

# WA DEPARTMENT OF PRIMARY INDUSTRIES AND REGIONAL DEVELOPMENT

## Response to Commonwealth Regional Telecommunications Independent Review 2021

1. What telecommunications services are required in regional Australia to meet current and future needs? Are there any things regional communities and businesses need to do, but can't, on their existing services?

### Key recommendations:

1. **Future Commonwealth and State government co-funding programs should, where appropriate, be deployed using a 'Neutral Host Carrier' model.**
  2. **The Commonwealth should fund an independent testing program to assess the performance of mobile phone networks and establish minimum performance standards for government-funded or government-subsidised infrastructure. This program could also be used to ensure that the 4G network is effectively replicating the footprint of the 3G networks prior to its proposed shutdown in 2024.**
  3. **The reliability of fixed lines is essential during emergencies and extreme weather event and the Terrestrial Fixed Line telephony services must be retained via the Universal Service Obligation.**
  4. **The attractiveness of Regional Western Australia is being impacted by the lack of competitive (fibre) carrier diversity and route diversity, compared to other regions.**
- **Fit-for-purpose, world-class digital infrastructure.** To be globally competitive, and to attract and retain the appropriate talent to the regions, residents need access to fit-for-purpose, world-class digital infrastructure and services at competitive and affordable prices. This includes access to high-capacity, high-speed broadband services (both download and upload speeds on fixed and mobile services) that are highly reliable and comparable to those accessible to metropolitan residents and businesses.
  - **Mobile broadband performance, coverage and capacity.** The same is required for mobile phone network services as applies to fixed line broadband services. The mobile phone network coverage in the WA, South-West of a line from Kalbarri to Esperance, along with all other regional centres, towns and the remainder of WA needs to be ubiquitous, high-capacity, high speed and highly reliable. Many of these areas remain without adequate mobile network service and many areas which have coverage do not deliver sufficient network throughput. This deficiency is having significant impacts on public safety, small business' ability to carry out essential daily operating tasks, regional attractiveness for population growth, tourism, amongst others.
  - **Emergency Services resilience.** Emergency Services and WA Police depend upon both government radio networks and the mobile phone networks where the government radio networks do not provide coverage. In times of emergency, such as bushfires and cyclones, it has become clear that the resilience of the mobile phone networks is poor and cannot provide an adequate backup to the government radio networks. New approaches need to be investigated to provide higher resilience to the mobile network and new networks need to be investigated to provide backup to the mobile phone network. These could include the use of

existing towers (for example, Digital Farm network in WA) to host CBRS radio repeaters which rely on power systems that are more robust than the backup power in some mobile phone network sites. These repeaters could permit emergency services personnel to communicate with regional people who already have UHF 476-477MHz CBRS radios in almost every vehicle and at homesteads in remote areas when the mobile phone network is unavailable. Implementation of the proposed national Public Safety Mobile Broadband capability remains a priority, with the recent Royal Commission on National Natural Disaster Arrangements recommending that Australian, state and territory government should expedite the delivery of the capability.

- **Continuance of the provision of fixed-line voice services.** Regional consumers have made it clear that they want to maintain their fixed line voice services and do not want fixed line voice services replaced with a satellite-based or mobile phone network-based voice service. This is due to the experiences of unreliability of satellite and mobile networks—especially during emergency situations. The Commonwealth should give serious consideration to a long-term plan to upgrade the existing High-Capacity Radio Concentrator (HCRC) terrestrial voice network to a modern voice and data service, operated on Neutral Host Carrier model by a neutral third-party provider. The towers can be used to host additional modern networking equipment which could provide both terrestrial broadband services along with high-reliability terrestrial voice services to regions now served only by NBN Skymuster.
- **Expansion of private terrestrial Fixed Wireless networks.** The Government of Western Australia has co-funded the deployment of more than 100,000 sq km of private fixed wireless networks in regional Western Australia delivering speeds of 100mbps and more for a cost of \$13m. Unlike the NBN FW and Satellite services, these networks are operating sustainably without ongoing taxpayer subsidy. Consideration should be given by the Commonwealth to co-funding private Fixed Wireless networks in areas that would not be profitable for NBN to do so.
- **Full replication of the 3G mobile footprint by 4G/5G service prior to the shutdown of the 3G network in 2024.** The carriers have announced that they intend to replicate the existing 3G footprint with 4G service footprints prior to the 3G network shutdown, however anecdotal reports from the regions where 4G has replaced 3G coverage are that many issues remain. A significant number of reports from the regions suggest that in some instances the service degrades rather than improves when new 4G services are deployed, those mobile phones often persist with attempting to use the 4G network when manually switching the phone to the 3G network will improve performance. There should be an independent testing program deployed nationally to ensure that the shutdown of the 3G networks in 2024 does not disadvantage regional residents and the 3G network kept operational until the carriers demonstrate that the 4G/5G networks will provide as good or better performance as the 3G network currently provides in all areas. Additional Mobile Black Spot programs should continue to be funded by the Commonwealth and State governments but deployed using the Neutral Host Carrier model.
- **5G millimetre wave equity.** 5G millimetre wave services will multiply the speeds and capacity of mobile networks in cities and large towns. How and when, will regions access services that approximate services equivalent to the millimetre wave 5G services so as not to fall behind the cities where they are without the same level of performance that will be delivered in the cities?
- **Mobile Roaming.** Regional residents are unhappy that, for the most part, they have access to only one carrier in regional Australia. The question most frequently asked is why towers funded or subsidised by taxpayer money are not automatically designated as accessible via roaming.

- **Neutral Host Carrier model in publicly funded infrastructure.** In the absence of a mobile roaming declaration, all infrastructure that is funded or subsidised by taxpayers should be delivered using a Neutral Host Carrier model that permits all carriers equal access to this publicly funded infrastructure as is the case in places like New Zealand. This should be a requirement of all publicly funded infrastructure.
- **Need for carrier diversity.** The absence of carrier diversity (and route diversity) across regional WA is limiting new business opportunities in industries such as satellite ground stations, data centres, renewable energy production and other mission-critical services which depend upon near 100% uptime and require carrier diversity. Increasingly, large infrastructure projects require not just high -capacity connectivity, but also carrier diversity in the provision of digital infrastructure. The lack of competitive services in the majority of regional Western Australia is an impediment to new industries deciding to locate in the area and there are already reports of lost business development in industries such as the ground segment space sector (Satellite Earth Stations). Further, in many regional towns, fibre transits directly through the area without any means of access – i.e., there are no affordable means of accessing the fibre via ‘onramps’ due to the excessive cost laid out by the carriers—in many cases hundreds of thousands of dollars to access the fibre accompanied by requirements for customers to pay hundreds of thousands of dollars for the upgrades to network capacity to use the fibre. The Commonwealth should introduce a regulatory vehicle like that which regulates regional backhaul link pricing which also applies to the cost of access to backhaul and access to backhaul capacity. Presently, carriers can charge whatever they like for both network connectivity and network capacity before the customer is subject to the regulated monthly tariffs for usage.
- **Low Earth Orbit (LEO) satellites.** LEO satellites appear to hold great promise to solve many of the above deficiencies in regional connectivity, however, there are currently barriers that may either prevent these services from being delivered or may make them uneconomic without government subsidies. Further, the potential of direct satellite-to-mobile phone services that are in trials are also promising, yet not demonstrated to be viable. Direct to satellite mobile phone service should be explored in greater depth.

## 2. What changes in demand, barriers or challenges need to be addressed when it comes to telecommunications services in regional, rural and remote Australia?

- **Demand forecasts.** Demand forecasts from independent assessments and modelling done by Nokia Bell Labs (and others) have documented that network demands have been highly predictable for three decades, with network traffic effectively increasing 50-100% every 12 months. Mobile carriers have generally met these demands in metropolitan areas but failed to keep up with demand by increasing network capacity in regional areas. This increasing demand is unlikely to change into the foreseeable future and carriers need to be held accountable to deliver adequate capacity to regional networks in the same way that they deliver to metropolitan networks. It would highly beneficial if the Commonwealth were to develop an algorithm to monitor and report on the performance of the regional mobile telecommunications networks in the same way it has done with NBN service providers.
- **Network capacity planning.** Carriers are often not proactively upgrading networks to meet user demands, resulting in degraded network performance, despite the availability of more than three decades of data which has clearly and accurately predicted future network demands. Wholesale customers are required to pay for network upgrades before being given access to networks. This leads to an inequitable situation where the first customer requiring the upgrade pays for the full cost of the upgrade with subsequent customers using that capacity paying nothing, which in most cases will be the competitors of the customer who has

paid for the upgrade and no clawback options available to distribute the cost across users equitably. Further, for the most part, mobile networks are also not upgraded proactively to meet forecast demands, but only upgraded in response to performance complaints. A nationwide study of user speeds published by the ACCC and the establishment of minimum standards under standard conditions. e.g., download and upload speeds measured at 3km from a direct line of sight to the tower, etc. should be undertaken to establish baseline performance on individual towers and alert consumers and carriers to congested towers and networks.

### 3. How have the Government's policies and programs affected telecommunications service outcomes in regional, rural and remote Australia? How can these be improved?

- The Commonwealth Regional Connectivity Program (RCP) has provided some much-needed co-funding for regional infrastructure.
- The requirement for 50/50 matching funds to be contributed by industry sometimes renders important projects in high regional production value areas with low population density uneconomic. Other models should be explored which prioritise regional production value over population density for funding. However, the challenge in these areas is not just start-up capitalisation of projects but the cost of operating, maintaining, and upgrading these networks, which government programs do not fund. It may be that user-funded models such as LEO satellites are the most cost-effective approach to addressing this challenge, which will shift traffic away from terrestrial networks.

### 4. How do service reliability issues impact on regional communities and businesses? How do outages, including in natural disasters, impact on communities and businesses?

- **Mobile network architecture not designed to withstand sustained power outages. Mobile phone network not sufficiently resilient to perform reliably during natural disasters.** During the events when communications infrastructure is most critically needed is when it is most likely to fail, (fires, cyclones, floods, etc.) compromising safety, emergency response and other critical issues. Communications infrastructure itself is rarely damaged. More likely, transmission system failures, power supply failures or backup power failures occur, rendering the rest of the infrastructure inoperable. As emergency services radio systems have only limited range, they often depend on the mobile phone network for backup. When the mobile phone networks fail, emergency services are compromised. Cyclone Seroja, which struck the Western Australian coast in the Gascoyne/Mid West region of Western Australia in 2021 resulted in more than 100 mobile base stations being offline for up to four days when these services were most needed. Emergency services could not communicate with people who had lost power because telecommunications transmission facilities had failed due to lack of adequate power backup. Power backup to transmission facilities and exchanges need to be dramatically upgraded. Some funds have been allocated for these upgrades by governments, but more is needed. More attention needs to be given to hardening transmission systems, providing carrier and route diversity in backhaul, increasing the power backup systems to a minimum of 24 hours in all facilities and ensuring that all access sites, transmission hubs and exchanges have generators, and an established protocol to provide refuelling of generators.
- **Network outages compromising public safety.** During times when communications networks are down, (e.g., natural disasters), people are often unable to do critical things like purchase fuel at petrol bowsers to escape a fire, know where to relocate to avoid danger, buy food at supermarkets and roadhouses, call for help, call for an ambulance or fire services or call for police.

- **Network outages negatively impacting ability of small businesses to trade.** Almost all businesses now depend upon EFTPOS connections over public communications networks (primarily the mobile phone networks) and cannot trade when the comms networks are down. Further, the absence of reliable connectivity to the internet impacts the ability of regional businesses to conduct operations generally, causing significant productivity degradation and reduces regional competitiveness. Income ceases where there is no connectivity.
- **A mechanism for end users to report carrier network faults.** DPIRD receives a significant number of complaints from end user customers that there is no channel through which they can report network faults to the carriers. If a component of telecommunications infrastructure in the network fails, causing widespread user impacts, users cannot report this to carriers other than as it relates to a user's account. For example, if a cable is cut or a mobile tower is offline, carrier call centre staff have no mechanism to accept a complaint about infrastructure—only about the user's service. All carriers need to establish a mechanism for retail customers to report network faults that are delivered directly to the part of the company which investigates and manages *network* faults.
- **Service response times.** Service response times of the major telecoms carriers is often inadequate, with some services going unrepaired for up to eight months after being reported. There appears to be few, if any consequences when critical services go un-repaired beyond agreed service level agreements when network infrastructure is involved.
- **Reliability of Service a major concern in COVID times.** Poor reliability is being experienced in many low population centres in regional WA. With COVID and a reduced need to work centrally, reliability of connection has never been greater. More people are moving to the regions and working from home. Outages and inconsistent connection can be preventative for people to work from home, move into the region, or enter the workforce. There are constraints on the workforce in the regions and there is anecdotal evidence that people such as stay-at-home parents are seeking to join the workforce under working from home arrangements.

5. How might such impacts be addressed to ensure greater reliability? How can the network resilience be addressed in regional areas?

- **Carrier/Emergency Services Cooperation.** Carriers should be held to account to provide information to emergency services and government regarding vulnerable weak points in the networks, single points of failure for transmission services and data on the length of power backup for all exchanges, transmission facilities and access points. There should be a mandatory cooperation agreement between regional carriers and local emergency services to service telecommunications infrastructure which includes services such as refuelling generators and replacing batteries. All too often, carriers do not share information or permit third parties to perform basic maintenance, resulting in failures in network availability during natural disasters and emergencies.
- **Backup power upgrades:** The impacts of Cyclone Seroja have reinforced that Industry and government should continue to work together to co-fund backup power upgrades and to establish a cooperative model for servicing infrastructure during emergencies that does not depend exclusively on carrier support staff.
- **Transmission links of critical importance.** Transmission facilities that are single points of failure for downstream infrastructure require particular identification and attention.

6. How did the use of digital services change for regional consumers and businesses during the response to the COVID-19 pandemic? What insights for future service delivery does this provide?

- COVID has demonstrated both that many services can be effectively delivered digitally – if there is sufficient and reliable connectivity.
- It has also demonstrated that the reliability of regional connectivity, especially the mobile phone network, is less robust than is acceptable—particularly the power systems which support communications infrastructure.
- COVID has led to increased migration into the regions and more people working from home. Upload speed and reliability of connection are equally important as download speed. Accessible cost prices for reliable high upload/download speed connections are a rapidly growing essential need.
- COVID lockdowns has also required many businesses to adapt their business to be available to consumers on the internet.
- Broadband infrastructure is essential for business. Creative industries in WA who require strong upload speeds are forced to live/work in the few fibre zones.
- Regional areas provide a unique lifestyle option for ‘mobile’ businesses – those that aren’t confined to metro area. Often businesses such as those in the creative industry require a decent fibre connection to operate however are limited to locations because of this.

#### 7. What can be done to improve the access and affordability of telecommunications services in regional, rural and remote Indigenous communities?

- **Bare-bones option.** NBN should make available a ‘bare-bones’, ultra-low-cost connectivity option – effectively equivalent to the cost of a standard land line – e.g., approximately \$25/month for those individuals who require only a basic access to digital services and who do not need high-speed, high data services.
- **Point to multipoint satellite product.** NBN should create a satellite product that could be used as a community downlink in remote areas, with signal then relayed to multiple destinations within the community, permitting multiple residences to share a single, high-capacity community-grade service, rather than requiring a separate dish on every residence. This will save money for NBN and provide an affordable option for those communities where individual households cannot justify the monthly cost of a Skymuster service.
- **Telehealth.** Create and make available a low-cost telemedicine platform that could be installed in community centres in individual communities using NBN satellite and high-compression video to reduce the use and cost of bandwidth. Renegotiate existing satellite bandwidth contracts to reduce bandwidth costs.
- **Digital Literacy.** Education on telecommunication services is essential in improving uptake rates on current technology. Many regional users are operating on old and dated technology due an unwillingness to learn of new technology from broadband providers. Skymuster uptake rate is 30% in the South West, the remainder of eligible consumers are on inferior product.
- **Third party providers of digital education.** Education could be done through other impartial agencies. The South West Broadband Broker program developed by South West Development Commission and delivered in partnership with Regional Development Australia South West is a good example.
- Continue funding programs to deliver new and improved infrastructure.
- **Regulation of the cost of accessing connectivity to existing fibre routes.** Access to fibre options is often prohibitively costly and prevents small business from improving their connection capability.
- Broadband connection options can be confusing to general community, small businesses account for a significant portion of business in the regions and are time poor and cannot

continually research best service options for their business. An independent body which performs this carrier-neutral service would be highly beneficial.

#### 8. How can investment in telecommunications infrastructure work with other programs and policies to encourage economic development in regional Australia?

- **Telecommunications as essential infrastructure.** Telecommunications infrastructure is an economic enabler, much like affordable housing, access to electricity, water, medical care, food, and other critical services. It is a service that is required to attract and retain people in the regions who will bring new businesses and new social networks to the regions. If it does not exist, young, vibrant, innovative and creative individuals will not locate to or stay in regional areas. Telecommunications should always be included in any discussions around infrastructure. Infrastructure Australia has now acknowledged this and included digital connectivity infrastructure in its latest long-term strategy documents. In addition, communications is one of the sectors included in the proposed expanded scope of the Commonwealth's Security of Critical Infrastructure regime, aimed at uplifting the all-hazards resilience of critical infrastructure. It needs to become 2<sup>nd</sup> nature that digital infrastructure is now essential infrastructure in the same way that power, water, roads, buildings, and bridges are essential infrastructure.
- **Carrier and Route Diversity (fibre).** To be globally competitive, regional areas need carrier diversity (and route diversity) just like metropolitan areas. The Commonwealth should foster and support the development of Telecommunications policy and infrastructure (designated Commonwealth responsibilities). However, in some instances, the infrastructure provided by the Commonwealth is not fit-for-purpose for the needs of the States. One solution, as previously indicated in response to Question 1, is the support for the deployment of competitive, diverse backhaul infrastructure which will enable more affordable access to more bandwidth and enable more downstream services such smart community applications and attract new industries to the regions. As regional WA is becoming increasingly a place where large strategic industrial areas are planned and developed, (e.g., hydrogen production, gas and slurry pipelines, satellite ground stations, renewable energy estates, etc.) carrier diversity becomes even more critical. A multi-billion-dollar facility cannot afford downtime due to one carrier experiencing an outage. Carrier diversity provided via physically diverse fibre cables (route diversity) is increasingly a critical requirement in large industrial estates. Amongst other areas, there are reports of businesses within strategic industrial areas (e.g., Kemerton) in the south west experiencing connection issues due to insufficient capacity during business hours, which is already causing issues with day-to-day business. Providers have yet to step in to address the issues raised.
- **Local enablers.** Programs that provide incentive for private investment through approaches such as land assembly, investment incentive or utility provision could be bolstered with inclusion of improved telecommunication infrastructure.

#### 9. What role could innovation, including new models, alternative investors or new ways of doing business, play to encourage investment in regional telecommunications infrastructure? What are the barriers?

- **Current opportunities are plentiful for investment in the telecommunications sector.** The current business investment environment in Australia has significantly favoured the telecommunications sector, with many new projects and companies receiving heavy investments from the private sector and successful share market floats. 2021 market floats

experiencing market valuation increases of greater than 30% in less than 12 months are not uncommon.

- The Commonwealth should take advantage of this positive investment environment to seek out private sector investment partners to invest in government-supported/subsidised projects that have investment return potential. This would include large infrastructure projects, wireless service providers and any significant infrastructure-based projects.
- **Infrastructure bonds**, issued by the Commonwealth, to attract private investment, could be a viable, alternative approach to cash grants to carriers for funding large-scale telecommunications infrastructure projects. Telecommunications projects could easily provide an acceptable rate of return for investors, compared with other infrastructure bond projects.
- Open-access, common use infrastructure models should be required wherever taxpayer money is employed.
- A 'Neutral Host Carrier' Open-RAN model should be employed in all taxpayer-funded mobile network environments, ensuring equal-access and equal opportunities for all carriers, and to minimise the necessity to duplicate infrastructure.

10. To what extent will new technologies enable significant change to the delivery of telecommunications services in regional Australia over the next 5-10 years? Are there any barriers to accessing these technologies?

- **Costs are dropping. Performance is improving.** The cost of communications technology has reduced dramatically over the past decade. These price reductions mean that equipment can be upgraded or simply reconfigured (Software-Defined platforms) on a much more rapid turnaround schedule than in previous times when the cost of equipment meant that equipment replacement cycles could be as long as a decade; whereas now, even annual upgrades are not considered unusual in some cases, for example, in Fixed Wireless installations.
- **Direct satellite-to-mobile phone connectivity is coming.** This will likely occur soon and could dramatically change the landscape for mobile phone services in regional Australia where population density is low. The government should support trials of this technology and continue to fund innovative approaches to this model.

11. How can Government better support the rapid rollout of and investment in new telecommunications solutions in regional areas?

- Create a predictable cycle of funding that permits service providers and investors to have confidence in engaging with government at all levels for co-funding programs. Often, the misalignment of timing amongst State, Commonwealth and other funding prevents maximum leverage for individual projects.
- Continued liaison with local stakeholders, prioritise regional production value, population and heavy industry areas to ensure growth is facilitated.

12. How can different levels of Government, the telecommunications industry and regional communities better co-ordinate their efforts to improve telecommunications in regional Australia?

- **Changes required in funding models.** It is critically important to recognise that in many places in regional Australia, it is not economic for one organisation to cost-effectively fund and operate telecommunications infrastructure without subsidy. Further, the amount required to subsidise a particular location varies, depending upon circumstances. A 50/50 co-contribution scheme is not always the optimum mix. For example, in some circumstances, it may not be necessary for the government to contribute a full 50% co-contribution to make a project



viable; yet in other circumstances, it may require a 100% government subsidy of infrastructure to make a different project viable. Government should be flexible in how it provides subsidies, based upon circumstances that can be justified by proponents.

### 13. What changes to Government investment programs are required to ensure they continue to be effective in delivering improved telecommunications?

- The two most important changes to government investment programs to improve delivery of telecommunications in regional Australia are:
  - Enhanced minimum performance criteria for taxpayer subsidised infrastructure
  - Equity of access to infrastructure for all government-funded or government-subsidised infrastructure

### 14. How can regional consumers be better supported to identify, choose and use the best connectivity options for their circumstances, as well as to understand and use their consumer rights?

- **Digital Literacy programs.** It would be useful if the Commonwealth launched an assistance program, perhaps through a funded partnership with an organisation such as Better Internet for Regional Rural and Remote Australia (BIRRRRA), to evaluate, organise and make publicly available an online tool to permit end users to explore, investigate and choose services that match their needs. The current environment is complex, in many cases misleading and confusing. The presence of a third party to collate, evaluate and publish neutral recommendations which permit non-technical users to make informed, neutrally recommended choices would be beneficial. The WA State Government's *Digital Government Digital Inclusion Program* may provide inspiration for a similar Commonwealth program.<sup>1</sup>
- A general absence of the ability to analyse broadband options available is a significant blockage to regional consumers choosing the most appropriate connection option.
- Education attempts by ISPs are often rejected by regional consumers due to a general mistrust of biased advice from ISPs caused by experiences with previous poor products used by themselves or their neighbours.

### 15. To what extent is public information on connectivity options, including predictive coverage data and speeds, sufficient to help regional customers make informed decisions? What other information is needed?

- **Poor coverage claim accuracy.** The current 'coverage' maps provided by the carriers are inaccurate (overly optimistic in most cases), misleading, and not at all user-friendly (poor user interface) and do not provide an accurate picture of the availability of the capacity on the networks. Each generation of coverage map tools released by carriers seems to become less and less useful, with less and less detail and reduced useability.
- **Impact of inaccurate mapping on Mobile Black Spot funding allocation.** Further, overly optimistic coverage forecasts provided by the carriers significantly negatively impact the ability to make useful recommendations for Mobile Black Spots programs. If a carrier claims to have coverage in an area (whether there is coverage there or not), this area becomes ineligible for nomination as a Black Spot, so poorly served areas can be overlooked when service is still required.
- **Need for impartial analysis.** There is a continuing demand for impartial advice from consumers on IT and telecommunications issues. Regional consumers are more likely to need more individual advice and assistance on a one-to-one basis given social isolation and the distance to access support services (if even available).

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<sup>1</sup> <https://www.wa.gov.au/government/have-your-say-digital-inclusion-western-australia>

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

- **Performance monitoring.** The Commonwealth should fund a neutral third-party national performance monitoring program that holds carriers to account for their claims of coverage and performance.
- **Carrier diversity and competition.** There is currently insufficient diverse infrastructure in regional Australia. This results not only in a lack of competition to drive service improvements up and prices down but also limits carrier diversity for important mission critical services like satellite earth stations, regional data centres and emergency services. The Commonwealth should be fostering the adoption of new, competitive infrastructure in regional areas to address this issue.

### **OTHER LOCATION-SPECIFIC ISSUES AND THE IMPACTS OF THOSE ISSUES TO REGIONAL COMMUNITIES:**

Data capacity upgrades to mobile services should be prioritised where major projects are under construction-- e.g., Kemerton Industrial Park WA and Bunbury Outer Ring Road WA.

#### **GASCOYNE:**

##### *Telecommunication Summary*

- Current poor coverage in the non NBN parts of the town (Carnarvon)
- Slow speeds when visitor numbers are high

##### *Poor telecommunication service impact*

- Reputational damage for the town heavily reliant on tourists.
- Business impact of slow internet speeds
- Education is heavily reliant on mobile and internet coverage. Poor education outcome risk especially if COVID pandemic had required increased WA lockdowns

#### **Exmouth:**

##### *Telecommunication Summary*

- The town of Exmouth can reach a population of approximately 20 000 during the peak tourist season. Traditionally the peak season was March to October, however since the COVID outbreak Exmouth has received consistently high visitor numbers throughout the year. During periods with high visitor numbers both mobile and the NBN congestion systems stall.
- The congestion issues will be amplified during the Exmouth Solar Hybrid Eclipse event in April 2023 when visitor numbers are expected to reach 50 000.
- A recent doubling of capacity was immediately taken up.

##### *Poor telecommunication service impact*

- Reputational damage for the town heavily reliant on tourists.
- Business impact of slow internet speeds
- Telehealth medical video access is difficult when speeds are slow
- Education is heavily reliant on mobile and internet coverage. Poor education outcome risk especially if COVID pandemic had required increased WA lockdowns

#### **SHARK BAY**

### *Telecommunication Summary*

- Slow speeds during school holidays when there is a large influx of tourists.
- Require continuous mobile and landline coverage. Outages of both mobile and landline coverage have occurred since April:
  - April 8 a few days prior to Cyclone Seroja crossing the coast
  - 4 July 2021 through to Monday 5 July 2021 a 27-hour outage.
  - August 11

### *Poor telecommunication service impact*

- An outage of telecommunications services just prior to a Cyclone crossing the coast places a remote community like Denham at significant risk. The emergency services couldn't be provided with updates and in turn the community couldn't be provided with updates to manage their safety.
- Medical services in many instances require a video meeting to provide service. With a high proportion of residents over 50 and no Doctor based in the town reliable telecommunications is important for routine and emergency medical needs. This is especially so in the case of an emergency when a doctor needs to visually direct over video, nursing staff.
- Outages and slow speeds are damaging to the reputation of the town for visitor experiences. Outages have created substantial difficulties for visitors to access booking details, use an EFTPOS to access fuel, food and cash.
- Outages and slow speeds can be damaging to business reputation and bottom line.
- Outages are a major threat to life as 000 calls are unable to be made so responders could not provide assistance.
- Education is heavily reliant on mobile and internet coverage. Poor education outcome risk especially if COVID pandemic had required increased WA lockdowns

## **UPPER GASCOYNE**

### *Telecommunication Summary*

- The Mount Augustus tourist park has recently upgraded to small cell 4G Telstra and 4G Optus
- Township of Gascoyne Junction only has 3G
- There has been a decline in telecommunication service since February 2021 after substantial rainfall and flooding.
- During the flooding in February the town had limited mobile and landline coverage and in some instances no coverage
- Very slow to no coverage is common for part of a day

### *Poor telecommunication service impact*

- With no doctor, nurse or ambulance based at Gascoyne Junction emergency medical services access is critical to manage an emergency medical event
- Poor EFTPOS services at times during the day impact the reputation of the town that relies heavily on Tourism service.
- Road damage occurs when people are not able to get an update on road closures prior to travelling. Damage to unsealed roads is a large component of the Shires expenditure with a low level of rates to manage the repairs. With large numbers of tourists travelling in the region and a wet year in 2021 compounded by inconsistent telecommunication leads to expensive damage to roads.
- Education is heavily reliant on mobile and internet coverage. Poor education outcome risk especially if COVID pandemic had required increased WA lockdowns

### ***Special mention***

- Mount Augustus National Park located 460km East of Carnarvon.
  - **Four people have perished hiking the rock in the past two years.**
  - One proposal to improve telecommunication for visitor safety is for four macro cells at an estimated cost of \$4million to give safety coverage for the rock. There may be additional costs for the satellite backhaul.