30 May 2024

Committee Secretary
Senate Standing Committees on Rural and Regional Affairs and Transport
PO Box 6100
Parliament House
Canberra ACT 2600

Dear Committee Members,

Thank you for the opportunity to make a submission to the Parliamentary Inquiry into the Shutdown of the 3G Mobile Network on behalf of Surveyors Australia.

The following information has been gathered after consulting with land surveyors across the country. Around 30% of our membership replied to our survey at the time of writing, giving us their direct feedback and outlining their concerns and the impact they expect this change will have on their businesses and livelihoods.

We have particularly concentrated on:

(b) the number of devices and customers affected by the shutdown;
(c) the absence of 4G services in rural and regional areas previously covered by 3G;
(e) the impact on industries that use 3G devices;
(f) the impact of a lack of telecommunications services on the economic and social circumstances of those who live in regional Australia;
(g) service provisions and coverage; and
(h) efficacy and capability in disaster situations;

Surveyors Australia is the peak industry association for the 16,000 surveyors in Australia. With a membership of close to 500 businesses, we are uniquely placed to comment on the industry sector of surveying in relation to the broader property and construction sector. Our members are key to the Australian economy and community and are often referred to as land surveyors. Our members play a critical role in various fields and industries, primarily focused on:

- Land Measurement, Boundary Definition and Topographic Mapping
- Construction Surveying
- Geospatial Data Collection
- Hydrographic Surveying
- Legal Expertise on Land Administration

Surveyors ensure that infrastructure projects, such as roads, bridges, and utilities, are constructed accurately within land ownership, contributing to land value and often efficient transportation. No building or infrastructure project can start or finish without a land surveyor involved.

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Surveyors are critical to environmental management, urban planning, emergency response and precision agriculture. They ensure the accuracy, safety, and sustainability of land and infrastructure development while contributing to various aspects of our daily lives, including property ownership, navigation, environmental protection, and urban planning.

We note that the upcoming switch off of the 3G network will have implications across Australia, most concerningly for the 000 emergency call service, which is justifiably the primary focus of this inquiry.

There are several other industries which will also be impacted. Surveying is one of these.

Shutdown Impact on Surveying

The equipment needed for surveyors to undertake their work has, up until recently, utilised the 3G network. While devices are now starting to be sold that are 4G compliant, this is a relatively new development occurring only over the last few months.

To provide the most current information for the Committee, we carried out a detailed survey of members seeking their feedback on the impact of the Shutdown. Close to 30% of our membership responded providing feedback from across Australia which we have used to shape this submission.

Only around 30% of the respondents have upgraded their equipment and will be prepared for the switch off while the others may face difficulty to transition.

These devices can last over ten years, and some of our members tell us that they have purchased secondhand controllers which are even older, as they still give the necessary precision for GPS use.

The announcement of the switch off was in 2019, meaning that there were several years of life left in many controllers. Our members are therefore having to replace perfectly working equipment and upgrade before they otherwise would – without the benefit of a resale market.

At a cost of around $15,000 per controller, this is a significant, and unexpected, expense on our industry of which approximately 70% own or operate a small business.

Our larger businesses have told us they are expecting to pay over $1million to upgrade.

Having to upgrade each controller at the same time (and not a time of their choosing as part of their usual asset replacement program) is causing stress on their cash flows and business plans.

> *"We have no reason to have to upgrade other than to switch to 4G capable devices. We are only a small company and the cost will be roughly 25% of the total fees we turnover in a 12 month period. We simply don't have the cashflow to make the change without having to borrow money or lease the equipment (which we have not had to do before)."*

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48% of our industry are at or near retirement age according to the Oxford Economics Report of 2022: Determining the Future Demand, Supply and Skills Gap for Surveying and Geospatial Professionals. Due to the skills shortage, many of those aged 70 years and over continue to work a day or two a week. $15,000 is a significant expense when nearing the end of their careers.

To quote the thoughts of two of our members:

> *"The impact will be cash flow. I am 60 years old and would prefer not to go back into debt with a lease or alternatively take $50K out of the business at this stage in my career."*
>
> *"I was looking to retire in the next year or so. The change over an expense not welcomed however may be offset if the new device has more capability. It remains to be seen if we have a degraded service in regional areas where 3G had good coverage and 4G has poor coverage. If this is the case then the capital put into the new device is counter-productive and could have been used elsewhere".*

The recent budget and the passing of the Treasury Laws Amendment (Support for Small Business and Charities and Other Measures) Bill 2023 will give some small businesses the ability to increase the Instant Tax Write-Off from $1,000 to $20,000 for this financial year and the next. This will go some way to helping a sole trader or an eligible business who may be able to purchase a device across two different financial years (with each averaging around $15,000). It should be noted that these businesses may have other costs they would have preferred to allocate this funding toward, similar to other small businesses.

While we appreciate the increase in the Instant Asset Write Off, it does not provide the support needed for many of our other members, with over 70% of those members who responded to our survey needing to purchase more than one. This further breaks down to approximately half saying will be out of pocket by over $20,000, with several in the $100,000-$300,000 range and one looking at over $1 million dollars.

It should also be noted that this puts an end to the ability to purchase second hand equipment which had been a fairly common practice in our industry. Besides the environmental impact of scrapping perfectly good equipment, purchasing new adds to the unexpected cost of upgrading.

As mentioned earlier, this is a forced upgrade at a time not of their choosing. **We would appreciate your recommendations including financial assistance to ease this burden.**

Supply Issues and Other Solutions

Another concern is that our equipment is only available to purchase from overseas suppliers. It appears that the switch off in Australia was not communicated to those suppliers with enough time for them to develop and sell 4G compliant equipment until recently.

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We appreciate Telstra extending the date for their switch off to 31 August, as there was a concern that with 30 June 2024 rapidly approaching, there was a surge in demand, and we are concerned about further supply issues.

> *"We have a $48,000 invoice but there aren't enough supplies in Australia to deliver on order at the moment"*

With the majority of our surveyors operating on the Telstra network due to it's far reaching coverage, this would prevent surveyors being able to continue their work until they receive their new device, or until a work around is found.

Hot spotting from a mobile phone may work, but then we know that 4G and 5G may not initially have the necessary coverage in rural and regional areas, where we still need to undertake our work.

The easier options for upgrading, such as wifi hotspots, are not as rugged as the inbuilt modems in GNSS and total station controllers. The additional complexity of needing more devices to charge, carry, connect and troubleshoot (when connections aren't working) is an extra frustration resulting from this change.

One of our members has communicated his experience with the changeover; we have included this to highlight the real-life concerns held by those in our industry:

> *"I took the cheapest option by purchasing a 4G antenna for my Leica GS18T - GPS receiver, as it has a 4G modem built in. My Leica CS20 controller only has 3.75G and won't connect after June 30. To replace the controller, Leica CRK wanted to charge me $9350 ex GST. This means I got less than five years use out of it.*
>
> *"A new antenna allows my existing controller to connect to GPS and then the internet which solves the problem. An external antenna is not as streamlined as I'd prefer because walking through the bush I'd have to mindful not to lose the antenna or make sure it doesn't fall off. Having the sim card in my controller would have been a preferred option. I could hotspot my phone to the controller but disconnection issues arise if walking away from GPS with phone in pocket and uses up battery on phone also."*

Members have further pointed out the time it would take to utilise a "work around" solution and its lack of reliability:

> *"This means charging, and remembering, another piece of equipment and carrying it everywhere and the need to train staff. It also slows down our day and reduces our productivity as we need to spend time connecting to and packing it up at the start and finish of every job where we would use the GPS. It wastes time."*
>
> *"Its an expensive task to upgrade a perfectly piece of GPS equipment. There are options to hotspot wifi to a mobile phone using 4G, however my tests show it works intermittently and difficult to set up at the start of the day."*

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If a surveyor is unable to undertake their tasks, it can add knock on delays setting back the progress of a construction project and making it more expensive.

Access to 4G and 5G Coverage

As you are aware from the scope of your inquiry, there is a concern about switching off 3G, before 4G and 5G coverage is in place. While 000 calls are of upmost concern, our rural and regional members are also concerned about their staff being placed in unsafe situations where they cannot call for assistance.

One of our rural members already operates with two personnel, where only one should be needed, due to the patchy nature of 3G in case of accident. This safety issue would be exacerbated with even less service available.

Our rural and regional surveyors have further elaborated:

> *"4G reception is very patchy outside of suburban environments, 4G data is also now considerably slower than previously which I suspect is due to the 5G rollout."*
>
> *"4G signal coverage in remote areas across the state (even just off the main highways) is patchy and not reflected accurately by the coverage maps shown by providers. Furthermore, remote areas that may have coverage, may only have minimal cells, resulting in losing connection often and/or difficulty re-connecting, as the capacity of each cell tower is reached.*
> *"It would be great to see locations of each comms tower as well as their capacity as part of the "coverage" maps. It would also be useful to include this "real" capacity as part of assessing impacts of turning off 4G".*
>
> *"4G and 5G coverage on towns is reasonable, however for rural areas there is minimal 4G coverage. An example is between Merriwa NSW and Dubbo NSW, where the 4G coverage is patchy. Our field crews use a phone booster in their vehicles, however this is of no use when there is no coverage. As a consequence of the upcoming 3G shutdown, we have had to purchase our own base stations and UHF radios as we will no longer be able to rely on CORSNET. "*
>
> *"In addition to the connectivity issue for surveying equipment, the lack of coverage presents a workplace health and safety issue. Our field crews now carry alternate devices for an emergency, and we expect to have to purchase satellite phones once the 3G shutdown comes into full effect." (Dubbo, NSW, Surveyor)*

Impact for Disaster Recovery

Your inquiry also focuses on the efficacy and capability in disaster situations. Surveyors play a role in the immediate recovery after natural disasters. When the next major flood event occurs it will be surveyors who are the first onsite to identify the height of the flood waters.

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Surveyors are involved in mapping the damage from fires and ensuring fence lines and land boundaries can be replaced quickly. Similar scenarios for cyclones.

We cannot risk not having a signal during these times of crisis.

While we understand the need for Australia to advance technology, it should not put people at risk, and ideally it should not stop projects or put hardworking citizens, such as our members, out of pocket.

Support Needed

We would like to see support provided though the federal budget to assist our industry to cope with this unexpected change. That support could be by grant, subsidy, depreciation or other support.

> *"I am a small one man business in rural Victoria, $15,000+ is a huge impost on a small business like mine. I hate to throw away proven equipment on basically untried and unproven equipment that probably won't work anyway due to poor phone coverage... The cost to industry, farming, medical and financial of this proposed 3G shutdown is immense."*

It is vital that Surveyors provide accurate information. Registered and Licensed Surveyors have a responsibility, and understand the need, to ensure the integrity of their data and the cadastre. They work to avoid risks which may impact at every level; from property fence lines to construction of major infrastructure, to the need for accurate valuation of property and land taxes which underpins significantly state budgets (treasury).

Without reliable equipment or telecommunication networks, the surveyor is forced into a situation that impacts the delivery of service that would include costly upgrades, project delays or project cancellations requiring potential adoption of less efficient measurement methodologies or work practices. This would directly affect the construction industry from small family home renovations to large government infrastructure projects such as new rail lines, roads, tunnels and bridges.

The present skill shortage of surveyors also means it is unlikely that other surveyors would be easily able to step in, especially during a very difficult and expensive transition period to new networks.

The lack of network signal in rural or regional areas, added expense, and shortage of supply, may well create dire consequences with delays becoming a reality.

We are therefore pleased your committee is looking at the potential impacts on the 000 service and to other industries. We hope that your interest may help to alleviate many unanticipated and hard hitting consequences of this change.

We would appreciate your recommendations including financial assistance for those impacted to help them avoid the financial ramifications from the switch off.

This may be through instant asset write-offs, depreciation assistance or a one off grant program.

We respect the need for technological advancement, but the lack of awareness and ability to prepare over a more appropriate period of time has left us needing to ask for help. The five years notice should be more than enough for the average person to be prepared to upgrade a mobile phone from 3 to 4G, but the ten year turnaround for our industry will set us backwards.

We suggest your recommendations also include a way for this situation to be avoided with any future network upgrades, through policy or regulatory measures. A smoother transition could be achieved through mandating minimum coverage standards for new networks, providing a longer notice period for switch offs or engaging with industry to ensure suitable measures exist before any future transition can occur.

We would appreciate the opportunity to address the committee as part of your deliberations, or to provide further information or examples of impact.

Yours sincerely,

Chief Executive Officer
Surveyors Australia