An Australian Government Initiative

Regional Development Australia

REGIONAL DEVELOPMENT AUSTRALIA WHEATBELT

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Regional Telecommunications Independent Review Committee

RDA Wheatbelt Telecommunications Review Submission.

1. **What initiatives or tools could be implemented by the telecommunications industry or government to improve connectivity literacy, and make it easier for regional consumers and businesses to understand their connectivity options and help them to choose affordable services that meet their needs?**

It is debatable that businesses and residents in the Wheatbelt Region are having difficulty in understanding their connectivity options as indicated in a Regional Development Australia Wheatbelt (RDAW) survey in 2017. The survey indicated that 97% of Wheatbelt respondents used the internet for work and personal reasons, indicating then that the majority were abreast of connectivity literacy. Anecdotal evidence suggests that in the intervening period, regional users have stayed updated with the additional connectivity options coming online, such as Starlink.

Correspondingly, the survey indicated that the agriculture sector in the Wheatbelt was well across connectivity literacy, with 97% of agri-respondents indicating they were connected to the internet (with 41% connected to mobile wireless and 38% to Sky Muster). Of these respondents, 17% were connected to more than one service type. It could be projected that with the advent of additional service providers such as Starlink, connectivity rates in the agriculture sector in the region have increased.

Ultimately, the issue is that the Wheatbelt Region, along with other regional, rural, and remote (RRR) areas is perceived as a thin commercial market for providers, which has the effect of reducing the number of potential providers and thereby competition in the digital marketplace. As a result, RRR consumers generally accept what is available and what delivers the services they require. For example, there is strong evidence that there has been a relatively high uptake of Starlink services in the Wheatbelt. This is despite the Starlink monthly plan for residences being $139 per month, double the cost of other providers delivering services to inner regional and urban areas. Whilst there are other internet providers offering cheaper plans, it appears that residents and businesses in the region are prepared to pay extra for the faster download/upload speeds and availability of unlimited data offered by Starlink.

Where it is financially possible for businesses and residents in the Wheatbelt, necessity far outweighs affordability. For example, several farmers in the western parts of the Shire of Brookton (located approximately 120km from Perth) have spent in the vicinity of $2,000 on boosters to improve mobile phone reception.

RDA Wheatbelt Inc | 3 Constable St, Gingin WA 6503
P: [redacted] | E: admin@rdawheatbelt.com.au
Website: www.rdawheatbelt.com.au
ABN: 30 580 026 380

ABN: 30 580 026 380

2. **What further initiatives can be implemented to support First Nations communities in developing and leading their own digital inclusion solutions while ensuring cultural appropriateness?**

Whilst the rates of connection to the internet in Indigenous households have increased between 2011 and 2021 (ABS Census) in the Wheatbelt, an RDA Wheatbelt project run between 2018 and 2022 aimed at Indigenous business development, showed that there remained low ownership rates of equipment such as laptops and desktop computers. Primarily, digital connectivity was based on mobile phones, with the majority operating on a pre-paid plan.

This situation has not only constrained Wheatbelt Indigenous businesses participating in the mainstream economy but is also a barrier to improving educational outcomes for Indigenous school and post-school students.

In essence, the key issue is affordability of laptops and desktop computers for Indigenous households and business start-ups, as well as the cost of connectivity plans. Although there may be some reticence in Government financially supporting Indigenous households and businesses acquiring these devices and plans, the fact remains that without these devices and connection to the internet, the majority of Indigenous Australians in the Wheatbelt region will continue to exist in a 'lock in' trap of poor educational outcomes/attainments leading to extremely limited opportunities for economic participation, and therefore the continuation of welfare dependency and poverty.

3. **How can government and industry address any misleading and inaccurate information surrounding telecommunications services in regional, rural and remote areas, to ensure consumers and businesses have access to reliable and unbiased information when making decisions about their connectivity options?**

A Government website would be the most logical service for providing reliable and unbiased information about potential providers. It is assumed that any issues arising regarding misleading and/or inaccurate information could be directed to the ACCC for investigation and if necessary, prosecution.

4. **Deploying and maintaining telecommunications infrastructure in remote areas requires a skilled workforce. What initiatives can be implemented to ensure there is a skilled workforce in regional and remote Australia capable of supporting the construction, maintenance and operation of futureproof telecommunications infrastructure?**

The first step in ensuring the availability of a skilled workforce is an adequate supply of housing. Workers' accommodation is currently in short supply in regional, rural and remote (RRR) areas in WA, and across the nation.

The second step is to ensure there are enough workers available to carry out the required services. Arguably, there are two options which could be utilised to achieve this outcome. The first is increasing the workforce through incentivised education and training options such as lower costs for courses and/or delivery through VET courses in senior secondary education. Additionally, this approach could target potential workers in RRR areas through making the necessary courses available in Senior High Schools, District High Schools, and regionally based TAFEs.

Additionally, in order to meet short initial demand, there could be a specific focus on the competencies and experience of skilled migrants, with points weighting applied to those willing to live and/or work in RRR areas.

5. **Could the NBN fixed wireless network or other alternative networks be used to provide reliable and affordable voice services in remote areas? Are there any consumer safeguards or guarantees that need to remain or be changed under reformed universal service arrangements?**

NBN fixed wireless is limited in its capacity to provide reliable and affordable voice services in RRR areas, particularly where there are low population densities across Local Governments. NBN fixed wireless only provides to townsites, however there is a significant proportion of the population who live on rural properties that rely on satellite or tower services for their needs. The infrastructure needed for NBN fixed

wireless to provide voice services to RRR areas would be significant, and therefore not viable should the installation take place over a long period of time where changes in technology occur quickly.

6. In modernising universal service arrangements, should access to public phone infrastructure continue and are there particular areas of need? Could technologies beyond traditional payphones be explored to meet this need?

Access to public payphones should be maintained unless, or until, technology provides a viable option. Availability of public payphones remains an imperative for Wheatbelt residents who are financially disadvantaged, with particular reference to the region's First Nations population, of which the majority are in a position of high to extreme economic disadvantage. Generally, most of these people have pre-paid mobile plans and struggle to maintain a consistent level of credit on their plans, which necessitates the use of public payphones when they are financially unable to renew their credit on the pre-paid plan.

7. What should the minimum internet speed guarantee be (currently a peak speed of 25/5 Mbps) to meet modern needs? Should minimum data download/upload allowances be regulated? What other factors are important, like latency, reliability and affordability?

Current speeds of 25/5 Mbps in some instances would be acceptable, however with consistent increasing utilisation and usage, it should be anticipated that minimum internet speed guarantee will need to be lifted. As previously cited, many Wheatbelt residents and businesses are prepared to accept the higher service costs for providers such as Starlink based on high download/upload speeds and unlimited data.

It should also be noted that, on a frequent basis, 25/5 Mbps is not achieved in RRR areas and can be as low as 5/2 Mbps for extended periods of time. The inconsistency of reliable internet speed adversely affects businesses and organisations who require adequate speeds to continue operations.

8. How can we achieve equity with respect to mobile services (voice, data and SMS) in regional, rural and remote communities and on regional and remote roads?

Achieving equity in mobile services in RRR areas is a challenge due to effects of the topography, geography, climate etc. There needs to be an investigation as to how mobile coverage can be achieved in areas that are subject to bushfires and/or other extreme climate events, such as cyclones. Additionally, comprehensive mobile coverage on National and State highways and roads is imperative, particularly on roads with low volumes of traffic, which is hoped that the Regional Roads Australia Mobile Program will address.

9. How can we ensure regional, rural and remote areas have access to the networks, equipment and capacity they need for improved household connectivity and to foster innovation and efficiency across regional industries, including for IoT applications?

Ensuring that RRR areas have access to networks, equipment and capacity requires a multi-option approach, encompassing fibre and fixed wireless, along with supporting providers that have set up local services. These include WISP or the CRISP[1] network that has been deployed in areas across the Wheatbelt.

CRISP was conceived by a group of local individuals who viewed the need for greater connectivity in the regions, with a local workforce capable of addressing issues in a timely manner through their close geographical network.

10. The cost of building and maintaining telecommunications infrastructure in rural and remote areas can be a barrier to offering better services. What can be done to improve the fixed broadband options available to regional, rural and remote Australians?

As noted previously, RRR areas represent a thin market for providers, resulting in fewer providers in the market and less competition. It is understandable that those providers entering the RRR areas will potentially look to higher tariffs to maintain commercial viability and/or infrastructure. One possibility to improve fixed

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[1] CRISP Wireless. About - CRISP Wireless

broadband options in RRR areas is for governments to focus on programs to increase private investment in the sector. Due to less competition in these areas, providers do not see it as a viable option to expand their network to these areas, resulting in consumers having few choices.

11. Have you had experience with new or alternate service providers such as Starlink or WISPs? If not, why not? What additional measures would persuade you to consider new technologies?

Anecdotal evidence offered to RDA Wheatbelt suggests that alternate providers are considered and adopted by stakeholders due to their capacity to deliver reliable services and faster speeds for data download and upload. These service capacities appear to outweigh cost considerations.

These technologies also provided essential coverage in recent whether events (January 2024), where traditional telecommunications were unable to connect for an extended period of time. This was due to the power grid being down, with no back-up generators installed on the towers, and in some areas meant consumers were without any means of telecommunication for up to eight days.

12. What can be done to maximise access to multiple connectivity options in case of outages?

It appears that the Government is taking a step in the right direction through its Mobile Network Hardening Program. Correspondingly, the national Public Safety Mobile Broadband (PSMB) capability proposal is a practical approach to ensuring coordination of emergency services personnel, as well as the safety of affected communities. Equally, the option of potentially implementing a TDR capability is feasible and could supplement the PSMB capability.

13. What can be done to increase capacity and improve the reliability of telecommunications services in regional, rural and remote Australia?

As cited previously, the topography of some of the Wheatbelt region's RRR areas is a challenge to reliable telecommunications. For example, the western areas of the Wheatbelt are characterised by deep valleys and high ridge lines, which contribute to levels of inconsistent coverage. It is quite common to lose mobile coverage on secondary major roads and some highways between the Shires of Chittering, Toodyay and Northam, all of which are within a 100km radius of Perth.

Similarly, it is known by RDA Wheatbelt that farming businesses in the Shires of York, Beverley and Brookton have inconsistent mobile coverage across their properties, hampering work processes and with serious implications for the safety of workers, particularly during peak work periods such as seeding and harvest. In turn, consistent mobile coverage in the eastern sections of the Wheatbelt is largely determined by the carrier the user chooses. For instance, from personal experience, the author whose carrier is Optus, loses coverage along the Great Eastern Highway (between the Shires of Cunderdin and Yilgarn) with only intermittent coverage passing through the town of Merredin, and intermittent coverage (text only) in the township of Westonia.

Whilst local people have chosen a carrier that provides more reliable coverage (being Telstra), the issue lies with people travelling from urban areas, who have of other carriers that lack capacity outside of the city boundaries.

To address these issues, it may entail the construction of additional 360 degree towers at strategic points on major secondary roads and national/state highways under the Regional Roads Australia Mobile Program. Addressing the issues of geographical barriers to reliable reception, however, presents a more complex and expensive problem. Whilst there may be an option of positioning towers on highpoints of ridges and hills, the challenges of accessibility and maintenance could act as physical and economic barriers to such an approach.

However, as the Magellan Group[2] indicates, the main cost for tower companies is the payment for the land that the towers are constructed on. Other costs for carriers as outlined on their website are absorbed, defrayed or offset due to:

"The carriers own the transmission equipment and are responsible for the installation, maintenance and operation of that equipment. Because the tower costs are largely fixed, each incremental tenant or piece of equipment added to the tower generates a significant incremental profit margin (90%-plus)."

The Magellan Group also clarify why communication towers are an asset due to:

1. ***Essential to the Efficient Functioning of a Community***

   With an increasing need for mobile connectivity to support a growing number of devices we use on a daily basis, communications towers serve as the backbone to the efficient functioning of modern society.

   Communications towers allow wireless carriers to provide mobile wireless services to consumers irrespective of economic market conditions.

2. ***Earnings Are Not Sensitive to Competition, Commodity Price Movements or Sovereign Risk Towers typically generate reliable earnings for a number of reasons:***

   - *Limited competition:*

     Long-term customer contracts (typically about 10 years) with built-in fixed price escalators. High switching costs for customers, as moving transmission equipment between towers requires a network redesign, risks disruption to subscribers and incurs a significant cost of physically relocating the equipment. Therefore, the number of customers not renewing contracts is low (1-2% on our estimates).

   - *It is difficult to build new towers, given regulatory and social hurdles (i.e. nobody wants a large tower in their backyard).*
   - *There is minimal overlap between the competing tower providers' footprints.*
   - *Towers are typically unregulated and hence face limited sovereign and regulatory risk.*
   - *Towers are not exposed to commodity prices or cycles.*
   - *Telecommunications providers base their multi-year network investment plans on the expected long-term growth in mobile data traffic.*
   - *The majority of tower revenue in any given year is secured through long-term customer contracts.*

Alternately, the Magellan Group identified two key risks for investors being:

1. ***Alternative Structure***

   In urban settings, telecommunications providers are increasing their capacity further through network densification (i.e. putting cell transmission sites closer together). They are achieving this by placing antennas on street lights and utility poles. Collectively, these are called 'small cells'. Towers provide ubiquitous coverage, while small cells help service hotspots with high wireless traffic demand.

   We believe these small cells are complementary rather than substitutes to towers due to the limitations of small cells transmission and relatively high costs. Outside urban settings, there is limited usage of small cells as towers remain far more economical.

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[2] Magellan, Investing in communication towers. Investing in communication towers - Magellan Financial Group (magellangroup.com.au)

2. *Carrier Merger Risks*

Communications towers are exposed to carrier merger risks. When one telecommunications provider acquires another, it may remove redundant transmission equipment from towers. However, the impact is usually spread over several years rather than immediately following a merger, given the time required to integrate wireless networks and the long-term nature of tower contracts.

This investment outline provided by the Magellan Group does suggest that investment in construction of communication towers is economically viable. However, IBIS World[3] has projected that a reduction in Government spending on NBN infrastructure and an easing of demand has resulted in an 8.7% decrease of revenue in the sector to $7.4 Billion over the past five years to 2023-24.

If it is the case that the decrease in the Commonwealth Government spending on NBN infrastructure is contributing to the decline in revenue in the sector, then it may be necessary for the Government to look at further investment in NBN infrastructure to increase capacity and improve the reliability of telecommunications services in RRR areas.

14. How can the energy and telecommunications sectors work more effectively, especially with respect to redundancy?

As stated on the Infrastructure Australia website[4], the Covid pandemic demonstrated the capacity to deliver reform, however there is a cost involved in funding redundancy options and complexity in working through the approaches with multiple government tiers, regulators, and industry stakeholders.

It may be accepted that a level of pragmatism be adopted in terms of the additional costs involved. In essence, the funding involved could be seen, not so much a cost, but rather as an investment in ameliorating potential negative impacts and securing the response capacities of the energy and telecommunications sectors.

It could be proposed that such funding of increased capacities will not only show a return on investment in terms of health and safety outcomes during emergencies, but could also ease adverse effects on economic productivity.

As for the complexities of working with multiple governments tiers, regulators, and stakeholders, RDA Wheatbelt believes that the development of a universal approach to increasing capacity and alleviating redundancy is an imperative, particularly for RRR areas across Australia.

One option that may be available to overcome such complexity is to adopt the COAG approach with State Government representatives, bringing forward state regulations and stakeholder considerations at a Commonwealth level, and working with the Federal Government to establish a unified strategy.

15. What innovative solutions can be explored to ensure telecommunications infrastructure remains operational during and after natural disasters?

Recent international research[5] illustrates the potential of a holistic process in addressing telecommunications energy efficiency. The researchers propose the following:

- Deployment of energy efficient hardware.
- Utilisation of green data centres with advanced power management technologies.
- Employing intelligence (AI) powered management systems.
- Optimisation of network traffic flow.

Network management optimisation appears crucial and includes:

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[3] IBIS World, Telecommunications Infrastructure Construction in Australia industry analysis

[4] Infrastructure Australia, Australian Government. Recommendation 7.1: Improving the resilience of Australia's telecommunications | Infrastructure Australia

[5] Chinedu Alex Ezeigweneme, Aniekan Akpan Umoh, Valentine Ikenna Ilojianya, & Abimbola Oluwatoyin Adegbite, 2024. Telecommunications energy efficiency: Optimizing network infrastructure for sustainability. *Computer Science & IT Research Journal.* Volume 5, Issue 1.

- Regular evaluation and optimisation of infrastructure to eliminate redundancy and underutilised equipment.
- Utilisation of software-defined networking (SDN) and Network Function Virtualization (NFV).
- Renewable energy integration – Onsite renewable energy generation and power purchase agreements to reduce dependence on traditional grids and fossil fuels.

16. How could partnerships with local communities improve the maintenance, security and availability of infrastructure?

Two phases should be taken into consideration for question of partnerships with local communities to improve maintenance, security, and the availability of infrastructure.

The first phase is ensuring community consultation, and support of the site and building of infrastructure. There is anecdotal evidence provided that in some communities, people feel that there has been little or no consultation, or that their views have been ignored in regard to where infrastructure is or will be sited. Essentially, these people feel that once the infrastructure in is in place and reliable service commenced, they will accept the outcomes regardless of their previously held views. Whilst this approach of the end justifying the means does have a level of success, it may also leave a somewhat bitter feeling among those RRR residents who felt that they were omitted from the consultation process, or their views were not acknowledged.

In turn, the outcome of the consultation of the community may exert an influence on the second phase of the partnership in the maintenance and security of the infrastructure, particularly if the telecommunication services are being provided by a local provider.

For example, CRISP Wireless (based in the Shire of Narrogin) is a local provider set up by local individuals to meet the local and broader regional needs. In the set-up process, the local and broader regional communities were involved and encouraged to participate in the consultation process. Apart from identifying a demand for an alternative service, the consultation process contributed to a sense of community ownership, which was extended through local employment opportunities.

17. What lessons can be learned from private sector investment in regional telecommunications in closing the digital divide in regional and remote areas?

As Optus noted in their submission to the Regional Telecommunications Review in 2021[6];

"The needs of regional Australians are clearly becoming more sophisticated".

RDA Wheatbelt concurs with this observation and with the assertion of Optus that relying on just a small number of predominantly Government-funded networks has failed to meet the requirements of regional Australia.

Equally, RDA Wheatbelt agrees with statement in their submission that regional Australians have a legitimate right to expect the same accessibility to services as their urban counterparts. In addressing this shortfall in services, the way forward is for the Government to move away from funding a small number of providers, and towards the facilitation and promotion of investment across the broader private domain.

It is feasible that this approach could free up the market, pivoting the RRR telecommunications market away from the existing duopoly or triopoly towards a multi-provider market. This would be more attuned to the localised needs and gaps, which has already been demonstrated through the CRISP Wireless network based in the Shire of Narrogin. The CRISP network provides services to the south-eastern, eastern, and north-eastern Shires within the Wheatbelt region which, prior to the advent of CRISP, had limited, inconsistent or no internet connection.

Essentially, the local founders of CRISP Wireless recognised the needs and gaps within the market and took steps to address these. Their investment with some Government funding opportunities responded to a localised need, exemplifying the benefit of Government supporting local private investment in

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[6] Optus, Submission in Response to Issues Paper, Regional Telecommunications Review, Public Version, 2021

telecommunications. Not only has this private localised initiative addressed coverage issues but has also provided local employment and funding support for community organisations.

The Government should move away from the reductive approach in supporting a major provider, such as Telstra, to deliver services which has ultimately led to partial or near-complete market failure in RRR areas and look at encouraging a multifactor approach to private investment in the sector.

18. What has been your experience as a consumer of Australian Government programs aimed at improving regional communications? What improvements would you suggest?

Australian Government programs are often limited for small telecommunications businesses, with providers within the duopoly or triopoly gaining greater funding for infrastructure and services that they are already able to acquire through their own means. Targeted Government programs towards smaller providers to increase their infrastructure and service reach need to be considered for equitable distribution throughout the regions.

19. What changes to Australian Government investment programs are required to ensure they are successful, efficient and effective in delivering improved, reliable and equitable telecommunications for regional, rural and remote consumers?

The first step in ensuring the Australian Government investment programs are successful and efficient in delivering equitable and reliable telecommunications for RRR consumers, is to undertake a comprehensive audit and evaluation of telecommunications coverage and quality of services. There is a fundamental quote: "If it can't be measured, it can't be managed."

It could be expected that such an audit and evaluation of services provides clearly defined needs and gaps in specific areas, which the Government may then examine options in responding to the shortfalls in services.

Feedback from Yilgarn and Gingin indicates where the 3G network is being wound down, the 4G network is not taking up the same reception footprint and has increased the number and area of blackspots. This was also experienced with the change from 2G to 3G. A comprehensive review of all RRR coverage is required to identify the reduced footprint.

20. How could Australian Government programs better align with state, territory and local government planning and funding processes in delivering telecommunications services and infrastructure?

As discussed in the previous response, a comprehensive audit and evaluation of telecommunications availability, accessibility and reliability could provide a clearer understanding of needs and gaps in RRR areas, which would assist with State, Territory and Local Government planning and funding processes in delivering telecommunications services and infrastructure.

Currently, in terms of mobile black spots in the RRR areas of WA, it seems that Government response only occurs as a result of natural disaster event, where lives and property are lost, or at high risk due to poor or no mobile coverage. This ad hoc approach is neither equitable nor acceptable. An example is the telecommunications outage of the eastern Wheatbelt area in January 2024, where power outages affected the telecommunications towers, leaving residents with no access to communications. The disaster, which was compounded by days of no telecommunications, electricity or water, had a lasting impact on residents in multiple Shires.

Similarly, there seems to be an expectation of residents and businesses in RRR areas to find their own solutions or live with poor, limited, or no internet connectivity, which is not equitable. It is incumbent on the three tiers of Government to represent and respond to the needs of all Australians, not just those living in major urban areas.

Additionally, an audit and evaluation of RRR telecommunications needs and gaps could support the strategic delivery of the Better Connectivity Plan.

21. What other matters should the Committee consider in its review and why are they important?

Nil