TELSTRA CORPORATION LIMITED

Select Committee on the response to major flooding across New South Wales in 2022

Response to Questions taken on Notice from the Public Hearing on 14 June 2022.

Restoration of fibre optic cables damaged in the 2022 floods.

Public Submission

30 June 2022

Contents

* Picture on front page taken 1.65 km south of Caniaba (south-west of Lismore) at 1:58am, 4 March 2022.

1   Introduction

Telstra is pleased to provide the following responses to Questions taken on Notice (QoN) from the Public Hearing on 14 June 2022 convened by the **Select Committee on the response to major flooding across New South Wales in 2022**.

Telstra is proud of the extent our staff went to in restoring services as quickly as possible, using their expertise and detailed knowledge of Telstra's network to prioritise activities in a way that maximised the restoration of services for the greatest number of people in the shortest possible time.

The 2022 NSW floods impacted our network in ways that have not previously occurred, and we have conducted our own review of the performance of our network during this time to identify opportunities to improve the resilience of our network against future disasters. We will look to implement these improvements over time and will continue to work alongside other utility providers at planning forums to prepare for future events.

2   Responses to questions taken on notice

2.1   How many satellite phones did Telstra supply during the 2019/2020 bushfires and to whom?[1]

In early January 2020, we received a request for satellite phones from the NSW Telco Authority. Upon receiving the request, we put 15 satellite phones (both the handset and the ongoing account plan[2]) into service and provided them to the NSW Telco Authority. Telstra understands the NSW Telco Authority distributed the satellite phones to evacuation centres experiencing loss of all telecommunications as well as those evacuation centres where the fire front was predicted to travel.

2.2   What role does Telstra have to provide satellite phones during an emergency event?[3]

We did not receive any requests for satellite phones from either the NSW State Government (including its departments and agencies), nor did we receive any requests for satellite phones from Local Government Authorities (LGAs) during the 2022 NSW floods. We did, however, provide some satellite phones on an ad hoc basis to our customers in impacted regions, where and when the opportunity arose for us to do so. We provided four satellite phones in the northern NSW flood affected region at the time of the floods, although we did not specifically track/document where and when these phones were used.

Telstra holds a few hundred satellite phones available for deployment nationwide. However, Telstra's satellite phones are primarily used for the purposes of providing them to our customers with a Priority Assist (PA) status in the event their fixed landline is disrupted, the restoration time is expected to be

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[1]   Uncorrected Transcript, p.38, first entry for Ms Cate Faehrmann "*How many satellite phones, roughly, were provided during the bushfires? Do you have that figure?*" and sixth entry for Ms Cate Faehrmann "*My final question on this is do you know who made the request for the satellite phones?*" Telstra agrees to take these questions on notice at the seventh entry for Mr Peter Sutherland on p.38.

[2]   These satellite phones were purchased by NSW-TA and were configured on an ongoing rental plan and are now an asset that NSW-TA continue to own (unless since that time, they have cancelled the plan). It is very difficult for us to lend large numbers of satellite phones at short notice.

[3]   Uncorrected Transcript, p.43, first entry for The Hon Catherine Cusack "*Does Telstra have any role in relation to emergency management when all of its communications fail in an emergency?*" and fourth entry for The Hon Catherine Cusack "*That is my question: Do you have a role to play or a responsibility with regard to that?*"

lengthy, and there is no mobile phone coverage to their premise. PA customers are Telstra customers with a diagnosed life-threatening medical condition that may be at risk without access to a working home phone line. While we can supply these satellite phones during an emergency (as outlined in the previous paragraph), we must balance the competing needs of ad hoc community requests with our obligations to our PA customers.

We are strongly of the view that deployment of satellite phones to specific locations during an emergency is not an accountability that should sit with Telstra. Telstra is not in a suitable position to decide who should be the recipient of a satellite phone, nor do we have the logistics during an emergency to transport the phones. Our priority needs to be restoration of our network and it is our strong recommendation that a government department / agency, or another body with adequate visibility of the situation should have the accountability and responsibility for the actual deployment of satellite phones.

Furthermore, and in line with the Australian Communications and Media Authority (ACMA) rules on Identity Verification checks, all carriers including Telstra are subject to specific regulations that require us to check the identity of our customers before issuing a phone plan, including satellite phone plans.

Therefore, and as per our original submission, we continue to advocate for essential services such as hospitals, emergency service organisations and government departments / agencies critical to natural disaster response, as well as Local Councils and community groups to consider the benefits of procuring a satellite phone as part of their emergency preparedness plans. Deploying Telstra's supply of satellite phones (available for purchase) to the locations where they are needed can take several days, and the best course of action is to have satellite phones pre-provisioned (i.e., purchased and on a monthly plan) at locations where they are likely to be needed. To this end, we would welcome the opportunity to discuss the role that Telstra could play to supply satellite phones to these entities in the future.

2.3   Why was mains power left at ground level when Tumbulgum was upgraded?[4]

The transcript for the hearing recalls the Chair as observing: "*I'll give you an example of what happened in Tumbulgum. In the last flood, Telstra moved the mobile phone towers to higher land. However, it put the energy supply and the support materials to the mobile phone tower on the ground. As soon as it flooded, mobile phone reception was lost.*"[5]

Contrary to the Chair's questioning, Telstra does not have, and has never had, a mobile base station in Tumbulgum. We did not move a mobile base station in Tumbulgum, as we have never had one there. Figure 1 below is a map of mobile and fixed wireless base stations and towers within a 10.0 km radius of Tumbulgum. The map is sourced from the publicly available RFNSA database.[6] The map shows one tower in Tumbulgum, at 793 Tumbulgum Rd, Tygalgah NSW 2484 (RFNSA Site Identifier 2484016).[7] This site is an NBN site, and only has NBN fixed wireless access services on it.

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[4] Uncorrected Transcript, p.42, third entry for The Hon Catherine Cusack *"in relation to Tumbulgum, for example, returning to the Chair's question – which was, essentially, "What was the point of putting the tower on a hill but leaving the power on the ground?" – who is doing that risk assessment? Is it just something that you wait till it fails then you rebuild it better but leave it there to fail?"* ?" Telstra advises it will look at the particular site and come back to the committee in the second entry for Peter Sutherland on p.42.

[5] Uncorrected Transcript, p.36, last entry for the Chair.

[6] Radio Frequency National Site Archive (RFNSA). https://www.rfnsa.com.au/

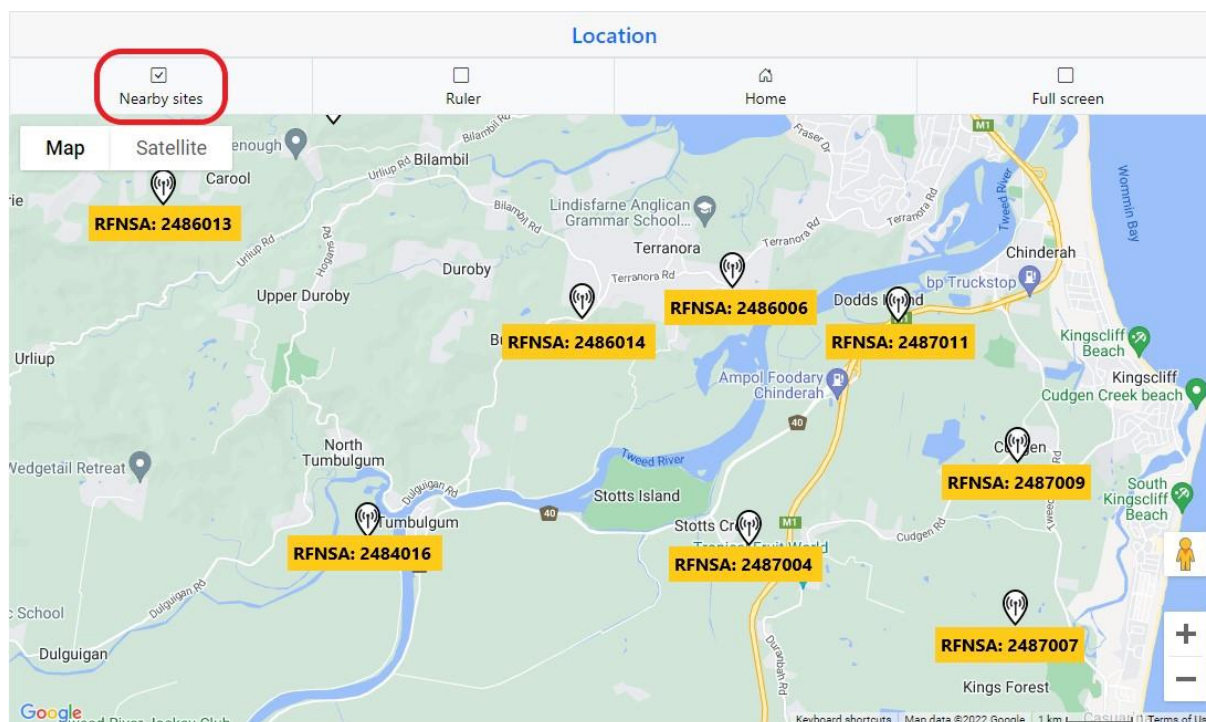[7] RFNSA Site 2484016. https://www.rfnsa.com.au/2484016/site-detail

Figure 1: RFNSA map of base station towers within a 10.0km radius of Tumbulgum

Table 1 below shows the address and the operators present at each of the sites in Figure 1. Telstra's closest tower to Tumbulgum is at Stotts Creek (RFNSA ID 2487004), just over 5km away (as the crow flies).

RFNSA ID	Address	Operators present	Distance from Tumbulgum
2484016	793 Tumbulgum Rd TYGALGAH NSW 2484	NBN Co.	0.0 km
2486014	800 Terranora Road TERRANORA NSW 2486	NBN Co.	4.7 km
2487004	62 Cudgen Rd STOTTS CREEK NSW 2487	Telstra, Optus, Vodafone	5.8 km
2486006	32758 Terranora Rd TERRANORA NSW 2486	NSW-TA, Telstra, Optus, Vodafone.	6.7 km
2487011	Lot 6 Tweed Valley Way, CHINDERAH NSW 2487	Optus	8.7 km
2487007	80 Pine Ridge Rd KINGS FOREST NSW 2487	Telstra.	10.0 km
2487009	604 Cudgen Rd CUDGEN NSW 2487	NBN Co.	10.0 km

Table 1: List of sites from the RFNSA database within a 10.0km radius of Tumbulgum

For completeness, the community of Tumbulgum is served by Telstra's mobile base station at 62 Cudgen Rd Stotts Creek (RFNSA ID 2487004), as shown in Figure 2 below. The Stotts Creek base station is at an elevation of 56.6m above sea level, with a 50m monopole with a clear line of sight to

Tumbulgum, which is around 4m above sea level. We note Telstra and Vodafone are co-located with Optus at the Stotts Creek site.[8]

Figure 2: Google Earth™ view of the base station at
Stotts Creek (blue pin, RHS) to Tumbulgum.

Separate to the questions regarding a Telstra mobile base station at Tumbulgum, we do have a fixed -line exchange facility in Tumbulgum. Prior to the 2022 flood event, there has been no impact to Telstra's infrastructure that provides services to the township in previous flood events. When the exchange was rebuilt in around 1980,[9] it was built on a brick platform that raised the floor 1300mm above ground level – see Figure 3. This was done to ensure it was higher than any previous recorded flood levels in the area. The mains power supply connection into the building and power meter is in the connection box on the side of the building at a height of 2000mm above ground level. The power from the street into the exchange is delivered through an underground cable from the power pole on the roadside. The location of the power meter, connection box and how the power enters the property is determined by the local power authority, not Telstra. Both the Telstra exchange and electrical connection box were inundated by the recent flood event.

The delay in restoring power to the Tumbulgum exchange was due to safety procedures required to be carried out by the local power authority. Once power safety was

Figure 3: Exterior of Tumbulgum Exchange, showing mains power connection box located on the building wall on the RHS of the picture.

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8   The site at Stotts Creek is owned and managed by Australian Tower Networks, which is the entity created by Optus to own and operate their tower sites.

9   We have not been able to ascertain the precise date, but it was circa 1980.

certified and power to the site was restored, we were able to commence restoring services to the community from that point.

2.4 Did loss of Telstra's facility at Woodburn only affect the Woodburn community or did it cause systemic outages along the North Coast?[10]

Telstra's network is designed and built to limit, where possible, single points in the network that upon failure could result in widespread outages across a region. We build our network with alternate transmission paths and backup equipment to maintain as much resilience as possible. As such, the outage at the Woodburn exchange did not, *in and of itself*, cause other outages along the NSW North Coast. If, during the March 2022 floods, only the Woodburn exchange was disrupted, then only local services (NBN fixed service and Telstra's mobile services) at Woodburn would have been disrupted and other Telstra services along the northern coast would have continued uninterrupted. In essence, it requires multiple damage to Telstra infrastructure across an area for there to be widespread disruption. This is the point made by Mr Sutherland at the hearing, where he noted "*There was not a single point of failure that affected everything...*"[11]

However, Woodburn exchange is a transmission access point along Telstra's coastal transmission route where optic fibres from other fixed line exchanges, mobile base stations, and NBN equipment are joined by transmission equipment. As noted in the previous paragraph, Woodburn exchange is only one element in a much larger, overall network comprising redundant transmission paths and redundant equipment. It was the *combined* loss of several different facilities and optic fibre routes that together caused the disruptions to Telstra's mobile and NBN's fixed line services along the northern coast.

To provide more detail, Telstra's facility at Woodburn was affected by a loss of mains power on 2 March 2022. The site was not accessible by Telstra staff until flood waters receded on 8 March 2022, at which time, Telstra staff were able to access the site to deploy a portable generator to restore power. Figure 4 below is an aerial view of Woodburn exchange showing the extent of the flooding. Woodburn exchange was not ever inundated by flood water; it lost mains power, and we were unable to safely access the site to deploy a portable generator until 8 March 2022.

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[10] Uncorrected Transcript, p.42, seventh entry for The Hon Catherine Cusack *"In terms of Woodburn, everybody on the North Coast has been led to believe that something flooded at Woodburn and took down the whole North Coast. That was definitely a facility that was mentioned by Telstra on radio frequently when everybody was trying to find out what was going on. Are you saying that the Woodburn failure only affected Woodburn and didn't impact the rest of the coast?"* At p.42, sixth entry for Peter Sutherland, Telstra agrees to take this question on notice.

[11] Uncorrected Transcript, p.42, sixth entry for Peter Sutherland.

Figure 4: Aerial view of Woodburn Exchange (red circle).

Woodburn exchange is a transmission access point on the Ballina-Grafton transmission route, as shown in Figure 5. Please note, Figure 5 is not a full transmission map; it only shows components of the transmission network pertinent to the flooding in March 2022. It is not an official network diagram. Please also excuse spelling mistakes in the diagram, as it was hastily produced during the floods to help prioritise and coordinate Telstra's restoration activities.
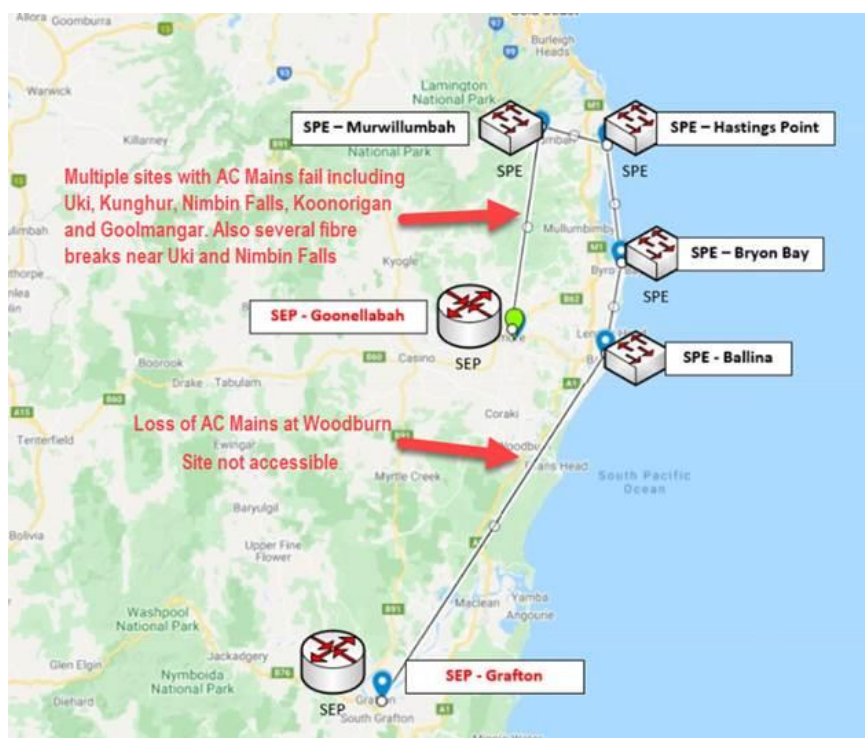
Figure 5: Notional diagram of Fibre Routes through Woodburn and surrounding areas impacted by the March 2022 floods, developed to assist with prioritisation of restoration activities.

As Figure 5 shows, Telstra experienced outages due to loss of mains power at several sites, along with fibre breaks on the inland route between Goonellabah and Murwillumbah (some of the total 34 fibre optic cable breaks Telstra experienced during the floods).

During the March 2022 flood event, the Woodburn exchange itself remained above the peak flood water height, and as such, was not directly impacted by water ingress. It was the loss of mains power and the depletion of all onsite power reserves that ultimately resulted in the failure of the site, along with the transmission and customer services it supported. This loss of power could not be overcome as the exchange and other local businesses were surrounded by floodwaters and cut off from the outside world. It should be noted that we received numerous reports from responding agencies that the exchange was under water up to the roofline throughout the event, which were later determined to be incorrect. Figure 4 shows the exchange circled in red, which was located directly next door to the evacuation centre, and while the floods had clearly encroached the town, our exchange remained above the peak flood water height.

It was only when the flood waters receded that the site was accessible to both Telstra and the power utilities, with our attendance ultimately reinstating power to the site through the delivery of a portable generator and fuel supplies. This action also resulted in the restoration of NBN services dependent on NBN equipment housed at the Woodburn exchange.

As a final note to this question, Telstra wishes to make a minor correction to the statement made by Mr Sutherland at the Public Hearing. At the hearing, Mr Sutherland noted "*We had 35 fibre optic cable breaks across the region, and those 35 fibre optic cable breaks, along with loss of power, is what led to*

the vast majority of outages."[12] Mr Sutherland was quoting this figure from memory, and in fact the
correct number of fibre optic breaks across the region was 34.

2.5   Why was it not possible to deploy a Cell on Wheels (CoW) at Ballina when they can be used for music festivals?[13]

Telstra wishes to reiterate the statement[14] made during the Public Hearing that revenue or any other
commercial consideration is never a factor in the deployment of a CoW during an emergency. Where it is
safe, practical, and feasible from a technology perspective, we will always deploy temporary assets to
serve our customers during emergency events.

Telstra also wishes to confirm the statement[15] made during the Public Hearing that there was no
deployment of temporary assets in Ballina (CoWs or SatCoWs), and that the only restoration activity that
occurred was restoration to the permanent facilities in Ballina. This is because in this instance, it was not
practical to do so. Our radio communications engineers investigated deployment options for a temporary
asset at Ballina and concluded it was not possible to deploy a temporary asset. This is because it would:
1) make the customer experience worse (including impacting the ability to call Triple Zero) given that
temporary mobile solutions deployed in an area where a permanent mobile site is still operating will
cause interference to each other and severely degrade each other's performance; and 2) it would not
restore 4G or 5G services. We treat each of these two topics separately below. At times, our explanation
will be a little technical, as the design, placement and configuration of telecommunications networks,
including radio networks as used by mobile phones, is necessarily technical. We have tried as much as
possible to explain the necessary concepts in clear and simple terms below.

1. Deploying a CoW or SatCoW would increase disruption to 3G voice calls.

From a radiocommunications perspective (i.e., from the perspective of a base station being a radio
transmitter), temporary mobile base station assets (CoWs or SatCoWs) are very much like ordinary
permanent base stations. If two base stations (temporary or permanent) transmit on the same frequency
at the same geographic location at the same time, they cause interference to each other, and
communication ceases. As such, cellular mobile networks are carefully designed by radio engineers to
avoid overlapping of cells.[16]

Ballina is served by four mobile base stations as shown in Figure 6 and Table 2 below. As Figure 6
shows, Telstra still had 3G services operational at two of the four mobile base station sites in Ballina.

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[12]   Uncorrected Transcript, p.42, sixth entry for Peter Sutherland.

[13]   Uncorrected Transcript, p.47, last entry for The Hon Catherine Cusack "*There was a temporary fix put into Ballina. The mayor
of Ballina was saying, "If you can do this for music festivals, why can't you do this for flooded communities in a temporary"*—",
second last entry for The Chair on p.47 "*Is there simply just not the revenue available to you to do it? Is that a reason, because
in fact we did have evidence*—", and Telstra's offer to take this on notice in the last entry for Mr Peter Sutherland on p.47, "*…
but I will take that on notice and come back to you.*"

[14]   Uncorrected Transcript, p.47, last entry for Mr Peter Sutherland, "*Certainly, there were no revenue decisions or criteria
assigned to the deployment of any infrastructure, so that's never an issue in emergencies—Telstra will do everything we can to
restore services.*"

[15]   Uncorrected Transcript, p.47, last entry for Mr Peter Sutherland, "*I am not aware of Ballina being restored by anything other
than restoring the major site in the town, but I will take that on notice and come back to you.*"

[16]   To explain with an example, there is a finite limit to the amount of voice/data traffic that can be carried by a given quantum of
radio spectrum. Once traffic demand exceeds the capacity of the spectrum, more base stations must be introduced to meet
demand, i.e., increase the number of cells in a given area. To achieve this, the "footprint" of existing cells must be reduced (by
reducing transmitter power) such that those cells capture a smaller population. Reducing the population visible to the cell
affords the smaller number of users the ability to send more traffic.

The two operational 3G base stations were providing good coverage across most of Ballina, as handsets and other 3G devices in the south-west of Ballina would connect to the northern base station (BIYL at Clarke St) in the absence of the base stations west Ballina (WEHZ) and south Ballina (BLNT). Introducing either a CoW or a SatCow would risk interference with the permanent base stations that were still in operation (as described above) and would not substantially improve the coverage, nor increase the data available to customers. This is because 3G has a limited data carrying capacity, being an older generation, and only operates on low-band (850 MHz) spectrum.[17] CoWs and/or SatCoWs take some time to connect into the network and to configure and given a temporary asset would not substantially increase coverage, we concluded the community of Ballina would be better off with our staff focusing on restoring 4G and 5G services.
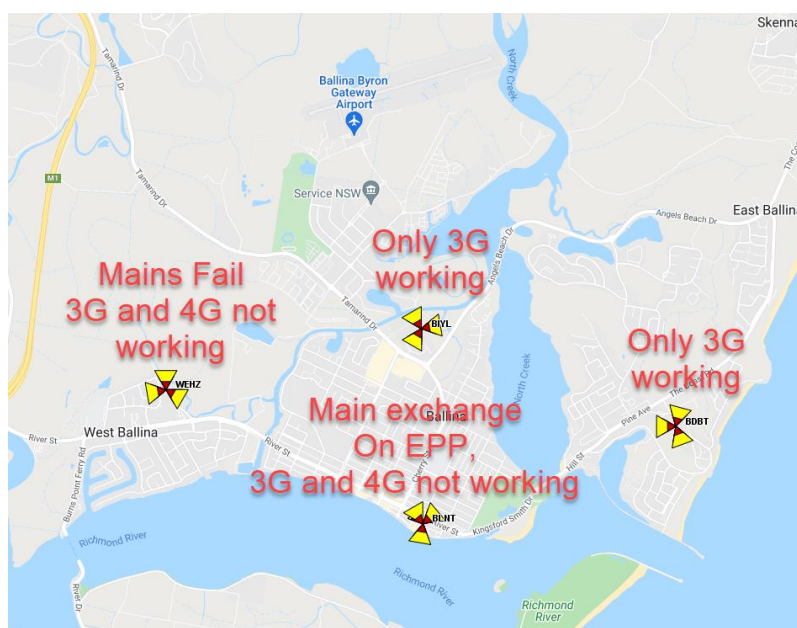

Figure 6: Telstra's Mobile Base Stations at Ballina.

RFNSA[18] Site ID	Address	Status
2478002 (BDBT)	B1 Sulva St, East Ballina, NSW 2478	3G working 4G and 5G offline
2478003 (WHEZ)	38 Barlows Road West Ballina, NSW 2478	No mains, battery backup exhausted
2478006 (BLNT)	23 Regatta Ave, Ballina, NSW 2478	Operating on Emergency Power Provisions (EPP), but all mobile generations need manual reset.
2478010 and 2478018 (BIYL)	27-29 Clarke St, Ballina, NSW 2478	3G working 4G and 5G offline

Table 2: Site locations and mobile generations for Telstra's Mobile Base Stations at Ballina.

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17   See footnote 25 on p.17 for a definition of low-band spectrum and its properties.

18   The Radio Frequency National Site Archive (RFNSA) is accessible at https://www.rfnsa.com.au/

2. Deploying a CoW or SatCoW would not have restored 4G and 5G services.

As can be seen in Figure 6 , Telstra's 3G network remained operational at mobile base station sites not affected by loss of mains power, whereas our 4G and 5G networks were disrupted. This is because we lost backhaul transmission (i.e., backhaul underground fibre optic cables) for our 4G and 5G networks (cutting them off from the rest of the network), but we did not lose backhaul transmission for our 3G network. Customers may have seen the "4G" or "5G" symbol light up briefly on their devices but would not have been able to connect to the internet. As such, their devices would have dropped back to 3G for data, most likely displaying "HSPA" to indicate data was being transmitted over 3G.

Telstra's 3G network uses legacy backhaul transmission, which was implemented on slightly different routes to the transmission used for 4G and 5G. In the unpredictable nature of the flood, it transpired that transmission for 4G and 5G was hit harder than the transmission routes for 3G, resulting in 3G retaining transmission connectivity (only one path) but complete loss of 4G and 5G backhaul transmission connectivity in the region. This is a result of the unpredictable nature of natural disaster events; other future natural disasters could be different where our 3G backhaul is harder hit – it is simply not possible to predict.

It was not possible to switch the 4G and 5G traffic onto the operational 3G backhaul route, because our 3G network uses a different generation of backhaul transmission to that required for 4G or 5G (i.e., it is incompatible). Like the decision not to deploy a temporary asset in the south-west of Ballina, again we concluded the community of Ballina would be better off with our staff focusing on restoring 4G and 5G services, which meant restoring the backhaul transmission as quickly as possible.

4G and 5G mobile services were restored to Ballina at 4:19pm on Friday 4 March 2022.

2.6   Did Telstra offer customers an apology or a credit on their bills for loss of service?[19]

Telstra apologised to its customers for the disruption to their service(s) during the flood event, as well as thanking them for their patience during our restoration efforts. Telstra considers it appropriate to apologise to customers for service interruptions, irrespective of the root cause or the scale of the outage, which can be seen from the messaging we communicated through mass media (radio, television, print) described in section 2.7.

Telstra automatically provides credit to our customers' accounts for fixed line services where services are disrupted, as we explain on our Disaster Relief website.[20] Providing automatic account credits for mobile services is not possible, because it is not possible to know which devices were attempting to connect to a base station when the base station is offline. Instead, Telstra offers Disaster Assistance Packages, as described at our Disaster Relief website. These packages include extra data and free call bundles for both pre-paid and post-paid customers. Pre-paid customers need to apply for these packages, and it was applied (within 24 hours of us confirming eligibility) for post-paid customers.

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[19] Uncorrected Transcript, p.42, The Hon. Catherine Cusack: *"Services were lost for over a week. Did Telstra offer customers an apology or a credit on their bills for that loss of service*?" Mr Peter Sutherland response: "*I can't speak specifically about what credits were applied but we can certainly come back to you on the specifics about what we did for customers post the event.*"

[20] Telstra Disaster Relief website. https://www.telstra.com.au/aboutus/community-environment/disaster-relief
Automatic credit for fixed line accounts is noted here: https://www.telstra.com.au/aboutus/community-environment/disaster-relief#:~:text=provide%20a%20daily-,credit%20on%20your%20bill

We also proactively contacted our Boost, Belong and Telstra customers to provide details on how to register for a Disaster Assistance Package. We also specifically contacted Priority Assist customers to offer them support to get services operational.

SMSs were sent to Boost, Belong and Telstra customers who had a mobile contact or mobile asset and were in the invoked postcodes, as shown in Table 3. The different dates represent progress of the floods over time. Please note, the volumes shown in Table 3 are the aggregate for NSW and Queensland, as it is not easily possible to split the SMSs specifically into each state, as some base stations extend across the state border.

Group	Message	Date	Volume
Boost	Our thoughts are with everyone affected by the floods. Boost customers in the area can register for a Disaster Assistance Package, including additional data, calls/texts. Apply now through Telstra at www.telstra.com.au/forms/request-disaster-assistance	Send 1: 04/03 Send 2: 09/03 Send 3: 10/03 Send 4: 11/03	Send 1: 5,103 Send 2: 2,008 Send 3: 268 Send 4: 367
Belong	If you've been affected by the QLD or northern NSW floods, we want to help. You can apply for one month credit for your account & financial assistance. We're also adding 50 GB free data to eligible mobile accounts. More info: https://bit.ly/3K0cjGQ	Send 1: 01/03 Send 2: 08/03 Send 3: 09/03 Send 4: 11/03	Send 1: 5,558 Send 2: 12,443 Send 3: 646 Send 4: 9,795
Telstra	Our thoughts are with everyone affected by the floods. Telstra customers in the area can find out more about how to register for a Disaster Assistance Package, including getting additional data, by visiting www.telstra.com/disasterassist. If you're unable to access the link, call us on 1800 888 888. For outage information and restoration updates, visit outages.telstra.com.au	Send 1: 28/02 Send 2: 01/03 Send 3: 02/03 Send 4: 03/03 Send 5: 04/03 Send 6: 09/03 Send 7: 10/03 Send 8: 11/03	Send 1: 523,283 Send 2: 3,258 Send 3: 176,914 Send 4: 40,924 Send 5: 245,171 Send 6: 19,211 Send 7: 144,838 Send 8: 139,752

Table 3: Dates and aggregate NSW + Qld volumes of SMS notifications sent to Boost, Belong and Telstra customers in flood affected areas.

We also proactively contacted Priority Assist customers. We contacted 5,296 registered PA customers, primarily by SMS, as per Table 4. Where we did not have a mobile contact or mobile asset associated with the registered PA customer, we contacted them by Electronic Direct Marketing (eDM, i.e., an email).

PA Customers (NSW/QLD)	
Breakdown	Count
Total PA Customers	5,296
Contact via SMS	4,969
Contact via eDM	327

Table 4: Priority Assist customer contacted via SMS or eDM.

For registered PA customers with a mobile contact or mobile asset who were in the invoked postcodes, we sent following SMS message:

- *<From Telstra> Hi <FirstName>. We understand your services may be not working due to severe weather in your area. If you need help with your services or support to bring you back online with an alternate solution, please respond 'Y' and we'll contact you within the next 24*

*hours to discuss further. If you don't need help, please respond 'N'. Alternately, if you have any
questions or require urgent assistance, please call us on <CTA>.*

Our Assurance Team made follow up calls to all customers who responded Yes to either log fault/apply
disaster package/offer interim solutions.

2.7   What updates did Telstra provide the community on outages and service restoration?

Telstra's Regional Australia and Media team provided the community with ongoing updates to national
and local media, often daily. We also spoke to our customers and communities via regular posts on our
social and owned channels, as well as paid advertising about our assistance initiatives and restoration
work. Table 5 below contains a chronology of the information we provided to the community.

Date	Media / Online Updates
28/02/2022	Media release issued and Telstra Exchange blog published, announcing assistance package for Northern NSW Telstra Regional General Manager Michael Marom interviewed by ABC Radio Media team responded to enquiries from The Australian, Australian Financial Review, Comms Day and IT Wire
01/03/2022	Telstra Regional General Manager Michael Marom interviewed by ABC Radio Media team responded to enquiries from The Guardian and CRN
02/03/2022	Telstra Regional General Manager Michael Marom interviewed by ABC Radio Media team responded to enquiries from Seven News Sydney and ABC Gold Coast
03/03/2022	Telstra Regional General Manager Michael Marom interviewed by ABC online, ABC Gold Coast and ABC North Coast Social post to reassure our affected customers and let them know how we were helping
04/03/2022	Telstra Regional General Manager Michael Marom interviewed by ABC Radio and Prime 7 News Media team responded to enquiries from Gizmodo
06/03/2022	Published Telstra Exchange blog providing updates on restoration and communities eligible for Telstra's disaster package. This was updated daily (for example, Flood Update #8) to keep the community informed about impacts and restoration. Commenced sending daily updates to national and local media, detailing restoration progress Social post to help affected users navigate through 'self serve' options instead of calling in Telstra Regional General Manager Michael Marom interviewed by ABC Radio Commenced purchasing 'live reads' on local radio to make customers aware of Disaster Assistance Packages.

Date	Media / Online Updates
07/03/2022	Telstra CEO Andy Penn interviewed by 2GB regarding restoration of northern NSW Telstra Regional General Manager Michael Marom interviewed by ABC Radio and Triple M Media team responded to enquiries from the Australian Financial Review
08/03/2022	Telstra Regional General Manager Michael Marom interviewed by ABC TV News and Radio
09/03/2022	Telstra Regional General Manager Michael Marom interviewed by ABC News Radio Media team responded to enquiries from 10 News Sydney Social post to update customers and communities on our restoration progress
10/03/2022	Telstra Regional General Manager Michael Marom interviewed by ABC Radio
11/03/2022	Announced $250k worth of grants for flood affected communities
17/03/2022	Media team responded to enquiries from Prime7 News

Table 5: Media interviews, briefings and online updates

Telstra has a range of measures to notify our customers and other stakeholders of impacts to our network during disasters, as well as providing updates on our restoration efforts. In accordance with the Federal Government's Mass Service Disruption Protocol,[21] Telstra disseminates twice daily updates to Federal and departmental government stakeholders. While not included in the Protocol, we also send our updates to State government and local councils, twice daily, with the first update issued on Monday, 28 February, and the final update sent on Tuesday, 22 March. These updates provided an overview of services impacted across Telstra's fixed and wireless network, restoration efforts underway and, information about support to Telstra's customers and locations of evacuation centres where Telstra were present.

2.8   How and when did Telstra provide information to the evacuation centres, and who asked you to do that?[22]

As outlined in section 2.7, we provided several updates through the media, and online. The dates for each of those updates are provided in Table 5, and these were all readily available to people gathered at evacuation centres. We were not asked to provide these updates, although there is a requirement in the Telecommunications (Customer Service Guarantee) Standard 2011[23] for Carriers and Carriage Service Providers (CSPs) to notify customers when extreme weather events cause mass outages (also known as Mass Service Disruptions[24]), which we comply with.

We also attended 13 community and recovery centres in northern NSW and seven across outer Sydney over the first three weeks. After the first three weeks, we also maintained a presence at the recovery

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[21]   Maintained by the Department of Infrastructure, Transport, Regional Development and Communications.

[22]   Uncorrected Transcript, p.43, the Hon. Catherine Cusack "*On notice, could you provide the Committee with the time line for when you gave service to the evacuation centres*?", and "*I'm curious to find out who asked you to do that – whether that request was made by the telco or whether it was because Telstra was being totally smashed in the media by a very upset community.*"

[23]   Telecommunications (Customer Service Guarantee) Standard 2011, https://www.legislation.gov.au/Details/F2011C00791.

[24]   AMCA: How Mass Service Disruptions affect the CSG Standard. https://www.acma.gov.au/how-mass-service-disruptions-affect-csg-standard

centres in Lismore and Ballina for a further two weeks. While we don't have precise logs and records of which staff were present at each centre, we are confident we had staff on hand to assist our customers for much of the time the centres were in operation.

Figure 7: Telstra staff at the Lismore Evacuation Centre

While radio broadcasts (e.g., ABC radio) were readily available to the community, the ability to access online updates is predicated on being able to access the internet, which requires mobile coverage and for the mobile network to be operational (not disrupted). To this end, we monitored the location of evacuation centres for impacts to the mobile network, and if there were impacts to the mobile network, we prioritised restoration activities at those sites.

Telstra was supplied with a list of evacuation centres most days from the State Emergency Service (SES), and we also received a list from NSW-TA. These lists were used by our incident management team to monitor for network congestion and to prioritise restoration activities. We recommend it would be beneficial if these lists could be provided at consistent time intervals (e.g., at the start of each day, say 8am) and that it would be beneficial if the lists highlighted new centres that have opened up, as well as highlighting centres that have been closed since the previous update.

One useful learning from our incident management team is that some geographic locations are better than others for establishing evacuation centres. Evacuation centres result in a concentration of people, who are likely to be attempting to use mobile devices more intensely than they would during a normal day, as they're likely to be seeking updates, attempting to contact family and friends, or keep children entertained. Establishing an evacuation centre at the fringe of our mobile coverage can exacerbate the

problem of intensified traffic demand.[25] As part of planning for future flood events, we recommend it would be beneficial for emergency coordinators to meet with Telstra to review possible evacuation centre locations, to establish a mobile coverage rating for possible sites. While we appreciate there isn't always a lot of choice in an emergency and mobile coverage would only be one factor of many in selecting a site to establish an evacuation centre, we consider it would be useful for decision makers to have an understanding of which community locations (council offices, schools, churches, sporting facilities, etc) are likely to have better mobile coverage/capability, and we would welcome the opportunity to prepare this information with emergency coordination groups in advance of the next disaster season.

2.9   Why was there a 4½ day delay in information reaching Essential Energy?[26]

During the Public Hearing, Telstra was asked whether we thought a 4½ day delay between when we provided the NSW Telco Authority with our priority list of sites for mains power restoration and when Essential Energy received the list of sites was acceptable. At the hearing we responded saying that length of time would not be good enough.

After the Public Hearing, we reviewed dates and times where we provided lists of priority sites for mains power restoration to both NSW TA and to Essential Energy. As the description below clearly illustrates, Essential Energy received our list of priority sites directly from us 50 hours after it was first sent to NSW TA. As such, we are not aware of a 4½ day delay in Essential Energy receiving our list of priority sites.

At the hearing, we also noted that in addition to working with NSW TA, we also work directly with mains power providers, and cited Essential Energy and Ausgrid as examples.[27] During any emergency event, we aim to work directly with all mains power providers, where and as appropriate. In the case of the 2022 NSW flood, affected areas were not inside Ausgrid's supply areas, and hence, we had no need to specifically contact them in this instance.

Below, we describe the date and time of the lists of priority sites for mains power restoration, as sent to both NSW Telco Authority and Essential Energy.

- **NSW TA**: Telstra sent two emails to the NSW Telco Authority[28] in early March, each with a list of priority sites for power restoration as shown in Table 6. The understanding between Telstra and the NSW TA was that the list supplied by Telstra was to be forwarded to the relevant mains power providers by NSW TA to assist them in prioritising power restoration work.

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[25]   Mobile network operators use a combination of radio spectrum to provide service to customers. In Australia, network operators predominantly use low-band and mid-band radio spectrum. Low-band spectrum is good for wide-area coverage and building penetration as it travels long distances without too much attenuation, but is not capable of carrying large volumes of data traffic. Mid-band spectrum (frequencies from 1800 MHz and above) are used for carrying large volumes of traffic, however, the radio-waves at mid-band frequencies do not travel as far (shorter propagation distance). This is simply how radio transmission works (laws of physics) – lower frequencies travel further but carry less data; high frequencies carry more data but travel shorter distance.

[26]   Uncorrected Transcript, p.44, Ms Cate Faehrmann asks Mr Sutherland, "…*what is your view of that? Do you think a 4½ day delay in terms of getting that list of critical infrastructure to Essential Energy is good enough*?"

[27]   Uncorrected Transcript, p.44, Mr Sutherland, last entry.

[28]   Emails were sent to telcofac@customerservice.nsw.gov.au

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	Date / Time	# Sites
1	Wed 2 Mar 2022, 10:17am	15 priority sites
2	Fri 4 Mar 2022, 8:07am	13 priority sites

Table 6: Date and time of emails sent to NSW-TA with sites for
priority mains power restoration.

- **Essential Energy**: Separate to the lists of priority sites for mains power restoration supplied to the NSW TA, Essential Energy contacted us on Thursday 3 March 2022 to request a priority list of sites for mains power restoration. We provided a list of 12 priority site to Essential Energy at 12:19pm on Fri 4 Mar 2022. We received a reply from Brendon Neyland at 4:27pm on Sun 6 Mar 2022, noting that of the 12 sites we had listed, 10 were now restored (fully energised). The remaining two sites, Woodburn Transmission Distribution Point Unit (DPU) at Woodburn Exchange and the Ballina Exchange were unable to be re-energised as the main power assets were flooded and had been de-energised.

The emails described above were the only correspondence directly between Telstra and NSW TA or Essential Energy. After that time, loss of mains power was no longer the leading cause of disruption to our network, and our attention shifted to repair of water damaged assets including mobile base stations, exchanges, roadside communications assets and fibre optic cables.