Office of the
Inspector-General of
Emergency Management

2025 Significant Weather Events Summary Report

Queensland Government

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The Office of the Inspector-General of Emergency Management has reviewed all relevant documentation and evidence provided by state agencies and other entities, the community, and sourced from media and other public reports. This review report is based on the information that has been supplied to the Office of the Inspector-General of Emergency Management as of 14 October 2025 and does not consider any other material that has not been provided or sighted by the Office of the Inspector-General of Emergency Management. It is therefore possible that some inconsistencies may be present despite the best efforts of the Office of the Inspector-General of Emergency Management to validate and align the raw data utilised throughout this report.

Cover images: Queensland Fire Department

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14 October 2025

The Honourable Dan Purdie MP
Minister for Police and Emergency Services
PO Box 15195
City East Queensland 4002

Queensland Government
Inspector-General of
Emergency Management

Dear Minister

In accordance with the Government endorsed terms of reference dated 22 May 2025, I present the following reports:

- 2025 Significant Weather Events Summary Report
- North and Far North Queensland Tropical Low and Associated flooding (29 January – 28 February 2025) Event Report
- Tropical Cyclone Alfred and Associated Severe Weather (1 March – 16 March 2025) Event Report
- Western Queensland Surface Trough and Associated Flooding (21 March – 19 May 2025) Event Report

These reports detail the impacts of three major and distinct weather systems that affected 73 of the 77 local government areas and one town authority representing 95.5% of the state. The impact of the events included the displacement and isolation of residents, prolonged periods of power and telecommunications loss, extensive damage to homes, businesses and significant livestock losses.

The three weather events were unique and complex, affecting communities in different ways and requiring tailored responses. The individual event reports provide detailed insights into the nature of these impacts and the challenges faced. The 2025 Significant Weather Events Summary Report provides a whole of state perspective on the three events, highlighting compounding and cascading impacts on both the disaster management sector and the Queensland community. It also identifies commonalities across the events to support a holistic understanding of their collective impact.

The production of these reports has been a collaborative effort across Queensland's disaster management sector, reflecting both preparedness and response activities. This process enabled a deeper understanding of operational strengths, challenges and opportunities in managing widespread and compounding disasters. Community members contributed and shared their experiences through public submissions and attendance at community forums.

I recognise the commitment and hard work at all levels across Queensland, and I extend my sincere thanks to councils, state agencies, volunteers, emergency services personnel and disaster management practitioners, their dedication and service were crucial in responding to these events.

I acknowledge the work being undertaken to recover from the impact of these events is ongoing and will be for some time. The commitment of the entities and people is tireless, and I acknowledge everyone involved.

To the community members who supported one another during these challenging events, thank you. Your resilience, compassion, and unwavering commitment to helping others is deeply appreciated. You should be proud of your efforts, which will inspire and strengthen Queensland's response in the future.

Yours sincerely

Alistair Dawson

Alistair Dawson APM
Inspector-General of Emergency Management

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Acknowledgement of Country

The Office of the Inspector-General of Emergency Management acknowledges Aboriginal peoples and Torres Strait Islander peoples as the Traditional Owners and Custodians of this Country. We recognise their connection to land, sea and community. We pay our respects to them, their cultures and to their elders past and present.

Acknowledgements

The Office of the Inspector-General of Emergency Management extends our sincere thanks to all who contributed to the reviews of the significant weather events that impacted Queensland between January and May 2025.

The scale of these events was extensive, impacting 73 of the 77 local government areas (LGAs) and one town authority. The impact across Queensland was widespread, with numerous local government areas affected by distinct weather events. Specifically:

- North and Far North Queensland Tropical Low and Associated flooding (29 January – 28 February 2025) Event – impacting 40 LGAs
- Tropical Cyclone Alfred and Associated Severe Weather (1 March – 16 March 2025) Event – impacting 18 LGAs
- Western Queensland Surface Trough and Associated Flooding (21 March – 19 May 2025) Event – impacting 41 LGAs

Notably, 19 LGAs were impacted by both the North and Western Queensland events, and 7 LGAs experienced effects from both TC Alfred and the Western Queensland Floods. These overlapping impacts created compounding challenges, stretching local resources and increasing emotional, social, and economic pressures on communities already in recovery.

We acknowledge the many community members who shared their experiences through our community forums, written submissions, and personal conversations. Your courage in sharing deeply personal and often confronting stories has provided invaluable insight into the real and lasting impacts of these events.

We thank the staff of Articulous, Australian Red Cross, and the Department of Communities for their support at community forums, helping create safe and inclusive spaces for dialogue.

Our gratitude also extends to local, state, federal, and non-government stakeholders who provided timely information and participated in interviews with thoughtfulness, care, and a genuine commitment to the review process.

To the emergency management practitioners and volunteers – your dedication and unwavering commitment, event after event, is to be commended. Your work remains the backbone of Queensland's disaster response and recovery.

Finally, we acknowledge the staff of the Office of the IGEM, along with seconded and contracted personnel, whose integrity, empathy, and rigour ensured the reviews were conducted to the highest standard.

Thank you to everyone who contributed. Your voices, insights and efforts have helped shape a stronger, more resilient Queensland, one that learns and continues to improve its preparedness, response, and recovery for future events.

Alistair Dawson APM
Inspector-General of Emergency Management

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Figures and tables

Summary report

How to read this report

The Summary Report is one of four reports arising from the three significant weather events in the first half of 2025. The reports are written in line with the terms of reference and are described as follows:

- North and Far North Queensland Tropical Low and Associated Flooding (North Queensland Floods)
- Tropical Cyclone Alfred and Associated Severe Weather (TC Alfred)
- The Western Queensland Surface Trough and Associated Flooding (Western Queensland Floods).

The purpose of the Summary Report is to provide a whole-of-state summation of the three events, their collective impact on the disaster management sector and the Queensland community. The Summary Report also provides an analysis of any commonalities between the three events.

The Summary Report discusses the cascading and compounding impact of the three events on the disaster management sector. It reflects on the changing face of disasters, and how strategic-level planning in response to complex and potentially catastrophic crises can be achieved, as identified in the Crisis Appreciation and Strategic Planning (CASP) Guidebook.[1]

The purpose of the reviews is to provide the agencies and entities in Queensland's disaster management sector with an opportunity to reflect on preparedness and response activities in times of disaster. The scope of the reviews was limited to Queensland and the preparedness and response operations conducted under the Queensland disaster management operations. However, Australian government agencies that regulate or provide services to Queensland were also invited to provide submissions.

The reviews also provided community members opportunities to share their experiences that helped to inform the reports.

Complicated vs complex

What's the difference between Complicated and Complex?

Complicated problems originate from causes that can be individually distinguished. They can be addressed piece-by-piece – for each input to the system there is a proportionate output. The relevant systems can be controlled and the problems they present admit permanent solutions.

On the other hand, **Complex** problems result from networks of multiple interacting causes that cannot be individually distinguished. They cannot be addressed in a piecemeal way, and they are such that small inputs may result in disproportionate effects. The problems they present cannot be solved once and forever but need to be systematically managed.

Source: Roberto Poli, author of Working with the Future: Ideas and Tools to Govern Uncertainty. (CASP 2024, p. 10)

[1] Crisis Appreciation and Strategic Planning Guidebook, National Emergency Management Agency, Australian Government, 2024, p. 10

The Summary Report should be read in conjunction with the individual event reports. The report provides an overall summary of the significant weather events that impacted the state during the first half of 2025. Together these documents provide insights on:

- pre-season planning activities
- integration of preparedness and response activities between all levels of government
- opportunities to enhance community resilience
- communication systems and connectivity of communities
- provision of information to make informed decisions at both planning and response phases.

While each of the three events experienced this year is unique and had specific impacts on each community, there are shared experiences which provide invaluable insights for government agencies, businesses, not-for-profits, and individuals of how to better manage their preparation and response to disasters. A full list of recommendations is contained in this Summary Report but is also reflected in the event reports.

Methodology

In undertaking the reviews, consideration was given to the intent of the Queensland Disaster Management 2016 Strategic Policy Statement, and analysis was aligned to the Standard for Disaster Management in Queensland (the Standard)[2] and terms of reference. The methodology outlines the minimum requirements for the Office of the Inspector-General of Emergency Management (the Office) reviews.

The review was conducted according to Queensland's disaster management arrangements (QDMA) as it existed for the period of the three events in the first half of 2025.

The report contains observations, insights and recommendations, as described below:

Observation: A record of a noteworthy fact or occurrence that someone has heard, seen, noticed, or experienced as an opportunity for improvement or an example of good practice.

Insight: A deduction drawn from the evidence collected (observations), which needs to be further considered. An insight defines the issue, not the solution.

Recommendation: A proposed course of achievable action to either reinforce good practice or address an area identified for improvement.

Monitoring the implementation of accepted recommendations occurs through the Office's monitoring, evaluation and reporting program.

[2] Standard for Disaster Management in Queensland, Inspector-General of Emergency Management, 2021

Lines of inquiry

From the terms of reference (Appendix A), the Office developed three lines of inquiry in relation to the three reviews:

1. **Pre-season planning activities**
   including pre-season planning activities undertaken by entities.
2. **Integration of preparedness and response activities, including information and data needs**
   including a) integration of preparedness and response activities between all levels of government; and b) provision of information and data to inform and support planning decisions in the preparation and response phases.
3. **Opportunities to enhance community resilience including communications for the community to stay connected**
   including a) opportunities to enhance community resilience to better prepare for and respond to future disasters; and b) ensuring effective communications systems to enable the community to take necessary actions and to ensure connectedness within the community and with response entities.

The data collection and analysis activities for the review were prioritised and coordinated through these lines of inquiry. Throughout the review process, it became clear that many issues raised were complex and overlapped across multiple lines of inquiry. In such instances, efforts have been made to acknowledge the overlap while including the discussion in the most relevant section or sections of the event report.

Other reviews and reports

The reviews also considered other relevant available reviews and reports, such as:

- *Australia's National Climate Risk Assessment,* Australian Climate Service, Australian Government, 2025
- *From storm to study: Insights on resilience from Tropical Cyclone Alfred*, prepared by Dr Geoff Boughton, Dr David Henderson, and Dr Bruce Harper from James Cook University for Natural Hazards Research Australia, 6 May 2025
- *Brisbane City Council Tropical Cyclone Alfred Review*, prepared by The Hon Paul de Jersey for Brisbane City Council, 12 May 2025
- *Social media analytics to explore community experiences of Tropical Cyclone Alfred*, prepared by Julian Marx, Farnaz Pirasteh, and Rashika Bahl from The University of Melbourne for Natural Hazards Research Australia, 10 May 2025
- *Australian Transport Safety Bureau (ATSB) report AO-2025-016*

Introduction

Queensland is no stranger to significant weather events. But even by Queensland's standards, the first half of 2025 exceeded expectations as a protracted period of consecutive disasters across most of the state.

All three events – the North and Far North Queensland Tropical Low and Associated Flooding (February), Tropical Cyclone Alfred and Associated Severe Weather (March), and the Western Queensland Surface Trough and Associated Flooding (March-April) – impacted 73 of Queensland's 77 local government areas (LGAs) and one town authority, covering 95.5 per cent of the state.

This prompted the activation of those councils' counter disaster operations at least once this year[3], and of those, 25 LGAs had areas where residents were displaced or isolated, experienced extended periods of power and telecommunications loss, and suffered extensive property and business damage and livestock losses.

Twenty-four LGAs were activated for two events. Nineteen council areas were impacted by both the North and Far North Queensland Tropical Low and Associated Flooding event and the Western Queensland Surface Trough and Associated Flooding event.

What are compounding and cascading hazards?

In 2021, the United Nations Office of Disaster Risk Reduction, Sendai Framework for Disaster Risk Reduction, put out its Scoping Study on Compounding, Cascading and Systemic Risks in the Asia Pacific. They use the Pesca Roli and Alexander (2018) definition of compound events, which are:

1. extremes that occur simultaneously or successively

2. extremes combined with background conditions that amplify their overall impact

3. extremes that result from combinations of 'average' events.

Source: undrr.org, 2021, p. 20

Six council areas impacted by both the Tropical Cyclone Alfred and Associated Severe Weather event and the Western Queensland Surface Trough and Associated Flooding event.

Two lives were lost in the far north[4] of Queensland, and Queensland Health reports that 36 people have since died from melioidosis (as at 22 September 2025), a soil-borne disease exposed when floodwaters receded. The degree of impact on communities varied from minor-moderate damage to public infrastructure to record inundation and flash flooding.

The combined impact of the three events damaged almost 22,000 kilometres of Queensland roads. Roads were closed entirely or partially with restricted access, and vital arterial roads were washed away. The Ed Kratzmann Bridge on the Bruce Highway over Ollera Creek north of Townsville was washed away on Sunday, 2 February 2025. As a vital supply route to the Far North, a temporary bridge was constructed by Australian Defence Force (ADF) personnel, Department of Transport and Main Roads (TMR), and other agencies to keep road freight going north. The bridge was reopened on 10 February with reduced speed limits – reopening the supply route to the Far North in eight days.

[3] https://www.qra.qld.gov.au/disaster-funding-activations
[4] https://mypolice.qld.gov.au/townsville/2025/02/02/flood-related-death-ingham/; https://mypolice.qld.gov.au/townsville/2025/02/04/flood-related-death-bemerside/

In Southeast Queensland, after TC Alfred crossed the mainland, record rain fell across the Southeast. Flooding and rain forced the closure or restricted access to almost 700 kilometres of State-controlled roads. Approximately 450 traffic signals became inoperable due to localised flooding.

A Technical Report into TC Alfred by James Cook University College of Science and Engineering reported "the weakening of TC Alfred just prior to landfall meant that the large population in Southeast Queensland and Northeast NSW 'dodged a bullet'."[5] As it was, 500,000 households and businesses – making up two million people – lost power for up to 11 days. These power outages had a flow-on effect to telecommunications. For those who found themselves without power and isolated due to flooding or closed roads, the radio was both a source of information and comfort to listeners. Local radio demonstrated trusted and comprehensive broadcasting.

Two weeks after TC Alfred, the Western Queensland Floods inundation damaged more than 11,000 kilometres of roads, and the small communities in the far west were cut off for weeks. All major highways between Charters Towers, the Gulf Country, the Queensland-Northern Territory border, and New South Wales border were inaccessible. Aviation was the only way to resupply impacted communities. It is considered that stock losses would have been significantly higher without the air support that delivered fodder to the surviving livestock.

In Western Queensland, rain fell with record-breaking intensity and led to flood warnings across 11 catchments, stretching as far north as the Leichardt River, as far west as the Georgina River, and across to the Condamine River towards the southeast of the state – an area the size of Victoria. Record flood levels were recorded along the Thompson, Barcoo, Bulloo and Paroo rivers and Cooper Creek. The flood peaks moved south towards New South Wales and South Australia, causing extensive damage to properties and significant stock loss, estimated at around 213,000. Approximately 8000 kilometres of fences were damaged.

The three events triggered the closure of 1194 schools across Queensland. During the floods in Far North Queensland in February, 113 schools closed. In Southeast Queensland, 1053 schools were shut pre-emptively on Thursday, 6 March when it was anticipated TC Alfred would make landfall on Friday, 7 March. In Western Queensland, 28 schools were closed because of the floods.

The cost is still being counted, however, some of the costs of disaster response and relief operations can be quantified through commitments made by the Queensland Reconstruction Authority (QRA) utilising Disaster Recovery Funding Arrangements (DRFA) categories A and B, including:

- Counter Disaster Operations – costs borne by councils and state government agencies in responding to the disaster events. Across the three events, these totalled nearly $34 million as at 30 June 2025.
- Emergency Hardship Assistance grants of $180 per person or $900 for a family, have totalled $150 million as at 30 June, representing payments to almost 940,000 individuals.
- Emergency Works – immediate repairs to transport or eligible essential public infrastructure assets such as bridges, totalled almost $9.5 million as at 30 June.

[5] TC Alfred, SE Queensland and NE NSW Damage to Buildings CTS Technical Report No 70, Boughton et al, James Cook University, 2025, p. 3

Of the 72 LGAs which activated for the events, all qualified for some Essential Public Asset and Reconstruction funding, covering anything from debris removal to major road repairs. The Insurance Council of Australia (ICA) puts the total value of claims for the North Queensland Floods and TC Alfred at $1.483 billion, covering 127,000 home, motor vehicle, and commercial insurance claims.[6] ICA advised in relation to Western Queensland Floods 347 domestic claims were registered.

Each of the three disasters has demonstrated is that no part of the state is immune to the impacts of severe weather events. For example, TC Alfred was a reminder to the Southeast that tropical cyclones can impact the area, noting that the last cyclone recorded to cross the Southeast Queensland coast was Tropical Cyclone Zoe in 1974. In the Upper Burdekin catchment, the Bureau of Meteorology (Bureau) recorded two consecutive days of more than 700 millimetres of rainfall; the first instance of this on record in Australia. Areas around Windorah and Longreach recorded their highest wet season rainfall on record.

Disaster Recovery Funding Arrangements (DRFA)

The Disaster Recovery Funding Arrangement (DRFA) is a jointly funded program between the Australian and state and territory governments, which provides financial assistance for disaster recovery costs. The DRFA can be activated to provide funding and support to Queensland communities, when an event meets the definition of an eligible disaster.

Source: Queensland Reconstruction Authority

In isolation, each of the events impacted communities involved, but as a group, they illustrate the changing face of crises. As noted in the CASP Guidebook: "…incidents and disasters can overlap and produce waves of second and third-order effects as well as challenges. As the scale and frequency of incidents increase, emergency managers and incident leaders face a spectrum of consequences with proportionately fewer resources".[7] This is reiterated by the Australian Climate Service in the 2025 Australia's National Climate Risk Assessment: "Australia currently experiences compounding and cascading hazards, and this is going to increase. Concurrent events, and reduced time between severe events will become more common".[8]

[6] Figure as at 22 August 2025
[7] Crisis Appreciation and Strategic Planning Guidebook, National Emergency Management Agency, Australian Government, 2024
[8] Australia's National Climate Risk Assessment Report, Australian Climate Service, 2025, p. 5

Recommendations

Recommendation 1

The Inspector-General of Emergency Management recommends that the secretariats of the Queensland Disaster Management Committee (QDMC) and the State Disaster Coordination Group (SDCG) consult with their respective Chairs to extend in-person invitations to senior representatives from telecommunications entities to attend QDMC and SDCG to brief and participate in intra-agency planning in future disaster events.

Recommendation 2

The Inspector-General of Emergency Management recommends that the Department of Primary Industries lead a discussion with relevant stakeholders to establish a framework for the procurement of, and distribution of fodder during disasters.

Recommendation 3

The Inspector-General of Emergency Management recommends that the Queensland Police Service convene a meeting with the Civil Aviation Safety Authority and other state entities deploying aviation assets to disaster operations (e.g. Queensland Reconstruction Authority, Queensland Fire Department, Department of Primary Industries, Energy Queensland, Local Government Association of Queensland etc), to discuss air operations in uncontrolled airspace and complex environments to determine what 'safe practice' looks like, as well as 'good practice'.

Recommendation 4

The Inspector-General of Emergency Management recommends that the Queensland Reconstruction Authority lead a multi-agency discussion on the appropriate duration of community self-sufficiency in the context of emerging disaster risks.

Recommendation 5

The Inspector-General of Emergency Management recommends that the Office of the Inspector-General of Emergency Management is involved in consultation prior to the finalisation of the government action plan, to align intended actions with the intent of the recommendations.

Recommendation 6

The Inspector-General of Emergency Management recommends that the review reports be returned to the Office of the Inspector-General of Emergency Management to monitor, evaluate and report on progress and implementation of the recommendations that are accepted in whole or in part by government.

Timeline of events

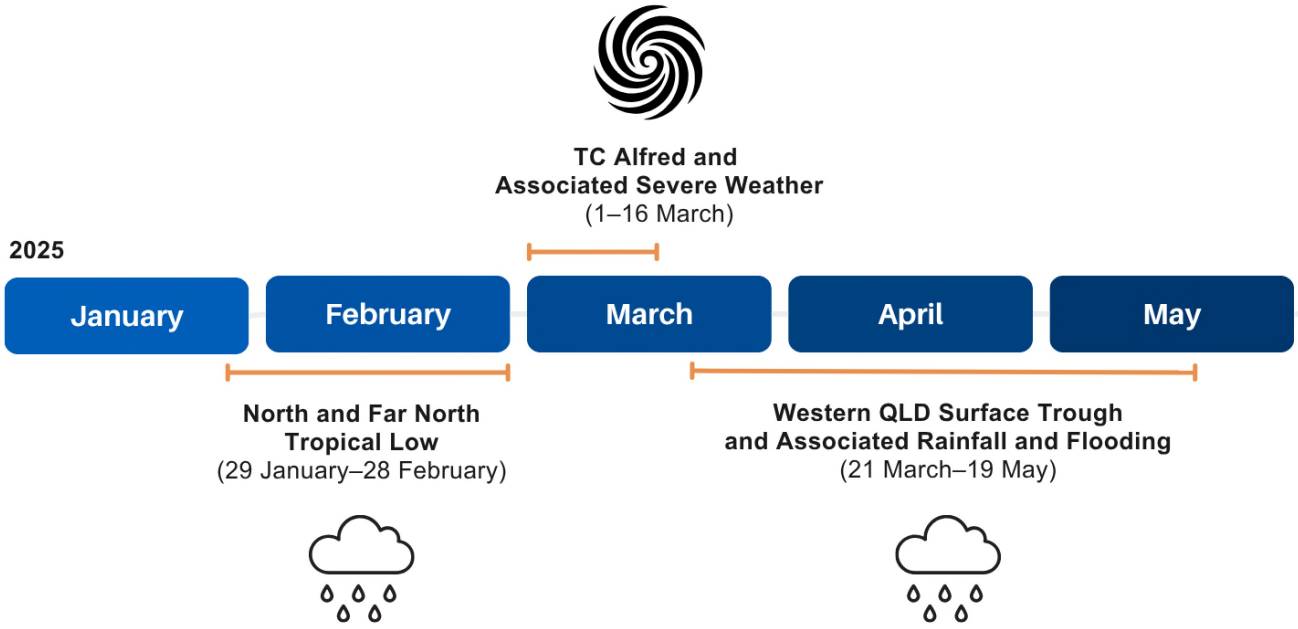

Figure 1: An overview of the DRFA-activated events. Response activities may have started before DRFA activation and continued after the activation period ended.

Community consultation

To gain insights from impacted communities, the Office invited public submissions, conducted community forums, and met with mayors and councillors. The forums and meetings were targeted at local government areas most impacted, spread across the three events, and where the activity had councils' support.

Mayor and councillor meetings

To gain direct insights into community experiences and perspectives, targeted engagement meetings were held with mayors and councillors representing the affected LGAs. These meetings provided an opportunity to understand the unique challenges and strengths within each community, as well as to identify good practices and areas for improvement in the operationalisation of disaster management arrangements. A total of 14 meetings were conducted.

Table 1: Councils the IGEM held meetings with for the reviews.

Meetings with local government mayors, councillors, and staff	
Cairns Regional Council	Longreach Regional Council
Yarrabah Aboriginal Shire Council	Bulloo Shire Council
Cassowary Coast Regional Council	Quilpie Shire Council
Hinchinbrook Shire Council	Fraser Coast Regional Council
Townsville City Council	Redland City Council
Palm Island Aboriginal Shire Council	City of Logan
Charters Towers Regional Council	City of Gold Coast

These discussions generated valuable information on community impacts, local response efforts, and opportunities to enhance coordination and effectiveness across the disaster management sector.

Community forums

Community forums provide an opportunity for community members from impacted areas to participate in a structured engagement session hosted by the Office. These forums are supported by the Australian Red Cross (ARC), Community Recovery officers (from the Department of Families, Seniors, Disability Services and Child Safety), and are facilitated by an experienced external facilitator. ARC was available to provide psychological first aid if needed, and Community Recovery officers provided information and referrals to available support services.

The primary purpose of the forums was to connect directly with community members affected by the disaster events, and to hear and document their lived experiences, perspectives, ideas, and suggestions. These firsthand accounts offer valuable insights into the social and operational impacts of the events.

The information gathered through these forums helped the Office develop a deeper understanding of how the events affected communities and delivery of the Queensland Disaster Management Arrangements (QDMA), informing future improvements in relation to disaster preparedness and response.

Four community forums in four disaster-impacted local government areas were conducted.

The Office negotiated a date, time, and venue with the council to conduct the community forums. The Office would like to thank them for their advice and assistance to organise these forums. We also thank local governments for their advice to not hold a community forum where they held concerns for potential impacts to the recovery of their communities.

Table 2: Community forums

Location	Local government area	Date	Event
Hervey Bay	Fraser Coast Regional Council	Sunday, 27 July	TC Alfred
Redland Bay	Redland City Council	Thursday, 7 August	TC Alfred
Quilpie	Quilpie Shire Council	Tuesday, 12 August	Western Queensland Floods
Cardwell	Cassowary Coast Regional Council	Wednesday, 20 August	North Queensland Floods

The community forums were attended by 116 people. These forums aimed to provide an opportunity for disaster-affected community members to tell their stories and express their views in a safe and respectful environment.

Participants were invited to share how the 2025 disaster events impacted them as individuals and as a community. Additionally, the forums also provided an opportunity for sharing their experiences and insights about:

- Community preparedness and activities undertaken ahead of the disaster event
- How effective was the communication and shared information with communities and aspects of consistency and timeliness of the communication
- Explore the understanding of shared responsibility, as well as the impacts of the event on others
- Community outcomes and resilience, including local strengths and solutions that held during the events and how communities can be supported before and during disaster events.

The community forums were promoted through paid, location-targeted social media advertising, organic social media posts on the Office's channels (Facebook and LinkedIn) and council channels. Promotion also included ABC Radio interviews. The community forum at Redland Bay was cross promoted at an earlier ARC emergency preparedness event. The community forum at Cardwell was promoted on local commercial radio stations.

Each council received a communications kit that included social media copy and tiles, a fact sheet, and poster. Councils were encouraged to promote the forums within their communities. All communications directed community members to the Office webpage with additional information about the reviews and forums, and a digital form for forum registrations.

No recordings or identifying photographs were taken at forums to help encourage open discussion in a safe environment. Critically, the Inspector-General of Emergency Management, Alistair Dawson, attended all community forums, emphasising the importance of participants' contributions, providing assurances of their anonymity and encouraging them to make submissions to the review.

Public submissions

The Office sought public submissions to hear directly from individuals, communities, and local organisations about their experiences of the event. Public submissions were promoted through the same channels used to promote the community forums.

The Office received 53 submissions from the community and 106 from entities. Many entities provided submissions covering one or more of the events, with a number of entities providing a response covering all three events.

The public shared their feedback by either:

- Completing an online form from the Office website, which had prompts to assist the submission process
- Downloading the form, completing it offline and emailing it to the Office
- Emailing their submission directly to a dedicated IGEM review email address.

Individuals were also welcome to attach supporting materials, such as photos, videos, or documents, to provide further context to their submission.

Public submissions were open from 13 June to the 27 August 2025.

Community insights

There were common themes across the three events, and some specific to one or two events. The Office notes that although these themes are different, they are sometimes connected and driven by different complexities.

The following represents the common themes across the three events:

- Communities or community members perceived they were well prepared
- Community preparedness was often based on lived experiences, however, due to the extent of the event, many community members were caught off-guard
- Isolation of communities
- Lack of access to food and goods
- Some communities and community members were resilient while others were not
- A perceived reliance on government
- Some community members perceived as not knowing local hazards and their risks
- Communities banding together to help each other
- Loss of livestock
- Telecommunications and power outages
- The reliance of telecommunications on power
- Perception that warnings were not received, not timely, and not localised
- Perception that public information was lacking and not location specific
- Perception that tourists could be better warned
- Risk to life when having to evacuate in dangerous conditions and without any warning
- Concerns around facilities used in disasters, such as amenities, suitability, location or safety
- Vulnerability of infrastructure to disasters and the need to make infrastructure more resilient.

Further detail about community sentiment for each of the three events is available in the specific event report:

1. North and Far North Queensland Tropical Low and Associated Flooding
2. Tropical Cyclone Alfred and Associated Severe Weather
3. Western Queensland Surface Trough and Associated Flooding.

Bureau of Meteorology in disaster management

The Bureau is Australia's national agency for weather, climate, oceans and water. Its comprehensive suite of products and services supports informed decision making by governments, emergency services, industry, and the community. It offers a wide range of observations, forecasts, warnings, analyses, and advice, covering various aspects of Australia's atmosphere, water, ocean, and space environments.

The *Meteorology Act 1955* (Cth) Section 6(1) and (2) outline the Bureau's functions, including issuing warnings for gales, storms and other weather conditions that may endanger life or property, as well as conditions likely to lead to floods or bushfires.[9]

The roles and responsibilities of federal and state government emergency management agencies in delivering forecasts and warnings to the Australian community are specified in the Intergovernmental Agreement (IGA) on the Provision of Bureau of Meteorology Hazard Services to the States and Territories. Under the IGA, the Bureau's responsibilities include, but are not limited to the issue of warnings of:

- gales, storms and other weather conditions likely to endanger life or property
- weather conditions likely to give rise to floods
- riverine flooding, defined as any flooding where the rain-to-flood delay time is relatively high and typically more than six hours but excludes flooding caused by elevated sea levels, storm surge, flash floods, failure of manmade infrastructure, and urban overland flow.[10]

The IGA also states warning services for flash flooding are the responsibility of state and local governments, where flash flooding is defined as "any flooding of short duration with a relatively high peak discharge in which the time interval between the observable causative event and the flood is less than six hours".

Weather forecasting – the Bureau's observations network

Information based on observations is available as data feeds through the Bureau's real time data and climate data services. The real time observation network includes radars, automatic weather stations, rainfall and river level gauges.

Access to live observations and satellite imagery is available on the Bureau's website and via the BOM Weather app.

[9] Meteorology Act 1955 (Cth) s6
[10] Intergovernmental Agreement on the Provision of Bureau of Meteorology Hazard Services to the States and Territories, Council of Australian Governments, 2017

Bureau flood warning service assessment

The Bureau uses three performance indicators for its flood warning service:

- Timeliness: percentage of flood watch and flood warning products issued on time, i.e. before or at the stated next issue time.
- Lead time: percentage of river level forecasts that met or exceeded the target lead time. The lead time is essentially how much advance notice (time) is given ahead of exceedance of a specific river height trigger. Target lead time and the corresponding trigger height are defined in the Service Level Specification (SLS) for each forecast location.[11]
- Peak accuracy: percentage of predicted flood peaks that were within a specified water level range (as per the SLS) of the observed peak, typically +/- 0.3m.

Table 3: Bureau performance measures

Flood warning verification measures associated with North Queensland Floods		
Performance indicator	Target	Actual Performance (%)
Lead time	70	81
Peak accuracy	70	71
Timeliness	97	99

The targets for all performance indicators, shown in Table 3, were exceeded.

The Bureau in the North Queensland Floods

During the North Queensland Floods, the Bureau often lacked access to critical local thresholds, such as evacuation triggers. This information becomes vital when forecasts approach or exceed record levels.

With more intense weather events expected in future, understanding potential community impacts will be essential for local governments planning flood mitigation and adaptation.

The information enables the Bureau to tailor its decision-support services by understanding the decisions which are made at various impact thresholds and between the nominated flood levels of minor, moderate, and major.

Leading up to and during the North Queensland Floods, the Bureau presented the following forecasts, warnings, briefings, and media inquiries:

[11] Service Level Specification for Flood Forecasting and Warning Services for Queensland – Version 3.6, Bureau of Meteorology, 2024, p. 15

Table 4: Number of Bureau products during the North Queensland Floods

Number of products by type issued during the North Queensland Floods	
Type of communication	Number
Severe weather warnings	25
Severe thunderstorm warnings	34
Flood watches	11
Flood warnings	273
Briefings to emergency management sector via QDMA	478
Media inquiries	283
Social media posts	167

In addition to tailored briefings and online products, the Bureau provides services to the emergency management sector, including forecast and weather warning products, standard and supplementary briefings to emergency management agencies, and 24-hour phone access to meteorologists and hydrologists for specialist support and interpretation of data.

The North Queensland Floods highlighted an opportunity to improve efficiencies in the provision of the Bureau's briefing services. For example:

- alignment and consolidation of briefings to disaster management groups with common needs
- an improved, shared process for briefing requests
- visibility of the briefing schedule across the QDMA.

Insight: Community safety may be enhanced with increased understanding and communication between disaster management groups and the Bureau regarding the relationship between Bureau warnings and planned disaster response triggers. The solution lies in strengthening collaboration and information-sharing across jurisdictions and between levels of disaster management groups.

The Bureau in TC Alfred

In the lead-up to and during TC Alfred, the Bureau provided up-to-date forecasts and warnings through a range of channels. Forecast and warning products were disseminated directly to emergency management agencies.

These products were also published on the Bureau website and mobile app. The Bureau provided briefings and advisory services to all levels of government, as well as extensive communication to the public via media and its social media platforms.

The Bureau delivered the following forecasts, warnings, briefings, and media inquiries for TC Alfred:

Table 5: Bureau products for TC Alfred and Associated Severe Weather

Number of products by type issued for TC Alfred and Associated Severe Weather	
Type of communication	Number
Tropical cyclone advice	49
Severe weather warnings	52
Coastal hazard warning	38
Flood watches	10
Flood warnings	102
Briefings to emergency management sector via QDMA	331
Media inquiries	436
Social media posts	772

The accuracy of the forecast track position for TC Alfred was high. Flood warning peak accuracy and timeliness met or exceeded the targets as specified in the Queensland Flood Service Level Specification (SLS). The community was provided with significant lead time for flood warnings in the first flood watch product issued on Sunday, 2 March 2025.

Tropical cyclones are considered compound events, encompassing a combination of hazards such as strong winds, heavy rainfall, flash and riverine flooding, and coastal impacts. Recognising their compound nature enables communities to prepare more effectively for the diverse risks these systems present.

The Bureau in the Western Queensland Floods

The Bureau acknowledges that internet and mobile phone network connectivity issues can prevent communities from accessing forecast and weather warning information. The Bureau provides regular updates to ABC Emergency to support live emergency broadcasting. Responding to additional media enquiries and amplifying timely messaging through social media channels also helps the Bureau deliver and amplify key messages, forecasts, and weather warnings more broadly.

The Bureau's weather data is obtained from a network of different types of observing stations around Australia. The observation network in Western Queensland is a combination of automatic

weather stations and real-time and manually-read rainfall and river-level gauges. The region's network is less dense than in higher-rainfall areas east of the Great Dividing Range.

Leading up to and during the Western Queensland Floods, the Bureau advised that the following forecasts, warnings, briefings, and media inquiries were issued:

Table 6: Bureau products for the Western Queensland Floods

Number of products by type issued during the Western Queensland Floods	
Type of communication	Number
Severe weather warnings	19
Severe thunderstorm warnings	106
Flood watches	13
Flood warnings	323
Briefings to emergency management sector via QDMA	366
Media inquiries	127
Social media posts	264

The Bureau provided 366 briefings to the emergency management sector via the QDMA, responded to 127 ad hoc media enquiries, and published 264 social media posts during the event. The information was further disseminated by meteorologists and hydrologists through briefs and advice services, mainstream media, and social media reporting.

For many locations, the onset of flooding was faster than normal due to the intensity of the rainfall. Standard flood forecasting models are less effective within many catchments in Western Queensland; the high prevalence of braided rivers and the low density of the real-time observation network mean that empirical forecasting techniques (peak height correlations) are often the preferred method of forecasting. This reduces the extent to which forecast rainfall can be used to anticipate flood levels.

Bureau contributions and stakeholder perspectives

A Western Queensland Local Disaster Management Group (LDMG) reported that the Bureau's input at daily meetings was critical to their planning during this event because it enabled them to determine the flood height that would impact properties.

Similarly, a neighbouring District Disaster Management Group (DDMG) noted that intelligence from the Bureau and landowners upstream along the Warrego, Paroo, and Bulloo rivers and their tributaries was instrumental in preparing several LDMGs of the impending floodwaters. This locally sourced information from landowners was also provided to the Bureau to support weather modelling and forecasting.

Another DDMG further highlighted the value of intelligence from the Bureau and landowners upstream of the Thomson and Barcoo catchments, which helped to prepare their areas for the flood event.

> *"Excellent support was provided by (the Bureau) in providing the most up-to-date intelligence on rain and river heights which assisted the LDCC (Local Disaster Coordination Centre) in planning."*
> Western Queensland LDMG member

Forecast limitations or constraints

The Bureau's ability to provide accurate flood forecasts in Western Queensland is significantly constrained by the lack of upstream weather stations and monitoring infrastructure along key river systems. As mentioned above, standard flood forecasting models are of limited utility within many catchments in the region. In some areas, councils must rely on local information and informal observations – such as flow rate at river height markers – to estimate likely flood heights. Whilst valuable, this approach limits the lead time available for preparation and response.

Decision makers face additional challenges when rainfall patterns deviate from historical events. This occurred during the North Queensland Floods where rainfall shifted from east to west and the rainfall pattern complicated predictions and planning.

Good practice

'Know your weather. Know your risk' is the Bureau's annual public safety campaign. Its overarching goal is to inform communities about severe weather and how it could impact them, giving them confidence to act when they need to. In 2024, the campaign ran from 9 September to 13 October 2024.

Source: Bureau of Meteorology

In Western Queensland, the Office heard that the absence of radar coverage and insufficient rainfall gauges may further hamper the Bureau's forecasting capabilities. In some cases, it was expressed that the Bureau may have only became aware of the true extent of the rainfall after significant events had already occurred.

One Western Queensland LDMG relied on overnight rainfall figures provided by locals, noting the flood heights exceeded those of the last comparable flood event in 1963. A neighbouring disaster district acknowledged the limitations of Bureau data and flood monitoring in the region, highlighting that local knowledge remains the primary source of intelligence and should be systematically documented. The district also identified opportunities to improve flood behaviour monitoring in the Channel and Gulf Country regions, noting that councils have invested in cameras and monitoring equipment to address gaps in the current network.

Participants of a Western Queensland community forum also expressed frustration with the lack of timely early warning, response capacity, accurate Bureau information, and the disparity between predicted and actual rainfall. Early warning and response capacity are affected by the declining rural populations and fewer residents living on properties to provide on-the-ground information, limiting early warning and response capacity.

Capability improvements

The Bureau acknowledges the need for enhanced meteorological infrastructure in many Queensland regions. This report contains a dedicated section on the Flood Warning Infrastructure Network. Notably, the Bureau advised planning for a new radar installation in Western Queensland is underway, with site selection anticipated by mid-2026 following stakeholder consultation. The specific type of radar and supporting infrastructure is yet to be determined.

Additionally, the Bureau is exploring the use of renewable energy and hybrid power supply options to improve the resilience of radar installations. Pilot projects are underway in New South Wales but there no current plans to extend the project to Queensland.

Other capability improvements

The Bureau provides data and advice to support private meteorologists and third-party providers who offer supplementary services that are well suited for specialised or local needs. However, the Bureau remains the primary authoritative source for most agencies and decision makers.

The Bureau ensures its meteorologists also meet World Meteorological Organisation (WMO) standards by requiring that they complete a WMO-accredited course as a prerequisite for working for the department.

Previous IGEM reviews

Previous IGEM reviews, including the 2023–24 Severe Weather Season Review[12]; noted the limitations in the Bureau providing comprehensive weather warnings about the rainfall levels experienced and the impact of unprecedented severe weather events on preparedness activities.

In the Southeast Queensland Rainfall and Flooding February to March 2022 Review, it was noted that Queensland had highly dynamic weather and rapid changes in short timeframes.[13] It was recommended that options be investigated to consolidate flood warning infrastructure in Queensland.[14]

Flood warning infrastructure

Flood warning infrastructure plays a critical role in protecting Queensland communities by providing the intelligence needed to anticipate, prepare for, and respond to flood events.

The review heard from some community members and several local governments that they believe coverage remains insufficient across parts of the state, which could create gaps in situational awareness and reduce the accuracy of flood forecasting and planning measures.

Infrastructure fit for current and future events

Recent events have provided valuable insights into the performance of flood monitoring

[12] 2023–24 Severe Weather Season Review, Inspector-General Emergency Management, 2024, p. 43
[13] South East Queensland Rainfall and Flooding February to March 2022 Review, Inspector-General Emergency Management, 2022, p. 60
[14] South East Queensland Rainfall and Flooding February to March 2022 Review, Inspector-General Emergency Management, 2022, p. 63

infrastructure under high-impact and prolonged conditions. In some regions, systems that struggled to maintain functionality highlight where the opportunities are to strengthen their resilience.

High volumes of water and debris can adversely affect automated gauges, which are critical for data collection. Visual references, such as flood markers or flood cameras, offer complementary support for situational awareness when automated or manual systems are disrupted.

Stakeholders across Western Queensland have noted potential limitations in flood monitoring coverage, particularly in remote areas where catchments span large distances. In some locations, the distribution of gauges, weather stations, and water markers appears sparse. This may constrain formal monitoring capability and contribute to gaps in situational awareness. In turn, reduced accuracy of flood forecasting can reduce lead times for effective preparedness activities, warning delivery, and evacuation planning.

Did you know?

Queensland has more than 3300 rainfall and river gauges.

These inform state-wide flood warnings and forecasts.

Flood warning assets are owned and operated by more than 60 groups, including state and local government, the private sector, and the Bureau of Meteorology.

Source: Bureau of Meteorology?

Manual gauges can be challenging to monitor when infrastructure is limited or inaccessible. In one instance, a stakeholder described using a street sign as a makeshift gauge after the actual gauge reached its limit at 7 metres and could only be accessed by drone. This example illustrates the resourcefulness of local responders.

In another example, decision makers pivoted to manual gauge readings using helicopters, drones, and community-sourced observations to assess river heights and flood conditions when a river gauge failed. The Local Disaster Coordinator (LDC), supported by experienced liaison personnel, used the data to make informed decisions to keep the community safe. While this LDMG was able to adapt quickly, the review heard how challenging the circumstances were to gather this data.

The Queensland Strategy for Disaster Resilience 2022–2027 (QSDR) encourages a shift toward more resilient systems in response to increasing hazard intensity and climate-driven risks. Designing and maintaining infrastructure with future conditions in mind supports community safety and long-term preparedness.

> *"When the gauge network failed] We had to make our own gauge as it only goes to 7m and the only way to get to it was using a drone... The business of manually reading a gauge was ridiculous. If we didn't use a drone, we wouldn't know."*
> Western Queensland councillor

Local governments and other entities who manually read gauges report the data back to the Bureau, who use and publish it on the Bureau website. The Bureau-published data is then drawn by, and displayed on local governments' disaster dashboards, which supports LDMG and the communities' decision-making. Disaster dashboards are designed and widely promoted as a single source of truth for a local government area and draws from multiple, official inputs, such as TMR for road closures, and Energex and Ergon for current power outage information.

One North Queensland local government reported challenges experienced by the delay between submitting their manually-read gauge data, its publication on the Bureau website, and it appearance their disaster dashboard. The delay affected the timing of their community-focused flood warning because their local flood data conflicted with the information on the Bureau website, which hadn't been updated. This highlights the interconnected nature of disaster information systems and validating information.

> *"We were asking the community to refer to the disaster dashboard, which was using [out of date] Bureau readings. The community lost confidence in the information coming from the LDMG, as the website had incorrect information. This has now caused long-term reputational damage to the LDMG in the community, which will be challenging to rectify for future disaster events."*
> North Queensland councillor

Damaged flood warning assets

Queensland's exposure to compounding disaster events means that when an event occurs, there is a chance that flood warning assets, such as radars, gauges, and telemetry systems, may be damaged or offline from the previous event. The scale of the network and remoteness of the assets can make timely restoration challenging, particularly when assets are impacted from multiple, cascading events.

The time to restore lost or faulty gauges and sensors can limit the availability of monitoring data when a further event unfolds. For example, during recent flood operations, several river height sensors were not functioning, requiring manual readings and alternative methods to support planning and response. For example, a radar west of Townsville was struck by lightning in early January and remained offline during the significant flood event later that month.

These circumstances highlight the complexity of maintaining a widespread monitoring network and the importance of resilient systems to support timely and reliable information for communities and emergency responders.

> *"The number of river height flood monitoring sensors that were not working limited the data available for planning and response."*
> LDMG member

Flood cameras: enhancing situational awareness

There is growing recognition of the value of 'alternative flood warning infrastructure'[15], such as flood cameras, to supplement the situational awareness provided by flood gauges. Flood cameras on main roads and bridges help to enhance real-time situational awareness. Some local governments

[15] https://www.qra.qld.gov.au/news-case-studies/news/alternative-flood-warning-infrastructure-guideline-supports-flood-warning-needs

have said that cameras positioned across catchments and along major transport routes helped to provide visual confirmation of flood conditions, which supported their operational decision making.

Enhancing and augmenting this capability aligns with the QSDR's emphasis on improving access to real-time information (Strategic Commitment C1.2) and ensuring investment is aligned with local and regional needs (Objective 4). It also aligns with the Interim State Disaster Management Plan's (Interim SDMP) focus on predictive capabilities and situational awareness to support coordinated response.

The way forward

The QSDR emphasises the need to transform systems to make them more resilient, especially in the face of systemic disaster risk driven by a changing climate and increasing hazard intensity. Ensuring infrastructure is designed and maintained to withstand future conditions is essential to safeguarding communities.

There is a need for improved redundancy in flood warning infrastructure, such as backup telemetry systems, satellite-based monitoring, or manual cross-validation to ensure continuity of operations when primary systems fail. These measures should be embedded into operations and used in training to support broader business continuity planning frameworks, as outlined in the Interim Queensland Prevention, Preparedness, Response and Recovery Disaster Management Guideline (DM Guideline), to ensure critical functions can continue during disruptions.

Physical flood markers play a valuable role in supporting community understanding of flood risk, particularly in high-tourist areas. In such contexts, visible markers provide a tangible reference point, helping people visualise what flood heights mean in that location. Flood markers also serve as important educational and cultural assets by bridging understanding between long-term residents and new residents or visitors who may be unfamiliar with local flood behaviour.

Significant investment is currently underway to strengthen Queensland's flood warning capabilities, including the $236 million National Flood Warning Infrastructure Network (FWIN) Program led by the Bureau[16] and the $7 million Emergency Response Fund (ERF) FWIN program led by the QRA.[17] These programs aim to strengthen the network and significantly improved data availability across the state.

Diversifying the types of infrastructure used, such as cameras and satellite telemetry, can help support and improve the flood warning infrastructure network in Queensland.

Insight: Complementary flood monitoring assets such as flood markers and flood cameras can contribute to the accuracy, timeliness and resilience of flood warning intelligence.

[16] https://www.qld.gov.au/emergency/dealing-disasters/disaster-types/flood/for-councils-and-flood-practitioners/flood-warning-infrastructure-resources/bureau-of-meteorologys-flood-warning-infrastructure-network-fwin-program
[17] https://www.qra.qld.gov.au/ERF/ERF-FWIN-program-2021-22

Electricity

The Critical Infrastructure Disaster Risk Assessment Report 2024 identifies the electricity network as a vital service but one that is vulnerable in disaster events and can pose community safety risks.[18]

Electricity companies are well-prepared and resourced ahead of forecast disaster events to restore connections as soon as possible, when safe to do so. Energy Queensland is represented in person at the Queensland Disaster Management Committee (QDMC) and on the State Disaster Coordination Group (SDCG).

> *"At one point I estimated towards 100 pieces of equipment – trucks, cherry pickers etc. – from Energex and Ergon at a staging point, being dispatched to perform repairs shortly after the cyclone passed and it was safe. That was not a last-minute thought. It would have had to be planned ahead of time to mobilise resources of that scale. Congratulations are in order."*
> Member of the community

Electricity distributors work in partnership with LDMGs and agencies to conduct pre-season planning, participate in multi-agency disaster exercises, and attend state and district-level disaster management group meetings.

Queensland's energy distributors report that they operate an ongoing asset inspection and maintenance program on the network to prepare for the severe weather season, which complies with the *Electrical Safety Act 2002* (Qld) and the Electrical Safety Code of Practice 2020 – Works[19].

TC Alfred caused the largest impact on the electricity network from a severe weather event in Queensland's history. One electricity distributor described it as an incredibly challenging large-scale event, with many customers restored early, only to be impacted a second time when the cyclone made landfall.

Did you know?

Electricity is supplied to most Queenslanders via an electricity distribution system, which connects the high-voltage system to homes and businesses.

The distribution network has a total line length of about 232,000km.

Energy Queensland is the largest power distribution company in the state with 2.3 million consumers.

Energex operates in Southeast Queensland with a distribution area of about 25,000km^2, including:

• 56,000km of overhead powerlines and underground cables

• 703,000 power poles

• 50,000 distribution transformers.

Ergon Energy has more than 760,000 customers across regional Queensland.

- It has a network of poles and wires that spans 152,000km.

Powerlink manages the state's high-voltage powerlines. Its transmission network runs 1700km from Cairns to the New South Wales border. It comprises 15,449 circuit kilometres of transmission lines and 152 substations.

[18] Queensland Critical Infrastructure Disaster Risk Assessment, Queensland Fire and Emergency Services, 2024, p. 36
[19] Electrical Safety Code of Practice 2020 – Works, Electrical Safety Office, 2020

> *"Tropical Cyclone Alfred caused widespread damage across Southeast Queensland from 6 to 16 March 2025, impacting more than 500,000 electricity households and businesses; the equivalent of more than two million people."*
> Electricity distribution company

Maintaining a resilient power network of this magnitude, over vastly different and some difficult landscapes, and in a complex disaster environment, is challenging. Landslips, bushfires, and lightning strikes happen, and record-breaking flood heights also challenge the network.

The Office heard from Queensland's electricity distributors and local governments that vegetation management, which is essential for network maintenance, is a difficult and at times complex issue. One government agency summarised the concerns:

> *"Several local councils in the cyclone impacted area expressed ongoing frustration with the current policies and practices guiding clearance of vegetation, mainly trees, along power line easements. They suggest a reluctance from official tree trimming operations to undertake 'proper' cut-back of large trees that represent an obvious threat to power lines due to time and cost to do so, as well as sensitivity about environmental impact."*
> State government department

Community members at some community forums mirrored this sentiment, voicing frustration that a "lack of adequate tree maintenance for many years" and "a bare minimum model" exacerbated damage to the electricity network during the flood event far beyond what would have happened if vegetation did not interfere with power infrastructure, including powerlines.

There are instances where critical substations need to be pre-emptively shut down for the safety of the community and to protect the asset. This allows faster restoration of the sub-station when conditions are safe.

Insight: Improving vegetation management around electricity infrastructure assets may improve access to, and the resilience of the network.

Preparing for high consequence events

The Office heard from people who had planned and prepared for the typical severe weather event they are familiar with but were surprised and unprepared for what happened earlier this year; that 'had never happened before'.

> *"Never in 38 years of our family owning that house have we ever seen water like it. We have never experienced a flood like this before."*
> North Queensland resident

The Office heard that people expect to lose power during significant weather events, however, for several parts of the state, communities and entities struggled with the length of time they were without power. Those with lived experience were more prepared, with generators, spare fuel, batteries, torches, candles, tinned food, and gas barbecues or camp stoves for cooking.

> *"While I anticipated some loss of power, I was unprepared for an outage that lasted seven days."*
> Resident in Southeast Queensland

QRA's Get Ready Queensland annual severe weather season preparedness campaign recommends community members pack their kit for "three days after bad weather, even if the power (electricity), water or internet are not working".[20] However, some local governments and entities expressed a view that preparedness planning and messaging should expand to include longer periods without power. This may encourage better planning and community resilience when mains power is lost for longer periods of time. This is especially true for supermarkets and small businesses who rely on cash-only transactions during power outages and who need to protect produce.

Building resilience and shifting community expectations about power restoration may also support LDMG and agency efforts to deliver public information and warnings in offline formats during power and telecommunication outages. There is also a role here for disaster management in helping communities understand they now need to prepare for the type of events they have yet to experience. Local governments, agencies, and entities need to update preparedness messaging to instruct Queenslanders to prepare for worst-case scenarios.

Insight: Communities plan and prepare for what they know. Communities now need to think about preparing for the type of events they have yet to experience.

Recommendation (4)

The Inspector-General of Emergency Management recommends that the Queensland Reconstruction Authority lead a multi-agency discussion on the appropriate duration of community self-sufficiency in the context of emerging disaster risks.

The Office acknowledges the work done by Energy Queensland staff, including Ergon and Energex, and their dedication to reconnecting communities during natural disaster events, including approximately 3500 staff who worked more than 41,000 hours statewide, as follows:

- 300 field staff and 100 support staff during North Queensland Floods
- 2400 field staff and 500 support staff to reconnect after TC Alfred
- 100 field staff and 20 support staff during the Western Queensland Floods.

[20] Get Ready QLD – Protect what's most important: Pack a kit (Council Hub), Get Ready Queensland, Queensland Reconstruction Authority, 2022

Fuel

When mains power goes down, generators are usually a common back-up to keep services running. However, the use of generators is dependent on a community having access to sufficient fuel stores. Generators can keep essential services operational, such as telecommunications, sewerage systems, refrigeration, and reticulated water supply. However, the stability is dependent on the capacity of the generator, and there is no second-level redundancy.

The Office heard that all forms of fuel resupply was a complicating factor but diesel fuel supply for generators was a bigger issue for Far North, North, and Southeast Queensland because of extended power outages. Stored diesel fuel supplies were fully consumed in at least one region because of the demand across emergency services, airports, telecommunications, and personal generators.

The Office also heard that some fuel stations did not have their own generators as a redundancy when mains power was lost and could not operate pumps or process payments to allow local resupply. In other circumstances, fuel stations equipped with generators could not operate because staff were unable to travel to work. In addition, some areas that had extra stored fuel couldn't access or move it due to road damage or floodwater, so despite having fuel nearby, generators ran out of fuel until the roads were cleared. The result was community members feeling even more isolated and experiencing a greater impact on their mental health.

> *"People were screaming out for fuel within two days… The message about being prepared for several days didn't get through."*
> North Queensland mayor

It should be noted that communities who shared their fuel with others to keep other generators running reported a higher level of resilience.

After TC Alfred, one Queensland district advised they would develop an emergency fuel strategy to identify agency fuel needs and fuel storage plans and create a fuel prioritisation plan before the next severe weather season. These steps may support the delivery of essential services in this district during extended power outages in the future.

> *"[This community] regularly experience power outages and isolation due to severe weather. While the community are maturing their resilience to such events… a generator at the local fuel supplier may support community resilience in maintaining back-up generation."*
> Southeast Queensland councillor

Aviation fuel

In Western Queensland, where there is more familiarity with being isolated, the more pressing fuel issue was the scarcity of aviation fuels – avgas and Jet A1.

One Western Queensland council advised that, in their opinion, the shortages of avgas and Jet A1 was due to a lack of planning at state level. Another council reported that they waited for more than a week before they were resupplied. However, when there is an elevated chance of a significant disaster event coming, local plans should include auditing current holdings and increasing stores, including among private and corporate aviation businesses.

Another Western Queensland council has since identified the need to increase the amount of aviation fuel stored locally to be better prepared for the next weather event that requires extended aviation support. Another is exploring storing aviation fuel at the local airport so they can resupply to isolated areas during extended isolation.

The influx of smaller and lower-range aircraft and helicopters into Western Queensland to perform rescues, fuel resupply and supply drops was one of the reasons regional aviation fuel supplies were severely reduced. These aircraft and air drops, however, were crucial to support western communities and primary producers. “

Telecommunications

The *Telecommunications Act 1997* (Cth)[21] establishes a regulatory framework for the telecommunications industry in Australia promoting efficiency, competition, and accessibility of services. Sections 313[22] and 344[23] place obligations on carriers and carriage service providers to provide reasonable assistance to authorities during emergencies. The two sections describe obligations to telecommunications carriers to support disaster planning, to ensure continuity of communication services in a disaster, maintain network survivability, and manage outages.

The *Security of Critical Infrastructure Act 2018*[24] also places obligations on telecommunications entities to protect their assets from all hazards. Telecommunication companies currently provide briefings to the QDMC and SDCG. However, collaboration and addressing issues quickly is more easily achieved when entities are co-located with key agencies and entities during significant and complex disaster events. The Office understands telecommunication companies are well prepared, staffed, resourced, and practised in responding to, and reconnecting communities after a disaster event, when safe to do so.

Telecommunication companies work closely with other partners, including electricity distributors, for pre-season planning and information sharing, preparation work, ensuring emergency contacts are current, and communication channels between entities are open.

Across the severe weather season, loss of telecommunications – phone and internet, including the Government Wireless Network (GWN) – presented a significant challenge for communities, local governments, agencies, and their partners. In many situations, this was due to losing power to telecommunication systems, which is discussed in more detail further in this section.

For most areas of the state, loss of communication was a significant challenge. Lack of connectivity made it very difficult for entities and communities to gather reliable intelligence, communicate and

[21] Telecommunications Act 1997 (Cth)
[22] Telecommunications Act 1997 (Cth), s313
[23] Telecommunications Act 1997 (Cth), s314
[24] Security of Critical Infrastructure Act 2018 (Cth)

coordinate with partners, issue and receive warnings and information, or call for help. The overnight timing and speed of the flooding events were an exacerbating factor.

> *"The shutdown of mobile and internet services, which resulted from the power outage, created a complete communications blackout. This breakdown severely limited the ability of emergency services, local authorities, and residents to coordinate, report incidents, or seek assistance. The lack of reliable communications not only delayed response efforts but also increased risk to the public and made it extremely difficult to distribute critical information. Strengthening telecommunications resilience in regional areas must be a key focus of future disaster management improvements."*
> Member of State Parliament

Community members in some locations reported that they could not call Triple Zero (000), receive warnings or Emergency Alerts, or find information. As one council member said, "A town where nobody has power, gets no info, and zero phone reception in a flood, is just a disaster waiting to happen."

> *"When you lose power, you lose communications. We didn't know nobody could hear us. We used CB radios, and Starlink got us through. That's how we found out nobody could hear us".*
> Far North Queensland councillor

Insight: Disaster management entities should have resilient business continuity plans that account for communication disruptions.

There are several factors that determine the ability of a telecommunications company to reconnect services after a natural disaster event. Because safety is paramount for personnel and community members, the site must be deemed safe.

However, determining safety can be difficult if access has been impacted by fallen trees, powerlines, landslips, flooding, or damaged roads. In the instance of damaged infrastructure, parts need to be sourced, transported, and installed, which takes time and sometimes presents unique challenges.

> *"We work with emergency authorities to get facilitated access, to be escorted in (to a badly impacted area). If it's a major site that has priority over others, we let the LDMG and DDMG know, and we get priority access to those sites."*
> Telecommunication company

There is a strong community expectation for telecommunication services to stay connected during and after a natural disaster. The Office heard from several people at community forums that they felt

'disconnected' and 'very isolated' without telecommunications and were frustrated at broader messaging on ABC Radio to find information online, despite outages.

Satellite devices

It is worth noting, and covered in more detail later in this report, that more connected and resilient communities coped better with this issue by checking in, helping neighbours, and sharing information and resources, such as satellite devices.

Satellite devices are becoming increasingly more common in regional and rural areas where mobile phone coverage is sporadic or not available, particularly among local governments and emergency service agencies. Several local governments across the state have also invested in satellite devices at community facilities to better support their displaced community members during disasters.

However, while satellites devices make communication possible when telecommunications are down, they are not able to receive Emergency Alerts, which are cell-based, and have challenges of their own.

A council that deployed staff through LGAQ's Council to Council (C2C) arrangements (see Workforce planning) advised satellite service units were present but siloed by agencies until one could be borrowed to maintain connectivity. The allocation of these devices should be resolved prior to deployment so they can be accessible in a multi-agency environment.

In another example, a Western Queensland LDMG advised their backup satellite device took five hours to activate and was limited to only servicing the council building.

Inter-agency planning

The connection between telecommunications and electricity should be highlighted, noting that both services have differing priorities and their own business continuity planning processes to support resilience of infrastructure and continuity of service.

Telecommunications companies acknowledged that while power and telecommunications do not necessarily share the same restoration priorities after a disaster event (for a multitude of valid reasons), there is a need to identify areas of operational and strategic commonality and opportunity, where shared outcomes can be achieved while acknowledging the challenges each face in delivery of safe and sustainable service delivery.

Senior representatives from the electricity and telecommunication utilities briefed the QDMC and the SDCG committees multiple times daily during these events and attended the SDCC daily. There is an opportunity for the telecommunication utilities to also mirror this senior-level representation at the SDCC to deliver briefings and participate in inter-agency planning and strategy development.

Recommendation (1)

The Inspector-General of Emergency Management recommends that the secretariats of the Queensland Disaster Management Committee (QDMC) and the State Disaster Coordination Group (SDCG) consult with their respective Chairs to extend in-person invitations to senior representatives from telecommunications entities to attend QDMC and SDCG to brief and participate in intra-agency planning in future disaster events.

Offline messages

Mobile phone tower batteries and generators are a well-used and established redundancy for telecommunications companies when mains power is lost. One telecommunications company alone has more than 200 permanent fixed generator sites in Queensland in high-priority locations and sites that are difficult to access due to isolation during weather events. There are hundreds more mobile generators that move into areas before a significant forecasted severe weather, such as cyclones and tropical lows.

During the severe weather events of 2025, many places in Queensland were without power for several days or weeks, and these back-ups were not sufficient to maintain services. Some generators that ran out of fuel could not be refuelled because of access and safety issues, as mentioned earlier.

> *"As batteries and fuel ran out, many couldn't access updates."*
> Community member from North Queensland

The Office understands that at least one telecommunications company is working with several LDMGs in Queensland to identify local and appropriately trained resources who can be authorised to attend sites to maintain continuity of service.

> *"(It's an) Agreement with local government authorities because they can get there quicker than I can. We're prioritising areas in higher risk areas. The work will continue and will take a good couple of years to roll out and finalise."*
> Telecommunications company

The extended loss of telecommunications also signifies the importance of entities providing public information and warnings across multiple platforms as part of normal business, including 'offline' options such as newsletters or flyers, which community members can access during telecommunication blackouts.

Insight: All entities with warning responsibilities should include offline messaging as part of their business continuity planning.

In its 2025 Australia's National Climate Risk Assessment, the Australian Climate Service reported that Australia will increasingly experience compounding and cascading hazards, with reduced time between severe events[25]. Telecommunications and electricity networks could be down for longer periods of time.

[25] Australia's National Climate Risk Assessment Report, Australian Climate Service, 2025, p. iii

Agencies and entities responsible for issuing warnings before, during, and after disaster events should embed offline communications as part of their business continuity plan.

Improved pre-season community preparedness messaging should include being ready to lose phone and internet as standard. Communities need education on where and how to find offline information in their area. This helps set the expectation that telecommunications, including the internet, may be lost for extended periods of time during natural disaster events and there is a shared responsibility for community members to stay informed.

Public information and warnings

> *"A warning provides point-in-time information about a hazard that is impacting or is expected to impact communities. It describes the impact and expected consequences for communities and includes advice on what people should do."*
> Australian Institute of Disaster Resilience Public Information and Warnings Handbook[26]

> *"Public information is information provided to the public immediately before, during and after an emergency to reduce the potential impact of an emergency or hazard."*
> Queensland Warnings Manual[27]

Under the QDMA and outlined in the Queensland Warnings Manual,[28] local governments are responsible for issuing community-focused warnings for severe weather (including severe storms with dangerous cells), flooding, cyclone, and storm tide.

Councils can request warnings support from their QPS Emergency Management Coordinator (EMC) and the State Disaster Coordination Centre (SDCC) Watch Desk. During SDCC activations, the QPS Public Information and Warnings Unit provides surge capacity (QPS PIWU).

The Queensland Fire Department (QFD) is responsible for all fire warnings and Queensland Health is responsible for extreme heatwave warnings. A warning is only issued when some form of protective action is needed. It is otherwise considered public information.

Australian Warning System

All community-focused warnings in Queensland follow the Australian Warning System (AWS) framework. It was implemented in Queensland in November 2023.

[26] Australian Disaster Resilience Handbook Collection: Public Information and Warnings, National Recovery and Resilience Agency & Australian Institute for Disaster Resilience, 2021
[27] Queensland Warnings Manual, Queensland Police Service, 2024, p. 8
[28] Queensland Warnings Manual, Queensland Police Service, 2024, p. 8

The AWS framework helps community members readily understand the hazard, their risk level for that hazard at that point in time, and what they need to do to be safe, regardless of where they are in the country. It has been applied across all hazards and across most warning distribution methods.

AWS warnings are community-action focused and locally specific to the area being impacted. They can include suburbs or streets, evacuation centre locations or places of refuge, areas to avoid, sandbagging locations, recovery centres, and other relevant local details.

The national framework includes:

1. A nationally consistent set of triangular hazard icons
2. Three warning levels:
    a. Advice – an incident has started but there is no immediate danger.
    b. Watch and Act – there is a higher level of risk and people should take some form of protective action to be safe.
    c. Emergency Warning – your life is in danger and people need to act immediately to be safe.
3. Colours that correspond to each warning level
    a. Advice is yellow
    b. Watch and Act is orange
    c. Emergency Warnings are red
4. A suite of call-to-action statements – a succinct statement at the top of the warning product that advises people what they need to do to be safe (e.g., stay informed, move to higher ground, shelter indoors now etc.)

Primary agencies responsible for issuing community-focused warnings in Queensland

Severe weather, flood, cyclone, and other warnings: Local governments, and Maritime Safety Queensland

Bushfires: QFD

Extreme heatwaves: Queensland Health

AWS community-focused warnings are not the same as, and do not replace, Bureau weather warnings. Weather warnings include weather information, for example, expected rainfall, temperatures and wind speed. (Refer to the Bureau of Meteorology in Disaster Management for more information.)

Local governments use the Bureau's products to inform their decision making around AWS warnings, along with local understanding of the environment, demographics, community preparedness levels, routes in and out of certain areas, time of day, time of year, and other factors.

QPS Emergency Management Coordinators (EMCs) supported and delivered warnings training to local governments across Queensland ahead of the 2024–2025 severe weather season as part of the continuous improvement efforts.

QPS Public Information and Warnings Unit (PIWU) provided guidance for warnings through:

1. Introduction of the Queensland Warnings Support Model, which outlines the process for LDMGs seeking warnings support
2. Publishing the Queensland Warnings Manual on the Disaster Management website to provide warnings guidance, information of Emergency Alerts (EA), and when to request the Standard Emergency Warning Signal (SEWS)
3. Attending and participating in community and industry engagement events.

Emergency Alerts

EAs are a distribution method of warnings used with other platforms to get urgent community warnings and information out. EAs can be sent via text message to mobile phones, or a recorded voice message to landlines. Text messages can be sent based on service address or geo-located to mobile phones in an area.

EAs are requested by council, or QFD for significant fires, and are sent by the QPS SDCC Watch Desk.

The EA system is a national system. Emergency Alerts are sent based on a triaged approach, which can impact the timing of EA delivery. For example, a life-threatening situation over a large area in South Australia (such as a fast and dangerous bushfire) can take precedence over a lower risk event in New South Wales (such as a slow riverine flood). This can sometimes cause a 'bottleneck' and may result in a delay in community members receiving the EA.

NEMA advised the EA system is due to be replaced with the National Messaging System (NMS), which aims to address the speed and geographic accuracy of Emergency Alerts. The NMS will be fully implemented and available for use by states and territories in time for the 2026–27 Higher Risk Weather Season, commencing 1 October 2026.

Communication during events

The Office heard that local governments and communities in North, Far North, and Western Queensland were well prepared for a traditional wet season but were taken by surprise by the huge volume of rain that fell in a short amount of time and caused record-breaking flash flooding.

> *"We've lived in the tropics for 40 years – been through Cat 4 and 5 cyclones – but we've seen nothing like this. We've never flooded (into the house) before."*
> Member of the public, North Queensland

In North and Far North Queensland, the heaviest falls happened late at night, after council staff had gone home and many community members were asleep. Some attribute being 'taken by surprise' to inadequate weather forecasting for their region.

Warnings summary

The Bureau issued a flood watch, then flood warning for parts of North Queensland, on Monday 27 January. At 5pm on Saturday 31 January, the Bureau issued a Severe Weather Warning with intense rainfall. The first AWS flood warning – Advice – Stay Informed – was issued at 3.15pm on 29 January and published on the State Warnings Map by a Far North Queensland council. This was also published on the State Warnings Map.

TC Alfred formed on 23 February, well offshore from the Queensland coast. The system posed no threat to the Queensland coast and islands for several days as it tracked southward through the Coral Sea. The first tropical cyclone forecast track map was issued on 22 February, and the first Bureau Tropical Cyclone Warning was issued on 4 March. The first community-focused warning was issued at 12.30pm on 28 February and published on the State Warnings Map. This was an Advice level warning, advising the community to Prepare Now, which was also published on the State Warnings Map.

In Western Queensland, the Bureau issued its first flood watch on 22 March for the Diamantina River. A flood watch was issued on 22 March. The first Bureau flood warning was issued on 23 March for the Thomson and Barcoo rivers. At 7pm the following day, 24 March, the Bureau issued the first severe thunderstorm warning with intense rainfall for the region. The first local government-issued flood warning was issued at 3.30pm on 22 March for an Advice – Stay Informed, then published on the State Warnings Map.

Table 7: First warning for each event and Emergency Alert (if requested).

Agency	FNQ/NQ floods	TC Alfred	WQ floods
Bureau weather warnings	27 January	4 March	23 March
AWS community warning	29 January	28 February	22 March
Emergency Alert	31 January for Townsville LGA	5 March for Gold Coast LGA	Nil issued

Note: There is no central record of LDMG-issued AWS community warnings.

> *"We had a conversation with BoM at 10pm and they said more rain was coming but we'd be right, but I was woken up in the middle of the night because a person in the community had water in the house and was being rescued."*
> North Queensland mayor

The sentiment above was mirrored in Western Queensland by some councils, community members and agencies, with actual rainfall totals far above what was forecast by the Bureau.

One agency's opinion was that: "The Bureau of Meteorology was completely unaware of the extent of the rainfall in some falls until well after it actually happened. It was only after one of their recording stations notified them of a 200mm fall on the second day of the event that they became aware of what may be ahead."

Despite these issues, councils started issuing AWS flood warnings and some requested EAs as soon as they could, but due to the rapid onset and loss of power and telecommunications in some locations, the warnings were not seen until it was too late for people to leave safely or protect their properties.

The Office acknowledges that localised AWS warnings are not always possible for rapid-onset events, such as severe storms, flash flooding, and some bushfires, because of the speed and unpredictability of these hazards. This is especially true for smaller councils, during weekends, and overnight. Conversely, due to the slower nature of TC Alfred, there was significant time available for local governments and agencies to inform and warn people in Southeast Queensland about the event and how to prepare. Some community members in the Southeast considered it a 'beat up' and believed cyclones were only an issue for northern Queensland.

> *"People in SEQ don't know what cyclones can do and the threat TCs can cause in an area not built for TCs. There's also a misbelief that cyclones don't come this far south so TC Alfred was 'a beat up' and 'overhyped'.*
> Community submission

Public information and warnings delivered in the lead up to TC Alfred were considered accurate, timely, and helped some community members understand their risk and what protective actions were needed.

> *"During the response phase of TC Alfred, there were 229 AWS compliant warnings created by 19 local governments and published on the Disaster Management State Warnings Map. There were 27 EAs issued by 10 local governments".*
> Emergency services agency

However, just before and post-crossing of TC Alfred, large sections of Southeast Queensland lost power and telecommunications for longer than anticipated, some for more than two weeks. This meant any public information and warnings being sent by LDMGs may not have been received, creating community concern and some confusion.

> *"Massive loss of power in SEQ meant community were frustrated by agency spokespeople constantly referring people to websites. [All levels of government] need to do better with their public information and warning strategies to get information out during mass power outages. Suggest pop-up information stands in impacted areas."*
> State government agency

As discussed in the Telecommunications section, there is an over-reliance on technology to issue public information and warnings, and little observed evidence of offline business continuity planning options for communicating when power and phones are down.

Insight: It is not always possible to issue local, community-focused warnings for some events. If community warnings are issued, they may not be seen by all members of the community. There is a shared responsibility between entities and the community to understand local risks and be informed and prepared.

Storm tide

Tropical cyclones are a part of life for people living in Queensland's coastal areas.[29] While the Queensland cyclone season is officially from 1 November to 30 April, cyclones can be experienced at other times.

The severity of a cyclone is described using a five-category system, shown in Table 9, that is based on the strongest wind speeds generated near the centre of the cyclone.

Table 8: category wind gusts (km/h) and typical impact.[30]

Category	Strongest gust	Typical effects
1 - Tropical Cyclone	Less than 125 km/h Gales	Minimal house damage. Damage to some crops, trees and caravans. Boats may drag moorings.
2 - Tropical Cyclone	126-164 km/h destructive winds	Minor house damage. Significant damage to signs, trees and caravans. Heavy damage to some crops. Risk of power failure. Small boats may break moorings.
3 - Severe Tropical Cyclone	165-224 km/h very destructive winds	Some roof and structural damage. Some caravans destroyed. Power failure likely.
4 - Severe Tropical Cyclone	225-279 km/h very destructive winds	Significant roofing and structural damage. Many caravans destroyed and blown away. Dangerous airborne debris. Widespread power failures.
5 - Severe Tropical Cyclone	More than 280 km/h extremely destructive winds	Extremely dangerous with widespread destruction.

A tropical cyclone can produce very strong winds, heavy rainfall, flooding, and elevated sea levels well above the highest tide levels of the year when it comes ashore. This rise in sea level is caused mainly by strong onshore winds and reduced atmospheric pressure.

The rising height of the sea level associated with a tropical cyclone is made up of three components: the height of the tide, storm surge, and wave setup. Storm tide is the term used to define the total water level of these components.[31]

[29] https://www.getready.qld.gov.au/getting-ready/understand-your-risk/types-disasters/cyclone-and-storm-surge
[30] https://www.getready.qld.gov.au/getting-ready/understand-your-risk/types-disasters/cyclone-and-storm-surge
[31] Tropical Cyclone Storm Tide Warning Response System Handbook, Queensland Fire and Emergency Services & Bureau of Meteorology, 2016, p. 6 1.10

In addition to the height of the storm tide, individual waves associated with the cyclone may run up the foreshore. The height of the wave runup depends on the wave height, wave period, beach slope and the nature of the foreshore.[32] This is demonstrated in figure 2 below.

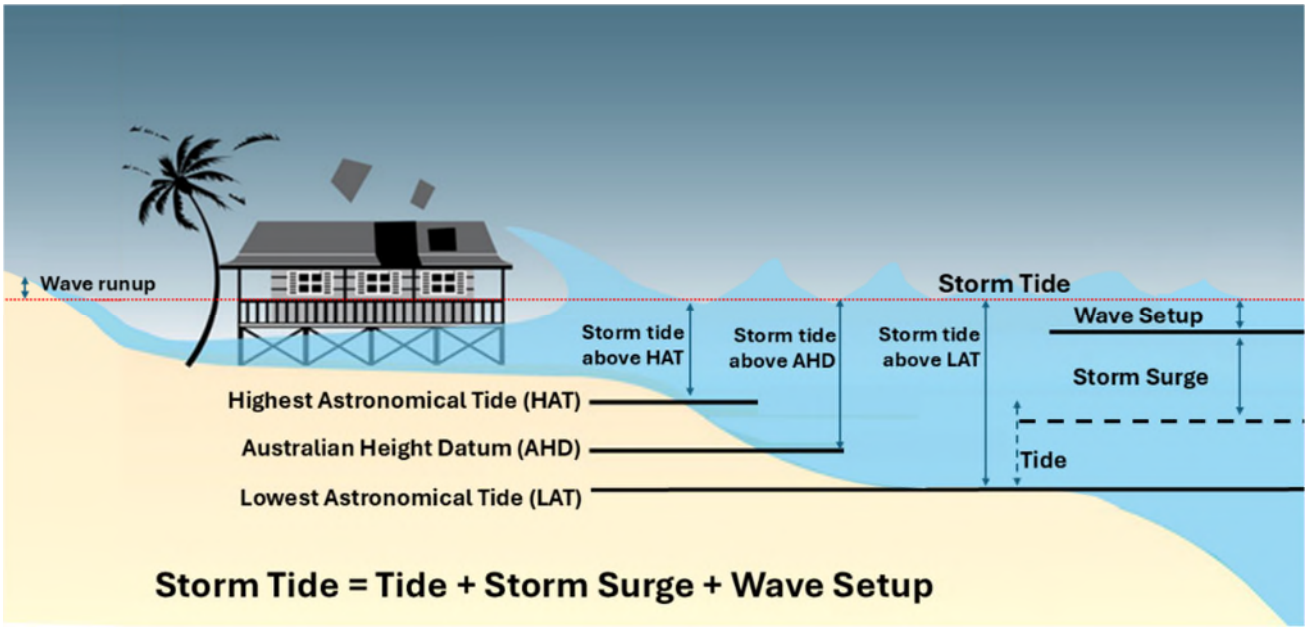

Figure 2: Depiction of the components of storm tide.

The height of the storm tide can be referenced against different data, primarily lowest astronomical tide (LAT), Highest Astronomical Tide and the Australian Height Datum (AHD).

In Southeast Queensland, direct landfalls of tropical cyclones are historically rare. Most cyclone-related impacts are the result of weakening systems that track through the region, with flooding being the most common hazard. Although cyclones being historically rare this does not mean southeast Queensland is not at risk of cyclones.

In 1974, the southeast was impacted by three cyclones – Tropical Cyclone Wanda (21–25 January), Tropical Cyclone Pam (3–6 February), and Tropical Cyclone Zoe (6–13 March). TC Wanda crossed the coast as a category 2 just north of Double Island Point and weakened to a rain depression sitting just north of Dalby. The flood rains which followed were the most disastrous the Moreton region had at the time.[33] Just nine days later, TC Pam passed 500km east of Brisbane, causing further damage to already-eroded beaches. The combination of a 0.68m storm surge and king tide saw seawater breech 6.2m boulder walls at Palm Beach, which forced residents to evacuate their flooded homes[34]. TC Zoe crossed the coast at Coolangatta before going back out to sea, heading further south. There was no significant wind damage however flooding was extensive.[35]

In 1954, before cyclones were named, a tropical cyclone crossed at Coolangatta on 20 February. Unofficially it was named the Great Gold Coast Cyclone, and it caused serious structural damage to

[32] Tropical Cyclone Storm Tide Warning Response System Handbook, Queensland Fire and Emergency Services & Bureau of Meteorology, 2016, p. 14 3.25
[33] https://www.bom.gov.au/cyclone/history/wanda1974.shtml
[34] https://www.bom.gov.au/cyclone/history/pam.shtml
[35] https://www.bom.gov.au/cyclone/history/zoe.shtml

buildings in Brisbane, the Gold Coast, and Sunshine Coast.[36] A 0.64m storm surge was recorded in Moreton Bay, while the surge was much higher at Beachmere. Waves at Kirra brought 3m of water onto the highway, washing cars off the road.[37] As a result of heavy rain, flooding, combined with the storm surge in the Nerang River, caused evacuations in the area.[38] Severe flooding also occurred in the Northern Rivers area of New South Wales. It was reported between 26 to 30 people died because of the flooding, severe winds, and storm surges.[39]

Considering the Southeast Queensland coast is vulnerable to tropical cyclones and has experienced them, communities should be ready and prepared for them.

Sheltering during storm tide

Due to uncertainty over both the location and timing of a cyclone making landfall and any associated storm tide, evacuation and the need to shelter people at-risk will occur more frequently and over a larger area than the actual storm tide inundation area. This degree of uncertainty, combined with the imperative to prioritise safety, often leads emergency planners to adopt precautionary approaches.

Inundation by storm tide is not comparable with riverine flooding. Storm tides will be accompanied by gale force winds and successive waves of seawater rapidly moving across the foreshore. Trees, building material and debris may be carried along by the storm tide. Any evacuation must be completed before the onset of these conditions.[40]

To assist with evacuation, the Queensland Government has developed the Evacuation: Responsibilities, Arrangements and Management Manual (Evacuation Manual).

The Evacuation Manual states that areas exposed to the impact of a hazard such as storm tide should be categorised into four different evacuation zones based on severity of impact:[41]

- Minor (Blue zone)
- Moderate (Yellow zone)
- Major (Orange zone)
- Extreme (Red zone).

The evacuation zones are intended to be mapped and readily accessible by the community, so they understand areas vulnerability to hazards (in this case storm tide).

The Office checked many of the coastal local governments' websites regarding storm tide evacuation zone development. Of local governments north of Bundaberg that are most susceptible to storm tide, prepared maps were available for their community. However, there was inconsistencies in how they had adapted the maps to the Evacuation Manual. Not all councils had adopted four zones, some had three, and one council had five. There were also differences in the colours used and terminology. Most referred to storm tide but one referred to storm surge, and another used a combination of storm tide and storm surge.

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[36] https://knowledge.aidr.org.au/resources/cyclone-the-great-gold-coast-cyclone-queensland/
[37] https://knowledge.aidr.org.au/resources/cyclone-the-great-gold-coast-cyclone-queensland/
[38] https://knowledge.aidr.org.au/resources/cyclone-the-great-gold-coast-cyclone-queensland/
[39] https://knowledge.aidr.org.au/resources/cyclone-the-great-gold-coast-cyclone-queensland/
[40] Evacuation: Responsibilities, Arrangements and Management Manual, Appendix 2 Development of Evacuation Zones, Emergency Management and Coordination Command, Queensland Police Service, 2024
[41] Evacuation: Responsibilities, Arrangements and Management Manual, Emergency Management and Coordination Command, Queensland Police Service, 2024

The City of Townsville is an example of a local government that appears to have followed the Evacuation Manual. From their website the community can see an overview of the evacuation zones for the local government area and then access specific maps for different storm tide risk areas (as shown in figure 3).

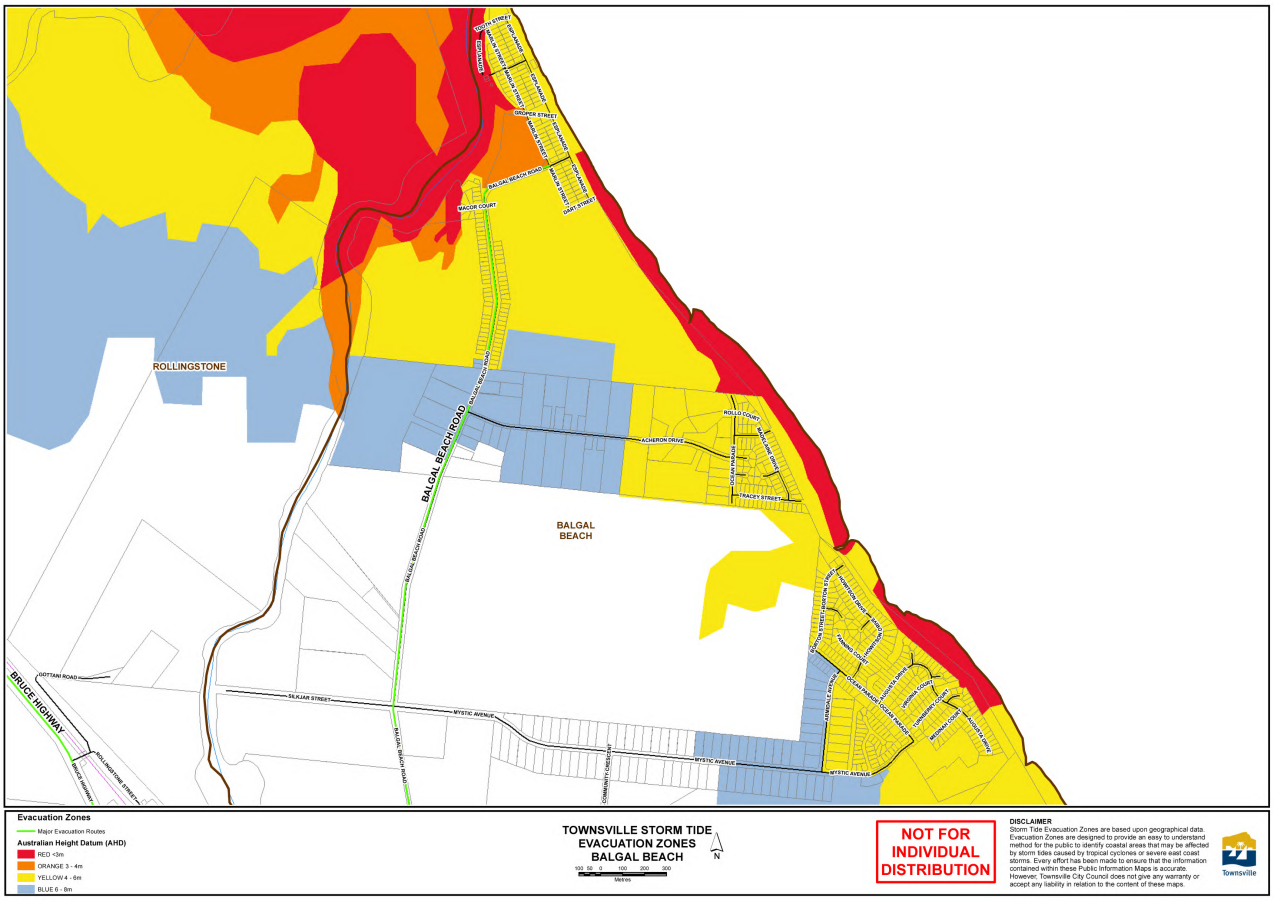

Figure 3: Storm tide evacuation zone, Townsville

For the coastal local governments impacted by TC Alfred, the Office did not see any adherence to the Evacuation Manual requirement for predefined storm tide evacuation maps but did find examples of storm tide inundation mapping at various levels or risk. For one council, risk was based on 1% Annual Exceedance Probability (AEP) of a storm tide event for the year 2016 and the year 2100 to enable the community to understand the areas that may be subject to impacts from a 1% AEP storm tide event under future climatic conditions.

Insight: There is an opportunity for coastal councils in Southeast Queensland to adopt storm tide evacuation zones as per the Evacuation Manual which many northern, coastal local governments have adopted.

Storm tide response

The *Tropical Cyclone Storm Tide Warning Response System Handbook* (2016) assists with preparation and execution of plans for risks to the community from storm tides generated by tropical cyclones in Queensland.

During TC Alfred, the Bureau provided twice daily storm tide updates to members of the QDMC and the SDCG, written in a table format. The table contained in the advice identified two scenarios – forecast track and worst case (2% probability of exceedance) across 10 locations. These were updated and issued at six-hourly intervals.

Location	Tide (m above LAT)	Storm Surge (m)	Wave Setup (m)	Storm tide (m above LAT)	Storm Tide (m above AHD)	Storm Tide (m above HAT)

Figure 4: Information provided in the Bureau's storm tide advice.

It is noted that the Bureau's Storm Tide Advice issued to emergency management agencies is limited to storm tide heights, not areas to be inundated or evacuated. Responsibility for understanding what areas will be inundated and what areas need to evacuate based on these heights and locations resides with LDMGs.

During TC Alfred, LDMGs used the Bureau's storm tide height data to model inundation areas. Each LDMG used the Bureau's data to map the potential inundation based on their risk appetite. What datum they used (LAT, AHD or HAT) to inform their modelling was based on their local needs.

Insight: Information about the potential inundation of the storm tide should be obtained from the responsible LDMGs who have the data and modelling capabilities.

The Office was aware that prior to TC Alfred crossing the coast, LDMGs were asked to provide specific inundation mapping to the QDMC based on specific levels above HAT. This request caused two issues across the local governments concerned. Councils that hadn't used HAT were unfamiliar with how to convert it to the datum they normally work in (usually AHD), and were also unfamiliar with the specific location requests. Requests could be simplified by providing relevant Bureau storm tide advice which presents the storm tide height for three different datums (LAT, AHD and HAT). The second issue was many councils used the forecast track probability to inform risk, while the QDMC or SDCG were most likely using the worst case.

Insight: Planning for an imminent tropical cyclone event should include a shared understanding of the risk appetite of the relevant disaster management groups that support locally led disaster response operations.

The Department of Environment Tourism, Science and Innovation (DETSI) provides Storm Tide Advisors (STAs) who are physically located 24 hours per day at the SDCC once activated. STA responsibilities are outlined in the *Tropical Cyclone Storm Tide Warning Response System Handbook* (2016) and the Interim SDMP. Their responsibilities include:

- Monitoring water levels using a network of storm tide gauges
- Monitoring wave conditions using a network of wave buoys
- Liaising with the Bureau to confirm information in Storm Tide advices
- Providing technical advice as required on storm tide to the local, district and state groups before and during a storm tide event that is expected to exceed HAT
- Managing the Storm Tide Reference Landmarks mapping tool.

It is noted that under these arrangements STAs *do not* provide advice about inundation or subsequent evacuation advice. LDMGs are responsible for identifying storm tide inundation and communicating with their communities.

The Office understood there was limited awareness of the availability of STAs to provide technical advice on storm tide to disaster management groups, before and during a storm tide event.

Insight: Greater awareness of the services offered by storm tide advisors could be promoted to assist coastal disaster management groups.

Storm tide terminology

On analysis of the terms provided by stakeholders, doctrine and public information, the Office found that some entities use the term ‘storm tide’ and some use term ‘storm surge’ but they were referring to the same thing. Sometimes these terms are used interchangeably by entities across Queensland.

Common language is a shared responsibility of the Standard for Disaster Management in Queensland. It requires common language to be used by all entities within Queensland's disaster management arrangements, which did not happen in this case.

Insight: The terminology ‘storm tide’ and ‘storm surge’ are used inconsistently in doctrine, public information and by disaster management practitioners.

Storm tide – other risks for consideration

One local government advised that when it came to risks of storm tide the focus was primarily storm tide inundation only. They referred to the Storm Tide Resilient Building Guidance for Queensland Homes as an excellent resource.

- Exposure I (Inundation) – homes located further from the beach front or close to tidal creeks that are likely to be inundated by storm tide.
- Exposure W (Waves) – homes located closer to the beach front that are likely to be both inundated by storm tide and affected by waves.

The resource also states, “Most storm tide damage is experienced by properties directly exposed to incoming ocean waves, which is typically those within 100 to 200 meters of the open shoreline”.[42]

The local government that raised the risk of ocean waves urged that, from a disaster management perspective, it is important that State and Local Disaster Management agencies understand the risk to communities of Storm Tide Exposure W (Waves).

[42] Storm Tide Resilient Building Guidance for Queensland Homes, Get Ready Queensland, Queensland Reconstruction Authority, 2019, p. 16

There is a risk that a sole focus on storm tide inundation will underestimate community exposure to the hazards of a storm tide event and consequently may lead to poor disaster management outcomes in relation to evacuation preparedness.

Evacuation

Evacuation is a risk management strategy that can mitigate the adverse effects of a disaster on a community. Local governments plan for evacuation operations prior to the onset of disaster events with assistance from their LDMG, leveraging local knowledge, experience, and existing community relationships.[43] Evacuation involves the movement of people to a safer location and their return. For an evacuation to be effective, it must be planned and implemented appropriately and communicated clearly to affected community members.

The DM Guideline describes three approaches to evacuation:

- Self-initiated: movement to a safer place prior to, or in the absence of, official advice or warning.
- Voluntary evacuation: evacuation advice has been issued, with people strongly encouraged to consider enacting their evacuation plans.
- Directed evacuation: evacuation where a relevant government agency has exercised a legislated power that requires people to evacuate.[44]

Central to evacuation planning is understanding the risks threatened by the hazard and balancing the need to evacuate with that of sheltering in place. Different types of shelter options are described in the DM Guideline as:

- Shelter in place – if evacuation is not directed, residents are encouraged to seek refuge in their own homes or others who may live in a safer building or location.
- Evacuation centres – located beyond a hazard to provide temporary accommodation, food and water until it is safe for evacuees to return to their homes or alternative accommodation.
- Public cyclone shelters – buildings designed, constructed and maintained in accordance with government requirements which provides protection to evacuees during a cyclone.
- Places of refuge – buildings assessed as suitable to provide protection to evacuees during a cyclone, but is not a public cyclone shelter. These are typically opened when the capacities of other evacuation facilities have been exceeded.
- Neighbourhood safer places – buildings or open spaces where people may gather as a last resort to seek shelter from bushfire.
- Assembly points – temporarily designated locations specifically selected as a point which is not anticipated to be adversely affected by the hazard.[45]

The 2023–24 Severe Weather Season Review Report Recommendation 1, sub point 1, with QPS, “by October 2025, to provide clarity in evacuation terminology and procedure in the Interim SDMP and PPRR DM Guidelines.” This matter is being progressed.

[43] Evacuation: Responsibilities, Arrangements and Management Manual, Emergency Management and Coordination Command, Queensland Police Service, 2024
[44] Interim Queensland Prevention, Preparedness, Response and Recovery Disaster Management Guideline 2024-25, Emergency Management and Coordination Command, Queensland Police Service, 2024
[45] Interim Queensland Prevention, Preparedness, Response and Recovery Disaster Management Guideline 2024-25, Emergency Management and Coordination Command, Queensland Police Service, 2024

In preparation for TC Alfred residents in Southeast Queensland were neither directed or recommended to evacuate because of the expected high winds or storm tide. Many Southeast Queensland LDMGs opened places of refuge for community members who were seeking a shelter option other than their usual place of residence. The communication of this shelter option caused confusion across the community.

> *"Saw and heard across events and season, agencies/LGs confused terms for evacuation centres and places of refuge = community confusion. Evacs weren't opened "until the very last minute", locations weren't published or made public until TC was here. Entities need to be consistent in understand and use of these terms and teach the community about them."*
> Radio listener

> *"During TC Alfred there was some confusion created due to the use of Refuge Centre or places of refuge instead of Evacuation Centres. This created confusion and barriers around some agency's [sic] response and support."*
> Disaster Management practitioner

The review heard in all four community forums that residents could not easily access evacuation facilities during the events. Many residents advised they were unaware of where evacuation facilities were, and others did not know how to access them safely due to road closures from flooding.

Insight: Evacuation sub-plans should include clear activation triggers, shelter options available, communication strategies to inform the community of the risks and request clear courses of action.

Pre-season preparedness

Ahead of the 2024–25 severe weather season, many local governments carried out disaster preparedness exercises, which included evacuation planning discussions. These exercises brought disaster management groups and partner agencies together to assess the effectiveness of the councils' disaster management plans. These exercises provide essential opportunities to test interoperability, identify capability gaps, and refine processes, all of which supports coordinated and confident response efforts.

Despite this preparation, the Office heard that still more training and practice is required by evacuation planners and personnel staffing facilities.

> *"Many local governments have a limited pool of staff formally trained in evacuation centre operations, and those who are trained are often required to complete other duties. In several cases, council officers who could support evacuation centre establishment and management were themselves impacted by flooding, leaving them unavailable. Similarly, the availability of trained Red Cross volunteers was*

limited due to access or other competing events."
Local government body

The review also heard the places of refuge were criticised by some people who attended for not being resourced to a high standard.

"There is an increased community expectation that emergency shelters be established, available at multiple locations, and resourced to a high standard. It is becoming increasingly challenging to resource evacuation centres with sufficient trained personnel."
Southeast Queensland councillor

"During TC Alfred, the [LGA] experienced a growing complexity in the needs of evacuees, reflecting broader shifts in health and social care systems. More residents are now supported at home through programs such as the National Disability Insurance Scheme (NDIS), aged care in the home and hospital-in-the-home services. When these services are disrupted during disaster events, vulnerable individuals often present to evacuation centres, not because they need shelter in the traditional sense, but because they require ongoing care and support that cannot be safely delivered at home."
Southeast Queensland mayor

Insight: Shelter personnel should be appropriately trained, available, and well-practiced within fit-for-purpose facilities with a considered business continuity plan.

Underpinning disaster management in Queensland is that of shared responsibility amongst all stakeholders, and is characterised by consultation, collaboration, and participation. The responsibility for the personnel operating in a shelter option is not local governments' alone, but that of numerous agencies. The need to triage people as they register at a shelter option is provided in the ARC's Queensland Evacuation Centre Field Guide.[46] The triage process involving multiple agencies is considered good practice and implemented by most LDMGs. For an example of good practice in evacuation, refer to the North Queensland Floods Event Report.

"Screening for high-care needs coordinated with Department of Housing and hospital staff, enabled us to triage and arrange alternate accommodation."
North Queensland councillor

[46] Queensland Evacuation Centre Field Guide, Australian Red Cross, 2017

Western Queensland Floods evacuation

Western Queensland experienced record-breaking floods in March 2025 which forced residents from Thargomindah and Jundah to evacuate to Charleville and Longreach. Adavale had little warning as record rain fell overnight, with residents waking up to water in their homes. All the residents of the town were evacuated to Quilpie, 90km away.

Most of the roads around Adavale are unsealed and the inundation triggered their closure. Other regional routes were closed in places due to riverine flooding. Evacuations were reliant on local helicopters and one small dingy until a swift water rescue team could be brought in. One Western Queensland LDMG supported the evacuated residents and arranged accommodation, clothing, toiletries and meal vouchers.

Residents from one town, who needed extra support, were evacuated to Longreach in the neighbouring shire as floodwaters threatened their homes. The 54 evacuees had just bare essentials and needed to be transported from the small airport to the library where the LDMG allocated accommodation and provided meals. Recognising the potential mental health implications for the evacuees, the LDMG supported the evacuees with ongoing welfare checks until it was safe for them to return home.

It was a similar story for the residents of another western town who were evacuated to a neighbouring town.

Insight: When preparing evacuation sub-plans, consideration should be given to evacuation arrangements for persons external to their LGA and include communication strategies for informing the community of the evacuation stages.

Sheltering people experiencing homelessness

The Office heard three different examples of proactive coordinated multi-agency approaches to supporting and providing safe shelter to people sleeping rough during TC Alfred:

- Gold Coast LDMG: City of Gold Coast, Australian Red Cross, and state agencies engaged with more than 210 rough sleepers. They were offered accommodation at places of refuge and were engaged daily before, during and after the event to ensure they were safe.
- Brisbane LDMG: Brisbane City Council (BCC) and Department of Housing and Public Works engaged with people experiencing homelessness to explore accommodation options. BCC then funded Micah Projects and Emmanuel City Mission to provide food and shelter approximately 272 people over six days.
- Moreton LDMG: The QPS Vulnerable Persons Unit supported by various state agencies engaged with homeless persons providing referral options for accommodation as well as medical support.

Proactive, multi-agency approaches such as these demonstrates the value of targeted engagement and welfare checks. However, such efforts remain ad hoc and event-specific, with no systematic approach or data collection process to capture the scale or needs of people experiencing homelessness during disasters. The number of people experiencing homelessness in Queensland has increased significantly in recent years. This cohort remains among the most exposed during disaster events, lacking safe shelter, and access to communication resources and support networks. People experiencing homelessness are not consistently integrated into disaster planning.

The doctrines, including the Interim SDMP, DM Guideline, and QSDR, emphasise inclusive resilience, connected communities, and support for "vulnerable populations." Yet, practice remains fragmented. The presence of informal camps in high-risk areas, such as those identified across the Moreton District during TC Alfred, further highlights the need for tailored evacuation planning and risk mitigation.

The University of Sydney was engaged by the Queensland Government to develop a toolkit for reducing disaster risk of people experiencing homelessness. The *Person-Centred Emergency Preparedness (P-CEP): Homelessness Outreach Guide* was designed to be used by emergency services and disaster managers and provides guidance on collaborating with homelessness services to ensure people experiencing homelessness have access to safe shelter and emergency information in disaster.[47]

Workforce planning

A guiding principle of the *Disaster Management Act 2003* (Qld) is to prepare for an event, to ensure resources and services can cope with the effects of event.[48] The Act also requires local government to ensure they have a disaster response capability. Capability refers to their ability to provide equipment and a suitable number of people using available resources to effectively manage a disaster in the local government's area.[49] DDMGs and the QDMC are to provide local governments with appropriate resources and support them in conducting disaster operations.[50]

For entities and disaster management groups at all levels, disaster management workforce planning is an example of deliberative planning. Under the DM Guideline, deliberative planning requires assumptions about the future based on history and projections, such as the effect of climate adaptation.[51] It addresses key risks by describing roles and responsibilities, trigger and escalation points, and the resources required to achieve the desired end state. Workforce planning is based on point-in-time information during the planning process and needs to be continuously reviewed and updated.

Triggers for updates to workforce plans include changes in entity staffing and resources, changing risks and lessons identified from after action reviews and the evaluation of exercises. Monitoring of the training and exercising program for key disaster management roles supports workforce plans. Event activations and exercises validate the effectiveness of workforce plans and if they remain fit for purpose and scalable.

When identifying and training staff for workforce planning, all entities should consider the impact of the changing face of disasters, from complicated to complex with bigger, longer-lasting impacts.

Workforce planning and the effective use of resources and capabilities is a shared responsibility within the QDMA. The principal guidance for planning is contained in the Interim SDMP and DM Guideline with topic specific planning found in other supporting resources, such as evacuation manuals, that provide further detail in relation to planning for evacuations.

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[47] https://collaborating4inclusion.org/homelessness-and-disaster/
[48] Disaster Management Act 2003 (Qld) S4A(ii)
[49] Disaster Management Act 2003 (Qld) S80(1)(a) and (2)
[50] Disaster Management Act 2003 (Qld) S4A(e)
[51] Interim Queensland Prevention, Preparedness, Response and Recovery Disaster Management Guideline 2024-25, Emergency Management and Coordination Command, Queensland Police Service, 2024

Local, district and state-level entities are responsible for ensuring arrangements are in place for appropriate resource capability and capacity. This includes preparation of plans to document capacity and capability thresholds and escalation points for requesting assistance with resources.

During response operations, workforce planning becomes immediate and is based on the situational awareness of the unfolding event and likely staffing levels. Effective immediate planning requires close monitoring of emerging conditions and timely communication about key shifts.

As information comes to hand, the availability of trained and experienced personnel needs to be ascertained. Availability may be affected by key personnel being deployed to support another event, weather and road conditions preventing travel, and personnel caring for their families impacted by the event. It should be noted that often staff involved in an event are also being impacted by the same event as the community, yet dedicate their time to support the response.

> *"High staff turnover and lots of new staff has limited the number of experienced staff, and impact on fatigue management."*
> Southeast Queensland councillor

Staffing levels

Entities which prepared pre-season rosters reported they were appropriate in the lead-up to, and during the event. Early deployment of personnel provided some entities with better capability for response operations and ensured sufficient staffing levels for a protracted event.

Effective workforce planning enabled staffing levels to be maintained and for fatigue to be mitigated. One local government reported that using experienced workforce coordinators to prepare rosters provided additional expertise during TC Alfred. Meanwhile, effective use of lead time and early activation enabled timely resource deployment for an entity responding to TC Alfred. Others successfully enabled rapid deployment of personnel which supported restoration of critical services, such as energy.

Activating a Police Operations Centre (POC) independent of the Gold Coast Disaster District was effective in supporting staffing levels. The POC coordinated extra staff resources before, during and after TC Alfred. It provided vital assistance to the LDCC and District Disaster Coordination Centre (DDCC) by deploying sufficient staff to identified affected areas.

> *"The increasing frequency and severity of climate events is negatively impacting emergency response personnel and volunteers, physical, psychological and mental health."*
> Australian Climate Service[52]

[52] Australia's National Climate Risk Assessment Report, Australian Climate Service, 2025, p. 89

Fatigue management

The prolonged crossing of TC Alfred tested personnel fatigue, including for leaders. Another factor which impacted fatigue management was high staff turnover resulting in new personnel with limited experience. Integration of fatigue management in planning was seen as beneficial. In contrast, some entities identified prolonged activation, particularly for LDCC meant personnel would have benefited from a formal fatigue management policy to reduce reliance on individuals in key roles. Some acknowledged councils with limited staff find fatigue management difficult and have noted surge capacity needs strengthening. For other events, entities identified improving fatigue management for key personnel is an important consideration to be implemented, including moving catering outside to encourage staff to take breaks.

Good practice example for personnel safety during TC Alfred

Logan Disaster District established a dedicated QPS Workplace channel for QPS operational staff to provide timely updates regarding river and road conditions to be shared throughout the event. Images with pinned location data were useful in pinpointing hazards for situational awareness.

The North Queensland Floods debrief recommended amending the fatigue policy so that personnel who work seven days in both response and business as usual can access fatigue leave. The DPI debrief for Western Queensland Floods also identified fatigue and wellbeing management could be improved.

A Western Queensland local government advised during a meeting with the Office that they do not operate formal rosters or have a fatigue management policy.

Insight: Proactive fatigue management planning supports staff wellbeing and helps sustain continuity of operations.

Council to Council (C2C) program

When councils identify they need more personnel, they may access the C2C program coordinated by the Local Government Association of Queensland (LGAQ). Under the program, local government specialists or personnel from non-disaster impacted areas are deployed to support disaster operations or business as usual council functions. The C2C program also provides personnel to manage the fatigue of impacted councils.

Use of the program was identified by some councils as an opportunity for improvement when they conducted their after-event reviews. Several mayors and councillors told the Office they had limited appreciation and knowledge of the C2C program prior to the event and rated it highly in post-event debriefs.

Pre-approval of personnel for deployment under the program worked well. Others noted it would have been better if they had requested C2C program support earlier. Since January 2025, 62 council officers from 27 councils were deployed to 18 impacted councils. The program has matured through a pilot project to now deliver a 2025 professional exchange and familiarisation program involving Southeast Queensland, Far North Queensland and First Nations councils.

Insight: Strengthening the professional capability and mobility of council officers to support the LGAQ's C2C program within Queensland's disaster management arrangements may effectively assist disaster-impacted councils and their communities.

Personnel to support evacuations

Evacuations can be resource intensive operations, depending on their timing, scale and complexity. In evacuation planning, local governments communicate with all relevant stakeholders and support agencies to ensure resource continuity and to minimise the potential for confusion and time delays.[53]

Challenges were experienced in identifying and deploying personnel trained in evacuation centre management from within local government, through the C2C program and from relevant non-government organisations. These challenges were explained to the Office as accessibility through competing events, being impacted by the event itself and limited personnel who could support evacuation centres. The need to increase the number of trained officers and volunteers would assist in this regard.

The increased complexity of disasters requires an understanding of the resource constraints and limitations for trained roles. Resilient workforce plans ideally include surge capacity and redundancies for trained personnel to effectively manage an evacuation centre. Planning processes should account for the potential impact of concurrent events on the availability of experienced personnel, including the likelihood events may have personally impacted on personnel who perform key roles.

Volunteers

Volunteers are a key part of Queensland's disaster management workforce. The Queensland Parliament's Local Government, Small Business and Customer Service Committee has conducted an inquiry into volunteering in Queensland[54]. The terms of reference include a focus on opportunities to increase emergency response volunteering in Queensland, how to optimise the engagement, support and integration of volunteers assisting with disasters and community recovery.[1] The Parliamentary inquiry reported on 18 September 2025. For this reason, the IGEM reviews are not addressing volunteering and volunteer capability.

Collaboration and coordination

There were numerous instances of entities collaborating and sharing resources to:

- Better support fatigue management
- Share transport resources, for example, SES transporting QPS across a flooded section of the Bruce Highway to help maintain QPS staffing levels
- Deploy personnel from non-impacted areas to assist and prevent service fatigue (entities which provided personnel to assist in other parts of the state indicated the deployments provided valuable learning)
- Support capability gaps, for example, QPS personnel with tropical cyclone experience assisted Southeast Queensland entities. By having structured capability support through

[53] Evacuation: Responsibilities, Arrangements and Management Manual, Emergency Management and Coordination Command, Queensland Police Service, 2024 p. 4
[54] Inquiry into Volunteering in Queensland, Report No. 4, Local Government, Small Business and Customer Service Committee, Queensland Parliament, 2025

formalised arrangements, agencies can leverage pre-identified skills, inform rapid deployment and strengthen workforce capability and capacity for future disaster events.

Insight: There is an opportunity to better use personnel experienced in specific types of disasters in future such events.

Information sharing between entities with a role in disaster management

Capability integration is a shared responsibility identified within the Standard for Disaster Management in Queensland[1]. Entities build capabilities together in a way that complements existing capability within the community. This includes sharing information, but also for agencies to understand what their information needs are and share current, relevant information with other agencies.

The DM Guideline address collaboration and interoperability as essential foundations for effective disaster management. Consideration should be given to establishing a continuous flow of accurate, critical, and up-to-date information between stakeholders across all levels of Queensland's disaster management arrangements.

Incident management systems

Event management systems (EMS) at the different disaster management levels in Queensland provide platforms for information sharing and situational awareness.

- At the local level, Guardian Control Centre (Guardian) is used by 60 LDMGs and is the predominate system used
- At the district level, Disaster Incident and Event Management System (DIEMS) is used
- At the state level, EMS is used.

Many councils said that Guardian, the primary event management system used by 60 councils provided benefits, such as other councils being able to assist remotely[1], ease of information sharing and familiarity of use with C2C deployments.

Councils that operate the Guardian system also invest in Guardian add-on products, such as:

- multi-agency dashboard
- public facing dashboard for situational updates and warnings
- opt-in notification
- community alert system for real-time hazard flood intelligence messaging
- decision support Flooded Road Systems Dashboard
- monitoring and mapping of inundated roads in real-time weather forecasting and long-range climate intelligence.

Insight: Use of common systems between local governments promotes information sharing and situational awareness.

The Brisbane district uses the Disaster Incident and Event Management System (DIEMS) system which enables real-time sharing of information such as, weather updates, road closures, impact assessments, and resource availability. The streamlined communication supported coordinated

decision making, reduced duplication of effort, and ensured all stakeholders operated from a common operating picture, improving the efficiency and effectiveness of the response.

A post action review identified a full review of the DIEMS entries and communications with each LDMG and DDMG members showed good communication both vertically and horizontally. SMS text notifications for important and time-critical information were used well, and this practice should continue. Brisbane and Redland LDMGs demonstrated effective email communications, which were timely and backed up by phone calls and text messages. They noted the communication was clear and responsive, and allowed for effective coordination during the event.

Insight: Systems that are interoperable enable information sharing and decision making between entities.

With regards to the use of Noggin (at state level only) the Aviation Cell advised Event Management System EMS was not used or considered fit-for-purpose for aviation tasking and most requests come in via phone or email.[1]

There were concerns raised about the interoperability between Guardian, DIEMS and Noggin.

> *"Same old story of the need for one common operating platform could solve comms issues, LGAs use guardian, District use DIEMS and State use Noggin."*
> Queensland councillor

Several solutions were suggested, including one that the State purchase one system that all three levels use. One council recognised the critical importance of effective integration between local, district and state levels of government during disaster preparedness and response. During TC Alfred, the Office was advised that the lack of a streamlined process for managing Requests for Assistance (RFAs) and key operational information presented coordination challenges. RFAs went through a variety of channels, including verbal requests, SMS, emails, and paper forms, resulting in some delays and duplication of effort. This impacted on timely sandbag distribution, providing temporary power solutions, council-to-council resource sharing, data and modelling requests and personal assistance requests.

Another council suggested developing a standard information communication technology (ICT) specification (not system). A consistent information sharing platform that allows electronic publication of key information such as change of status, situation reports, evacuation centre locations, and numbers from various ICT systems may have minimised unnecessary or duplicated requests for information as experienced in TC Alfred. The lack of interoperability between these three primary systems has been raised in previous IGEM reviews, however the issue remains unresolved.

Insight: There is a need to work towards interoperability between all systems to enable sharing of a common operation picture.

Procedures, protocols and exercising

Disaster management training is one of the activities undertaken to maintain or enhance the Queensland disaster management arrangements. The Queensland Disaster Management Training Framework (QDMTF) covers the core training courses and inductions relevant to key disaster management stakeholders to support the effective performance of participants roles.[55]

The Office was provided with some evidence across local, district and state levels where exercising tested information sharing between entities.

In 2024, the EM&CC revised the SDCC Concept of Operations (ConOps), to improve intelligence, planning, information management, safety, and agency coordination capabilities. The SDCC conducted exercises to test these capabilities and workflows prior to the start of the high-risk weather season.

One council conducted an exercise to improve their procedures and communication protocols for their first response and impact reporting for events when the LDCC is not stood up. This exercise was attended by LDMG agency representatives and neighbouring councils. They advised that this enabled them to identify future improvements to their procedures and protocols.

One DDMG advised QDMTF training for the DDCC was reinforced with practical exercising including intelligence reporting, situation report writing and request for assistance processing. Lessons identified and reported as recommendations became action items and lessons learned. The District Disaster Management Plan (DDMP) was amended to become the basis for further exercising or action.

One state agency conducted an exercise to gain a greater understanding of their involvement and response to hypothetical flooding. One of the objectives was to understand communication and reporting processes across the department, as well as with external agencies.

Exercising is a valuable way to test information flow and reporting within the system and the Exercising Development and Coordination team provide whole-of-government exercise support. One state department found this team's input was highly beneficial and ensured those without an extensive understanding of exercise management could run effective disaster management exercises.

Liaison officers

Liaison officers were embedded in LDCCs in all three events to assist in information sharing.

A District Disaster Coordinator (DDC) advised embedding liaison officers from key agencies in the DDCC ensured direct communication, faster decision making and alignment of agency actions with overall response objectives. Both the LDMGs in this disaster management area have suggested that, in future activations, they will embed liaison officers in the DDCC.

One council reported a notable increase in the willingness to provide the LDCC with liaison officers from several agencies and for sustained periods. This included the QPS, QFD, and Energy Queensland.

A western DDMG had a QPS liaison officer embedded in their LDCCs, which assisted with information flow from the LDMG to the DDMG. A QRA regional liaison officer was also embedded

[55] Interim State Disaster Management Plan 2024-25, Queensland Disaster Management Committee, 2024

into the LDCCs to provide advice on recovery and funding, which assisted in requests for assistance.

Energy Queensland advised better outcomes in Ingham and surrounds by embedding Ergon Energy liaison officers in LDCCs, and they would continue this during major events.

Insight: Use of liaison officers is an effective strategy to support inter-agency information sharing and situational awareness.

Information requests

Some councils expressed concern of what they perceived as unrealistic requests for information. An example that was provided was with TC Alfred approaching, councils received requests at short notice and through multiple channels to provide flood maps. There was a concern expressed that due to the variability of the weather, they were not confident in the product and were concerned about posing a risk of misinforming their communities. Mapping that models predictive analysis scenarios may be of assistance for future events.

Another council advised of the challenge of providing an early morning situation report that had been requested. They advised that this placed a strain on already fatigued members of the LDMG. This was in the context of providing the community with the latest information via the early morning media briefs. The Office recognises the importance of providing timely information to the community as per the Standard and acknowledging that disasters can occur in compressed timeframes.

Insight: Having an established reporting protocol and a workforce planning strategy may assist to plan for requests for information.

LDMGs also expressed a desire for information flow to travel through the system in order for each level to have a clear sight of all information and requests to assist in informed decision making.

Insight: Clear reporting requirements between all levels of the QDMA supports improved information sharing and situational awareness.

Meetings

One LDMG advised collaboration with their DDMG was strong throughout the event. It also reduced the number of extraordinary meetings, which was appreciated given the event's duration. Meetings were purposeful rather than held for the sake of formality.

On the other hand, councils expressed the need for better alignment between local, district, and state meeting schedules to avoid duplication and improve coordination. Although DDMG and QDMC meetings gave an overall visibility of the context of the operations, they were considered by some as time-consuming. Some agencies would send three or four people to a meeting, and if each participant wanted to speak, this could extend the time of the meeting unnecessarily.

The meeting schedules set by the QDMC (as the strategic committee), should also be reflected in the SDCG meeting schedules, so that strategic briefs from the QDMC can be received and acted on by the SDCG, which can then report outcomes at the next QDMC.

Business continuity planning

This year's disaster events exposed significant vulnerabilities in redundancies and business continuity planning across multiple areas, including essential services such as telecommunications, major food producers, and care services. Major disruptions were experienced by entities at various times, highlighting critical interdependences and an overreliance on the restoration of supply chains, energy supply, and telecommunication services.

Disruption impacts across sectors, services, and communities need to be understood and mitigated where possible. Organisations should take a proactive approach to recognising the risks that could disrupt their operations, assess potential consequences for people and organisations dependent on their services, and plan to continue to deliver essential goods and services when disruptions occur. Industry bodies increasingly recognise the need to deliver industry-specific guidance on business continuity planning and user-friendly tools.

Business continuity planning is a mandatory requirement for Queensland Government departments and statutory bodies to ensure they continue to operate during a disaster event.[56] However the Standard states, where possible, business continuity planning in the private and non-government sectors should be undertaken to assist in the continuity of service during an event and re-establishment of business post event. These plans should be informed and integrated with disaster management planning at the local, district and State levels.[57] Residual risks need to be documented, and risk controls need to be agreed by those who own them to ensure roles and responsibilities are understood.

Did you know?

"Business continuity planning enhances community resilience by ensuring disaster management stakeholders (government, NGOs, and businesses) can continue their core business following any critical incident or disruption. The process of business continuity planning assists organisations to:

- stabilise disruptive effects to service delivery during events
- identify, prevent and manage risks
- adopt an all-hazards approach
- expedite response and recovery if an incident or crisis occurs."

Source: Interim Disaster Management Guideline

Insight: Entities which provide critical services in disasters should have business continuity plans integrated with disaster management plans.

Planning for disruptions

Business Queensland provides guidance for businesses about the importance of business continuity planning. This includes how to prepare a plan to assist businesses to be more resilient and continue operating during times of disruption.

[56] Performance Management Framework Specific Purpose Planning Requirements Mandatory and discretionary planning, Department of the Premier and Cabinet, Queensland Government, 2025, p. 6
[57] Interim State Disaster Management Plan 2024-25, Queensland Disaster Management Committee, 2024

The website features tailored advice in relation to managing businesses before a flood, cyclone, bushfire, severe storm or drought.[58] Cyclone planning advice includes consideration of alternatives for loss of power, access, communications and operations.[59]

> *"We had a 6-burner stove and an oven. With no electricity, we had no way of keeping anything hot for extended periods so serving the food and getting it to delivery ASAP (was required). On Wednesday (we) served over 400 meals across 2 mealtimes. A phenomenal effort."*
> Small business owner, Far North Queensland

To prepare for supply chain disruptions, Business Queensland provides a guide on how to conduct a business impact assessment as part of business continuity planning. [60] The severity and length of supply chain disruption determines the level of business impact.[61]

Likewise, the inability or restriction of staff and suppliers being able to travel should be part of businesses' and organisations' business continuity plans. In all three events, the Office heard of instances where staff being unable to attend work had significant consequences on essential services, such as council operations, aged care, and disability services.

> *"…receiving in-person supports during the North Queensland floods, Western Queensland floods, and Tropical Cyclone Alfred was challenging as many NDIS support workers were unable to travel to their participants' homes because of road closures or flooding or needing to help their own families prepare during the events. This highlights the need for NDIS providers to have a disaster management plan so that they have systems and processes in place when an emergency event does occur."*
> Disability advocacy organisation

Insight: Business continuity plans and disaster management plans need to outline redundancies and contingencies to deal with widespread or prolonged, critical infrastructure disruptions.

Business continuity in aged care and disability sectors

More people need assistance to live in their own homes and receive in-home aged care or through support through the National Disability Insurance Scheme (NDIS) and My Aged Care.

Individual providers are responsible for maintaining and activating their own business continuity plans. However, current arrangements offer limited assurance mechanisms to test or validate these plans. This may contribute to providers not being suitably prepared and, potentially, a risk to clients' physical, mental, and emotional wellbeing.

[58] https://www.business.qld.gov.au/running-business/natural-disaster/disaster-hub
[59] https://www.business.qld.gov.au/running-business/natural-disaster/disaster-hub/cyclone
[60] https://www.business.qld.gov.au/running-business/natural-disaster/disaster-hub
[61] https://www.business.qld.gov.au/running-business/suppliers-stock/supply-chains

Both private and public disability and aged-care providers are also accountable for developing hazard-specific business continuity plans to help ensure continuity-of-care during disruptions. However, the Office heard some community members who receive at-home support were not prepared for the coming severe weather event.

Residents of a multi-story retirement village advised the Office of the impacts of a prolonged power outage during TC Alfred. They reported being without power for four days, which significantly restricted use of elevators, lighting and car garage access. Residents expressed feeling isolated and unable to access food or medical supplies.

"In one retirement village, my team and I visited residents in the days leading up to the event where it became clear that several residents were not able to adequately prepare due to illness, disability, or mobility issues."
State member of parliament

The Australian Government has strengthened its quality and safety standards in reforms in the *Aged Care Act 2024* (Cth) which come into effect on 1 November 2025. In the quality standard Outcome 2.10 – Emergency and Disaster Management, emphasis has been placed on the importance of providers preparing for a wide range of emergency and disaster situations. Providers are encouraged to embed these arrangements into their broader business continuity planning, supporting the health, safety, and wellbeing of older people and workers by ensuring continuity of essential care and services during disruptive events. [62]

These updates also present an opportunity to strengthen sector-wide consistency in business continuity planning and enhance alignment with disaster management doctrine, which prioritises the protection of vulnerable people and the continuity of essential services.

Similarly, having a disaster management plan is an expectation for registered providers under the National Disability Insurance Scheme (NDIS) Quality and Safeguards Commission.[63]

"Under the Emergency and Disaster Management Practice Standard and Quality Indicators, emergency and disaster management includes planning to ensure the continuity of supports critical to health, safety and wellbeing of participants in an emergency or disaster."
NDIS Quality and Safeguards Commission[64]

Of the 165,000 NDIS service providers, only 15,000 NDIS providers are registered and therefore required to comply with the NDIS Practice Standards. The remaining 150,000 unregistered

[62] https://www.agedcarequality.gov.au/strengthened-quality-standards/organisation/emergency-and-disaster-management
[63] https://www.ndiscommission.gov.au/rules-and-standards/ndis-practice-standards
[64] Emergency Management Provider Alert – Emergency Management, NDIS Quality and Safeguards Commission, 2024

providers are not required to meet those Practice Standards, despite delivering critical services to people with disability.[65]

In the context of disaster preparedness and response, both registered and unregistered providers play a vital role. Queensland's disaster management sector, and the communities it serves, should expect all NDIS service providers to uphold their responsibilities through effective business continuity planning. This is essential to ensure continuity-of-care and safety for people with disability during disaster events.

Where aged care and disability service providers did not provide services through the flooding events, other essential public systems were negatively impacted. Some local governments described occurrences of people with support needs attending an evacuation centre during TC Alfred because their service providers were absent and their basic care needs were not being met.

Council staff and other evacuation centre workers, such as ARC volunteers, are not trained to provide higher-level care needs, such as toileting. In other circumstances, Hospital and Health Services (HHS) reported an increase in emergency department presentations and calls to 13Health throughout TC Alfred from people with disability seeking assistance because their NDIS services were not being provided.

Insight: Any shortcomings of business continuity planning by service providers may place undue pressure on hospitals and the disaster management systems.

Local government and disaster management groups' business continuity plans

While there is no legislative requirement or formal guideline requiring local governments to have business continuity plans in place, councils across Queensland have business continuity plans in place, tailored to their size, resources, and risk profile. While approaches may vary, having a plan that is adaptable and scalable provides clear value in enhancing organisational resilience and ensuring continuity of essential services during disruptions.

It is noted that the DM Guideline encourages district and local disaster management groups to undertake business continuity planning as part of their disaster management plans. This ensures the group can continue operating during a disaster event to provide coordination and emergency support to the local community and strengthen the resilience of organisations and the communities they serve.

Currently, Queensland Government guidance on business continuity planning for local governments appears to be limited to responding to cyber security incidents. The Queensland Audit Office's Better Practice Cyber Response and Recovery Governance[66] checklist asks public sector entities (including local governments) to consider if they have integrated cyber risk management, disaster recovery, business continuity and information asset management processes at both the organisational and whole-of-government levels (if applicable).

[65] https://www.ndisreview.gov.au/news/supporting-you-be-safe-choice-and-control
[66] https://www.qao.qld.gov.au/reports-resources/better-practice/cyber-response-recovery-governance-checklist

Best practice and resources

This year the United Nations Disaster Risk Reduction office (UNDRR) has undertaken research into business continuity planning and published the **'**Continuity planning empowers businesses to adapt, recover, and thrive'[67]. This provides insights for those undertaking business continuity planning, including:

- "Business continuity plans can separate those that recover from those that do not…What businesses do today will determine how they fare in the face of a disaster tomorrow.
- "Business continuity plans are cost-effective mitigation measures…(they) are a quick, low-cost way to mitigate potentially high-impact disaster risks.
- "Business continuity plans are a mechanism to operationalise resilience…They clarify roles and actions that are needed to continue operations or resume quickly after a disruption.
- "Business continuity plans can offer a strategic advantage during uncertainty (and) can significantly enhance a company's competitiveness.
- "Business continuity plans can improve financial reserves…(they can provide) a form of assurance that operations will continue (and) improve insurability: turning the business into a lower-risk policyholder."[68]

Supply chain

Disruption to transport corridors

The Bruce Highway was cut at multiple locations, including near the Seymour River in the Hinchinbrook Shire and Plantation Creek in the Burdekin Shire), significantly impacting supply chains. Inland routes were also closed, leaving no viable detour options for heavy freight.

On 2 February 2025, a critical failure of the Ed Kratzmann Bridge over Ollera Creek severed the Bruce Highway, isolating communities north of Townsville. TMR placed an RFA for ADF support to install a temporary single-lane bridge, which opened for emergency vehicles on 6 February. Heavy vehicles regained access on 10 February, followed by general traffic on 11 February after intensive repair efforts. Subsequent works restored full speed limits in early April. QPS EMCC described the Ollera Creek Bridge solution as a 'testament to the effectiveness of the QDMA'. For more detail on how TMR worked to re-open the Ed Kratzmann bridge in eight days, refer to the event report.

Rail outages also contributed to supply chain impacts. To maintain supply flow, tailored weather forecasts were requested to identify short travel windows for road freight prioritisation, and controlled heavy-vehicle convoys moved essential goods before conditions worsened. The Port of Townsville was prioritised for freight continuity, with rail inspections and reopening commencing as soon as conditions allowed.

Insight: Disruption to Queensland's limited freight corridors constrains the movement of goods, heightens supply chain vulnerability and complicates prioritisation decisions during periods when transport capacity is reduced.

[67] https://www.undrr.org/news/continuity-planning-empowers-businesses-adapt-recover-and-thrive
[68] https://www.undrr.org/news/continuity-planning-empowers-businesses-adapt-recover-and-thrive

Emergency supply and resupply

In the North Queensland Floods, major road and rail corridors were cut and emergency air and maritime operations became critical to maintaining the supply of essential goods. DSDIP advised that the Economic Functional Recovery and Resilience Group "supported the SDCG by facilitating emergency resupply of essential foods to Cairns via air freight, including the coordination of nine charter flights in response to declining food stock levels in grocery stores raised through the QDMC… (and) supported the Cairns Supply Plan."

Despite these efforts, the scale of demand exceeded capacity. Approximately 40 pallets of goods were flown into Cairns daily, compared with normal volumes of over 198,000 kilograms of pallets of food 1000 pallets per day.[69] Air freight operations were further constrained by domestic screening requirements and dangerous goods restrictions, including lithium batteries, fuels, and cleaning products, which required repeated approvals from the Department of Home Affairs and manual reconfiguration of loads.

Maritime alternatives were also activated, and a tug and barge transported refrigerated containers from Gladstone to Cairns, and other barges moved produce between Townsville and Cairns while the Bruce Highway was closed. Maritime Safety Queensland controlled port movements and issued risk-based exemptions where required to enable maritime transport of essential goods.

Feedback from local governments highlighted the need for pre-approved arrangements and scalable multi-modal strategies to address large-scale isolation. This operation was complex by its very nature and had surpassed a complicated issue[70]. The combination of strategies, aviation, maritime, ADF engineers and state entities reflected the systematic management of the concurrent challenges presented by all partners. It is important the lessons identified in all aspects of this operation are fed back into the SDCG to translate into planning for similar events in the future.

Retail operations and demand

Retail distribution networks typically hold only two to three days of stock, making them highly sensitive to prolonged transport disruptions. To reduce pressure on supply chains, the Cairns DDMG coordinated public messaging about supply to discourage panic buying, with purchase restrictions applied by supermarkets.

Cassowary Coast Regional Council experienced significant shortages with residents relying on local butchers and bakeries for essential goods when supermarket stock was depleted. In Cardwell, the need to feed deployed personnel placed pressure on local resources, with local governments recommending that agencies bring their own provisions when required. A local review of business continuity planning may assist to address supply chain disruptions, which affected not only remote communities but also larger centres, requiring the SDCC to coordinate with suppliers to maintain resupply to locations such as Cairns and Weipa.

[69] Estimates Hearing Hansard: State Development, Infrastructure and Planning; Industrial Relations, Wednesday, 30 July 2025, Queensland Parliament, 2025, p. 36
[70] Crisis Appreciation and Strategic Planning Guidebook, National Emergency Management Agency, Australian Government, 2024

Remote and regional challenges

Remote and island communities also experienced significant challenges when supply chains were disrupted. Isolation was compounded by power outages, which created difficulties in maintaining cold storage for food and medicines.

Communities in Cape York and the Torres Strait were particularly vulnerable as they are heavily reliant on maritime services for essential goods. When primary freight routes were cut, these communities faced extended delays in resupply. This prompted calls for strengthened local supply solutions and the establishment of satellite distribution centres to improve continuity during future events.

Local observations highlighted that while some communities demonstrated strong preparedness, others faced critical gaps. Burdekin communities, including Giru, Groper Creek, Rita Island, Wunjunga and Jerona, were described as resilient, maintaining their own stocks of food, water and medication. Independent retailers such as the Atherton IGA supermarket were able to maintain supply longer than major supermarket chains, but this was not sustainable under prolonged isolation. Increased demand from people travelling from coastal areas placed additional pressure on limited stock. Similarly, Coles Mareeba sourced a generator to maintain operations, but stock levels remained limited due to ongoing disrupted freight disruptions.

Feedback also highlighted the need for improved transparency and communication between retailers and LDMGs. Limited information on stock availability and delivery schedules created uncertainty for communities and complicated local planning efforts.

Insight: Local Disaster Management Plans should include supply chain continuity for communities at risk of being isolated, including defined triggers for resupply when supply routes are compromised.

Sector and industry impacts

Supply chain disruptions had significant consequences for primary industries and freight operators. Extended closures of key routes prevented cattle movements from agistment properties, leaving producers unable to truck stock for sale for months. This resulted in severe cash flow stress and financial hardship.

Producers also faced loss of income and increased transport costs when alternate routes were required. For example, the Office was advised the Palmerston Highway closure forced diversions through longer western routes, reducing business for small townships, and adding additional freight costs. It is understood similar pressures occurred during the Bruce Highway closure when no viable alternative route was available.

Freight operators experienced major operational and financial impacts. Trucks were stranded south of Townsville during the Ed Kratzmann Bridge closure, resulting in significant revenue losses. The Office was advised that some operators had to secure emergency finance to maintain operations and retain staff until transport resumed.

These impacts highlight the vulnerability of industries that rely on supply chain networks and the cascading economic effects of disruption to critical freight corridors.

Fodder

Widespread flooding across Western Queensland caused prolonged isolation of rural properties, leaving large numbers of livestock without access to feed. Road closures and inundated paddocks prevented ground transport of fodder, creating an urgent need for support by aerial delivery to sustain animal welfare and prevent stock losses. The coordination of emergency fodder provision required collaborative efforts across all tiers of the QDMA, and the DPI Fodder Disaster Taskforce was activated to assist with supply and distribution.

DPI was identified as the lead agency for fodder drop activity coordination and was responsible for administering the Coordinated Fodder Support Package, which was made available to primary producers impacted by the event[71]. DPI established an Operations Cell at the Charleville DDCC to manage fodder logistics, and operated from Blackall, supported by local council, to organise fodder drops across surrounding shires. Key operational hubs further supported the coordination of fodder distribution at Jundah, Quilpie, and Eulo in Western Queensland. At peak activity, up to 19 helicopters operated from one regional airport, while local coordination in two towns enabled access to otherwise isolated properties. These hubs helped reduce flight distances and supported efficient delivery to remote areas.

Fire ant risk also presented a challenge. To support efficient distribution, DPI implemented biosecurity protocols including weed-free and fire ant-free declarations for the hay supplied and approved the purchase of hay stored in local sheds. The SDCG recorded an increase in approaches from charity groups offering fodder donations and the need to manage associated fire ant risk. Coordination with freight providers and non-profit organisations ensured deliveries complied with biosecurity requirements.

Initial confusion about who was facilitating fodder drops was reported by some councils, with planning taking several days to be established in some locations. A lack of understanding around the process for requesting and coordinating drops and reliance on informal communication channels, such as phone calls and emails, were cited as possible contributing factors to delays and confusion. In several locations, individuals with local knowledge and relevant skills assumed coordination roles. While this approach was considered effective, it was noted that these individuals were not identified prior to activation, creating uncertainty around availability when needed.

Insight: Clarity in roles and responsibilities in fodder provision decreases the risk of parallel effort, delays and supports timeliness of tasking and delivery.

Activation of fodder support funding under the DRFA package required multiple high-level approvals. The Coordinated Emergency Fodder Support Package was identified as a DRFA Category D measure, as indicated in QRA's Activation Summary.[72] In accordance with the Queensland Disaster Funding Guidelines[73] Category D, measures must be requested by the State and jointly agreed to by the Premier and the Prime Minister. This requires conditions set by the Australian Government and approval from the Prime Minister to be in writing. Any expenditure

[71] https://www.qra.qld.gov.au/funding-programs/event-specific-exceptional-circumstances-assistance/2025-western-queensland-surface-trough-exceptional-circumstances-packages/coordinated-fodder-support-package-2025-western-queensland-trough
[72] Activation Summary: Disaster Recovery Funding Arrangements event, Western Queensland Surface Trough and Associated Rainfall and Flooding 21 March – 19 May 2025 (V24), Queensland Reconstruction Authority, 2025, p. 4
[73] Queensland Disaster Funding Guidelines, Queensland Reconstruction Authority, 2024

incurred prior to the Prime Minister's agreement is considered ineligible for DRFA cost-sharing[74]. DPI raised concerns around this process, noting that animal welfare impacts begin to emerge within two to three days of isolation. DPI suggested that without a discretionary fund for initiate drops while awaiting prime ministerial approval, fodder may not reach affected areas until after critical animal welfare thresholds have passed.

Lessons identified during the response highlighted the need for clearer coordination roles, improved communication systems, and pre-event planning. Identified opportunities for improvement included formalising roles and responsibilities, enhancing training and induction processes, and developing operational guidelines to support future coordination. Additional suggestions focused on improving aviation coordination and asset visibility, using local helicopters to reduce costs and support the local economy, and implementing secure systems to manage property-level information.

Pre-season planning and exercises involving fodder drops were also identified as valuable preparedness activities. Formalising liaison officer roles early in activation was recommended to improve coordination and resource dispatch, along with establishing property identification protocols to assist aerial delivery operations. The need for consistent messaging and data sharing with councils was also highlighted as a key area for improvement.

Despite the challenges, several aspects of the fodder response were considered successful. DPI's logistics network successfully maintained consistent fodder and fuel supply across all affected regions throughout the event, and more than 900 helicopter flights were logged, delivering more than 3000 large hay bales.

Local coordination at hubs such as Jundah, Quilpie, and Eulo were praised for enabling access to remote properties, and individuals who took on coordination roles were credited with helping save livestock. Collaboration between DPI, councils, primary producers, and helicopter operators was also recognised as a strength.

The emergency fodder response demonstrated the importance of coordinated logistics, local knowledge, and multi-agency collaboration in safeguarding animal welfare during widespread disaster events. The challenges encountered, lessons identified, and good practices observed provide valuable insights to strengthen future disaster preparedness and response efforts across Queensland's disaster management system.

Recommendation (2)

The Inspector-General of Emergency Management recommends that Department of Primary Industries lead a discussion with relevant stakeholders to establish a framework for the procurement of, and distribution of fodder during disasters.

During the North Queensland Floods, the coordination of fodder drops for the Flinders LDMG was supported by a deployed DPI officer. The Agriculture Disaster Taskforce encouraged industry bodies to share the Disaster Impact Survey with their members to assist in assessing the scale of the event's impact.

[74] Queensland Disaster Funding Guidelines, Queensland Reconstruction Authority, 2024, p. 13

DPI received 38 disaster impact assessments indicating stranded cattle in the Flinders region, and later submitted 64 surveys relating to livestock, with 46,000 head of stock counted. Messaging was finalised to direct producers to local councils for fodder access, and guidance was provided on humane euthanasia and carcass disposal. Fodder support was included in Category C recovery packages.

Operational challenges were reported by the RSPCA, which closed its North Queensland centres and operated remotely during the event. The organisation experienced increased calls to assist with pets left behind or unreachable due to road closures. Difficulties in local-level communication and coordination with recovery hubs affected the timely distribution of resources. The RSPCA received calls from the farming community that were not reflected in DPI data and noted the need for improved contact with recovery hubs. Six pallets of pet food were delivered to Townsville, with distribution facilitated through community centres using local contacts.

Aviation

The 2020 Royal Commission into National Natural Disaster Arrangements highlighted aviation as essential to Australia's natural disaster responses. The unique capabilities aircraft provide include rapid deployment in response operations over large distances to gain situational awareness; access to remote or isolated communities to deliver essential supplies or perform evacuations, and transportation of emergency personnel.[75]

There are generally three types of aircraft used in response operations conducted within Queensland's disaster management arrangements:

- Aeroplanes (fixed wing aircraft)
- Helicopters (rotary wing aircraft) and
- Unmanned Aerial Vehicles (drones) which are also referred to as Remotely Piloted Aircraft Systems.

Use of aerial assets in disaster response

The role of QPS under the Disaster Management Plan includes providing aircraft assets to whole-of-government disaster responses via Queensland Government Air (QGAir), and supplying coordinators to the SDCC aviation cell to support all aircraft deployments. Other documented roles in the Interim SDMP are:

- Powerlink's agreements with aerial service providers to deploy equipment and personnel on short notice to assess damage and event response[76]
- Surf Life Saving Queensland (SLSQ) Aviation in providing a network of support and intelligence to disaster management groups for disaster response
- SLSQ's role in performing surveying, mapping and imagery support using RPAS.

Other entities also use aviation assets or engage aviation service providers during disaster response operations for gathering information to support situational awareness and damage assessment. The entities include local governments (evacuation and emergency resupply), QPS (search and rescue), the QFD (firefighting), the DPI (fodder drops), Queensland Health (medical retrieval) and Energy Queensland (energy supply restoration). A request for assistance by local,

[75] Royal Commission into National Natural Disaster Arrangements Report, Australian Government, 2020, p. 205
[76] Interim State Disaster Management Plan 2024-25, Queensland Disaster Management Committee, 2024, p. 65

district or state level disaster management groups may also result in engaging aviation services. When Queensland's total resources cannot reasonably cope with the needs of the event, non-financial assistance can be sought from the Australian Government Disaster Response Plan (COMDISPLAN).[77] The DM Guideline only refers to aviation providers in the context of planning emergency relief in a logistics sub-plan.[78]

Insight: Improved guidance in key doctrine and establishment of clear roles and responsibilities for entities deploying aviation resources pre-season would strengthen communication, improve coordination, and enhance operational efficiency.

QPS aviation capability

The QPS Aviation Capability Group consolidates QPS aviation capabilities and assets including QGAir, QPS Air Operations (PolAir) and the RPAS Unit[79]. The Commissioner's 100-Day Review of the Queensland Police Service Final Report (100-day Report) noted Civil Aviation Safety Authority (CASA) compliance requires a robust governance approach, staffing and infrastructure when considering the QPS Aviation Capability Group. Interactions with the aviation sector and relationships are described as complex and the significant costs associated with aviation capability were noted.[80]

SDCC Aviation Cell

On 1 July 2024, the QPS assumed responsibility for the Air Desk of the SDCC as part of the transition relating to administration of the Disaster Management Act. The QPS also manages QGAir, which provides fixed-wing services to meet emergency and other specified aviation needs of the community and the Government, including official travel.

The governance for the SDCC was supported by a Concept of Operations (ConOps) authorised by the State Disaster Coordinator on 5 December 2024 which defined the functions and capabilities of the SDCC including the rostered personnel. The ConOps maintained the SDCC's alignment with the Incident Command and Control System (ICCS) and the Australasian Inter-service Incident Management System (AIIMS) to provide a model of interoperability through consistent understanding of key principles.

The principal role of the SDCC is to support the State Disaster Coordinator and relevant QDMA through the coordination of a state level operational response capability during disaster operations. When the SDCC is activated, 12 capabilities operate including an aviation capability. The function of the capability is to provide statewide management of air assets and associated supporting resources by providing planning, direction, coordination and monitoring of air assets.

The ConOps also states the capability is to coordinate the safe, efficient and effective use of air assets. The aviation cell consists of the following roles:

- Aviation Coordinator (QPS)

[77] COMDISPLAN Australian Government Disaster Response Plan, National Emergency Management Agency, Australian Government, 2025
[78] Interim Queensland Prevention, Preparedness, Response and Recovery Disaster Management Guideline 2024-25, Emergency Management and Coordination Command, Queensland Police Service, 2024, p. 29
[79] Commissioner's 100-Day Review of the Queensland Police Service – Final Report, Queensland Government, 2025
[80] Commissioner's 100-Day Review of the Queensland Police Service – Final Report, Queensland Government, 2025

- Aviation Capability Group Subject Matter Expert (QPS)
- Retrieval Services Queensland Liaison Officer (Retrieval Services Queensland)
- QFD Liaison Officer (QFD)
- QPS Search and Rescue Liaison Officer (QPS)
- QGAir Fixed Wing Liaison Officer (QGAir)
- ADF Rotary Wing Liaison Officer (ADF)
- Administrative Officer (QPS)
- Aviation Liaison Officer (QPS)
- Support Officer Field Operations (QPS)
- Airbase Manager (QPS).

The role of the Aviation Coordinator includes monitoring fatigue to ensure a safe work environment is maintained. Preparedness of the aviation capability was constrained by business-as-usual operational demands on the Aviation Coordinator who concurrently provided support for QGAir operations. The dual roles prevented their participation in pre-season exercises and precluded them from training personnel to perform aviation cell roles.

Good practice

DPI's aviation policy ensures compliance and safety with CASA regulations.

During response, the demand for QGAir operations increased and created a significant workload and limited respite due to the protracted nature of the events and the lack of trained personnel. The SDCC's Concept of Operations places the responsibility for monitoring fatigue with the coordinator of each capability.

A review of staffing for the aviation capability would enable identification of other personnel to be trained in the roles and support fatigue management during disaster response operations, particularly for prolonged activation periods of the SDCC. Personnel identified to perform aviation capability roles would benefit from participating in pre-severe weather season exercises.

Regulation of aviation operations

The conduct of civil air operations in Australia is regulated by CASA under the *Civil Aviation Act 1988* (Cth).[81] Section 3 outlines CASA's responsibilities include promoting and enhancing civil aviation safety, which includes an emphasis on preventing aviation accidents and incidents. CASA operates under a different risk tolerance than emergency management as the Civil Aviation Act is focused on non-emergency management. Under section 9A of that Act, CASA should regard the safety of air navigation as the most important consideration. The rules for aviation safety, excluding the Air Operator's Certificate, which apply to commercial aviation activity, are within regulations and other legislative instruments[82].

CASA's regulatory role includes issuing approvals for exemptions for non-standard operations during emergency events. Active monitoring enables CASA to anticipate emergency operation applications and ensure timely approvals. Management protocols and planning for transporting

[81] *Civil Aviation Act 1988* (Cth), s3A
[82] https://www.casa.gov.au/rules/changing-rules/overview-casa-rule-making-principles-and-obligations

dangerous goods occurred during the three events. It is not clear whether approvals for transport of goods does not extend to transporting people.

Airservices Australia provides air traffic management, aviation rescue firefighting and aeronautical information, navigation and communication services to industry and the travelling public under the *Air Services Act 1995* (Cth).

Air traffic control services and aviation rescue firefighting services are provided by Airservices Australia at 29 Australian airports. The Aeronautical Information Publication includes Notice to Airmen (NOTAM) which are notices 'distributed by means of telecommunication containing information about the establishment, condition or change in any aeronautical facility service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.'[83] Prohibited and restricted areas declared for shorter periods are published by NOTAM[84].

NOTAM notifies pilots of a temporary airspace restriction by telling them areas to avoid[85]. During TC Alfred, Airservices Australia also contributed to the National Coordination Mechanism as part of the Australian Government's Crisis Management Framework.

[83] Visual Flight Rules Guide, Version 8.2, Civil Aviation Safety Authority, Australian Government, 2025, p. 4
[84] CASR Part 91 General Operating and Flight Rules, Plain English Guide, V5.1, Civil Aviation Safety Authority, Australian Government, 2025, p. 55
[85] https://www.casa.gov.au/operations-safety-and-travel/consumer-and-passenger-advice/how-aviation-regulated/how-airspace-regulated

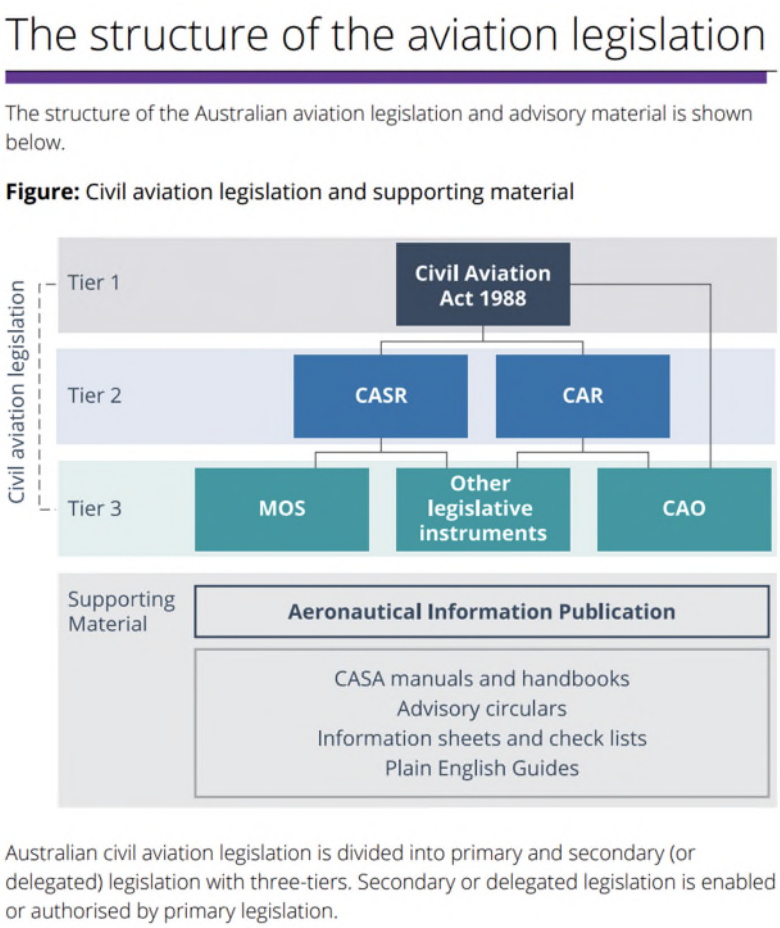

Figure 5: Visual Flight Rules Guide, p. 2

Airspace is defined as either controlled or uncontrolled[86]. Controlled airspace is actively monitored and controlled by air traffic controllers who give clearance for aircraft to enter the controlled airspace. Uncontrolled airspace is unsupervised and pilots do not require clearance. Pilots must follow visual flight rules or instrument flight rules[87].

Regulations are complex and include minimum flying height rules for populous and non-populated areas, display of anti-collision lights, and low flying (such as for sling load operations)[88]. The basic rule to prevent a collision during a flight is a crew member must maintain vigilance, so far as weather conditions permit, to see and avoid other aircraft.[89] For take-off or landing an aircraft must not be flown in a way that creates a risk of collision with another aircraft, person, vessel, vehicle or structure.[90]

Western Queensland Floods

The largest scale and number of aviation operations conducted occurred during the Western Queensland floods and occurred in uncontrolled airspace. DPI coordinated approximately 900

[86] https://www.casa.gov.au/operations-safety-and-travel/consumer-and-passenger-advice/how-aviation-regulated/how-airspace-regulated
[87] https://www.casa.gov.au/operations-safety-and-travel/consumer-and-passenger-advice/how-aviation-regulated/how-airspace-regulated
[88] Visual Flight Rules Guide, Version 8.2, Civil Aviation Safety Authority, Australian Government, 2025, p. 4
[89] Civil Aviation Safety Regulations 1998, Reg 91.325 Basic rule
[90] Civil Aviation Safety Regulations 1998, Reg 91.340

flights and the delivery of more than 3000 bales of hay as emergency fodder. The event highlighted several interdependencies involving logistics. Councils, QPS, DPI and Energy Queensland contracted aviation agencies or activated those who were pre-approved to perform response operations such as evacuation, emergency resupply, relief (including fodder drops), transportation of personnel to restore essential services, collecting data for situational awareness, aerial inspections of assets (such as energy infrastructure) and damage assessments.

Collaborative and concurrent problem solving worked well. For example, aircraft-based options were considered to transport replacement generator to one town, while restoration of emergency road access was under consideration. A power distribution company organised a helicopter to transport the generator to enable crews to start cleaning and repairing the town's power station. Meantime, resource sharing and prioritisation for the delivery of critical supplies was also considered to be effective.

DPI's internal aviation policy was reviewed and updated with CASA's input to ensure compliance and safety. DPI's policy, QFD's aerial firefighting government and QPS's AOC all ensure compliance and safety with CASA regulations.

It was reported to the Office that aviation operations were complex and challenging. For primary producers in one local government area, almost all resources needed to be transported by daily aircraft. One town's self-evacuations were initially hampered by helicopters unable to fly due to weather. Resupply for aviation fuel became problematic. Aviation fuel supplies were required for closer staging sites for smaller helicopters distributing fodder. Post-event, one local government identified establishing an emergency supply providers list for fuel within the region to ensure continued access during isolation.

Many requests from local landholders and from a neighbouring LDMG prompted the DDMG to request State support to source aircraft to transport essential food, medical resupplies, veterinary supplies and other resources required. This led to the state agency coordinating rotary and fixed-wing aircraft from a main Western Queensland airport to conduct resupply operations throughout the district. One Western Queensland council reported that local knowledge and helicopter surveillance improved their decision making.

DPI aviation logistics for fodder drops was coordinated by chief pilots who managed taskings and reporting. Pilot mapping and data was used to track fodder delivery and flight paths. Local and district disaster management groups supported fodder related aviation logistics by procuring aviation fuel. However, coordination challenges arose when tasking disputes led to councils withdrawing their support. DPI identified post-event that better definition of roles and responsibilities for aviation coordinators in procurement contracts would be beneficial.

It was noted the SDCC aviation cell was required to manage and coordinate a significant aerial resupply operation during the response to the Western Queensland Floods but was often staffed by one or two personnel. In practice, the aviation cell functioned as a liaison point instead of a command point. It matched requests to available assets from QGAir, emergency medical services, QFD, ADF or private providers because its own aviation assets cannot be pre-deployed unless a formal request is made. A DDMG assumes responsibility for tasking after the asset has been allocated. Air base managers are a highly skilled resource which was exhausted early in the event.

Most aviation taskings were requested by telephone or email as the EMS is not fit this purpose. Inefficiencies may occur due to the lack of integration between EMS, DEIMS and agency-specific

systems. QPS has noted coordination and understanding of the movement and deployment of air assets, including fixed and rotary wing, was a challenge. Work has started to build capability around situational awareness and tracking of aviation assets.

It would be beneficial if the SDCC aviation capability enhancement includes workforce planning for people with aviation background and understanding of aviation fuels, including the adoption of contemporary fatigue management protocols for future protracted and complex response operations.

Enhancing state aviation capability

The National Emergency Management Agency (NEMA) is delivering an enhanced national aerial emergency response capability over two financial years from 2025–26. The purpose of the capability enhancement is to respond to a key recommendation of the Royal Commission into National Natural Disasters and to ease pressure on ADF personnel and aerial assets. Additional aircraft for the aerial firefighting fleet is helping build a multi-hazard capability to be deployed for emergency response in all types of disasters.[91]

Insight: Strengthening aviation capability nationally for an all-hazards approach would be beneficial to Queensland.

The volume of aviation operations in uncontrolled airspace conducted during a defined period in response to the Western Queensland Floods highlights the challenges in preparing and planning for aviation operations. Safety is paramount and knowledge about assets and fuel requirements is needed to inform efficient and effective taskings. Knowledge of regulatory compliance of the safe transport of goods and passengers is also critical to reduce the number of exemptions CASA is requested to approve during disaster response operations.
Regulations for key roles such as aviation coordinators and air base managers and flying in uncontrolled airspace requires qualifications and training. For disaster management operations, personnel involved in aviation coordination benefit from participating in relevant exercises to improve efficiency while maintaining safety standards. CASA is well placed to provide advice to the SDCG about safe aviation operations when required. During events, Airservices Australia noted being present at SDCC would assist their situational awareness and the information flow to the aviation industry including manned airports.

Should the recommendation below be accepted in full or in part, entities holding Air Operator Certificates (AOC) should consider including the relevant AOC holder in any meetings associated with the recommendation.

Recommendation (3)

The Inspector-General of Emergency Management recommends that the Queensland Police Service convene a meeting with Civil Aviation Safety Authority and other state entities deploying aviation assets to disaster operations (e.g. Queensland Reconstruction Authority, Queensland Fire Department, Department of Primary Industries, Energy Queensland, Local Government Association of Queensland etc), to discuss air operations in uncontrolled airspace to determine what does 'safe

[91] https://www.nema.gov.au/our-work/emergency-response/national-aerial-capability

practice' look like as well as 'good practice'.

Community resilience

Community members and entities were invited to make submissions for all three event reviews of 2025. In doing so, they were invited to provide thoughts on 'opportunities to enhance community resilience to better prepare for and respond to future disasters.' The Office identified that, in broad terms, Queenslanders are generally resilient.

> *"Our community was well prepared. We lost power for six days, and this included the only telephone exchange. Many of us had generators and our local hall has a generator for those who needed it. Our local network of people and knowing our neighbours got us through."*
> Small community in Southeast Queensland

In Queensland disaster resilience is recognised as "the ability of the Queensland Government, local governments, communities, businesses and individuals to prepare for, respond to, and manage potential hazards and disasters, thereby minimising impacts and rapidly recovering to emerge stronger and better able to cope with future disaster events".[92]

Communities can actively increase their resilience by taking steps to reduce their disaster risk through planning and preparedness actions. The QRA's Get Ready Queensland program actively promotes a year-round, whole-of-community approach to disaster resilience, including understanding local risks.

This program is also delivered by councils, which educates communities to prepare for, respond to, and recover from disasters.[93]

Examples of planning and preparedness actions people can take might include:

- An individual preparing an emergency kit with enough non-perishable provisions and medication for an extended power outage
- A household opting to move from a home located on a flood plain to one on higher ground
- Members of a sporting club coming together to plan how they will sandbag their clubhouse in the event of a flood, including assigning roles, purchasing sandbags and shovels, and inviting the local SES group to demonstrate the most effective sandbagging techniques
- A GP clinic preparing a business continuity plan in consultation with staff and patients, so it is strongly informed by its key stakeholders.

Submissions and community forums identified multiple factors that increased or decreased community resilience in the lead-up to this year's events, and suggestions for building resilience for the future. While there were many examples of strong and inspiring community resilience in action,

[92] Queensland Strategy for Disaster Resilience 2022–2027, Queensland Reconstruction Authority, 2025
[93] https://www.qra.qld.gov.au/resilience/get-ready-queensland

it is apparent that Queenslanders' resilience is being severely tested and requires a shift in approach to meet the challenges now being experienced.

Shared responsibility

The Standard states "Entities have a shared responsibility to work together with their community to develop integrated strategies to manage…risks" from natural and human-caused hazards.[94] One of the outcomes of shared responsibility between the disaster management sector and the community should be that "The community: knows their hazards and the associated risks, and is invested and acts to reduce the impact of events."[95]

Achieving this outcome can be possible when disaster management entities "encourage and enable the community to help manage their risks" and the community acts on the information provided by disaster management.[96]

Self-reliance, dependencies, and expectations

The Office observed differences in the resilience levels reported by rural, regional, and metropolitan areas across the three event reviews. Rural and remote communities self-reported high levels of resilience. For example:

> *"The community is very resilient…Being a very remote location, a degree of disruption and discomfort is expected, if people are passive and dependent on services they normally do not stay in the area for long."*
> Remote Queensland councillor

Communities in metropolitan areas with more reliable infrastructure and systems, such as telecommunications, transport, and electricity, reported being more challenged by the disruptions they experienced. For example:

> *"We couldn't get to the pharmacy and had to drive for 15 minutes for internet. We didn't have a radio, and I was confident we weren't going to lose power because we haven't for five years."*
> Southeast Queensland resident

But even the resilience of communities that are more practiced in severe hazard and disaster events can be challenged when major disruptions occur. For instance, coastal communities in Far North Queensland were tested when fuel and food supply chains were cut after the Ed Kratzmann Bridge north of Townsville was damaged by floodwaters.

As stated elsewhere in this report Queenslanders continue to hold very high expectations of government in a disaster and often assign them a higher degree of accountability for community

[94] Standard for Disaster Management in Queensland, Inspector-General of Emergency Management, 2021
[95] Standard for Disaster Management in Queensland, Inspector-General of Emergency Management, 2021
[96] Standard for Disaster Management in Queensland, Inspector-General of Emergency Management, 2021

safety than themselves. The Office received submissions that spoke of the 'duty of care to the residents' local councils were perceived to hold, and how they 'should be held accountable' for what amounted to a catastrophic weather event that overwhelmed local infrastructure. For example, one Far North Queensland mayor said the council was being blamed by the community for the flash flooding following record rainfall.

The challenge for governments and any entity providing critical services is recognising that the increased interdependence of people on the infrastructure and systems they rely on every day leads to increased community expectations in disasters. As NEMA articulates in the CASP Guidebook:

> The challenges of managing contemporary crises have moved from problems that are 'complicated' to problems that are 'complex'. As society becomes more interconnected and interdependent, expectations increase as do the consequences of failure.[97]

Insight: Queenslanders are resilient, but this review process has indicated this can be relative to where they live, and their interdependencies with infrastructure and systems.

Connected communities

It is now widely established that communities which are high in social capital – where people are strongly connected, know their neighbours, and are linked into networks – are more disaster resilient.[98] According to Australian Red Cross: "Social capital, which refers to the social ties and connections between people and communities, can play a critical role in disaster management by enabling collective action, information sharing, and trust-building."[99]

The Office heard many examples of connected communities supporting each other through this year's events, such as:

> *Our community was well prepared. We lost power for six days, and this included the only telephone exchange. Many of us had generators and our local hall has a generator for those who needed it. Our local network of people and knowing our neighbours got us through.*

It takes an investment of time and effort to develop these connections.

Insight: Research shows connected communities are more resilient.

Inclusive emergency preparedness information

Past reviews, for example SEQ Floods 2022 noted that warning and public information messages were often limited in their accessibility for people with disability, overly technical, and failed to reach Culturally and Linguistically Diverse (CALD) and First Nations communities, as well as people with low literacy skills. A Queensland-based project demonstrated that materials in Easy English materials with illustrations increased preparedness.

[97] Crisis Appreciation and Strategic Planning Guidebook, National Emergency Management Agency, Australian Government, 2024
[98] Social Capital and Community Resilience, Aldrich and Meyer, 2014
[99] 'The hidden power of community: Unveiling social capital's role in Australia's disaster resilience', Australian Red Cross, 2024

Through this review, the QRA advised that it is delivering a new project through their Get Ready Queensland campaign to provide preparedness information in languages other than English, including a series of natural hazard information videos and Easy Read resources for CALD communities and people with low literacy skills. There will be a toolkit for government and NGOs on how to use and adapt the resources for their communities.

Get Ready Queensland advises, “These inclusive and accessible resources are being developed for use across Australia and will focus on seven natural hazards: bushfires, floods, cyclones, storms, heatwaves, earthquakes and tsunamis. The resources will be translated into Arabic, Cantonese, Dari, Korean, Mandarin, Punjabi, Thai, and Vietnamese.”

Conclusion

The North Queensland Floods, Tropical Cyclone Alfred, and Western Queensland Floods presented significant challenges to Queensland’s disaster management sector, testing its capacity to respond to events of unprecedented scale and complexity. Despite these challenges, the QDMA demonstrated the value of the principles of a locally-led, regionally coordinated and state and Commonwealth-supported approach to managing disasters in Queensland. This framework reflects a scalable, flexible and cross agency approach, ensuring that responses are tailored to the severity and complexity of each event whilst also maintaining strong coordination across all levels of government and community.

The collective efforts of government agencies, local governments, non-government organisations, volunteers, and communities showcased the resilience and dedication of all involved. Under immense pressure, all stakeholders worked tirelessly and collaboratively to deliver the best possible outcomes.

While the QDMA has proven its value, it is acknowledged that the system is undergoing a period of adjustment. Queensland has been subject to major disaster events in 2022, 2023–24, and 2025. These events have placed sustained pressure on Queensland’s disaster management system. The Office has undertaken a number of reviews and made a suite of recommendations aimed at enhancing the QDMA, improving resilience and operational effectiveness.

In undertaking this review, regard has been had to the recommendations from previous IGEM reviews in 2022, 2023 and 2024–25, and it is evident that the QDMA is undergoing a period of transition with adjustments still being embedded across the sector. This transition will take time, but those changes and the small but meaningful enhancements identified in this review reflect a shift towards more adaptive, integrated, and future-focused approaches to disaster preparedness and response, informed by lessons learned and an evolving risk landscape. These enhancements are essential to ensure the system continues to evolve and improve. The focus remains on continuous improvement, with a commitment to refining processes, improving doctrine, strengthening coordination, and enhancing community resilience through shared responsibility.

Looking ahead, the lessons to be learned from these events by all aspects of the system, coupled with the insights from the recently released National Climate Risk Assessment, will guide future preparedness and response efforts. The QDMA will continue to adapt to the changing nature of disasters, ensuring Queensland is ready to face future challenges with confidence and capability. By building on the progress made and fostering a culture of learning and collaboration,

Queensland's disaster management system will remain a cornerstone of community safety and resilience.

This review reaffirms the importance of ongoing reflection, adaptation, and preparation to meet the needs of a dynamic and evolving risk environment. Together, we will continue to strengthen our disaster management arrangements and ensure Queenslanders are well-prepared for whatever lies ahead.

Appendix A

Terms of Reference

Terms of Reference for the reviews of:

- North Queensland Floods (late January to early February 2025)
- Tropical Cyclone Alfred's impact on South-East Queensland (late February to early March 2025)
- The Western Queensland Floods (late March to early April).

Functions of the Office

The Office of the Inspector-General of Emergency Management (the Office) is to provide the Queensland Government and the community with assurance of the State's disaster management arrangements.

Section 16C of the *Disaster Management Act 2003* outlines the following functions for the office of the Inspector-General of Emergency Management, including:

- to regularly review and assess the effectiveness of disaster management by the State, including the State disaster management plan and its implementation;
- to regularly review and assess the effectiveness of disaster management by district groups and local groups, including district and local disaster management plans;
- to regularly review and assess cooperation between entities responsible for disaster management in the State, including whether the disaster management systems and procedures employed by those entities are compatible and consistent;
- to review, assess and report on performance by entities responsible for disaster management in the State against the disaster management standards;
- to identify opportunities for cooperative partnerships to improve disaster management outcomes;
- to report to, and advise, the Minister about issues relating to the functions above; and
- to make all necessary inquiries to fulfil the functions above.

Guiding principles and methodology

The Reviews will be guided by the following principles:

- The Standard establishes the outcomes to be achieved for all entities involved in disaster management. It consists of Shared Responsibilities, Outcomes, Accountabilities, and Indicators. The Standard focuses on outcomes rather than setting a minimum standard that must be met.
- As described by the Standard, the focus is on outcomes, the Standard provides the parameters within which disaster management should be conducted across Queensland, without being prescriptive about how it should be done.
- The Standard is to be used by all entities in Queensland with responsibility to contribute to disaster management. This includes those with legislated roles, as well as entities acting on behalf of or under an arrangement with those that do.

- The term 'entity' is defined in the *Acts Interpretation Act 1954*, at Schedule 1 Meaning of commonly used words and expressions. It determines that an entity includes both a person and an unincorporated body. Consistent with the *Disaster Management Act 2003*, the Standard uses the term entity to describe those with roles or responsibilities in disaster management in Queensland. This includes all tiers of government, non-government organisations, not-for-profit organisations, disaster management groups, and others with legislated roles in disaster management.

In conducting the Reviews, the Office will engage with:

- relevant entities impacted by these events where DRFA has been activated,
- any other entities providing critical infrastructure support in the preparation and response phase,
- relevant entities engaged in preparation and response activities,
- industry,
- community,
- relevant disaster management doctrine, and
- other relevant reviews previously conducted, or which may have commenced, relevant to this review.

The reviews will be guided and informed by consideration of various sources of evidence, not limited to submissions (written or oral), interviews, official reports, data, case studies, public consultation and the views of experts.

Scope

For the associated events, the Office will deliver a separate report, for each identified event. The reports will identify enhancements and good practices to inform and ensure continuous improvement of Queensland's Disaster Management Arrangements (QDMA).

In relation to the associated events, the reports will focus on the following:

- pre-season planning activities undertaken by entities,
- integration of preparedness and response activities between all levels of government,
- opportunities to enhance community resilience to better prepare for, and respond to future disasters,
- ensuring effective communications systems to enable the community to take necessary actions and to ensure connectedness within the community and with response entities,
- provision of information and data to inform and support planning decisions in the preparation and response phases, and
- any other matters that the Office considers necessary related to preparation and response.

Out of scope

These reviews will not consider matters relating to:

- activities solely related to recovery,
- areas outside of the event areas previously identified,

- land use planning, and
- building design, codes and construction.

Deliverables and timeframe

The review reports will include an analysis of the preparedness and response related to each event. Based on the evidence, the reports may include identified good practice as well as recommendations for improvements in the QDMA and opportunities for strengthening future preparedness and response mechanisms.

Before finalising the review reports, the IGEM will consult with relevant entities on draft findings and recommendations.

The three reports will be delivered to the Minister for Police and Emergency Services by Tuesday 14 October 2025 for consideration of tabling in Cabinet.

Appendix B

Insights

Insight	Location
Community safety may be enhanced with increased understanding and communication between disaster management groups and the Bureau regarding the relationship between Bureau warnings and planned disaster response triggers. The solution lies in strengthening collaboration and information-sharing across jurisdictions and between levels of disaster management groups.	Summary Report, p. 24
Complementary flood monitoring assets such as flood markers and flood cameras can contribute to the accuracy, timeliness and resilience of flood warning intelligence.	Summary Report, p. 31 North Queensland Floods Event Report, p. 34 Western Queensland Floods Event Report, p. 33
Improving vegetation management around electricity infrastructure assets may improve access to, and the resilience of the network.	Summary Report, p. 33 Tropical Cyclone Alfred Event Report, p. 55
Communities plan and prepare for what they know. Communities now need to think about preparing for the type of events they have yet to experience.	Summary Report, p. 34 North Queensland Floods Event Report, p. 53 Tropical Cyclone Alfred Event Report, p. 63

Disaster management entities should have resilient business continuity plans that account for communication disruptions.	Summary Report, p. 37
All entities with warning responsibilities should include offline messaging as part of their business continuity planning.	Summary Report, p. 39
It is not always possible to issue local, community-focused warnings for some events. If community warnings are issued, they may not be seen by all members of the community. There is a shared responsibility between entities and the community to understand local risks and be informed and prepared.	Summary Report, p. 44
There is an opportunity for coastal councils in Southeast Queensland to adopt storm tide evacuation zones as per the Evacuation Manual, which many northern, coastal local governments have adopted.	Summary Report, p. 48 Tropical Cyclone Alfred Event Report, p. 43
Information about the potential inundation of the storm tide should be obtained from the responsible LDMGs who have the data and modelling capabilities.	Summary Report, p. 49 Tropical Cyclone Alfred Event Report, p. 44
Planning for an imminent tropical cyclone event should include a shared understanding of the risk appetite of the relevant disaster management groups that support locally led disaster response operations.	Summary Report, p. 49 Tropical Cyclone Alfred Event Report, p. 44
Greater awareness of the services offered by storm tide advisors could be promoted to assist coastal disaster management groups.	Summary Report, p. 50 Tropical Cyclone Alfred Event Report, p. 45

The terminology ‘storm tide’ and ‘storm surge’ are used inconsistently in doctrine, public information and by disaster management practitioners.	Summary Report, p. 50 Tropical Cyclone Alfred Event Report, p. 45
Evacuation sub-plans should include clear activation triggers, shelter options available, communication strategies to inform the community of the risks and request clear courses of action.	Summary Report, p. 52
Shelter personnel should be appropriately trained, available, and well-practiced within fit-for-purpose facilities with a considered business continuity plan.	Summary Report, p. 53 Tropical Cyclone Alfred Event Report, p. 48
When preparing evacuation sub-plans, consideration should be given to evacuation arrangements for persons external to their LGA and include communication strategies for informing the community of the evacuation stages.	Summary Report, p. 54
Proactive fatigue management planning supports staff wellbeing and helps sustain continuity of operations.	Summary Report, p. 57
Strengthening the professional capability and mobility of council officers to support the LGAQ’s C2C program within Queensland’s disaster management arrangements may effectively assist disaster-impacted councils and their communities.	Summary Report, p. 58
There is an opportunity to better use personnel experienced in specific types of disasters in future such events.	Summary Report, p. 59
Use of common systems between local governments promotes information sharing and situational awareness.	Summary Report, p. 59

Systems that are interoperable enable information sharing and decision making between entities.	Summary Report, p. 60
There is a need to work towards interoperability between all systems to enable sharing of a common operation picture.	Summary Report, p. 60
Use of liaison officers is an effective strategy to support inter-agency information sharing and situational awareness.	Summary Report, p. 62
Having an established reporting protocol and a workforce planning strategy may assist to plan for requests for information.	Summary Report, p. 62
Clear reporting requirements between all levels of the QDMA supports improved information sharing and situational awareness.	Summary Report, p. 62
Entities which provide critical services in disasters should have business continuity plans integrated with disaster management plans.	Summary Report, p. 63 Tropical Cyclone Alfred Event Report, p. 50
Business continuity plans and disaster management plans need to outline redundancies and contingencies to deal with widespread or prolonged, critical infrastructure disruptions.	Summary Report, p. 64
Any shortcomings of business continuity planning by service providers may place undue pressure on hospitals and the disaster management systems.	Summary Report, p. 66
Disruption to Queensland's limited freight corridors constrains the movement of goods, heightens supply chain vulnerability and complicates prioritisation decisions during periods when transport capacity is reduced.	Summary Report, p. 67

Local Disaster Management Plans should include supply chain continuity for communities at risk of being isolated, including defined triggers for resupply when supply routes are compromised.	Summary Report, p. 69
Clarity in roles and responsibilities in fodder provision decreases the risk of parallel effort, delays and supports timeliness of tasking and delivery.	Summary Report, p. 70 Western Queensland Floods Event Report, p. 39
Improved guidance in key doctrine and establishment of clear roles and responsibilities for entities deploying aviation resources pre-season would strengthen communication, improve coordination, and enhance operational efficiency.	Summary Report, p. 73 Western Queensland Floods Event Report, p. 41
Strengthening aviation capability nationally for an all-hazards approach would be beneficial to Queensland.	Summary Report, p. 78
Queenslanders are resilient, but this review process has indicated this can be relative to where they live, and their interdependencies with infrastructure and systems.	Summary Report, p. 81
Research shows connected communities are more resilient.	Summary Report, p. 81
Local disaster management groups having clear understanding of the Bureau's role, responsibilities and capabilities could improve preparedness, manage expectations, support more effective local planning and decision making during events.	North Queensland Floods Event Report, p. 32
Communities increasingly rely on telecommunications to remain connected and access disaster related information.	North Queensland Floods Event Report, p. 44 Tropical Cyclone Alfred Event Report, p. 59

Communities and entities should plan for three days of self sufficiency, in line with advice already provided in the QRA's Get Ready Queensland program.	North Queensland Floods Event Report, p. 53 Tropical Cyclone Alfred Event Report, p. 51
To help manage expectations and improve community understanding of flood mitigation efforts, councils are encouraged to regularly and clearly engage with its residents regarding planned and completed works programs.	Tropical Cyclone Alfred Event Report, p. 30
When preparing evacuation sub-plans local governments need to include clear triggers for the activation of shelter options, communication strategies informing the community of the risks, the requested courses of action, and shelter options available.	Tropical Cyclone Alfred Event Report, p. 47

Appendix C

Glossary of abbreviations

13Health	**Health Contact Centre**
ABC	Australian Broadcasting Corporation
AHD	Australian Height Datum
API	Application Programming Interface
ARC	Australian Red Cross
AWS	Australian Warning System
Bureau	Bureau of Meteorology
C2C	Council to Council
CALD	Culturally and linguistically diverse
CASP	Crisis Appreciation and Strategic Planning (CASP) Guidebook
ConOps	Concept of Operations
DDC	District Disaster Coordinator
DDMG	District Disaster Management Group
DETSI	Department of Environment Tourism, Science and Innovation
DFSDSCS	Department of Families, Seniors, Disability Services and Child Safety
DHPW	Department of Housing and Public Works
DIEMS	Disaster Incident and Event Management System
DM Guideline	Interim Queensland Prevention, Preparedness, Response and Recovery Disaster Management Guideline 2024-25
DPC	Department of the Premier and Cabinet
DPI	Department of Primary Industries
DRA	Disaster Relief Australia
DRFA	Disaster Recovery Funding Arrangements
EAs	Emergency Alerts
EFRRG	Economic Functional Recovery and Resilience Group
EMCC	Emergency Management Coordination and Command
EMS	Event Management System
ERF	Emergency Response Fund
ERWG	Emergency Relief Working Group

Evacuation Manual	Evacuation: Responsibilities, Arrangements and Management Manual
FRrG	Functional Recovery and Resilience Group
FWIN	Flood Warning Infrastructure Network
Guardian	Guardian Control Centre
GWN	Government Wireless Network
HAT	Highest Astronomical Tide
HHS	Hospital and Health Services
IFD	Intensity–Frequency–Duration
IGA	Intergovernmental agreement, Bureau of Meteorology
IGEM	Inspector-General of Emergency Management
LAT	Lowest Astronomical Tide
LDC	Local Disaster Coordinator
LDMG	Local Disaster Management Group
LGA	LGA
LGAQ	Local Government Association of Queensland
MER	monitoring, evaluation and reporting
MSQ	Maritime Safety Queensland
NEMA	National Emergency Management Agency
NFWINP	National Flood Warning Infrastructure Network Program
NMS	National Messaging System
Office	Office of the Inspector-General of Emergency Management
P-CEP	Person-Centred Emergency Preparedness
PolAir	QPS Air Operations
PPRR	Prevention Preparedness, Response and Recovery
QDMA	Queensland Disaster Management Arrangements
QDMC	Queensland Disaster Management Committee
QDMTF	Queensland Disaster Management Training Framework
QFD	Queensland Fire Department
QGAir	Queensland Government Air
QPS	Queensland Police Service
QPS PIWU	Queensland Police Service, Public Information and Warnings Unit

QRA	Queensland Reconstruction Authority
QSDR	Queensland Strategy for Disaster Resilience
RFAs	Request for Assistance
SDCC	State Disaster Coordination Centre
SDMP	Interim State Disaster Management Plan 2024-25
SES	State Emergency Service
SLS	Service Level Specification for Flood Forecasting and Warning Services, Bureau of Meteorology
SRRG	State Recovery and Resilience Group
Standard	Standard for Disaster Management in Queensland
TC	Tropical Cyclone
TMR	Department of Transport and Main Roads
ToR	Terms of Reference

Appendix D

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