

Submission

to the Regional Telecommunications Review 2021

From the Goldfields Voluntary Organisation of Councils
(GVROC)

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1. Background and Context

1.1 Background to Goldfields Esperance Region

The GVROC region is vast, covering a land area of approximately 940,000 km² and comprising red deserts, expansive mineral wealth, the magnificent Great Western Woodlands, and the iconic white, sandy beaches of the Southern Ocean. The region is renowned for its lifestyle, its friendly people, a great sense of community combined with excellent facilities and great opportunities.

As the largest region in Western Australia covering a third of the State, GVROC regional communities and economic activity is relatively isolated from the major urban centres and capital cities of Australia, however this drives an entrepreneurial and pioneering spirit amongst its people, strong and resilient communities, and the freedom to live in one of the most beautiful, natural, safest, and least populated areas of the world. Approximately 55,000 people live in the region.

The region generates over \$25 billion per annum in economic output, with around 32,000 employed people working in the region, and nearly 4,500 businesses, half of which are sole traders.

Major industries include mining; manufacturing; construction; rental, hiring and real estate services; transport and logistics; agriculture, forestry, and fishing; education and social services and tourism. The region produces an array of resource and agricultural commodities, and imports and exports product across the globe, through the Southern Port facility in Esperance. Founded on mineral wealth and a strong mining heritage, the region is an important mining hub for Western Australia accounting for over 10% of the State's mineral and petroleum production.

Approximately 80 percent of the Region's population, 70 percent of jobs and 87 percent of businesses are concentrated in the two most populous local government areas of the City of Kalgoorlie Boulder and the Shire of Esperance, with a significant portion of the region's Indigenous population residing in more remote towns and communities across the Region. A further 23 percent of jobs in the Region are located in the minerals industry intensive Shires of Laverton, Leonora and Coolgardie.

Aboriginal and Torres Strait Islander people represent nearly ten percent of the region's population. The character of the Goldfields-Esperance region reflects our unique Aboriginal culture, the legacies of early mining and agricultural pioneers, and a multi-cultural history of interstate and international migration.

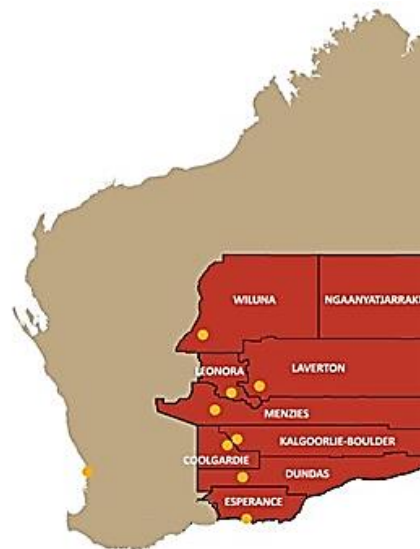
The Region accounts for approximately 3 percent of State GDP, with its dominant minerals sector accounting for 80 percent of regional exports, one-third of all regional jobs and 45 percent of the Region's total payroll.

1.2 Background to Goldfields Voluntary Regional Organisation of Councils (GVROC)

The Goldfields Voluntary Regional Organisation of Councils (GVROC) was formed in 2007, with the overarching principle to develop a strategic alliance of Local Governments in the Goldfields, who contribute and work together to ensure development and retention of infrastructure and community services and undertake joint economic development initiatives, through grant funding with the State and Federal governments plus the private sector, to enhance the region.

It consists of the:

- Shire of Coolgardie
- Shire of Dundas
- Shire of Esperance
- City of Kalgoorlie-Boulder
- Shire of Laverton
- Shire of Leonora
- Shire of Menzies
- Shire of Ngaanyatjaraku
- Shire of Wiluna



The GVROC also look to enhance service delivery and infrastructure for its collective and individual communities and to achieve a sustainable, cost-effective model for sharing of resources.

1.3 Interest of the Goldfields Voluntary Regional Organisation of Councils in Telecommunications

The geographical expanse and sparsely distributed population and industry in the Goldfields Esperance region presents a challenge to accessing telecommunications infrastructure for industry and the community. Access to broadband internet is limited outside of major towns, with regional residents and businesses often dependent on slower and less reliable satellite broadband for internet connectivity. Combined with cellular phone network coverage of only approximately 33% of the geography of the Goldfields Esperance region, telecommunications and digital connectivity is a significant obstacle for economic development with businesses operating outside of major centres that do not have the capacity to establish private networks.

This GVROC Submission seeks to address the Australian Governments Regional Telecommunications Review 2021 conducting a review of the adequacy of telecommunications services in regional, rural, and remote parts of Australia through a focus on the Goldfields Esperance region.

2. Addressing the 2021 Regional Telecommunications Review Terms of Reference

2.1 The Impact of Government Policies and Programs to Improve Regional Connectivity and Digital Inclusion

The Australian Government in the past has been dedicated to supporting telecommunications in regional Australia through the regional rollout of the National Broadband Network, the Mobile Black Spot Program, commitments to a review of consumer safeguards and the Universal Service Guarantee. In 2018, the Australian Government released a 2018 Regional Telecommunication Review which found that more than 96% of premises in regional Australia had access to the National Broadband Network (NBN) or had construction underway to allow access.

Over 600 Mobile Black Spot Program towers have been deployed, with future rounds of this program noted. The report highlighted deployment of 5G networks and Low Earth Orbit satellite networks bringing competition to existing networks.

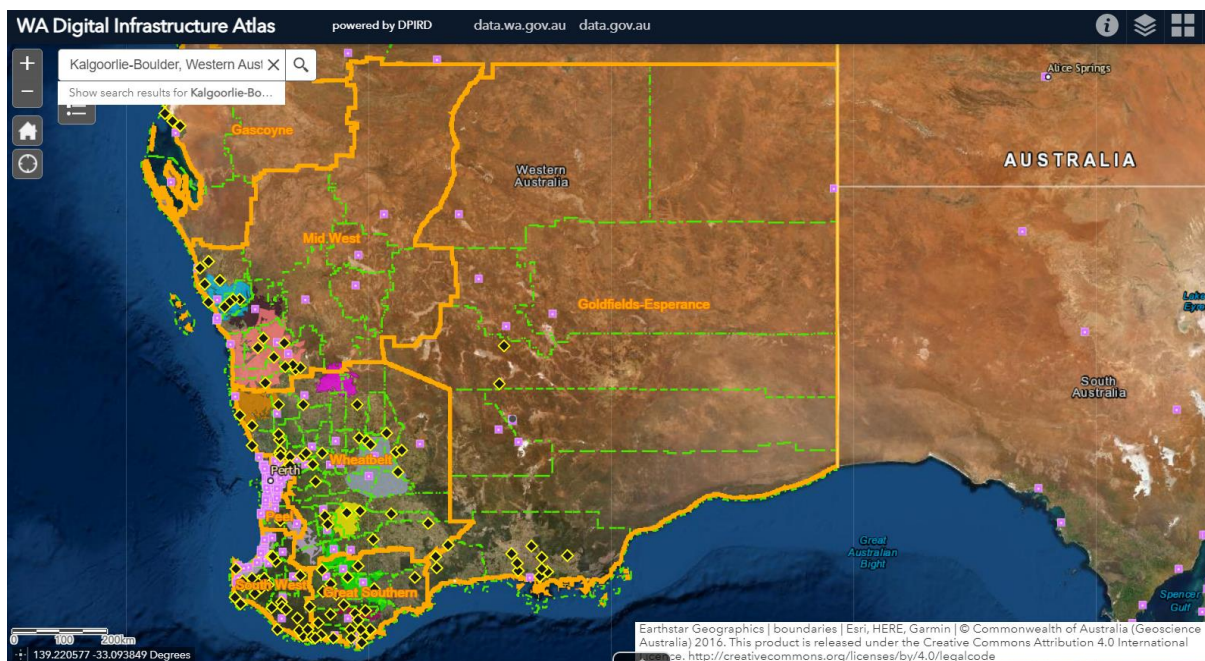
While these achievements have improved services for some regional telecommunications users, the following issues were noted:

- There is a divide between regional customers with a fixed-line broadband service and reliable mobile coverage versus customers reliant on the Sky Muster satellite service with data limitations, congestion on the fixed wireless network, and poor mobile coverage, resulting in an economic cost for regional business.
- The experience of customers on the Sky Muster satellite service falls well short of needs and expectations, with business and community demand for data increasing and the use of digital technologies increasing.
- There are little to no free-market drivers to stimulate the change required in the telecommunications industry's current limited focus on regional needs.
- There is a need to modernise the Universal Service Guarantee by guaranteeing ongoing access to broadband as well as voice with the services covered by the Universal Service Guarantee needing to meet regional, rural and remote Australian's expectations.
- Excessive repair times are reported by the community for landline services.
- There is a disconnect between the actual quality and reliability of services delivered compared to the theoretical maximum speed of packages being sold including what NBN Co offers on the performance of the Sky Muster satellite service.
- Access, affordability, and digital ability are major issues for Indigenous communities with these communities being at risk of being excluded from the business and social opportunities apparent from digital technologies.

The above issues remain pertinent to the needs of residents outside the major centres of the City of Kalgoorlie Boulder and the Shire of Esperance in the Goldfields Esperance region.

The Western Australian Government has also been active in seeking to improve the telecommunications services offered to regional Western Australians. The Western Australian Government is committed to improving mobile connectivity in regional Western Australia, through its Regional Telecommunications Project (RTP) and the Regional Mobile Communications Project (RMCP) programs administered by the Department of Primary Industries and Regional Development (DPIRD) in recognition that mobile connectivity is essential to maximising the full potential of regional businesses and communities. The RTP and RMCP have partnered with the Australian Government's Black Spot Program. The State's investment of \$105 million since 2012, has expanded mobile coverage and reduced communication gaps in small, rural communities and at strategic locations across regional Western Australia. This investment is funding 375 new or improved mobile communication infrastructure sites. DPIRD has also supported the eConnected Grainbelt Project's WA Internet of Things (IoT) Decision Ag Grant Program and the Grainbelt Digital Enhancement Program (GDEP) aiming to deliver high capacity backhaul wholesale broadband connectivity to improve access to digital technology to far-reaching, broad coverage areas throughout Western Australia's grain belt.

Despite both the Australian and Western Australian Governments targeting telecommunications black spots, to date only a small number of projects have supported the Goldfields Esperance region. The WA Digital Infrastructure Atlas lists 14 Mobile Black Spot Round 1 base stations out of over 600 sites supported nationally. Furthermore, the 2018 Australian Government Mobile Black Spot Program Priority Locations listed 125 specific priority locations of which none were in the Goldfields Esperance region.



Fourteen Mobile Black Spot Round 1 Base Stations in the Goldfields Esperance Region (Black and Gold Diamonds) - WA Digital Infrastructure Atlas

2.2 Insights from COVID-19 on the Changing Digital Needs of Regional, Rural and Remote Areas

The Goldfields Esperance region with advent of COVID 19 has seen increased investment after an initial fall and a reduction in unemployment. Unemployment has reduced to 3.83% as at March 2021. COVID 19 has resulted in closure of State and international borders restricting migration and access to foreign workers.

Job vacancies are a key issue for the region with the WA Chamber of Minerals and Energy noting that there were more than 1,000 vacancies in the Kalgoorlie-Boulder mining sector alone. Some mining companies in the region are offering higher wages and bonuses to employees if they can refer new workers. Kalgoorlie Esperance region has previously been endorsed for the Regional Sponsored Migration Scheme (RSMS) which allows Australian employers in regional and low population growth areas of Australia to nominate skilled workers from overseas to fill skilled vacancies in their business in order to alleviate skill shortages.

In response to COVID 19 and skills shortages, reliance on digital technology and the telecommunications that underpins it have become more critical to businesses and community organisations.

Adoption of digital technology and the use of Zoom and Microsoft Teams teleconferencing during the COVID 19 pandemic has also made living in regional areas more attractive. In 2020 the Australian Bureau of Statistics registered the largest inflow of Australians moving to regional areas from capital cities since records began. A net 43,000 Australians moved to regional areas from capital cities in 2020, according to the ABS figures.

In the Goldfields Esperance region, adoption of digital technology, Zoom and Microsoft Teams teleconferencing has made extra demands on the existing telecommunications infrastructure. Companies have increasingly looked at alternative providers and private networks to the major providers NBN, Telstra and Optus, to both increase access to services and reduce costs.

For remote communities and in particular indigenous communities, the lack of access to communications services such as broadband and mobile telephony and a reliance on satellite services has highlighted the digital divide with more populated areas. New technologies require higher bandwidth capability and remote communities are increasingly falling behind in being able to access this capability which requires recognition by the Australian and Western Australian Governments to support greater resourcing.

2.3 Service Reliability Issues Which Impact Regional Communities and Options for Mitigating Them

The Goldfields Esperance region's remote areas continue to have no, or poor, mobile phone voice and data reception, affecting quality and reliability of services.

The lack of connectivity disadvantages people in areas who rely on mobile connections for business, social connection with family and friends, access to services such as telehealth, education, and welfare services. Access to across the counter services is not an option in remote regional areas. Access to reliable telecommunications can also be critical in an emergency in response to extreme weather, bushfires, flooding or road accidents. A lack of mobile coverage can delay response times, increasing health and property risks.

The 2019 Australian Infrastructure Audit acknowledges that mobile services in regional, rural, and remote areas can be costly and poor quality, and that coverage gaps affect community safety, liveability and productivity. However, the development of business cases for attracting funding to deliver services can be challenging given large distances and the small number of people in remote communities.

Australian Government support to leverage interest from both major telecommunications providers and new smaller providers can be a cost-effective means of delivering telecommunications to remote communities. An example of this approach is provided in section 2.5 Ways of Encouraging Further Investment in Regional Telecommunications.

2.4 The Role of Emerging Technologies in Delivering Telecommunications Services in Regional Australia

Local government is increasingly recognising the importance of technology supporting smart city concepts that can build community services and future economic activity with access to low power sensors and Internet of Things (IoT) solutions, data informed decision making, wireless networks, and web and mobile based applications. The Federal Government has recognised Smart Cities policy priorities including Innovation and Digital Opportunities which aims to harness the productive potential of information and communications technologies and the digital economy, and to make more data publicly available. The IoT Alliance Australia Association has recognised the benefits of IoT in the delivery of a range of services by government.

IoT drives innovation & improves outcomes across cities



Public Safety

- Situation awareness
- Security, surveillance video & drones)
- Weather, flood & events monitoring



Energy & Renewables

- Sustainable use
- Load management
- Resource optimisation
- Waste to energy



Infrastructure & Resources

- Asset management & tracking
- Robotics, autonomy & safety
- Infrastructure maintenance
- Resource optimisation



Smart Cities

- Asset management & tracking
- Smart parking
- Smart bins & waste management
- LED street lighting



Smart Vehicles

- Driver assistance
- Video evidence
- Maintenance management
- Autonomous operation
- Safer, better utilisation, sustainable



Urban Farming

- Vertical & rooftop gardens
- LED lighting & hydroponics
- Food security & safety
- Farm to fork
- Smart warehousing
- Smart supply chains

IoT and Government's Role in the Development of Cities– IoT Alliance Australia

Similarly, private sector groups are adopting private networks, private WiFi and IoT as a means of delivering new services in a cost-effective manner. An example of a project in the Goldfields Esperance region to adopt both private networks and a range of new services is the Esperance Digital Farm Network (EDFN).

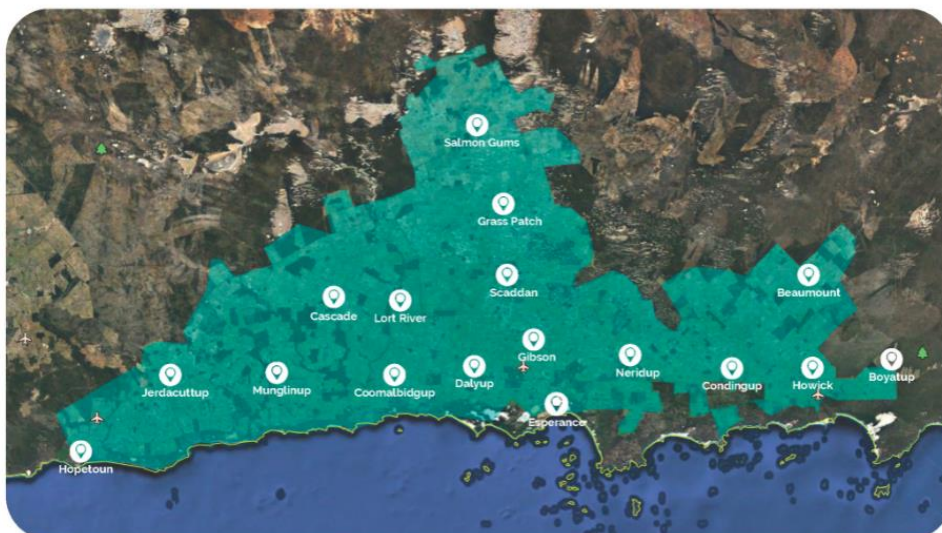
The EDFN was supported in 2021 by a \$3 million State Government Digital Farm Grants program grant towards developing business grade internet across the Esperance district. Led by the South East Premium Wheatgrowers Association (SECWA) and CipherTel, a regionally based and WA owned telecommunications carrier, the EDFN seeks to address poor internet connections for many Esperance farm businesses and supports the adoption of new agricultural technologies.

The proposal leverages several existing Telstra Towers and fibre infrastructure to develop a new Fixed Wireless network, bypassing congested satellite and old copper lines. The network will initially cover 70 per cent of the Esperance farmland and is extendable. With a small dish antenna on the roof of the farm office or home, the network will connect users up to 20km from the Tower (line of sight) and will deliver speeds of up to 80 Mbps Download and 40Mbps Upload with unlimited data usage. Once connected, high speed, low latency internet can be used for work, education, safety, and entertainment.

Internet can be distributed on farm via Wi-Fi or low powered IoT networks to connect a multitude of devices enabling data collection, monitoring and control and real-time remote support to growers. Captured data can be analysed and provide valuable insights enabling better decisions on farm to improve production, reduce chemicals and fertiliser usage, and better manage plant disease or nutrient deficiencies.

To connect to the network, users are required to contribute a fee per site to be connected. This connection fee covers the cost to install and commission the end-user equipment on the farm office or home. The network also offers a range of internet plans with varied speeds and prices including a business grade internet service superior to offerings available via satellite. Speeds and data plans offered by the Esperance Digital Farm Network are much higher than satellite and generally much cheaper and consistent than mobile internet options and prices are comparable to enterprise-grade internet offered in the Perth CBD.

ESPERANCE DIGITAL FARM NETWORK - COVERAGE CAPTURE AREA



Private networks such as the EDFN provide an example of an alternative approach to engaging with smaller local providers as opposed to exclusive funding of the major telecommunications providers in Australia. Other companies in Western Australia supporting private networks and IoT solutions includes Logic IT, Node One and Space Angel.

IoT networks such as the EDFN includes LoRaWAN or Low-Power, Wide-Area Networks (LPWAN) which are growing as private networks supporting IoT devices. LoRaWAN is unique in LPWAN wireless communication technology in that it has multiple deployment and business models to solve the needs of IoT business cases and applications globally. Deployment options include Public, Private and Hybrid networks. Private LoRaWAN Networks essentially mean that a customer can deploy their own gateways, provide their own backhaul, and deploy sensors in range of those gateways in a cost-effective manner. This contrasts with Public Networks where customers pay a network operator to connect their sensor without the need to deploy gateways with backhaul.

There are also opportunities to engage with companies interested in private 5G networks. A private 5G network is a wireless local area network (LAN) that uses 5G-enabled technologies to create a network with dedicated bandwidth and infrastructure that meets a company's specific connectivity needs. 5G is capable of transmitting speeds up to 100 times faster than 4G LTE.

A further opportunity is the announcement by the US based Space X that it is interested in deploying regional telecommunication services in Australia. Space X is a global provider of rocket launch services and has over 100 future missions planned, including with the National Aeronautics and Space Administration (NASA) and the US Government representing over \$US10 billion in contracts. Space X Starlink has a global network supporting satellite internet, seeking to deliver high speed internet to remote and regional locations globally.

With private networks, there are also opportunities to acquire Spectrum Licence from the Australian Communications and Media Authority (ACMA) to rollout their own 4.9G / 5G telecommunications network and get local suppliers to rollout and maintain. ACMA are an independent Commonwealth statutory authority. ACMA regulate communications and media services in Australia to maximise economic and social benefits and deals with content matters, telecommunication company consumer issues, compliance and enforcement and spectrum management. ACMA approves spectrum licences allowing entities to operate a range of radio communication devices with a spectrum licence supporting a geographical area and a frequency range.

There is an opportunity for local governments and indigenous communities in remote areas to apply for spectrum as part of planning for private networks which should be encouraged by the Australian and Western Australian Governments.

With the growth of private networks supporting business cases for accessing new technologies in a cost-effective manner for regional communities and business, Australian and Western Australian Government support can accelerate the development of private networks through recognition of their importance and the provision of funding.

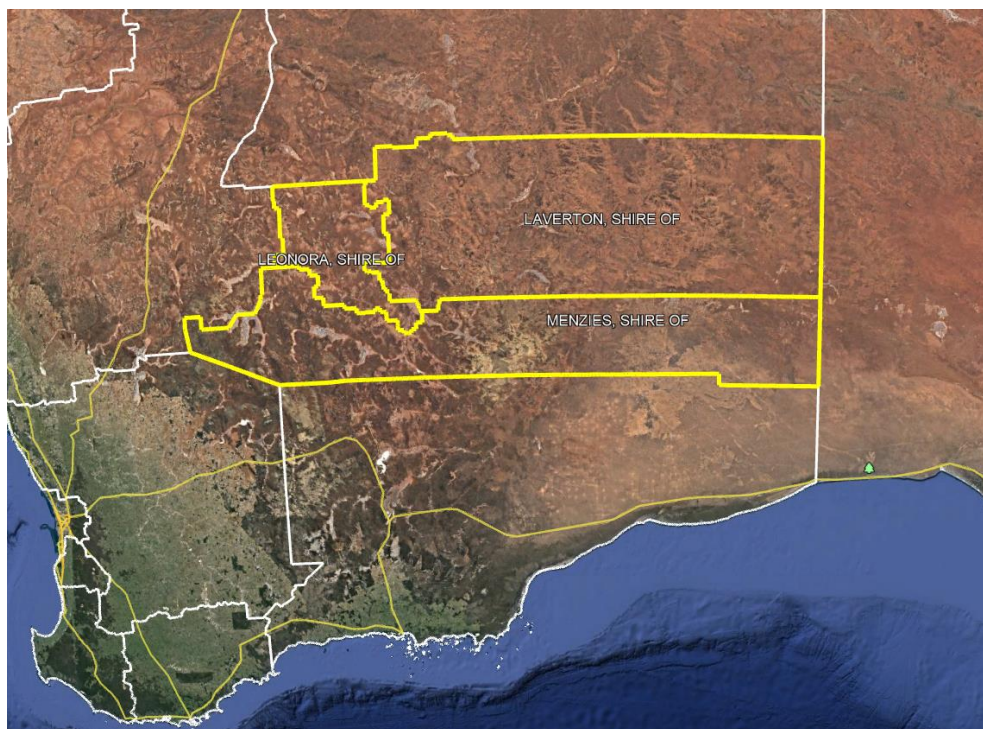
2.5 Ways of Encouraging Further Investment in Regional Telecommunications

As previously noted, Government funding support can leverage interest from both major telecommunications providers and new smaller providers that can be a cost-effective means of delivering telecommunications to remote communities.

An example of this approach is the Western Australian Government seeking applications from telecommunications carriers under the Northern Goldfields Digital Connectivity Grant Program to partner with the State Government in a project to deliver improved digital connectivity to local businesses, and communities in the Northern Goldfields.

A total of \$1 million in co-contributions has been allocated to provide fast, reliable, scalable, and affordable broadband to local businesses and communities in the Leonora, Laverton and Menzies districts. Submissions are encouraged from carriers that supply terrestrial or non-terrestrial telecommunications services, including providers of emerging digital connectivity options. The project will ensure enterprises in this remote area have access to digital services needed by modern businesses to operate in today's marketplace. This includes improved internet connection, as well as sufficient bandwidth and coverage to operate IoT devices, such as monitoring and sensing tools that are important to build business efficiencies and capacity in remote locations.

The Australian Government should also consider programs to leverage co-contributions towards private networks that fill the gap in providing broadband to regional areas such as those in the Goldfields Esperance region.



Areas Supported by the WA Government Northern Goldfields Digital Connectivity Grant Program

2.6 The Role of Telecommunications in Supporting Broader Regional Development Goals

Advanced telecommunications are vital for large investors in mining and large industrial projects. Investment by the private sector in major projects can be leveraged to support improved community access to telecommunication services.

Linking government telecommunications programs to engaging with large projects and private investors can support both the development of these projects and improvements in access to regional telecommunications.

The Goldfields Esperance region is attracting projects which are important to Australia's future in the supply of rare-earth to global markets, the supply of nickel for electric battery world markets, the supply of potash fertiliser to international markets and development of renewable energy and hydrogen to support decarbonised sources of energy. New projects and industries complement the regions traditional reliance on gold mining and agriculture. Some of the new projects being developed are of global significance and can be catalysts to supporting improved telecommunications infrastructure in the region. They include:

- **Lynas Rare Earths Ltd**- Lynas Rare Earths Ltd is seeking to build a \$500 million plant to process rare earths mined at Mount Weld in the northern Goldfields. Lynas is the only producer of scale of separated rare earths outside of China and the second largest producer in the world. Rare earths are used in many high tech and future facing industries, including electronics, wind turbines, catalytic converters, electric and hybrid motor vehicles and in defence applications.
- **Cassini Nickel Mine** - Mincor Resources Cassini underground nickel mine is Kambalda's first new nickel development in two decades. Kambalda is 59 kilometres southeast of Kalgoorlie. The project will support 200 jobs and represents an investment of \$98 million. The nickel industry has seen increased demand with nickel with it being a vital part of the market growth in lithium-ion batteries in electric cars.
- **Australian Potash's Lake Wells Potash Project** - Australian Potash's Lake Wells Sulphate of Potash project is located approximately 500kms northeast of Kalgoorlie, in the north-Eastern Goldfields and consists of granted mining leases and exploration licenses covering a total of over 1,200 square kilometres. Sulphate of Potash is primarily used as fertiliser for agriculture. The value of the total project is \$292 million. Australian Potash has received a \$140 million loan facility to further develop the project through the Northern Australian Infrastructure Facility (NAIF).
- **Western Green Energy Hub** - The \$100 billion Western Green Energy Hub (WGEH) supported by Intercontinental Energy and CWP Global seeks to produce 3.5 million tons of zero carbon green hydrogen, or 20 million tons of green ammonia each year, for both domestic consumption and export. Covering a 15,000km² area in the Goldfields-Esperance region, the WGEH would be world's biggest renewable energy hub and could generate up to 50GW of wind and solar energy. Around 30GW from the hub is expected to be produced from wind, with the rest generated by solar power. The project is at a feasibility stage of development.

2.7 Ways to Improve Co-ordination between Government and Industry in Telecommunications Investment

The Australian Government has a range of grants and finance programs to support regional development, industry development and investment in regional and remote locations.

Regional telecommunications should be considered as part of their selection criteria for these programs which will support telecommunications development in regional and remote areas such as the Goldfields Esperance region. These programs would then complement Australian Government programs direct support for telecommunications in regional areas already referred to in this submission including the National Broadband Network, the Mobile Black Spot Program and the Universal Service Guarantee.

Australian Government programs which can be relevant to complementing telecommunications development in the Goldfields Esperance include:

- **Building Better Regions Fund (BBRF):** The BBRF supports the Australian Government's commitment to create jobs, drive economic growth and build stronger regional communities and can provide up to \$10 million per project.
- **Modern Manufacturing Initiative (MMI):** The MMI supports projects that integrate Australian businesses into domestic and international value chains, supporting the export of goods and services into new markets. MMI provides co-funding to encourage linkages between local businesses and domestic and international firms, increasing scale, supply capacity, and the ability to innovate. Co-funding grants under MMI are available of between \$1 million to \$20 million, up to 50% of the eligible project expenditure.
- **Cooperative Research Centres Projects (CRCP):** CRC-P Grants provide funding for short-term research collaborations. Matched funding of between \$100,000 and \$3 million. Grants are for up to 3 years.
- **Accelerating Commercialisation:** Accelerating Commercialisation provides expert guidance, connections, and financial support to assist small and medium businesses, entrepreneurs and researchers to find the right commercialisation solutions for their novel products, process or service. Funding is through competitive matched grants of up to \$1 million over two years for commercialisation activities.
- **Australian Renewable Energy Agency (ARENA):** ARENA is an Australian Government agency established to support the global transition to net zero emissions by accelerating the pace of pre-commercial innovation, to the benefit of Australian consumers, businesses, and workers. Since 2012, ARENA have supported 602 projects with \$1.77 billion in grant funding, unlocking a total investment of almost \$7.75 billion in Australia's renewable energy industry.
- **Clean Energy Finance Corporation (CEFC):** The CEFC is an Australian Government owned corporation established to lead investment in Australia's transition to a low emissions economy. This includes working with co-investors across renewable energy generation and energy storage, as well as agriculture, infrastructure, property, transport, and waste.

- **Australia's National Hydrogen Strategy:** The Australian Government has allocated \$275.5 million to accelerate the development of hydrogen hubs in regional Australia and implement a clean hydrogen certification scheme.

The Australian Government should also consider linkages with Western Australian Government regional and industry development grants programs indirectly relevant to telecommunications development in the Goldfields Esperance. Some of the direct programs support for telecommunications in regional areas by the Western Australian Government have already been referred to in this submission including the Regional Telecommunications Project (RTP) and the Regional Mobile Communications Project (RMCP) grants.

Western Australian Government programs indirectly relevant to telecommunications development include:

- **Regional Economic Development (RED) Grants:** The RED Grants program is a Western Australian Government initiative that invests in community-driven projects that support efforts to create long-term economic growth and job sustainability in our regions. The program will invest \$40.8 million towards the RED Grants program over seven years for projects that will directly benefit regional communities.
- **Digital Farm Grants Program:** The Digital Farm Grants program provides funding for last-mile solutions for agribusinesses in agricultural and pastoral regions that lie outside the current or planned NBN fixed wireless and fixed line footprint.
- **WA Internet of Things (IoT) Decision Ag Grant Program:** The WA Internet of Things (IoT) Decision Ag Grant Program was designed to demonstrate on-farm connectivity solutions to support remote digital farm monitoring with IoT sensors and devices, even in areas without current farm-wide connectivity.
- **Grainbelt Digital Enhancement Program (GDEP):** The GDEP is an initiative from the \$22 million Agricultural Telecommunications Infrastructure Fund. GDEP aims to deliver high capacity backhaul wholesale broadband connectivity to improve access to digital technology to far-reaching, broad coverage areas throughout Western Australia's grainbelt.
- **Western Australian Renewable Hydrogen Fund:** A \$50 million fund established to drive renewable hydrogen industry development with \$900,000 committed towards industry-led feasibility studies.

Better coordination at a State and Federal Government level with other regional development and economic development programs, will leverage a greater level of resources to support improved access to telecommunications in regional and remote areas in the Goldfields Esperance region.

2.8 Consumer Awareness and Education Regarding Telecommunications Options in Regional Areas

Australian, State and Local government programs and projects are investing in systems that deliver services and in particular support telehealth and distance learning to support more effective service provision as well as reduced costs of service delivery. Similarly, companies are investing in systems that support greater integration of regional and remote businesses into State and National systems.

However, regional and remote communities suffer from poor access to the internet, and they also lack access to the skills to use technology. Australian Bureau of Statistics have shown that Indigenous households are approximately 75% more likely than non-Indigenous households to not have an internet connection. Indigenous Australians face additional barriers around skills, affordability, and access to culturally appropriate technology. Digital inclusion and the digital divide are issues for the Goldfields Esperance region.

A major source of education and training to support digital inclusion and digital literacy is Western Australian Government support through the TAFE system. TAFE colleges at Kalgoorlie and Esperance support basic computer literacy and internet skills as well as Diploma and Certificate levels accreditation in Information Technology. TAFE also has a range of flexible programs for Aboriginal people including an Aboriginal Designated Placement Program offering a range of courses with designated places for Aboriginal students.

The Western Australian Community Resource Network (WACRN) also offers support for supporting digital inclusion. The WACRN comprise over 100 rural, remote, and regional Community Resource Centres (CRCs). The centres are not-for-profit organisations that are independently owned and operated by their local community. CRCs provide access to government and community services and information, and undertake community, business, and economic development activities.

A focus for CRCs in the past has been digital inclusion and access to training and services linked to digital access. The WACRN is supported by the Western Australian Government.

CRCs in the Goldfields Esperance region include:

- Norseman
- Coolgardie
- Leonora
- Tjuntjuntjara
- Kambalda
- Menzies
- Laverton
- Irrunytju



Tjuntjuntjara in the Goldfields Esperance Region

The Australian Government is also committed to supporting digital inclusion for regional and remote Australian communities. The Australian Government is increasingly focused on digital delivery of services over the internet. While a key focus of the Australian Government has been on the delivery of telecommunications infrastructure to regional and remote areas through the National Broadband Network, the Mobile Black Spot Program and the Universal Service Guarantee, more attention is needed to ensure regional communities are equipped with the skills to engage digitally.

An example of this approach by the Australian Government is the development of an Indigenous Digital Inclusion Plan (IDIP) by the National Indigenous Australians Agency, with support from the Department of Infrastructure, Transport, Regional Development and Communications. This work is part of the Australian Government’s response to the recommendations of the 2018 Regional Telecommunications Review. The IDIP will address key issues to improve Indigenous digital inclusion in the three areas of access, affordability, and digital ability.

Linkages between the Federal, State and Local Government over digital inclusion with higher levels of resources to support the WACRN network of Community Resource Centres (CRCs) and TAFE in the Goldfields Esperance region can support greater engagement by people in remote areas on enhanced digital access and skills development.



Bega Garnbirringu Health Service in Kalgoorlie Provides Telehealth Services to the Goldfields Esperance Region

3. Telecommunications Priorities for the Goldfields Esperance Region

3.1 Western Australian Government Priorities for the Goldfields Esperance Region

The Western Australian Government through the Department of Primary Industries and Regional Development (DPIRD) and the Goldfields Esperance Development Commission manage a list of telecommunications priorities for the Goldfields Esperance region.

The priorities list feature 42 sites which feature the following characteristics:

- Indigenous community sites with no Optus or Telstra coverage where improved connectivity and mobile access will assist with Aboriginal economic and social development and support emergency services operations and response times.
- Remote town sites with small populations where improved connectivity and better mobile communications will support improved connectivity and better mobile communications to support economic and social development and emergency services.
- Agricultural zones where improved connectivity and better mobile communications will significantly increase access to technologies supporting enhanced productivity in farming as well as support improved service access to farming families.
- Sites improved connectivity and better mobile communications will support existing and prospective mining operations.
- Sites where expanded digital connectivity will support tourism and economic diversification.
- Sites which will support improved connectivity and better mobile communications to improve safety for motorists and tourists accessing coastal national parks.

Linkages between Federal, State and Local Government over telecommunications priorities for the Goldfields Esperance region can progress these projects through improved collaboration and leverage of resources.



Menzies Town Hall in the Goldfields Esperance Region

3.2 Local Government Priorities for the Goldfields Esperance Region

Local Government in the Goldfields Esperance region are conscious of telecommunications needs for the Goldfields Esperance region. Major issues identified for Local Government in the Goldfields Esperance region includes the following:

- Mobile services in the Goldfields Esperance region are limited and non-existent outside major towns.
- The NBN Skymuster satellite service is congested and unstable.
- Bushfires and flooding have shown that telecommunications access has compromised emergency responses.
- The agriculture sector is using mobile coverage to link operations and improve business performance and is undermined by limited telecommunications access.
- Increase tourism requires increased mobile phone coverage.
- Access to telecommunication services is vital for access to health care, education, business and social services.
- Increasingly Government services such as myGov require access to telecommunications services in order to be accessible.
- Remote Aboriginal communities are in particular impacted by a lack of access to adequate telecommunications services.
- Increased Government support is required including matching funds from the Western Australian Government to complement the Federal Mobile Blackspot program and other potential Australian Government funding programs.

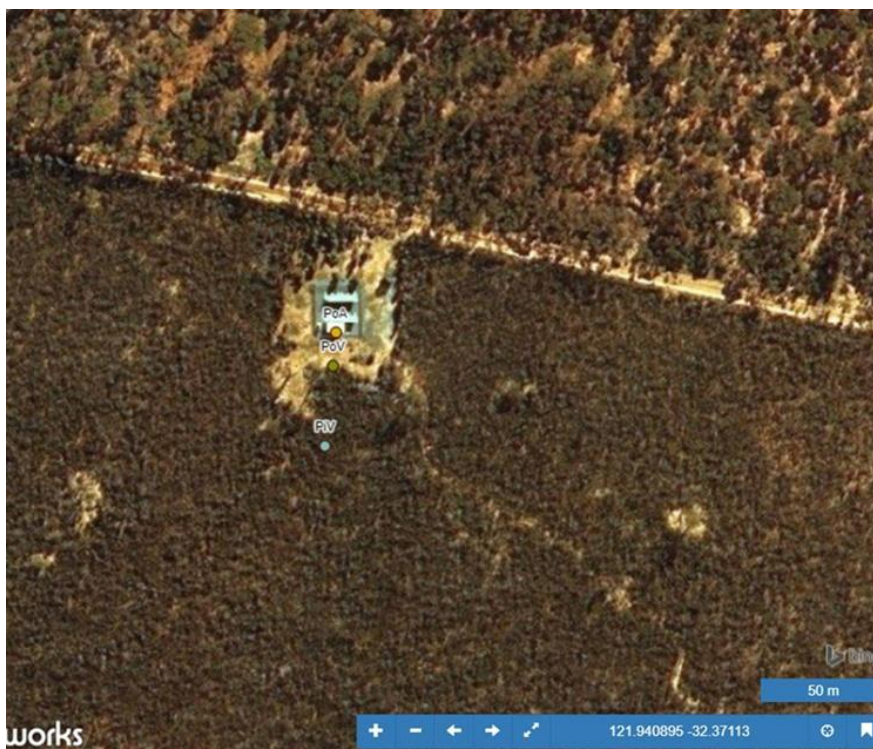
Specific issues for individual Local Government organisations in the Goldfields Esperance region have been identified as follows:

Shire of Dundas

The Shire of Dundas is a local government area in the Goldfields-Esperance region covering an area of 93,179 square kilometres with the Shire based in the town of Norseman. The following telecommunications issues have been raised by Shire of Dundas:

- Telstra is the monopoly provider of telecommunications services in the Shire of Dundas.
- The community of Dundas is reliant on old dial-up telecommunications access through the copper network providing limited service.
- The District High School and new mining operations in the region are impacted by substandard connectivity.
- COVID 19 has revealed severe issues for tourists and other external people regarding connectivity with mobile devices uploading or downloading images or opening documents to meet COVID entry requirements.
- Bushfires have also revealed gaps in telecommunications access including mobile services during emergency situations.
- The Shires of Dundas and Coolgardie and City of Kalgoorlie Boulder are critical locations in the National Freight Network and National Critical Infrastructure network and need better telecommunications coverage.

- East-west corridors include the Eyre Highway (A1), Trans-Australia Railway, interstate NBN Fibre-optic and Telstra relay stations.
- The north-south corridor includes the Esperance Coolgardie Highway, (A94, A1) Esperance gas pipeline and Esperance Branch Railway servicing mines to the Port of Esperance.
- NBN/Telecommunications nodes are regarded as being at risk and unmanaged making them vulnerable to bushfires.
- An understanding of the NBN bushfire management plan/ policy and program is required as part of bushfire preparedness.
- Data-sharing between NBN, Telstra and Department of Fire and Emergency Services (DFES) is needed to supply location information for Bushfire Risk Management Planning purposes, including Telstra shared occupancies.



Fibre Optic Booster Facility surrounded by high fuel load in the Great Western Woodland, Shire of Dundas

Shire of Esperance

The Shire of Esperance is a local government area in the Goldfields-Esperance region of Western Australia, covering an area of 42,547 square kilometres with the Shire based in the town of Esperance, where three-quarters of the Shire's population resides. The following telecommunications issues have been raised by Shire of Esperance:

- Better mobile coverage is required around coastal areas with multiple blackspots existing.
- Mobile services coverage is limited with mobile coverage on the edge Esperance also poor.
- Increased demand for digital data has been noted as an issue in poor performance of telecommunications services with existing towers being overloaded.

- More resources and money are required to increase the capacity of the existing towers to cater for increased demand.
- Matching funds from the Western Australian Government to complement Australian Government funding is critical to securing funds from the Federal Mobile Blackspot program which is in threat of being secured by other States with matching funding.
- Government requires the public to use more online services such as myGov without support for the telecommunications services to support increased usage.
- More farming practices are using mobile coverage to link operations and improve business performance and so mobile coverage is vitally important for those farmers to remain competitive with new technology.
- Improved mobile coverage is required for emergency services to support tourism and workers on remote sites.

Shire of Laverton

The Shire of Laverton is a local government area in the Goldfields-Esperance region of Western Australia, covering an area of 179,798 square kilometres with the Shire based in the town of Laverton.

The following telecommunications issues have been raised by Shire of Laverton:

- When travelling between Laverton and Kalgoorlie there is no mobile coverage other than close to the town sites or occasionally weak signals detected from nearby mining operations.
- When travelling east the reception is basically non-existent.
- With the upgrade of the road network, attention should be provided to improve telecommunications access with work on roads and telecommunications supported together.
- There is a need for both State and Federal Governments to work together to ensure improved telecommunications coverage for all types of emergency services.

Shire of Leonora

The Shire of Leonora is a local government area in the Goldfields-Esperance region covering an area of 32,189 square kilometres, with the Shire based in the town of Leonora. The following telecommunications issues have been raised by Shire of Leonora:

- Telstra has advised the Shire of Leonora that they have no plans to upgrade to better internet services in Leonora.
- There are currently no ASDL ports available in Leonora and Telstra has no plans to upgrade the exchange to provide additional capacity for internet.
- The Leonora community and business regards poor telecommunications as unacceptable and frustrating.
- The COVID 19 pandemic has required Australians to increase communication via online platforms and the Leonora community has been denied this basic need.

- Being geographically isolated, having access to telecommunication services is vital for access to health care, education, business and social services.
- The availability of NBN Skymuster satellite services in Leonora and Leinster does not satisfy the requirements of the Leonora community given it is costly and slow.
- Areas of the Northern Goldfields, including the Goldfields Highway and the Leonora-Laverton Road have no mobile reception.
- In an emergency, trying to find high ground for access to mobile reception is time consuming, costly, and potentially life threatening.

Shire of Menzies

The Shire of Menzies is a local government area in the Goldfields-Esperance region covering an area of 124,635 square kilometres with the Shire based in the town of Menzies. The following telecommunications issues have been raised by Shire of Menzies:

- Only Telstra telecommunications services are available North of Kalgoorlie.
- Large sections of the Goldfields Highway have no mobile reception for almost 400kms of road.
- Tjuntjuntjara access, once leaving the Trans Access Road, has no mobile reception.
- The town of Menzies has no fixed lines meaning all internet is via satellite.
- Major tourist areas have no mobile reception.

Shire of Ngaanyatjarraku

The Shire of Ngaanyatjarraku is a remote local government area in the Goldfields-Esperance region in Western Australia near the Northern Territory/South Australian border covering an area of 159,948 square kilometres with the Shire based in the town of Warburton. The following telecommunications issues have been raised by Shire of Ngaanyatjarraku:

- Warburton has 4G Network mobile coverage that is also congested later in the day when school age children and parents are home.
- The Shire currently relies on a 3G Network in the 9 Remote Aboriginal Communities that don't have 4G.
- ADSL 1 only is available in remote communities and those with 3G have very limited access to bandwidth.
- Outages are experienced on a regular basis at on average once a week.
- Fibre Optic Cable follows the Great Central Road, but access is cost prohibitive with access currently limited to State Government Departments.
- Plans for sealing the Great Central Road will increase tourism traffic but is not linked to addressing the lack of mobile phone coverage between Laverton to the Northern Territory border with Western Australia.

- Telecommunications shortcomings have been exposed during emergency situations as in January 2020, Eyre Highway was closed in WA due to fires, while the Great Northern Highway was closed due to floods in the Kimberley wet season. Telecommunications was not available to contact the Northern Territory to tell them to put up road closed signs to stop directing tourists through the flooded area and no access to phone lines meant that Eftpos, ATM and Credit Cards could not be processed and communications with Government agencies such as Centrelink was not possible.
- NBN Skymuster satellite service is becoming congested and the service unstable.
- Telstra is the only provider on the Lands, and they will only do something if it is commercially viable to them.
- The Telstra Community Service Obligation is outdated and not fit for modern requirements of telecommunications services.
- Starlink could be an opportunity going forward, with US based Space X indicating interest in service provision in Australia.



Shire of Ngaanyatjarraku Offices, Tjulyuru Cultural and Civic Centre, Warburton

4. Conclusion

The following key conclusions are noted as the main points of this GVROC submission into the Regional Telecommunications Review:

- Australian Government support for telecommunications in regional Australia is primarily through the regional rollout of the National Broadband Network, the Mobile Black Spot Program, commitments to a review of consumer safeguards and the Universal Service Guarantee.
- The Western Australian Government has programs seeking to improve the telecommunications services offered to regional Western Australians including the Regional Telecommunications Project (RTP) and the Regional Mobile Communications Project (RMCP).
- Despite Australian and Western Australian Government support, there continues to be a divide between regional customers with a fixed-line broadband service and reliable mobile coverage and customers reliant on the Sky Muster satellite service with data limitations, congestion on the fixed wireless network, and poor mobile coverage.
- Access, affordability, and digital ability are major issues for indigenous communities' access to telecommunications.
- Emergency telecommunications requirements for agencies such as the Western Australian Department of Fire and Emergency Services (DFES) are not being met in the Goldfields Esperance region, putting at risk Government responses to bushfires and flooding.
- Goldfields Esperance region continues to be disadvantaged with 14 Mobile Black Spot Round 1 base stations established out of over 600 sites supported nationally.
- The 2018 Australian Government Mobile Black Spot Program Priority Locations listed 125 specific priority locations of which none were in the Goldfields Esperance region.
- COVID 19 and skills shortages have led to greater adoption of new digital technology and the use of Zoom and Microsoft Teams teleconferencing in the Goldfields Esperance region, making additional demands on existing telecommunications infrastructure.
- Goldfields Esperance region remote areas continue to have no, or poor, mobile phone voice and data reception, affecting quality and reliability of services.
- Smart Cities approaches to services in regional Australia with low power sensors, Internet of Things (IoT) solutions, data informed decision making, wireless networks, and web and mobile based applications can support the case for investing in telecommunications in regional Australia.

- Private networks, private WiFi and IoT using LoRaWAN or Low-Power, Wide-Area Networks (LPWAN) is a means of delivering new services in a cost-effective manner with the Esperance Digital Farm Network (EDFN) an example of what can be achieved.
- There are also opportunities to engage with companies interested in private 5G networks.
- Space X Starlink has a global network supporting satellite internet, seeking to deliver high speed internet to remote and regional locations globally and may also offer opportunities for regional and remote communities.
- Spectrum Licences from the Australian Communications and Media Authority (ACMA) can support the rollout of 4.9G / 5G telecommunications networks supported by local suppliers.
- Government funding support can leverage interest from both major telecommunications providers and new smaller providers that can be a cost-effective means of delivering telecommunications to remote communities.
- Investment by the private sector in major projects can be leveraged to support improved community access to telecommunication services in regional and remote areas.
- In the Goldfields Esperance region, projects which are important to Australia's future in the supply of rare-earth to global markets, the supply of nickel for electric battery world markets, the supply of potash fertiliser to international markets and development of renewable energy and hydrogen to support decarbonised sources of energy, can also be leveraged to support community access to telecommunication services.
- The Australian and the Western Australian Government has a range of grants and finance programs to support regional development, industry development and investment in regional and remote locations which should consider as part of their selection criteria, support for telecommunications in regional and remote areas such as the Goldfields Esperance region.
- The TAFE system and the Western Australian Community Resource Network (WACRN) support digital inclusion and access to training and services linked to digital access and can achieve more with access to greater levels of resources.
- The Western Australian Government through the Department of Primary Industries and Regional Development (DPIRD) and the Goldfields Esperance Development Commission manage a list of telecommunications priorities for the Goldfields Esperance region currently featuring 42 sites which should be supported through linkages between Federal, State and Local Government.

In terms of recommendations to Government regarding resourcing of regional and remote telecommunications, this GVROC submission into the Regional Telecommunications Review notes the following:

- Despite both the Australian and Western Australian Government targeting telecommunications black spots in regional Australia, only a small number of projects have been supported for the Goldfields Esperance region even though this region covers more than a third of the State, and more funding support is required.
- Indigenous people in remote communities have limited access to telecommunications and this should be a priority for Australian and Western Australian Government funding in support of their digital inclusion.
- Emergency telecommunications requirements for the Western Australian Department of Fire and Emergency Services (DFES) and other agencies require additional funding to ensure the Goldfields Esperance region can respond to bushfires and flooding.
- New technologies require higher bandwidth and remote communities are increasingly falling behind in access to bandwidth which requires recognition by the Australian and Western Australian Government to support greater resourcing.
- With the growth of private networks supporting business cases for accessing new technologies in a cost-effective manner for regional communities and business, Australian and Western Australian Government support can accelerate the development of private networks through recognition and the provision of funding.
- Government support for the provision of Spectrum Licences from the Australian Communications and Media Authority (ACMA) can support the rollout of private telecommunications networks in remote and regional areas.
- The Australian Government should also consider programs to leverage co-contributions towards private networks that fill the gap in providing broadband to regional areas such as those in the Goldfields Esperance region.
- Linking government telecommunications programs to engaging with large projects and private investors can support both the development of these projects and improvements in access to regional telecommunications.
- Australian and Western Australian Government grants and finance programs supporting regional development, industry development and investment in regional and remote locations should be linked to regional telecommunications as part of their selection criteria for these programs which will support telecommunications development in regional and remote areas such as the Goldfields Esperance region.

- Linkages between the Federal, State and Local Government over digital inclusion with higher levels of resources to support the Western Australian Community Resource Network (WACRN) network of Community Resource Centres (CRCs) and the TAFE system can support engagement in remote areas on digital access and skills development.
- Linkages between Federal, State and Local Government over telecommunications priorities for the Goldfields Esperance region can progress these projects through improved collaboration and leverage of resources.

Finally, should you wish to discuss any of the GVROC's comments and suggestions in this submission, please contact either myself or our GVROC Executive Officer, Andrew Mann via the contact details contained at the front of the submission.

Kind regards



Malcolm Cullen – GVROC Chair
President, Shire of Coolgardie
30 September 2021