BIRRR

BETTER
INTERNET FOR
RURAL,
REGIONAL &
REMOTE AUSTRALIA

2024 SUBMISSION

Australian Government

Regional Telecommunications Review

Image: JM Styling & Photography

Thanks for the opportunity to submit to the 2024 Regional Telecommunications Review. Many of the issues and recommendations from BIRRR's 2021 RTIRC Submission are still relevant.

List of previous submissions

- BIRRR Submission – Shutdown of the 3G mobile network (Senate Inquiry) (June 2024)
- BIRRR Submission into the Better Delivery of Universal Services Discussion Paper (March 2024)
- On Farm Connectivity Program Discussion Paper: BIRRR Submission (March 2023)
- BIRRR Submission to the Regional Connectivity Program: Draft Grant Opportunity Guidelines Round 3 (Feb 2023)
- BIRRR Regional Telecommunications Review 2021 Submission (2021)

Cover Image Supplied by: *JM Styling & Photography, Jasmin Morrison*

Submission date: *5th August 2024, with granted extension*

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This submission was prepared in good faith by a voluntary team. Please address any queries to BIRRR at birrraus@gmail.com

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Executive Summary

While there has been extensive investment of public funds, by governments, aimed at enhancing regional, rural and remote (RRR) telecommunications, there have been significant failings in planning, implementation and delivery. Solutions implemented are often unaffordable, fail to meet community needs, lack adequate support, or are not delivered on time. There is a need for improved planning and frameworks, designed with community consultation for RRR place-based telecommunications solutions. Additionally, barriers to connectivity adoption include a lack of Connectivity Literacy, affordability, procurement processes and misinformation fostered in a sales based environment.

Better Internet for Rural, Regional and Remote Australia (BIRRR) outlines a comprehensive set of recommendations aimed at addressing the persistent challenges faced by RRR communities in telecommunications (Appendix 5). Key recommendations include the establishment of a national RRR strategic telecommunications framework to guide future development and investment, and the creation and enhancement of targeted programs for Connectivity Literacy awareness and support. BIRRR also proposes the development of a centrally managed RRR connectivity platform and improved affordability measures, including concessional broadband services and extended government allowances.

The submission calls for modernising the Universal Service Guarantee (USG), strengthening consumer protections, and ensuring RRR consumers can access redundancy. BIRRR also advocates for increased resilience in infrastructure to withstand natural disasters and proactive planning for future technology disruptions. Engaging regional advocacy groups in industry research and collaboration is also crucial. These measures aim to leverage existing infrastructure and enhance service adequacy, capacity, and reliability for RRR consumers while ensuring robust regulatory oversight and consumer protection.

RRR Australians face unique challenges and have a significantly higher reliance on connectivity for workforce participation, access to government services, education, health and emergency services than urban areas. RRR telecommunications need future proofing, consumers should not be subjected to poor technology migration processes, inaccurate information and left without connection due to a lack of failsafes and redundancy. Telecommunications is an essential service. Government needs to think big, and have long term strategic plans in place, in order to help RRR Australians get connected, and stay connected.

BIRRR Background

Better Internet for Rural, Regional and Remote Australia (BIRRR) is a grassroots not-for-profit volunteer group which advocates for viable and sustainable solutions to a wide variety of RRR telecommunication issues.

BIRRR is independent, apolitical and technologically agnostic. Since 2014 we have provided information, practical support and advice, primarily through our Facebook platform, website and extensive consumer engagement in RRR areas. The organisation boasts a membership of almost 16,000 individuals across Australia giving BIRRR a unique appreciation, insight and understanding of the issues and impacts of the connectivity challenges and barriers to access facing regional consumers.

Over the past decade, BIRRR has made significant strides in advocating for improved connectivity and services in underserved areas. We have successfully raised awareness of the unique challenges faced by rural and remote consumers, influencing policy changes and encouraging more effective government and industry responses. BIRRR has also provided crucial support to its members through guidance on navigating service issues, advocating for better service standards, and highlighting gaps in coverage and service quality. These efforts have helped drive improvements in telecommunications infrastructure and service delivery, fostering greater equity in access to RRR consumers across Australia.

BIRRR is a founding member of the Rural, Regional and Remote Communications Coalition (RRRCC) and supports their Submission.

BIRRR 2024 RTIRC Recommendations

1. Implement a national rural, regional and remote (RRR) strategic framework, plan and strategies for future development and investment in RRR telecommunications infrastructure.
2. Reduce and eliminate the barriers to accessing telecommunications services for RRR consumers.
3. Develop a centrally managed interactive RRR connectivity platform & enforceable standards for coverage maps and addressing systems information.
4. Develop strategies and funded programs to improve affordability of telecommunication services and equipment in RRR areas.
5. Improved procurement processes of RRR telecommunications services across all levels of government through a funding framework.
6. Introduce measures to reduce misinformation and disinformation and provide independent advice to individuals, small businesses and industry within the RRR telecommunications sector.
7. Define and enhance adequacy and capacity of RRR telecommunications services
8. Modernise and strengthen the Universal Service Guarantee (USG) and Universal Service Obligation (USO)
9. Strengthen and enhance RRR telecommunications consumer protections and ensure they are enforced by regulators and Government
10. Strengthen the resiliency and redundancy of RRR telecommunications infrastructure to better prepare for power outages, natural disasters and extreme weather events
11. Develop a strategic plan to proactively plan for future technology disruptions and emerging telecommunications technology challenges and risks
12. Regional advocacy and regional consumer focused groups should be invited to be engaged and present on government working groups and during industry research and collaboration processes.
13. BIRRR recommends the Government support the recommendations presented in the initial report of the First Nations Digital Inclusion Advisory Group.

Submission

1.0 Strategic planning, frameworks and community engagement for RRR telecommunications infrastructure

While there has been extensive investment of public funds, by both federal and state governments, aimed at enhancing regional telecommunications infrastructure, there has been significant failings in terms of planning, implementation and delivery.

Solutions implemented are often unaffordable, fail to meet community needs, lack adequate consumer support, or take many years to roll out. For example, numerous Round 1 Regional Connectivity Program (RCP) projects have been terminated despite incurring costs and partial funds being spent, whilst others have seen low uptake.

Issues described by BIRRR members and regional communities we engage with include:

- Lack of coordination between funding programs and various government levels, complicating efforts for local and state governments to stay informed and develop place-based connectivity solutions designed to meet the needs of RRR communities.
- Limited independent advice available for local governments, industry and communities in creating digital plans, roadmaps, and connectivity infrastructure gap analysis within a region. In particular smaller vulnerable communities often do not have the resources and capabilities to be part of Government grant opportunities as they experience difficulty in being able to access independent advice.
- Inadequate mapping of RRR telecommunications infrastructure, funded projects and gaps analysis.
- Insufficient community engagement and provider-led solutions that often overlook appropriate place-based assessments of specific communities' needs and budgets.
- Projects that experience prolonged rollout periods, with poor community engagement and communication. Additionally, often planned upgrades are proposed on existing community demographics which can change extensively within roll-out timeframes.

- Insufficient due diligence regarding a telecommunications company's ability and capacity to deliver the project within the required timeframe and effectively engage with the community.
- State and local planning and development barriers.
- Absence of mandated consumer education or connectivity literacy awareness embedded in grant funding, resulting in low take up of funded solutions..

Without a structured framework and plan to prioritise RRR telecommunications infrastructure and identify gaps and needs, communities struggle to access effective place-based solutions. A lack of a planning framework which prioritises connectivity infrastructure and limited mapping that identifies where gaps are located and where networks are at their weakest, makes it difficult for communities to gather knowledge about connectivity solutions. The lack of mapping and coordination of funded projects also has the potential to create an overbuild of infrastructure, as funded programs are not working together with local governments (LGAs), businesses, and the telecommunications industry. It is crucial to identify and prioritise capacity gaps and ensure thorough assessment of a telecommunications company's ability to deliver the project and engage with the community.

REC 1.0: Implement a national RRR strategic framework, plan and strategies for future development and investment in RRR telecommunications infrastructure.

BIRRR recommends the federal government create and implement a strategic framework and plan to ensure ongoing investment in the maintenance, upgrades and delivery of RRR telecommunications infrastructure.

We believe a commitment to establishing a RRR Communications Fund is needed, resourcing long-term and ongoing investment in regional telecommunications through the Mobile Black Spot Program, Regional Connectivity Program and State/Territory co-investment programs.

Formal RRR investment and planning should ensure parity, be built in consultation with stakeholders, outline clear priorities for future place-based investment incorporating social, cultural, economic and geographical needs of each community. To achieve this BIRRR recommends adoption of a range of strategies, outlined below.

1.1. A framework for identifying prioritised locations for funding of place-based solutions

Develop a framework for Government funded programs, in conjunction with the states and territories, local Governments and consumer advocates, that has a set of key criteria to prioritise funding. The framework should include factors such as remoteness, population, social and economic benefit, risk of natural disasters, redundancy already available, health, education, tourism and business benefits. The framework should also consider access to competition. Long term planning should also consider future proofing connectivity infrastructure so that future growth in capacity is considered at planning stages and not after a project is rolled out. Thus, the Government can prioritise and target specific localities, rather than the telecommunications companies choosing where to invest.

1.2. Conduct a comprehensive connectivity infrastructure audit and mapping exercise of all RRR telecommunications infrastructure.

BIRRR recommends the federal government, with the support of states and territory Governments and telecommunications companies, conduct a thorough audit and mapping of current regional connectivity infrastructure. This would involve the development of a comprehensive mapping platform, detailing the availability of all connectivity types, including mobile carriers, National Broadband Network (NBN) services, Starlink, Wireless Internet Service Providers (WISPs), alternative fibre providers, ADSL, and planned upgrades or funded projects as they are rolled out. The audit should identify infrastructure gaps and areas which lack capacity and redundancy, to determine where networks and infrastructure are at their weakest or least resilient. For instance what power redundancy is provided at each site and sites that are capacity constrained.

Whilst BIRRR has developed a series of maps including the BIRRR WISP Map[1] and the RRR Connectivity Upgrade Map[2], as volunteers it is difficult to keep these updated and we lack access to the data and tools needed to ensure the maps are accurate and useful in identifying gaps and informing consumers. BIRRR believes a new connectivity infrastructure audit map or platform should be accessible to communities and local governments to aid in planning future infrastructure developments and investment. It is crucial to enhance competition and improve program outcomes that existing government maps include all technologies and telecommunications infrastructure available in RRR Australia and are updated regularly.

[1] *https://www.zeemaps.com/map/eagbn?group=2307253*
[2] *https://www.zeemaps.com/map/ipknl?group=4401811*

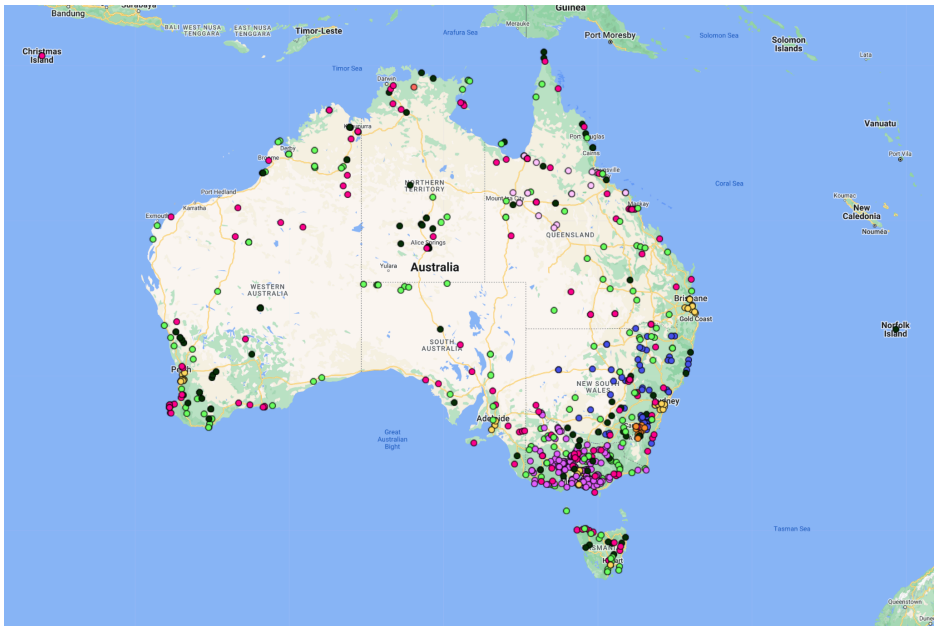

Figure 1: BIRRR RRR Connectivity Upgrade Map

1.3. Funding for independent advice and resources to local government and communities to be embedded in all funded RRR telecommunications programs.

BIRRR recommends the creation of a departmental responsibility and funding mechanism specifically aimed at developing resources and providing independent advice for LGAs and unincorporated communities to assess place-based connectivity solutions. This support would fund resources and aid in building an understanding of regional connectivity technologies, as well as ensuring that communities and LGAs have the skills and resources to conduct thorough evaluations on the telecommunications companies proposing solutions. Additionally, it would enable them to effectively analyse the pros and cons of the proposed solutions, ultimately supporting the creation of region and community-specific digital roadmaps and plans as tangible outcomes.

1.4. Consumer engagement and project assessment outcomes with post project audits included in all RRR telecommunications projects funding agreements.

BIRRR recommends government funded connectivity programs include a standard outcome requiring investment partners to demonstrate evidence of consumer engagement and support and how the projects align with community needs and budgets. Applicants should be evaluated on their ability and

capacity to deliver projects within required timeframes, with mandatory post-project audits. Furthermore, all programs should incorporate consumer education, Connectivity Literacy awareness, and support metrics into their post-project delivery plans.

2.0 Barriers to consumer access to connectivity

2.1 Connectivity Literacy

Connectivity Literacy (explained in detail in Appendix 1), a term coined by Kristy Sparrow of BIRRR, represents a significant barrier to accessing telecommunications services for RRR consumers. Unlike Digital Literacy, which involves the ability to use technology and navigate digital platforms, Connectivity Literacy encompasses the essential knowledge and awareness needed to choose appropriate connectivity technologies, providers, plans and equipment. It involves understanding complex terminologies, evaluating providers and their offerings, and troubleshooting connectivity issues. There is a lack of research and data on the impact that Connectivity Literacy barriers have on digital inclusion in RRR Australia.

Due to limited independent support and the commercially motivated bias of telecommunications providers, many consumers, through no fault of their own, lack the necessary knowledge to make informed decisions about their connectivity. Additionally, confusing plan information and information summaries that are lengthy and written in language that confuses the consumer often prevents access. This lack of Connectivity Literacy leads to poor service choices, ineffective use of equipment, and reliance on potentially misleading information, ultimately perpetuating myths about poor RRR connectivity, making it difficult to get problems resolved and exacerbating the digital divide in RRR areas.

The lack of standardised and transparent information on what telecommunications services a consumer can access at their location also presents a significant barrier to connectivity access for RRR Australians. Issues include:

- Lack of standardised mobile coverage maps
- Lack of a comparison site for consumers to find which technologies they can access

- Addressing issues on provider websites, consumers are often not able to search by their coordinates or gazetted address and addressing issues such as inaccurate locations and missing addresses are not easy to get resolved.
- Poor nbn marketing of products to RRR areas. For example, nbn SkyMuster unlimited plans have been on the market for more than a year and consumers are still unaware that they exist, with RSPs naming them a variety of different names from Ultra to Premium. BIRRR has comments every day from regional consumers who still think they can't access nbn.

The Regional Tech Hub (RTH), while a valuable resource, faces several challenges that hinder its effectiveness in addressing widespread RRR Connectivity Literacy issues. It is underfunded and under-resourced, limiting its ability to fully tackle the complexity of Connectivity Literacy awareness and capacity building in rural and remote areas.

Improving Connectivity Literacy is crucial for enhancing digital inclusion and ensuring that consumers can access and maintain reliable and affordable telecommunications services. However, this should not be a role for the consumer alone, Government and industry must also address Connectivity Literacy and support the consumer to be aware and understand connectivity, to ensure improved digital inclusion in RRR areas.

REC 2.0: Funding and creation of a Research and Training Centre for RRR Connectivity Literacy and Awareness Capacity Building

BIRRR recommends the funding and creation of a dedicated RRR Connectivity Literacy and awareness Research and Training Centre of Excellence, Regional Development Corporation (RDC), Cooperative Research Centre (CRC) or similar that supplies dedicated independent research and training for RRR Connectivity Literacy and awareness capacity building.

BIRRR believes a large-scale, flagship industry-based research centre that aims to solve industry-identified telecommunications access problems should be established. The creation of a dedicated RRR Connectivity Research and Training Centre (CRTC) would solve a number of issues including long-term funding models, cooperation between multiple tiers of government and private

enterprise, and the need for research and support to future proof RRR Australian connectivity needs and build capacity in growing Connectivity Literacy needs.

2.1 Establishment of a RRR Connectivity Research and Training Centre (CRTC)

The Australian government should fund and establish a RRR Connectivity Research and Training Centre (CRTC) to drive innovation and solutions for improving connectivity and access awareness in underserved areas. By investing in independent research to identify and address Connectivity Literacy, creating educational and information materials, and implementing extension programs with workshops, pop-ups, and interventions, the CRTC would empower RRR communities with the knowledge and tools necessary for effective digital engagement.

2.2 Funding, development and implementation of a Connectivity Literacy Awareness Training Program.

More specifically BIRRR strongly recommends funding within the CRTC of a **Connectivity Literacy Awareness Training Program**. This initiative would aim to work closely with relevant bodies to develop the Program to equip communities, individual consumers, volunteers, small businesses, local governments, and regional sectors (e.g., agriculture, health, education) with the knowledge and skills to build capacity within their communities about telecommunications technologies and best practices. The program would create Connectivity Literacy resources and content modules and could be used in conjunction with existing programs, such as the Regional Tech Hub (RTH). A proposed program outline developed by BIRRR in collaboration with James Cook University and Dr. Rachel Hay is attached in Appendix 2.

2.3 Significantly enhance and expand the Regional Tech Hub (RTH)

To significantly enhance the effectiveness of the RTH, it is crucial to increase its funding and resources to expand services and capabilities.

Additional funding and resources will be necessary to grow and maximise the RTH's potential, improving Connectivity Literacy and empowering regional communities to make informed telecommunications decisions and make best use of available infrastructure.

REC 3.0: Develop a centrally managed interactive RRR connectivity platform & enforceable standards for coverage , performance and address information

3.1 Development of a centrally managed RRR connectivity platform

BIRRR recommends the development of an interactive map, tool, app, or website where RRR consumers can view all available telecommunications technologies. This platform should include a 'wizard' feature to help users select suitable options based on their specific address, connectivity needs and budget. Predicted speed, availability, installation/equipment costs and latency metrics could also be included to help consumers make decisions about technologies.

3.2 Development of enforceable standards for RRR telecommunications coverage maps

Current coverage maps are inconsistent and difficult to navigate. Maps and sites consumers frequent to determine access assist customers in knowing what is available, diagnosing issues with their service, having faults fixed and purchasing the correct equipment for their location. Often these maps do not accurately reflect user experience (issues and case studies provided in BIRRR's 2021 RTIRC submission are still relevant and have not been addressed three years on). Accurate and consistent coverage maps are important for the transition to newer technologies, such as the transition from 3G to 4G and being able to monitor changes and manage expectations of continued coverage. Additionally, they are useful for strategic funding for mobile blackspots and future planning of infrastructure.

BIRRR recommends the development of a standard set of metrics for coverage and performance information, including coverage maps and real-world performance data that includes information such as expected speeds, latency and availability metrics available for the consumer to access. To ensure consistency and improve accuracy, the Government should ensure that mobile carriers and telecommunication companies are mandated to provide coverage maps that are standardised and transparent so that consumers can make sound decisions when choosing telecommunications services.

The recently implemented National Audit of Mobile Coverage aims to better identify mobile coverage black spots across Australia to help target future investment, and to provide an independent resource that better reflects on ground experiences of mobile coverage provided commercially by mobile providers. As yet there has been no publicly released data. BIRRR encourages the Government to ensure

that the detailed data on coverage and capacity is released to the public to enhance publicly available information on coverage and performance of mobile networks in RRR areas. BIRRR is supportive of consumer participation in data collection via crowdsourcing.

BIRRR also recommends implementation of a similar program to the United States (US) Broadband Data Act[3], which collects detailed data from providers and involves consumer participation in data collection, across a range of technologies. Although the Australian Competition and Consumer Commission (ACCC) Measuring Broadband Australia Program[4] is useful for consumers and Government, reports are not provided for nbn satellite services and the focus of reports is on speed and not other important metrics such as availability.

3.3 Development of procedures and strategies to assist consumers with addressing issues and awareness of the nbn network

Additionally, procedures and strategies must be established to assist consumers who encounter issues with their addresses not mapping accurately on address checker sites. This could include:

- A dedicated support line or online chat service for resolving address mapping issues quickly.
- A streamlined process for consumers to submit address discrepancies and receive timely updates on their status, both for addresses that map incorrectly or are mapped for the wrong technology.
- Nbn to ensure consumers can get the assistance they need with addressing issues and not be pushed to a list of providers. When a consumer puts their address into the nbn roll out map and their address is unrecognised, the consumer is sent to a list of all nbn providers, who may or may not sell the nbn technology the consumer is mapped for. BIRRR is aware that addressing issues create significant barriers to consumers in getting connected to nbn. Consumers should be able to 'fix their address' with nbn, as it is nbn data, nbn mapping and nbn addressing, sending consumers to a provider to fix the issue is adding another carriage to an already long train.
- Collaboration with local authorities and mapping services to update and correct address databases regularly, including adding new addresses.

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[3] *https://www.fcc.gov/general/broadband-data-improvement-act#:~:text=The%20BDIA%20requires%20the%20Commission,(the%20Section%20706%20Report%20).*

[4] *https://measuringbroadbandaustralia.com.au/*

- NBN must urgently raise awareness by implementing targeted marketing campaigns specifically for RRR regions, ensuring that all Australians in these areas are fully informed about the availability and benefits of NBN broadband services, addressing the current lack of awareness.

By implementing these measures, the government can ensure that all consumers, regardless of their location, have access to accurate and reliable information about their connectivity options and can easily resolve any address-related issues.

2.2 Affordability

Affordability of telecommunications services and equipment in RRR Australia remains a significant barrier to access. Access to government, banking, medical, education and social services is increasingly reliant on connectivity as face-to-face services are being withdrawn, not available or failing. The connectivity landscape in RRR areas changes rapidly both in terms of changes in technology access and required equipment. As well as being confusing, this rapid change also creates financial barriers for consumers. The introduction of unlimited and cheaper nbn Sky Muster Plus Premium plans has been a welcome announcement since the last RTIRC review, as has the School Student Broadband Initiative (SSBI). However, there are still ongoing affordability barriers for RRR consumers. These include:

- Lack of pre-paid plans or pay as you go plans, in particular for fixed connections. Although some providers such as Launtel[5] offer daily rates, they do not sell all available nbn technologies. Pre-paid is often more budget-friendly and flexible for low-income consumers.
- The disparity between the cost of fixed services and mobile options, with fixed services frequently being more expensive and less flexible (requiring installation and equipment), pushing low-income consumers towards mobile plans.
- With newer technologies now requiring 24/7 power, the added expense of funding power supply (for those not on mains power) and power redundancy (for those with unreliable electricity) adds another financial burden.
- The costs associated with connectivity equipment such as wi-fi routers, repeaters, antennas, and signal-enhancing equipment, can further strain household and business budgets.

[5] *https://www.launtel.net.au/*

- RRR consumers are less likely to be able to ‘bundle’ plans and often need to have separate bills from multiple providers for broadband, mobile and voice services.
- Fixed broadband plans often require a credit check, which can create a barrier to access.
- Consumers with inadequate or no mobile coverage have an increased financial burden to stay connected. In today's digital world, having a mobile phone is crucial for two-factor authentication (2FA), a key security measure for protecting personal and financial information. Many services require 2FA codes sent via SMS or app notifications to mobile devices, adding an essential layer of security against unauthorised access. Even for consumers without mobile coverage there is a need to pay for a mobile plan to be able to access wi-fi calling and 2FA via SMS.

Fixed services are often unaffordable for renters, students, transient workers, pensioners, First Nations consumers and those with concessions or low income. These consumers are often ‘mobile only’ consumers. For those reliant solely on mobile services, the absence of affordable, redundant connectivity options can leave them vulnerable to service disruptions and congestion. To provide equitable opportunities to the RRR community, access to affordable broadband and voice services is a necessity.

REC 4.0: Develop strategies and funded programs to improve affordability of telecommunication services and equipment in RRR areas.

To provide equitable opportunities to the RRR community, access to affordable broadband and voice services is a necessity. BIRRR suggests the following strategies to improve telecommunications affordability for RRR consumers.

4.1 The Low Income Digital Inclusion Forum (LIDIF) is tasked with developing affordability strategies for fixed and mobile services for RRR low income users.

LIDIF is already active and engaged, this engagement could be leveraged to provide specific affordability strategies for RRR consumers. There should be a particular focus on those consumers residing in RRR areas who have no adequate access to mobile services, those residing in First Nations and other small vulnerable communities and those who have additional affordability challenges.

4.2 Government to fund a concessional NBN broadband service and equipment supply product across all technologies.

BIRRR supports Australian Communications Consumer Action Network's (ACCAN) recommendation that the government funds an affordable broadband concession product to support low income RRR Australians to access services on the nbn network. This should include funding for equipment (such as wi-fi routers and modems if required) to support all low-income RRR residents, potentially managed through Services Australia. This would broaden current programs such as the 'telephone allowance' and SSBI, potentially negating requirements for credit checks and addressing administrative barriers to uptake.

4.3 Increase the frequency and amount of Services Australia quarterly Telephone Allowance[6]

The Services Australia quarterly telephone allowance is in urgent need of updating to better reflect the essential nature of telecommunications today and cost of monthly mobile plans. This allowance should be extended to low-income consumers and vulnerable groups in RRR areas, particularly those who do not have access to reliable and adequate mobile services.

4.4 Extend the School Student Broadband Initiative (SSBI)

The SSBI should be extended to include RRR tertiary students and low-income consumers, such as health care card holders and pensioners, as well as those severely affected by natural disasters, in particular those living in RRR areas without adequate mobile coverage. This would assist the affordability issues that stem from the need for these consumers to have to pay for multiple telecommunication services to stay connected.

4.5 Un-metering of essential publicly funded Government and health online services

BIRRR recommends the un-metering of essential publicly funded Government and health online services such as Centrelink, Medicare, MyGov and Services Australia, similar to New Zealand's Zero Data [7] initiative across all limited data connectivity technologies/plans (fixed and mobile broadband).

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[6] *https://www.servicesaustralia.gov.au/telephone-allowance*

[7] *https://www.tewhatuora.govt.nz/health-services-and-programmes/digital-health/zero-data/*

4.6 Government to ensure affordable back-up power redundancy is provided for all nbn technologies in RRR areas.

The government should make available subsidies for the purchase of backup power solutions for consumers in RRR areas who rely on the NBN network. This measure will ensure that these consumers maintain internet connectivity during power outages, which is critical for accessing essential services such as telehealth, remote learning, and emergency communications. By providing financial support for backup power systems, the government can enhance the resilience of NBN services in RRR areas, thereby improving reliability and ensuring continuous connectivity for households and businesses in these regions. As new nbn products and technologies are rolled out in coming years, there should be embedded power redundancy factored into all new products.

2.3 Procurement Barriers

Government procurement practices and contracts often result in poor outcomes and connectivity solutions for education, health, and other government services. For example, in Alpha, Queensland, despite the availability of NBN Fibre to the Premise, the local school, police station, emergency services and hospital are not yet connected. Similarly, BIRRR is aware of several locations, such as Mistake Creek and Lochington State Schools, where Education Queensland refused to allow a Telstra small cell site to be installed on school grounds. Other examples include a school and a local council being offered free business grade wireless solutions by a local provider (which would have been a significant improvement on their existing connectivity options), only to be told they were unable to accept the offer due to existing contracts. Procurement processes, used by many state departments and some local governments, restrict place-based connectivity solutions and create barriers for government services to access the best technology available. The reliance on single-provider contracts in state education and health systems further prevents tailored connectivity solutions, favouring large carriers and telcos, and limiting the ability of local entities to procure more suitable products. This centralised approach often leaves government services with inadequate connectivity, preventing them from utilising the best available technology, even though the infrastructure is available.

Additionally, state and LGA planning and development applications can often delay and extend the roll out of new infrastructure.[8] For example, the rollout of new base station infrastructure often faces delays due to complex planning and development processes involving multiple stakeholders, such as landowners, local councils, and state departments. This deployment typically spans 24 to 36 months and can be affected by external factors like prolonged negotiations.

REC 5.0: Improved procurement processes of RRR telecommunications services across all levels of government through a funding framework.

To address procurement barriers in telecommunications and improve connectivity solutions for government services, the federal government should implement the following recommendations in conjunction with states and territories:

5.1 Develop a Telecommunications Procurement Framework

States and territories should create a framework that supports place-based solutions and encourages the use of multiple provider contracts over single state-based contracts. This framework should streamline tender processes to facilitate procurement from smaller contractors and prioritise individualised solutions.

5.2 Encourage states and territories to set performance metric targets in RRR telecommunications contracts and implement contract flexibility.

Include clear, measurable performance metrics such as speed, uptime, and security in procurement guidelines to ensure high standards are maintained throughout the contract duration. Encourage adaptability of contracts to consider new emerging technologies and infrastructure builds in RRR areas. Introduce stop/go points in contracts to provide the flexibility to exit agreements if key milestones are not met, ensuring accountability and adaptability to better technology solutions as they become available.

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8 *https://www.infrastructure.gov.au/media-communications-arts/phone/mobile-services-and-coverage/mobile-black-spot-program/frequently-asked-questions-mobile-black-spot-program*

2.4 Misinformation & Disinformation

One of the largest challenges to getting and staying connected in RRR areas is directly related to misinformation (false, inaccurate, or misleading information) and disinformation (information that is covertly spread deliberately to deceive, influence or make sales). Misinformation and disinformation in the Australian telecommunications industry is widespread and ingrained within the very organisations consumers traditionally trust for connectivity advice. Misinformation combined with marketing and advertising that is not transparent creates confusion and makes it incredibly difficult to educate and engage consumers on how to get connected and stay connected.

Telecommunications companies and installers are often biased in the advice they give to make a sale, this "sales bias" influences the information and recommendations they provide, leading to advice that serves their own profit motives rather than the best interests of the consumer. Some telecommunications companies also have 'incentive based sales' for sales staff which can create issues such as biased recommendations, where salespeople push products that offer higher commissions rather than those that best meet customer needs. This can lead to customer dissatisfaction, misinformed decisions, higher costs, and a lack of trust in service providers.

Additionally, not all providers sell all available technologies and some providers sell only limited plans, for example iinet only sell nbn fixed wireless plans up to 25/5 mbps speed[9], even though higher speed tiers are available, likewise Bordernet only sells standard nbn satellite plans[10] and does not offer any of the available unlimited data plans. Telstra does not sell nbn satellite and Optus does not sell nbn satellite or nbn fixed wireless, instead both providers push consumers in these areas to their mobile networks. In regional areas telecommunications "sales bias" is a significant barrier which perpetuates myths and reinforces misinformation.

Compounding this is a lack of independent advice on RRR connectivity options and solutions, not only at a consumer level but also for business and industry. For example, ag-tech is heavily vendor-driven, with

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[9] *https://www.iinet.net.au/internet-product/broadband/nbn/plans/wireless*

[10] *https://www.bordernet.com.au/services/skymuster*

many vendors blaming "poor connectivity" rather than poor product design. Although many ag-tech products can be used in areas without mobile coverage, there is a pervasive and unfounded perception that mobile coverage is essential for using ag-tech. The recent On Farm Connectivity Program (OFCP) provided no assistance to producers in matching suppliers products to their problems and needs, there is a real need for independent producer led advice in this space. Likewise, many businesses believe or are told the only way their point-of-sale systems will operate is via the mobile network. This widespread misinformation significantly hampers the adoption of ag-tech, connectivity redundancy and innovation in business, making reliable connectivity a persistent challenge for businesses and communities. Misinformation from social media and mainstream media further compounds the problem, spreading falsehoods that shape public perception and decision-making and thus entrench the barriers to accessing connectivity.

REC 6.0: Introduce measures to reduce misinformation and disinformation and provide independent advice to individuals, small businesses and industry within the RRR telecommunications sector

To overcome the barriers created by misinformation and disinformation in the telecommunications sector, the following recommendations are made:

6.1 Implement the ACCC recommendations as highlighted in their response to the TCP Code draft package of 20th May 2024.

In particular the Telecommunication Consumer Protection (TCP) code should:

- Remove support for commission-based selling, which creates misaligned incentives for sales staff and encourages irresponsible selling of telecommunications products.
- Establish a general duty to avoid entering into unsuitable contracts with consumers.
- Mandate comprehensive training for all customer-facing staff of communication service providers to ensure they provide clear, accurate, and accessible information.
- Improving the quality and accuracy of information available to consumers

6.2 Support, fund and expand independent telecommunications advisory programs for RRR individuals, industry sectors and communities

Continue funding and support for independent advisory programs like the Regional Tech Hub, providing unbiased advice to RRR consumers on connectivity options. Expand these services to provide independent advice to communities, local governments, small businesses, agriculture and other industry specific sectors regarding their specific connectivity challenges and proposed solutions. Fund a business case analysis to evaluate the viability of private sector independent advisory service models for technology. Develop recommendations on how government or private industry can support the growth and development of these sectors.

6.3 Promote and raise awareness of accurate RRR telecommunications information

Launch public awareness campaigns to combat misinformation and disinformation, emphasising the availability and benefits of various connectivity solutions. Encourage collaboration with local communities and trusted organisations to disseminate accurate information.

6.4 Greater priority given by government regulatory bodies to identify misinformation and disinformation that exists in the regional telecommunications space.

This could include strategies such as:

- consumers being able to report misleading information via a website, including information, advertisements and sale of misleading or illegal equipment (such as illegal repeaters).
- Regulatory bodies enforcing fines to telecommunications providers who are actively misleading consumers.
- Ensuring consumer protections are in place regarding misleading and deceptive information, across all telecommunications codes and service obligations.

These measures aim to ensure consumers in RRR areas receive trustworthy, unbiased advice, leading to better connectivity decisions and improved access to digital services.

3.0 Capacity and adequacy of RRR connectivity technology

RRR telecommunications infrastructure often lacks capacity, in particular for mobile services, and there is no common definition of what is adequate.

3.1 Adequacy of RRR telecommunications services

There is a lack of a clear definition on what is adequate when it comes to broadband services in RRR Australia. BIRRR believes that there needs to be minimum standards that can be adapted and modernised easily as new technologies emerge and are rolled out. Adequate broadband services should provide:

1. **Minimum Speed:** There is a need for current SIP speeds to be upgraded and enhanced as consumers' needs change and demands increase. Existing requirements of download speeds of at least 25 megabits per second (Mbps) and upload speeds of at least 5 Mbps should be modernised.
2. **Reliability / Availability:** Consistent and stable broadband connections with minimal downtime. BIRRR believes that a minimum standard should deliver 99.99% availability. Currently, network performance and availability metrics for nbn satellite services are 99.7% which is lower than fixed line and fixed wireless services at 99.9%[11]. These metrics reflect that the most remote customers can often be challenged by only having access to the least reliable telecommunications services.
3. **Accessibility:** Availability of broadband services to all Australians, regardless of their geographical location, ensuring that people in RRR areas have equitable access to those in urban areas. Medical priority should be available to vulnerable consumers in RRR areas.
4. **Affordability:** As discussed above services must be affordable, with affordability measures put in place to protect consumers.
5. **Redundancy:** Due to the critical nature of RRR telecommunications it is essential that consumers are able to access redundancy in connectivity as well as in-home power redundancy.

[11] *https://www.infrastructure.gov.au/sites/default/files/documents/better-delivery-of-universal-services-discussion-paper.pdf*

6. **Quality of Service:** This includes factors such as the ability to maintain speed during peak usage times, responsiveness of customer support, consumer protections and overall user satisfaction with the service.
7. **Latency and Bandwidth:** Having low latency and sufficient bandwidth to support multiple users and devices simultaneously and ensuring consumers can access a low latency connection for voice services. There should be an absence of restrictive data caps to ensure users can fully utilise their internet connection without worrying about running out of data or incurring additional charges.

By considering these factors, adequate broadband services can be defined in a way that ensures robust, equitable, and future-ready connectivity for all RRR Australians.

3.2 Capacity of RRR telecommunications Infrastructure

RRR telecommunications infrastructure in Australia often lacks capacity due to a combination of policy, regulatory, and economic factors. Key issues contributing to this capacity shortfall include:

- **Access to Affordable Backhaul:** Limited availability and high costs of backhaul infrastructure make it difficult for providers, in particular smaller bespoke providers, to deliver robust and scalable services to RRR areas. Backhaul in regional areas is a challenging and expensive component for last mile providers, such as WISP's and is preventing innovation and competition in regional connectivity. Telecommunication providers cannot compete and solve connectivity issues without access to affordable and adequate fibre.
- **Access to Spectrum:** RRR telecommunications providers often face challenges in accessing necessary spectrum, which restricts their ability to expand and enhance services. Australia is one of the largest countries in the world with the lowest population density. To maximise the potential solutions for rural and remote connectivity, existing spectrum allocation and use needs to be managed more effectively. Many of the common frequencies and bands that are used for services such as LTE and fixed wireless broadband (in particular the lower bands that are more suitable for rural areas) have been purchased by the major carriers for millions of dollars and are therefore out of reach of smaller carriers. The ACCC has acknowledged that these high prices are

anticompetitive[12] and that high spectrum costs affect financial sustainability and lead to lower network investment and poor-quality services that deliver substandard user experience.

- **Lack of Planning:** Insufficient strategic planning and investment in telecommunications infrastructure and lack of a framework, lead to gaps in service coverage and quality.
- **Underutilisation of Fixed Networks:** Over-reliance on mobile networks due to lack of consumer awareness and affordability of fixed network infrastructure results in congestion, reducing the quality of service for consumers. Consumers in RRR areas often do not leverage existing fixed networks, contributing to the overburdening of mobile networks and further exacerbating capacity issues.

Addressing these challenges is essential to improving the capacity and reliability of telecommunications infrastructure in RRR Australia.

REC 7.0: Define and enhance adequacy and capacity of RRR telecommunications services

To ensure RRR telecommunications can keep up with changing demands, BIRRR recommends defining service adequacy and implementing strategies to increase capacity of RRR telecommunications networks.

7.1 Defining and developing minimum standards for telecommunications adequacy.

Develop adaptable, flexible and clear minimum standards for telecommunications adequacy through the establishment of adaptable and regularly updated minimum speed, availability and repair/installation standards. Ensuring minimum standards are adaptable and regularly updated is also critical in meeting changing consumer needs.

7.2 Treat spectrum as a public asset and plan for most efficient and effective utilisation

Currently there are no market incentives to encourage the larger telecommunications companies to effectively utilise all the bandwidth they control. A ‘use it or lose it’ policy for spectrum would prevent

[12] *https://www.infrastructureaustralia.gov.au/2021-australian-infrastructure-plan*

companies tying up bandwidth they have no intention of using. This would free up bandwidth for use by bespoke providers and drive innovation and competition in the market.

7.3 Identify capacity gaps and enhance regional backhaul infrastructure.

A high-level map of all available fibre and communications infrastructure, so gaps can be identified and governments can use this to plan future backhaul investment. The maps should identify if the existing backhaul is capacity constrained, and other barriers which are preventing access to technologies that could be used by last mile providers to solve connectivity issues in more remote areas.

- Acknowledge the need for connectivity redundancy in regional areas similar to metro areas, and roll out new fibre pathways to achieve this by incentivising the construction of new backhaul and fibre infrastructure in areas where gaps are identified to maximise economic benefits.
- Establish a clear plan and framework to increase affordable backhaul in regional areas, prioritising areas with no backhaul, a single backhaul source, or capacity-constrained backhaul.
- Include telecommunications infrastructure mandates in major infrastructure projects (railways, roads, big business builds) to ensure community upgrade pathways are considered at the design phase.
- Educate RRR communities on the capacity constraints of mobile networks. Many rural and remote mobile towers are experiencing excessive strain due to high amounts of data use (congestion) which is impacting voice calls, texts and ability to connect. Drivers to encourage uptake of fixed home/business connections in these communities would lessen strain and increase capacity of mobile tower infrastructure.

7.4 Develop a proactive strategic plan / framework that anticipates technological advancements and increasing consumer needs.

Government should develop comprehensive plans for RRR telecommunications infrastructure investment and upgrades, focusing on future needs and emerging technologies. To achieve this Government will need to proactively engage local communities in planning and decision-making to tailor solutions to specific regional needs. This should include preparation for the end of life of the nbn Sky Muster satellites and transition processes, strengthening the capacity of the mobile network for future growth and planning for upgrade pathways and increased capacity across all nbn technologies. Engaging

communities proactively and well in advance of these changes is crucial for strategically planning and implementing place-based solutions that cater to local requirements. This engagement ensures that consumers are informed, involved, and ready to adapt to new technologies, maintaining robust and future-ready connectivity in RRR areas.

Revise the existing SIP minimum speed requirements of 25/5 Mbps to reflect evolving consumer needs and the increasing demand for high-bandwidth applications such as streaming, video conferencing, and cloud services. Recognise the growing necessity for higher upload speeds to keep pace with technological advancements and consumer expectations.

4.0 Universal Services (USO and USG)

As the Australian government reforms and modernises the Universal Services Framework (USF), it is crucial to address the diverse needs of consumers, particularly in rural and remote areas. Telecommunications redundancy should be prioritised to ensure alternative communication options during emergencies and service disruptions. Universal services for RRR consumers must be updated to meet evolving technology and connectivity demands, to deliver reliable, resilient, and affordable telecommunications with robust consumer guarantees. Solutions should be tailored to specific community needs through significant local engagement, adapting to technological advancements and demographic changes.

Maintaining the Copper Continuity Obligation (CCO) within a reformed Universal Service Obligation (USO) for telecommunications is crucial until proven alternate technologies and established migration policies are widely available. With over 280,000[13] consumers still reliant on copper infrastructure and recent issues arising from the migration of over 4000 Telstra Next Gen Wireless Link (NGWL) consumers, concerns persist regarding Telstra's ability to meet existing USO requirements with emerging technologies and current migration procedures. Removing the CCO obligation prematurely risks leaving RRR consumers without essential telecommunications services, underscoring the necessity of its continuation until viable alternatives are thoroughly tested and accessible and migration processes can be planned and implemented. Furthermore there should be better regulation and enforcement of Telstra’s contractual obligations to protect consumers throughout this change.

[13] *https://www.infrastructure.gov.au/sites/default/files/documents/better-delivery-of-universal-services-discussion-paper.pdf*

A reformed USO should establish universal communication redundancy, ensure adaptability to changing consumer needs and emerging technologies and protect RRR consumers by enforcing consumer safeguards. Essential components of a modernised USF include universal access, 99.99% reliability, minimum service quality standards, affordability for low-income consumers, strengthened and transparent Customer Service Guarantees (CSG), service requirements like number portability and voice prioritisation, affordable power redundancy, and thoroughly tested emerging technologies. Payphones play an important role in RRR communities and should remain under a reformed framework. Clear communication of USO reform and migration policies are necessary to ensure widespread consumer awareness, with strict penalties for misleading information. These recommendations aim to protect rural, remote, and vulnerable consumers, ensuring equitable access to reliable telecommunications services for all Australians. For further details, refer to the BIRRR submission on the Better Delivery of Universal Services Discussion Paper.[14]

REC 8.0: Modernise and strengthen the Universal Service Guarantee (USG) and Universal Service Obligation (USO)

8.1 Ensure new Universal Service Frameworks are adaptable and flexible to keep pace with changing consumer demands and new technologies.

Any new Universal Service Framework should ensure that minimum standards of RRR telecommunications services are flexible and adaptable and can keep pace with changing consumer needs and demands. There must be considerable emphasis placed on the need for technologies used in RRR areas to deliver reliability metrics as close to 99.99% as possible.

8.2 Ensure new Universal Service Frameworks mandate access to affordable redundancy in telecommunications for all regional consumers.

The modernising and strengthening of the Universal Service Guarantee (USG) and USO into a new universal services framework, should ensure that all RRR consumers can access affordable redundancy

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14 *https://birrraus.com/wp-content/uploads/2024/05/birrr-submission-into-the-better-delivery-of-universal-services-march-2024sm.pdf*

that is supported by consumer guarantees. It is essential that alternative means of communication are available during emergencies or service disruptions, this is especially crucial to medical priority consumers and those who have no adequate mobile coverage. Redundancy should be available on request by the RRR consumer and should not be at the discretion of the telecommunications provider. Access to telecommunications redundancy should be a guaranteed right for consumers, rather than something dependent on provider approval or availability.

8.3 A new Universal Services Framework must include strengthened consumer protections, especially during technology migrations

To ensure a smooth and protected transition for consumers to new telecommunications technologies, the following integrated strategies should be implemented:

- Provide extensive education and transparent communication, including clear timelines and step-by-step guidance.
- Establish dedicated support services, such as hotlines and in-person assistance, particularly for vulnerable groups.
- Conduct pilot programs to gather feedback and make necessary adjustments.
- Strengthen consumer protection regulations with strict penalties for non-compliance.
- Offer financial assistance to cover transition costs, prioritising low-income and vulnerable consumers.
- Continuously monitor new technologies post-migration to promptly address any service disruptions and quality issues.

This comprehensive approach will safeguard consumers, ensuring they remain informed, supported, and connected throughout the migration process.

5.0 Consumer Protections

Telecommunication consumer protections in Australia's RRR areas face significant shortcomings. Despite technological advances, residents often lack awareness of their rights and experience poorer service levels compared to metropolitan areas. Key issues include:

- **Fault identification and resolution**: Regional users struggle to have faults acknowledged due to long call centre wait times - often in excess of several hours, difficulty accessing support, lack of specialised regional support and an onus on the consumer to provide the data. Our members often report difficulties navigating offshore call centres, including multiple transfers to resolve problems and push-tactics encouraging the use of app-based or online support. Consumers with no mobile coverage are often sent SMS codes that they are unable to receive, to identify themselves or to log into an app, before support will be given. Retail Service Providers (RSPs) require online diagnostics which can not be done without a working connection and it is impossible to contact any provider if you do not have telecommunications redundancy and your primary connection stops working.

  For example, Starlink support is only available via an app and is offshore, thus consumers with no working connection and no broadband redundancy, struggle to get assistance. Furthermore, providers such as Telstra have removed dedicated RRR support contact methods, such as the NGWL hotline (1800 MY NGWL) and are now pushing consumers to app based support that requires skills in digital literacy to navigate and needs a working connection or mobile service to access.

- **Widespread network issues**: When issues are widespread and affecting multiple consumers, such as a nbn Sky Muster network issue or issue with a mobile or nbn fixed wireless tower, consumers have to troubleshoot individually and there is no mechanism to raise a community wide or network wide problem. The complexity of the nbn wholesale model adds to the difficulty, as consumers must navigate multiple stakeholders for resolution. During this process fault tickets are frequently closed and the customer must start the complex process all over again, leading to frustration and fatigue.
- **Onus on consumers for troubleshooting**: RSPs often place the burden of troubleshooting issues on consumers, requiring them to perform complex diagnostics, which can be particularly challenging especially for those with limited telecommunications redundancy. This is a growing issue for nbn connections, in particular nbn fixed wireless and nbn satellite, where the customer is expected to be able to demonstrate a degraded service (slow speeds, dropouts, browsing issues etc). In some instances the issue or fault can take several nbn visits and a great deal of persistence by the consumer to resolve (for example, see Appendix 3). Nbn and RSPs appear to

have no visibility on an individual connection to be able to fault find remotely. Likewise, when reporting a mobile fault affecting a community, support staff seem unable to see network issues that may be affecting a widespread area.

- **Consumer awareness**: There is a lack of awareness about consumer rights under the USG and insufficient information about provider performance and service quality for consumers to be able to make decisions about their connectivity options. Additionally, consumers are often not informed by their provider of their rights.
- **Regulations**: The telecommunications industry, particularly with emerging providers like Starlink, face significant issues due to the lack of regulation and licensing for installers. Although Starlink is sold as 'self-install' some installers operate without adhering to Australian cabling and licensing standards, do not have appropriate insurance, contribute to misinformation and disinformation or use deceptive selling and pricing practices. This lack of regulation has resulted in a proliferation of "cowboy" installers monopolising on the market's gaps, which undermines service quality, consumer trust, and overall network integrity and contributes to misinformation among consumers.

  WISPs also face minimal regulation, which can result in consumer vulnerabilities and unreliable service. Although the majority are invested in best practice there are rogue providers that impact market stability and consumer trust. Highlighting the need for stricter licensing, consumer protection standards, and improved support requirements. Additionally, the sale and use of illegal repeaters exacerbates mobile network issues, further complicating the already unreliable service and making it challenging for consumers to report and resolve connectivity problems.

- **Telecommunications Industry Ombudsman (TIO) issues**: BIRRR members have raised concerns about the lengthy resolution times for complaints, the perception that the small financial fines imposed are insufficient to drive meaningful change in provider practices, and that telecommunications companies often resort to issuing small credits on customer accounts rather than genuinely fixing or resolving the underlying issues.
- **Extended installation and repair timeframes**: Consumers in RRR areas often experience significant delays in both the installation of new services and the repair of existing ones, resulting in extended periods without essential communication services. Faults in these areas

frequently involve prolonged repair times, recurring issues and multiple technician visits. These problems are further exacerbated by appointment cancellations and unresolved faults, especially concerning landline services and nbn fixed wireless and satellite connections. The long nbn fault resolution chain (for example - customer to RSP, RSP to nbn, nbn to major contractor, major contractor to subcontractor, and subcontractor to customer) means there are multiple points for the issue to be dropped or time lost, prolonging the issues and repair timeframes.

Providers often evade accountability by meeting benchmarks that average out over regional populations, leaving a cohort of consumers consistently receiving poor services. For instance, nbn's Service Level Agreement (SLA) for repairs and faults stipulates a 10-business-day window to contact remote end-users for satellite connections, with potentially longer delays for those in hard-to-reach locations[15]. Likewise, for installations, nbn has up to 35 business days to connect new services in isolated areas, with a 20-business-day timeframe for other satellite areas and even longer for locations with limited access. Moreover, nbn is required to meet these service metrics only 90% of the time, potentially leaving 10% of consumers facing significantly longer repair and installation timeframes. Similarly, Telstra's USO for voice services also contains a 90% targeted service agreement, which again potentially leaves 10% of RRR consumers with no avenues for redress. Unfortunately this cohort of consumers are often the same consumers who have recurring problems with telecommunications services.

- **3G Shutdown :** BIRRR has ongoing concerns with the impending 3G shutdown. While carriers have committed to providing equivalent 4G coverage, BIRRR questions how carriers can guarantee coverage without fully testing it prior to the 3G network closure. Coverage maps are based on predictions and may not reflect real-world experience. The Australian Competition and Consumer Commission (ACCC) has also highlighted issues with the comparability and transparency of these maps. As identified in the Australian Governments Interim Report on the shutdown of the 3G mobile network "*BIRRR echoed others concerns and stated that customers should be cautious of claims of equivalent coverage until the actual switchover to 4G occurs. BIRRR lamented that there is currently little information about how the operators will support customers who suffer from lost or degraded coverage after the 3G shutdown, and said that*

[15] *https://www.nbnco.com.au/content/dam/nbnco2/documents/wba/wba2/SFAA_WBAEthernetServiceLevels_markup_CIRRemediation_20180313.pdf*

'mobile coverage maps lack accuracy and transparency and don't clearly state if 4G coverage will be the same across all layers of the map i.e. indoors, with an antenna etc'[16]".

- **Migration Processes:** The migration from Telstra's Next Generation Wireless Local Loop (NGWL) services in rural and remote (RRR) areas has led to significant consumer frustration due to poorly managed migration processes and issues with Telstra's call centres. The transition from NGWL, which provided vital connectivity for many remote users, has been marred by inadequate planning and execution. Consumers have faced prolonged service disruptions and delays as Telstra's migration processes have been plagued by inefficiencies. Additionally, the call centres tasked with managing these transitions have struggled with high call volumes, long wait times, and insufficient support, exacerbating the problem. This has left many RRR consumers feeling unsupported and anxious about their connectivity options, highlighting the need for more effective migration strategies and improved customer service in such critical transitions. Further information and recommendations are available in the BIRRR Shutdown of the 3G Mobile Network - Senate Inquiry Submission into 3G Shutdown.
- **Lack of regional technicians across all technologies:** The lack of technicians and telecommunications specialists can further extend repair and installation timeframes.

These issues highlight the need for more effective support mechanisms and improved regulatory oversight in the RRR telecommunications sector.

REC 9.0: Strengthen and enhance RRR telecommunications consumer protections and ensure they are enforced by regulators and Government

9.1. ACMA to declare telecommunications an essential service

To strengthen and enhance consumer protections, the Australian Communications and Media Authority (ACMA) should declare telecommunications an essential service due to its fundamental role in modern life, supporting communication, information access, and essential services. Such a designation would ensure equitable access across all regions, including remote areas, and empower ACMA to enforce stricter regulations and standards to improve service reliability and consumer protections. It would also

[16] *https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Rural_and_Regional_Affairs_and_Transport/3GNetworkShutdown/Interim_Report/Chapter_1_-_Interim_Report#_ftn23*

enhance focus on the resilience and security of telecommunications infrastructure, safeguarding against disruptions and promoting investment in infrastructure and technological advancements. Recognizing telecommunications as essential would formalise its critical importance, ensuring it receives the necessary priority and resources to meet the needs of all Australians.

9.2 Strengthen RRR telecommunications consumer protections, ensure penalties are enforced and introduce escalating fines for recurring faults

There is an urgent need to modernise and update existing consumer protections for RRR consumers that more adequately reflect the critical nature of telecommunications. In particular the existing SIP agreement currently has installation and repair time frames that often extend into many weeks and at time months. Often nbn connections are the only available connectivity in remote areas, thus the existing guarantees must be updated to protect these consumers.

To address the regulatory gaps in the telecommunications sector, particularly with emerging providers like Starlink and Wireless Independent Service Providers (WISPs), BIRRR recommends the implementation of comprehensive regulatory measures to enhance consumer protection and service reliability. Strengthening regulations should include rigorous licensing criteria, consumer protection standards, and improved support requirements. Furthermore, stricter controls and oversight should be established for WISPs to mitigate consumer vulnerabilities and enhance service quality, with specific attention to rogue operators that undermine market stability. For foreign-owned networks, enforcing service quality standards, requiring local representation, and enhancing regulatory oversight are crucial to address gaps in support and responsiveness.

Additionally there should be an introduction of stringent licensing and certification requirements for all telecommunications installers to ensure adherence to Australian cabling and licensing standards, appropriate insurance, and accountability. Regulations must also mandate transparency in sales practices to prevent deceptive pricing and misinformation. The regulation of illegal repeaters must be enforced to prevent their negative impact on network performance. These measures will collectively improve service standards, protect consumers, and ensure a reliable telecommunications infrastructure.

Increased enforcement and penalties for breaches to universal services should occur to ensure compliance and protect consumers. Universal services should be fully monitored to ensure that

providers are meeting the requirements of the guarantees. There should be clear consequences for when these guarantees are not met, including set repair and installation timeframe targets which trigger intervention by the Telecommunications Industry Ombudsman (TIO) when breached and increased fines for repeated closures of issues when not resolved. Government regulatory bodies should investigate the use of escalating industry fines to RSPs when a fault continues to occur. For example, when the same fault is reported more than three times within a 12-month period, or if the fault takes longer than 4 weeks to repair. Money raised from industry fines should then be used to expand and improve the quality of Connectivity Literacy and awareness resources.

9.3: Enhance the Telecommunications Industry Ombudsman (TIO) and increase RRR consumer awareness.

To improve the TIO in Australia, efforts should focus on increasing consumer awareness of its services through targeted outreach and clear information for RRR consumers. A review of specific RRR cases including issue, time frame and result should be published and used in conjunction with consumer feedback and RRR stakeholder engagement to improve outcomes for consumers. Implementation of proactive monitoring will help address systemic problems early and increase accountability of telecommunications providers. The TIO should prioritise resolving the root causes of complaints rather than just getting credits applied, and improve transparency by providing regular updates on complaint progress. RRR complaint data should be specifically monitored for any trends and recurring issues and reported to Government regulators. Ensuring TIO staff receive relevant comprehensive training, especially in RRR technologies and issues will improve overall effectiveness and reduce wait times**.** Enhancing accessibility through multiple filing options and comprehensive staff training will also help. These strategies will contribute to ongoing improvements, expedite resolutions and reduce consumer frustration.

Additionally, the Government should ensure regulators conduct regular, targeted RRR marketing programs to inform customers of their consumer rights in regards to telecommunications and RSPs must ensure that consumers are aware of the TIO and their rights as a consumer.

9.4: Regulatory bodies to mandate network monitoring on all technologies to ensure consumers are receiving quality and reliable service.

All telecommunication providers should be mandated to provide network monitoring and diagnostics to ensure consumers are receiving quality and reliable services and that fault reporting does not become such an onerous task for a consumer on any network. nbn are wholesalers, who don't interact directly with the customer. nbn does not currently provide intuitive diagnostic tools to the RSP for nbn fixed wireless and nbn satellite connections.

Nbn must immediately implement intuitive diagnostic tools for RSPs and consumers which track issues and status for the nbn, RSP and user. Additionally, the factors required from a consumer to report a fault need to be simplified to ensure the onus is not placed on the consumer. *Figure 2 Starlink Proactive Support*

For example, a Starlink user has access to end-to-end service testing, testing from the Starlink device to the cloud and testing Starlink device to the home to the, as well as a wi-fi strength mapping checker of a consumer's home. In addition Starlink proactively contacts customers when they detect a service abnormality. This basic intuitive customer test information should be provided by nbn for nbn Fixed Wireless and Sky Muster end-users. The onus should not be on a consumer to have to do extensive troubleshooting and prove there is an issue.

9.5: Implement initiatives to improve customer support centres for RRR consumers.

RRR telecommunication providers should offer dedicated regional call centres and onshore support to ensure that consumers receive timely and contextually relevant assistance, improving service quality and satisfaction. By incentivising providers to enhance support services and reduce customer wait times, they can address issues more efficiently and effectively. Additionally, offering multiple communication touch points for reporting issues and faults ensures that consumers have accessible and convenient options to seek help, ultimately leading to quicker resolutions and a more reliable service experience for those in rural and remote areas.

9.6: Strengthen the TCP Code[17] with standardised and easier to understand Critical Information Summaries (CIS), labelling and information initiatives.

Telecommunications equipment needs to be clearly labelled with technology type across all technologies. For example, a sticker or labelling system on nbn Network Termination Devices's (NTDs)

[17] *https://www.acma.gov.au/telecommunications-consumer-protections-code*

stating what technology is installed and customer bills clearly stating which technology is being used for the plan. RSPs should use consistent language, terminologies and plan names to prevent confusion.

The TCP should be focused on making Critical Information Summaries (CIS) documents easy to understand and compare for consumers. BIRRR recommends introducing a similar system to the US government to help consumers make sense of complicated plans, charges and promotions via a ' food labelling' initiative for telecommunications plans. The Federal Communications Commission (FCC) labels[18] are modelled on nutrition labels and are intended to help consumers comparison shop for the internet service plan that will best meet their needs and budget (example shown in Appendix 6). The labels must disclose information about telecommunication plan prices, introductory rates, data allowances, and broadband speeds and must be shown at point of sale, both online and in person sales. They also include links to information about network management practices and privacy policies.

Additionally, consumers should be able to view set plan and technology specifics (such as speed, availability and latency metrics) on RSP websites and address checker sites, such as the nbn address checker and mobile coverage maps.

6.0 Resiliency & Redundancy of networks

Regional telecommunications infrastructure and networks in Australia need to be resilient to ensure consistent and reliable communication for rural and remote Australians. Everyday power resiliency is essential to maintain service during common power outages, while there is also a need to proactively strengthen networks in preparation for natural disasters, to help mitigate communication breakdowns when they are most needed.

Low Earth Orbit (LEO) satellite services, in particular Direct-to-Device (D2D), have the potential to help consumers in times of emergencies when terrestrial networks can face disruption from loss of power, equipment destruction or loss of backhaul[19]. However, as yet D2D technology is not available in Australia. Of particular note the LEO Satellite working group, highlighted that - *while it will be technically possible to provide emergency access to everyone within an emergency area when terrestrial networks*

[18] *https://www.fcc.gov/broadbandlabels*

[19] *https://www.infrastructure.gov.au/sites/default/files/documents/low-earth-orbit-satellite-working-group-2023-chairs-report-19april2024.docx*

go down, that a LEO D2D network will likely become congested under these conditions. One operator noted that in this kind of scenario it would likely throttle individual connections to text messages only (or similar) to ensure reliable access to everyone. Additionally, it may be possible to prioritise certain services, such as for emergency personnel[20]*.*

Likewise emergency roaming trials in Australia have been promising however, there has been no path forward to implementation since the trials were undertaken.

Rural and remote Australians require access to redundant systems to avoid dependency on a single communication source, ensuring that they are not left isolated when one network fails. This multifaceted resilience is crucial for safety, connectivity, and overall quality of life in these regions. To improve resiliency and redundancy the following issues and opportunities need to be addressed:

- Telecommunications companies are often not proactive when there is prior warning for an extreme weather event, bushfire or other natural disaster.
- There is no minimum standard of backup power for telecommunications infrastructure, especially in regards to infrastructure built with Government funding. Likewise there are no maintenance requirements. With a lack of technicians in RRR areas, often towers take a long time to be repaired leaving communities without telecommunications services and the ability to make 000 calls for weeks at a time.
- With most telecommunications services now reliant on 24/7 in-home power, there has been a lack of information and support from telecommunications companies in educating the consumer and ensuring they are aware of the need for power redundancy, particularly in areas prone to continual power disruptions and off-grid premises. Few providers sell power redundancy solutions and there are no grants or subsidies available for consumers to access backup power equipment, which is often cost prohibitive.

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https://www.infrastructure.gov.au/sites/default/files/documents/low-earth-orbit-satellite-working-group-2023-chairs-report-19april2024.docx

REC 10: Strengthen the resiliency and redundancy of RRR telecommunications infrastructure to better prepare for power outages, natural disasters and extreme weather events.

10.1: For telecommunications Infrastructure providers to be proactive in ensuring network resilience and preparedness for natural disasters, and ensure that consumers can access network outage information.

Telecommunication infrastructure providers should take proactive measures to ensure network resilience when natural disasters are anticipated and to inform consumers of potential issues. When providers are notified of extreme weather warnings, fire alerts and other potential natural disasters there should be planned preparation. This could include auto transfer stations, deploying portable generators in advance to key locations, training SES staff on generator operation and refuelling, and maintaining infrastructure through regular checks, adequate fire breaks, and weather protection measures. Additionally, consumers should be informed of how to prepare for network outages and be easily able to find outage information about their telecommunications services and expected repair time frames so they can plan accordingly. Such preparedness is vital for maintaining communication during emergencies and ensuring public safety.

10.2: Introduction of Power Backup Standards for all RRR telecommunications infrastructure

Telecommunications companies must implement a minimum standard of power backup of no less than 12 hours, particularly at towers and infrastructure prone to frequent power outages and those funded by Government programs. This ensures continuous service during common power interruptions, which are prevalent in regional areas.

10.3: Government and industry to develop policy and funding to support In-Home Backup Power resources and equipment

Government and the telecommunications industry should actively disseminate information on how consumers can stay connected during power outages, ensuring that residents are prepared and informed. Additionally, new universal service connections should be mandated to include affordable

in-home backup power solutions. Power redundancy equipment could also be supplied via a grants program to vulnerable consumers.

10.4: Implementation of emergency roaming to be fast tracked

Emergency roaming capabilities have the potential to allow users to connect to any available network in times of crisis. Mobile carriers should be mandated to enable roaming with voice and SMS prioritisation during declared natural disasters and emergencies.

10.5: A funded program specifically for the roll out of wi-fi hubs and equipment in vulnerable communities

Funding for communities to access installation of wi-fi hubs using satellite technology, that is not dependent on local towers or backhaul, to be placed at community meeting points and emergency services buildings in vulnerable communities. These should include back-up power supply and device charging stations as well as consumer awareness campaigns within the local communities to ensure residents and emergency services can access these solutions when needed. Grants should not require co-contribution from local communities or local Government, as this often prevents the most vulnerable communities from accessing these grants. Vulnerable communities could include those regularly affected by natural disasters and those in very remote locations that are hard to access. In smaller communities these centres could be used to provide affordable community access to connectivity for low income users and socially disadvantaged consumers.

7.0 Emerging Technologies

Emerging new technologies, such as direct-to-device (D2D) mobile, LEO satellites, and forthcoming 6G networks, hold the potential to transform connectivity in Australia's underserved areas, offering unprecedented opportunities for improved access, enhanced services, and economic growth. However, they also bring significant threats and challenges that must be carefully managed.

Australia's current and future dependence on the privately held SpaceX's Starlink service for RRR connectivity solutions raises significant concerns. The control of critical infrastructure by a foreign-owned operator, which is not a publicly listed company, and lack of onshore customer support,

increases potential for issues and decreases options for intervention by the Australian government and regulatory controls. Concerns also arise regarding foreign ownership of other LEO satellite solutions and the potential displacement of terrestrial solutions and Australian-based providers, leading to reduced local industry participation and associated security of supply concerns. BIRRR also holds concerns that terrestrial Australian owned infrastructure is being replaced with less reliable foreign owned networks. Consideration needs to be given to maintaining terrestrial networks instead of placing all remote communications needs and solutions into the basket of foreign owned LEO satellite services.

Deployment of LEO satellite technologies in Australia also brings forth significant cultural and environmental concerns. For First Nations communities, the presence of numerous satellites can disrupt the night sky, which holds cultural and spiritual significance. The intrusion of artificial satellites into these sacred views undermines traditional knowledge and cultural practices tied to the stars. Environmentally, the end-of-life phase of LEO satellites is problematic as they burn up in the stratosphere, releasing harmful substances such as aluminium oxide. This not only contributes to atmospheric pollution but also has the potential to impact climate patterns and ozone layer integrity. These issues highlight the need for stringent regulatory measures and respectful engagement with Indigenous communities to address the broader implications of LEO satellite technologies.

Likewise, emerging D2D technologies promising “ubiquitous mobile coverage” provide opportunities but also raise several concerns. Technical limitations related to signal strength, latency, and data throughput, can affect reliable performance across diverse environments. Additionally, D2D systems can be susceptible to disruptions from extreme weather conditions and network issues. Device compatibility issues, coverage and capacity constraints, integration of D2D technologies with existing networks and navigating regulatory and spectrum challenges could further complicate the roll-out of this emerging technology. Managing consumer expectations and environmental and cultural concerns is also crucial, as users must be informed about potential limitations and service quality issues.

There has been a lack of consumer-facing, independent, and rigorous research and trials into emerging telecommunications solutions before roll-outs. Without thorough and independent testing, technologies like LEO satellites, D2D communications, and 6G may not be adequately evaluated for performance in the challenging conditions of rural and remote areas. Our members' experience with Starlink highlights that rain fade, drop outs and congestion can be particular issues (see Appendix 4) which can impact

Starlink's overall reliability metrics. This is of concern as Telstra have already commenced replacing USO voice services with Starlink voice connections.

Emerging technologies must be evaluated before roll out to assess the impact factors such as network issues, congestion, extreme weather events or power outages can have on overall availability metrics. The involvement of foreign-owned entities with short-term contracts can further complicate matters, as these entities might not fully understand local conditions or provide timely support. The absence of robust research, due diligence and trialling of new emerging technologies could mean consumers may not be made aware of these shortcomings, leaving them vulnerable when issues arise and exacerbating their connectivity challenges.

REC 11: Develop a strategic plan to proactively plan for future technology disruptions and emerging telecommunications technology challenges and risks.

One of the primary threats is the rapid disruption new emerging technologies may cause. Consumers could be required to change technologies, providers, plans, and equipment far more frequently than before, leading to potential confusion and frustration. The pace of technological advancement may outstrip the ability of consumers, particularly those in remote areas, to adapt quickly, resulting in service interruptions and increased costs.

It is crucial to develop strategic plans and support mechanisms that facilitate smooth transitions for RRR consumers and communities. This includes investing in Connectivity Literacy awareness and capability programs, providing financial assistance for equipment upgrades, and ensuring robust regulatory oversight and evaluation of new technologies.

11.1 Future proof regulatory and consumer protections of emerging telecommunications services through progressive frameworks that consider the risks of investing in foreign owned networks.

Challenges of emerging technologies also include the need for comprehensive regulatory frameworks to ensure fair competition and protect consumer interests. The lack of a proper regulatory framework to manage performance, costs, or availability of Starlink services (and other emerging technologies) poses a challenge, as there are no Australia-based support mechanisms in place. Without proper oversight,

there is a risk of market monopolies, increased prices, and uneven service quality. Regulatory and policy settings should ensure that adequate consumer protections are in place and enforced for all new and emerging technologies

11.2 Mandate rigorous independent testing, by qualified researchers, of new emerging technologies and their potential challenges and opportunities for RRR consumers.

Independent, robust research and trialling of emerging telecommunications technologies like LEO satellites, should occur before they become licensed and publicly available to RRR consumers. Such research would ensure that these technologies are thoroughly tested under RRR Australian conditions, proving their reliability and performance in real-world scenarios. It would provide consumers with crucial information for making informed decisions and help mitigate risks by identifying and addressing potential issues before widespread deployment. Additionally, tailored solutions could be developed to meet the specific needs of Australian users, particularly in remote areas. Independent evaluation would also hold technology providers accountable for their claims, accelerate innovation through feedback, and support regulatory bodies in establishing appropriate standards and requirements.

This research could be undertaken by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), universities or research institutions with strong telecommunication programs, and should involve Government agencies like the ACMA, ACCC and industry consortia like the Communications Alliance, major telecommunications providers, regional telecommunications advocacy groups and Non-Governmental Organisations (NGOs) focused on digital inclusion. Independent and robust research and trialling will play a key role in evaluating and ensuring the reliability of emerging technologies before they are widely adopted.

8.0 Consumer Advocacy

Grassroots consumer advocacy representation in regional telecommunications in Australia is vital to ensure that the unique needs and challenges faced by RRR communities are heard and addressed. Regional advocates play an important role in providing a direct line of communication between consumers and decision-makers, facilitating feedback and driving improvements in service quality and accessibility.

Whilst the LEO satellite working group had First Nations representation it did not have representation of RRR consumer advocates, although BIRRR, National Farmers Federation (NFF) and ACCAN were invited to attend one working group meeting. Engagement with consumer advocacy groups can provide crucial insights, thereby ensuring a more comprehensive understanding of RRR consumers' unique needs, challenges and on the ground experiences.

Advocacy organisations can also offer personalised support and resources to local communities, empowering them to understand their rights and navigate the often complex telecommunications landscape. This representation also helps to foster a sense of community and collective action, which can be crucial for mobilising efforts to address systemic issues and advocating for equitable access to technology.

REC 12: Regional advocacy and regional consumer focused groups should be invited to be engaged and present on government working groups and during industry research and collaboration processes.

Past history shows that regional advocates can highlight and challenge any discrepancies in service provision and pricing, ensuring that regional consumers receive fair treatment compared to their urban counterparts. By maintaining a vigilant and informed presence, grassroots groups can hold telecommunications providers accountable and push for necessary regulatory and policy changes. For these reasons regional advocacy and regional consumer focused groups should be invited to be engaged and present on government working groups and during industry collaboration and research processes.

9.0 First Nations Communities

BIRRR is supportive of the recommendations suggested in the initial report of the First Nations Digital Inclusion Advisory Group[21].

REC 13: BIRRR recommends the Government support the recommendations presented in the initial report of the First Nations Digital Inclusion Advisory Group.

21 *https://www.digitalinclusion.gov.au/sites/default/files/documents/first-nations-digital-inclusion-advisory-group-initial-report.pdf*

Appendices

Appendix 1: Background on Connectivity Literacy

Connectivity Literacy is a term coined by Kristy Sparrow, a co-founder of Better Internet for Rural, Regional, and Remote Australia (BIRRR) who has extensive grassroots experience in regional connectivity and consumer advocacy. It encompasses the knowledge and awareness required by consumers to get and stay connected to both voice and broadband services that meet their needs and budgets. Connectivity Literacy is often confused with Digital Literacy.

Digital Literacy is all of the skills and knowledge needed by a consumer to use technology, navigate various digital platforms, understand, use and communicate through them[22]. Digital Literacy is well researched through the Australian Digital Inclusion Index (ADII)[23]. The ADII measures digital inclusion through three dimensions of **Access, Affordability and Digital Ability.** However, it does not address Connectivity Literacy barriers.

Connectivity Literacy is a precursor to Digital Literacy (understanding how to use different devices, software, and operating systems), and incorporates the knowledge needed to navigate through choice of telecommunications providers and technologies, and to understand terminologies, plans and equipment. Connectivity Literacy is the largest barrier to access in rural, regional, and remote (RRR) Australia.

Anecdotal evidence highlights that unlike Digital Literacy, Connectivity Literacy does not have any demographic barriers such as age, gender, location, or education level. It is **the core foundation to Digital Inclusion**, affecting the outcomes of all Government infrastructure and research programs, yet historically has received little attention, research or funding.

The Australian telecommunications industry places a large emphasis on consumers being connectivity literate. However, there is little independent support and education available to assist consumers. Telecommunications providers are often biased and only sell consumers products they can best profit

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[22] *https://journals.sagepub.com/doi/full/10.1177/2042753020946291*

[23] *www.digitalinclusionindex.org.au*

from. This "profit-driven sales bias" or "profit-driven product bias" practice occurs when providers prioritise their financial gains over the actual needs and best interests of the consumer, often leading to the promotion of more expensive or less suitable services and products. This can result in consumers being misled or underserved, as they might not be informed about more suitable or cost-effective connectivity options that would better meet their needs. Connectivity Literacy encompasses:

- **Choosing a technology:**
    - How to find the range of technologies that may be available at a residence or business, including satellite, fixed wireless, mobile broadband or fibre.
    - Choosing which technology meets a consumers' needs, wants and budget and knowing how to get connected to that technology.

Anecdotal evidence suggests that often it is not inadequate connectivity infrastructure that is a barrier, but “unknown knowns”[24] (Rumsfield, 2002). More simply, consumers don’t know what they don’t know or don’t know what they can access.

- **Choosing a provider:**
    - Understanding how to find a provider to meet your needs and budget
    - How to contact a provider, understanding provider payment methods, and using provider apps and dashboards.

Strong provider allegiance, historic beliefs and email accounts that are tied to specific providers can inhibit consumer decisions, frustrating better provider choice, reducing the ability to find and choose a provider that offers a more suitable technology and can support a consumer in staying connected.

- **Choosing a plan:**
    - Navigating through a wide range of plans, data allowances, speed tiers and add-ons.
    - Understanding Critical Information Summary (CIS) documents, contracts and terminologies and the intricacies of what is included in a connection plan.
    - Being able to find an affordable plan.
- **Selecting and upgrading equipment:**

[24] *https://academic.oup.com/jxb/article/60/3/712/453685*

    - Selecting, updating and configuring connectivity equipment, such as routers, mesh systems and point-to-point equipment.
    - Knowing how to improve wi-fi coverage
    - Choosing headsets and cameras to improve video-conferencing, telehealth and education lessons.
    - Knowing when to purchase new equipment.
- **Troubleshooting a connection:**
    - Knowing how to identify and report a fault or degraded connection.
    - What to do when you have connection issues and how to solve problems such as drop outs, slow speeds, buffering, poor wi-fi and other performance issues.
    - How to get issues escalated with your provider.
- **Telecommunication terminologies:**

Can also be a barrier to getting connected as complex and confusing terminologies often leads to misunderstandings and misinformed decisions among consumers.

- Many consumers engaging with BIRRR refer to their internet connection as ‘Wi-Fi’ regardless of the actual type or when asked how they are connected they name their provider e.g. “Telstra internet”.
- Inconsistent terminology for equipment; for example, an NBN modem may be called a Network Termination Device (NTD), a modem, or a router, or an nbn connection box.
- The names of telecommunications companies also add to the confusion, as seen with Sky Muster, Skybridge, and Skymesh—each serving different functions but often mistaken for one another. Also the similarity in names with other technologies and companies, such as Starlink being referred to as Skylink or Skynet.
- The names of technologies such as fixed line, fixed wire, fixed wireless, mobile wireless, mobile broadband, independent wireless, and satellite, alongside the huge number of abbreviations used by the telecommunications industry, create a daunting landscape for consumers.
- Plan names contribute to this confusion, as they are frequently labelled differently by each provider (e.g., sonic, fast, standard, 25/5, 12/1, basic, plus, premium, ultra).

Connectivity illiteracy hinders access to reliable and affordable voice and broadband services by preventing consumers from making informed decisions about technologies, providers, and plans. It leads

to poor equipment choices, ineffective troubleshooting, and reliance on potentially misleading information. This results in negative experiences, perpetuating myths about poor regional connectivity and ‘bad bush broadband’, exacerbating the digital divide, especially in rural and remote areas.

As the telecommunications landscape in RR areas has shifted from one provider and limited technologies, to a complex network of multiple providers and technologies, consumers in RRR areas now face a confusing "patchwork quilt" of connectivity options, providers and plans. Often RRR consumers are not aware of their options in regards to connectivity. This complexity, along with rapid technological changes, has fostered significant connectivity illiteracy which is also hindered by limited mobile connectivity, a lack of competition (in particular for mobile services), difficulties in getting services repaired and maintained and reliance on less reliable and more expensive broadband technologies. Connectivity illiteracy is further exacerbated by misinformation, poor provider support, geographical barriers, economic constraints, a lack of digital skills and education and inadequate consumer protections. Consequently, due to no fault of their own, it has become increasingly challenging for RRR people to understand and choose the best connectivity solutions for their needs and budgets. These factors create significant obstacles for RRR consumers, thereby impeding digital inclusion.

To have digital inclusion RRR Australian consumers and businesses, all levels of Government and industry must be able to access and understand three essential factors:

1. Connectivity infrastructure i.e. **Access** to quality, reliable and affordable connectivity **infrastructure** that best suits an individuals' needs and budget.
2. Connectivity Literacy
3. Digital Literacy

Appendix 2: Connectivity Literacy Awareness Training Program

1. **Program Structure**:
    - **Training Modules**: The program will consist of comprehensive training modules covering various aspects of connectivity, including understanding available technologies, plans, providers and equipment and how to troubleshoot common connectivity issues.
    - **Delivery Methods**: Training will be delivered through a combination of online modules, webinars, and in-person workshops, ensuring accessibility for all participants regardless of their location.
    - **Learners:** community digital mentors, staff from the Regional Tech Hub and First Nations Connectivity Hub, local Government, community organisations, other regional stakeholders, regional industry groups
2. **Key Focus Areas**:
    - **Connectivity Basics**:
        - Fundamentals of available technologies in RRR areas, including emerging technologies.
        - How to choose the best connectivity, provider and plan for an individual's or communities' needs and budget.
        - How to select equipment for individual households, businesses and specific needs such as ag-tech, telehealth or education.
        - Assistance with troubleshooting a connection and how to stay connected in an emergency.
        - Understanding redundancy and making best use of available technologies.
    - **Terminology:** Navigating the maze of telecommunications terminologies
    - **Consumer Rights and Protections**: Educating participants about their rights as consumers, including understanding service contracts, what to do in case of service disruptions and where to go if they can't get issues resolved.
3. **Community Engagement**:
    - **Local Champions**: The program will identify and train local champions, community volunteers and industry extension officers, who can act as points of contact within their communities, providing ongoing support and guidance.

- **Awareness Campaigns**: Trainers will be equipped to run awareness campaigns and workshops within their communities, promoting the importance of connectivity and how to get and stay connected to services that meet their needs and budgets.
- **Resource Distribution**: Trainers will distribute educational materials, such as pamphlets, guides, and online resources, to ensure widespread dissemination of information.

4. **Support and Resources**:
    - **Ongoing Support**: Participants will have access to a support network of experts and peers for ongoing assistance and advice.
    - **Resource Library**: An online resource library will be available, containing up-to-date information, troubleshooting guides, and training materials.
    - **Feedback Mechanism**: A feedback mechanism will be in place to continually improve the program based on participant experiences and evolving technological landscapes and to ensure information is kept up to date and relevant.

5. **First Nations Communities**:

- **Culturally Adapted Training**: In collaboration with the First Nations Digital Inclusion Advisory Group (FNDIAG) or other appropriate First Nations groups and organisations, the initiative could be culturally adapted to address the specific needs and preferences of Indigenous communities to ensure it is relevant, respectful, and effective.
- **Closing the Gap**: The initiative will support the broader objective of closing the digital divide for First Nations communities, enhancing access to digital technologies and online services. Improved connectivity will enable better access to education, healthcare, and economic opportunities, contributing to social and economic development.
- **Community-Led Approach**: Local Indigenous leaders could use the program to be trained as connectivity champions, ensuring that the knowledge and skills are passed on in a culturally appropriate and sustainable manner. This community-led approach will empower First Nations people to take control of their digital futures.

5. **Outcome Goals**:
    - **Enhanced Connectivity Literacy**: Increased understanding and awareness of telecommunications technologies and strategies for staying connected in RRR areas.

- **Community Resilience**: Improved community resilience through better preparation for emergencies, power outages, weather events and natural disasters.
- **Social Outcomes**: Enhanced social outcomes through improved connectivity, enabling better access to education, healthcare, and social services.
- **Digital Inclusion**: Promotion of digital inclusion by ensuring all community members, regardless of location or socioeconomic status, have the skills and resources to participate in the digital world.
- **Empowered Communities**: Empowered communities capable of independently maintaining and improving their connectivity standards.
- **First Nations Empowerment**: Strengthened digital inclusion for First Nations communities, supporting their cultural, social, and economic well-being.

By implementing the Connectivity Awareness Training Program initiative, we aim to create a ripple effect of knowledge, awareness and preparedness across RRR areas, ultimately leading to more resilient and connected communities.

Appendix 3: Customer Troubleshooting Issues

[redacted]
Top contributor · July 9 at 7:06 AM ·

Evening all,
I just wanted to share with you my recent NBN Fixed Wireless experience and give a massive thank you to Kristy Sparrow for her part in resolving it. Since the start of the year my upload speed had been less than 1. The signal lights on my NTD box were red 90% of the time. ADSL performance ten years ago was better. Up until the end of 2023 it had been around 5 and 7. Indeed both downloads and uploads had been improving up until the Christmas storms which hit the Gold Coast hinterland on Christmas night 2023. I have had a version 3 ODU ever since it was installed in early 2019. Going through my RSP in trying to get it resolved was fruitless and so I turned to this group and Kristy. That was not though the quick solution that I had hoped for. The Hills contractors that were sent out, were either trying to solve the issue in record time, would not follow directions that NBN had given them and ended up needed 6 different visits until finally an NBN engineer and a more senior Hills tech attended and fixed my issues within about 2 hours. Previous visists included getting a taller mast installed, a V4 installed and general poking and proding by the techs. The most fristrating part being that each visit was done by a different Hills contractor. It was only because of Kristy's sheer persistence that I was able to get to a successful outcome. I had given up and in fact purchased a starlink on the current special price but have now cancelled the service. I now have solid green lights on my NTD box, 130-140 down and 5-6 upload and with the tower upgrade around the corner hopefully this will only improve, fingers crossed! The trend lines on my SamKnows white box have gone upwards at a 45 degree angle as a result of this win! Thank you Kristy Sparrow!

nbn Fixed Wireless service assurance example[25]

[25] https://www.facebook.com/groups/BIRRR/permalink/2546165685592103/

Appendix 4: BIRRR Starlink Issues Report

BIRRR is concerned by recent claims that rain fade on Starlink services in Australia is a myth[26]. Actual user experiences, especially in regions with heavy rainfall, have demonstrated that rain fade (along with other factors) does impact Starlink, affecting the reliability of the service, particularly during the northern wet season. Comms day reports that

> *Telstra has revealed that it is now servicing just 285,000 copper line connections from the $230 million of annual subsidy it gets from universal service funding: costing over $800 per connection and rising. It has also reported that its tests of LEOsat services showed that the conception that they suffer from rain fade is a myth[27].*

International research demonstrates that heavy rain significantly impacts Starlink availability metrics, with more frequent and prolonged network outages occur during thunderstorms compared to clear days[28]. Research highlighted that thunderstorms caused 420% more outages, making the network unstable in adverse weather conditions, especially in humid and cloudy environments.

> *"Thunderstorms also significantly impact Starlink's performance, causing 420% more frequent and prolonged network outages compared to clear days. These extended outages render the Starlink network unstable during adverse weather, posing challenges…"*[29]

Whilst LEO satellites are less impacted by rain fade and can recover faster than Geostationary (GEO) satellite services, like nbn's Sky Muster, they are not immune. The impact of rain and storms on communication systems is a concern as, along with other factors, it can impact the reliability of the service. As Telstra has already commenced replacing some USO voice services with Starlink, BIRRR has concerns that consumers are being migrated off terrestrial solutions for technologies that will be impacted by rain fade. This will be a significant issue for consumers in the northern tropics and areas with high rainfall intensity.

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26 https://www.linkedin.com/posts/communications-day-commsday_telecommunications-telecoms-commsday-activity-7193762544073777153-1CXh/

27 *https://www.linkedin.com/posts/communications-day-commsday_telecommunications-telecoms-commsday-activity-7193762544073777153-1CXh/*

[28] *https://arxiv.org/html/2405.06801v1#bib.bib1*

29 *https://arxiv.org/html/2405.06801v1#bib.bib1*

User experience in regional areas of Australia with Starlink during rain events is that the service is impacted by rain fade. There have also been anecdotal reports of impacts of smoke, high winds and solar storms.

Telstra has released data from a small sample of Starlink test sites (7 test sites) of which 3 test sites were not located in northern Australia (including one test site in Port Melbourne) to state that Starlink is more reliable than regional fixed line equivalents and that signals hold up well during even the heaviest rain[30]. Yet their website states

> *Telstra Satellite Internet powered by Starlink is designed to work well in most weather conditions, including rain, snow, and wind. Extreme weather, especially heavy rain, can cause brief service dropouts[31].*

Telstra's data is misleading for consumers as it compares several months of Starlink data from 7 testing sites against hundreds of thousands of copper connections over a period of many years[32]. In addition copper and regional fixed line services have been poorly maintained and repaired, leading many regional advocates to question Telstra's methodology and data analysis methods. With 4 testing sites in the tropics and 3 in Victoria and South Australia, the averages were always going to be moderated by better performing low rainfall intensity sites. Telstra have also used the statistics in a favourable light only ever referring to average down times and not maximum downtimes. The testing sites were placed in locations that did not have an average wet season and Telstra also defined heavy rain as:

> *Heavy rainfall events (defined as 1 mm per 5-minute period) occurred in 1,494 five-minute blocks (covering 0.75% of the time) during the period. The average service availability during heavy rainfall events was 99.4%, while during dry periods it was 99.8%. This difference was not statistically significant, suggesting that we cannot be confident that it was specifically caused by heavy rain.*

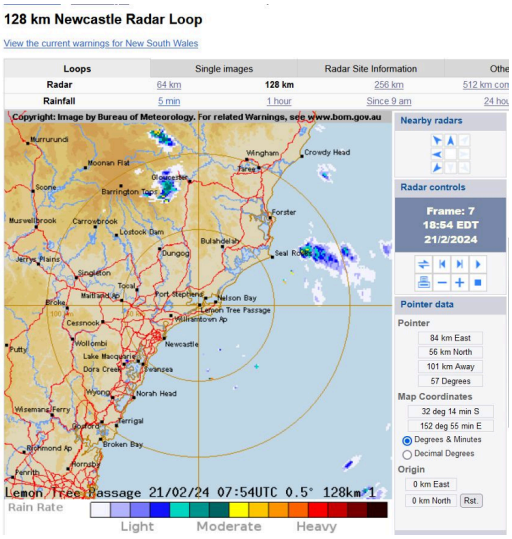
By contrast, industry defines 1mm rain in 15 minutes as 'moderate'[33]. Rainfall intensity is classified according to the rate of precipitation, which is given as the amount of rainfall per unit of time. According to Manual of Surface Weather Observations (MANOBS), the following general categories are used to

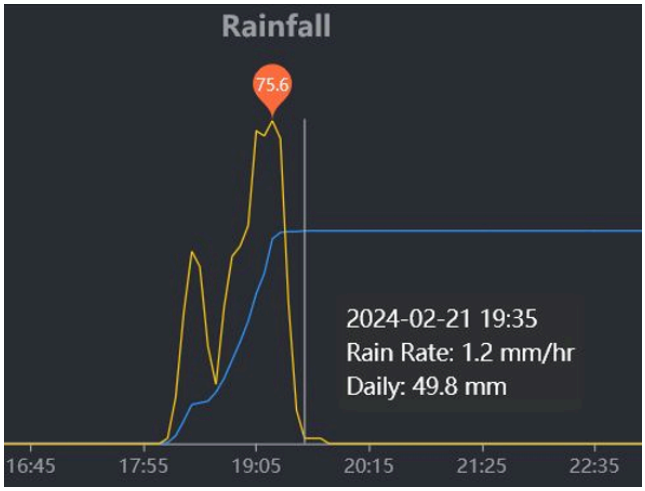
[30] *COMMUNICATIONS DAY 27 June 2024*
[31] *https://www.telstra.com.au/internet/starlink*
[32] *https://www.telstra.com.au/consumer-advice/customer-service/network-reliability*
[33] *https://www.baranidesign.com/faq-articles/2020/1/19/rain-rate-intensity-classification*

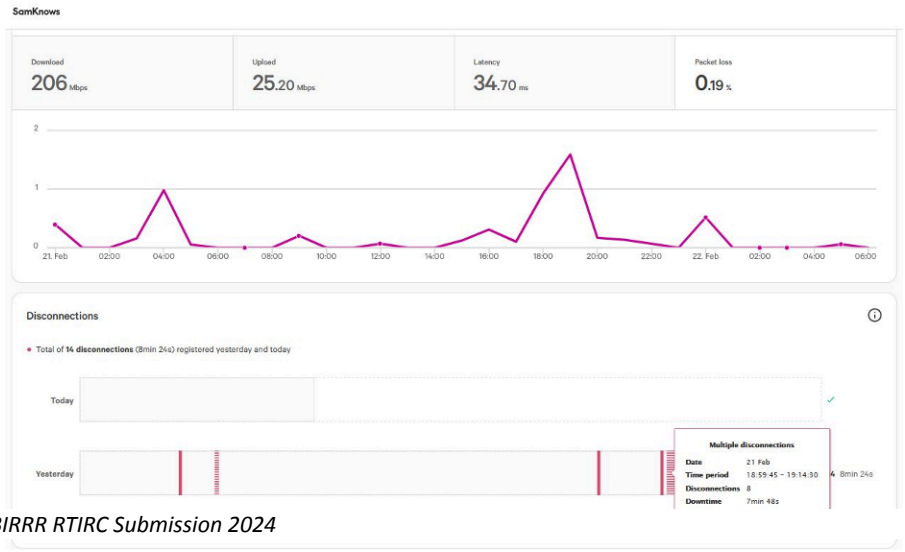
classify rainfall intensity, and it is this type of rain that occurs in northern areas during a typical wet season.

- **Heavy rain:** rain rate is greater than 7.6 to 50 mm/h (0.3 to 2”/hr) or 0.125 to 0.83 mm/min (0.005" to 0.033”/min) which for a 0.1 mm resolution rain gauge equals 76 or more full tipping buckets per hour (76+ pulses/hr).
- **Violent rain:** Can sometimes be used to characterise precipitation rates greater than >50 mm/hr (>2 in/hr) or >0.83 mm/min (>0.033”/min) which for a 0.1 mm resolution rain gauge equals 500 or more full tipping buckets per hour (500+ pulses/hr, 8+ pulses/minute).

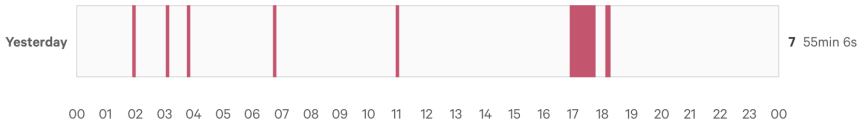
Our members' experience is that rain fade does occur on Starlink services, during moderate, heavy and violent rain events. For example, the impact of a short storm on a Starlink service in the Gloucester region of NSW which caused a 7 minute 48s outage.

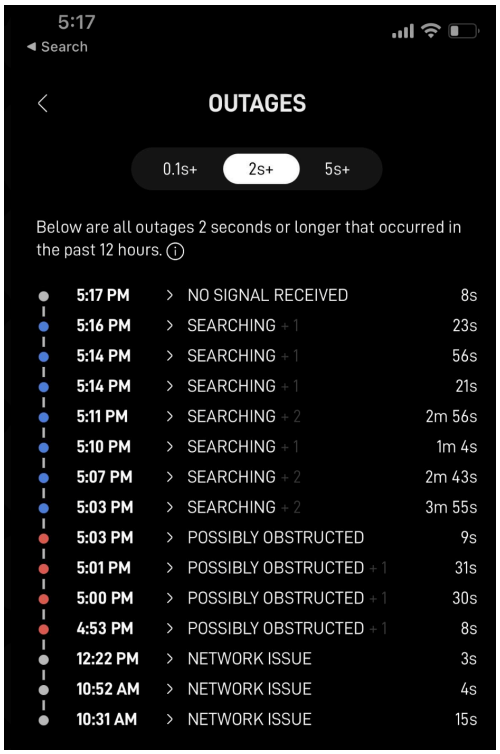


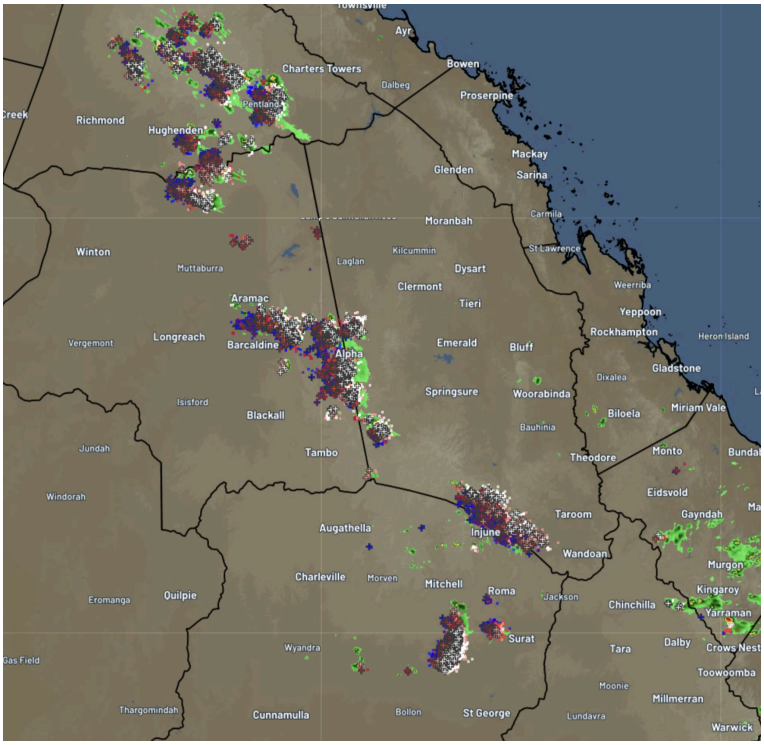




The black image below shows Starlink outages as recorded at Malden Station, Alpha, Central Queensland on 5th November 2023 during storms over a 24 hour period, the Starlink app did not record all of the available time without a connection. Rain began falling at approximately 4.50pm. During this time period lightning strikes caused several fires, the community were able to communicate via their HCRC and NGWL landlines and UHF. When the power went out, those without a generator or alternate power source only had their landline to communicate with. **Neither nbn Sky Muster or Starlink were able to be used for voice calls.** The second image highlights outages recorded by Sam Knows on nbn Sky Muster at the same location during the storm. The third image is a screenshot of the rain radar and lightning tracker in what was a fairly typical storm for central Queensland in the wet season.

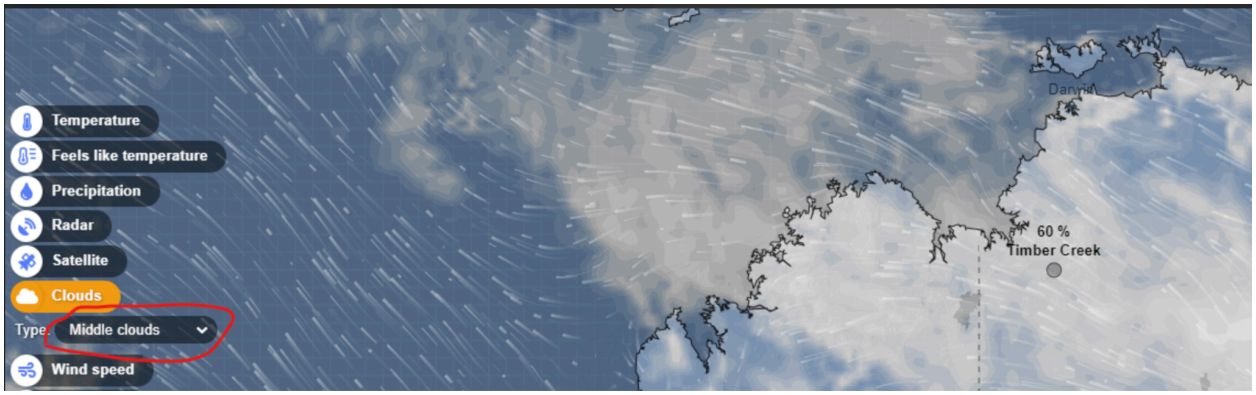






Whilst Starlink does recover once the storm has passed, storms during wet seasons and tropical rain can repeat themselves quickly, potentially creating multiple outages in a short time span.

For instance, anecdotal evidence of recent storms and heavy cloud cover in the Timber Creek area of the Northern Territory, reported that Starlink was not usable for extended time periods during the heavy cloud event.



Additionally, the Telstra data did not consider rainfall intensity, as highlighted below, northern areas of Australia and the eastern seaboard are prone to higher rainfall intensity than other areas of Australia[34] and it is these areas that have a large population of RRR consumers.

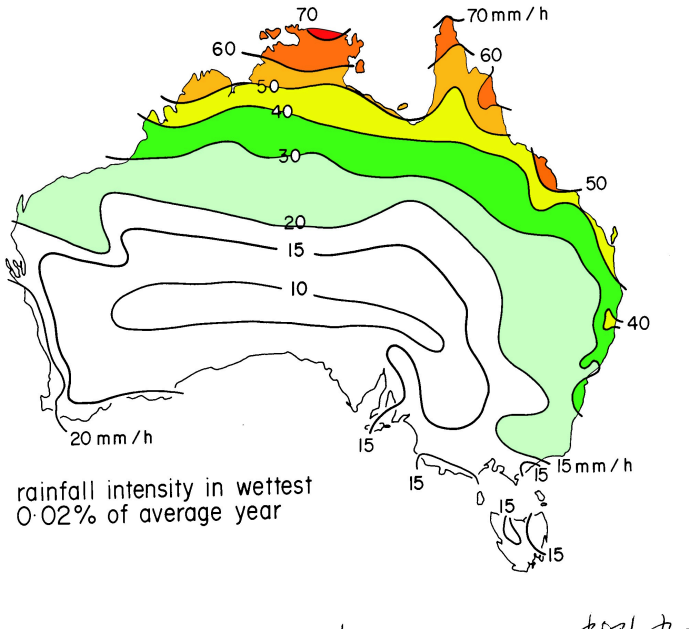


Figure: Australia Rainfall Intensity Map

[34] http://www-das.uwyo.edu/~geerts/cwx/notes/chap10/oz_heavy_rain.html

In addition to rain fade, Starlink services can be affected by microdrops of less than 1 second and macro drops caused by network issues, power outages, obstructions etc which can affect the services overall availability and therefore highlighting how it can be less reliable than terrestrial networks. Whilst consumers who are streaming may not be affected by small dropouts they do affect voice calls, cloud programs and data transfer.

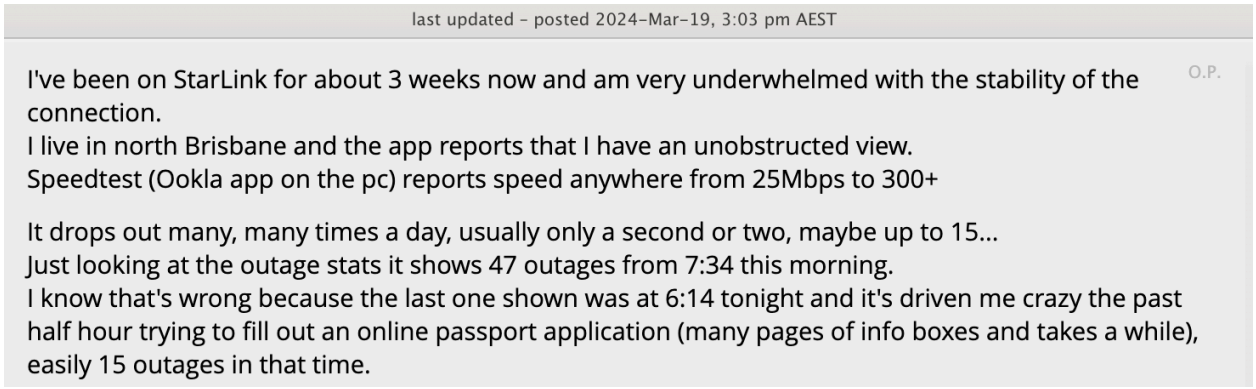


Figure: Whirlpool user experiencing dropouts on Starlink[35]

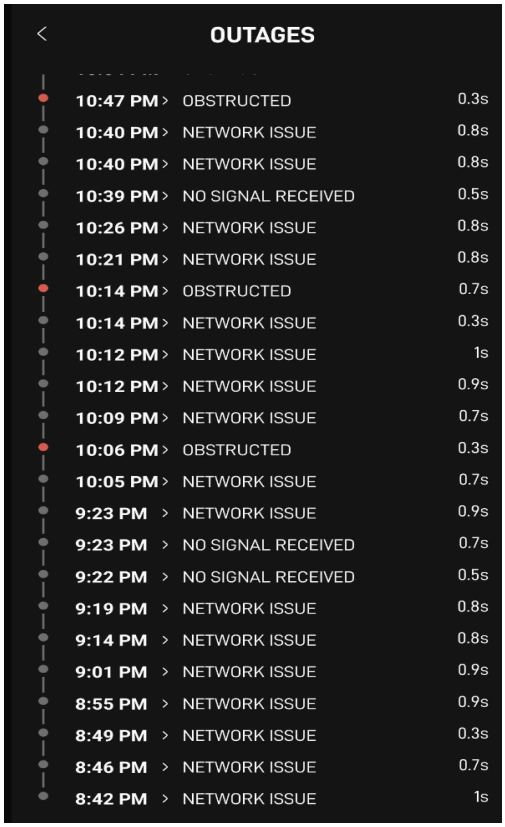
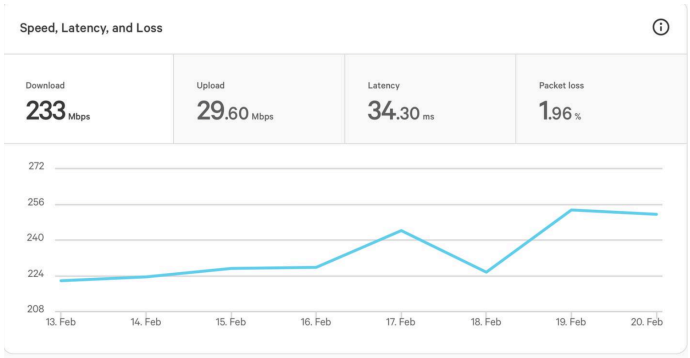


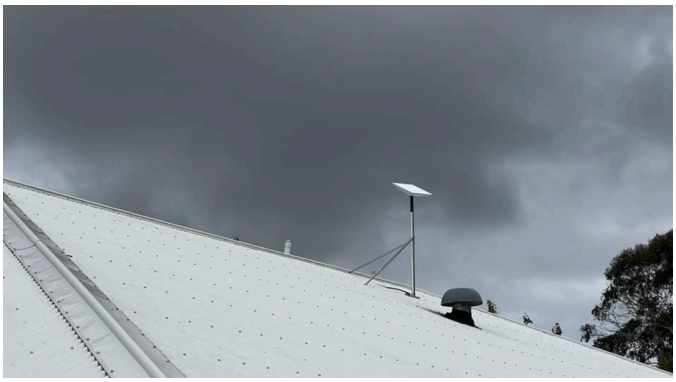
Figure: Microdrops on a Starlink Service in central Queensland

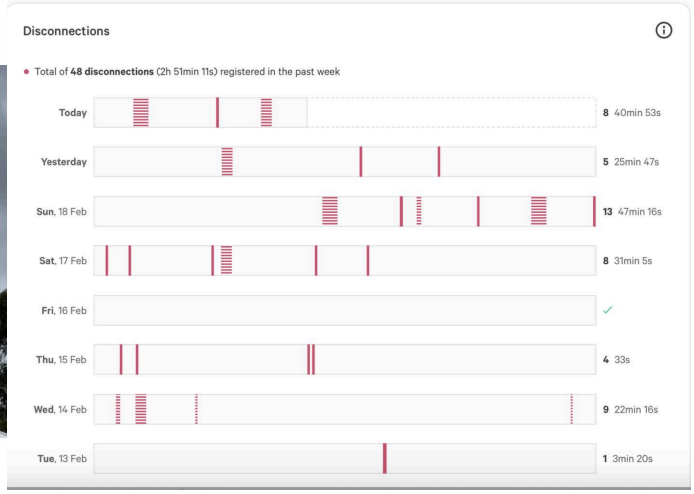
[35] *https://forums.whirlpool.net.au/archive/9w8ywxkv*

South-west Victoria, Starlink service downtime with no obstructions.

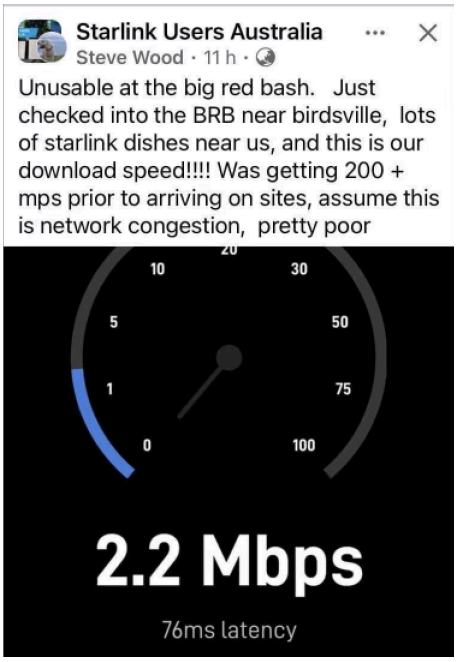
This Starlink service in South West Victoria shows significant packet loss / downtime, despite the equipment having no obstructions and the service being professionally installed. Results from ACCC Sam Knows White Box.







Starlink can also be prone to issues created by congestion when a large number of connections are being used in a small area, such as the recent experience consumers had at the Big Red Bash at Birdsville and the Boulia Camel Races.



17 July, 2024

Businesses miss out on tourism boom as Telstra crashes ... again

Boulia businesses couldn't use EFTPOS, while ATMs were also crippled by network congestion.

By Troy Rowling

Australian Hotel owner [redacted] said the inability to process EFTPOS and ATM transactions caused significant financial losses during Boulia's biggest tourist event of the year.

Cash was still king in Boulia on the weekend – although that was hardly a choice for local businesses and the thousands of tourists who had descended on the Outback community.

In what is supposed to be a boom period for the tiny town's economy, many couldn't buy a beer from the pub without handing over a note.

Luckily, many tourists heeded the call and brought enough cash to last the weekend.

Some even admitted that carrying bank notes was a small protest against the "cashless society" concept.

But Boulia business owners were still left frustrated at losing out on vital tourist dollars due to repeated telecommunication failures.

The race club relied on the Starlink satellite service, which also struggled to keep up with demand – most caravans now have a Starlink dish, which also puts a strain on the network.

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[36] *https://www.northwestweekly.com.au/businesses-miss-out-on-tourism-boom-as-telstra-crashes-again-2024-07-17*

Appendix 5: BIRRR 2024 RTIRC Recommendations

1. Implement a national rural, regional and remote (RRR) strategic framework, plan and strategies for future development and investment in RRR telecommunications infrastructure.

1.1. A framework for identifying prioritised locations for funding of place-based solutions.

1.2. Conduct a comprehensive connectivity infrastructure audit and mapping exercise of all RRR telecommunications infrastructure.

1.3. Funding for independent advice and resources to local government and communities to be embedded in all funded RRR telecommunications programs.

1.4. Consumer engagement and project assessment outcomes with post project audits included in all RRR telecommunications projects funding agreements.

2. Reduce and eliminate the barriers to accessing telecommunications services for RRR consumers.

2.1 Establishment of a RRR Connectivity Research and Training Centre (CRTC)

2.2 Funding, development and implementation of a Connectivity Literacy Awareness Training Program.

2.3 Significantly enhance and expand the Regional Tech Hub (RTH)

3. Develop a centrally managed interactive RRR connectivity platform & enforceable standards for coverage maps and addressing systems information.

3.1 Development of a centrally managed RRR connectivity platform

3.2 Development of enforceable standards for RRR telecommunications coverage maps

3.3 Development of procedures and strategies to assist consumers with addressing issues ***a***nd awareness of the nbn network

4. Develop strategies and funded programs to improve affordability of telecommunication services and equipment in RRR areas.

4.1 The Low Income Digital Inclusion Forum is tasked with developing affordability strategies for fixed and mobile services for low income users

4.2 Government to fund a concessional NBN broadband service and equipment supply product across all technologies.

4.3 Increase the frequency and amount of Services Australia quarterly Telephone Allowance'[37]

4.4 Extend the School Student Broadband Initiative (SSBI)

4.5 Un-metering of essential publicly funded Government and health online services

4.6 Government to ensure affordable back-up power redundancy is provided for all nbn technologies in RRR areas.

5. Improved procurement processes of RRR telecommunications services across all levels of government through a funding framework.

5.1 Develop a Telecommunications Procurement Framework

5.2 Encourage states and territories to set performance metric targets in RRR telecommunications contracts and implement contract flexibility.

6. Introduce measures to reduce misinformation and disinformation and provide independent advice to individuals, small businesses and industry within the RRR telecommunications sector.

6.1 Implement the ACCC recommendations as highlighted in their response to the TCP Code draft package of 20th May 2024.

6.2 Support, fund and expand Independent Telecommunications Advisory Programs for RRR individuals, industry sectors and communities

6.3 Promote and raise awareness of accurate RRR telecommunications information

6.4 Greater priority given by government regulatory bodies to identify misinformation and disinformation that exists in the regional telecommunications space.

7. Define and enhance adequacy and capacity of RRR telecommunications services

7.1 Defining and developing minimum standards for telecommunications adequacy.

7.2 Develop plans to upgrade RRR technologies to address evolving consumer needs.

7.3 Treat spectrum as a public asset and plan for most efficient and effective utilisation

7.4 Identify capacity gaps and enhance regional backhaul infrastructure.

7.5 Develop a proactive strategic plan / framework that anticipates technological advancements and increasing consumer needs.

[37] *https://www.servicesaustralia.gov.au/telephone-allowance*

8. Modernise and strengthen the Universal Service Guarantee (USG) and Universal Service Obligation (USO)

8.1 Ensure new Universal Service Frameworks are adaptable and flexible to keep pace with changing consumer demands and new technologies.

8.2 Ensure new Universal Service Frameworks mandate access to redundancy in telecommunications for all regional consumers

8.3 A new Universal Services Framework must include strengthened consumer protections, especially during technology migrations

9. Strengthen and enhance RRR telecommunications consumer protections and ensure they are enforced by regulators and Government

9.1: ACMA to declare telecommunications an essential service

9.2: Strengthen RRR telecommunications consumer protections, ensure penalties are enforced and introduce escalating fines for recurring faults

9.3: Enhance the Telecommunications Industry Ombudsman (TIO) and increase RRR consumer awareness.

9.4: Regulatory bodies to mandate network monitoring on all technologies to ensure consumers are receiving quality and reliable service.

9.5: Implement initiatives to improve customer support centres for RRR consumers.

9.6: Strengthen the TCP Code[38] with standardised and easier to understand Critical Information Summaries, labelling and information initiatives.

10. Strengthen the resiliency and redundancy of RRR telecommunications infrastructure to better prepare for power outages, natural disasters and extreme weather events.

10.1: For telecommunications Infrastructure providers to be proactive in ensuring network resilience and preparedness for natural disasters, and ensure that consumers can access network outage information.

10.2: Introduction of Power Backup Standards for all RRR telecommunications infrastructure

10.3: Government and industry to develop policy and funding to support In-Home Backup Power resources and equipment.

[38] *https://www.acma.gov.au/telecommunications-consumer-protections-code*

10.4: Implementation of emergency roaming to be fast tracked.

10.5: A funded program specifically for the roll out of wi-fi hubs and equipment in vulnerable communities

11. Develop a strategic plan to proactively plan for future technology disruptions and emerging telecommunications technology challenges and risks.

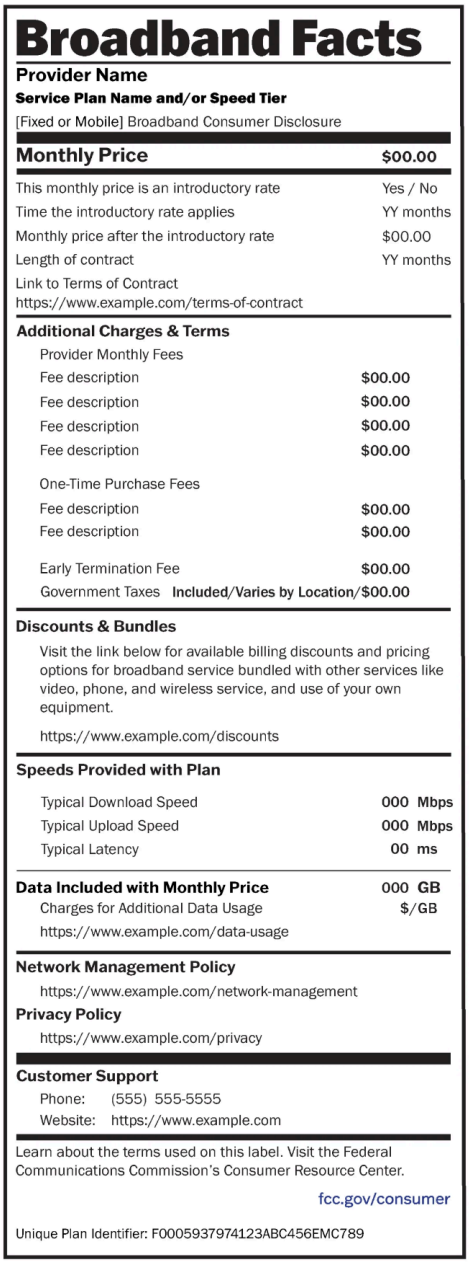
11.1 Future proof regulatory and consumer protections of emerging telecommunications services through progressive frameworks that consider the risks of investing in foreign owned networks.

11.2 Mandate rigorous independent testing, by qualified researchers, of new emerging technologies and their potential challenges and opportunities for RRR consumers.

12. Regional advocacy and regional consumer focused groups should be invited to be engaged and present on government working groups and during industry research and collaboration processes.

13. BIRRR recommends the Government support the recommendations presented in the initial report of the First Nations Digital Inclusion Advisory Group.

Appendix 6: FCC Broadband Labelling Example[39]



Broadband Facts

Provider Name

Service Plan Name and/or Speed Tier

[Fixed or Mobile] Broadband Consumer Disclosure

Monthly Price	**$00.00**
This monthly price is an introductory rate	Yes / No
Time the introductory rate applies	YY months
Monthly price after the introductory rate	$00.00
Length of contract	YY months
Link to Terms of Contract https://www.example.com/terms-of-contract	

Additional Charges & Terms

Provider Monthly Fees	
Fee description	**$00.00**
Fee description	**$00.00**
Fee description	**$00.00**
Fee description	**$00.00**
One-Time Purchase Fees	
Fee description	**$00.00**
Fee description	**$00.00**
Early Termination Fee	**$00.00**
Government Taxes	**Included/Varies by Location/$00.00**

Discounts & Bundles

Visit the link below for available billing discounts and pricing options for broadband service bundled with other services like video, phone, and wireless service, and use of your own equipment.

https://www.example.com/discounts

Speeds Provided with Plan

Typical Download Speed	**000 Mbps**
Typical Upload Speed	**000 Mbps**
Typical Latency	**00 ms**

Data Included with Monthly Price	**000 GB**
Charges for Additional Data Usage	**$/GB**

https://www.example.com/data-usage

Network Management Policy

https://www.example.com/network-management

Privacy Policy

https://www.example.com/privacy

Customer Support

Phone: (555) 555-5555

Website: https://www.example.com

Learn about the terms used on this label. Visit the Federal Communications Commission's Consumer Resource Center.

fcc.gov/consumer

Unique Plan Identifier: F0005937974123ABC456EMC789

Consumer broadband labels will be required for internet providers starting on Wednesday — in many cases in both English and Spanish. Federal Communications Commission

[39] *https://www.fcc.gov/broadbandlabels*