Your details

Title

Submission details

I am making this submission as	Other
Submission type	I am submitting on behalf of my organisation
Organisation making the submission (if applicable)	Cradlepoint
Your position in the organisation (if applicable)	Marketing Manager
Consent to make submission public	I give my consent for this submission to be made public

Share your experience or tell your story

Your story	Overview Cradlepoint welcomes the opportunity to provide a submission to the NSW Government commissioned expert inquiry into the 2019-20 bushfire season to provide input to NSW ahead of the next bushfire season. Vulnerable communities during the 2019-20 summer bushfires

struggled from lack of connectivity in three main areas. Firstly, compromised mobile tower coverage meant loved ones were unable to communicate during this stressful time. Secondly, local authorities were hampered in communicating critical updates from governments and other authorities to their communities, which saw many affected towns using whiteboards or loudspeakers as "public square" advisories. Thirdly, businesses were impacted by the inability to sell vital resources such as fuel and food, having lost the ability to transact via Eftpos or credit card facilities.

Why is rapid connectivity important?
¬ Provides the means to communicate with loved ones
¬ Enables fast access to government and authority advice
¬ Supports businesses to trade and transact
¬ Keeps fire vehicles connected to each other and back to base while inland fighting fires where preserving life can be a second-by-second decision
¬ Processing and accounting for community residents where areas have been evacuated

In previous decades, these challenges were simply part of the course when dealing with natural disasters, as the technology did not exist to provide alternative connectivity options that exist today. Mobile LTE networks can provide almost instant connectivity in place of physical wired Internet lines that in many areas during the most recent bushfires, were damaged due to natural disasters or may not have existed.

During natural disasters, LTE technologies are available to assist in two main ways:
1. Fast connectivity (hours versus a month for new hardwire lines or a consumer USB dongle which would not have the processing capacity required)
2. Simple, installation that doesn't require technical skills, for situations where no IT personnel may be on hand to get the solution working – routers can be configured before they are shipped or setup remotely using cloud management solutions

Global case studies

Disaster Recovery

The ability to provide rapid response to vulnerable communities during natural disasters can be expedited with the ability to quickly set up a reliable network connection to assist in immediately coordinating response and recovery operations in situations where IT support is limited or non-existent

Cradlepoint supported the Mornington Peninsula Shire during the evacuation of approximately 900 Mallacoota residents during the Australian bushfires in January 2020. Cradlepoint provided rapid connectivity by supplying routers for a pop-up processing centre for displaced people from Mallacoota when they arrived into port at Hastings by two naval ships. This enabled authorities to account for and process evacuees efficiently and with empathy during a crisis that was stressful due to loss of life and property. The routers were sent within hours of the request and required a few hours and no IT personnel to have up and running.

Accounting for people accurately and quickly during large-scale evacuation situations is something previously done with manual head counts and relies on the ability to keep people gathered in a single location for a period of time while authorities can finalise numbers of people estimated within a region against the tally. Authorities can now do this quickly and easily while people are moving through checkpoints. Not only is this safer and more

accurate, but it mitigates additional stress on people experiencing difficult situations.

Globally, Cradlepoint has supported other disaster recovery agencies. After super Typhoon YuTu crashed into the islands of Saipan (50,000 residents), Guam (165,000 residents), and Tinian (3,500 residents), Cradlepoint supported the ResponseForce1 (RF1) team by setting up the network connectivity for communication going in and out of the airport operations.

Despite no connectivity and few IT resources to deploy the network, these disaster areas could rapidly respond and coordinate on the ground recovery operations such as communications and bringing in resources due to the ability to get a network connection up and going fast.

In a similar fashion, the Oregon State Fire Marshal's Incident Management Team (IMT) in the U.S. set up a reliable network solution that was deployed quickly in Florida to assist in the recovery of Hurricane Michael the day after it hit.

At that time, Hurricane Michael, a category 5 hurricane, was the third most pressure-intense hurricane to make landfall in the continental U.S. and the fourth-strongest in terms of maximum sustained winds (155 mph) according to the National Oceanic and Atmospheric Administration (NOAA). The destruction was massive and wide-felt in the region — ranging from the collapsing of commercial and industrial buildings to city blocks of residential homes being wiped away. There was extensive flooding, and the local power companies announced the hurricane's winds left over 200,000 people in the region without power.

With no trace of remaining infrastructure, there was no communication going in or out. The team needed a network connection immediately to begin accessing outside resources, alert recovery agencies of the severity of the situation, and start recovery assistance.

The team was quickly able to set up a Cradlepoint router that simply needed a sign-in to access connectivity.

Emergency Services

Emergency vehicles throughout Australia still rely on radio technologies to communicate with each other and back to base. Despite investments being made to upgrade to radio technologies, there is still room to improve with connectivity in-vehicles using always-on technologies via wireless networks. We have seen success in other geographies where these technologies are deployed, for example Anne Arundel County Fire Department (AACoFD) in the U.S is using 4G LTE solutions to deliver always-on connectivity and Global Positioning System (GPS) location data to save lives in deploying the right resources to bushfire emergencies. These are situations where every decision and every second counts.

Constant connectivity gives AACoFD the confidence to rely on real-time vehicle location information that allows their Computer Aided Design (CAD) system to choose and send fire apparatus and personnel to the emergencies that are nearest their current location. The wireless routers onboard the vehicles provide GPS coordinates to the CAD system every 3 seconds. When an incident arises, the CAD can see where the closest vehicles are, enabling deployment of the appropriate resource there in the fastest available time.

During extreme weather conditions, Automatic Vehicle Location (AVL) services also enable personnel at headquarters to find

firefighters who are unaccounted for. Vehicles can be located via GPS coordinates, which can help keep emergency response teams safe.

Planning for Australia's future connectivity during natural disasters
It is our belief that the NSW government needs to factor connectivity failsafe options into planning for future natural disasters to avert the risk of leaving vulnerable and remote communities as well as organisations supporting those communities, disconnected and unable to access vital information during periods where traditional communications infrastructure may be affected, as they were during the 2019-20 bushfire season.

As other submissions have already outlined, power and mobile tower connectivity plays an important role (as outlined in AMTA and Communications Alliance submission) in enabling connectivity to fire affected communities. The following are additional considerations for the NSW Government to review when planning how it can ensure the right technology solutions are in the field ready for the next natural disaster, whatever that may be.

Key considerations:
¬ Providing alternative power options where power infrastructure is impacted – for example power generators – and ensuring adequate supplies for backup power options.
o The Mallacoota town bushfire disaster demonstrated a systemic collapse of infrastructure, highlighting that it's critical to consider the interconnected nature of connectivity, power and infrastructure
¬ Preparing in advance for enabling support in cities and communities that are most vulnerable to natural disasters
o Who would be the coordinating authority?
¬ Consider the distribution of routers to regional areas that are most affected by natural disasters:
o Should they be deployed ahead of time as a proactive measure; or
o Deployed when needed to communities that require rapid connectivity
¬ The mechanism for facilitating the implementation of routers for failsafe connectivity, for example:
o Local fire services that can switch on routers as needed; or
o Telecommunications authorities on a state-by-state basis.

Looking forward, it's imperative to include technology that can provide alternative options for connectivity that helps citizens stay in touch with loved ones, allows government and emergency agencies to provide timely information updates and enables businesses to continue to service communities and transact during disasters.

Additional information

https://cradlepoint.com/success_stories/anne-arundel-fire
https://cradlepoint.com/success_stories/clackamas-fire
https://cradlepoint.com/success_stories/indianapolis-fire
https://cradlepoint.com/success_stories/flymotion
https://cradlepoint.com/success_stories/responseforce1
https://cradlepoint.com/success_stories/hurricane-recovery

Terms of Reference (optional)

The Inquiry welcomes submissions that address the particular matters identified in its Terms of Reference.

Supporting documents or images

Attach files

- NSW Bushfire Inquiry - Cradlepoint submission - May 2020_Final.docx
- renfrew-county-cs.pdf
- caldwell-fire-cs-v3.pdf