federal Government regional funding program. While there are currently no communications funding initiatives under the Barkly Regional Deal²⁴, phone and Wi-Fi access have been identified as important issues by Barkly Backbone as part of its consultation with communities and homelands across the Barkly region. Communications are seen as critical for safety and for engagement of young people:

- + “A lot of the grandparents and parents [say] “We'd really like to take the kids back to the homelands, so that we can keep them safe during the holidays and they can go hunting and really connect more with their land and different cultural practices.” And having Wi-Fi would be a key drawcard, of course, for the kids to get them back there, and for them to stay there for two weeks.” (Lucy McGarry, Monitoring, Evaluation and Learning Officer, Barkly Backbone 2022)

Barkly Backbone team member Lucy McGarry described communications as an essential service for communities, particularly for elderly or vulnerable people and for emergency situations:

- + “Because this is about [people having the choice of] living and dying on country. So, if they have better dialysis or better palliative care or aged care services, old people won't have to leave ... and go to Alice Springs or Mount Isa. Same thing, if they have access to quality phone and Wi-Fi, they're probably going to have more young people sticking around.” (Lucy McGarry, Monitoring, Evaluation and Learning Officer, Barkly Backbone 2022)

Lack of communications is also making it harder for young people to stay living in homelands, including to continue with schooling:

- + “Now everything's about technology and so kids are evolving ... they love their phones now and I mean with education it would be easier for kids to have access out on homeland ... because I used to be home schooled when I was a kid ... back then it was different so we had to post [our work in].” (Eleanor Dixon, Governance Coordinator, Barkly Backbone 2022)

²⁴ The Barkly Regional Deal (<https://barklyregionaldeal.com.au/>) is a \$78.4 million Federal Government initiative, in partnership with NTG and Barkly Regional Council, to fund community-identified priorities to improve economic and social outcomes. However, none of the 28 planned initiatives relate to improved telecommunications access.

Access to IT devices, Wi-Fi or shared facilities

Community access facilities are needed for people without affordable or reliable home access

The most common reason regular Internet users (those who have used the Internet in the last three months) gave for not using the Internet more often were “I do not have convenient access to the Internet” (63%). Most people we spoke with reported that they do not have computers at home due to prohibitive costs to purchase. This makes community access computers necessary for digital skills learning such as keyboard skills, MS Word and other Office applications, and to use some online services. There is demand from community members for a space for online learning, research and working on digital projects, including language and culture projects.

Despite the large population, there are currently limited facilities providing community access computers and free public Wi-Fi in Tennant Creek:

- + “Tennant Creek doesn’t even have ... an internet place ... we did have a computer at the front [of the Central Land Council office], but due to COVID [we removed it] ... I’m hoping to get our computer back at the front so people can have access every day.” (Daryl Fitz, Region 6 Manager, Central Land Council 2022)

Nyinkka Nyunyu provides Wi-Fi at the cultural centre and café but not computer access. However, they have experienced issues with the Wi-Fi during the summer months:

- + “During summer when it’s really hot we find that the Wi-Fi ... will drop out quite often ... there have been days where the EFTPOS machines don’t work and, yeah, the internet will be down for like an hour.” (Kate Riethmuller, Manager, Nyinkka Nyunyu 2022)

Nyinkka Nyunyu are currently applying for funding for up to four computers to be made available for community access. These computers would also facilitate access to the Mukurtu archive.

Communications access is becoming critical for governance and participation in community activities

Lack of communications access limits participation in regional governance and decision-making:

“[Lack of communications is] one of the big challenges ... with my work I must ring around to do community planning, organise meetings and stuff ... it’s hard to get in touch with certain people who live in the remote areas.” (Eleanor Dixon, Governance Coordinator, Barkly Backbone 2022)

“Better communication [are needed] because sometimes it’s a struggle to get in contact with our communities ... most of our communities have got the old style pay phone boxes ... sometimes they answer them ... [If] we can communicate via mobile or send them texts ... it’s an easier way to get information to them.” (Daryl Fitz, Region 6 Manager, Central Land Council 2022)

Central Land Council described the challenges of holding regional meetings without communications infrastructure:

- + “When we have meetings here, we have to sometimes consult 100, 150 people and sometimes they’re scattered all over the region ... we have to send drivers ... or fax things down to places ... [Where there is mobile coverage] that’s one driver we don’t have to send.” (Daryl Fitz, Region 6 Manager, Central Land Council 2022)

Nyinkka Nyunyu staff struggle to contact people, particularly elderly people, to participate in steering committee meetings:

- + “[Most] old people that are on our steering committee don’t really have access to email or like phone ... numbers are constantly changing, or another family member

might have that phone now ... our main source of getting people to meetings is we drive out and hand them a flyer ... sending through an email or a text ... won't get the same kind of response." (Kate Riethmuller, Manager, Nyinkka Nyunyu 2022)

The move to online delivery of services can lead to exclusion or reduced engagement in activities.

- + "The AFL registration [in Tennant Creek] is online this year and they had to delay this season by a couple of weeks because they just haven't got the registrations ... [because] that involves the parents doing the online forms for the kids. So, even here in Tennant Creek where there's pretty good access, it's having an impact on people's confidence a lot of the time." (Lucy McGarry, Monitoring, Evaluation and Learning Officer, Barkly Backbone 2022)

Service Delivery and Use of Online Services

Impact of COVID-19 and misinformation about vaccines

Tennant Creek did not have the same restrictions that many remote communities experienced during the COVID-19 pandemic during 2020-21:

- + "Lockdown weren't as severe as other places ... you could still move and go to the shop ... you could only go up and down the highway to the major centres. [But] you could not go to the remote areas because they're part of the Biosecurity Act." (David Curtis, Executive Manager Operations, Julalikari Council 2022)

There was a lot of misinformation spread via social media during the COVID-19 pandemic, particularly related to the effectiveness of vaccinations for Aboriginal people. This resulted in a high level of vaccine hesitancy. Anyinginyi Health coordinated an effective message campaign to promote vaccination and address misinformation via posters, T-shirts, a Facebook page, and radio messages. CAAMA Radio also played an important role in getting reliable information out in language during the pandemic.

However, this hesitancy quickly changed when COVID-19 began to spread in Tennant Creek and across the region in December 2021, resulting in greater vaccination take-up.

Use of Teams and videoconferencing

Many agencies in Tennant Creek provide services to remote communities across the Barkly region. Due to stringent travel restrictions (both inter-state and closure of most remote communities), there was an increase in the use of videoconferencing by local agencies for telehealth consultations, meetings, client consultation and training. Within Tennant Creek there is a small hospital as well as First Nations health service (Anyinginyi Health). The lack of full-time doctors in Tennant Creek also requires use of tele-health for consultations with doctors in Alice Springs or Katherine and to support remote patients. Some research participants described the positive aspects of online communications:

- + "The Zoom capabilities and videoconferencing has opened up a whole new world. I mean we use our Zoom for cultural aspects as well, like return objects from around the world and we've been Zooming into America, to New Zealand, into London so it's pretty good [with] groups of senior elders and young emerging people." (Daryl Fitz, Region 6 Manager, Central Land Council 2022)
- + "Instead of people travelling to meet, they just Zoom in or Team in ... [there's about] 30 to 50% increase, I think, in using Teams and Zoom." (David Curtis, Executive Manager Operations, Julalikari Council 2022)

However, other agencies reported the broadband speed available to them was insufficient for reliable videoconferencing, including for telehealth use.

Resident use of online services

There is only moderate levels of online services used among Tennant Creek residents for banking, Centrelink, MyGov, licensing, fine payment and other services. As Tennant Creek has a Centrelink office, bank, post office and other services available, most residents prefer to access face-to-face services rather than go online. This has reduced the driver to use online services and the associated digital skills. Despite this, there is a gradual upward trend in use of online services that has been exacerbated by the COVID-19 pandemic.

- + “I’m quite pleasantly surprised that, because of the need to go into Centrelink and use MyGov, people are used to it now. So some people even started using their mobile phones instead of going ... into Centrelink to report ... And older people, because of that reporting and having to do a lot of things online, even banking and all of that, have had to learn.” (Linda Turner, Julalikari A.C. Chairperson, 2022)

However, for those people living in small communities and homelands outside of Tennant Creek, gaining access to most services requires online access or driving to a regional centre, both of which are a cost burden to the user. As key services increasingly move online as part of the digital transformation, there is a need for Internet access to enable affordable access to online services.

The move to online financial services can be fraught for First Nations people with very limited income and savings or food reserves. This was the case with the introduction of the Basics debit card, which quarantines about 50% of welfare payments of First Nations people in Northern Territory, for cashless use in approved outlets. There were initial technical issues with the introduction of the Basic card system:

- + “[Initially] there were a lot of bugs [in] the system ... people would go shopping, they’d know they have money there, but when they go [to pay] the system wouldn’t work, so they had to put all the stuff back and leave the shop with nothing, and very frustrated.” (David Curtis, Executive Manager Operations, Julalikari Council 2022)

While these are reportedly resolved now, communications or power outages can still leave people without a means of purchasing food or supplies as payment relies on EFTPOS.

Residents also experience challenges in signing up for online services, which typically require a mobile phone number, email address, street address, birth certificate or other form of identification. For people living in remote homelands or communities, often without mobile or internet services, street names or support services, these requirements can present a significant (sometimes insurmountable) barrier to accessing services. Additionally, with a cultural taboo on use of the same name as someone who has passed away, it is common for Aboriginal people in central Australia to change their first name, which can also create issues with multiple names for the same person.

Helpline services, where available, often require extensive wait times (in turn requiring extensive mobile data), are usually ill-equipped to deal with First Nations languages or accents and may have limited understanding of the remote community context.

Access to media and new services

Demand for online entertainment and gaming has increased

Just as in other parts of the country, there is growing demand for streaming services for movies and TV series, news and sports, and music content in Tennant Creek. 94% of survey respondents used online entertainment services in the past six months such as streaming video/music or playing online games.

The expanded use of Internet for media streaming gaming has increased demand on the 4G network, slowing services at peak times. Household data costs have also increased with most users on pre-paid mobile services.

Local media and information channels

Local information sources enable delivery of reliable and trusted information. This can help to counter misinformation from social media, particularly during the COVID-19 pandemic and vaccination rollout.

Local news and information is shared across the region through various community channels, including local radio services (CAAMA, 8CCC, and ABC Alice Springs), the Tennant and District Times newspaper (now online only), websites and Facebook pages of local agencies (e.g. Barkly Regional Council, Julalikari AC, Central Land Council, Anyinginyi Health), and noticeboards and distribution of flyers.

- + “We have our Facebook page for the organisation, we have a web page as well. You know, people do look at both of those ... [for] jobs and stuff ... community events. Flyers still work ... quite well ... We don't bother with the paper, it's too expensive. When it was paper, yes. They did buy it and read it. But now it's wholly digital, they don't bother.” (David Curtis, Executive Manager Operations, Julalikari Council 2022)

Face-to-face communications remains a primary means of sharing news and information:

- + “The grapevine ... really it's word of mouth from people who work in organisations, they share info [with each other] ... [Julalikari has] got a Facebook page, we got a website ... [for] engaging with community. And we also have a newsletter.” (Linda Turner, Julalikari A.C. Chairperson, 2022)

Tennant Creek receives the CAAMA First Nations radio service, which is highly popular among First Nations audiences in providing locally relevant news, information music and programming, with 37% of survey respondent listening daily or weekly (ABC Radio was also 37%).

- + “CAAMA's everybody's favourite. You ask obviously all Aboriginal people, that's our radio station, you know.” (Linda Turner, Julalikari A.C. Chairperson, 2022)

CAAMA has a radio studio in Tennant Creek, however they did not have a local broadcaster employed at the time of our visit in May 2022. 8CCC community radio is also popular, with a local radio studio run in partnership with Barkly Regional Arts. 8CCC plays a lot of music from the Barkly region's First Nations bands produced by Winanjikari Music.

- + “[I really like] 8CCC's support for local NT music ... [you] hear a lot of stuff that we've produced ... [We're working with 8CCC] on re-engaging with the town to get more local radio content out there.” (James Winwood, Winanjikari Music Manager, 2022)

The local newspaper, the Tennant and District Times, changed from a weekly print version to online delivery in 2021. Some people miss having a printed newspaper:

- + “Tennant and District Times was our little local newspaper. \$1, sometimes just four pages. But everyone loved it because that was our local info, then about six months ago it went online ... [so now] even I forget to read it on Friday.” (Linda Turner, Julalikari A.C. Chairperson, 2022)
- + “I really miss not having a paper newspaper, like the Tennant Times ... [but] there are other ways that information gets distributed in Tennant Creek, especially Facebook groups.” (Geoff Evans, former Community Programs Manager, Julalikari Council, 2022)

Affordability

Affordability of mobile data and devices is a significant concern

Affordability of Internet access is a key issue due to low incomes and high pre-paid data costs. 48% of respondents indicated they have had to cut back on essential household costs to afford personal or household Internet within the past six months. The second most common reason given by regular Internet users for why they don't use the Internet more often was "The Internet is too expensive for me" (43%).

Despite pre-paid data costing significantly more than post-paid plans, 83% of Tennant Creek community residents surveyed use pre-paid mobile services. Pre-paid enables people to pay when they can afford, rather than commit to a monthly billed service that they may not be able to pay when it is due.

- + "People have learnt their lessons over the years, including myself, of having plans and ... having a big bill ... a lot of people have realised pre-paid's the way to go because you can only use what you've got." (Linda Turner, Julalikari A.C. Chairperson, 2022)

There is limited community awareness about recent changes to Telstra post-paid plans to casual month to month charging rather than fixed term contracts and removal of excess usage fees²⁵. Optus also have the option of month-to-month SIM plans.

The cost of data use has risen due to the increased use of video and music streaming services (e.g., Netflix, Binge, YouTube, Spotify) and online gaming, particularly by young people. This is leading to pressure on parents and elders to purchase pre-paid credit:

- + "Young people now ask ... 'can you buy me credit?' ... [but] young people, including my granny, they clever and they store up their data. She watches movies all day ... when she's not working ... she knows how to get what and what plan to be on, the pre-paid plans." (Linda Turner, Julalikari A.C. Chairperson, 2022)

Residents living in remote communities across the Barkly region have also been vocal about the high costs of poor-quality phone and internet. A recent ABC article reports that "Residents living in the remote community of Ampilatwatja say they're being sold Internet plans for high-speed connections that regularly cannot be reached."²⁶

The cost of smart phones and devices was also raised as an issue, particularly due to the high turnover of devices. Participants called for a Telstra shop in town to have more affordable options of devices and plans²⁷. There is currently no local outlet that provides post-paid mobile services.

Digital Ability

Need for programs to improve digital literacy and for work readiness

Surveyed participants had moderate levels of digital literacy. Of the 80% of people who had used the Internet within the last three months, 91% had accessed an online government service in the previous six months, 89% had used online banking, and 89% used the Internet to keep in touch with family or friends. Most regular users reported being able to send and receive emails (88% said 'very true' or 'mostly true'), find and install apps/software (91%), connect to a Wi-Fi network (91%), and complete online forms (83%).

²⁵ There are no longer charges for excess monthly data use, however the download speed is capped at 1.5Mbps for the remainder of the month. Source: <https://www.telstra.com.au/help/critical-information-summaries/personal/mobile/mobile-plans/telstra-mobile-plans>. Mobile devices can still be paid off on a fixed term plan.

²⁶ Source: <https://www.abc.net.au/news/2022-07-12/telstra-coverage-remote-central-australia-phone-internet-plans/101226174>

²⁷ The nearest Telstra store is in Alice Springs, 508kms south of Tennant Creek.

A significant portion of those surveyed (20%) had never used the Internet, with 89% of non-users giving the reason as 'not needing to use it' and 44% saying they had no convenient access.

Some of the barriers to digital literacy identified by interviewees included low levels of English text literacy, lack of computer and keyboard skills due to being mobile only, and shared use of mobile phones.

With increasing digital transformation of services to online delivery, digital literacy is becoming a necessary life skill. It builds agency by enabling people to access information and services independently.

- + "If you don't have those skills, you're automatically at a disadvantage ... a higher level of computer literacy would be something that would benefit [everyone here] ... we've had the Literacy for Life people here for probably about a year now ... [some people] really benefited from it ... [a] similar program with digital content [is needed]." (Kate Riethmuller, Manager, Nyinkka Nyunyu 2022)

There are currently limited support services in Tennant Creek for accessing and using online services, other than the Centrelink office where some assistance is available during opening hours to access government services. Several interviewees called for more training and support in use of online services, such as banking, especially for older people:

- + "[It] would be really positive for people if they could learn how to access basic [online] services ... get your banking App on your phone with a password that no-one else knows. So that you can like transfer money between accounts and stop kids from taking your card and stealing your money ... [Most artists still rely on phone banking] and then it's like an hour on hold ...[to] ask what your balance is and it's \$0 ... [Sometimes they call] 30 times to see if they've put the money in yet." (Catherine Lynch, Art Centre Manager, Barkly Regional Arts, 2022)

Digital learning often happens at home, with young people providing peer learning

Peer learning is an effective means of skills transfer, particularly within the home environment. Young people often assist family members to use online services and navigate the digital world:

- + "Young people now are our teachers for us old people. [They] learn how to do all of that stuff, and it's just the way they've grown up I guess ... I brought my phone ... 'can you set it up for me?' ... And yeah, they do it. So young people are really clever with IT." (Linda Turner, Julalikari A.C. Chairperson, 2022)
- + "[Developing digital literacy is] not just about access ... it's about people's literacy and the supports ... what I observe here is, there's often one or two key people in a family or even in a community who are the enablers for other people around all sorts of exchange with mainstream. So, whether that's filling in forms or healthcare or getting a driver's licence or advocating around NDIS. It's often a younger person who has that role of being the mediator. So, they might have the literacy skills, but it may not be broadly shared across their family." (Lucy McGarry, Monitoring, Evaluation and Learning Officer, Barkly Backbone 2022)

There are limited agencies providing digital skills or workforce readiness training

Digital skills are increasingly becoming a requirement in applying for jobs:

- + "When we put out job descriptions ... we're not getting a lot of response back digitally ... its 50/50 if people have the computer skills needed for the jobs [because they are] mostly mobile only." (Daryl Fitz, Region 6 Manager, Central Land Council 2022)

There is demand for training in workforce readiness digital skills. However, David Fitz from CLC pointed out that there is no longer Skillshare, TAFE or the Bachelor Institute training facility operating in Tennant

Creek, which had previously offered foundation skill programmes. He suggested Julalikari as a potential agency for digital skills training, alternatively Rise-Ngurratjuta or GTNT Group²⁸, which deliver training and work readiness programs, or Salt Bush who currently offer some literacy and digital skills.

- + “[Julalikari is] looking at setting up a training body to ... [deliver] locally based training in lots of things ... so computer skills would be one, driver education is another ... a lot of things that are online now, even with driver licenses renewals, registrations and stuff.” (David Curtis, Executive Manager Operations, Julalikari Council 2022)

Other agencies also urged a return to locally managed training to ensure sustainability and local jobs:

- + “I’d like to see is that it’s locally based ... [so] there’s training or apprenticeships for some of the kids to be able to monitor, help work on it, repair ... that’s outcomes for us.” (Karen Hayward, CEO, Papulu Apparr-Kari Language and Cultural Centre, 2022)

Digital skills development tends to be demand-driven, as skills are needed to undertake a particular task. For this reason, training and support is most effective when provided ‘just-in-time’, when and where skills are needed, rather than a ‘just-in-case’ approach of delivering training workshops on a range of topics that may not be immediately relevant.

This was the experience of artworkers at Nyinkka Nyunyu, who have done training in using the Story Art Money (SAM) database for cataloguing artworks and managing sales and artist payments:

- + “The staff do have some trouble kind of using it and remembering how [it] works ... once the training’s finished it kind of just gets forgotten ... [such as] how to upload a photo and then get it onto SAM and then filling in all the details about an artwork or an artist.” (Kate Riethmuller, Manager, Nyinkka Nyunyu 2022)

David Curtis from Julalikari said that practical face-to-face and hands-on training works the best. He pointed out that many people have low literacy and prefer applications that are icon-based and interactive, rather than text-based applications:

- + “[It works best] where they can just click it and navigate [and it’s more] pictographic, it’s far easier to navigate ... with the texting and with the social [media]” (David Curtis, Executive Manager Operations, Julalikari Council 2022)

This also reflects the primary use of smartphones for Internet use (77% of survey respondents), with few households reporting having a laptop (26%) or desktop computer (23%). The lack of computer access limits the development of keyboard skills and use of applications, such as Microsoft Office and email, used in most workplaces. However, some people do have a laptop or computer in the home, including for creative purposes, such as artists researching colours and images online to inform their art practice (Catherine Lynch, Art Centre Manager, Barkly Regional Arts, 2022).

Social media is a primary means of communication

Social media is popular in Tennant Creek, with 89% of survey respondents saying they used the Internet for keeping in touch with family or friends, 80% used it for engaging with community, and 83% met new friends or reconnecting with old friends online. Beyond voice and text communications, social media is a primary means of communicating and accessing news and information. Some older people are learning how to use social media to connect with family members, primarily Facebook. Younger people are tending

²⁸ GTNT Group is a not for profit employment and training service in the Northern Territory. See: <https://www.gtntgroup.com.au>

to use more visual platforms such as TikTok, Instagram and Snapchat²⁹. The making of TikTok videos has become an entry platform into the social media world for young people, including children as young as 3 years old (Geoff Evans, former Community Programs Manager, Julalikari Council, 2022).

Local organisations use social media as a communication and marketing tool. However, digital communications have become a specialist skill used by businesses for online messaging and promotions. This is a potential area for skills development in the region.

However, some interviewees described social media as an addiction, especially for young people:

- + “There’s a lot of kids who stay up until all hours of the morning [on TikTok] and then don’t come to school because they’re sleeping during the day ... it’s a big issue in the community ... social media addiction or gaming addiction or whatever it is.”
(Catherine Lynch, Art Centre Manager, Barkly Regional Arts, 2022)

Cyber safety and scams are a concern, with training and awareness required

Interviewees identified a range of cyber-safety issues prevalent in the region from online bullying and harassment, access to inappropriate content, grooming, scams, and social media comments leading to family disputes. Filming and distribution of fight videos on social media and YouTube has become commonplace in many remote communities including Tennant Creek, with potentially significant social and economic impact:

- + “You hear all the anti-social behaviour stuff and that’s always posted online ... You get a lot of people posting violent attacks, fights and all that type of stuff. ... That’s one area we’d like to stop. ... It’s a big issue in Tennant Creek because every time you open up a Facebook page or something there’s someone having a brawl.” (Daryl Fitz, Region 6 Manager, Central Land Council 2022)

The proliferation of fight videos online was seen to be impacting on tourism and the town’s economy:

- + “Our tourists look at what’s going on in Tennant Creek [online] and they drive straight past.” (Daryl Fitz, Region 6 Manager, Central Land Council 2022)
- + “I am on the Tourism Boards ... [the fight videos are] a big thing. So, if you went to YouTube Tennant Creek you’ll see fight, fight, fight, fight, Desert Harmony Opera ... everything else is just negative ... [we are wanting to] put more positive stories up.” (Jeff McLaughlin, Mayor, Barkly Regional Council 2022)

Interviewees discussed possible solutions to address the issues of social media misuse and negative online content, including developing strategies to build local cultural authority in the online space:

- + “Asking communications organisations [e.g. Facebook, Google] to stop [promoting this content]. Quit allowing people to put that type of stuff up ... [just put up] good stuff.” (Daryl Fitz, Region 6 Manager, Central Land Council 2022)

Tennant Creek previously had a Council of Elders and Respected Persons (CERP), which sought to play a role in providing cultural governance in the online space, however this group is no longer operating:

- + “When we had CERP ... we brought the police in, and we brought those young people in ... [We told them it’s an offence to post violent or abusive content] ... So that stopped ... [But now] they’re not being educated about the legal aspects of what they’re doing with their digital footprint. That if they’re using it for mischief making

²⁹ Mobile phones have become the primary means for young people to take and share photos and videos among family and friends via text, not just through social media.

and other things, also accessing bad things online, that they can get into a lot of trouble.” (David Curtis, Executive Manager Operations, Julalikari Council 2022)

Some people argued that cyber-safety issues reflect underlying social issues within the community:

- + “74% of our kids [in the Barkly] do not live with their parents ... I'd say it's worse now than it was when we did the survey ... we can turn up to a house and find up to 27 kids in there ... because it's safer than staying at home because of the alcohol and the fighting and the overcrowding and all the rest of it.” (Karen Hayward, CEO, Papulu Apparr-Kari Language and Cultural Centre, 2022)

Others felt there had been a reduction in the inappropriate use of social media:

- + “[It's] not as bad as it used to be, like Facebook starting big fights in the town, amongst young people especially ... it's starting to go away from that now ... I hear a lot of comments about go and talk to that person face-to-face, don't be a keyboard warrior.” (Linda Turner, Julalikari A.C. Chairperson, 2022)

There were calls for more training in cyber-awareness and digital skills, especially in computer use and online services. Scam calls, texts and online messages are becoming more commonplace, with limited awareness in the community of how to discern and avoid them.

- + “There's not a lot of information about how to use the internet [safely] ... a lot of the kids nowadays use their mobile phones but there's no caution. It would be good for the school to [educate] them about using the internet and some of the risks ... if there was a program, I'm pretty sure that a lot of community mob would be interested in doing it, especially like people my age ... who are more proactive.” (Eleanor Dixon, Governance Coordinator, Barkly Backbone 2022)

Some interviewees raised concerns about the cultural impact of misuse of social media, including breaching cultural protocols:

- + “Last year there was some men's business ... that was recorded and shared on social media and that had a ripple effect through the whole Territory ... there's misuse definitely going on.” (Lucy McGarry, Monitoring, Evaluation and Learning Officer, Barkly Backbone 2022)

In contrast, some participants spoke of the potential for using digital media and apps to support people experiencing trauma and family dysfunction:

- + “[If] a digital app is somewhere where you can go and feel comfortable talking or accessing [support] so we don't have those suicides, we don't have that depression. ... Our kids are dealing with trauma every day.” (Karen Hayward, CEO, Papulu Apparr-Kari Language and Cultural Centre, 2022)

Local Digital Media Content Production, Archiving and Sharing

Local music production and events

There is a strong history of music recording, production and events with community bands and musicians in the Barkly region, supported by Winanjikari Music Centre at Barkly Regional Arts (BRA). This includes a current project to provide music equipment and Garageband recording computers to five communities in the region, along with training and support to undertake local recording of songs, particularly in language.

Winanjikari Music Manager James Winwood explained that most of the recorded music is released online direct to streaming services including indigiTUBE, Spotify, and YouTube. Winanjikari Music are also

helping bands to sign up with APRA to protect their artists' rights and generate royalty income from their online music.

Winanjikari Music also coordinate music events in Tennant Creek, including the annual Desert Harmony Festival, as well as providing fee for service audio visual production for conferences, funerals, and other local events.

Barkly Regional Council are also building a new youth centre adjacent to the swimming pool. Jeff McLaughlin, former Mayor of Barkly Regional Council, said this will include a computer room and a music room with Garageband and an iPad lab for creating digital music and beats.

Digital language and cultural production in Tennant Creek

Language and cultural maintenance are high priorities in Tennant Creek and across the Barkly region, with a range of language and cultural recording activities being undertaken by several organisations.

The Papulu Apparr-Kari Language and Cultural Centre have been operating for 35 years in Tennant Creek with a core function to restore, revive and retain the 16 languages of the Barkly region.

- + "It's all about making sure the language doesn't die ... to learn how to ... to say the words you need to be able to hear them ... [being] our Year of Indigenous Languages ... there seems to be an interest and there seems to be a pride of people wanting to know their own language."
(Karen Hayward, CEO, Papulu Apparr-Kari Language and Cultural Centre, 2022)

CEO Karen Hayward said that Papulu Apparr-Kari employs 100% Indigenous staff, offering traineeships to school graduates to work in the Centre and learn digitisation, archiving, language recording, multi-media production and developing apps and games. Papulu Apparr-Kari has a multi-media unit in Tennant Creek with another in Elliott, where they work with elders to record language and oral histories. They produce audio and video content for CAAMA, NITV and online platforms. Papulu Apparr-Kari are currently planning to produce a podcast about the frontier wars of the region to build awareness of the region's colonial history.



Figure 11: CEO Karen Hayward in Papulu Apparr-Kari's audio-visual archive facility

The Nyinkka Nyunyu Art and Culture Centre, managed by Julalikari, was established to preserve the culture and stories of the Warumungu people. The precinct provides a range of functions: cultural centre, art centre and gallery, visitors centre and café, and archive facility. Nyinkka Nyunyu has run in-house and touring exhibitions and cultural events over recent years, and had works included in major exhibitions in Alice Springs, Darwin, Sydney, and overseas.

Julalikari was recently awarded \$7.8 million through the Arts Trail NT funding to undertake major upgrades to the Centre, including relocation of the café and a new exhibition space incorporating audio-visual content of local country and cultural stories, as well as an archive space for artifacts and provide access to the digital archive.

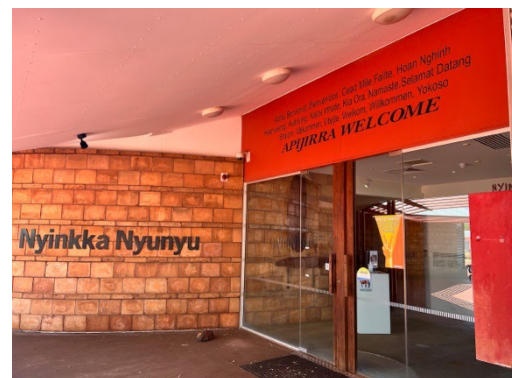


Figure 12: Front entrance to Nyinkka Nyunyu Art and Culture Centre

Following workshops held by Desart, digital photography has become part of the Nyinkka Nyunyu artists' practices. The art centre hopes to develop these skills further. Nyinkka Nyunyu was completing a feature length film, predominantly in language, at the time of our visit, and staff member and artist Jimmy Frank was keen to undertake more digital media projects to share and preserve Warumungu culture. Norman Frank, a Julalikari director, was also making a short documentary with independent film-maker Kim Zoe Evans during our visit.

As well as music production and visual arts, BRA also supports digital media production. BRA previously ran a digital media skills project called Media Mob, delivering training and production support during the early 2010s in Barkly communities. With a lot of interest from local bands to create video clips of their songs to share on YouTube and ICTV, BRA is re-developing a multimedia arm to increase its digital media production and has employed a media producer. BRA also see the potential of supporting young people who are active on TikTok to become the next generation of content creators. There is demand for digital content creation programs for youth.

- + "A lot of people would be interested in doing that, especially the young people. Because that then enables them to create content ... [that's] relevant to their community [and culture]. But that's not happened yet [young people are] always on their phones ... [and] social media. So, it would be good to sort of have something that they could use." (Eleanor Dixon, Governance Coordinator, Barkly Backbone 2022)

Archiving Facilities and Activities in Tennant Creek

Papulu Apparr-Kari Language and Cultural Centre established an extensive digital archiving program in 2020, to digitise the extensive collection of language recordings and paper records created over the Centre's 37-year history. The digitised records are then catalogued in an extensive database to enable community access to the collection and the ability to search for records.

- + "So that means scanning, photographing, digitalising, re-recording, and from that we develop more resources to be able to have the language used in the future ... [We get] high school kids and do a school-based apprentices and kind of put them through my media centre." (Karen Hayward, CEO, Papulu Apparr-Kari Language and Cultural Centre, 2022)

Papulu Apparr-Kari has been repatriating language materials with several linguists, schoolteachers, and others who are returning materials for archiving. A key challenge is managing access rights to the recordings in the collection. They have contracted Terri Janke Lawyers to advise on a process for managing intellectual property and copyright, as well as access rights.

The Centre re-purposes historic records as different products, including new language resources, books, lesson plans and apps for teaching languages. This includes a popular language learning app called 'Feed the Monster' which helps users learn to construct sentences in language. They have received ABA funding to digitise recordings of two key languages from Elliott and Tennant Creek and are in the process of developing apps for each of the 16 Barkly region languages. The Centre also recently completed a series of plant and animal books in language. Papulu Apparr-Kari are also working with with the Australian Numeracy and Literacy Foundation to support similar projects in other regions, including the Torres Strait Islands, Cape York and the Anangu Pitjantjatjara Yankunytjatjara Lands.

Nyinkka Nyunyu Art and Culture Centre also have a digital media archive set up to store old local heritage collections of photos, community records, video and audio recordings, and other materials. The *Mukurtu Wumpurrarni-kari Archive* was developed by the Warumungu community in Tennant Creek in 2007 in

collaboration with Dr Kimberley Christen and Craig Dietrich³⁰ to enable local management and access control of their cultural and social heritage collection. Mukurtu is a Warumungu word meaning ‘dilly bag’ or safe keeping place for sacred materials. Warumungu elder, Michael Jampin Jones chose the name Mukurtu to describe a safe keeping place for Warumungu people to share stories, knowledge, and cultural materials properly using their own protocols³¹.

While there is currently limited access to the archive, Nyinkka Nyunyu have received funding for a purpose-built archive space for artifacts and the Mukurtu computer. They are now seeking funding for two archive worker positions to manage and build the collection and support community access.

Nyinkka Nyunyu has also been involved in repatriation of Warumungu content and cultural artefacts from AIATSIS in Canberra, as part of ongoing efforts to return Warumungu objects to country, including one item from Virginia, USA.³²

The Central Land Council office also has an archive computer, using the Keeping Culture archive software and containing a vast regional media collection of photos, videos, and records which people can access.



Figure 13: Street map at entrance to Ngalpa Ngalpa (Mulga) town camp.



³⁰ The Mukurtu CMS is now an open-source platform support by Washington State University and used by First Nations communities internationally to manage and share digital cultural heritage according to local protocols. The software enables collections to be locally managed to ensure restriction of access to sensitive and cultural materials, such as family specific or men only /women only content.

³¹ Source: <https://mukurtu.org/about/>

³² Julalikari A.C. Annual Report 2020-21: p47

7. CONSIDERATIONS FOR LOCAL DIGITAL INCLUSION PLAN

Developing a local Digital Inclusion Plan would enable a coordinated whole-of-community approach to address some of the challenges outlined in this report. It would also provide a useful tool for advocacy to government, industry, and fundraising efforts.

Strategies proposed during community and agency consultations are outlined below to assist community stakeholders in planning efforts to improve communications services and digital inclusion in Tennant Creek. These are not intended to be prescriptive, nor are they listed in order of priority.

Identified Issue	Possible Actions	Potential Stakeholders
Access		
<p>Stage 1 and 2 of Wi-Fi network for Community Living Areas funded and installed, but no funding for network operations.</p> <p>Stage 3 yet to be funded.</p>	<p>Establish a Wi-Fi Network Management Committee with representatives from the seven CLAs to develop a Management Plan and policies, operational budget and sustainable model for funding or cost recovery;</p> <p>Apply to the Northern Territory Aboriginal Investment Corporation for Stage 3 funding and operational costs for five years.</p>	<p>Julalikari Council Aboriginal Corporation, Northern Territory Government, Central Land Council, Northern Territory Aboriginal Investment Corporation, NBN, Easyweb Digital</p>
<p>Barkly Regional Council and Julalikari both developing Wi-Fi projects which risk working at odds to each other.</p>	<p>Barkly Regional Council and Julalikari to meet to discuss Wi-Fi project objectives and collaborate on planning around hotspot locations, access times, content filtering and usage protocols to limit anti-social behaviour risk.</p>	<p>Barkly Regional Council, Julalikari Council Aboriginal Corporation, Central Land Council?</p>
<p>Lack of community access computers for developing basic digital skills</p>	<p>Review identified needs for community access computers including access to online services, training or mentor support, elder support, workplace readiness training, etc.</p> <p>Review options for appropriate space/s for community access computers, printers etc., as well as mentor support/ staffing needs, in town and at community centres in CLAs, to address these needs.</p> <p>Recognising the diversity of community needs may require multiple sites for different purposes.</p>	<p>Julalikari Council Aboriginal Corporation, Central Land Council, Barkly Regional Council</p>

Identified Issue	Possible Actions	Potential Stakeholders
Limited regional coordination and planning to address communications needs of remote communities and homelands in the Barkly region	<p>Establish a Regional Communications planning group, comprised of stakeholders from Barkly Regional Council, community councils, homelands, health services, in consultation with NT Government; seek input from telco providers where needed.</p> <p>Identify existing services and planned upgrades (including 3G to 4G upgrades by June 2024) and priority areas for further upgrades; identify options for funding or existing programs, including Regional Connectivity Program or ABA funding.</p>	Barkly Regional Council, Urupuntja Council Aboriginal Corporation, Central Land Council, Northern Land Council, Julalikari, community councils from Ali Curung, Anyinginyi Heath Service, Urupuntja Heath Service, NT Government, Telstra, NBN
Affordability		
Primary use of pre-paid for data (high data cost), including for household use; limited awareness of changes to mobile pre-paid and post-paid plan options or satellite service options.	Provide easy-to-read materials in IGA store and post office (posters, brochures) and radio messages outlining options for more affordable mobile and data services via Telstra, Optus and NBN fixed line retail service providers	Julalikari, IGA, ACCAN, CAAMA, Telstra, Optus, NBN retail service providers
Need for free access to online government services	This will be addressed by the Wi-Fi project and BRC hotspots in town if services are free to access. The Tennant Creek library currently provides free Wi-Fi with daily data limits.	Services Australia / Centrelink, Barkly Regional Council, Australia Post
Digital Ability		
Mentor support in use of government and online services when needed.	Employment of Digital Mentor, possibly based at Centrelink office or post office, to support people with limited digital ability to use government and online services and apps, set up phones, add recharge data etc.	Services Australia / Centrelink, Australia Post, Julalikari, other government agencies
Demand for workforce readiness IT skills.	Provide specific training workshops or one on one support in workforce readiness skills as needed (e.g. office software, keyboard/typing skills, file management, search and online tools, preparing a CV, letter writing, email use, job search etc).	Julalikari, Employment service providers (Rise-Ngurratjuta, GTNT Group), literacy support agencies (Salt Bush)

Identified Issue	Possible Actions	Potential Stakeholders
<p>Concerns around cyber-safety issues especially scams and posting of violent imagery or posts inciting conflict on social media.</p>	<p>Consider re-establishing the Council of Elders and Respected Persons;</p> <p>Run cyber-safety awareness workshops (including in schools, workplace and for elders);</p> <p>Awareness campaign to highlight risks/ issues using resources designed/adapted for local content (on radio, Facebook pages, posters etc).</p>	<p>Julalikari A.C., NT Police, Night patrol volunteers group, Office of e-Safety/ Be Deadly Online, Barkly Regional Arts, CAAMA, 8CCC, inDigiMOB</p>
Media Services and Production		
<p>CAAMA and 8CCC radio studios currently not broadcasting local programming</p>	<p>Encourage CAAMA and 8CCC to recruit and train local broadcasters to do regular radio shows from Tennant Creek</p>	<p>CAAMA, 8CCC, Barkly Regional Arts</p>
<p>Need to promote positive online content from Tennant Creek to counter negative content dominating online searches.</p>	<p>Seek production funding for locally produced films/ animations/ photography of community and cultural stories to share online and at new Nyinkka Nyunyu gallery and other spaces, including ICTV, NITV;</p> <p>BRA and/or Papulu Apparr-Kari to run multi-media content production workshops for young people to document local community/ cultural stories, create video clips etc;</p> <p>Maybe commission a series of local youth-produced TikTok videos about life and culture in Tennant Creek and Barkly region to share online;</p> <p>Employ a Communications person to work at Nyinkka Nyunyu to promote local activities update refresh social media feeds with positive local content/stories.</p>	<p>Julalikari A.C., Barkly Regional Arts, Nyinkka Nyunyu Art and Culture Centre, Papulu Apparr-Kari Language and Cultural Centre, CAAMA, ICTV, NITV, inDigiMOB</p>

Appendix 1: Summary of Survey results

The following results are based on the initial analysis of surveys with 44 residents, of which 93% identified as Aboriginal. As outlined in the Executive Summary the final results, after data cleaning and weighing against ABS statistics, may differ from these results. These authoritative results will be available via the Australian Digital Inclusion Index website and data dashboards in mid 2023.

Demographics

- + **Gender:** 61% of respondents were female and 39% male.
- + **Identity:** 93% of respondents identified as Aboriginal.
- + **Education:** 18% have completed up to year 12, 9% have completed a Certificate course, 16% have attained a Diploma or Bachelor Degree, and 39% attained year 10 or lower.
- + **Employment:** 52% were employed or engaged in CDP activities (48% of these full-time) and 20% were unemployed. 39% had been looking for work in the last month.
- + **Welfare:** 66% received some form of government pension or benefit, primarily JobSeeker, Youth Allowance or a pension.
- + **Housing:** 59% lived in multi-generational or shared households, with an average of 5.1 people per house. 49% of respondents said they pay rent to the public housing authority, with 37% boarding or living at home.
- + **Health:** 23% had a long-term disability or health condition.
- + **Language:** 77% indicated they spoke a language other than English at home. 32% speak Warlpiri, 25% speak Alyawarr, and 21% speak Warumungu, with 9 other Aboriginal languages spoken. 95% of respondents indicated they understand spoken English (66% very well and 32% quite well), and 100% indicated they understand written English (61% very well, 39% quite well).
- + **Income:** The average weekly household income was about \$850. 30% of respondents' household income was \$300 per week or lower, 34% between \$650 to \$1250 per week, and 20% between \$1250-3000.

Phone use

- + **Phone Use:** 82% (36 of 44) of survey respondents used their mobile phone for phone calls, with 16% (7) using someone else's mobile phone. 3% (2) use a fixed line phone in their home, 8% (5) used a phone in a community office or workplace, and 3% (2) said they do not have any phone access.



61%
female respondents



93%
Torres Strait Islander or Aboriginal and Torres Strait Islander




52%
Employed (full-time, part-time, casual, CDP)



80%
Own or share a mobile phone



\$158
Average monthly household expenditure



37%
Listen to local radio service CAAMA daily or weekly



66%
Get emergency information direct and in person

- ✦ **Public Phone:** 11% (5) reported using the public phone regularly, with 66% using it at some time. 18% of respondents said that the public phone was reliable, 11% said it was not reliable and 36% said it was sometimes reliable.
- ✦ **Phone ownership:** 80% of respondents said they owned a mobile phone. Of those with phones, 74% had smartphones as their main mobile phone, and 83% used pre-paid services.
- ✦ **Data use:** The average monthly data allowances were: 12 (27%) have up to 10GB/month, 11 (31%) 11-20GB/month, 11 (31%) 21-80GB/month and one person over 100GB. However, 60% reported exceeding their data limit at least once over the past year, and 20% (7 people) reported exceeding their limit every month, suggesting that data use is higher.
- ✦ **Household Expenditure:** There is an average of 3.2 mobile phone services per household. Of the 35 responses on household mobile expenditure, the total expenditure was \$5520/month, an average household cost of \$158/month. 15 (43%) of households paid up to \$100/month, 10 (29%) paid \$101 - \$200/month, 7 (20%) paid between \$201-\$300/month, and 3 (9%) paid over \$300/month.

Media use

- ✦ **Radio Listening:** The most popular radio stations were First Nations and ABC services, with 37% listening to the First Nations radio service (CAAMA) daily or weekly and 37% listening to ABC radio daily or weekly. 18% said they never listen to radio.
- ✦ **Radio Access:** There are various ways that people listen to radio (multi-choice question) – 50% of respondents said they listen by car radio, 36% listen on a radio at home, and 36% listen via streaming on a phone or tablet.
- ✦ **TV Access:** (Multi-choice question) 66% of respondents reported getting broadcast TV via TV antenna, 18% reported using streamed services on their phones, 3 people used a VAST satellite, and no one reported having subscription satellite TV services. 20% reported never watching TV.
- ✦ **TV and Online Content:** YouTube, commercial television stations (7,9,10), and ABC TV were most popular (all with 41% daily viewing) followed by SBS TV (36% daily) and streaming services (Netflix, Stan etc- 32% daily). NITV was a popular weekly watch (27% daily and 32% weekly).
- ✦ **News and Information Services:** The most popular source of news and information were direct and in person (57% daily), followed by ABC TV (39%), Facebook (34%), and online news services (32%). ABC Radio (27%), commercial television stations (7,9,10 – 27%), and community noticeboards (23%) were secondary sources of news and information.
- ✦ **Emergency Information:** The most commonly used sources of emergency information were direct and in-person (66%), ABC Radio (61%), ABC TV (48%), and Facebook (45%).

Internet use

- ✦ **Latest Internet Use:** 68% (30 of 44 people) had used the Internet in the last week, with 5 people (11%) having used it within the previous 1-3 months and 9 respondents (20%) having never used the Internet.
- ✦ **Regular Internet Users:** Of those who had used the Internet within the last three months (80%, 35 people):

MAPPING THE DIGITAL GAP



Julalikari Council
Aboriginal Corporation

- 17% said they used the Internet almost constantly and another 46% several times a day, with 20% once a day
 - The most common online devices used are the smartphone (77%), smart TV (40%), laptop computer (26%), and desktop computer (23%).
 - Many people use Internet provided by others, with 31% reporting using the Internet at their place of work or education, 29% at the house of friends or family and 26% using free Wi-Fi in public spaces.
 - The main reasons people gave for not using the Internet more often were (multiple choice): “I do not need to use the internet more often” (46%); “The internet is too expensive for me” (43%); “I am concerned about privacy or scams” (34%); “I do not have convenient access to the internet” (29%); “I am concerned about inappropriate content and causing conflict” (23%); and “I do not have access to content in my own language” (20%).
 - Most people (46%) were not concerned about the time they spent online, with 34% slightly to moderately concerned about how it affected their wellbeing and relationships, and 11% extremely concerned.
- + **Low Internet Users:** The 9 people who never used the Internet cited the following as their main reason: not needing to use it (89%); no convenient access (44%); the Internet is not a priority (33%); and lack of confidence (22%) as secondary reasons. Only 1 low Internet user had considered using the Internet since social and physical distancing restrictions were introduced due to COVID.
 - + **Impact of COVID-19 on Use:** The following forms of COVID-19 restrictions were cited as reasons for increased Internet use: Lockdowns (52%), proof of vaccination requirements (50%), public health and COVID-19 messaging (50%).
 - + **Fixed Broadband Services:** The vast majority of respondents (84%) do not have any form of fixed home Internet. Of the 7 (16%) respondents with fixed broadband, 4 (9%) had NBN fixed line services.
 - + **Cost of Fixed Broadband:** 3 of the 7 respondents with fixed broadband connections said their household used less than 100GB data per month, 1 used between 200 -300GB per month and 3 had unlimited data, with 3 exceeding their limit at least once over the last year. The average cost was \$53.86 a month.
 - + **Mobile Broadband Service:** 3 respondents (7%) used a form of mobile broadband other than phone data (e.g. portable 4G modem) for data sharing, with 2 of these pre-paid and one on a billed plan.



68%

Of survey respondents used the Internet in the past week



20%

Never use the Internet



41%

Of regular users gave the reason “The Internet is too expensive” for not using the Internet more



46%

Of regular users gave the reason “I do not need to use the internet more often”



84%

Of households do not have any form of fixed home Internet



88%

Can send and receive emails



89%

Use online banking



95%

Use social media to keep in touch with family or friends

- + **Affordability of Internet:** 48% of respondents said that they have had to cut back on essential household at least sometimes to afford personal or household Internet within the past six months, with 36% compromising on speed and/or quality on their connection to prioritise affordability.

Digital Ability

- + **Overall Digital Ability:** Digital literacy is at a moderate level in the community.
- + **Regular Internet Users:** Of those who regularly or semi-regularly use the Internet (35 out of 44 people):
 - o Most people reported being able to send and receive emails (88% said 'very true' or 'mostly true'), find and install apps/software (91%), open a new Internet browser tab (94%), connect to a Wi-Fi network (91%), download and then open a file (89%), use a mobile phone or device as a Wi-Fi hotspot (89%), and complete online forms (83%).
 - o Online security and cyber-safety awareness are also reasonably high, with most people knowing how to set and manage secure passwords (94%), identify which apps/software are safe to download (86%), adjust privacy settings (86%), check if information is trustworthy (91%), add or remove friends or followers on social media (86%) and manage and decide what personal information to share online (83%).
 - o Many people are able to produce online content (51%) and post videos (63%), but there was lower confidence in creating websites (26% said 'very true' or 'mostly true'). 60% are aware of online copyright law.
 - o Most people know how to connect smart devices (e.g. smart TV) to the Internet (80%) and adjust privacy and security settings (71%).
 - o The main online activities include accessing government services (91%), online banking (89%), accessing health information (79%), online shopping (71%), learning or study (65%), comparing prices (63%), and online buying and selling (60%).
 - o Social media is popular, with 89% of respondents saying they used the Internet for keeping in touch with family or friends, 80% used it for engaging with community and 83% met new friends or reconnecting with old friends online.
 - o 94% of respondents had used online entertainment services in the past six months (e.g. streaming video/music, playing online games) and 31% had attended a music, arts, or cultural event online.
 - o In the past 6 months, 54% had used a smartphone app to navigate a route, and 34% had used a public transport app.

Comments

- + We need more Wi-Fi in Tennant Creek and better mobile in remote communities.
- + Learn how to use internet instead of relying on family.
- + Please use less mobiles and internet in the structuring of society for us. Thank you.
- + I live in Pmara Jujunta near Ti Tree. We need community access computers to learn on.
- + Want more services and apps to support language and culture and be culturally appropriate.
- + I don't have a home and don't know how to use the mobile phone or internet. I need a place to stay.
- + I don't have TV because it's too expensive. I don't use internet and closed my Facebook down. It's not good.
- + I see Facebook as a place for trouble



We need more internet access facilities and Wi-Fi in Tennant Creek. The public phones are all smashed so no phones to use. (Survey comment)



Figure 14: Phone booth outside Wuppa town camp.



Appendix 2: Community Communications Audit

About the Community	
Community Name:	Tennant Creek NT
Alternate name	
Traditional owners/ Language group	Warumungu
Location (Coords)	19.6459° S, 134.1910° E
Region	Barkly
LGA/Shire/ Regional Council	Barkly Regional Council
Land Council	Central Land Council (to south); Northern Land Council (to north)
Regional Service Centre, distance	508km from Alice Springs; 990km to Darwin
Remoteness (ABS)	Very Remote
Population Data - ABS 2021	
ABS link	https://abs.gov.au/census/find-census-data/quickstats/2021/SAL70251
ABS link- Aboriginal and Torres Strait Islander Quickstats	https://abs.gov.au/census/find-census-data/quickstats/2021/IREG707
Total population	3080
Aboriginal and Torres Strait Islander population	1707 - 55.4% (241 - 7.8% not stated)
Gender breakdown	50.9% male/ 49.1% female whole population; 49.7% male/ 50.3% female ATSI population
Median age and breakdown	28 ATSI population / 33 whole population
Number of families and number of children per family	662 whole population /
Language group, no. of first language speakers	Warumungu - 316 (10.3%), Alyawarr - 159 (5.2%), Warlpiri -136 (4.4%), Warlmanpa- 38 (1.2%)
% Aboriginal and Torres Strait Islander people who speak an Aboriginal and Torres Strait Islander language	44.8% (7.2% not stated)
% Aboriginal and Torres Strait Islander people who speak English at home	48.2%
Employment levels: number of people working, on Jobseeker, CDP, aged or disability pension etc	Data not yet available
Education levels / highest level attained (All persons- 15 years and over)	Did not go to school- 2.2%; Year 9 or below - 15.9%; Year 10 - 14.5%; Year 11 - 6.2%; Year 12 - 10.1%; Certificate level III - 9.4%; Certificate level IV -2.7%; Bachelor Degree 15.1%; Advanced Diploma/Diploma - 6.9%; Not stated - 16.9%

Number of dwellings; Average people per household/ bedroom	943 occupied private dwellings; 2.7 people per dwelling all households/ 3.7 for ATSI households
Housing suitability	1.4 people per bedroom ATSI households / 31.4% of houses need 1 or more extra bedrooms (3% for other households)
Median weekly household income	\$1,210 for ATSI households (\$1,996 for other households)
Median weekly personal income – for residents over 15 years of age	\$336 for (\$1,333 for non-Indigenous persons)
Average weekly rent	\$145 rent for ATSI households/ \$1083 monthly mortgage for ATSI households
Community Services and Plans	
Community Layout Plan	See Tennant Creek Land Use Plan (Northern Territory Planning Commission)
Agencies in community	Barkly Regional Council, Central Land Council, Northern Land Council, Julalikari Aboriginal Corporation, Anyinginyi Health, Papulu Apparr-Kari Aboriginal Corp, NAAJA (North Australian Aboriginal Justice Agency), Papulu Apparr-Kari Aboriginal Corporation (Home or House of Language), Barkly Regional Arts, Barkly Backbone, plus numerous others
Visiting agencies	Numerous
Community Development Plan	Barkly Regional Council 2021-22 Regional Plan
Power supply/type/backup in community; Relevance to telecommunications	Diesel generator for whole town - no reports of reliability issues
Use of power cards in households	Yes, expenditure unknown
Basics card site?	Yes
Types of Communications Available	
Public phones	About 10 - 2 near post office (both not working), 1 at Wuppa camp, 1 at most other camps
Home phones	Unknown
Mobile – 3G, 4G, 5G, small cell (satellite backhaul), provider, location of base station	4G base station on Maloney St (opposite Julalikari office), 4G mini tower on top of hill near airport (low signal strength), 4G/ 5G tower coming to east side of town
Coverage description	Good signal to most parts of town, some congestion during peak periods, reports of some dead spots around town, reaches about 20km out of town to south, does not reach Lake Maryanne 5km to north due to hills
ADSL, number of connections	NBN FTTN available in Tennant Creek, with good takeup by non-Indigenous households
Business grade services, number of connections	Anyinginyi Heath has fibre connection
Fibre to community	Yes

Satellite services, number, locations, provider	Not many needed due to 4G coverage
UHF or HF Radio	Unknown
Status of services: faults, issues, speeds during peak use time etc	Relateively reliable mobile coverage, some congestion during peak periods on 4G and NBN services
Communications Programs History	Not required due to large population
Any planned upgrades?	4G/ 5G tower coming to east side of town; WiFi network to be rolled out to 4 CLA's in next few months; WiFi hotpots to be rolled out to 6 sites in main street by Barkly Regional Council
Emergency information system	N/A
Telemetry network	Unknown
Media Services Available	
Radio services broadcast	FM- 87.6- Christian radio; 88 FM - tourist Gold; 98.1FM - ABC Classic; 103.7FM- commercial; 102.1- 8CCC; 102.9- CAAMA 8 kin FM; 103.7- radio TAB; 104.5- ABC Alice Springs; 106.1FM- commercial?; 107.7 FM- commercial; AM- ABC Alice Springs and ABC National
TV services	Broadcast of all 16 Freeview services
RIBS radio station	8CCC and 8KIN CAAMA both have radio studios in Tennant Creek - neither staffed currently
RIMO	CAAMA
Other media services	Tennant Times moved online in 2021
Community Access Facilities	
Internet access facilities	Leading Edge computers have community access computers, mostly used by nonIndigneous people, otherwise very few community access computers; youth computers nad iPads with WiFi planned for new youth centre under construction
Public Wi-Fi availability and mode	No public WiFi currently; Julalikari and Barkly Regional Council both working on WiFi projects
Access computers available in other facilities	Not currently
Programs supporting community access	
Expenditure Data	
Amount of money being spent on telecommunications per month	No details
Expenditure on mobile prepaid cards per month	No details

Expenditure on Wi-Fi vouchers per month	No details
Any cost saving mechanisms in place	No details
Training / Skills Data	
Number of community members that have undertaken digital training	No details
Nature and provider of training programs	GTNT and Rise Employment both provide digital skills training for workforce preparation;
Training options available	TAFE, Batchelor Institute and CDU no longer have full-time presence in Tennant Creek
Any workplace digital skills training	Julalikari, Anyinginyi Heath, Papulu Appurr-Kapi Language Centre, Barkly Regional Arts and Nyinkka Nyunyu all provide some on the job staff training in use of digital systems
Staff/resources to support digital skills/access	Limited
Use of online services/ applications	
Apps or digital tools in use	Archiving system at Papulu Appurr-Kapi, SAM database at Nyinkka Nyunyu
Use of My Gov, government services, banking	Good use of MyGov and online services among younger people
Number of people using social media	No data - see survey results
Number of people using email	No data - see survey results
Number of people using streaming services	No data - see survey results
Telehealth usage	No data - see survey results
Online education or training	No data - see survey results
Online court hearings or prison visits	No data - see survey results
Cyber-safety or scam support	No data - see survey results

Appendix 3: Coverage Maps

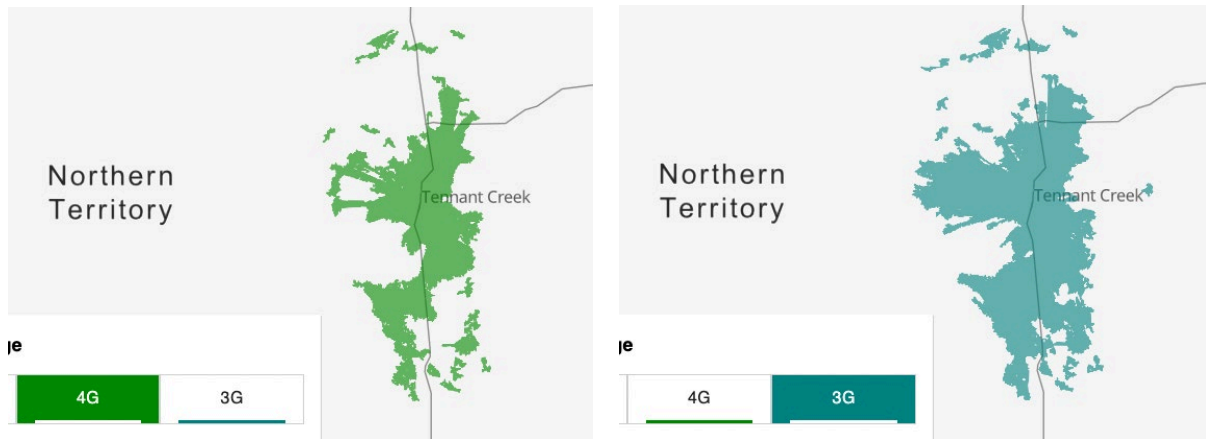


Figure 15: Telstra 4G and 3G coverage of Tennant Creek (Source: <https://www.telstra.com.au/coverage-networks/our-coverage>)

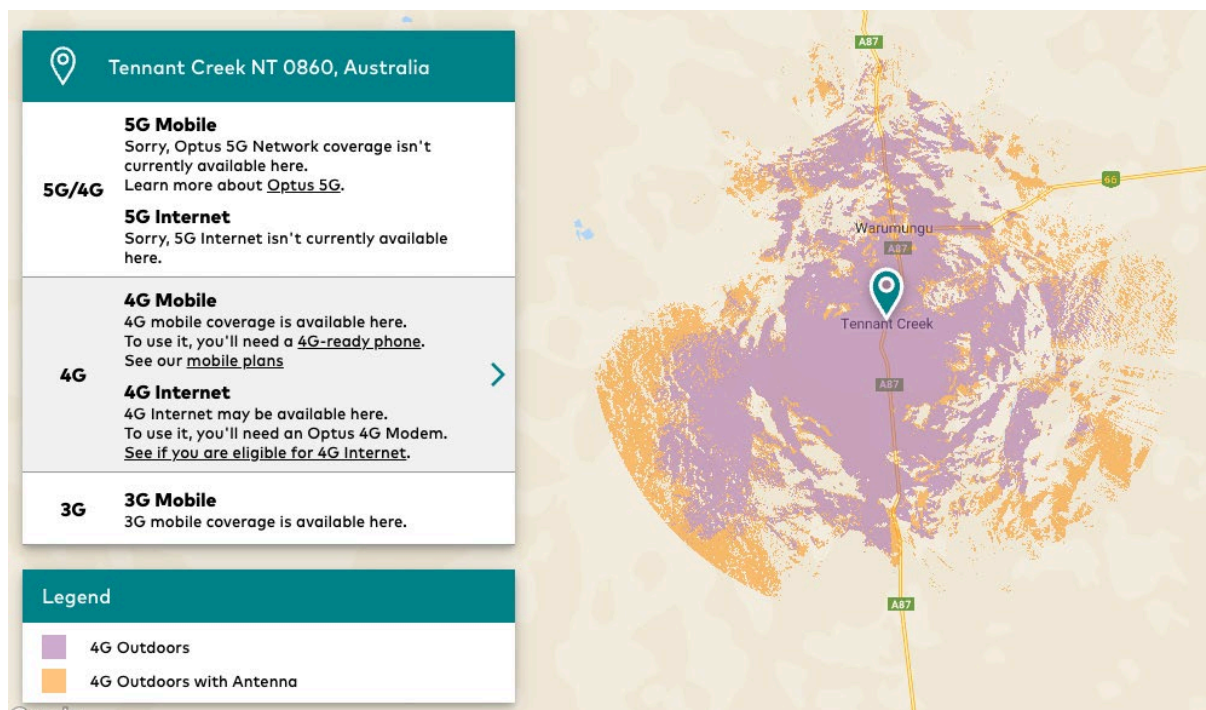
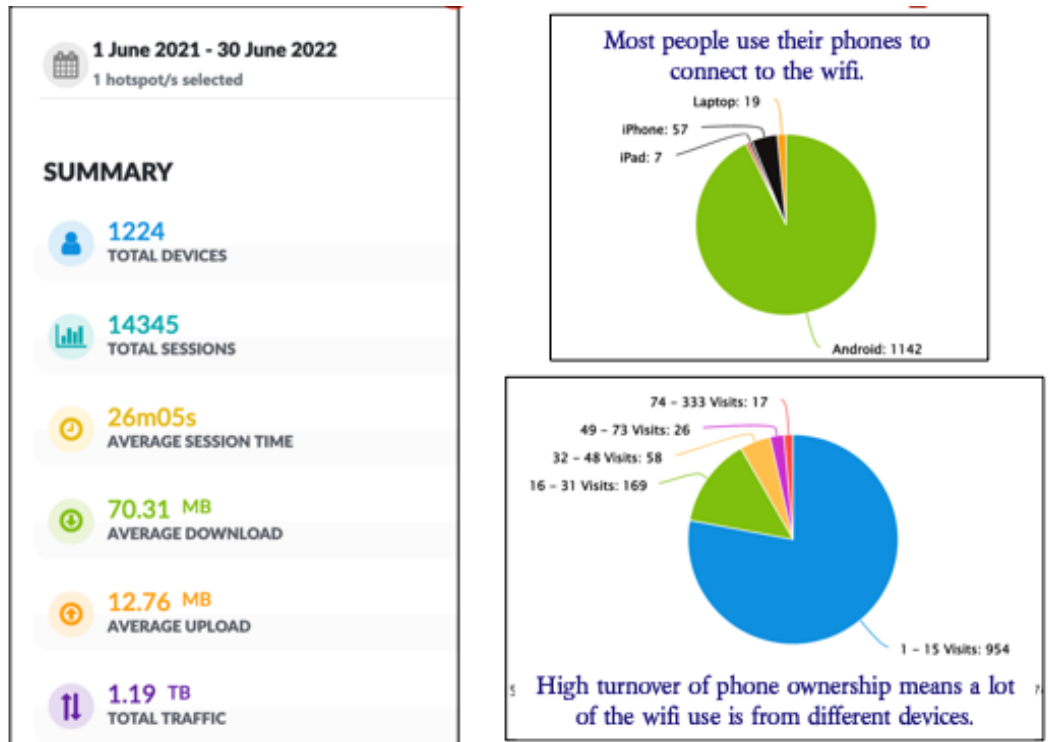


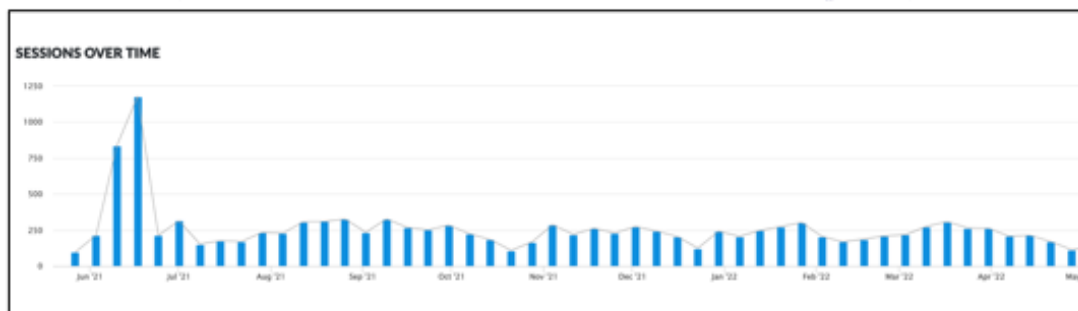
Figure 16: Optus Coverage map for Tennant Creek (Source: <https://www.optus.com.au/living-network/coverage>)

Appendix 4: Ali Curung Wi-Fi Hotspot Usage Analytics

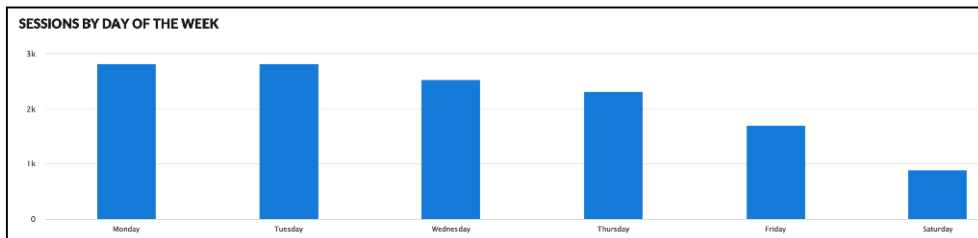
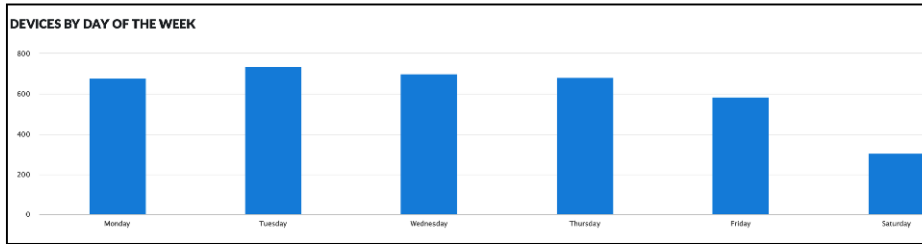
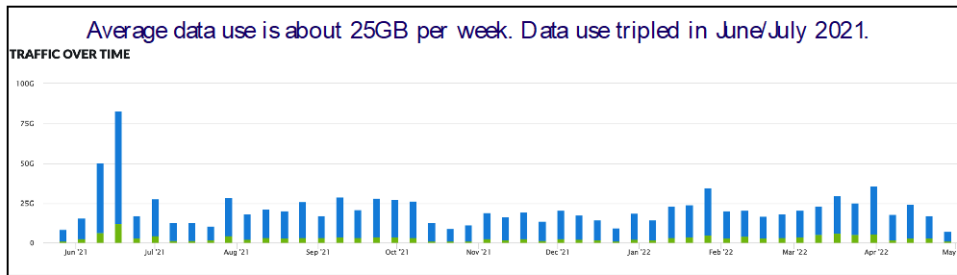
The report below outlines community use of the WiFi hotspot at Ali Curung over 13 months from its installation date on 1st June 2021 to 30th June 2022. It was provided by Central Australia Youth Link Up Service (CAYLUS) to demonstrate the value of free Wi-Fi services in remote communities, and its usage to convey health messages during COVID-19 lockdowns.



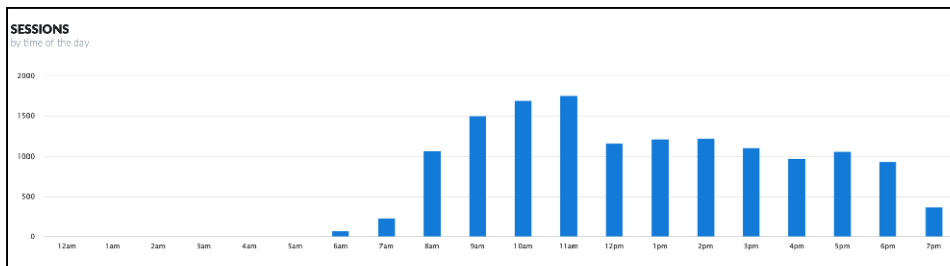
There was a big spike in use (more than double) of the wifi hotspot in June/July 2021. Mostly, there are between 50 - 100 devices connecting to the wifi hotspot every week.



Most of those devices are connecting to the wifi hotspot multiple times in a week, averaging about 250 connections per week per device.



Most wifi hotspot use is in the early part of the week.



Morning times are the busiest.

CAMPAIGN VIEWS					
CAMPAIGN	TOTAL VIEWS	IPHONE	IPAD		
CLCALicung-Fri-Sat	1297	20	1	1271	5
CLCALicung-Sun	482	6	1	473	2
CLCALicung-Mon-Tue	2750	52	2	2668	27
CLCALicung-Wed-Thu	2443	50	1	2374	17
Total	6972	128	5	6786	51

A COVID vaccination campaign in Warlpiri was run as part of the wifi log-in. Brief video messages from local, known people talking about vaccination were put on the wifi log-in page. This proved to be a good way to provide information of relevance and interest to the local community.

Appendix 5: Photos of Research Activities



Figures 18 & 19:
Daniel with Papulu Apparr-Kari CEO Karen Hayward and Central Land Council Manager Daryl Fitz



Figures 20 & 21:
Lyndon with Julalikari Chairperson Linda Turner (LT) and Daniel doing survey with resident.



Figures 22 & 23: Key Aboriginal-run services in Tennant Creek include Anyinginyi Health and Julalikari Aboriginal Corporation



Figures 24 & 25: The Barkly Aboriginal Alliance will inform the Barkly Regional Deal. BRA supports regional arts, music and media activities.