The Hon. John Barilaro MP
Deputy Premier
Minister for Regional New South Wales
Minister for Industry and Trade

CM9 Ref:INT21/127130

2021 Regional Telecommunications
Review Secretariat
Department of Infrastructure, Transport,
Regional Development and Communications
GPO Box 594
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Dear Secretariat

2021 Regional Telecommunications Independent Review

Thank you for the opportunity to provide a submission to the Committee for the 2021 Regional Telecommunications Independent Review (the Review).

Please find enclosed NSW Government's submission to the Review. I confirm this submission can be made public.

For further information about the contents of this submission, please contact Mr Brendan Cook, Executive Director Strategy and Economics, Department of Regional NSW brendan.cook@regional.nsw.gov.au.

Yours sincerely

The Hon. John Barilaro MP
Deputy Premier
Minister for Regional New South Wales
Minister for Industry and Trade

The Hon. Victor Dominello MP
Minister for Customer Service
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NSW Government Submission

2021 Regional Telecommunications Review

September 2021

NSW GOVERNMENT

Introduction

The NSW Government thanks the Committee for the opportunity to provide a submission to the 2021 Regional Telecommunications Review and notes the terms of reference. This submission reflects on key 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. COVID-19 has highlighted the opportunities and challenges that come with technological improvements; however, there are real risks that regional communities will be left behind without a change in approach.

Regional NSW hosts a third of NSW's population and produces around one fifth of the Gross State Product. The NSW Government's *20-Year Economic Vision for Regional NSW* identifies how regional NSW will continue to be a vibrant and growing part of the NSW economy, solidifying the regions as the perfect place for people to live, work, play and invest. The *20-Year Vision* identifies improved telecommunications services as a crucial enabler for emerging regional industries like advanced manufacturing, resource innovation, and technology-enabled agriculture, and all levels of government must optimise our policy and investment settings to meet this ambition.

Since the last review in 2018, the regions have been significantly impacted by challenges including drought, bushfires, floods and the COVID-19 pandemic. These events have changed the way people in the regions live and work, and highlights both the resilience and vulnerability of regional communities. The 2019-20 bushfires demonstrated the importance of our emergency telecommunications networks and that action is needed to ensure future emergencies do not leave communities without life-saving support. COVID-19 continues to change the way in which Australians interact with each other and the economy, including the way technology is accessed and used by individuals and businesses. COVID-19 restrictions have pushed more people into the online environment for functions including shopping for essentials, schooling and accessing medical care.

The NSW Government believes collective action across all levels of Government and the private sector can successfully enhance connectivity in our regions and is committed to playing its part in supporting the regions with a strengthened telecommunications framework. Equally, telecommunications providers have a responsibility and an obligation to provide adequate services to communities across Australia. This submission 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.

Commonwealth investment in the National Broadband Network (NBN) to date, including the introduction of the NBN business fibre zones announced in 2020, has greatly improved the service quality and affordability of broadband for regionally based businesses. The next phase of investment in the NBN through the 'Corporate Plan 2021' will result in significant telecommunication improvements for businesses and residents in regional areas. Continued investment of this nature will further assist with narrowing the 'digital divide'. Complementary programs such as the Regional Connectivity Program, with a place-based approach to targeting telecommunications infrastructure investment supports economic outcomes for regional Australia by enabling regional businesses to participate in the digital economy.

Overview of key issues

It is recommended that the Committee consider the following key issues in conducting its review:

Lead a national approach to telecommunication service planning

1. Establish a cross-jurisdictional Regional Telecommunications Senior Officers' Group to improve collaboration in program and policy design and implementation. — **All jurisdictions**

2. Implement an independently monitored 'Australian Connectivity Index' to transparently measure and report on access to essential telecommunication services. — **Department of Infrastructure, Regional Development and Communications (DITRDC)**

3. Develop a consolidated, regularly updated, and accurate national mobile coverage map using existing data sets available to all governments. — **DITRDC**

Improve coordination during natural disasters

4. Implement a natural disaster information sharing framework for carriers and emergency management agencies to minimise potential downtime in essential telecommunication services. — **DITRDC**

5. Implement cross-carrier roaming arrangements for basic text, voice and data in areas with natural disaster declarations, such as fire and flood. — **Australian Competition and Consumer Commission (ACCC)**

Expand mobile coverage in regional Australia

6. Implement active sharing models to improve mobile coverage in regional Australia, including strategic consideration of the following: — **ACCC**
   a. domestic roaming in remote communities
   b. spectrum access and fee arrangements which improve access and competition, and
   c. special arrangements for regional transport corridors.

7. Investigate options for new telecommunication infrastructure sharing models for regional locations, such as New Zealand's Regional Connectivity Group. — **ACCC**

Continue the rollout of the National Broadband Network

8. Expand elements of the successful Business Fibre Zone model to a broader range of business customers, starting with greenfield industrial precincts.	**NBN Co**
9. Investigate transitioning regional NSW end user customers from satellite services to more reliable and affordable alternatives.	**NBN Co**

Future proof regional Australia with emerging technologies

10. Review the regulatory and policy framework for mobile and fixed wireless services (such as 5G) in regional Australia to ensure the "digital divide" does not increase as new technologies come online.	**ACCC**
11. Investigate funding programs to support the deployment of mobile and fixed wireless services through increased focus on passive and active network sharing in regional locations.	**DITRDC**

Key issues

Lead a national approach to telecommunication service planning

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

Foster greater planning, policy and program collaboration across jurisdictions

A key opportunity would be for the Commonwealth and jurisdictions to share information regarding priority connectivity focus areas; upcoming programs and services and share best practice and lessons learnt. This could be supported by a cross-jurisdictional forum on regional telecommunications issues to discuss barriers to infrastructure and service sharing, and ways to increase market competitiveness and equity of access in regional Australia.

Issues that could be referred to this group for further consideration include:

- *Cross-jurisdictional reform priorities.* This Review may identify reform options or opportunities that could be best explored through collaboration by all jurisdictions.

- *Opportunities to reform and align State and Territory government regulatory barriers* – for example this could include access to Crown Land and development assessment requirements.

- *Information sharing to support State and Territory initiatives*. This group could facilitate information sharing between jurisdictions to support delivery of industry development and R&D opportunities, such as the NSW Government's work to establish the Connectivity Innovation Network (CIN). The CIN is due to be launched in late 2021 to solve connectivity challenges facing governments. Cross-jurisdiction collaboration and information sharing on such projects could amplify efforts and assist in scaling up regional connectivity innovation activities.

- *Support emerging technologies and novel connectivity business models* - This group could also investigate funding models or programs to help drive investment to support the emergence of new or alternative telecommunications providers and business models. This could include alternate providers such as Zetifi and Pivotel which have a regional focus and utilise various methods such as localised 4G networks, spot coverage and long-range 5G technology.

This group could be supported by technical experts to support strategic planning across jurisdictions.

Implement an independently monitored 'Australian Connectivity Index'

The Commonwealth should implement an independently monitored 'Australian Connectivity Index' to transparently measure and report on access to essential telecommunication services. An index would provide objective data to equitably measure

digital connectivity outcomes in terms of both levels of coverage and service and assist government at all levels to apply targeted policies to address the digital connectivity divide. A national connectivity index could build off the Connectivity Index framework currently being developed by the NSW Government.

Develop a National Mobile Coverage Map

The Commonwealth should regularly update the Mobile Black Spot Database with the latest, most accurate available information about black spot locations.

Data sharing is an ongoing issue for mobile black spot programs. Objective data and reliable mobile coverage mapping are needed to assist governments to develop effective, place-based policies to address regional connectivity issues. The mobile blackspot database is self-reported data; while mobile network operator (MNO) reported coverage maps can be optimistic in their claimed level of coverage.

The Commonwealth should work with States and Territories to collate existing data sets and develop a current national mobile coverage map (subject to governments applying appropriate safeguards for sensitive data). The Commonwealth could consider ways to supplement these data sets in future; for example, by introducing a requirement for carriers to share mobile coverage information of their entire network including detailed technical and usage data for all towers that have received Government funding. 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.

Improve coordination during natural disasters

Implement a natural disaster information sharing framework

Most widespread failures of telecommunications networks are preventable. The likelihood and consequence of these failures are significantly reduced when government agencies know where the critical parts of the network are and can take measures to both protect the infrastructure and replicate the function of the infrastructure if it is damaged or destroyed.

Government agencies such as the NSW Telco Authority have little visibility of carrier network infrastructure, which significantly impacts on public safety efforts across the separate phases of emergency management. NSW Telco Authority has met with telecommunications carriers over several years to discuss this issue and has received varied responses, ultimately resulting in inadequate data.

Recently, the Communications Alliance released its *Telecommunications – Facilities Information Sharing Industry Guideline (G665:2021)*, which is a positive step forward for standardising the sharing of information between carriers and government. However, voluntary self-regulation is inadequate when it comes to an area as critical as emergency management. For example, some information sharing is 'optional', which could undermine the ability of emergency management agencies to protect lives and property in a crisis.

Emergency management agencies could respond faster to telecommunications failures if they had regulated access to carriers' data about telecommunications infrastructure (with appropriate protections for sensitive data).

Emergency roaming in disaster declared areas

The NSW Government supports domestic roaming for emergency calls amongst residents. Carriers already have national roaming agreements to enable triple-zero calls (only) in recognition of the public interest in providing this critical service. Emergency mobile roaming would constitute a further tool for supporting public safety communications and information access to support calls other than a triple-zero calls that are requesting the services of an emergency services organisation. The role that family and community members have in protecting themselves and each other during emergencies, often as the closest available responder, may greatly benefit from emergency roaming, as recognised by the NSW Bushfire Inquiry.

The NSW Bushfire Inquiry's final report recommended governments and telecommunications regulatory, policy and market bodies, *'facilitate cross-carrier roaming arrangements between carriers and the public for basic text, voice and data during the period of emergency in areas directly affected by fire…*' (Recommendation 30).[1] This recommendation would be effective in areas where there is either limited (single network) coverage, or where one network is damaged and off-line while another remains operational. The advantages of emergency roaming in regional areas are significant. This would facilitate communication by emergency response volunteers and the public who may be particularly isolated. This service would enable them to be better informed about real-time local safety considerations and to collaborate more effectively.

Infrastructure Australia, in partnership with Infrastructure NSW, recently released its *Pathway to Infrastructure Resilience* which also identified telecommunications as a key part of supporting resilience in emergency situations. The papers provide guidance for telecommunications asset owners and operators on how they can support resilience through shared efforts such as harmonising hardware and inventory for back-up systems to support deployment or sharing technicians in emergency situations.

The ACCC concluded that the provision of roaming in specific geographic areas is technically possible.[2] While there are no barriers to carriers entering into commercial roaming agreements, there is little incentive to do this if a carrier has invested in its network that delivers a competitive advantage. The Regional Telecommunications Review should consider how emergency roaming could be implemented, while also considering the benefits of general domestic mobile roaming for the regions.

Expand mobile coverage in regional Australia

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

[1] NSW Bushfire Inquiry, 'Final Report of the NSW Bushfire Inquiry', 31 July 2020, p.xii-xiii
[2] ACCC, 'Domestic mobile roaming declaration inquiry – Final report', October 2017, p.91

Incentivising carriers to enter commercial roaming agreements

The NSW Government would like to see a detailed investigation of the potential for domestic mobile roaming in regional areas. In 2017, the Australian Competition and Consumer Commission (ACCC) released its final report into its 'Domestic mobile roaming declaration inquiry'. It concluded that it would not declare a domestic mobile roaming service as the ACCC was 'not satisfied that declaration would promote the long-term interests of end-users…'.[3] The NSW Government's submission supported that decision at the time, however, there have been significant changes in the telecommunications market since that time – operators restructuring their asset owning businesses, declining commercial interest in regional markets, and preparations for greater uptake in 5G. As well as changes in the market, there has been a significant increase in Government services being delivered online, alongside increases in broader economic and social connectivity uses. This warrants a further review.

The ACCC published '*Measures to address regional mobile issues*'[4] to accompany its declaration report in recognition of the social and economic implications of inadequate coverage in regional areas. Among its proposals, this report promoted transparency, consistency and availability of network coverage information from carriers to assist customers to choose their preferred network. However, this does not address the central issues of non-contiguous coverage and no option to choose a preferred carrier network. Incentives to expand the network in regional areas, such as the Mobile Black Spot Program, have not improved access to alternative networks, as regional coverage continues to be economically unviable for many.

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. Domestic mobile roaming would increase network access and better promote the long-term interests of end-users.

Universal Service Guarantee (USG) is another tool that could be used to improve service access. The USG can benefit regional areas by mandating levels of broadband connectivity, including a requirement to enable roaming to activate voice services. Broadband internet voice services are preferred and more accessible in regional areas than fixed-line telephone services, so mandating connectivity levels would support regional usage.

Current market disincentives created by spectrum management arrangements

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 the Australian Communications and Media Authority (ACMA). These limits apply to the auction of low

[3] ACCC, 'Domestic mobile roaming declaration inquiry – Final report', October 2017, p.2
[4] ACCC, '*Measures to address regional mobile issues*', October 2017

band spectrum that is scheduled for later this year. There is a finite amount of spectrum available but new technology and policy levers could be considered by Government as part of the solution to improve spectrum access.

Preliminary matters identified for further consideration by the Review include:

- *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 consumer a stable alternative. The Commonwealth should consider planning spectrum dedicated for LEO satellite services to minimise the impact on existing and future spectrum use to provide telecommunications for regional areas. This could expedite uptake of LEO services.

- *Spectrum fees for microwave point to point links* – backhaul solutions for regional sites can be challenging. A typical solution would be to use satellite or microwave links. Whilst there are existing programs, such as the Mobile Black Spot Program where governments are funding capital expenses, the Commonwealth could consider covering ongoing spectrum fees for backhaul links to the carrier's nearest existing mobile site or an alternate point of connection to their network. This is with the awareness that spectrum fees are typically lower in regional and areas when compared with metropolitan areas.

- *Spectrum fee rebates for mobile networks* – a potential method for the Commonwealth to incentivise carriers to build their networks in regional areas without access to reliable mobile coverage could be to provide rebates towards their spectrum fee for every area refreshed with reliable mobile coverage.

- *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 tap into regional areas. Guidelines would need to be established on expected usage for licenced spectrum.

Incentives and barriers to infrastructure sharing models

The provision of mobile coverage in low-density regional areas is not seen as an attractive commercial option by many carriers. Commercial considerations include a dependency on the rollout and uptake of 5G-enabled handsets to end users together with operational issues associated with running networks across 3G, 4G and 5G technologies. Additionally, there are significant challenges faced by network operators in supporting mobile and fixed wireless technologies with sustainable backhaul/transmission. Transport corridors should be key priorities for investigation as they are poorly serviced and commercially unattractive to the mobile and fixed wireless network operators. Alternative options and models should be considered to expand mobile coverage in these areas, including options for service and infrastructure sharing.

The Australian Communication and Media Authority's *Spectrum options optimised for local area wireless broadband services* information paper dated May 2020 makes a range of

relevant observations, and further investigation is recommended into how spectrum is allocated and optimised across all frequency bands to support regional rollouts of new technologies.

The Rural Connectivity Group in New Zealand has been jointly funded by the New Zealand Government and three Mobile Network Operators to build over 500 new 4G cell sites and increase coverage in regional areas. The operators will 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 regional areas of New Zealand.

Existing frameworks at both the State and Federal levels 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.

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 government, in confidence, to allow better allocation of funding through co-locating wherever possible. This requirement should include terms for overarching consent to co-location with co-funded government sites, unless exempt with valid reason.

Continue rollout of National Broadband network

Expand elements of Business Fibre Zone Model

The NSW Government welcomes the introduction of the NBN business fibre zones announced in 2020. These zones have greatly improved the service quality and affordability of broadband for regionally based businesses, with recent expansion of the program to provide metro equivalent pricing to businesses outside the business fibre zones. The introduction of the NBN installation cost guarantee reduces the risk for businesses to invest on their own.

The NSW Government would like to see this support expanded to businesses outside the fibre zones to further narrow 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.

More reliable and affordable services for current satellite customers

In their 2020 corporate plan, NBN announced $3.5 billion of investment to upgrade their existing network (conversion of fibre to the node to fibre to the premises) to provide users

with greater speeds and increase their average revenue per user. NBN also announced $300 million of co-investment with other levels of government; and $700 million to make business grade fibre services more affordable. NBN is required to make a 'commercial rate of return' on these co-investments which generally requires state governments to invest more than half of the total investment amount.

The NSW Government would like to see all regional communities having access to telecommunication services delivered with technologies that are reliable, affordable and adequate. Many communities and businesses in regional NSW provide feedback that existing satellite services do not deliver on these outcomes. The Commonwealth should consider all potential incentives or barriers to transitioning customers in remote or poorly serviced locations from satellite services, including by reviewing current NBN commercial investment practices.

Future proof regional Australia with emerging technologies

Review the regulatory and policy framework for mobile and fixed wireless (such as 5G) services to ensure 'digital divide' does not increase

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 focus should be increasing passive and 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.

Network operators face commercial challenges when rolling out technologies such as 5G. There is a dependence on uptake of 5G-enabled handsets by end users and operational complexity in supporting 3G, 4G and 5G technologies. Additionally, fixed wireless operators face challenges rolling out local area wireless broadband services. In both examples, support and incentives for asset sharing and support for use of backhaul and transmission in poorly served regional areas will assist the rollout of these new technologies.

Passive and active network sharing to support deployment of mobile and fixed wireless services

Existing programs could be reviewed and amended to support regional connectivity outcomes associated with the deployment of 5G and local area wireless broadband services. For example, 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 government and carriers.

New grant programs could aim to support deployment of 5G and local area wireless broadband services as well through the increased passive and active network sharing described above. These programs would benefit from a requirement or additional incentive 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. This would be to prevent investment in technologies that are likely to become redundant within a short period.