

Stephen Brown –

- [REDACTED]
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EXECUTIVE SUMMARY

The introduction to the Regional Telecommunications Review 2021 Issues Paper states that:

“Telecommunications plays a key role in supporting the productivity and wellbeing of regional, rural and remote Australia and the significant contribution the bush makes to the nation.”

In reality, for the community of Macdonald Valley, NSW, the shortfall and gaps in communications infrastructure and year-on-year ongoing infrastructure issues, detrimentally impact the productivity, wellbeing and resilience of the community, and limit the contribution of the community.

The paucity of telecommunication infrastructure has been underlined in recent years by multiple natural disaster events, isolating parts of the community in communications black holes. These are so evident that the community has taken it upon itself to seek grant funding to invest in a community UHF (CB Radio) network. Our community is now putting itself at the centre of managing a local solution and resilience building. It is somewhat giving up on the Government and providers to deliver basic services and improvements.

The following key telecommunications issues and actions highlight actions required to support our community's connectivity and digital inclusion:

- 1. Landline Infrastructure Failure – *ACTION REQUIRED: Intervention by Telecommunications Industry Ombudsman (TIO) & review of Telstra's Universal Services Obligation (USO) compliance.***
- 2. Mobile Blackspot not delivering on 2016 commitment – *ACTION REQUIRED: Intervention by both the Minister for Communications, Cyber Safety and the Arts & Australian Communications and Media Authority, commit to project & deliver***
- 3. Broadbands (ADSL + NBN Satellite) poor performance and reliability – *ACTION REQUIRED: intervention by Telecommunications Industry Ombudsman (TIO)***
- 4. Digital exclusion of our community – *ACTION Required: improve service performance and reliability & introduce and sustain digital inclusion awareness training***

Without addressing the individual sixteen questions posed in the Issues paper, it is evident from the range of experiences and issues that the community is not supported by telecommunications in multiple ways:

- **Digital exclusion** - Though only 90km from Sydney CBD, this is a community that is digitally excluded. Digital inclusion is the capability of individuals or groups to enjoy the benefits of being online and use technology confidently to improve their day-to-day lives. Important examples are limited access to sources of information in emergencies, such as the *Fires-Near-Me* or *Flood-Near-Me* apps, or broadcast warning alerts and restrictions on the ability to work or school at home. Limited telecommunications options, data limited and costly plans, unreliable service and poor performing telecommunications do not enable inclusion and access to the range of services or functionality expected of a digitally engaged community.

- **Reliability** – Regular and sometimes extended outages impact our community, which regularly faces natural disasters of flood and fire, as well as usual motor vehicle accidents, property accidents and household medical emergencies. We are not adequately supported by Fixed Voice, digital connectedness of NBN Satellite / ADSL or progress on the Blackspot Mobile programs. Frequent reporting of extended period Fixed Line outages and poor and fluctuation internet performance, is evidence that the root causes are not being addressed by service providers and Government. Further, there appears to be no means for collective community representation to be heard by senior Government and service provider representative.
- **Performance** - Bandwidth limits, and High Latency impact on the utility of the valley's broadband network. Low bandwidth, how much data can be transferred, is manifested as significant buffering and / or low quality of streamed content. High latency (the time it takes a data signal to travel to its destination and back) causes synch issues and freezing. This impacts on useability and functionality for a range of digital applications. Speed tests reported are:
 - ADSL (Download 0.60 – 6.00Mbps / Upload 0.80 – 1.00Mbps) with 30ms latency
 - Satellite (Download 4.83 to 21.26Mbps / Upload 0.33 to 4.59Mbps) with 800ms latency
- **Productivity, wellbeing and resilience** – For the components of telecommunications infrastructure that do exist, poor reliability and slow functionality are impactful. The result is that our telecommunications services do not play their key role in the continued function of everyday life and the productivity, wellbeing and resilience of our community. This is particularly highlighted during the extended period of working from home and home schooling for community members.
- **Co-ordination between government and industry** - Government has failed an opportunity to coordinate on investment – evident by significant fibre optic line investment targeting a solution at the local school whilst bypassing 7km of rural properties, and at the same time the school environs being the beneficiary of Black Spot Mobile small cell installation which went live in 2020.
- **Collaboration with communities** – Our community is continually overlooked and not meaningfully engaged by government and the telecommunications service providers / industry to ensure that investments in telecommunications are coordinated and deliver our needs. The lack of community engagement and consultation on the recent St Albans Black Spot mobile activities are a case in point, illustrating a disconnect and lack of interest by Government and industry representatives, who don't recognise communities as active, decision-making partners, and treat us as passive recipients of direction.

About the Macdonald Valley

The communities of the Macdonald Valley, the village of St Albans and the hamlet of Lower Macdonald are located along the Macdonald River, Webbs Creek, Wrights Creek and Mogo Creek and stretches over valley areas of approximately 35km x 10km, surrounded by National Parks. The valley is located 1.5 hours / 90 km from Sydney CBD and is included in the Greater Sydney Area. This is a historic and remote rural community of the Hawkesbury and Greater Sydney. The valley is made up of acreages, farms and residential block located in the village of St Albans and the hamlet of Lower Macdonald. The 2016 census summary below provides a snapshot, however does not illustrate the material proportion of regular residents with second homes in the valley:

- | | | | |
|--------------|------|-------------------------|--------------|
| • People | 596 | • All private dwellings | 349 |
| • Median Age | 50.5 | • People per household | -1~2.5 range |
| • Families | 140 | | |

KEY ISSUES IN OUR COMMUNITY – Adequacy, Reliability & Inclusion

Long term experience of the community, highlighted by the quadruple impact of the 2019/20 fires, 2020 flood isolation and 2021 flood isolation, and Covid 19 provide an actual experience of adequacy, service reliability, changing demand. The compounding effect of events and issues is summarised in the finding of Macdonald Valley Association Wellbeing Survey 2020 *“There is no doubt 2020 has been a tough year for the community of Macdonald Valley. The results show that this community was greatly affected by droughts, fires, smoke, floods and COVID-19. Over 40% of the population report that they are still feeling the effects of these challenging events.”*

Fixed Voice (Landline)

The greater part of the valley community is covered by the copper POTS (“plain old telephone service”) a basic voice and technology service. These lines suffer frequent outages.

- The collective experience of the community is that Telstra is failing in its Universal Services Obligation (USO). Telstra state that *“We fulfil our obligation to provide an STS (Standard Telephone Service) by giving customers access to a reliable telephone service that has good voice reception and ensures connections and faults associated with this service are undertaken and repaired within a reasonable time.”*
- Un-reliability of Fixed Voice is highlighted by an ongoing history of extended outages, lack of customer service engagement, recurrent issues not properly rectified and poor call quality. This contradicts Telstra’s USO statement. Typically, residents and parts of the valley will suffer Fixed Voice Landline outages multiple times in a year, as regularly flagged in community Facebook forums. Outages appear to emanate from shortfalls in ongoing maintenance, lack of upkeep or planned preventative maintenance to lines, fallen lines and damage to lines from fallen trees. The poor experience is also contributed to by poor and frustrating customer service experience, with experience of poor responsiveness and follow-up regularly shared amongst community members.
- Personal experience in the 2019/20 fires, when communicating directly with Andy Penn CEO of Telstra, is that in emergency situations there is insufficient local awareness engagement. So, whilst Telstra were referring to the area as an amber safety area and limiting access by their personnel, locals and volunteer fire fighters were living there and functioning day-to-day. Some local enquires and knowledge may have expedited Telstra’s access locally and commencement of repair actions.

Exchange Service

- St Albans’ phone exchange suffered a major multi-day outage in the March 2021 floods, following power supply being cut off. Some residents reported extended outages in the range of 1-3 weeks. The consequence for the community, especially with no 000 emergency call functionality, was a significant contributor to lack of emergency response information and isolation during the period of the floods. It is understood that failure to properly and regularly maintain backup power systems was the root cause. The need to then organise and helicopter in a generator and fuel as a work-around, meant that the community was in a telecommunications black hole for an extended multi-day period during this critical natural disaster event.

ADSL

Some residences within an approximate 5-7km radius of the St Albans phone exchange and Lower Macdonald do have ADSL, however, this is over-subscribed and provides sub-standard service capacity. Low Bandwidth and regular drop-outs are impacts of the oversubscribed service. Furthermore, being based on the copper lines, it’s reliability subject to the same issues as the Fixed Voice lines.

- ADSL connections use the copper phone line to deliver internet, while still allowing the use of the line for a home phone service. Access is limited to residences in an approximate 5-7km radius of the St Albans Exchange, however, this is over-subscribed and sub-standard in capacity for the demand and is known to regularly drop out.
- Reliability of ADSL is directly linked to reliability of the Fixed Voice lines, so ADSL users also experience regular and recurrent outages. For residents on the electricity grid, recurrent electricity outages cause disruption to household modem service, many residents have incurred the personal expense of installing backup electricity generators to carry household loads.
- Performance of ADSL is impacted by bandwidths constrains at Lower Macdonald reported ranges of (Download 2.1. to 14.00Mbps / Upload 0.04 to 1.30Mbps) and St Albans (Download 0.6 – 6.00Mbps / Upload 0.80 – 1.00Mbps) with 30ms latency.
- As recently as last week a resident reported Telstra’s advice to them *“Telstra no longer plans to support copper wire for data. Therefore, issues with ADSL are contractually a very low priority, and will only get worse”*. They also stated that *“they were aware that the system is over-subscribed, yet had no plans to rectify this.”* Believe it or not, their recommendation was *“to take up satellite NBN via another provider and not use Telstra for data.”*

Broadband (NBN) Internet

For a significant geographic area of the community, NBN satellite (Sky Muster) provides access to the National Broadband Network. The service is subject to a range of issues impacting on reliability and capacity. Low Bandwidth and High Latency are impacts on user experience and the uses it can be put to.

- NBN Satellite services speeds are significantly less than urban broadband with recorded speeds of (Download 4.83 to 21.26Mbps / Upload 0.33 to 4.59Mbps) and latency of 800ms. These just don’t compare to city broadband rates (Download 108.57Mbps / Upload 37.26Mbps).
- Bandwidth limits how much data can be transferred, and constrains the utility of the internet. Low bandwidth is manifested as significant buffering and / or low quality of streamed content.
- High latency (ping time), the time it takes a data signal to travel to its destination and back, causes synch issues and freezing. This impacts on useability and functionality for a range of digital applications. Particular examples highlighted with Covid lockdown and working from home are impacts on any 2-way communications, wi-fi calling, video (e.g. Zoom) or voice conferencing applications using VoIP (voice over internet protocol).
- The compounding impact of low bandwidth and high latency is on productivity, wellbeing and resilience in the community, limiting the contribution of the community, and inhibits equitable digital access to the range of functionality afforded city users.
- Users also report regular equipment issues with NBN Satellite internet. Weather conditions cause issues, and we’ve experienced equipment failure due to electricity outages and power spikes, and overhead electrical storms and lightning activity.
- Satellite broadband plans are most often data driven with tough data restrictions. Compared to city based and mobile data plans, prices are quite expensive for the amount of data included.
- The sensitivity to weather conditions with drop-outs in conditions of cloud / smoke / rain, typically coincides with situations when the service is more important for evolving safety and emergency wellbeing. Regular drop-outs necessitate time-consuming system resets, contact with customer service and wearisome network troubleshooting sessions.
- Many residents on the electricity grid have addressed one contributing reliability factor, blackouts, by installing backup electricity generators. However, especially in poor weather, communications systems become unreliable with satellite internet dropping in performance or dropping-out. Many will not use systems in storm conditions for equipment safety reasons, with multiple experiences of modems and handsets being burnt-out by electrical storms.

Mobile Back Spot Program –

Macdonald Valley is an identified and unresolved mobile Black Spot location. Optus has failed to deliver on 2016 Round 2 Optus funded project (MBSP2-NSW-028). Mobile coverage is negligible, with patchy coverage in Lower Macdonald and a Telstra small cell installation approximately 13km up the valley at Central Macdonald.

- The Federal Government’s Mobile Black Spot Programme promoted itself as a solution to mobile phone coverage and competition in regional and remote Australia, including in small communities and locations prone to natural disasters. Macdonald Valley has had marginal benefit from Black Spot projects announced since 2016 and after.
- A 2016 announcement of a macrocell installation would have provided, according to the grant objectives “at least ten square kilometres of new or upgraded handheld coverage”. Optus has failed to deliver on this 2016 Round 2 Optus funded project (MBSP2-NSW-028), meaning that for multiple fire seasons and flood events the community's isolation has continued, contrary to the Minister's and programs promises.
- The importance of mobile coverage and Black Spot program success was highlighted in in the December 2016 statement by Dominic Perrott MP, former State member for Hawkesbury, *“Residents in St Albans and the Macdonald Valley will soon be safer and better connected thanks to a new St Albans mobile tower announced today by the NSW and Federal Governments as part of the \$40 million Mobile Black Spots Program.”*
- Most recently, Optus has identified this proposed site / solution as a frustrated site, not feasible for technical and cost considerations. Optus is now proposing a solution of a small cell, with potentially 50% less coverage than a microcell commitment made under the 2016 grant funding.
- The valley has had minor improvement in service with the installation of a Telstra small cell in 2020, a community ‘hot spot’, at Macdonald Valley Public School. Whilst this small cell provides coverage locally of some 500-800m radius it does not support wide area solution and increase accessibility as part of an integrated valley network.

Fibre Optic

Macdonald Valley Public School recently benefitted from NSW Government funding for installation of a fibre optic line, running approximately 9km from the St Albans exchange. Government has failed in the opportunity to coordinate on this and the mobile Black Spot investment.

- In early 2021 the NSW Government funded fibre optic line was connected to Macdonald Valley public school, duplicating capacity provided by the recently installed Mobile Black Spot project Telstra Small Cell.
- We know that digital inclusion, particularly for students, is a lead indicator for future employment opportunities. However, with the paucity of quality, high speed connectivity service through the whole of the valley, student will be unable maintain broadband access for online learning, homework and study purposes.
- Government has failed in opportunity to coordinate on investment – whilst achieving a beneficial outcome for the school bypassing 7km of rural properties, and at the same time the school environs being the beneficiary of Black Spot Mobile small cell installation which went live in 2020.

Digital inclusion

Digital inclusion is the capability of individuals or groups to enjoy the benefits of being online and use technology confidently to improve their day-to-day lives. Though 90km from Sydney CBD, this is a community that is somewhat digitally excluded.

- The capability of individuals or groups to enjoy the benefits of being online and use technology confidently to improve their day-to-day lives is the foundation of digital inclusion. Limited

options, unreliable service and poor performing telecommunication limit inclusion and access to the range of online, education, health, social and financial benefits of a connected digitally engaged community.

- A material issue of digital inclusion in emergency situations is access to information sources, such as *Fires-Near-Me* or *Flood-Near-Me* apps, or broadcast alerts for *fire-danger warnings* and *flood-alert warnings*. With poor reliability and accessibility, the community lack this capability and should be considered “digitally excluded” from emergency information.
- Radio broadcast coverage and quality, though not a component of this review, should also be noted as poor. The ABC is the national Emergency Broadcaster and the ability of all the community to receive and clearly hear these broadcasts is most critical in the events we experience.

Emergency UHF Radio and Macdonald Valley

In Macdonald Valley, the community is backing its own project to give us UHF Radio (CB radio), a supplementary form of communication in lieu of the non-existent mobile phone coverage and poor reliability of Fixed Voice and broadband in emergency situations. Experience in multiple emergency events, in particular the 2019/20 fire season and the 2021 floods proved the value of UHF in connecting isolated residents

- The Macdonald Valley Association is leading a project to fund and create a community UHF radio network to connect our community members, support engagement, wellbeing and communications in emergency situations:
 - Welfare and well-being checks with residents by 24/7 patrolling emergency service crews over a duration of weeks on the local fireground;
 - Message relaying for residents with out of service landline phones, utilising neighbours with UHF and working landline phones;
 - Neighbour-to-neighbour communications and alerts about the progress of fires and proximity to assets;
 - Adoption of UHF channel 9 as a go-to community channel to facilitate emergency messages and communications;
 - Enabling out-of-area emergency services crews and helicopters to utilise the local channel 9 UHF to connect with local residents;
 - Tactical communication between residents and personnel working at the fire front or flood welfare and rescue.