

NSW Government Submission

2024 Regional Telecommunications Review

June 2024



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Introduction

Purpose of submission

This submission provides the NSW Government response to the 2024 Regional Telecommunications Review (2024 RTR).

In preparing this submission the NSW Government has reflected on changes in the telecommunications market since the previous review and the need for all governments to consider the broadest range of levers to improve access to essential telecommunications services in regional and remote Australia.

This submission by the NSW Government reflects the importance of leading a coordinated approach; expanding coverage and promoting competition and choice; and enabling social inclusion. The NSW Government's response to the 2024 RTR focuses on the key issues identified in the Issues Paper and acknowledges the Terms of Reference for the review. The NSW Government thanks the Regional Telecommunications Independent Review Committee (RTIRC) for the opportunity to provide a submission.

The following Departments and agencies provided input to this whole of NSW Government submission:

- Department of Primary Industries and Regional Development
- Department of Communities and Justice
- Department of Planning, Housing and Infrastructure
- NSW Reconstruction Authority
- Department of Customer Service
- NSW Telecommunications Authority
- Department of Education
- Department of Climate Change, Energy, the Environment and Water
- Transport for NSW.

Executive summary

This Submission puts forward seven priorities to the Regional Telecommunications Independent Review Committee in 2024 across three broad themes: develop and lead a coordinated national approach; expand coverage and promote competition and choice; and enable social inclusion, safety and resilience.

Develop and lead a coordinated national approach:

Lead a national approach to telecommunications planning and investment through cross jurisdictional engagement.

Priority 1: Develop and lead a national telecommunications strategy and standards framework

Expand coverage and promote competition and choice:

Mandate active sharing and investigate other models to incentivise market competition and consumer choice.

Priority 2: Mandate active sharing of infrastructure and spectrum in regional areas

Priority 3: Continue the rollout of the National Broadband Network

Priority 4: Future-proof regional Australia with emerging technologies

Enable social inclusion, safety and resilience:

Support those in regional and remote communities most in need.

Priority 5: Support First Nations communities with place-based funding programs

Priority 6: Continue to improve disaster recovery and emergency connectivity

Priority 7: Address affordability, support social inclusion and economic development

Overview

Telecommunications in Regional NSW

Regional NSW is Australia's largest and most diverse regional economy. It hosts a third of the State's population and produces one fifth of NSW's Gross State Product. An effective telecommunications network that offers affordability, reliability and speed/capacity is critical for the economic success of regional NSW and liveability for those that call it home.

Digital connectivity is becoming increasingly essential for full economic and social participation in society. It is particularly important for individuals and businesses in regional areas which tend to be more reliant on telecommunications to access essential services when compared to those living in metropolitan areas. Reliable access to multi-carrier services, real-time information, emergency services and post-disaster recovery support is also critical during natural disasters and other emergency events.

The NSW Government recognises that the importance of telecommunications in regional areas is only expected to continue as government, education, health and commercial services are increasingly delivered online, and the range of digital tools for work, study and leisure grow. Access to high-speed, high-capacity connectivity is also critical to attracting and supporting new investment opportunities and migration to regional areas. Moreover, improved telecommunications services as a crucial enabler for emerging regional industries such as advanced manufacturing, resource innovation, and technology-enabled agriculture.

Improving digital connectivity across regional NSW is one of five focus areas for investment under the \$4.2 billion **Snowy Hydro Legacy Fund (SHLF)**. This large-scale investment in mobile and internet connectivity is being delivered through the NSW Government's **Regional Digital Connectivity (RDC) Program**. This Program aims to bridge the digital divide between metropolitan centres and regional areas by investing in mobile and internet connectivity projects to drive economic growth, social equity, and ensure everyone in regional NSW can take advantage of new technology and digital opportunities.

Demonstrating the NSW Government's commitment to connectivity and digital inclusion, in 2023 the NSW Government released the **NSW Connectivity Strategy**. The Strategy's priorities include improving coverage and performance to metropolitan equivalent levels to people in regional communities regardless of which carrier they choose. The NSW Telco Authority has now commenced consultation on the State's first **Digital Inclusion Strategy**. Consultation is open on the related discussion paper until July 2024.

The telecommunications sector, like other providers of essential services, is accountable for meeting consumer expectations. This submission strongly seeks to broaden the options considered by the Commonwealth to ensure those responsibilities are met and provide regional citizens with more choices about the types of providers and services that meet their needs.

Key Priorities

Develop and lead a coordinated national approach

Priority 1: Develop and lead a national telecommunications strategy standards framework

- Establish a **national digital connectivity strategy** to align State and Territories programs, share key learnings, review new models.
- Implement a **national reporting portal** to monitor mobile and general connectivity coverage, performance and outcomes. This will ensure consistency and greater transparency of data within the sector.
- Design co-investment strategies and programs that provide **States and Territories with autonomy** on how best to use funding for the benefit of remote communities.
- **Seek to leverage and align major national telecommunications procurements** to incorporate improved connectivity opportunities for regional communities.
- Develop a set of **national service delivery standards** and reporting of major outages, emergency service usage, signal strength and speed of services for ongoing reporting in rural, regional and remote areas.
- Support and enable audits of **coverage claims made by telecommunications companies** about their products and services, in partnership with ACMA.

Expand coverage and promote competition and choice

Priority 2: Mandate active sharing of infrastructure and spectrum in regional areas

- Implement a strategic long-term policy and regulatory framework to **incentivise the telecommunications sector to actively share infrastructure and spectrum** on all Commonwealth Government funded assets in regional, rural and remote communities.
- **Mandate active sharing for all Commonwealth, State and Territory funding** programs to increase competition and offer greater consumer choice, coverage and affordability to regional citizens.
- **Introduce stricter licencing conditions on spectrum** when utilised in rural, regional and remote areas to facilitate active sharing (a 'use it or lose it policy' and 'use it or share it policy' with licence renewals and pricing).
- Improve the value of Commonwealth Government investments in improved mobile coverage and competition through the **strategic consideration of the use of Open RAN** architecture along with active sharing architectures such as **MOCN (Multi Operator Core Network)**.
- Design funding programs to **foster the development of the mobile network infrastructure provider (MNIP) market** which has a commercial incentive to facilitate integration of Mobile Network Operator (MNO) operating and business systems for active sharing.
- Address **mobile black spots on major regional roads and transport corridors** using active sharing to provide rural and remote, regional commuters with access to multi carrier services.

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- Investigate **options for a new telecommunication infrastructure sharing model**, leveraging best practice in other countries (e.g. New Zealand) and consider private investment opportunities.

Priority 3: Continue the rollout of the National Broadband Network

- **Expand elements of the successful Business Fibre Zone** model with the view to extending these to include citizen coverage, reducing set-up costs for future connectivity.
- Continue to **invest in NBN through the node to premise upgrade program** and expanding the footprint of fixed wireless services.

Priority 4: Future-proof regional Australia with emerging technologies

- Investigate **new and improved data speeds** to ensure all investments in Commonwealth Government funded assets are future proofed and of world standard
- Mandate, where appropriate, metropolitan equivalent **5G solutions for Commonwealth Government funded projects** in regional population centres (including consideration of full 5G equivalent service offering).
- **Investigate alternative energy sources, battery expansion** and generator backup options with new technologies.
- Investigate **costing models and a roadmap to identify when Low Earth Orbit (LEO) satellite services** should complement terrestrial technologies in rural, remote and regional locations.

Enable social inclusion, safety and resilience

Priority 5: Support First Nations communities with place-based funding programs

- Design and fund programs that provide First Nations communities with a **broad range of digital initiatives** (including but not limited to education and digital literacy skills, local employment opportunities, combined mobile and internet solutions) with clearly defined targets.
- Implement a **connectivity literacy** program to provide a tailored and neutral cultural support mechanism to assist First Nations people and communities to access the most affordable services for their need/s.
- Establish **place-based programs that are designed and led by Aboriginal people and communities**, tailored specifically to meet the community needs.
- Continue to develop a **whole-of-government digital strategy** as part of ongoing efforts to address the digital divide.

Priority 6: Continue to improve disaster recovery and emergency connectivity

- **Consider the impact of the 3G shutdown** in areas where it is the only mobile network and options to mitigate the risk it poses to public safety and emergency management, as well as meeting consumer needs.
- **Facilitate more regulatory measures to increase network resilience**; ensuring sites are appropriately hardened and increasing the likelihood that they will remain operational when needed most.
- Mandate **24/7 roaming as part of the mobile service capability for ESOs** and move to implement temporary disaster roaming for citizens.
- **Consider public Wi-Fi and LEOs as options to deliver connectivity at visitor nodes** to enable greater Public Safety Network expansion.
- **Continue to provide access to public phones** and introduce free public WiFi for safety measures.

Priority 7: Address affordability, support social inclusion and economic development

- Continue to resource the **Regional Tech Hub** and increase **digital connectivity training and education outreach programs**.
- Review and **address barriers to affordability** when accessing digital connectivity options in the current environment.
- Design programs that support **local workforce training and employment** in the telecommunications sector, as part of overall funding programs.
- **Improve connectivity** in recreational areas to enhance the wellbeing and general safety of citizens utilising these public asset/s.
- **Continue to fund programs to support regional tourism growth** (multi-carrier coverage and improved mobile services on major roads, improved mobile capacity for large scale regional events).

Develop and lead a coordinated national approach

Priority 1: Develop and lead a national telecommunications strategy and standards framework

The Commonwealth, States and Territories could more effectively coordinate activities to achieve a national approach to telecommunication service planning across regional Australia

Develop a Regional Australia Mobile Telecommunications Strategy

The 2021 Regional Telecommunications Review (2021 RTR) recommended increased co-ordination across governments. Whilst there have been improvements in this area with regular roundtables and working groups, there is still further work required in this area.

A national Regional Australia Mobile Telecommunications Strategy would offer an opportunity to better to align Commonwealth, State, and Territory approaches, share key learnings and models. This approach is consistent with recommendation 10 of the *Connecting the Country: Mission Critical Report (2023)* which recommends ‘the Australian Government lead development of a Regional Australia Mobile Telecommunications Strategy to consider the trends and demands of regional growth and identify regions and growth corridors where synergies can occur in the planning and construction of transport routes, energy, water and telecommunications connections. The strategy should be developed and agreed in consultation with State and Territory governments. The results of mobile coverage audits and key data on regional growth, industry, employment and tourism drivers would inform the Strategy.’¹

Coordinate infrastructure planning and development in regional areas

Significant delays in site acquisition and high rental costs in low-density population areas make it a less commercially viable option for mobile network operators and infrastructure providers. Government organisations must collaborate to overcome these challenges, ensuring these locations become more accessible for companies building digital connectivity infrastructure.

The *Connecting the Country: Mission Critical Report (2023)* recommends that the Australian Government ‘facilitate the harmonisation of planning and environmental regulations for new mobile infrastructure across regional, rural, and remote Australia’ under recommendation 15.²

¹ Connecting the country: Mission critical (2023) – Recommendation 10

² Connecting the country: Mission critical (2023) – Recommendation 15

The Commonwealth Government should continue to coordinate activities to achieve a national approach to telecommunication service planning across regional Australia. The 2021 Regional Telecommunications Review recommended increased co-ordination across governments. Whilst there have been improvements in this area with regular roundtables, there is still further work required in this area.

For example, there is an opportunity for a national approach with the Commonwealth Government providing a more active role to enable critical infrastructure planning and delivery in regional areas. This is due to their role as a national agency that sets policy and delivers programs across all States and Territories. Some of the areas that the NSW Government would welcome greater support from the Commonwealth Government on, in order to overcome challenges to building infrastructure in regional areas, include easier identification of and access to relevant land, and national guidelines to better enable continuous coverage across jurisdictional boundaries.

National digital connectivity coverage maps and reporting

The NSW Government recommended improved coverage maps in its 2021 RTR submission. It is noted that the National Audit of Mobile Coverage will provide valuable data, although not until late 2027.³

The NSW Government recommends continued improvement and standardisation of Mobile Network Operator (MNO) coverage information. The coverage maps currently produced by the MNOs use different propagation models and base geodata and provide coverage predictions to a self-set probability. As such, each operator's prediction model could generate significant differences with the same input data. Commercially sensitive variables should be set by the Australian Communications and Media Authority (ACMA), including requirements to use base geodata of a certain resolution and vintage.⁴

There are several other problems with current data sets that will also need consideration when reviewing data collection. The Issues Paper notes that 'individual experience of mobile coverage at any given location can be affected by the type of handset used, local terrain, the location and design of buildings and foliage'. In addition, coverage maps at too high a level, (such as LGA) and do not capture vast differences within that LGA.

The Commonwealth can provide a centralised portal with accurate and independently validated data for use by all States and Territories. This transparent approach would better enable governments to develop effective, place-based policies to better address regional connectivity issues. Information on network outages, number of emergency calls, and data on quality standards and signal strength should be available through the centralised portal.

The Commonwealth could consider ways to supplement these data sets by introducing a requirement for carriers to share mobile coverage information of their entire network including detailed technical and usage data for all towers. It could also be a condition of spectrum licensing to provide geographic coverage and usage data for the use of that spectrum.

This data will not only assist in protecting critical infrastructure but ensure better whole-of-government planning and investment of funds by avoiding duplication of infrastructure.

³ Department of Infrastructure, Transport, Regional Development, Communications and the Arts, <https://www.infrastructure.gov.au/media-communications-arts/better-connectivity-plan-regional-and-rural-australia/national-audit-mobile-coverage>

⁴ Geoscience Australia makes ~30 m resolution terrain data available freely, which would be an improvement upon some of the existing coverage maps based on 100 m resolution data.

This view is consistent with recommendation 9 of the *Connecting the Country: Mission Critical Report (2023)* which recommends that the Australian Government ‘conducts and publishes the results of a government-led region-by-region mobile coverage audit, with analysis of coverage gaps across regional, rural and remote Australia. The audit would benchmark metrics on connection, data capacity and latency and should commence before the next Regional Telecommunications Review commences under Part 9B of the *Telecommunications (Consumer Protection and Service Standards) Act 1999 (Cth)*; and biennially thereafter’.⁵

Proactive audits of products and services to protect regional consumers

The Commonwealth is encouraged to partner with ACMA to proactively audit the claims made by telecommunications companies about the quality and pricing of their services in remote and regional communities.

The Commonwealth Government plays a critical role in ensuring safeguards for consumers. For example, the Telecommunications Consumer Protection Code (TCPC), enforced through ACMA, requires telecommunication providers to comply with rules regarding advertising and sales information. It also provides information to consumers on their rights, such as the right to accurate information about a product or service. Currently, if a consumer is given inaccurate information, they must complain first to their telecommunications provider, and then the Telecommunications Industry Ombudsman if they are unsatisfied by their provider’s response.

Rather than relying on this reactive mechanism to address misleading and inaccurate information, the Commonwealth Government and ACMA are encouraged to take a more proactive role to protect consumers. Independent audits of the information being offered by telecommunications providers about their products and services would serve as pre-emptive checks to ensure accuracy for all customers. This would bolster consumer confidence that they have access to reliable and unbiased information when making decisions about their connectivity options. It could particularly benefit regional, rural, and remote consumers who have less access to information and choice.

Transparency requirements (currently broadly outlined in the TCPC, and in Australian Consumer Law) could also be strengthened to explicitly require telecommunications companies to provide accurate information about the coverage, speeds, and reliability of their products and services in a consistent format and wording. This will enable regional consumers to more effectively compare providers that best meet their needs.

⁵ Connecting the country: Mission critical (2023) - Recommendation 9

Expand coverage and promote competition and choice

Active sharing mobile coverage solutions enhance competition by lowering capital and operating costs, reduce the environmental footprint, and deliver multi carrier choice to regional and remote communities.

Priority 2: Promote active sharing of infrastructure and spectrum in regional areas

Develop a national policy and regulatory framework for active sharing

The NSW Government encourages the development of a national policy and regulatory framework that promote active sharing across all Commonwealth, State and Territory funded projects to increase competition and offer greater consumer choice in rural, regional and remote communities.

The NSW Government recognises that there are many benefits to implementing the active sharing model. In regional markets, there is limited commercial incentive for mobile network operators to invest in new and improved mobile services due to high establishment costs and low returns on investment. This shifts the burden to state and federal governments to fund improved coverage and competition rural, regional and remote communities.

The deployment of active sharing mobile solutions in regional markets has the potential to:

- improve the viability of regional network deployment by lowering capital establishment and ongoing operating cost through more efficient utilisation of infrastructure
- accelerate digital connectivity and enhance competition in the regional telecommunications market, providing rural, regional and remote consumers with more choice and better service quality
- provide better mobile coverage to support services that rely on a reliable network (e.g. Domestic Violence Electronic Monitoring)
- reduce the environmental impact of mobile network deployment through reduced physical infrastructure deployment and lower energy consumption.
- ensure metropolitan visitors and tourists to rural, regional and remote areas have mobile phone services available through their provider of choice, and
- increase the impact and spread of state and federal government connectivity funding.

The telecommunications sector is complex, market participants are commercially motivated, and regulatory frameworks lack the ability to ensure mobile coverage is provided to regional and outer regional locations with small populations.

Through a range of Active Sharing Partnership initiatives, the NSW Government has proved that active sharing is a feasible model from a technical perspective. However, the issue that the NSW Government is seeking to address through the RDC Program's approach to active sharing is predominantly a commercial one, where the incumbent mobile network operators are reluctant to share assets for competitive reasons.

The NSW Government's RDC Program seeks to ensure long-term value is delivered for the NSW taxpayer through the design of funding programs that enable and influence active sharing outcomes in Commonwealth policy settings and the national telecommunications market. This includes the Active Sharing Partnership Trial⁶ and the Active Sharing Partnerships Mobile Coverage Grant⁷.

\$30M Active Sharing Partnerships Mobile Coverage Grant: In late 2022, the NSW Government launched a \$30M Active Sharing Partnership grant opportunity for the construction and operation of active sharing mobile solutions that will provide new and improved mobile coverage to regional NSW. As a result of the program, two active sharing mobile solutions have been deployed in Brewarrina and Wilcannia, providing 4G and 5G voice and data services for more than 800 homes and businesses, and providing mobile coverage across 1,350 square kilometres. The new mobile solutions enable other mobile carriers to access and deliver 4G and 5G mobile services through an innovative shared model (known as active sharing or neutral hosting), which will bring more mobile competition and consumer choice into these communities.

The OneWiFi and Pivotel agreement brings active sharing into reality within regional NSW and follows more than 18-months work by the Regional Digital Connectivity program and the telecommunications sector.

Introduce stricter licencing conditions on spectrum

Lack of access to spectrum remains a key barrier to attracting innovative solutions and expanding market offerings in low-density markets in regional areas. Low spectrum frequency is crucial for regional coverage and there are limits imposed by ACMA. ACMA is currently consulting on the renewal options for existing licences, many of which are due for renewal around 2028. There is a finite amount of spectrum available but new technology and policy levers could be considered as part of the solution to improve spectrum access and encourage active sharing for the benefit of regional communities.

The NSW Government encourages the development of a long-term policy and regulatory framework for the telecommunications sector to share infrastructure and spectrum on Commonwealth Government funded assets to ensure maximum value from telecommunications investments.

⁶ <https://www.nsw.gov.au/regional-nsw/regional-business-and-economy-nsw/regional-digital-connectivity-program/mobile-coverage>

⁷ Mobile Coverage project – Active Sharing Partnership | NSW Government

Matters identified for further consideration include:

- **Spectrum licencing** - The introduction of a use-it-or-share/lose-it condition, where licence holders are required to share spectrum holdings if they are not using or plan to use holdings thoroughly, could be explored to allow smaller MNOs access to underutilised licenced spectrum. This would allow greater use of spectrum bands and promote competition by allowing smaller mobile networks to service regional areas and, in doing so, would build resilience in less served areas.
- **Spectrum planning for low Earth orbiting (LEO) Satellites** - LEO Satellites are considered an emerging and highly expansive technology particularly in the space of Internet of Things (IoT). With the absence of a fixed line connection at a premise and unavailability of stable mobile or fixed wireless broadband, LEO-based services could be capable of providing a stable alternative. The Commonwealth should consider planning spectrum dedicated for LEO satellite services to minimise the impact on existing and future spectrum use in regional areas. This could also expedite the uptake of LEO services.
- **Spectrum sharing** - Smaller mobile network operators could be allowed to use underutilised licenced spectrum where the primary licence holder has no plans to operate on the spectrum in the near future. This would allow greater use of spectrum and also promote smaller mobile networks to provide services into rural, regional and remote areas under-served by the MNOs. Guidelines would need to be established on expected usage for licenced spectrum to maximise consumer and citizen benefits.

Analyse best practice infrastructure sharing models.

The Commonwealth Government is encouraged to look to New Zealand as an alternative model from which key learnings and best practice infrastructure sharing programs can be reviewed and possibly replicated. The Rural Connectivity Group in New Zealand has been jointly funded by the New Zealand Government and three MNOs to build over 850 shared new 4G cell sites and increase coverage in regional areas. The operators share the radio access network and antennae at each new facility built, providing not only mobile access, but choice of provider to consumers living and working in rural and regional areas of New Zealand.⁸

Existing Commonwealth Government frameworks allow for co-location and service sharing. The Federal Facilities Access Code is designed to encourage the co-location of facilities where reasonably practicable and promote competition by facilitating the entry of new mobile and fixed line operators. Carriers are required to comply with the Facilities Access Code in accordance with subclause 37(2) of Part 5 of Schedule 1 of the *Telecommunications Act 1997*. Part 5 provides for carriers to provide other carriers with access to telecommunications transmission towers, the sites of telecommunications transmission towers and eligible underground facilities. Similarly, in NSW the circular, DFSI-2017-01: 'Telecommunication Sharing and Commercial Principles' encourages NSW Government agencies to co-locate where possible.

These co-location sharing provisions are effective in some areas; however, they are not delivering multi-carrier outcomes in most areas. Of the co-funded sites under the Mobile Black Spot Program (MBSP), only a small proportion have a second carrier. Whilst co-location avoids capital costs of a new tower, there are still significant costs for a second carrier, e.g.: Radio Access Network (RAN) equipment, tower lease, power connection and operation, backhaul connection and operation, back-up generator, tower strengthening and future equipment upgrades. These costs act as a barrier in already thin markets, especially the upgrade costs as technology phases out (e.g. 3G) and new technology (e.g., 5G) becomes available. The ACCC's *Regional Mobile Infrastructure Enquiry (2022-23)* found that active sharing

⁸ Home - Rural Connectivity (thercg.co.nz)

arrangements can reduce the cost of providing mobile coverage compared to co-location. The NSW Government has seen the market propose limited Multi-Operator Core Network sharing arrangements to suit their commercial objectives. This sharing should be extended across all MNOs to benefit all citizens on Commonwealth Government funded infrastructure.

The NSW Government supports investigating the feasibility of a similar model being used in Australia in locations with thin markets. A model such as the one used in New Zealand could be supported by the introduction of a requirement that carriers provide site data to the Commonwealth Government, in confidence, to allow better allocation of funding through active sharing of infrastructure.

Fund actively shared, multi-carrier solutions to boost coverage on regional roads

Engagement and collaboration across government, such as through the recently launched \$50M Regional Roads Australia Mobile Program⁹ (RRAMP), can ensure funding meets local needs and priorities, delivers value-for-money and long-term sustainability. RRAMP is part of the *Better Connectivity Plan* and a Commonwealth Government initiative which aims to improve mobile coverage on roads and highways to support communities and commuters in regional and remote Australia. Through RRAMP, State and Territory governments will trial new, novel, and innovative solutions to boost mobile coverage along roads and highways. This approach will go on to inform the development of a scaled-up national program.

Regional communities rely on roads in their daily lives to access major centres and services. Major transport routes are used by tourists to travel across regional and remote areas. Services such as health, safety and emergency also heavily rely on being able to stay connected to fulfill their duties.

⁹ <https://minister.infrastructure.gov.au/rowland/media-release/boosting-mobile-coverage-along-regional-roads-and-highways>

Priority 3: Continue the rollout of the National Broadband Network

Continue to invest in the National Broadband Network (NBN)

There have been several announcements about improvements to the NBN. Fibre to the premise upgrades will reach 90 per cent of the fixed line network, \$750m is being invested in the Fixed Wireless network to expand capacity and capability, and satellite plans have removed data caps and increased speeds¹⁰. These network improvements are all welcomed by the NSW Government.

However, there is still approximately 10 per cent of the fixed line network that is using the copper fibre to the node technology, some of which can only access speeds of 25/5 Mbps. There are also no plans from NBN to expand their fixed line or fixed wireless networks (without co-investment from government).

All regional communities should have access to telecommunication services delivered with technologies that are reliable, affordable and adequate. The Commonwealth should consider potential incentives or barriers to transitioning customers in remote or poorly serviced locations from fibre to the node and satellite services, including the review of current NBN commercial investment practices.

Expand the Business Fibre Zone model

The introduction of the NBN Business Fibre Zones announced in 2020 has the potential to greatly improve the service quality and affordability of broadband for regionally based businesses. Importantly, recent expansions of the program have been aimed at providing metro equivalent pricing to businesses outside the business fibre zones and the introduction of the NBN installation cost guarantee reduces the risk for businesses to invest on their own.

The NSW Government supports this model being expanded to businesses outside the fibre zones to further bridge the digital divide. Initial expansion efforts could be targeted at greenfield industrial precincts. Expanding the NBN Business Fibre Zone model to cover the entire fixed line network would allow equitable access to Enterprise Ethernet services across regional Australia. This would support a greater number of regional businesses throughout the transition to an increasingly digital economy. It also reduces the future cost to upgrade the entire area to fibre to the premise.

Priority 4: Future proof regional Australia with emerging technologies

Future proof regional Australia with emerging technologies

Expanding mobile coverage in regional Australia requires the Commonwealth Government to understand the nature and scope of existing barriers to digital connectivity in these regions and generate new solutions to address these barriers.

There are a range of opportunities for the Commonwealth to incentivise and enhance the rollout of new technologies across mobile and fixed wireless technologies in regional areas. Areas of

¹⁰ \$750 million investment to 5G-enable nbn® Fixed Wireless to deliver faster speeds to regional Australia | nbn (nbnco.com.au)

focus should be increasing active asset sharing amongst network operators, optimisation of spectrum allocations across all frequencies and licence types, and support for operators in the rollout of backhaul and transmission technologies.

Future-proofing regional Australia with emerging technologies involves strategies such as:

- Development of infrastructure to support high speed internet access in areas where coverage is only possible via satellite services. This could involve both wired and wireless solutions, such as Low Earth Orbit satellite internet for remote locations and supporting fixed wireless infrastructure where satellite coverage may not be possible due to the lack of a clear line of sight.
- Accelerate the deployment of 5G networks in regional areas to support high-speed, low-latency communications essential for modern applications.
- Invest in smart infrastructure (e.g., smart grids, IoT-enabled systems) to improve efficiency in agriculture, healthcare, and other critical sectors.
- Implement digital literacy programs to ensure that regional populations can effectively use new technologies
- Provide Commonwealth Government support for businesses to invest in improving digital connectivity in regional areas and for technology innovation.
- Partner with technology companies to pilot new solutions in regional areas and gather insights for broader deployment.
- Invest in more sustainable energy sources to enable digital connectivity such as solar and wind power with a focus on battery expansion and generator backup.

New grant programs should aim to support deployment of 5G

New Commonwealth Government funding programs should aim to support the deployment of 5G broadband services. These programs could contain a requirement for carriers to make reasonable efforts to ensure infrastructure funded through these programs are fit-for-purpose to deliver new technologies for a foreseeable period in the future. New rounds of the Mobile Black Spot Program should align with the progression of technology and include 5G and local area wireless broadband services as a minimum requirement for sites that are co-funded by the Commonwealth Government.

Further work is needed to improve overall data speeds

As of May 2024, speed test¹¹ research places Australia as 94th in the world for fixed broadband internet download speeds. To continue with a baseline of 25 Mbps for download speeds is substandard by international benchmarks, especially considering 5G and LEOs already regularly provide speeds of more than 200 Mbps in many areas of Australia. The top fifteen countries achieve an average download speed of over 200 Mbps. Australia should aspire to improving its standing internationally so that it is not creating an international digital divide between Australia and many other countries globally. A minimum of 50/10 Mbps might be acceptable in the short term as the Commonwealth works to expand the NBN footprint and test newer technologies. However, any minimum speeds should increase as soon as possible to ensure that quality connectivity is available to all Australians, and the nation improves its standing internationally for internet download speeds.

¹¹ Speedtest Global Index, <https://www.speedtest.net/global-index>

Develop a roadmap that recognises Low Earth Orbit (LEOs) satellite services

The NSW Government has trialled LEOs as an alternative service where typical cellular networks (4G/5G) are either unavailable or have poor coverage restricting effective access/use. Key benefits included reliability and speed of the network connection, quick set-up and flexibility. For example, Transport for NSW's regional road maintenance teams have utilised satellite technology for remote camps and frontline operational vehicles to provide network access for mobile devices, supporting communication in rural and remote areas for essential operational and safety benefits where typical cellular networks are either unavailable or have poor coverage.

Further review and discussion are required to determine when and where LEOs are able to provide a viable and complementary solution to regional, remote and rural connectivity and the role state and federal governments play in funding this service. The Commonwealth Government is well placed to support this effort by bringing consistency across States and Territories as the use of this new technology grows in popularity.

Enable social inclusion, safety and resilience

Telecommunications connectivity is fundamental to ensuring that our citizens have equitable access to essential services and economic and social opportunities in the digital age, regardless of location.

Priority 5: Support First Nations communities with place-based programs

Continue a whole of government approach

Poor digital connectivity in some rural and remote communities has led to challenges for First Nations peoples in establishing and maintaining a digital identity and/or improving their digital knowledge and skills. This in turn diminishes access to digital government services, as well as other economic and social opportunities. The Aboriginal Outcomes Unit/s in the NSW Government's Department of Customer Service and Department of Primary Industry and Regional Development are actively engaging and consulting with First Nations communities and are aligned with existing co-design channels such as the First Nations Digital Inclusion Advisory Group (FNDIAG) and the First Nations Digital Inclusion Strategy 2023-2026 (FNDIC). This whole of government approach should continue.

Programs must be led by Aboriginal people and place-based

Digital connectivity initiatives for First Nations communities must be Aboriginal-led and place-based. These programs need to be culturally responsive to the communities needs and key considerations:

- **Digital inclusion solutions** - Communities must design, develop and implement their own digital inclusion solutions. The Commonwealth Government and the telecommunications industry should provide the support, funding and upskilling of local Aboriginal Community Controlled Organisations (ACCOs) and members to successfully implement these initiatives.
- **Tailor digital literacy programs** - There needs to be a strong focus on digital literacy, ability, cybersecurity and safety. Place-based digital literacy programs should be designed and led by Aboriginal people and their communities. The programs should focus on teaching digital skills, tailored specifically to the unique needs of that community. The delivery of the program should also be in partnership with local training providers to ensure the knowledge remains in the community through a 'train the trainer' approach. Initiatives should include topics such as hacking, scams and fraudulent content.
- **Digital device initiatives** - Many households have one device that all members of the household use. Most student education and after-hours schoolwork is also moving to online delivery. There is a need to ensure communities have access to the latest digital devices, so they are not left behind.
- **Access to services** - Develop initiatives that focus on building relationships with key community leaders, enabling them to educate communities on how to access technology locally, how to use it to connect with both government and non-government services, and who to contact for support.
- **Cultural support** - Implement a tailored and neutral cultural support mechanism to assist Aboriginal people and communities to get access to the most affordable service for their needs. This would include face to face engagement for regional Aboriginal communities to explore potential options with a neutral engagement officer and ensure that these communities have equal access to key materials in relevant languages/culturally relevant format. For effective engagement, the individual or organisation engaging the community should be Aboriginal, and ideally carried out by someone local who is respected and trusted by the community.

Priority 6: Continue to improve disaster recovery and emergency connectivity

Impact of the 3G shutdown and risks to regional communications

The shutdown of the 3G mobile network in Australia is expected by September 2024, and the NSW Government is concerned about the impact on rural, regional and remote areas where 3G is the only mobile network currently available, particularly during emergencies and natural disasters.

It is vitally important to the NSW Government that its communities, services and industries, particularly those that currently rely exclusively on 3G networks, are not subjected to avoidable detrimental outcomes. Instead, they should be assured that they have a reasonable opportunity

to adapt to, and benefit from, the generational advancement of long-term evolution (LTE) technologies without undue distress.

There are two main issues of concern for those currently reliant on 3G networks. The first relates to the coverage footprints of 4G and 5G networks compared to those of existing 3G networks at the time when the latter are switched off. Control of this issue rests with MNOs and will be managed through their 3G decommissioning and 4G/5G roll-out plans.

The second issue relates to existing devices and equipment that currently operate on 3G networks but will not function, or fully function, on 4G and 5G networks. Control of this issue rests with the customers, including businesses and government, who currently operate 3G devices and equipment and who will need to manage their individual transition through acquiring upgraded devices and equipment, should they choose to do so.

Of primary concern to the NSW Government are the risks to the safety of its community and its first responders during emergency and disaster events if either or both main issues are not adequately addressed.

Further concerns are the risks to digital inclusion that could be caused by the community's inability to access mobile services for employment, business, educational and social purposes, or to access digital government services.

The NSW Government supports continuing efforts to inform affected customers and acknowledges that primary responsibility for network availability lies with MNOs, who should ensure that their 4G/5G coverage footprints are as good as, or better than, those of the 3G networks they are replacing. Should this not otherwise be addressed by MNOs, then the Commonwealth should consider exercising its powers to intervene and provide this assurance to the community.

Implement regulatory measures to increase network and site resilience

The NSW Government provided commentary in support of improved telecommunications resilience measures in its submission to the 2021 RTR. Much of that commentary is still current and some is reiterated in this section with the inclusion of new information to accommodate more recent developments.

The Pathway to Infrastructure Resilience¹², released by Infrastructure Australia in partnership with Infrastructure NSW, provided guidance to support telecommunications resilience and is largely informed by the findings of the Royal Commission into National Natural Disaster Arrangements Report and the independent NSW Bushfire Inquiry.

A major finding of this research is that achieving resilience requires a shift in focus from the resilience of assets themselves, to the contribution of assets to the resilience of the system – what is referred to as ‘infrastructure for resilience’. This approach requires consideration not only of how to strengthen the asset, network, and sector, but also how to strengthen the place, precinct, city, and region that the infrastructure operates within. It requires considering the role of each asset within the broader network and/or system and a shift from individual to shared responsibility.¹³

Non-regulatory activities, undertaken in partnership with commercial network operators, offer improvements in network resilience but are limited in their adoption and application as they rely

¹² <https://www.infrastructureaustralia.gov.au/publications/pathway-infrastructure-resilience-0>

¹³ Infrastructure Australia and Infrastructure NSW, 2021: ‘Advisory Paper 1: Opportunities for systemic change’,

on the carriers to participate. In contrast, the implementation of regulatory measures to increase network resilience would ensure sites are appropriately hardened and increase the likelihood that they remain operational when needed most.

As communications infrastructure is categorised as ‘critical infrastructure’ under the *Security of Critical Infrastructure Act 2018* (SOCI Act), owners are required to adopt an all-hazards risk management approach to protecting their infrastructure. Such endeavours establish good practice and benchmarking opportunities for site resilience; however, they may be limited and not sufficiently prescriptive to achieve adequate resilience.

The development and implementation of communications site resilience standards, supported by regulation, would be highly advantageous for increasing communications network availability when sites may otherwise be at greater risk of failure, particularly during times of disaster events.

The resilience of telecommunications coverage could be improved through legislating requirements for commercial carriers to have on-site power backup and alternative sources of network coverage to enable continuity of critical mobile and data communications for citizens in a crisis where power failures occur.

Asset Protection Zones (APZs) present as a relatively affordable and achievable option. APZs are often required around communications facilities, in accordance with the Rural Fire Service’s (RFS) Telecommunications Towers in Bush Fire Prone Areas – Practice Note 1/11. This involves providing a 10-metre zone around telecommunications infrastructure that meets RFS requirements and includes routine maintenance and vegetation clearing.

The NSW Government suggests following considerations to achieve network and site resilience:

- Methods for deploying temporary infrastructure as part of incident response.
- Establishing low-capacity long-range networks accessed only during disasters by the public and emergency services.
- Portable cell towers with multiple backhaul options under control of first responders to produce fast results.
- Use of mobile boosters and repeaters on Commonwealth Government sites connected to networks via fibre.
- Enhanced detailed fault and carrier outage alerting (ideally a dashboard).
- All weather access to sites.
- Landing zones at mountain top sites to allow access during site physical isolations.
- Expanding the definition of an essential public asset restoration (EPAR) to include telecommunication assets which would open up cost-sharing opportunities under the Disaster Recovery Funding Arrangements (DRFA).

Incentivising carriers to enter commercial roaming agreements

Further investigation of the potential for domestic mobile roaming in regional areas is recommended. Currently in NSW in some locations there is only one carrier’s network available at one location, with a different carrier’s network available at another location in the same region. This patchwork of non-complementary coverage affects how people can move across the regions and access mobile coverage. To obtain full coverage would require someone

subscribing to multiple carrier networks and operating different mobile numbers which is impractical.

Emergency Services Organisations (ESOs) require continuous (24/7) roaming available as a key part of a future Public Safety Mobile Broadband capability. This will support the resilience of ESOs' communications during both business-as-usual activities and when preparing and responding to natural disasters and major events. Temporary Disaster Roaming (TDR) is not sufficient to meet this need.

In April 2024, the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) released the 'Temporary Disaster Roaming: Preferred Scope'. The priority is for TDR to apply to the affected area, only in non-metro or peri-urban areas, with priority given to voice and text, with potentially limited data that could be 'throttled' to provide more citizens with at least some mechanism for communication. The NSW Telco Authority asserts that stronger governance should be applied to the scope to ensure that MNOs provide this much needed mechanism to support communications in disasters unless it is assessed as not technically possible.

The NSW Government is set to develop disaster adaptation plans for all regions across NSW. These plans will involve the telecommunications and other sectors to identify effective adaptation and mitigation responses both before and after disasters. It would be ideal to align this with the Commonwealth Government.

Manual roaming can be provided using methods such as Restricted Local Operator Services (RLOS)¹⁴ in 3GPP technologies, where end users can manually elect to join third party networks that may not be operated by their service provider. Such a service could be used as a mechanism in **use-it-or-share/lose-it** conditions which would help support disaster responses by facilitating the local population joining a temporary network whilst the service they subscribe to is suspended. Notably, this model is only possible where there are multiple service providers operating in the area.

The NSW Government recommended to the 2021 RTR that the Commonwealth investigate roaming models to support communications in areas affected by disasters and for domestic roaming at all times. The NSW Government reiterates this recommendation which includes:

- Investigate cross-carrier roaming arrangements for basic text, voice and data in areas with natural disaster declarations, such as fire and flood.
- Investigate potential incentives and barriers to improving mobile consumer outcomes in regional Australia including consideration of domestic roaming, as well as current spectrum access and fee arrangements.

NSW Government recommendations are consistent with Recommendation 23 of *Connecting the country: Mission critical (2023)* which calls for the development of protocols for temporary roaming arrangements in declared disasters and emergencies.

Public Wi-Fi and access to public phones

The Commonwealth Government could consider supporting a system where all payphones could be used as free Wi-Fi Nodes, offering Free Wi-Fi calling to individuals who cannot afford to pay for voice and data plans. Ensuring access to public phones remains important as they act

¹⁴ RLOS is described in ETSI TS 123 401 and is used to meet the requirements of the FCC in networks where domestic roaming arrangements haven't been established. It requires the user to accept connecting to the third party network.
<https://www.fcc.gov/wireless/bureau-divisions/competition-infrastructure-policy-division/roaming-mobile-wireless>

as a secondary safety measure and ensure that citizens remain socially and emotionally connected regardless of their financial circumstances.

Priority 7: Address affordability, support social inclusion and economic development

Commonwealth Government could address barriers to affordability to improve digital inclusion

All regional communities should be able to access telecommunication services delivered with technologies that are reliable, affordable, and adequate. In remote and small population areas with lower socio-economic demographics, affordability often prevents some citizens from accessing connectivity.

Commonwealth funded programs could include a component that directly addresses the needs of people who do not have access to telecommunications or the capacity to afford or use digital technology. More work is to be done to review all potential incentives or barriers to transitioning customers in remote or poorly serviced locations from satellite services, and the factors that prevent general affordability to accessing basic digital connectivity. While LEOs can provide remote communities with stable and reliable connectivity, these services are still unaffordable for many remote communities.

A detailed review of current regulations relating to satellite service pricing, quality, and general consumer protection is needed. This can be driven and lead by the Commonwealth Government with State and Territory consultation. Any affordability initiative must take a user-centred approach, and consumer preference and choice must be at the centre of the design.

NSW Digital Inclusion Strategy

Since the 2021 Review, the NSW Telco Authority has commenced consultation on the State's first Digital Inclusion Strategy. The NSW Digital Inclusion Strategy represents a significant commitment to ensuring that digital opportunities are accessible to all residents of the State by addressing the challenges of connectivity, affordability, skills, and accessibility. Statistics that underpin the need to the strategy, in relation to this submission include the following:

- **59%** of people living in regional areas of NSW were more likely to identify telecommunications services / equipment as a top 5 expense vs people living in Greater Sydney (56%).
- **18.6%** of households in regional NSW did not have internet connection at the dwelling compared to 11.2% in Greater Sydney.
- **30%** of Aboriginal people living in remote indigenous communities in Australia did not have household access to internet or telephone services, despite improvements in infrastructure.

The Digital Inclusion Strategy forms part of the NSW Government's overarching Connectivity Strategy.

A whole of government digital inclusion strategy with consistent data sets

In addition, the NSW Telco Authority has developed the Digital Connectivity Index (Connectivity Index)¹⁵, a visualisation tool which has been created to measure the quality of digital connectivity across NSW through three key elements: access, affordability, and demographics. Data from the Connectivity Index can be used to support decisions about digital connectivity infrastructure investments. The Index could be utilised nationally to bring about greater consistency in digital inclusion research, decision making and analysis.

Continue to fund independent support services for regional areas

Access to independent and trusted telecommunications support services is crucial for consumers and businesses in regional, rural, and remote areas where physical isolation increases reliance on digital connectivity to access information, goods, and services. Consumers in these areas are not always aware of all available services and options, particularly those enabled by new and emerging technologies, when compared to their counterparts in urban areas.

Outside of the **Regional Tech Hub's** offerings, there are usually few options for a consumer to validate or check the claims made by a telecommunications company about its products and services, leaving consumers and businesses vulnerable to exploitation, especially in areas where there is one dominant service provider. The Regional Tech Hub should continue to be resourced and an increase digital connectivity training and education outreach programs.

Connectivity literacy requires ongoing and complex decision making and involves knowing how to set up digital connection/s and device/s, responding to technical interruptions, faults, or outages, and navigating the complexities of the consumer telecommunications market. As connectivity options change over time, people must know their own needs as a consumer and understand rapidly advancing technology and commercial options. Commonwealth Government support and approaches to increasing connectivity literacy must look at both extrinsic and intrinsic enablers to digital participation. Extrinsic enablers are aimed at improving systemic responses to connectivity and affordability, while intrinsic enablers are aimed at empowering people through increasing their skills, awareness, confidence, and trust.

Enable local workforce training and employment in regional areas

The Commonwealth can play a key enabling role in the training, engagement and sustainability of a local workforce in the telecommunications sector. A Commonwealth Training and Education framework could be developed, as a 'backbone' to encourage workforce training and employment for rural and regional citizens to provide maintenance, construction and ongoing operational support to funded (mobile/internet) assets. The direction set by the Commonwealth will assist governments across Australia to mandate the vision and take a coordinated and aligned approach to address national skills shortage.

The framework developed by the Commonwealth could:

- Set a target of local workforce participation
- Provide opportunities for free training of regional and remote technicians
- Identify early training and career options for school aged students.
- Support reskilling and upgrade of qualifications of existing technicians
- Partner with TAFE and local RTOs, offering apprenticeships and traineeships.

¹⁵ NSW Government, NSW Digital Connectivity Index, <https://www.nsw.gov.au/departments-and-agencies/nsw-telco-authority/connectivity-leadership/nsw-digital-connectivity-index>

The **NSW Digital Skills and Workforce Compact** is a nation-leading partnership between the NSW Government, the digital industry, and education and training sectors. This collaboration leverages a collective impact approach to effectively address projected digital workforce shortages in NSW. This Compact focuses on creating a talent pipeline, providing opportunities for upskilling and reskilling, and enhancing digital literacy skills applicable across various industries.

Improve connectivity in recreational areas and built tourism

Further investments are needed to develop improved telecommunications connectivity in recreational areas, parks and wilderness areas to support tourism growth, safety and the general wellbeing of local citizens. This could be led by the Commonwealth with a coordinated and aligned effort across States and Territories to enable built tourism growth in regional communities, support improved coverage long major tourism routes into and out of tourism precincts, and encourage safer and more active participation in our national parks and wilderness areas.