Cairns REGIONAL COUNCIL

IGEM Review into the 2023/24 Severe Weather Season

Tropical Cyclone Jasper and associated rainfall and flooding submission

Tropical Cyclone Jasper and associated rainfall and flooding

Introduction

Cairns Regional Council welcomes the opportunity to provide a submission to the Office of the Inspector-General Emergency Management (IGEM) Review of the 2023–24 Severe Weather Season.

Our submission has been prepared to cover each of the key focus areas and identifies a number of issues and potential enhancements to inform and deliver continuous improvement in Queensland's Disaster Management Arrangements.

Overview of event

The Local Disaster Management Group – Cairns Region (LDMG-CR) moved to Alert status on December 7, 2023, following advice from the Bureau of Meteorology (BoM) regarding the formation of Tropical Cyclone Jasper (TC Jasper) offshore. The LDMG-CR advanced to Lean Forward status on December 8, reaching Stand Up status by December 11, 2023. On December 13 at 8:00 PM, TC Jasper made landfall near Wujal Wujal as a Category Two cyclone. A BoM update at 11:30 AM on December 14 reported that TC Jasper had downgraded to a tropical low, with a severe weather warning issued for heavy rainfall over the next 24-48 hours.

The LDMG-CR transitioned to Stand Down on December 16, 2023, based on current intelligence. However, approximately 14 hours later, on December 17, the LDMG-CR reactivated in response to an unexpected 1 in 100-year flood event caused by the severe weather system stalling over the peninsula region between Cairns and Wujal Wujal. The LDMG-CR remained active until a formal Stand Down on January 5, 2024.

This operation marked the longest activation duration related to a severe weather system for the Cairns LDMG since Tropical Cyclone Yasi in 2011. The Local Recovery Committee has maintained Stand Up status since December 19, 2023. Throughout the event, 60 Incident Management Team (IMT) staff across 13 cells supported the LDMG-CR's operations, and approximately 49 LDMG members participated in 13 extraordinary LDMG meetings.

As a severe weather system, TC Jasper was an anomaly. The system included phases of fast evolving and rapid onset conditions and was described as 'unusual' and 'very complex' by the BoM (BoM cited ABC, 2023). Initial preparations that concentrated on a worst-case scenario storm surge of up to 0.7m (with the predicted crossing coinciding with high tides) were given some short-term relief with BoM forecasting easing conditions. However, what followed was an 'extreme' and 'prolonged' weather convergence that resulted in a 360km long record-breaking flood event in which lead-times for modelling were 'greatly shortened' (BoM cited ABC, 2023). Coinciding with this rapidly evolving situation was a new mandatory public information system that was being tested in a cyclone event for the first time.

This period marked one of the most destructive weather events to ever impact the Cairns region. The deluge associated with TC Jasper and the subsequent rapid onset of severe flooding resulted in some of the highest rainfall and river levels ever recorded in our region. The weather event has had a profound impact on the Cairns area. However, communities in our northern corridor bore a disproportionately greater degree of impact.

Among others, the suburbs from Machans Beach north to Ellis Beach, and Lake Placid, Kamerunga and Caravonica felt the most severe effects. Some families endured extensive damage or total loss

of their homes and personal belongings, experienced disruptions to school and work as well as considerable levels of financial and psychological distress.

The 1 in 100-year event and its aftermath will have a lasting effect on the communities across our LGA and recovery will span several years.

IGEM Terms of Reference

FOCUS AREA 1

The effectiveness of preparedness, response, and transitional arrangements and activities undertaken by Queensland Government (including Government Owned Corporations and Statutory Bodies), relevant Local Governments, Commonwealth and other agencies engaged in operations in all of the Local Government Areas.

Accomplishments and strengths

The frequent Local Disaster Management Group (LDMG) meetings, although numerous, proved to be highly effective in disseminating crucial information and enhancing communication across all involved parties. These meetings were instrumental in ensuring a coordinated response.

The early activation of the Local Disaster Coordination Centre (LDCC) was another significant achievement. This proactive step greatly contributed to our preparedness, allowing us to address emerging challenges swiftly and efficiently.

Our collaboration with various agencies was commendable. Surf Life Saving, the State Emergency Service (SES), local Queensland Police Service (QPS), Queensland Ambulance Service (QAS), Red Cross, and the Department of Housing all performed outstandingly. The involvement of the Navy and Defence forces was particularly notable, as they provided reliable and much-needed assistance throughout the event. Additionally, the Australian Warning System (AWS) staff demonstrated exceptional dedication and effectiveness in their roles.

Opportunities for improvement

Despite these successes, several challenges need to be addressed to enhance our future responses**.**

Infrastructure and intelligence gaps *caused by failure and loss of critical flood monitoring infrastructure.*

The flooding event resulted in the failure and loss of a significant portion of our flood warning infrastructure network, including rain and river height gauges. This compromised the situational awareness and forecasting abilities of both the LDMG-CR and the BoM. Consequently, LDMG-CR personnel had to perform manual calculations using the only operational gauge at Myola to estimate downstream inundation timing. This method raised questions about the accuracy of our reporting from the District Disaster Management Group (DDMG) and State authorities.

Additionally, intelligence officers faced significant challenges using BoM data from the Cairns Airport site gauge, which experienced calibration issues. This gauge was critical for decision-making and had been incorrectly indicating minimal flood levels for many hours. Once it was realised that the gauge was malfunctioning, it was removed from the forecasting network without notice. Given that most other rain and river height gauges were damaged and unable to provide data, the unexplained absence of

this gauge was detrimental. Officers were forced to inspect river heights physically, delaying our response and highlighting the urgent need for improved communication and redundancy in our monitoring systems.

Attendance and Understanding of roles *compromised by the absence of key LDMG members led to gaps in resource allocation and coordination.*

Another significant issue was the inconsistent attendance of core LDMG members, such as Queensland Fire and Emergency Services (QFES) and Queensland Health. The absence of these key agencies created resource gaps that other agencies had to fill, which in turn impacted their own operations. Additionally, there was a general lack of understanding regarding the roles and responsibilities of different agencies. Enhancing this understanding is crucial for ensuring a cohesive and efficient response.

Lack of resource management and redundancy *impacted smooth transition activities.*

The TC Jasper event and subsequent flooding highlighted significant resourcing challenges in the Cairns and Far North region. Current resourcing levels are insufficient to support sustained operations during prolonged activations across multiple Local Government Areas (LGAs).

Staff fatigue became a critical issue as the event was largely unexpected. The absence of redundancy across all LDMG roles adversely affected transitional activities, emphasising the need for enhanced contingency planning. Furthermore, the timing of the event, just before Christmas when normal operations had ceased, exacerbated these challenges.

The resource depletion caused by the District Disaster Management Group Executive Officer's (XO) repeated requests for updated emergency plans also impacted transition activities. These plans had already been provided during preparation in August, and the constant requests diverted focus and time away from critical LDMG activities.

The capacity of local governments in disaster management was also impacted as on 16th December, LDMG-CR IMT personnel were requested to travel to Port Douglas via a Council-to-Council request for assistance (issued by the DDC) to support Douglas Shire Council sheltering and LDCC operations. Ten to fifteen LDMG-CR IMT personnel were requested to provide relief assistance for a 48-hour period while still recovering from the previous five-day activation in the Cairns LDCC. Due to Ex-TC Jasper's stalled movements after its coastal crossing, weather conditions and road closures from flooding and landslips on the morning of 17th December prevented LDMG-CR IMT personnel from traveling to Port Douglas. As the LDMG-CR had reactivated to Stand Up, those personnel were distributed among the Cairns LDCC and evacuation shelters, leaving the LDMG-CR and Council unable to honour the support request and resulting in Douglas Shire Council continuing to operate without relief assistance. If such a significant proportion of the LDMG-CR IMT had been deployed to support Douglas Shire Council, Cairns' capacity to respond to the 1 in 100-year flood event would have been exceeded almost immediately, likely catastrophically impacting the response efforts. Therefore, arrangements for Council-to-Council support must be revised to ensure requests for support are issued during the pre-impact phase of an event rather than during the impact phase, with early discussions and standing agreements formalised at the commencement of each annual wet season. By resolving these issues, support requests may be honoured, and personnel can be pre-deployed when conditions are optimal for preparedness.

Request for Assistance (RFA) process and communication *was impacted by connectivity issues across systems and ambiguous communication protocols.*

The process for handling RFAs encountered significant issues. RFAs must go through the Guardian system and then transfer to the Disaster Information and Emergency Management System (DIEMS) used by QPS. Connectivity problems between these systems resulted in RFAs being missed for extended periods. To mitigate this, RFAs should be sent and followed up with a phone call to ensure receipt. Additionally, raising RFAs at each LDMG meeting would help reiterate their importance and facilitate escalation if necessary.

A specific instance illustrated the critical nature of clear communication in RFA processing. An RFA sent to the DDMG was declined without an immediate explanation. It later emerged that the decline was due to insufficient information, but the required details were not clearly communicated. RFAs are time-sensitive and crucial for preserving life. If the reasons for declines were clearly articulated, necessary amendments could be made promptly to ensure timely resource deployment.

Reliability of weather intelligence and BoM forecasting *affected accurate and timely responses.*

Further evidence of a failure in both flood intelligence and the capacity of warning systems was evidenced by the major flood warning for the Barron River, which was issued by the BoM 5 hours and 26 minutes after major flood levels had already been reached within the lower Barron River catchment. Additionally, the LDMG-CR were hindered in their ability to sustain situational awareness as a result of the unavailability of BoM forecasters during the morning of the flooding event on 17th December 2023. This communications failure resulted in a lack of intelligence updates which were necessary at that point in time to inform critical decision making by the LDMG-CR. These significant challenges faced by the LDMG-CR in obtaining accurate forecast intelligence from the BoM in a timely manner thus hindered their ability to prepare and issue timely warnings and alerts to the community at risk.

During LDMG meetings, a BOM meteorologist and a hydrographer presented available data and forecasting, which once downgraded from a tropical cyclone risk, slowly transitioned to a localised flooding risk. There were several failings in the provision of advice which included the repeated advice that quite confidently indicated the low-pressure system and associated rain event was going to continue shift southwest and have a reduced impact to Cairns and its extents. This advice continued through several LDMG meetings until advice shifted to a 1 in 100-year event which occurred well after water impacted households. This resulted in an exacerbation of poor and ultimately very late public notification escalation. Additionally, Intelligence officers were using BOM flood gauge data from the Cairns Airport gauge site which was experiencing calibration issues. This was queried at the next available access to the BOM officer at the LDMG meeting when it was explained as being out of calibration and therefore it was removed from publication. This occurred during the rapidly rising flood impact. Next steps to deal with the loss of this gauge was to send officers to physically inspect the river heights, at which point it was identified flooding impacts were past the point of evacuation capability.

The biggest issue faced during TC Jasper was the reliability of weather intelligence. While the BoM provides long-term forecasting, it cannot predict events with less than 6 hours lead time, such as riverine, flash, or rapid onset flooding. The LDMG does not have access to hydrological intelligence, impacting the operational response, as resources could have been pre-deployed, and residents could have been advised to evacuate in time to beat the rising floodwaters.

Moreover, while the data received was not always incorrect, repeated assurances that the event would 1 in 100-year event affected preparedness and response strategies, as we were not fully equipped to handle the severity of the situation as it unfolded.

Furthermore, as previously mentioned, the gauge at the airport, which is essential for accurate weather and water level readings, was malfunctioning for several hours before the error was identified. This delay in recognising and addressing the malfunction meant that our forecasts and subsequent responses were based on inaccurate data for a significant period. This underscored the imperative to have a robust system in place for regular on-site checks and immediate rectification of any equipment faults, a situation which could have been effectively mitigated with on site BoM personnel.

***Lack of local BoM presence** compromised accurate and prompt responses.*

A significant challenge was the lack of local presence, severely hindering our ability to respond accurately and promptly. The absence of key personnel on the ground compromised situational awareness and decision-making capabilities, leading to delays and less effective responses.

The relocation of airport staff to Canberra had a notable impact on our accurate forecasting. Situational awareness is crucial in emergency management, and having personnel on site is vital for maintaining a clear and real-time understanding of the conditions. The lack of on-site staff resulted in a disconnect between the actual events and the data being interpreted remotely.

The challenges we faced due to the lack of local presence, underestimation of the event's severity, relocation of key staff, and equipment malfunctions significantly affected our response effectiveness. Addressing these issues is crucial for improving our situational awareness and ensuring timely, accurate responses in future emergencies. Communication following LDMG meetings also needs improvement. After each meeting, an update should be promptly disseminated, including the time of the next meeting, similar to the communication strategy employed by the Cairns Airport. This approach would enhance coordination and preparedness.

FOCUS AREA 2

The timing and effectiveness of new Australian Warning System (AWS) messaging that were issued to the community during the events

Representatives of the LDMG-CR's Public Information Team have participated in a number of reviews and de-briefs relating to TC Jasper and subsequent flooding.

These include:

- Internal de-briefs and reviews in **early-January 2024**.
- Meeting with QPS Manager of Warnings on **22 January 2024**.
- Critical incident de-brief with Eudoxia on **Tuesday 23 January 2024.**
- Forge After Action Review debrief on **Wednesday 7 February**
- National Emergency Management Agency (NEMA) After Action Review on **Thursday 8 February 2024**.
- Australian Warning System (AWS) Survey - **Friday 15 March 2024**
- AWS local government de-brief with QFES and Queensland councils – **Thursday 21 March 2024**

The below response to focus area 2 of the ToR is a consolidation of feedback provided during the above sessions.

Accomplishments and strengths

Early cyclone and storm surge messaging - The early (yellow and orange) AWS messaging for the cyclone and storm surge was effective and well-received.

Flood warnings - The AWS flood messaging aligned with BOM information and forecasts. While issues with timing were identified, the LDMG-led communication reflected the weather intelligence provided.

Templates - the templated text was straightforward and easy to complete.

Support from AWS Team - the AWS team was helpful and responsive when needed.

Opportunities for Improvement

Council officers were initially supportive of the concept of AWS, however, now believe a significant amount of work needs to be done to refine its application.

Trying to apply the AWS to a weather system as dynamic as TC Jasper with limited and ambiguous intelligence was cumbersome. This was to the detriment of other potential messages that could have gone out.

Council acknowledges our role as the 'test case' for the AWS framework. This has impacted our credibility and caused significant reputational damage to both the Council and QFES.

Inconsistency in initial broad AWS warning *significantly hindered effective and timely warnings.*

The AWS project team was very clear in workshops and the days leading up to the cyclone that local governments were expected to wait until the state issued a 'broad-based warning' before issuing warnings. During the event, a number of councils (eg Mackay and Tablelands) issued warnings well before the state. This issue persisted in TC Kirrily. On both occasions, this caused significant confusion. **We acknowledge that QPS have since removed the broad base warning requirement.**

Flexibility with templates *affected the ability to produce fit for purpose messaging.*

The style guides provided in the lead up to the 2023/24 cyclone season included directive language such as "set AWS requirement".

Examples below:

1. Call to action statement - Set AWS requirement. Tells people what to do.

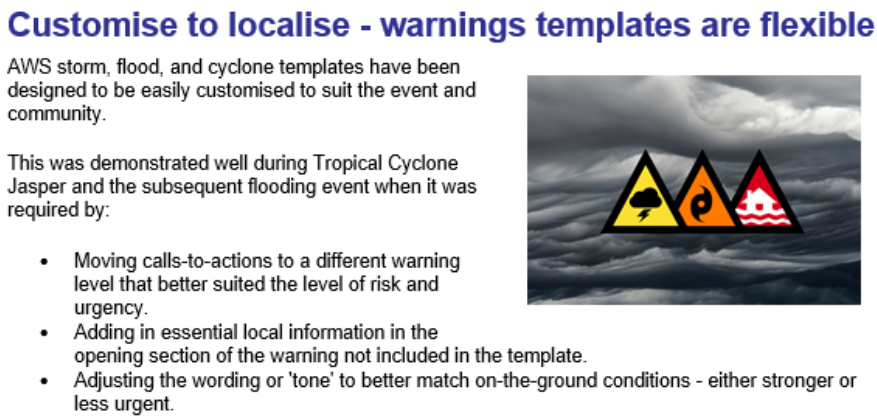
2. Warning level - Set AWS requirement. Indicates level of risk and danger.

4. Icons

ADVICE | WATCH and ACT | EMERGENCY WARNING

When using these templates, it is important that you use, in full, the call-to-action statements, warning levels, flood icon appropriate to the level, and colour palette.

After TC Jasper and subsequent flood event, advice was issued by QFES in its January newsletter emphasising the flexibility and scope to adjust the tone. This was not clear before the wet season. **We acknowledge that QFES shifted their approach and apologised for this confusion during the AWS local government de-brief in March 2024.**



Limited time to implement final AWS templates *impacted the ability to adequately test the content ahead of the disaster season.*

The AWS templates were received in early-September 2023. This gave us less than two months before the AWS system requirement went live on 1 November 2023. During this period, we had to look at how flood modelling, storm tide zones and possible cyclone impacts impacted various communities to determine trigger points for each AWS message and how best to apply the templates. We developed more than 50 templates and tested them at a full-day exercise with the IMT in late-November where issues were identified for improvement. In hindsight, this was not enough time to test triggers and align AWS templates to the Emergency Alert library.

A greater lead time with final templates would have given councils more time to implement and test templates. We note that NEMA has announced a $1.29 million project, funded in part through the Australian Government's Disaster Risk Reduction Package (DRRP), which will see the development of enhanced BoM products that support the ongoing implementation of the AWS. Any future changes should be conducted in a coordinated manner that provides more time to adapt templates to each local environment.

Alarmist language caused public backlash *when an AWS Emergency Warning was issued.*

Generally, the AWS message worked well at the yellow (Advice) and orange (Watch and Act) level. Council was criticised for alarmist language each time a red (Emergency Warning) was issued. The first example was the 'Leave Immediately' storm surge on Tuesday 12 December. The second example was when QFES issued an AWS communication and Emergency Alerts on the Cairns LDMG's behalf before the cyclone made landfall.

This showed the need for less alarmist language templates for lower category cyclones, or cyclones that do not directly impact the region. However, we note the research underpinning the development of the AWS (https://knowledge.aidr.org.au/media/7791/2337-sa-cfs-warnings-full-report.pdf) which is designed to get people to take action.

Without further options, councils find themselves in a difficult, 'all or nothing' position for warning the public. Further templates also need to be considered for storm surge which needs to consider the evacuation timelines and have more appropriate calls to action.

***Too much emphasis on AWS communications** impacted the ability to issue localised warnings.*

Our team spent most of the time trying to apply AWS communications to a Cairns context. A key takeaway for us after the event was to focus less on AWS warnings, and more on other ways to communicate with the public. This goes against the intent of AWS which is designed to provide a nationally consistent warning system.

A better way to streamline a national rollout of the AWS communications may have been to apply it to existing BOM warning products. Instead, BOM warnings have different language and levels to AWS which can cause confusion to the public.

We are seeking greater clarity around how AWS fits in with BOM warnings, and what the Cairns LDMG's role is in distributing BOM warnings vs AWS warnings vs its usual messaging. There is an overlap and it's unclear how all forms of communication will be received by the community.

***Excessive delays when distributing Emergency Alerts** via the QPS Watch Desk caused by operational relationship and approvals process significantly impacted the issuance of timely warnings.*

Multiple delays were experienced when attempting to push out emergency alerts via the QPS Watch Desk. This occurred during the storm tide and flooding. Sometimes this related to issues around language, despite it being consistent with the AWS templates. Other times it related to not providing enough street names in the text, or disagreement about the polygons used to distribute to the message.

The Public Information and Warning cell of the IMT was also told multiple times through the event to stop putting its own communications out. This occurred either via the Emergency Management Coordinator or via a QPS representative from Brisbane. At one stage, on Tuesday 12 December, the Emergency Management Coordinator directed a warning to be removed at the request of the DDMG.

On Sunday 17 December, requests for an EA were not actioned quickly enough.

A directive was then given to not send any communications out and the Public Information Cell was told that AWS and the DDMG were taking control. **Effective engagement with the District and State is essential to confirm the procedure to meet the collective duty of care to the Cairns population.**

Feedback indicates that the operational relationship between the LDMG and DDMG and their respective coordination centres must be clarified and improved. The relationship should be collaborative and about providing support, not refusing to send, and leaving local governments without guidance on what to do. We seek clarity about the state approval process and the role of QPS in distributing alerts.

***Considerable confusion caused when directives were issued** to the Public Information and Warning Cell, particularly in circumstances when the directive did not follow formal process.*

Constantly evolving disaster events require a nimble and dynamic approach to communications. Effective communication is best achieved when formal processes are consistently followed, or at least when transparent decision-making is clearly communicated to minimise confusion. During the event, there were several instances where individuals issued directives to the Public Information and Warning cell outside the formal process.

Directives were sometimes issued by other agencies or individuals located outside the center and typically outside of meetings. This created significant confusion regarding who was leading the communications, as well as ambiguity over the decisions made and who made them.

Difference of opinion around language between State Government agencies and DDMG relating to warning level.

Despite using templates provided by QFES, concerns were raised about the language used in warnings. We also received directives from the DDMG via the Emergency Management Coordinator (EMC) to change messages, in conflict with the AWS templates. This would occur either minutes before planning to send or after warnings had been issued.

If all agencies have representatives in the room, that should be the opportunity to discuss messaging and provide feedback, not to be told to change, or remove the communication by the same agency in a different location outside of the meeting. The LDMG members must be empowered to lead and approve communications.

Example below:

Storm tide – 12 December 2023

At the 8am LDMG, the planned communication was discussed for a 'Prepare to Leave' message at 9am and a "Leave Immediately' message at 12pm. Minutes below:

"Plan to push out Watch and Act – Prepare to Leave at 9am this morning advising red and orange zones that they are being asked to leave. Next step will be emergency warning at midday advising those zones to leave immediately. Initial message will ask people to stay with friends and family or booked accommodation, as well as advising details of shelters as a last resort only."

*No concerns were raised with the above planned warnings during the LDMG meeting.

At 2pm LDMG – the planned communication was discussed for a "Leave Immediately' message to be issued at 4pm.Minutes below:

"Emergency warning in relation to storm surge at approximately 4pm, awaiting confirmation."

*Again, no concerns were raised with the above planned warnings during the meeting.

At 3pm, 'Leave Immediately' emergency warning was issued via LDMG channels (dashboard, social media and media contacts). QPS Watch Desk declined to send. Directive received from DDMG via EMC to remove emergency warning from public channels.

At 4.41pm, EMC directs staff to remove emergency warning and issue advice level AWS after discussion with DDMG.

Another real time experience highlighted the requirement for AWS messages to be approved by the XO at the District level as a significant issue.

During the onset of TC Jasper, the BoM issued storm surge warnings for the Cairns northern beaches, predicting surges of around 2 meters depending on the timing and correlation with high tide. AWS messaging was prepared and reviewed with the DDMG XO, who advised that the messaging might cause unnecessary panic among residents and recommended reconsideration. Ultimately, the risk profile was much lower as the system moved further north. However, the inability to warn residents promptly due to unofficial district oversight undermined the AWS system's effectiveness and the LDMG's capacity for direct action.

Communities at risk needed accurate, consistent, and timely warnings throughout the event. The lack of previous trials using the Australian Warning System (AWS) for tropical cyclones significantly impacted the LDMG-CR during TC Jasper and associated flooding.

The LDMG-CR undertakes significant annual preparation to ensure Emergency Alert (EA) templates and polygons are pre-prepared and tested by the State Disaster Coordination Centre (SDCC) Watch Desk before each wet season. During the event, the requirement for EAs to be sanctioned by the district and then the SDCC Watch Desk caused unnecessary delays, potentially endangering lives. In some cases, EAs were not approved due to misalignment between AWS and state messaging requirements. The issues with the EA approval hierarchy, approval timelines, and misaligned messaging need immediate resolution before the next wet season. It is important to note that as of this submission, the Council is awaiting further details regarding the recently announced BoM funding to achieve AWS alignment.

FOCUS AREA 3

The communities' awareness of their local disaster management plans and the anticipated and or expected activities of the State's disaster management arrangements (locally led, regionally coordinated, State facilitated, and Commonwealth supported activities).

Accomplishments and strengths

The community knew where to find critical information *which aided in adequate preparedness, indicating messaging was effective.*

The community's preparedness for the recent event was notably high, largely attributable to the effectiveness of the preparedness activities across the region. This high level of readiness was a result of consistent messaging from all agencies, over a number of years in the lead up to disaster season. Additionally, the extended lead time prior to the event allowed residents to take necessary precautions, contributing to a well-prepared populace.

Furthermore, the accessibility of information played a crucial role in this preparedness. The disaster dashboard received a significant number of hits both before and during the event, indicating that people were aware of and able to access the right information when they needed it. This ensured that the community was well-informed and ready to respond appropriately.

Opportunities for improvement

The BoM brief indicated an El Niño pattern which influenced preparedness *and lead to complacency in preparing for unforeseen or unprecedented events.*

During TC Jasper, although there was extensive warning and preparation, the associated rainfall was largely unexpected. We activated the LDCC for TC Jasper, but based on the available intelligence, it was stood down once the cyclone had passed.

It should also be noted that BoM forecasts indicated an El Niño pattern with an extended hot and dry summer and an intense bushfire season anticipated. However, TC Jasper formed, and substantial rainfall occurred much earlier than expected by BoM. While weather events are inherently unpredictable, such briefings influence resource planning and can lead to complacency in preparing for unforeseen or unprecedented events.

This event had a significant impact on our LGAs and after observing the unfolding response to the event, it is evident that we need to invest more in supporting our community disaster teams. This investment is crucial to empower them to act when emergency services and other agencies are unable to reach the community.

Storm tide mapping versus flood mapping caused confusion *for some members of the public.*

There appeared to be some confusion within the community regarding the terms "Storm Tide Mapping" and "Flood Mapping." It was observed that some individuals mistakenly interpreted the "white zones" on storm tide maps as indications of safety from flooding, which is not accurate. This misunderstanding highlights a need for improvement. Clearer communication and public education on the differences between storm tide and flood mapping would be beneficial to enhance understanding in the future.

FOCUS AREA 4

The coordination and deployment of personnel and equipment.

Accomplishments and strengths

The LDCC was well-equipped with essential supplies, ensuring efficient operation during the event. Additionally, *most* of the evacuation centres were well-resourced, providing necessary support and safety for the small number of attendees. This level of preparedness and coordination was instrumental in managing the situation effectively.

Opportunities for improvement

Personnel and equipment were at times not well-coordinated *or adequately resourced impacting the effective activation of the evacuation centres.*

The evacuation centres are managed by the Red Cross. One of the primary centres (Marlin Coast) faced significant access challenges for staff due to surrounding access points flooding. Initially, allocating staff to open the centre was difficult, and this issue was compounded by the unavailability of critical supplies such as towels and blankets. Staff had to make emergency trips to nearby department stores to purchase essential supplies. Although the centre ultimately operated effectively and provided aid to those in need, the activation process was far from smooth and highlighted the need for improvements.

Increased vulnerability due to insufficient redundancy for communications staff

During and after the event, Council received requests for assistance from neighbouring councils to provide staff to help with their response. Council provided two communications staff to Douglas Shire Council for a total of four weeks in January and February 2024. This left the Cairns LDMG exposed if another disaster event occurred.

Given Cairns is surrounded by many remote LDMGs, often without dedicated communications team, more consideration needs to be given to how disaster teams are resourced with communications staff.

***The deployment of Local Government Association of Queensland (LGAQ) Council 2 Council program resources was hindered** by the road and airport closures*

Resources were mobilised from nearby local governments like Townsville; however, road closures and airport shutdowns isolated them, delaying their assistance until major transport routes reopened. By then, the critical phase of the event had passed. Earlier deployment of resources could mitigate such challenges. Furthermore, the LGAQ's requirements, which mandate 5–7 day deployments, are stringent. Some personnel could have potentially supported remotely if feasible, though this option did not seem available at the time.

The event coincided with the Christmas period when normal operations had ceased for the year, further affecting resource availability and deployment for assistance. The main challenge stemmed from capacity issues, as numerous agencies faced difficulties with staffing due to pre-planned leave.

***The capacity of local governments in disaster events** inhibits adequate planning, preparedness, response, and recovery.*

The scale, complexity and frequency of disaster events are increasingly exceeding the capacity of local governments across the planning, preparedness, response, and recovery spectrum. That includes the specialist technical capabilities and resources needed to adequately plan for and coordinate responses to significant events, particularly in the context of rapidly growing populations.

We will continue to advocate for future local response coordination to be led by the State and for substantial increases in baseline funding and dedicated expertise to be allocated to councils. This is essential to ensure councils have the necessary capacity and expertise to effectively manage response efforts.

***Flood intelligence and warning systems capacity must be significantly enhanced** to improve operational response.*

Disaster management groups must be fully equipped with sufficient, up-to-date flood intelligence data to fulfill their responsibilities for informed, real-time decisions, critical forecasting, and predictive planning. This necessitates comprehensive infrastructure, diverse data types, and dynamic flood modelling capabilities. Without this essential intelligence, gaps in situational awareness become unacceptable, hindering decision-making and impeding efforts to enhance flood resilience.

Flooding presents the most challenging natural hazard for the region. Consequently, our response to flooding is often reactive, relying on reports of actual flooding before we can act. Consideration of emerging technologies to provide intelligence and warnings for flooding is necessary.

Conclusion

In conclusion, while our recent response efforts were marked by several significant achievements, there are clear areas where we can improve. Addressing these challenges will enhance our readiness and effectiveness in future emergencies. Appreciation is extended for consideration of these points in the IGEM review and look forward to working together to implement these improvements.