

REGIONAL DIGITAL STUDY

Central West Queensland

February 2023

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List of Acronyms

ABS	Australian Bureau of Statistics
ADII	Australian Digital Inclusion Index
CRESC	Centre for Regional Economies and Supply Chains
CWQ	Central West Queensland
IC	Indigenous Council
NBN	National Broadband Network
NBN Co	National Broadband Network Corporation
LGA	Local Government Area
QLD	Queensland
RAPAD	Remote Area Planning and Development Board
RC	Regional Council
RDA	Regional Development Australia
SC	Shire Council

EXECUTIVE SUMMARY

Digital access in regional Australia is low in comparison to major cities resulting to digital inequalities which is reflected in the Australian Digital Inclusion Index (ADII). The digital inequality has been identified as one of the main obstacles to thrive regional development. The Australian Digital Inclusion Index (ADII) in all local government areas (LGAs) within the Central West Queensland (CWQ) region, except Central Highland Regional Council, are below the national average. Development of digital infrastructure and technologies in the region is, hence, an urgent need.

This regional digital study aims to address three main objectives across the geographic area which includes the local governments of Barcaldine Regional Council, Barcoo Shire Council, Blackall Tambo Regional Council, Boulia Shire Council, Diamantina Shire Council, Longreach Regional Council, and Winton Shire Council:

- (1) examining the digital landscape where current and future digital demands may lie;
- (2) identifying connectivity technology and infrastructure opportunities related to internet carriage services in the region; and
- (3) proposing a digital action plan through relevant stakeholder engagement, and identifying funding programs and support from different entities, to invest in and improve internet carriage services across the CWQ region.

The study employed mixed methodologies which were designed to achieve its research objectives, including desktop review, analysis of secondary data, stakeholder survey, and stakeholder workshops.

The report features major findings related to current digital connectivity status in the CWQ region, the importance, current use, and potential use of digital technologies, digital infrastructure gaps and needs, digital service quality, technology adoption, leadership, as well as the region's digital issues and challenges. It is suggested that the levels of digital connectivity in urban and rural CWQ are currently quite mixed.

The proposed digital action plan which includes actions for the CWQ region in relation to three fundamental dimensions of digital inclusion, namely access, affordability and ability, as well as suggested funding sources, has also been provided. The recommended actions are associated with seven strategic areas, including: community engagement; targeted geographical areas; infrastructure upgrade; rate and cost; digital skills; collaboration; and governance & business culture. A summary and LGA specific actions are proposed in the appendices (D1-D13). Appendices 1 and 8 are copied from "Regional Digital Study- Wide Bay Burnet, Banana and Gladstone (WBBBG)" report with the permission from the project funding agency. Research reported in these appendices are presented in the WBBBG's report. We would suggest reading these appendices in conjunction with the WBBBG's report.

1. INTRODUCTION

Digital connectivity is a critical factor in the creation of digital economy, which can provide great opportunities to diversify Australia's regional economies, improve the regions' chances for workforce attraction and retention, and enable their global economic participation and competitiveness. Deloitte Access Economics estimated that Australia's GDP was 6.5% or \$126 billion larger in 2019 due to productivity benefits of digital technologies. Burunciuc (2021), in an article published in the World Economic Forum, suggests that countries with strong digital infrastructure can mitigate up to 50% of the negative economic impacts from pandemics and that just a 10% increase in broadband activities can add at least 1% to the economic growth.

Enhanced levels of digital connectivity also have significant social impacts in terms of digital inclusion. Digital inclusion is about "ensuring that all Australians can access and use digital technologies effectively" (Australian Digital Inclusion Index (ADII), 2022, p.1). We are now "experiencing an accelerating digital transformation in many aspects of economic and social life, and we all should have the opportunity to benefit from digital technologies" to manage our health, access education and services, participate in cultural activities and civic life, organise our finance, follow news and media, as well as connect with family, friends, and the wider world (ADII, 2022, p.1). Digital inclusion is deeply intertwined with social inclusion (Helsper, 2008). According to the ADII (2018), digital inclusion is not only about the internet or technology, but also people's digital connectivity opportunities as a channel to enhance the quality of life. Digital exclusion, thus, can have substantial social exclusion consequences for residents, businesses, and communities. Digital inclusion is therefore important for a fair and equitable society (Marshall et al., 2021). The COVID-19 pandemic has also exacerbated some key challenges and brought about a greater reliance on digital connectivity for social inclusion activities including work arrangements, job opportunities, and other social services (Mabbott et al., 2020; Marshall et al., 2021).

Developed digital infrastructure and technologies are key to ensuring high-speed reliable digital connectivity in the region. Nevertheless, not all Australian regions are well connected to the National Broadband Network (NBN) or other types of internet carriage services. Remote Australia regions often experience digital disadvantages (Afshar Ali et al., 2020) and the remoteness is among critical issues causing digital inequality (Park, 2017). Many regional residents, businesses, and communities in Australia in general and Queensland (QLD) in particular, hence, are still being left behind as they do not have adequate access to digital connectivity, mainly to due to limited or lack of digital infrastructure and services in the region (Marshall et al., 2019). As such, the digital divide between Queensland's urban and rural areas has been deepened, and this may be related to increasing social and economic inequalities (Marshall et al., 2021). Thus, development of digital infrastructure and technologies in regional Queensland is an urgent need.

The ADII in all LGAs within the Central West Queensland (CWQ) region, except the Central Highland Regional Council, is below the ADII national average of 71.1 (ADII, 2022). The RDA CWQ has identified that digital infrastructure and an increase in technology availability will not only increase the region's Digital Inclusion Index rating, but also enhance the community's ability to access digital technologies and information and support its sustainable growth. The region has currently faced many digital challenges, including poor and expensive internet connectivity. Thus, enhanced digital technology would enable the CWQ region to access

multiple benefits at a lower cost, reach broader, and better collaborate with its councils and the business sector (Remote Area Planning and Development Board (RAPAD), 2017).

In partnership among the CRESC of CQUniversity, the RDA CWQ, this regional digital study has been prepared to provide key information to the RDA CWQ to plan for the development of digital connectivity infrastructure and services throughout its region. It is noted that mobile telephone blackspots are not considered within this report. The study aims to examine the CWQ region's digital landscape where current and future demands may lie, identify gaps in its digital connectivity, and seek agreement on recommendations to address the gaps for the region. The CWQ committee would be able to utilise the study findings to advocate for future government and non-government grants to fund the upgrade or transformation of digital infrastructure and services. Specifically, the study addresses three main objectives:

Objectives

- Examining the digital landscape where current and future digital demands may lie in the CWQ region.
- Identifying connectivity technology and infrastructure gaps related to internet carriage services within communities in the region.
- Proposing a digital action plan for the region through relevant stakeholder engagement, and identifying funding programs and support from different entities, to invest on and improve internet carriage services across the region.

2. METHODOLOGY

To support the development of this digital study and infrastructure prioritisation, the study employed mixed methodologies, which were designed to achieve its research objectives. The approaches included conducting a desktop review of existing literature, data and information, as well as taking additional analysis and extrapolation of data gathered from secondary sources, as well as from a stakeholder survey and stakeholder workshops. Details of methodologies applied to assess digital landscape, main digital connectivity, technology and infrastructure gaps, and actions needed to be taken, are outlined below.

2.1. Digital landscape and connectivity analysis

Local Government areas within the CWQ region were included in the demographic and digital connectivity analysis. Digital connectivity analysis included technology, technology mixes and infrastructure solely related to internet carriage services.

First, existing materials about digital connectivity were reviewed to draw an overview of the digital situation in the region. Secondary data about regional population and connectivity data and information were collected from available online sources such as Australian Bureau of Statistics (ABS), NBN, and other governmental sources.

Second, an online survey was developed to collect stakeholders' opinions about current/future digital/infrastructure issues and needs. The survey questionnaire was designed through a co-design process with RDA representatives using Qualtrics' online platform. A list of stakeholders' email addresses was provided by RDA CWQ. The online survey link was sent to relevant stakeholders of diverse expertise, background, and work experience, accompanied by an information sheet and consent form. The survey remained opened in several weeks to maximise survey responses. In the end, a total of 58 survey responses were received, and among which only 39 responses were completed and usable.

2.2. Digital action plan

A participatory action research method was used to collect data (as mentioned earlier) about digital issues and challenges and preparing a digital action plan for the Central West Queensland region.

Two stakeholder workshops (one face-to-face and one online) were organised at the end of the survey. Information about the workshop time and location was provided in an email sent to stakeholders. Sixteen stakeholders from different local government areas within the CWQ region and the university (in total) engaged in the two workshops. The survey results were presented in the workshops, which were followed by discussions by participants about technology and infrastructure gaps, current challenges, the region's priorities, abilities, and affordability in terms of digital connectivity, as well as actions needed for digital development in the region. The workshops lasted approximately 1 to 2 hours. A list of participating organisations in the survey is given in Appendix E. Workshop data were analysed using a thematic analysis approach.

2.3. Sources of potential grants and support

This task was done through a stakeholder survey, stakeholder workshops, and desktop review, that enabled researchers to identify information about existing programs, funding, and resource support.

3. CENTRAL WEST QUEENSLAND CONTEXT

It was estimated that more than 33% of Australian population live in outside of major cities and half of the population in Queensland live in regional cities and remote areas outside of the state’s capital city, Brisbane. The study area within CWQ regional area consists of five regional councils, one indigenous council, and five shire councils (Figure 1), which includes regional cities, towns and remote areas, namely: Barcaldine Regional Council, Barcoo Shire Council, Blackall Tambo Regional Council, Boulia Shire Council, Diamantina Shire Council, Longreach Regional Council, and Winton Shire Council. The region is known as the Beef Capital of Australia and Rockhampton is the largest city in the region.

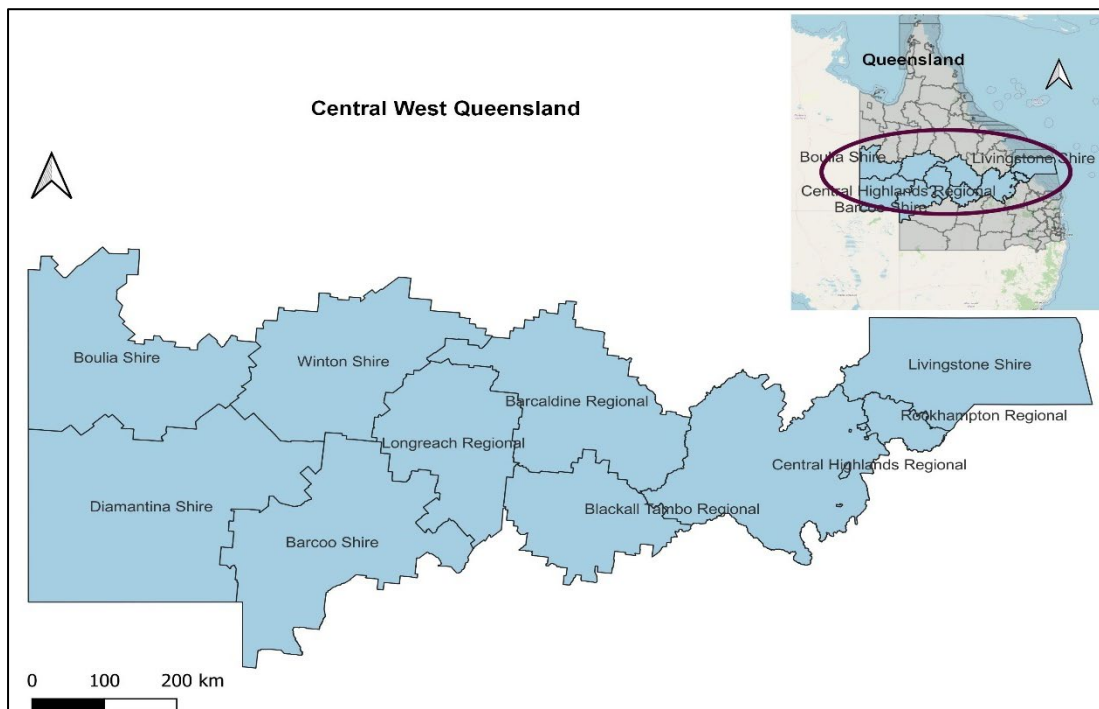


Figure 1: Study area

Table 1 provides socio-economic profiles of different local government areas in comparison to QLD average. Most of the socio-economic indicators, i.e., education, average income and working age population are below QLD average. Global studies have shown the correlation between socioeconomic factors (such as education, age, and income levels) and digital access (Campos et al., 2017; Lindblom & Räsänen, 2017; Yu et al., 2017), claiming the attention to provide equal digital opportunities. Most of the population in regional areas receive relative disadvantages in terms of socio-economic factors. As Afshar Ali et al. (2020) pointed out, socio-economic disadvantages are indeed an important determinant of digital access in Australia.

Table 1: Socio-demographic profile of CWQ

QLD/ LGA	Working age pop (%) 2021	Abor and TSI (%) 2021	Renter (%) 2021	No. of Businesses (2021)	No. of Agri Businesses (2021)	No. of jobs (2021)	Median Weekly HH income (\$) 2021	Bachelor or higher (%) 2021	Unemployment (%) 2021
QLD	64.5	4.6	33.1	460,807	41,139	2,444,090	1,675	21.9	4.6
Barcaldine RC	62.6	7.7	25.5	573	346	1,435	1,418	11.6	2.8
Barcoo SC	67.9	8.4	33	60	37	176	1,675	11.3	3.6
Blackall-Tambo RC	55.8	5.8	27.1	352	199	937	1,254	9.6	2.8
Boulia SC	61.3	30.1	38.9	58	27	226	1,490	6.9	3.4
Central Highlands RC	67.1	5.9	41	3,335	1,370	14,188	2,095	11.3	3.6
Diamantina SC	76.3	21.8	67.1	29	6	154	1,792	13.6	3.4
Livingstone SC	61.9	5.4	21.4	2,962	541	17,627	1,625	14.3	3.0
Longreach RC	64	6.1	35.5	624	269	1,914	1,561	14.2	2.6
Rockhampton RC	63.3	8.7	32.1	5,168	691	36,979	1,477	13.7	5.5
Winton SC	63.1	7.3	25.8	236	127	559	1,316	10.1	3.3
Woorabinda ASC	58.9	91.6	97.1	8	na	194	684	4.4	7.5

Source: ABS, Regional Profiles (available at <https://statistics.qgso.qld.gov.au/qld-regional-profiles>)

The proportion of first nation people in CWQ, in addition, is higher than QLD average. Despite the socio-demographic differences, the recent pandemic situation has forced every citizen to access social services through digital media more frequently than ever (Babacan et al., 2020). The CWQ region is predominant in agriculture-based industries, and its tourism is also an important sector for its regional economy. Despite new innovations for improving efficiency and reducing detrimental impacts on the environment, farmers' technology adoption in regional Australia is still not at a satisfactory level (Marshall et al., 2020) that is due to poor digital connectivity as one of the main factors affecting the adoption of digital technology. In order to thrive industries and economic growth in the region, disparities in digital access need to be minimised.

4. CURRENT STATUS OF THE DIGITAL LANDSCAPE

4.1. Digital connectivity in CWQ

The Australian Digital Inclusion Index (ADII) uses survey data to measure digital inclusion across three dimensions of access, affordability, and digital ability. A detailed measure of digital inclusion for Australia would allow us to identify critical barriers to inclusion, which may relate to accessing networks, costs of devices or data, or skills and literacies. The Index can help shape initiatives to increase digital inclusion in Australia. The Australian average of ADII shows an increasing trend but still there are some disadvantaged areas, particularly areas in regional Australia (Thomas et al., 2021; Afshar Ali et al., 2020). Marshall et al., (2020) also found that the digital ability of rural communities, especially of farmers, is below the national average, that adversely impacts on implementing advanced digital technologies in the region.

In CWQ, almost all the local government areas (except the Central Highland) ADII is currently below the national average as well as the Queensland average (Figure 2). Particularly, the digital access score is below the national average for the whole region, claiming the importance of developing digital infrastructure.

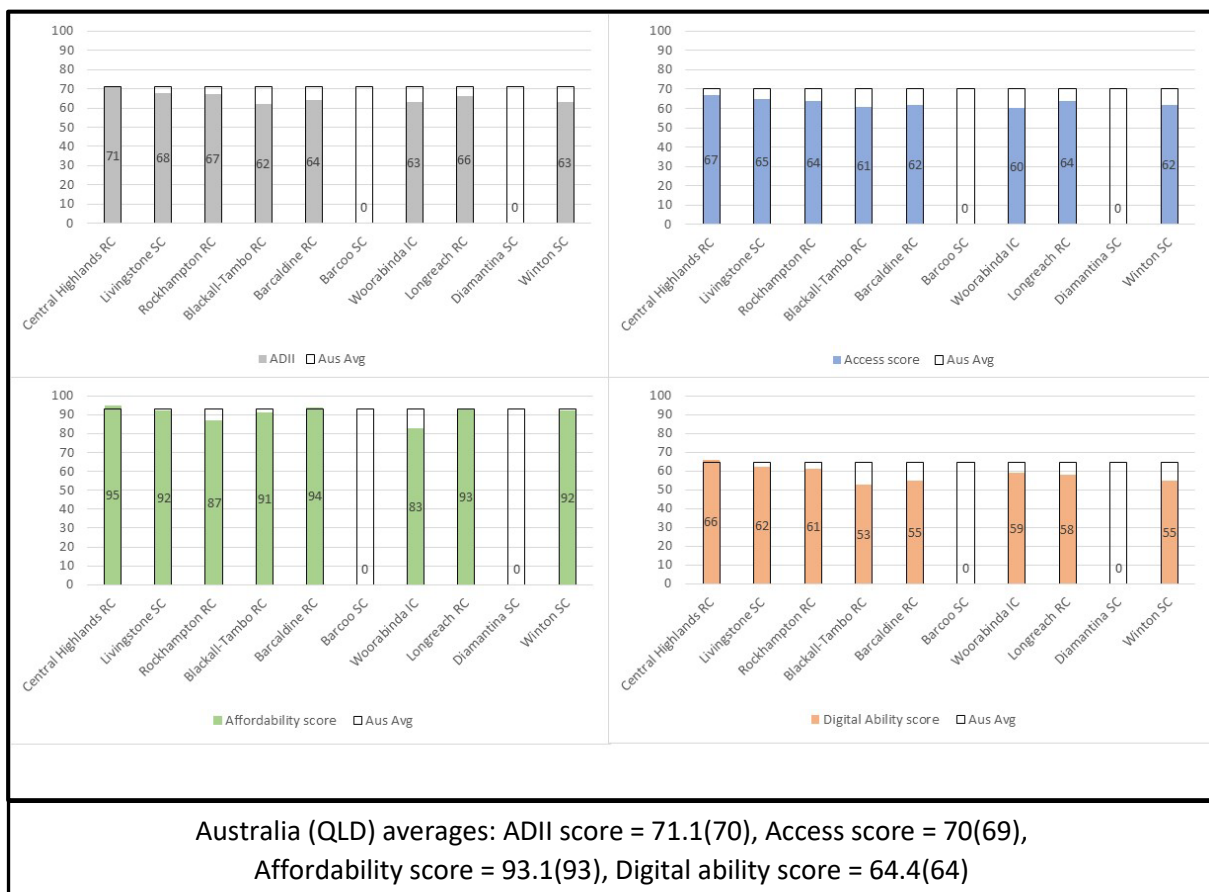


Figure 2: Australian Digital Inclusion Index (ADII) and its three main dimensions

Source: ADII, Available at <https://www.digitalinclusionindex.org.au/>

Additionally, the internet access from dwelling was examined to understand regional differences and disadvantages. Internet access from dwelling is highly varied between

different areas as well as within the region (Figure 3), that is also far below QLD average. Indigenous Councils and far remote councils receive higher disadvantages. The lack of digital infrastructure is one of the barriers to achieving a digitally enabled future for remote areas.

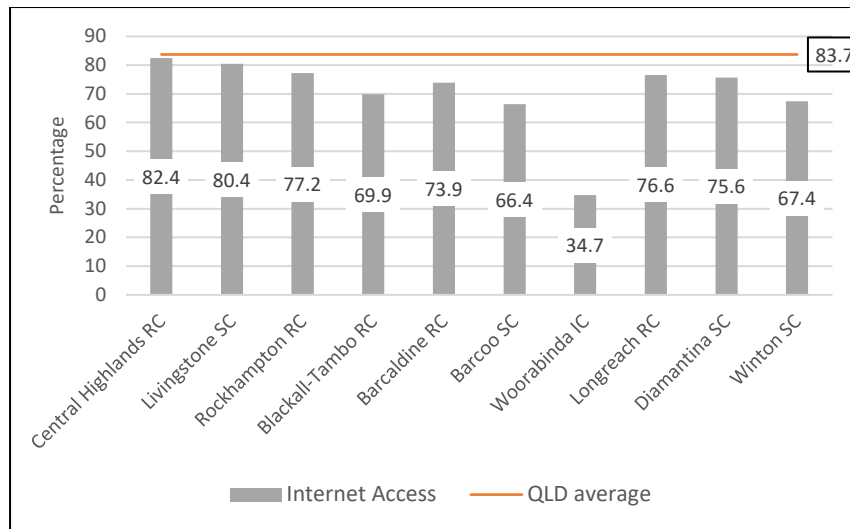


Figure 3: Internet access by dwelling
Source: Census data 2016, ABS.

4.2. Importance, current use, and potential use of digital technologies

Digital technologies provide the basis for innovation in almost all other sectors such as education (Department of Education, 2021), agriculture (Rotz et al., 2019), or health (Campbell et al., 2020; Beaunoyer et al., 2020). One of the issues examined through the stakeholder survey (mentioned earlier) is the importance of digital services for different sectors in the region. Survey respondents identified that digital connectivity was important for communication within and between businesses, accessing government and healthcare services, and online teaching and learning (Figure 4). Among the government services, the respondents were mainly concerned about access to services provide by the Federal Government. However, access to social media and private communication received less priority, that is perhaps due to the targeted cohort of survey participants. Workshop participants, in their discussion on the survey results, also highlighted the biasness of the survey cohort, that may have an impact on the results. Different from the present study, however, the importance of digital access to social networking sites to developing social connectivity has been mentioned in several studies, such as the study on social media in Queensland by Tiwari et al. (2019).

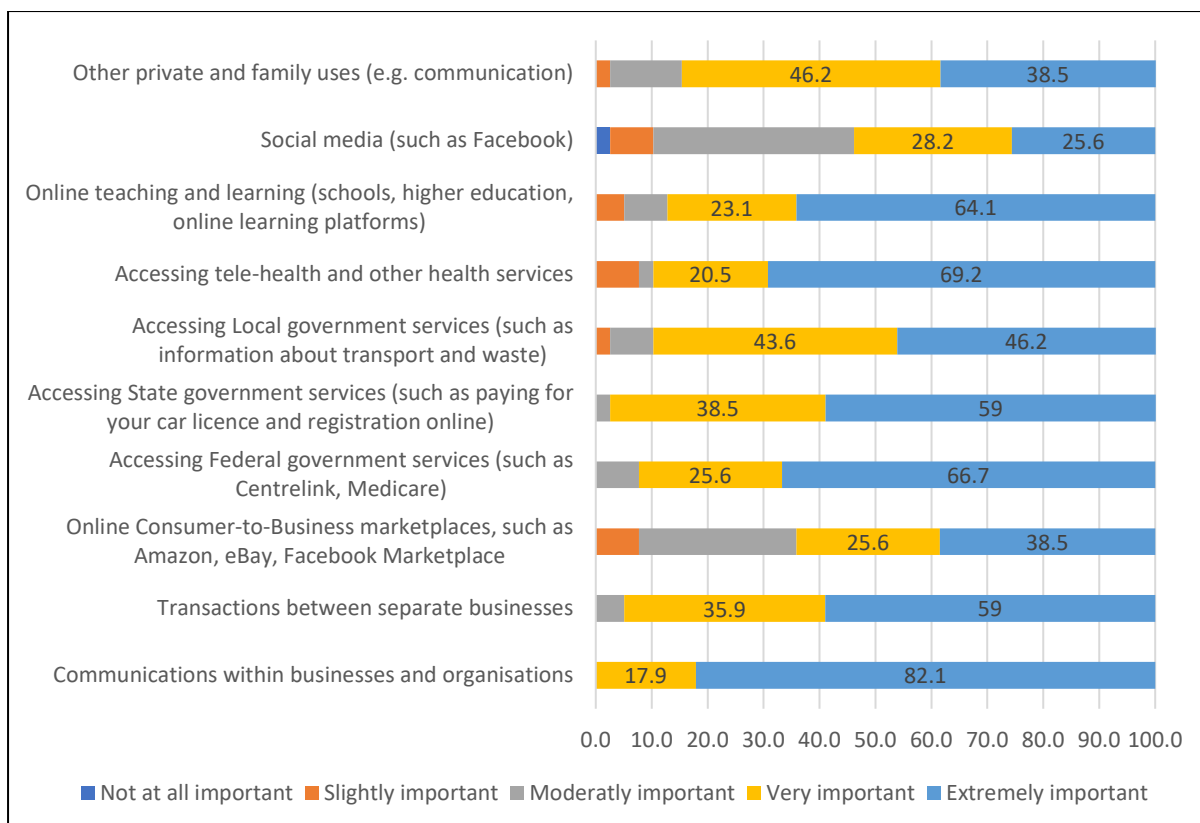


Figure 4: Importance of digital connectivity for different services

The survey respondents also shared their observation about the current uses of internet for different purposes in the region (Figure 5). It shows that businesses, education and accessing services are the main uses of digital technologies in the region. Moreover, of the respondents, 36% believed that the internet is often used to access social media, such as Facebook. Additionally, the respondents were asked to identify priority areas that would be benefited from better internet connection. Tele-health and online education were identified as the most potential areas to grow with better digital connectivity (Figure 6).

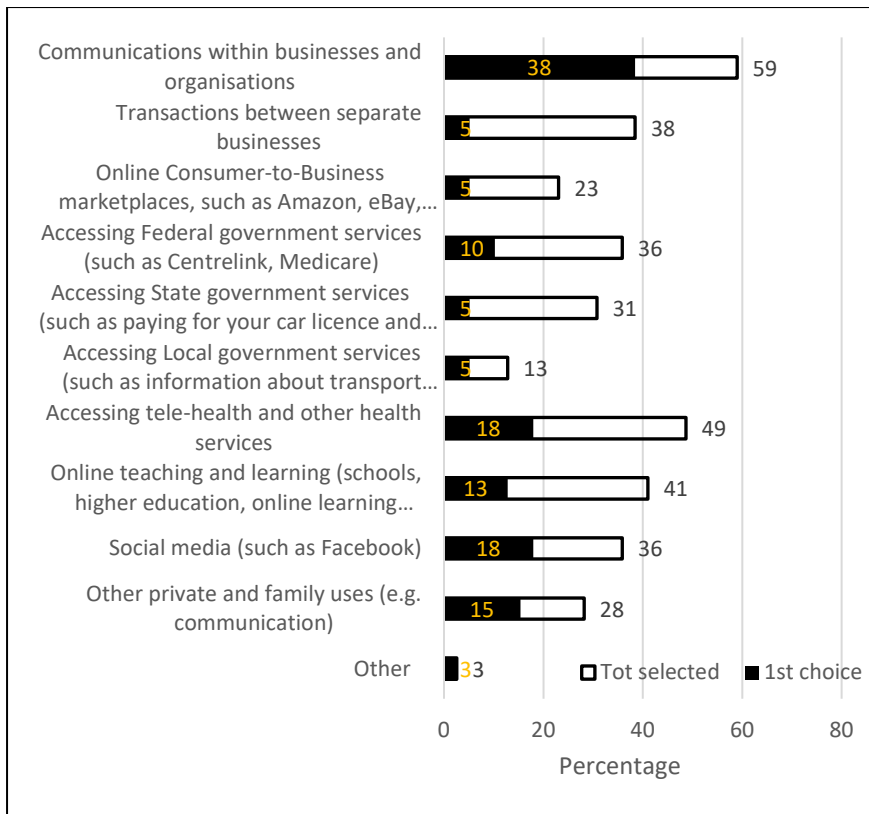


Figure 5: Current uses of internet

Note: Respondents were asked to select 3 most important categories and rank them. The graph indicates respondents' selection as well as their first choice.

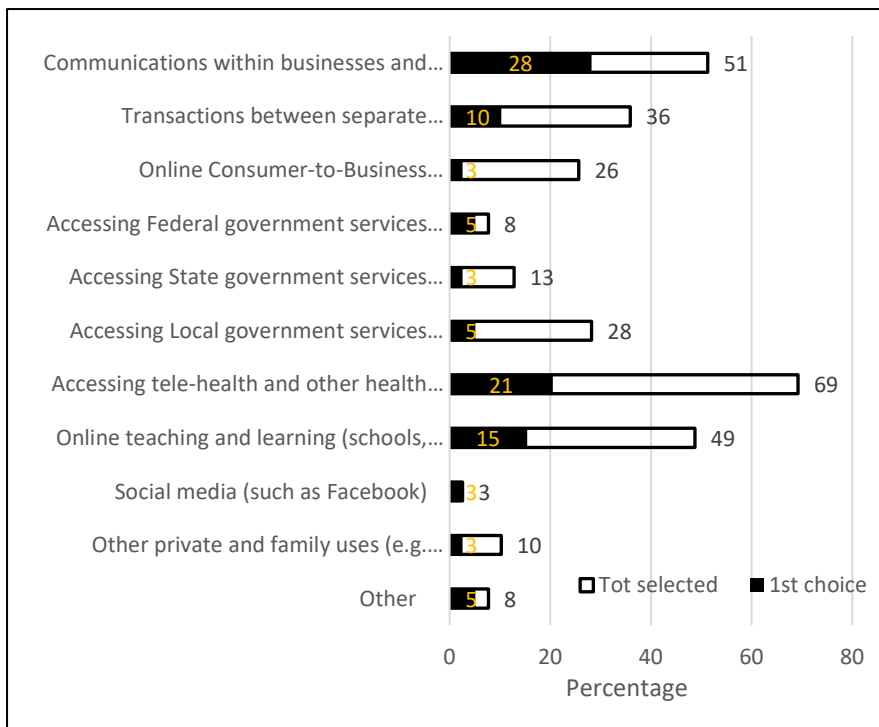


Figure 6: Potential sectors of benefited with improved digital connectivity

Note: Respondents were asked to select 3 most important categories and rank them. The graph indicates respondents' selection as well as their first choice

5. DIGITAL NEEDS AND CHALLENGES

Regional stakeholders as well as communities' perceptions are important to identify regional needs and priorities in development projects. The stakeholder survey was also used to identify digital infrastructure gaps, needs and challenges.

5.1. Digital infrastructure gaps

The level of digital services available across the region differs significantly. Most of the areas in the region were equipped with different combinations of digital accessible services. Of the respondents, 51% reported that the fibre was dominated in the region followed by satellite connections (36%). Fixed wireless (26%) was also observed to be a way of providing digital services to the region (Appendix A). Most respondents agreed that services across the region were not sufficient and needed to be upgraded (Figure 7).

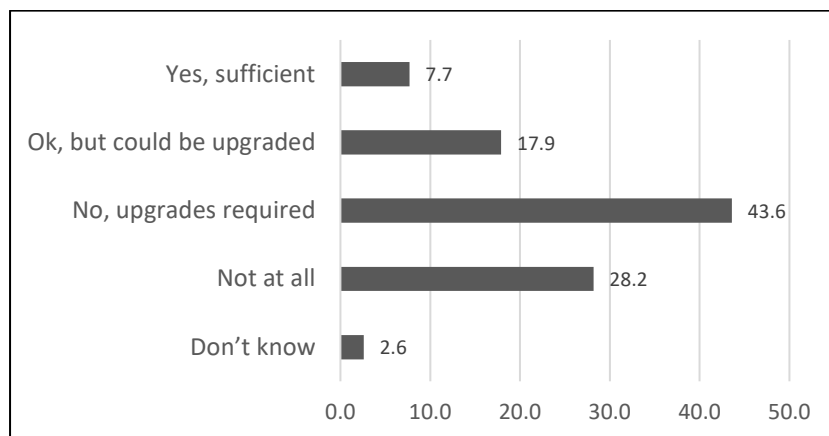


Figure 7: Needs of digital infrastructure improvement in CWQ

It was suggested that all geographical areas, including the rural and remote ones, as well as small businesses and households needed to improve their digital connectivity. The majority of the survey respondents were, however, concerned about improving the digital connectivity for rural and remote areas and small businesses. A detailed analysis of the survey responses indicated that high speed fibre for business premisses, rural fibre and fixed wireless, remote fixed wireless, and residential fibre connections, were identified as priority needs for improving digital connectivity (Figure 8).

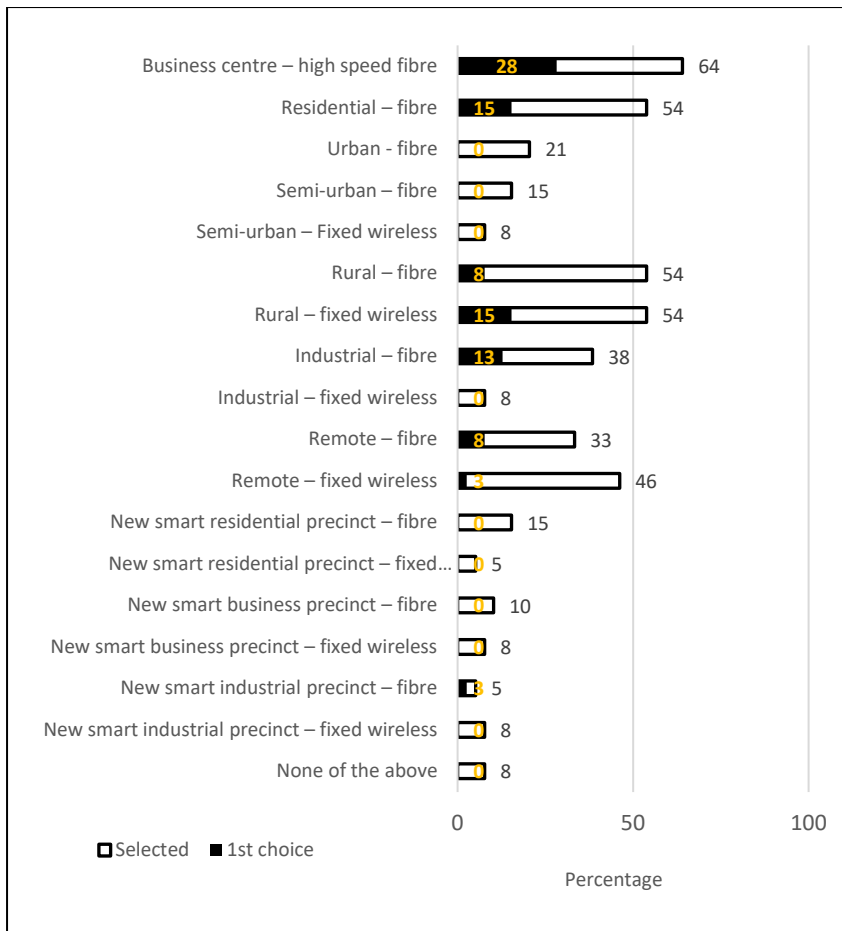


Figure 8: Priority needs for digital connectivity improvement

Note: Respondents were asked to identify 5 most important categories and rank them. The figure depicts the first choice as well as selected categories

5.2. Digital services and service quality in CWQ

More than half of the respondents (51%) were not satisfied (or extremely dissatisfied) with the available internet services across the region (Figure 9). Only 7.7% respondents stated that they were extremely satisfied with the internet service, and this is possibly associated with fibre access areas.

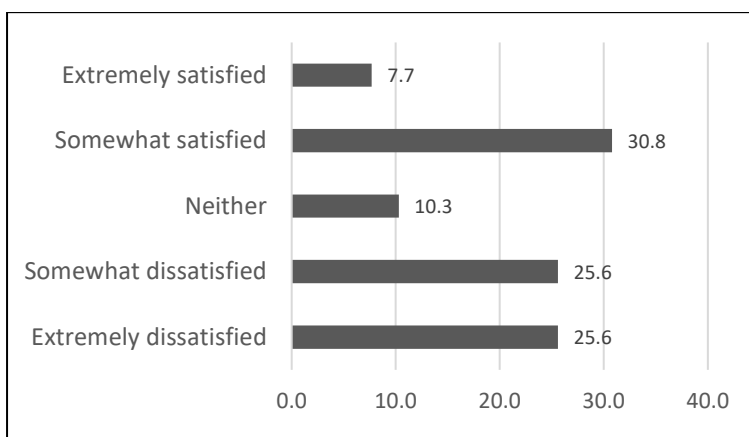


Figure 9: Satisfaction about the digital services available in CWQ

Similarly, 69% reported that the availability of technical peripheral services was below average or very poor, whereas only 13% agreed that technical services were good. The judgement could be based on the respondents' personal experiences and their awareness (Appendix B). Lack of technical expertise was also identified as a constraint to developing digital connectivity in the region (Appendix C). Nearly half of the respondents stated that the region's technical expertise was not good. Many of them also believed that the available digital services in the CWQ region were not affordable (Figure 10).

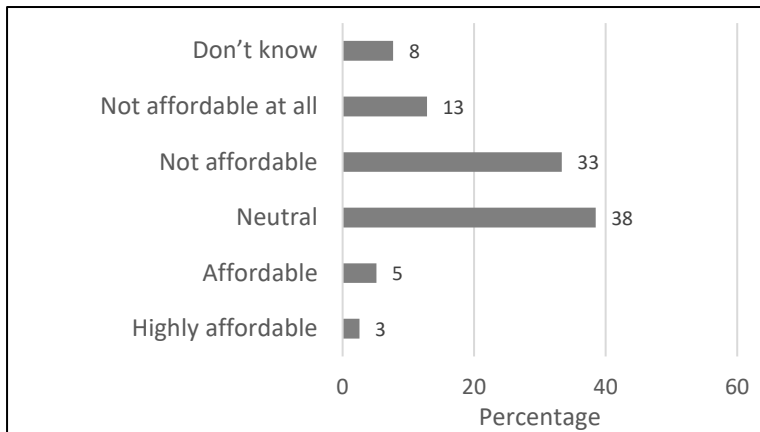


Figure 10: Affordability of technical services

5.3. Technology adoption and leadership

Digital technology adoption as well as leadership are important to acquire the technology to the region. Of the respondents, 43% agreed that the region adopted new technologies quickly whereas 39% stated that the technology adoption was slow (Figure 11). However, it seems that the respondents trusted the region's leadership capacity, as many believed that the region had a necessary level of leadership for digital connectivity (Figure 12). This can be seen a positive aspect for the region's digital infrastructure development. Importantly, almost all respondents agreed that the region needed to give priority to developing digital infrastructure in comparison to other regions.

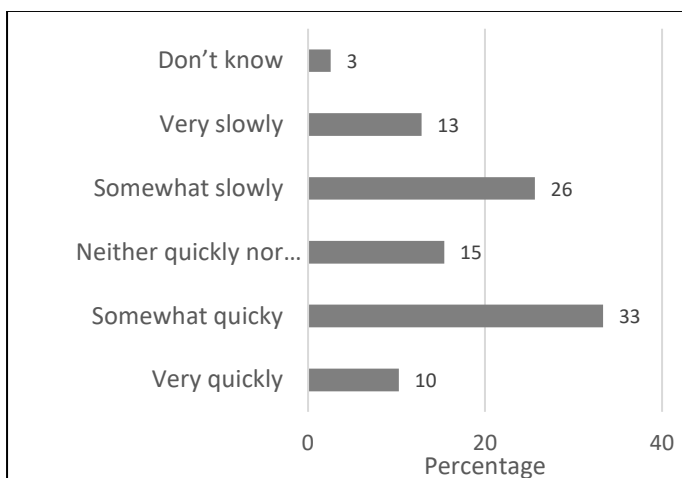


Figure 11: Digital technology adoption in the region

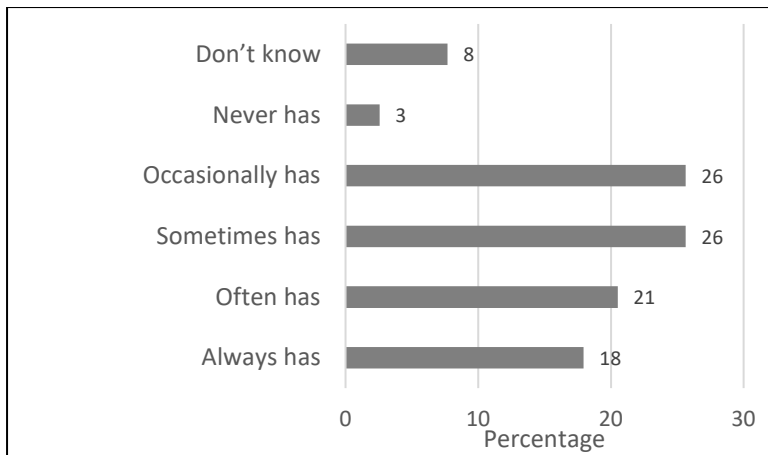


Figure 12: Regional leadership

5.4. Key issues and challenges

In addition to the needs and challenges identified from the survey results, findings draw on the two workshop discussions suggest a number of issues and challenges related to digital connectivity in the region, that need to be carefully considered.

The key issues and challenges mentioned by the workshop participants, which reflect three fundamental dimensions of digital inclusion proposed by the ADII (2022), including access, affordability, and digital ability, can be briefly described as follows:

Access

- Currently the connectivity is poor in many areas.
- Remote regions often have limited access to digital infrastructure due to geographical and cost factors.
- There are technological issues that prevent smooth digital connection in the region.

Affordability

- Affordability of technical services is low.
- The costs are more than what people afford to pay.
- There are social-economic issues, such as low-income residents and communities may not be able to afford the digital costs.

Digital Ability

- Some areas in the region (e.g., indigenous areas) do not have motivation to upgrade their digital infrastructure, and internet services are not seen to be important.
- People have limited knowledge about IT/digital connectivity.
- Education about digital connectivity is not yet widely available for residents, communities and stakeholders in the region.
- Government staff do not have relevant digital or management skills related to digital connectivity.
- There is still a lack of technical experts in the region.

6. PROPOSED ACTION PLAN

The suggested action plan for the CWQ region was designed to address three combined fundamental dimensions of digital inclusion: access, affordability, and digital ability. Access is related to attaining connections and devices, affordability means the ability to sustainably afford devices and connections, and digital ability refers to having the appropriate skills and knowledge to put devices and connections to good use (Marshall et al., 2021).

6.1. Proposed actions

Recommendations and actions for the CWQ region in relation to **access, affordability and (digital) ability** are presented in Table 2. The recommended actions are associated with seven strategic areas, including: community engagement; targeted geographical areas; infrastructure upgrade; rate and cost; digital skills; collaboration; and governance & business culture. There is also a suggested timeframe for the actions, such as short-term (approximately 3 years), medium-term (around 5 years), or long-term (about 10 years or more).

It is important to note that the action plan below was prepared for the whole CWQ, rather than for specific LGAs within the region, as it draws on stakeholders' perspectives who suggested general actions across the region. It is observed that digital connectivity is, geographically, a regional issue rather than a local issue (perhaps except for Indigenous/Aboriginal Shire Councils). Basically, the more remote from the coasts an area is, the less the area has access to fibre internet services.

We will also share this draft report with all LGA participants and requested their feedback in relation to their local digital priorities before finalising the report by 15 December 2022.

Table 2: Proposed actions to improve digital connectivity in the CWQ region

Digital inclusion dimension	Strategic area	Action	Timeframe
Access	1. Enhancing community engagement in terms of digital connectivity	1a. Conducting detailed demand analyses through large scale community surveys, which involves small and medium enterprises (SMEs), to understand the community's digital needs, including who needs what types of digital access.	Short-to-medium term
	2. Identifying target geographical areas which need digital upgrades	2a. Identifying priority areas based on the findings from demand analyses. 2b. Mapping and providing information about available services in the region and building a true picture of the breadth and depth of the delivery of technologies.	Short-term
	3. Speeding up fibre infrastructure upgrades in the region	3a. Establishing a plan for upgrading digital infrastructure in target and priority areas, at least in the rural and remote CWQ's LGAs identified in this study. 3b. Developing the feasibility of fibre infrastructure upgrades through collaboration with infrastructure/service providers and connecting various types of fibre infrastructure owned by different entities under a well-coordinated entity to provide better services to rural and remote areas. 3c. Identifying types of digital technologies needed in each geographical area. High speed fibre for business premises, rural fibre and fixed wireless, remote fixed wireless, and residential fibre connections may be among priority needs for improving digital connectivity.	Short-term
Affordability	4. Ensuring reasonable costs and user charges in developing or upgrading digital infrastructure and services	4a. Evaluating digital costs and user charges at national & local levels. 4b. Meeting service providers to consider the upgrade costs. 4c. Surveying potential users and consulting with infrastructure/service providers about reasonable connection rates and prices.	Short-to-medium term

		4d. Discussing with energy providers about how to maintain cheap energy for digital services.	
Ability	5. Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	5a. Providing training classes/sessions for stakeholders involved in digital connectivity projects. 5b. Organising community events to educate and raise people's awareness about the value of digital connectivity (LGAs can play a role in promoting these events) broadly and directly. 5c. Including knowledge about digital connectivity in school curriculums and activities. One of the activities may be organising digital knowledge competitions and prizes for students.	Short-to-medium term
Access, Affordability, Ability	6. Developing collaboration for improved digital connectivity	6a. Maintaining regular conversations and relationships with providers to access right information from and build trust with them. 6b. Organising symposiums at rural and regional areas where experts and digital providers can discuss and share their views/information about the availability and current and future use of digital services. 6c. Developing joint grant applications among different LGAs where different field offices can work together. 6d. Having different collaboration initiatives (for example, forums or platforms to get together, or to partnership between councils).	Medium-term
	7. Building effective governance and positive business culture	7a. Encouraging working from home in governmental offices, companies, businesses, and other working environments. 7b. Providing better platforms for digital technologies to work. 7c. Considering multi-agency resources to help councils in digital development. 7d. Building better business environments where digital participation is well facilitated. 7e. Encouraging entrepreneurship to take advantage of the benefits of digital connections.	Medium-to-long term

6.2. Funding opportunities to support the action plan

The proposed actions for improving digital connectivity in the CWQ region can be implemented with support from different funding sources. The survey respondents suggested that reallocation of the federal government funding was the best way to improve regional digital infrastructure, followed by the State government spending (Figure 13). The survey findings were validated in the workshop discussions, in which the workshop participants agreed that the federal government should play the major role in financially supporting regional digital connectivity projects.

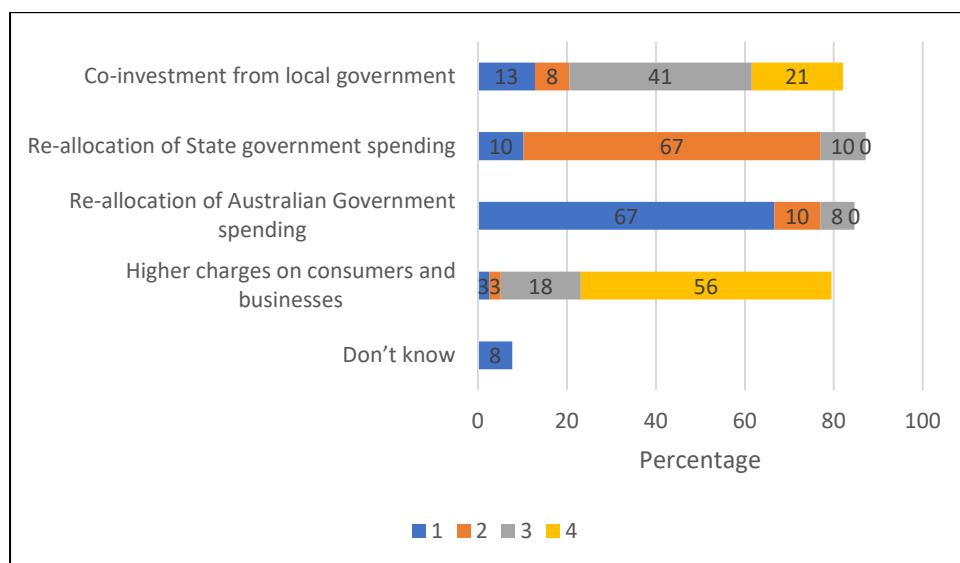


Figure 13: Potential funding sources for developing digital infrastructure

Note: 1-4 represent most preferred to least preferred

The workshop participants pointed out the possibilities to access the Federal Government funding allocation for regional development. As most of the LGA participants agreed, the proposal should be developed considering all areas in the region or a group of LGAs rather than being confined to a single LGA boundary

Some funding sources and resource support (mainly from the Federal and Queensland governments) which the CWQ region can consider include:

- The Regional Connectivity Program (Department of Infrastructure, Transport, Regional Development and Communities) <https://www.infrastructure.gov.au/media-communications-arts/internet/regional-connectivity-program>
- The National Stronger Regions Fund (Department of Infrastructure, Transport, Regional Development and Communities) <https://www.infrastructure.gov.au/territories-regions-cities/regional-australia/regional-and-community-programs/national-stronger-regions-fund>
- The Strengthening Telecommunications Against Natural Disasters (Australian Government), <https://business.gov.au/grants-and-programs/strengthening-telecommunications-against-natural-disasters>

- The GoDigitalQld strategy (Queensland Government), <https://www.chde.qld.gov.au/services/digital>
- The Building our Regions project (Queensland State Development, Infrastructure, Local Government and Planning) <https://www.statedevelopment.qld.gov.au/regions/economic-development/building-our-regions>
- The Queensland Disaster Resilience Fund (Queensland Reconstruction Authority), <https://www.qra.qld.gov.au/qdrf>
- The Queensland Business Portal (Business Queensland), <https://www.business.qld.gov.au/running-business/digital-business>

7. CONCLUSION AND WAYS FORWARD

The present study has examined the digital landscape where current and future digital demands in the CWQ may lie, identified gaps in digital connectivity and, sought agreement on recommendations to address the gaps for the region. Drawing on stakeholder survey results and stakeholder workshop findings, it has also presented a suggested digital action plan which different stakeholders in the CWQ can utilise to advocate for future government and non-government grants to fund the upgrade or transformation of digital infrastructure.

Findings suggest that the levels of digital connectivity in urban and rural areas within CWQ region are currently quite mixed. Without necessary improvement in digital infrastructure and connectivity, the region may face greater risk of depopulation, declining liveability, and increasing barriers to social and economic opportunities (Marshall et al., 2021). Therefore, this report suggested seven short-, medium-, and long-term strategies associated with 22 actions which the region may consider in developing its own digital connectivity plan (see Table 2).

Therefore, a collaborative approach involving all levels of government and service providers initiative is required to implement the action plan (Table 2) within the CWQ region through public and private support. Local, state, and federal government officials should work together, and work with the digital industry to improve digital infrastructure in the CWQ region. Particularly, federal and state governments should support local governments and industries in developing both soft and hard digital infrastructure through different research and development grant programs. In order to effectively put the recommended digital actions into practice, stakeholders involved in this process should also build a detailed implementation plan where different actions suggested above are reviewed and adapted so they would suit different implementation stages and purposes.

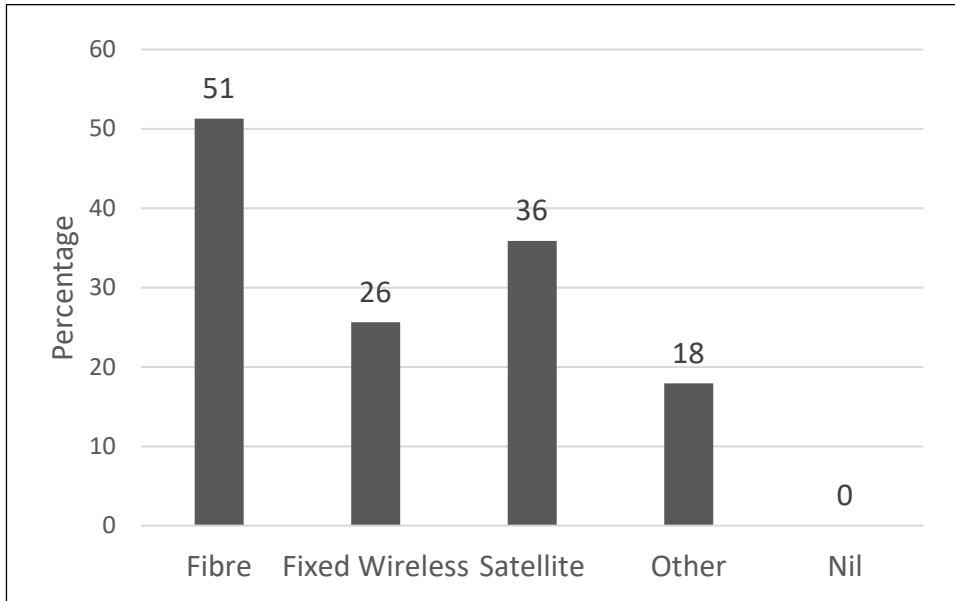
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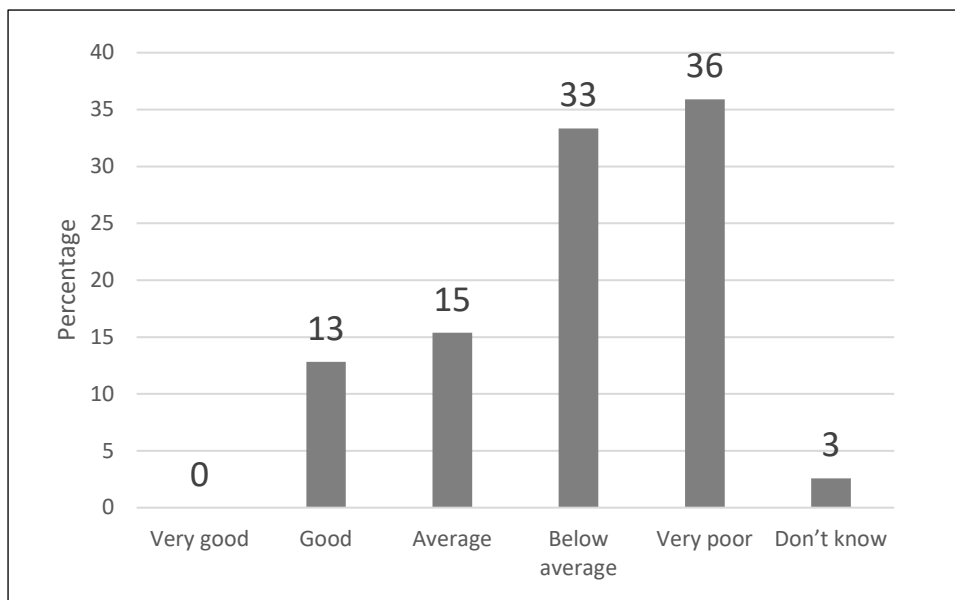
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APPENDICES

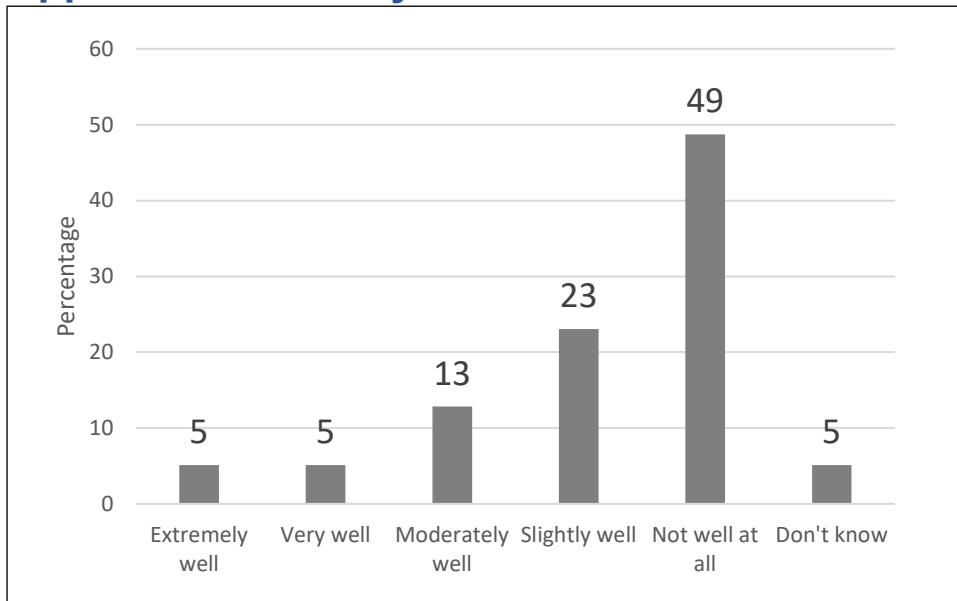
Appendix A: Availability of digital services in the region



Appendix B: Availability of technical services within the region



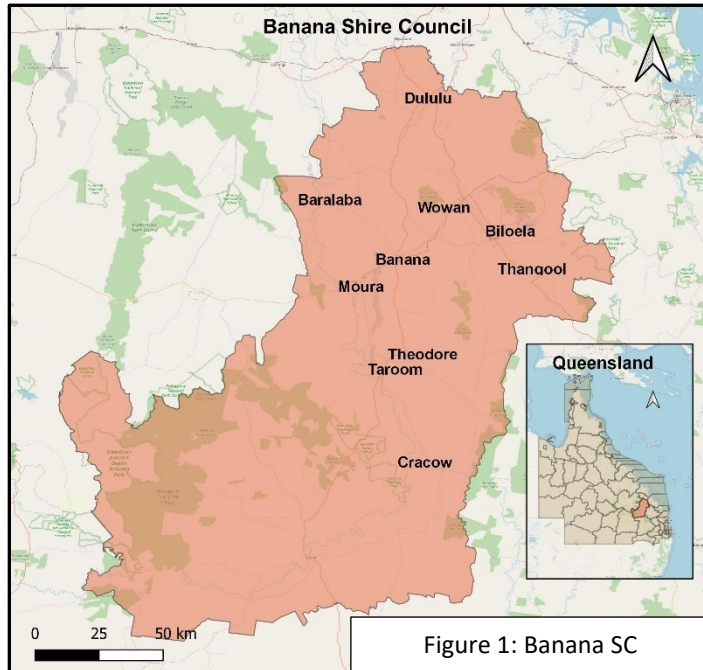
Appendix C: Quality of technical services in the region



Appendix D1: Community profile & proposed digital action plan- Banana Shire Council

1. Community & demographic overview

Banana Shire Council (BSC) has a total land area of 28,610Km², comprising 10 townships (Figure D1-1).



The estimated population in 2021 was 14,663, which showed a negative population growth rate in the last 10 years (-0.1%). The projected population in the year 2041 is 13,247. Around 3,569 families lived in BSC and of them, 43.6% lived with children and 11.8% are one-parent families. The working-age population was 63% whereas 15.7% fell under the elderly (age 65+) category (Queensland averages were 64.5% and 16.6%, respectively). The median age of people living in the Banana Shire Council area was 38. First nation people's population (5.1%) was higher than Queensland's average, which was 4.6%. Nearly 7.8% of the current population was born overseas. Most of the people (93.1%) lived in separate single-dwelling houses while 33.1% were owner-occupied houses.

17.2% of residents in BSC fell into a relatively most disadvantaged socio-economic group.

2. Major sectors and economic drivers

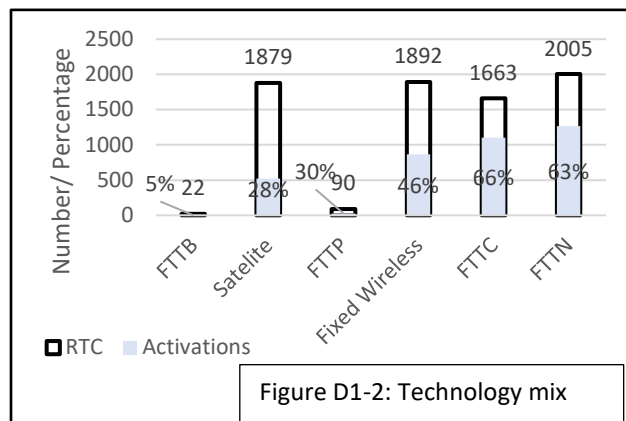
In 2022, there were 2,550 registered businesses in BSC and of them, around 27% were agricultural businesses. Most of the businesses (75.1%) did not generate employment opportunities, and only 1.3% of them employed 20-199 employees. Businesses together with the public and private services sectors totally generated about 148,932 jobs, and the unemployment rate remained lower (2.9%) than the Queensland average (4.6%). Most of the people worked for health care and social assistance (16%), retail trade (10%), construction (8.9%) and education and training (8.5%). The average household income was \$1,766 which was higher than the Queensland average (\$1,675). The median monthly mortgage payment was \$1,300.

3. Future major projects

Several development plans, including infrastructure development projects, have been in place in the region. For example, the Nathan Dam, Surat Basin Inland Rail, the Moura Raw Water Supply Upgrade, and Energy Park Industrial Area projects will help in developing agricultural production and other services.

In addition, currently two new circular economy manufacturing businesses are bringing their operations to Biloela. One will remanufacture solar panels, (being able to re-use 99% of a solar panel to use again), and the other business will melt used tyres to recover oil, black carbon and steel.

4. Current digital landscape



The ADII index for BSC is 67 which is below Queensland's average (70) and the Australian average (71.1). Accessibility (65) and digital ability (60) are lower than the Queensland average whereas affordability (65) is higher than the Queensland average. 76.8% of people access the internet from dwellings (ABS, 2016). Digital technologies are ready to connect across the region via FTTB, FTTP, FTTC, FTTN, wireless connection, and satellite but available services are underutilized (Figure D1-2). FTTP availability is limited.

5. Recommendations arising from regional digital study report

Digital Inclusion Dimension & strategy	Action/s & Priority	Priority level
ACCESS - Continuing speeding up demand-based and strategic fibre infrastructure and technology upgrades in the region.	Increasing fibre to the Premises availability for residential and business that are not currently served by either FTTP or FTTN, particularly to the rural and urban periphery areas. (Priority 1).	<i>Immediate priority and being prioritised in the region through NBN Local</i>
AFFORDABILITY – Enhancing digital and service equity across the region by ensuring reasonable costs and user charges.	- Managing to meet customer expectations of affordability by maintaining reasonable costs for socio-economic disadvantaged groups (Priority 2).	<i>Immediate to medium priority</i>
ABILITY - Reducing digital discrimination and improving digital skills and knowledge among stakeholders involved in digital connectivity projects and people in the community.	- Note: BSC Library was planning to roll out a series of digital literacy lessons at sites in Biloela, Moura, Baralaba and Taroom having successfully applied for the Tech Savvy Regional Queensland Grant 2018. - Providing more consistent & integrated education and training programmes, and ensuring the adoption of digital training services appropriate for different stakeholders (Priority 3).	<i>Already prioritized</i> <i>Immediate to medium priority</i>

Note: Discussion in the appendix draws on the following data/ information sources

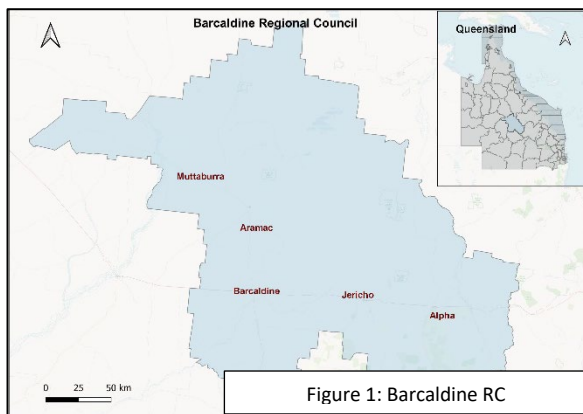
1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Banana Shine Council (<https://www.banana.qld.gov.au/>).
3. Queensland Government (<https://www.statedevelopment.qld.gov.au/regions/economic-development/building-our-regions/funded-projects>)

Note: Appendix 1 is copied from “Regional Digital Study- Wide Bay Burnet, Banana and Gladstone (WBBBG)” report with the permission from the project funding agency. Research reported in this appendix is presented in the WBBBG’s report. We would suggest reading this appendix in conjunction with the WBBBG’s report.

Appendix D2: Community profile & proposed digital action plan- Barcaldine Regional Council

1. Community & demographic overview

Barcaldine Regional Council (BRC) has a total land area of 53,382.7km², in regional Central Queensland, comprising five townships (Figure 1). The estimated population in 2021 was 2,863 with a negative population growth in the



last 10 years (-1.4%). The projected population in the year 2041 is 2,239. 694 families live in BRC and of them, 38.3% live with children and 13.8% are one-parent families. The working-age population is 62.6% whereas 18.3% falls under the elderly (age 65+) category which is slightly below the Queensland averages (64.5% and 16.6% respectively). The median age of the population is 42.8. First nation people's population is higher than Queensland's average which is 7.7%. Only 5.1% of the current population has been born overseas. Most of the people (94%) live in separate single-dwelling houses while 43.2% are owner-occupied houses. 10.2% of residents in BRC fall into a relatively most disadvantaged socio-

economic group.

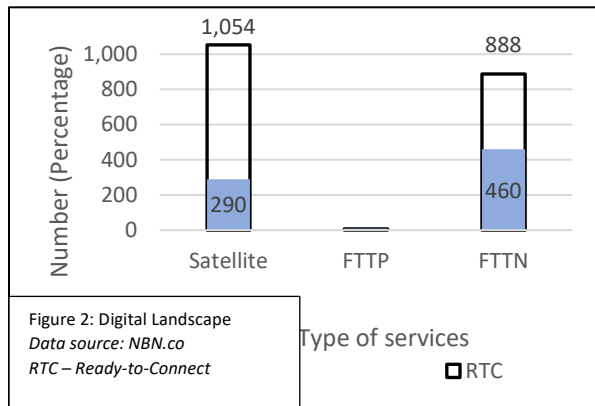
2. Major sectors and economic drivers

Currently, BRC operates 573 businesses and of them, 60.4% are agricultural businesses. Most of the business (65.8%) does not generate employment opportunities, but only 0.5% of business employed 20-199 employees. Businesses together with the public and private services sectors totally generate 1,435 jobs but the unemployment rate remains lower (2.8%) than the Queensland average (4.6% - June 2022). Most of the people work for agriculture, forestry and fisheries (30.8%), public administration and safety (10.5%) and health care and social assistance (10.2%). The average household income is \$1,418 which is lower than the Queensland average.

3. Future major projects

A number of infrastructure development projects such as roads, sewerage infrastructure, and digital networks. The construction of the army reserve and cadet depot is a special development project. It creates a number of temporary and permanent employment opportunities which require more digital access.

4. Current digital landscape



The ADII index for BRC is 64 which is below Queensland’s and the Australian average (QLD=70, Australia=71.1). Digital ability (55) and access (62) are behind the Queensland averages while affordability is 94. 73.9% of people access the internet from dwellings (ABS, 2016). Most of the area is covered by satellite and FTTP. As Figure 2 depicted, available services are underutilized.

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Speeding up fibre infrastructure upgrades in the region	Increasing fibre to the Premises availability for residential and business that are not currently served by either FTTP or FTTN, particularly to the rural and urban periphery areas. (Priority -2)	Short-term
ABILITY - Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	Targeted programs and sessions for business, not for profit entities, community groups, and supporting organisations in conjunction with providers and create better utilization of currently available services. (Priority 1)	short-term

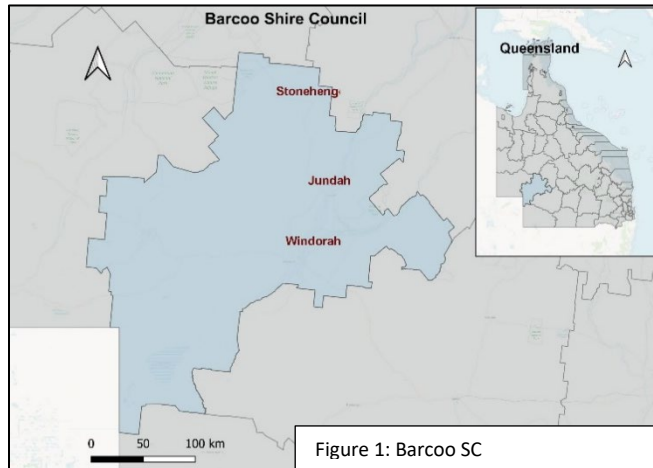
Note: The report is based on the following data/ information sources

1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
3. NBN Co., 2022, RTC data (Classified) & map (Open access)
4. Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix D3: Community profile & proposed digital action plan: Barcoo Shire Council

1. Community & demographic overview

Barcoo Shire Council (BSC) has a total land area of 61830.2km², comprising three townships (Figure 1). The



estimated population in 2021 was 312 with a negative population growth in the last 10 years (-1.5%). The projected population in the year 2041 is 212. Within the council, 66 families live and of them, 42.4% live with children and 9.1% are one-parent families. The working-age population is 67.9% whereas 14.7% falls under the elderly (age 65+) category which is slightly below the Queensland averages (64.5% and 16.6% respectively). The median age of the population is 38.8. First nation people's population is higher than Queensland's average which is 8.4%. Only 3.2% of the current population in BSC has been born overseas. Most of the people (87%) live in separate single-dwelling

houses while 36.5% are owner-occupied houses.

2. Major sectors and economic drivers

Currently, BSC operates 60 businesses and of them, 61.7% are agricultural businesses predominantly beef cattle farming. Most of the business (83.3%) does not generate employment opportunities, but only 5% of business employed 5-19 employees. Businesses together with the public and private services sectors totally generate 176 jobs but the unemployment rate remains slightly lower (3.6%) than the Queensland average (4.6%). Most of the people work for agriculture, forestry and fisheries (38.6%), public administration and safety (26.7%), and accommodation and food services (6.8%). The average household income is \$1,675 which is lower than the Queensland average. The median monthly mortgage payment is \$2,000.

3. Future major projects

Regional primary industries such as beef and mining expansion can be expected with current infrastructure development such as regional road networks and water supply weirs. Subsequently, the demand for digital services can be increased.

4. Current digital landscape

The ADII index data for BSC is not available. 66.4% of people access the internet from dwellings (ABS, 2016). The lack of information regarding digital infrastructure in the region is on the other hand lack of such facilities.

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Speeding up fibre infrastructure upgrades in the region	Increasing fibre to the Premises availability for residential and business that are not currently served by either FTTP or FTTN, particularly to the rural and urban periphery areas. (Priority -2)	Short-term
ABILITY - Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	Targeted programs and sessions for business, not for profit entities, community groups, and supporting organisations in conjunction with providers and RRC (Priority 1) and create better utilization of currently available RTCs.	Medium-term
ACCESS AND AFFORDABILITY – Building effective governance and positive business culture	Attracting a leading digital provider to the region and develop a regional governance system (Priority 3)	Long-term

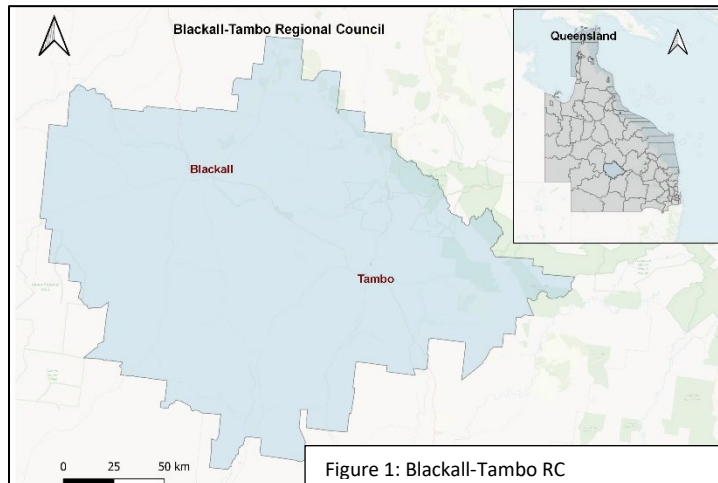
Note: The report is based on the following data/ information sources

1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
3. NBN Co., 2022, RTC data (Classified) & map (Open access)
4. Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix D4: Community profile & proposed digital action plan- Blackall-Tambo Regional Council

1. Community & demographic overview

Blackall-Tambo Regional Council (BTRC) has a total land area of 30,537.3km², comprising two townships (Figure 1).



The estimated population in 2021 was 1,920 with a negative population growth in the last 10 years (-1.6%). The population is projected to be 1,643 in year 2041. Around 519 families live in BTRC and of them, 34.5% live with children and 11% are one-parent families. The working-age population is 55.8% whereas 27.4% falls under the elderly (age 65+) category which is slightly different to the Queensland averages (64.5% and 16.6% respectively). The median age of the population is 48.6. First nation people's population is higher than Queensland's average which is 5.8%. Only 4.6% of the current population has been born overseas.

Most of the people (97%) live in separate single-dwelling houses and of them 42.2% are owner-occupied houses. 36.7% of residents in BTRC fall into a relatively most disadvantaged socio-economic group.

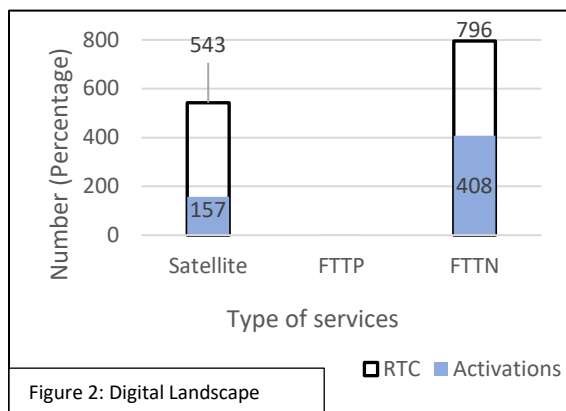
2. Major sectors and economic drivers

Currently, RRC operates 352 businesses and of them, 56.5% are agricultural businesses predominantly beef cattle farming. Most of the business (66.2%) does not generate employment opportunities, but only 6% of business employed 5-19 employees. Businesses together with the public and private services sectors totally generate 937 jobs but the unemployment rate remains slightly lower (2.8%) than the Queensland average (4.6% - first quarter of 2022). Most of the people work for agriculture, forestry and fishing (34.2%), health care and social assistance (9.5%), public administration and safety (9.4%) and retail trade (8.4 %). The average household income is \$1,254 which is below the Queensland average. The median monthly mortgage payment is \$867.

3. Future major projects

The development of housing and Blackhall airport may attract more people to the region and potential to increase the demand for digital facilities.

4. Current digital landscape



The ADII index for RCC is 62 which is below Queensland's and the Australian average (QLD=70, Australia=71.1). All three criteria – access (61), affordability (91) and digital ability (53) – are behind the Queensland averages. 69.9% of people access the internet from dwellings (ABS, 2016). Most of the area is covered by satellite and FTTN. As Figure 2 depicted, available services are underutilized.

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Speeding up fibre infrastructure upgrades in the region	Increasing fibre to the Premises availability for residential and business that are not currently served by either FTTP or FTTN. (Priority -2)	Short-term
ABILITY - Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	Targeted programs and sessions for business, not for profit entities, community groups, and supporting organisations in conjunction with providers and RRC (Priority 1) and create better utilization of currently available RTCs.	Medium-term
ACCESS AND AFFORDABILITY – Building effective governance and positive business culture	Attracting a leading digital provider to the region and develop a regional governance system (Priority 3)	Long-term

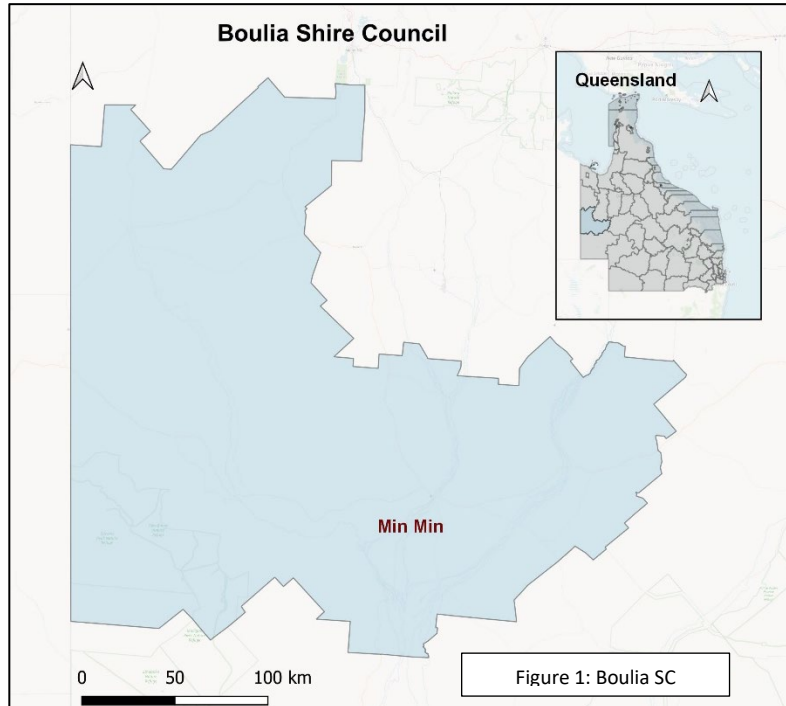
Note: The report is based on the following data/ information sources

1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
3. NBN Co., 2022, RTC data (Classified) & map (Open access)
4. Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix D5: Community profile & proposed digital action plan: Boulia Shire Council

1. Community & demographic overview

Boulia Shire Council (BoSC) has a total land area of 60,906.5m², (Figure 1).



The estimated population in 2021 was 470 with a negative population growth in the last 10 years (-0.5%). The projected population in the year 2041 is 392. Around 92 families live in BoSC and of them, 38% live with children and 23.9% are one-parent families. The working-age population is 61.3% whereas 16.6% falls under the elderly (age 65+) category which is slightly below the Queensland averages (64.5% and 16.6% respectively). The median age of the population is 30.5. First nation people's population is higher than Queensland's average which is 30.1%. Only 4.6% of the current population has been born overseas. Most of the people (79.9%) live in separate single-dwelling houses while 30.6% are owner-occupied houses. 100% of residents in RRC fall into a relatively most disadvantaged socio-

economic group.

2. Major sectors and economic drivers

Currently, RRC operates 58 businesses and of them, 46.6% are agricultural businesses predominantly beef cattle farming. Most of the business (69%) does not generate employment opportunities, but only 5.2% of business employed 20-199 employees. Businesses together with the public and private services sectors totally generate 226 jobs but the unemployment rate remains slightly lower (3.4%) than the Queensland average (4.6%). Most of the people work for agriculture, forestry and fisheries (45.1%), public administration and safety (15.9%), and construction (9.3%). The average household income is \$1,490 which is below the Queensland average. The median monthly mortgage payment is \$1,020.

3. Future major projects

Boulia Shire Council is in partnership with NBN through the RCP program to have fibre to the premises to the township. The agreements have been signed which augers well for digital connectivity for both the almost completed Industrial Estate and the soon to be developed Residential Estate. Both mining exploration and increased freight and tourist traffic will see an increase in demand for improved digital connectivity with the ongoing development of the Outback Way (Donohue Highway).

4. Current digital landscape

The ADII index for the region is not available due to the low sample size. According to the NBN Co Bouliia is covered by satellite, 237 connections are ready to connect but only 41% are activated.

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Speeding up fibre infrastructure upgrades in the region	Increasing fibre to the Premises availability for residential and business that are not currently served by either FTTP or FTTN. (Priority -2)	Short-term
ABILITY - Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	Targeted programs and sessions for business, not for profit entities, community groups, and supporting organisations in conjunction with providers and RRC (Priority 1) and create better utilization of currently available RTCs.	Medium-term
ACCESS AND AFFORDABILITY – Building effective governance and positive business culture	Attracting a leading digital provider to the region and develop a regional governance system (Priority 3)	Long-term

Note: The report is based on the following data/ information sources

1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
3. NBN Co., 2022, RTC data (Classified) & map (Open access)
4. Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix D6: Community profile & proposed digital action plan: Central Highland Regional Council

1. Community & demographic overview

Central Highland Regional Council (CHRC) has a total land area of 59,834.8Km², comprising 13 townships (Figure 1).

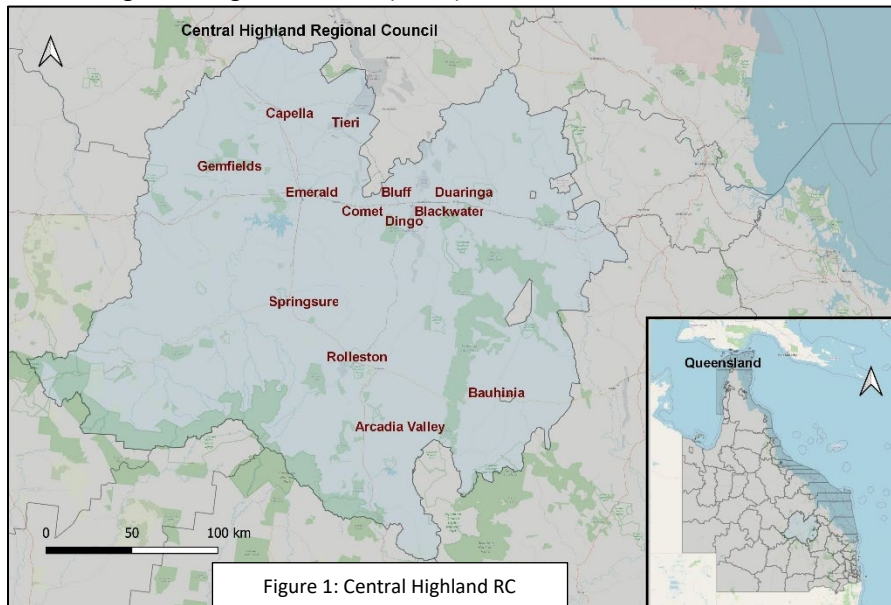


Figure 1: Central Highland RC

The estimated population in 2021 was 28,311, however, it showed a negative population growth rate in the last 10 years (-0.4%). The projected population in the year 2041 is 30,133. Around 6,763 families live in CHRC and of them, 46.9% live with children and 13.3% are one-parent families. The working-age population is 67.1% whereas 9.3% falls under the elderly (age 65+) category (Queensland averages 64.5% and 16.6% respectively). The median age is 34.1 indicating the high potential to contribute to the

working force. First nation people's population is higher than Queensland's average which is 5.9%. Nearly 11.7% of the current population has been born overseas. Most of the people (85.7%) live in separate single-dwelling houses while 22.2% are owner-occupied houses. 14% of residents in CHRC fall into a relatively most disadvantaged socio-economic group.

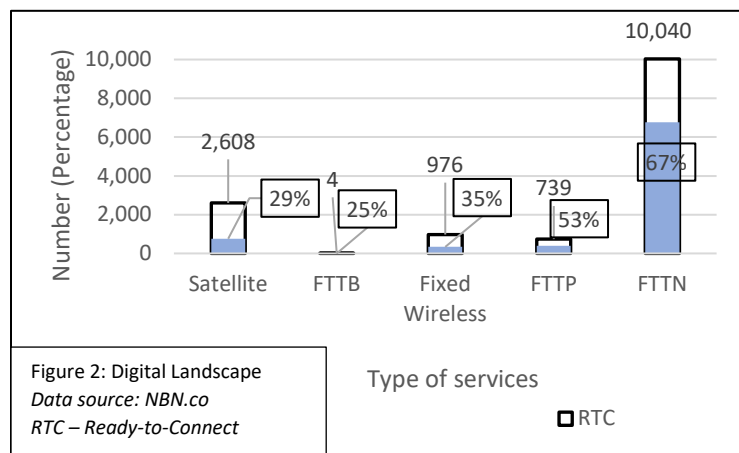
2. Major sectors and economic drivers

Currently, CHRC operates 3,335 businesses and of them, 41.1% are agricultural businesses. Most of the business (63%) does not generate employment opportunities, but only 1.9% of business employed 20-199 employees. Businesses together with the public and private services sectors totally generate 14,188 jobs but the unemployment rate remains slightly lower (3.6%) than the Queensland average (4.9%). Most of the people work for mining (22.5%), agriculture, forestry and fishing (12.6%), retail trade (8%) and education and training (7.7%). The average household income is \$2,095 which is higher than the Queensland average. The median monthly mortgage payment is \$1,500.

3. Future major projects

Several development plans are in place with infrastructure development projects in the region. For example, the robotic technology park and innovation research precinct in Emerald will help in developing agricultural production and allied services.

4. Current digital landscape



The ADII index for RCC is 71 which is above Queensland’s average (70) and slightly lower than the Australian average (71.1). Affordability (95) and digital ability (66) are higher than the Queensland average whereas access (67) is lower than the Queensland average. 82.4% of people access the internet from dwellings (ABS, 2016). Satellite services are available across the CHRC while Emerald, Blackwater, Capella and Tieri are predominantly covered by FTTN and FTTP. As Figure 2 depicted, available services are underutilized.

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Speeding up fibre infrastructure upgrades in the region	Increasing fibre to the Premises availability for residential and business that are not currently served by either FTTP or FTTN, particularly to the rural and urban periphery areas. (Priority -2)	Short-term
ABILITY - Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	Targeted programs and sessions for business, not for profit entities, community groups, and supporting organisations in conjunction with providers and RRC (Priority 1) and create better utilization of currently available RTCs.	Medium-term
ACCESS AND AFFORDABILITY – Building effective governance and positive business culture	Attracting a leading digital provider to the region and develop a regional governance system (Priority 3)	Long-term

Note: The report is based on the following data/ information sources

1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
3. NBN Co., 2022, RTC data (Classified) & map (Open access)
4. Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix D7: Community profile & proposed digital action plan- Diamantina Shire Council

1. Community & demographic overview

Diamantina Shire Council (DSC) has a total land area of 94,722.4km², comprising three townships (Figure 1). The estimated population in 2021 was 270 with a growth rate of -0.8% in the last 10 years. The projected population in

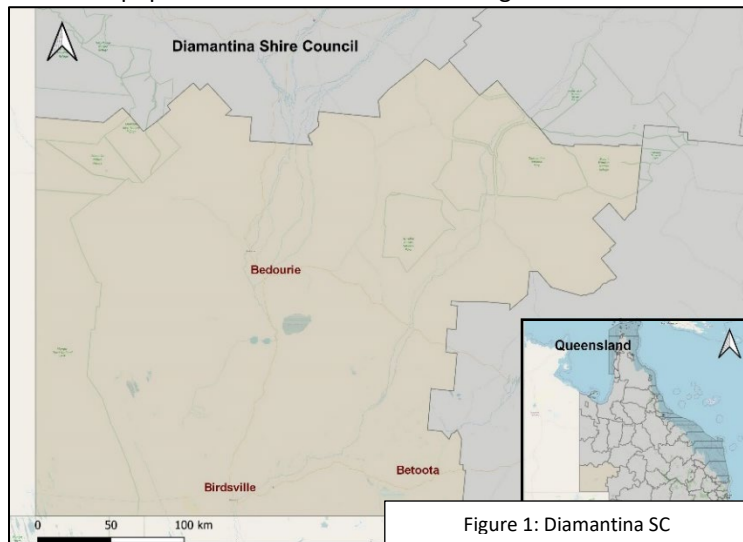


Figure 1: Diamantina SC

the year 2041 is 286. 51 families live in DSC and of them, 25.5% live with children and 15.7% are one-parent families. The working-age population is 76.3% whereas 15.2% falls under the elderly (age 65+) category which is slightly different to the Queensland averages (64.5% and 16.6% respectively). The median age of the population is 40.7. First nation people's population is higher than Queensland's average which is 21.8%. Nearly 10.9% of the current population has been born overseas. Most of the people (93.9%) live in separate single-dwelling houses while 8.5% are owner-occupied houses.

2. Major sectors and economic drivers

Currently, RRC operates 29 businesses and of them, 20.7% are agricultural businesses predominantly beef cattle farming. Businesses together with the public and private services sectors totally generate 154 jobs but the unemployment rate remains lower (3.5%) than the Queensland average (4.9%). Most of the people work in agriculture, forestry and fishing (33.1%) public administration and safety (31.2%), construction (9.1%), and accommodation and food services (9.1%). The average household income is \$1,792 which is higher than the Queensland average. The median monthly mortgage payment is \$953.

3. Future major projects

Several development plans are in place with infrastructure development projects in the region. For example, the Bedourie-Windorah road development and fibre optic telecommunications from Boulia to Birdsville via Bedourie.

4. Current digital landscape

The ADII index for DSC is not available. 75.6% of people access the internet from dwellings (ABS, 2016).

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Provide fibre infrastructure to the region	Provide fibre access to businesses and dwellings (Priority -2)	Short-term
ACCESS AND AFFORDABILITY –	To be part of regional digital governance system (Priority 3)	Long-term

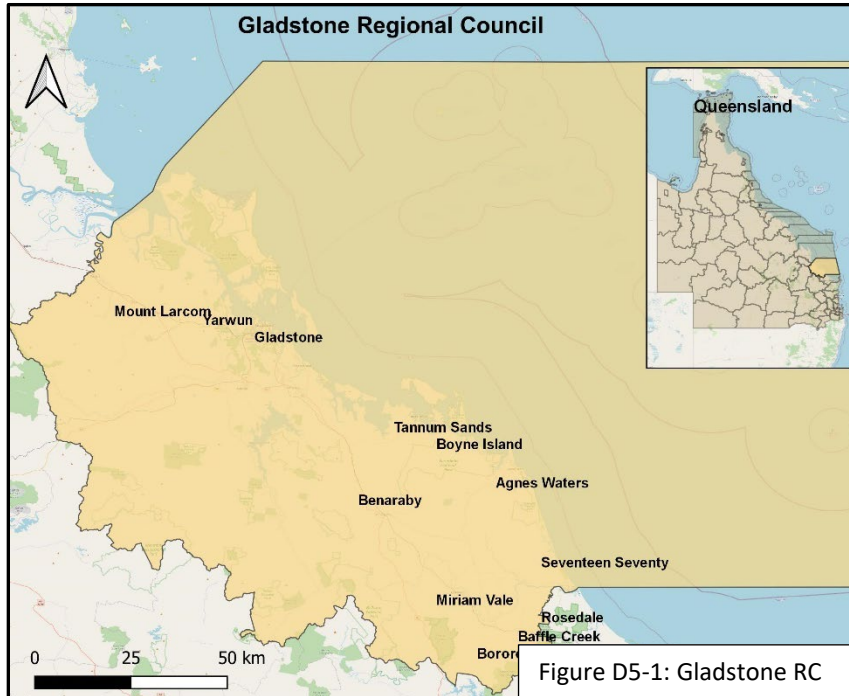
Note: The report is based on the following data/ information sources

1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
3. NBN Co., 2022, RTC data (Classified) & map (Open access)
4. Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix D8: Community profile & proposed digital action plan- Gladstone Regional Council

1. Community & demographic overview

Gladstone Regional Council (GSRC) has a total land area closer to 10,500 Km². GSRC encompasses a



vast landscape, from coastline to country, rural townships to major industry (Figure D5-1). The estimated population in 2021 was 64,304, which increased 0.8% in the last 10 years. The projected population in the year 2041 is 75,327. Around 16,846 families lived in GSRC and of them, 41.7% lived with children and 16.6% are one-parent families. The working-age population was 64.9% whereas 13.4% fell under the elderly (age 65+) category (Queensland averages were 64.5% and 16.6%, respectively). The median age of people living in

Gladstone Regional Council area was 38.2. First nation people's population (6.2%) was higher than Queensland's average, which was 4.6%. Around 13.3% of the current population was born overseas. Most of the people (85.5%) lived in separate single-dwelling houses while only 27.3% were owner-occupied houses. 21.5% of residents in GSRC fell into a relatively most disadvantaged socio-economic group.

2. Major sectors and economic drivers

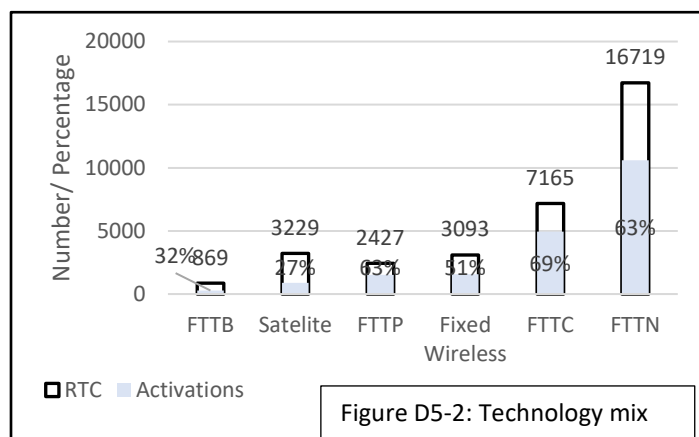
In 2022, there were 3,924 registered businesses in GSRC and of them, around 27% were agricultural businesses. More than half of the businesses (60%) did not generate employment opportunities, and only 2.5% of them employed 20-199 employees. The unemployment rate, however, was higher (5.8%) than the Queensland average (4.6%). Most of the people worked for health care and social assistance (16%), retail trade (10%), construction (8.9%) and education and training (8.5%). The average household income was \$1,639 which was a little lower than the Queensland average (\$1,675). The median monthly mortgage payment was \$1,600.

3. Future major projects

Several development plans, including infrastructure development projects, have been in place in the region. For example, the Gladstone Heavy Vehicle Transport Corridor, the Access to Gladstone Port project, the Toowoomba to Gladstone Inland Road project, or the Miriam Vale Water Treatment Plant Upgrade, will help in developing trade, economic, transport and agricultural activities, as well as other services. There are some large projects underway including the production of Green Hydrogen,

manufacturing of Electrolyzers, production of High Purity Alumina, and the expansion of port container handling facilities.

4. Current digital landscape



The ADII index for GSRC is 71 which is slightly above Queensland's average (70) and below the Australian average (71.1). Affordability (93) and digital ability (70) are above the Queensland averages while accessibility (66) is lower than the Queensland averages. 84% of people access the internet from dwellings which above the Queensland average (ABS, 2016). Mainly FTTN is available across the region, but FTTP and FTTB availability are limited. As Figure D5-2 depicted, available services are underutilized.

5. Recommendations arising from regional digital study report

Digital Inclusion Dimension & strategy	Action/s & Priority	Priority level
ACCESS - Continuing speeding up demand-based and strategic fibre infrastructure and technology upgrades in the region.	Increasing fibre to the Premises availability for residential and business that are not currently served by either FTTP or FTTN, particularly to the rural and urban periphery areas. (Priority 1).	<i>Immediate priority</i>
AFFORDABILITY – Enhancing digital and service equity across the region by ensuring reasonable costs and user charges.	Managing to meet customer expectations of affordability by maintaining reasonable costs for some socio-economic disadvantaged residents (Priority 2).	<i>Immediate to medium priority</i>
ABILITY - Reducing digital discrimination and improving digital skills and knowledge among stakeholders involved in digital connectivity projects and people in the community.	Note: Gladstone Libraries have provided digital literacy programs such as Digital Device Day, or Digital Media Workshop for Youth, etc. to help build digital capacity among the residents. Providing more consistent & integrated education and training programmes, and ensuring the adoption of digital	<i>Already prioritized</i>

	training services appropriate for different stakeholders (Priority 3).	<i>Immediate to medium priority</i>
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Note: Discussion in the appendix draws on the following data/ information sources

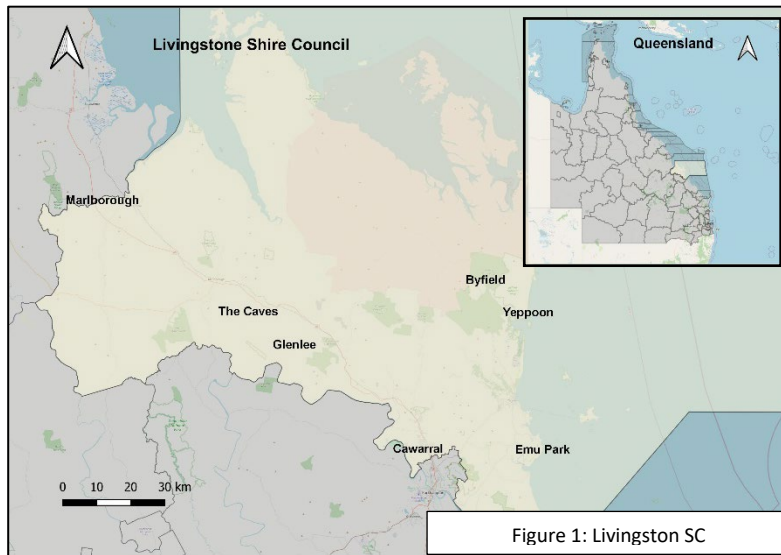
1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Gladstone Regional Council (<https://www.gladstone.qld.gov.au/>).
3. Queensland Government (<https://www.statedevelopment.qld.gov.au/regions/economic-development/building-our-regions/funded-projects>).

Note: Appendix 8 is copied from “Regional Digital Study- Wide Bay Burnet, Banana and Gladstone (WBBBG)” report with the permission from the project funding agency. Research reported in this appendix is presented WBBBG’s report. We would suggest reading this appendix in conjunction with the WBBBG’s report.

Appendix 9: Community profile & proposed digital action plan: Livingstone Shire Council

1. Community & demographic overview

Livingstone Shire Council (LSC) has a total land area of 11,757.9km², comprising seven townships (Figure 1). The estimated population in 2021 was 39,881 with a growth rate of 1.8% in the last 10 years. The projected population



in the year 2041 is 55,740. Around 10,646 families live in LSC and of them, 38.6% live with children and 13.8% are one-parent families. The working-age population is 61.9% whereas 19.6% falls under the elderly (age 65+) category which is slightly below the Queensland averages (64.5% and 16.6% respectively). The median age is 43.1 indicating a high potential to contribute to the working force. First nation people's population is slightly higher than Queensland's average which is 5.4%. Nearly 10.1% of the current population has been born overseas. Most of the people (88.4%) live in separate single-dwelling houses while

36.9% are owner-occupied houses. 16.5% of residents in LSC fall into a relatively most disadvantaged socio-economic quantile.

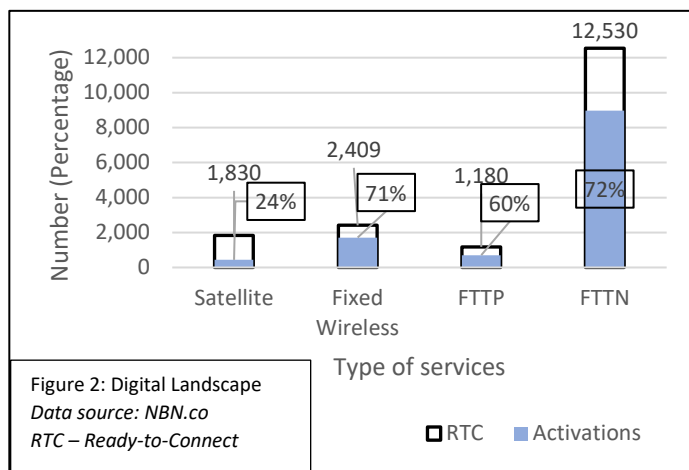
2. Major sectors and economic drivers

Currently, LSC operates 2,970 businesses and of them, 18.3% are agricultural businesses. Most of the business (58.5%) does not generate employment opportunities, but only 2.1% of business employed 20-199 employees. Businesses together with the public and private services sectors totally generate 17,627 jobs while the unemployment rate remains lower (3%) than the Queensland average (4.6%). Most of the people work for health care and social assistance (13.3%), education and training (10.9%), construction (10.5%), mining (9.8%), and retail trade (8.4%). The weekly average household income is \$1,625 which is slightly below the Queensland average. The median monthly mortgage payment is \$1,733.

3. Future major projects

The development of military training facilities along the shore may create new employment opportunities and the incoming population demand more digital facilities.

4. Current digital landscape



The ADII index for LSC is 68 which is below Queensland’s and the Australian average (QLD=70, Australia=71.1). All three criteria – access (65), affordability (92) and digital ability (62) – are behind the Queensland averages. 80.4% of people access the internet from dwellings (ABS, 2016). Most business and residential areas in the suburbs of Yeppoon, Rosslyn Bay, and Emu Park are covered by Fiber (either FTTN or FTTP) while the rest is covered by Fixed wireless and satellite. As Figure 2 depicted, available services are underutilized.

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Speeding up fibre infrastructure upgrades in the region	Increasing fibre to the Premises availability for residential and businesses that are not currently served by either FTTP or FTTN. (Priority -2)	Short-term
ABILITY - Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	Targeted programs and sessions for businesses, not-for-profit entities, community groups, and supporting organisations in conjunction with providers and RRC (Priority 1) and create better utilization of currently available RTCs.	Medium-term
ACCESS AND AFFORDABILITY – Building effective governance and positive business culture	Attracting a leading digital provider to the region and develop a regional governance system (Priority 3)	Long-term

Note: The report is based on the following data/ information sources

1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
3. NBN Co., 2022, RTC data (Classified) & map (Open access)
4. Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix D10: Community profile & proposed digital action plan- Longreach Regional Council

1. Community & demographic overview

Longreach Regional Council (LrRC) has a total land area of 40572.2km², comprising four townships (Figure 1). The estimated population in 2021 was 3,693 with a negative growth rate of -1.5% in the last 10 years. The projected

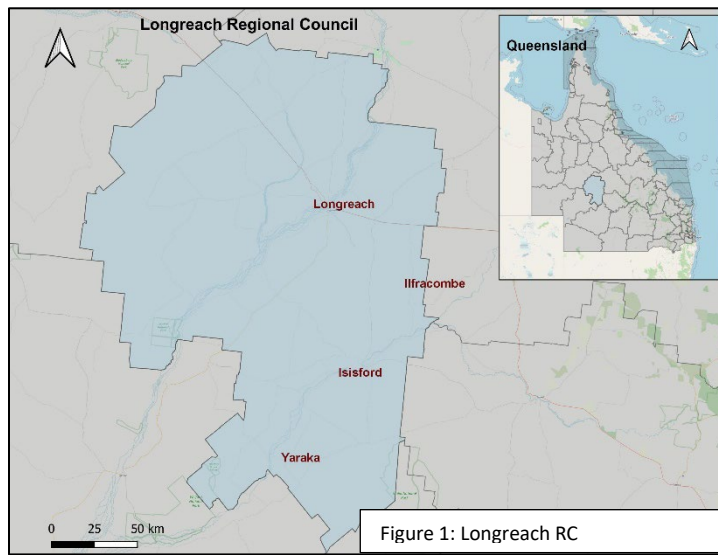


Figure 1: Longreach RC

population in the year 2041 is 2,685. Around 864 families live in LrRC and of them, 37.4% live with children and 15.4% are one-parent families. The working-age population is 64% whereas 16.9% falls under the elderly (age 65+) category which is slightly below the Queensland averages (64.5% and 16.6% respectively). The median age is 39.8 indicating the high potential to contribute to the working force. First nation people's population is higher than Queensland's average which is 6.1%. Nearly 7.7% of the current population has been born overseas. Most of the people (88.2%) live in separate single-dwelling houses while 32.5% are owner-occupied houses.

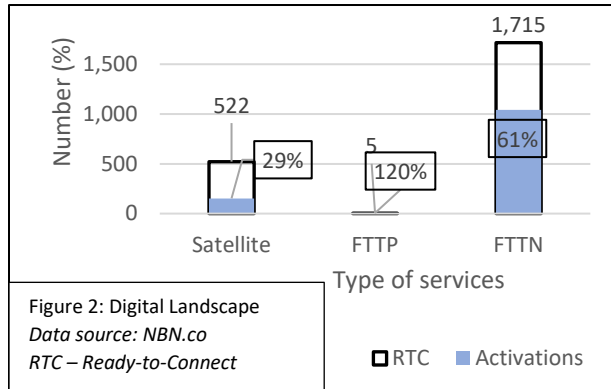
2. Major sectors and economic drivers

Currently, LrRC operates 624 businesses and of them, 43.1% are agricultural businesses. Most of the business (62%) does not generate employment opportunities, but only 2.1% of business employed 20-199 employees. Businesses together with the public and private services sectors totally generate 1,914 jobs but the unemployment rate remains lower (2.6%) than the Queensland average (4.9%). Most of the people work for agriculture, forestry and fisheries (14.9%), health care and social assistance (14.1%), public administration (10.4%), and education and training (8.9%). The average household income is \$1,561 which is slightly lower than the Queensland average. The median monthly mortgage payment is \$1083.

3. Future major projects

Several development plans are in place with infrastructure development projects in the region. Some of them are multi-modal freight hub and other infrastructure development. The expansion of services sector may require more digital access.

4. Current digital landscape



The ADII index for RCC is 66 which is below Queensland’s and the Australian average (QLD=70, Australia=71.1). All three criteria – access (64), affordability (93) and digital ability (58) – are behind the Queensland averages. 76.6% of people access the internet from dwellings (ABS, 2016). Fibre to Node (FTTN) connections are common in LrRC area and a few numbers are connected with FTTP. As Figure 2 depicted, available services are underutilized (except FTTP).

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Speeding up fibre infrastructure upgrades in the region	Increasing fibre to the Premises availability for residential and business that are not currently served by either FTTP or FTTN. Establish the fixed wireless facilities particularly to the rural and urban periphery areas. (Priority -2)	Short-term
ABILITY - Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	Targeted programs and sessions for business, not for profit entities, community groups, and supporting organisations in conjunction with providers and RRC (Priority 1) and create better utilization of currently available RTCs.	Medium-term
ACCESS AND AFFORDABILITY – Building effective governance and positive business culture	Attracting a leading digital provider to the region and develop a regional governance system (Priority 3)	Long-term

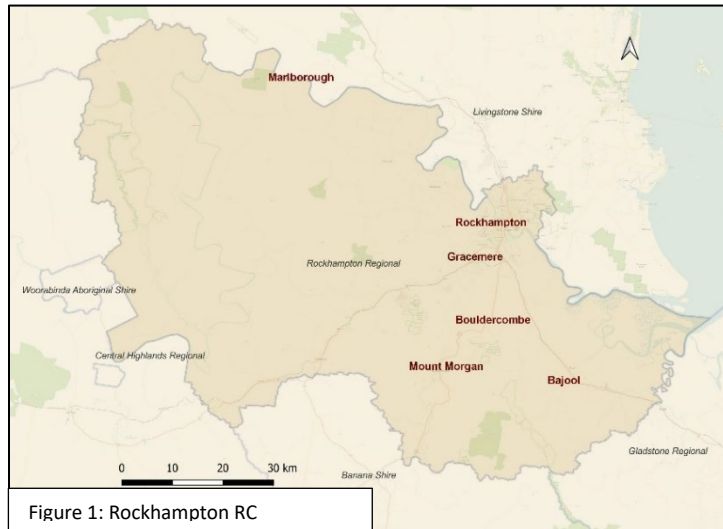
Note: The report is based on the following data/ information sources

- Australian Bureau of Statistics (<https://statistics.gsgo.qld.gov.au/qld-regional-profiles>)
- Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
- NBN Co., 2022, RTC data (Classified) & map (Open access)
- Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix D11: Community profile & proposed digital action plan- Rockhampton Regional Council

1. Community & demographic overview

Rockhampton Regional Council (RRC) has a total land area of 6,570.3Km², comprising six townships (Figure 1). The estimated population in 2021 was 82,904 with a growth rate of 0.5% in the last 10 years. The projected population in the year 2041 is 104,153. Around 21,022 families live in RRC and of them, 39.5% live with children and 20.7% are one-parent families. The working-age population is 63.6% whereas 16.2% falls under the elderly (age 65+) category which is slightly below the Queensland averages (64.5% and 16.6% respectively). The median age is 36.9 indicating the high potential to contribute to the working force. First nation people's population is higher than Queensland's average which is 8.7%. Nearly 10% of the current population has been born overseas. Most of the people (88.1%) live in separate single-dwelling houses while 29.7% are owner-occupied houses. 39.1% of residents in RRC fall into a relatively most disadvantaged socio-economic group.



Rockhampton Regional Council (RRC) has a total land area of 6,570.3Km², comprising six townships (Figure 1). The estimated population in 2021 was 82,904 with a growth rate of 0.5% in the last 10 years. The projected population in the year 2041 is 104,153. Around 21,022 families live in RRC and of them, 39.5% live with children and 20.7% are one-parent families. The working-age population is 63.6% whereas 16.2% falls under the elderly (age 65+) category which is slightly below the Queensland averages (64.5% and 16.6% respectively). The median age is 36.9 indicating the high potential to contribute to the working force. First nation people's population is higher than Queensland's average which is 8.7%. Nearly 10% of the current population has been born overseas. Most of the people (88.1%) live in separate single-dwelling houses while 29.7% are owner-occupied houses. 39.1% of residents in RRC fall into a relatively most disadvantaged socio-economic group.

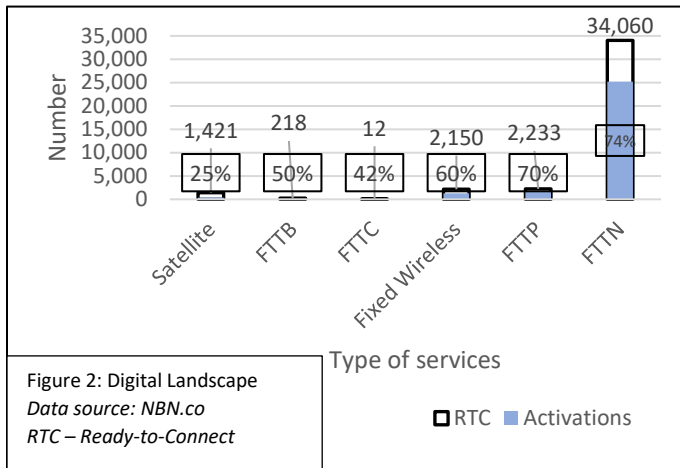
2. Major sectors and economic drivers

Currently, RRC operates 5,168 businesses and of them, 13.4% are agricultural businesses predominantly beef cattle farming. Most of the business (56.8%) does not generate employment opportunities, but only 3.1% of business employed 20-199 employees. Businesses together with the public and private services sectors totally generate 36,979 jobs but the unemployment rate remains slightly higher (5.5%) than the Queensland average (4.6%). Most of the people work for health care and social assistance (18%), education and training (9.9%), retail trade (9.7%), construction (7.7%), and accommodation and food services (7%). The average household income is \$1,477 which is below the Queensland average. The median monthly mortgage payment is \$1,733.

3. Future major projects

Rockhampton is a strategically important area to develop the whole Central West Queensland Region. It is planning to develop as a multi-model logistics and transport service hub. A military defense precinct is developing in the Rockhampton region which potentially increases the demand for digital services. The development of Rockwood Weir attracts potential investors to the region further increasing the demand for digital services.

4. Current digital landscape



The ADII index for RCC is 67 which is below Queensland’s and the Australian average (QLD=70, Australia=71.1). All three criteria – access (64), affordability (87) and digital ability (61) – are behind the Queensland averages. 77.2% of people access the internet from dwellings (ABS, 2016). Most business and residential areas in the suburbs of Rockhampton, Parkhurst, Mount Morgan, and Grasmere are covered by Fiber (either FTTN or FTTP) while the rest is covered by Fixed wireless and satellite. As Figure 2 depicted, available services are underutilized.

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Speeding up fibre infrastructure upgrades in the region	Increasing fibre to the Premises availability for residential and business (Priority 1)	Short to medium term
ABILITY - Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	Targeted programs and sessions for business, not for profit entities, community groups, and supporting organisations in conjunction with providers and Council (Priority 1)	Short to medium term
ACCESS AND AFFORDABILITY – Building effective governance and positive business culture	Attracting a leading digital provider to the region (Priority 2)	Long term

Note: The report is based on the following data/ information sources

1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
3. NBN Co., 2022, RTC data (Classified) & map (Open access)
4. Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix D12: Community Profile & proposed digital action plan- Winton Shire Council

1. Community & demographic overview

Winton Shire Council (WSC) has a total land area of 53,813.5Km², comprising four townships (Figure 1). The

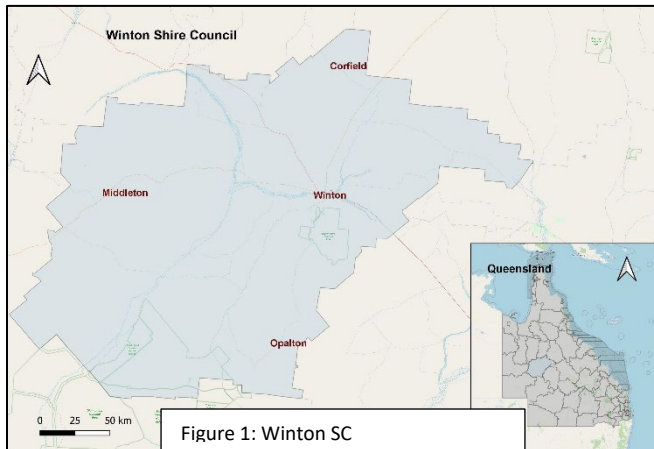


Figure 1: Winton SC

estimated population in 2021 was 1,132 with a negative population growth of -2% in the last 10 years. The population is projected to decrease by the year 2041 to 751. Around 256 families live in WSC and of them, 37.1% live with children and 11.3% are one-parent families. The working-age population is 63.1% whereas 20.9% falls under the elderly (age 65+) category which is slightly below the Queensland averages (64.5% and 16.6% respectively). The median age of the population is 48.3. First nation people's population is higher than Queensland's average which is 7.3%. Nearly 5% of the current population has been born overseas. Most of the people (85.4%) live in separate single-dwelling

houses while 85.4% are owner-occupied houses. 44.7% of residents in WSC fall into a relatively most disadvantaged socio-economic group.

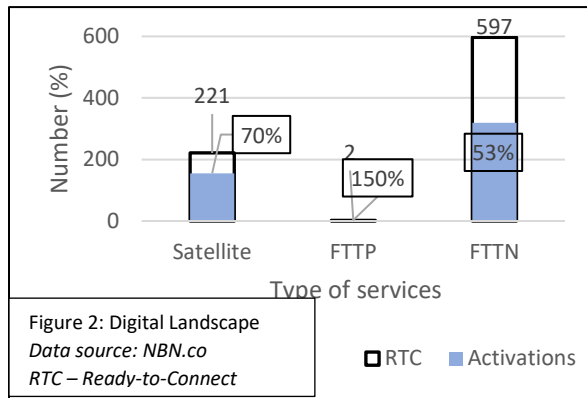
2. Major sectors and economic drivers

Currently, WSC operates 236 businesses and of them, 54% are agricultural businesses. Most of the business (64%) does not generate employment opportunities, but only 11.9% of business employed 5-19 employees. Businesses together with the public and private services sectors totally generate 559 jobs but the unemployment rate remains 3.3% in comparison to Queensland's average of 4.6%. Most of the people work for agriculture, forestry and fisheries (24%), public administration (18.2%), retail trade (10%), construction (7.5%) and health care and social assistance (6.3%). The average household income in WSC is \$1,316 which is below the Queensland average. The median monthly mortgage payment is \$863.

3. Future major projects

Several development plans are in place with infrastructure development projects in the region. For example, the development of highways (Donohue Highway) and road facilities may help to flourish the economic activities in the region.

4. Current digital landscape



The ADII index for WSC is 63 which is below Queensland's and the Australian average (QLD=70, Australia=71.1). All three criteria – access (62), affordability (92) and digital ability (55) – are behind the Queensland averages. Despite higher affordability, accessibility and digital ability are considerably low. 67.4% of people access the internet from dwellings (ABS, 2016). Most of the area is covered by FTTP but only 53% connected. As Figure 2 depicted, available services are underutilized except fibre to premises.

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Speeding up fibre infrastructure upgrades in the region	Increasing fibre to the Premises availability for residential and business that are not currently served by either FTTP or FTTN, and wireless network for remote areas. (Priority -2)	Short-term
ABILITY - Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	Targeted programs and sessions for business, not for profit entities, community groups, and supporting organisations in conjunction with providers and RRC (Priority 1) and create better utilization of currently available services.	Medium-term
ACCESS AND AFFORDABILITY – Building effective governance and positive business culture	Attracting a leading digital provider to the region and develop a regional governance system (Priority 3)	Long-term

Note: The report is based on the following data/ information sources

1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
3. NBN Co., 2022, RTC data (Classified) & map (Open access)
4. Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix D13: Community profile & proposed digital action plan- Woorabinda Aboriginal Shire Council

1. Community & demographic overview

Woorabinda Aboriginal Shire Council (WASC) has a total land area of 390.6 km², comprising two townships



(Figure 1). The estimated population in 2021 was 1,041 with a growth rate of 0.6% in the last 10 years. The projected population in the year 2041 is 870. 232 families live in WASC and of them, 21.1% live with children and 62.5% are one-parent families. The working-age population is 58.2% whereas 16.6% falls under the elderly (age 65+) category which is slightly below the Queensland averages (64.5% and 16.6% respectively). The median age of the population is 23.5. The percentage of Aboriginal peoples and Torres Strait Islander peoples in WASC is 91.6%. Only 0.9% of the current population has been born

overseas. 100% of residents in WASC fall into a relatively most disadvantaged socio-economic group.

2. Major sectors and economic drivers

Currently, WASC operates 8 businesses. Most of the business (60%) does not generate employment opportunities. The unemployment rate remains higher (7.5%) than the Queensland average (4.6%). Most of the people work for education and training (27.3%), public administration and safety (26.8%), and health care and social assistance (18%). The average household income is \$381 which is below the Queensland average.

3. Future major projects

Several development plans are in place with infrastructure development projects in the region. For example, the development of cultural centre (Duaranga) and adjacent Army Reserves and Cadets depot helps in the regional development which may require more digital connectivity.

4. Current digital landscape

The ADII index for WASC is 63 which is below Queensland's and the Australian average (QLD=70, Australia=71.1). All three criteria – access (60), affordability (83) and digital ability (59) – are behind the Queensland averages. 34.7% of people access the internet from dwellings (ABS, 2016). The council is covered by satellite and 200 connections are ready to connect but only 44 are actively connected, indicating underutilization (NBN co).

5. Recommendations arising from proposed digital action plan report

Digital Inclusion Dimension & strategy	Action/s & Priority	Timeframe
ACCESS - Speeding up fibre infrastructure upgrades in the region	Increasing fibre to the Premises availability for residential and business that are not currently served by either FTTP or FTTN. (Priority -2)	Short-term
ABILITY - Improving digital skills and knowledge among stakeholders involving in digital connectivity projects and people in the community	Targeted programs and sessions for business, not for profit entities, community groups, and supporting organisations in conjunction with providers (Priority 1) and create better utilization of currently available services.	Medium-term
ACCESS AND AFFORDABILITY – Building effective governance and positive business culture	Attracting a leading digital provider to the region and develop a regional governance system (Priority 3)	Long-term

Note: The report is based on the following data/ information sources

1. Australian Bureau of Statistics (<https://statistics.qgso.qld.gov.au/qld-regional-profiles>)
2. Australian Digital Inclusion Index (ADII) (2018) (<https://doi.org/10.25916/5b594e4475a00>)
3. NBN Co., 2022, RTC data (Classified) & map (Open access)
4. Regional Development Australia – Central and West Queensland (<https://rdafcw.com.au/>)

Appendix E: List of participating organisations in the Workshops 1 & 2

- *Group A: Australian Government*
 - Regional Development Australia Central West Queensland
 - National Emergency Management Services

- *Group B: Queensland Government*
 - Department of Regional Development, Manufacturing and Water
 - Department of State Development, Infrastructure, Local Government and Planning

- *Group C: Local Government*
 - Barcoo Shire Council
 - Blackall-Tambo Regional Council
 - Boulia Shire Council
 - Central Highland Regional Council
 - Livingstone Shire Council
 - Longreach Regional Council
 - Winton Shire Council
 - Woorabinda Aboriginal Shire Council

- *Group D: Education, Industry & Community Organisation*
 - CQUniversity Australia
 - NBN Local
 - Capricorn Enterprise