

Council Reference: Storm Damage & Flood
Your Reference:



20 May 2022

Professor Mary O'Kane and Mr Michael Fuller APM
2022 NSW Flood Inquiry

Via web submission

tsc@tweed.nsw.gov.au
www.tweed.nsw.gov.au



PO Box 816
Murwillumbah NSW2484

Please address all communications
to the General Manager

ABN 90 178 732 496

Dear Professor O'Toole and Mr Fuller

Submission - 2022 Independent Flood Inquiry

Thank you for the opportunity to make a submission.

Tweed Shire Council endorsed the enclosed submission to the 2022 NSW Flood Inquiry at its meeting on 19 May 2022.

We look forward to reviewing the outcomes of the Inquiry.

If you have any questions in relation to Council's submission, please contact Stephanie Papadopoulos Manager Corporate Governance at [REDACTED]

Yours faithfully

A handwritten signature in black ink, appearing to read "Troy Green", written over a large, light-colored oval shape.

Troy Green PSM
General Manager

Encls.



NSW Independent Flood Inquiry 2022
Tweed Shire Council Submission

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Definitions

ADF:	Australian Defence Force
BOM:	Bureau of Meteorology
Council:	Tweed Shire Council
DPE:	Department of Planning and Environment
EOC:	Emergency Operations Centre
EPA:	Environmental Protection Authority
LEMC:	Local Emergency Management Committee
LEMO:	Local Emergency Management Officer
LEOCON:	Local Emergency Operations Controller
PWA:	Public Works Advisory
SES:	State Emergency Service
TfNSW:	Transport for New South Wales
Tweed Shire:	the Local Government Area of the Tweed Shire

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Tweed Shire Council makes the following submission.

In addition to this submission, Tweed Shire Council set up a Share Your Flood Experience page on our community engagement portal which has received more than 60 community stories. These stories show the breadth and depth of impact of this flood right across the Tweed with images and content that community members have provided their permission to share and publish on the Your Say Tweed website. It is recommended the Inquiry read and note these submissions from community members who were directly impacted to better understand their personal and lived experience through the 2022 Northern Rivers floods. <https://www.yoursaytweed.com.au/share-your-flood-experience>

RECOMMENDATIONS TO THE INQUIRY

Tweed Shire Council makes the following recommendations, which are supported by the submission. If you have any questions or require further information, please contact Stephanie Papadopoulos Manager Corporate Governance at tsc@tweed.nsw.gov.au

1. Warning systems

- a) That a review be conducted into the required updates to standard data, forecasting and warning systems and remedial action be taken to improve the integrity of the system and account for current and projected changes to weather patterns and intensities.
- b) That funding and a set of minimum standards be provided to Councils and the NSW State Emergency Service for enhanced community education in relation to warning systems.
- c) That significant investment be made in community education of warning systems, terminology and preparedness.

2. First responders

- a) That consideration be given to the reform of emergency agencies, including the State Emergency Service, Rural Fire Service and Fire and Rescue to merge into one overall emergency response agency that works collaboratively with the Police.
- b) That the resourcing and structure of the SES be reviewed, and volunteer recruitment be increased. Alternatively, and more broadly review the provision and coordination of volunteer emergency services to support paid personnel.
- c) That Councils be provided with specific funding to provide facilities to the SES and local emergency management support staff.
- d) That funding be provided for the upgrade of priority emergency evacuation centres.
- e) That incentives be considered for businesses to support the training and deployment of emergency services volunteers.

3. Communication and Electricity networks

- a) That consideration be given to creating greater redundancy in communication and electricity networks to increase their resilience in disaster events, to ensure ongoing modern and coordinated radio, mobile telephone and NBN/broadband services.
- b) That investment be made in alternative emergency broadcasting / internet connection, including and provision of community communications hubs that can be deployed to impacted communities rapidly and SMS notification technology.

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- c) That a review of all communication infrastructure in flood risk areas be reviewed and relocated as needed.
 - d) That investment is required in diversifying the fibre network, including priority for additional fibre paths to be established to connect northbound.

4. Funding and procurement

- a) That the DRFA Cat B funding be reviewed in terms of breadth of coverage and timeframes, including expanding asset types, greater earlier resilience funding and longer repair timeframes for larger events.
- b) That the disparate and overwhelming number of new disaster and resilience grant funding programs be coordinated and consolidated to reduce the impacts on Council resources already stretched by flood recovery activities.
- c) That legislative reform be considered to provide greater clarity and flexibility for emergency procurement in response to natural disasters under the tendering provisions of the Local Government Act.

5. Insurance

- a) That financial assistance be provided to Councils to support the significant cost difference between asset repairs and insurance coverage.
- b) That consideration be given to alternative insurance sources (such as government provided insurance coverage) for Councils who are no longer eligible for private coverage, or premiums become uneconomic because of natural disasters.

6. Flood mitigation

That government substantially increase its investment in flood mitigation schemes which in the case of Tweed Shire could include expansion, additional funding and acceleration of Voluntary House Purchase, and Voluntary House Raising schemes, a review of the Murwillumbah CBD levee and drainage study and enhancement of the Murwillumbah CBD levee and pump systems.

7. Environment

That State and Federal funding expand and accelerate their contribution to building resilience in environmental ecosystems assets.

8. Planning Reforms

- a) That planning reform be considered which facilitates a reduction in the number of people living in, vulnerable high value assets and property located within, flood prone areas, and that fiscal support for this outcome be integrated into any legislative reform.
- b) Where supported by strategic assessment of land use patterns and policy, land use planning legislation and local provisions be amended to provide 'truth-in-planning' which ensures that land use zones more accurately reflect the desired future uses for the land.
- c) Where changes in land use occur, which propose a transition away from dwellings, that an approach be designed which supports relocations and compensation for landowners who experience potential reductions in land values.
- d) That the NSW Government implement a local housing strategy support team that works directly with local councils who are preparing housing strategies, with objectives to facilitate appropriate outcomes that can be easily implemented with financial and other support from key stakeholders who have been a party to development of the strategy.
- e) That expansion of the application of Division 7.2 of the Environmental Planning and Assessment Act 1979 be undertaken to establish opportunities for contributions to be directed to appropriate affordable housing targets, and secure greater involvement at the state government level.

9. Employment lands

- a) That funding be provided to Council to undertake a second Industrial Land Swap over Council owned land located at Quarry Road and Lundberg Drive, Murwillumbah for the relocation flood affected business out of the flood zone and onto flood free employment land.
- b) That funding and planning support be provided to Council for the progression of a Planning Proposal and external capital infrastructure necessary to facilitate the creation of Employment Lands within the area known as PEL Area 6.

10. Roads

- a) That TfNSW reviews the flood immunity of the M1 at Chinderah which restricts emergency access (and will do so to the new Tweed Valley Regional Hospital) as well as the supply and access to shops for food and essentials, schools, employment and emergency services.
- b) That regulatory clarity be provided for roles and responsibilities, including in relation to funding for the repair of Crown Lands roads.

11. Voluntary House Purchase and Raising Schemes

- a) That these schemes be urgently reviewed to determine whether their eligibility can be expanded to apply to a greater number of residents.
- b) That a significant, one off, cash investment be made immediately to accelerate Council's existing Voluntary House Purchase (VHP) Schemes. This would need to be immediate before owners receive insurance payouts and decide to rebuild. Councils such as Lismore or Tweed in a rate capped environment would not have the financial capacity to do a bulk voluntary housing purchasing program therefore the state should prioritise and give consideration to a separate fund that would enable the 100% of the purchase price to be met by the State for homes that are under existing voluntary house purchase schemes that have been deemed uninhabitable through a flood natural disaster such as we have seen in 2022. This would require the State's annual budget program of \$2m to be lifted significantly in the order of \$300m in the first year and \$200 m in the second financial year to make a significant meaningful difference to the effectiveness of the program.
- c) Expansion of the VHP Schemes into other areas be considered.
- d) Land Swap opportunities be investigated to complement the Voluntary House Purchase Schemes

12. Fees and charges

- a) That financial assistance be provided to Councils to offset financial assistance measures put in place because of a natural disaster, such as waiver of fees and charges for water costs associated with the clean-up of homes and businesses.
- b) That the existing emergency service levy model and additional legislative requirements placed on councils for the provision of facilities to SES and RFS be reviewed.

13. Safety of all emergency service personnel and community first responder

That funding be provided to improve safety of community, and emergency service personnel within known inundation areas, such as markers on power poles, or other infrastructure etc to assist in the identification of roadways or hazards no longer visible.

14. Community

Enable councils to fund and support community resilience programmes that build a culture of preparedness and resilience. This would include education programs on preparedness and understanding of weather and emergency information including flood warnings and river level information.

15. State natural disaster management plans

- a) That the NSW Government develops, and regularly updates detailed natural disaster management plans for each local government area in respect to the State's role, including in relation to temporary housing plans post-event.
- b) That post-event announcements by the Commonwealth and State governments regarding grant funding be made within 24 hours of the declaration of a disaster and be distributed equally to all areas within that declaration.

Criteria No.	Inquiry Criteria	Council Comment																								
1a	The causes of, and factors contributing to, the frequency, intensity, timing and location of floods in NSW in the 2022 catastrophic flood event, including consideration of any role of weather, climate change, and human activity.	<p>In 2017 and 2022, the Tweed Shire has experienced two of the biggest floods, greater than 1% average exceedance probability (AEP), in 5 years. This has created a perception that “things are getting worse”.</p> <table border="1" data-bbox="663 357 2074 571"> <thead> <tr> <th>GAUGE</th> <th>2022 LEVEL</th> <th>ESTIMATED AEP</th> <th>2017 LEVEL</th> </tr> </thead> <tbody> <tr> <td>Murwillumbah</td> <td>6.5m</td> <td>1%</td> <td>6.25m</td> </tr> <tr> <td>Tumbulgum</td> <td>4.8m</td> <td>1%-0.2%</td> <td>4.0m</td> </tr> <tr> <td>Chinderah</td> <td>3.0m</td> <td>1%</td> <td>2.25m</td> </tr> <tr> <td>Uki</td> <td>13.4m</td> <td>Unknown</td> <td>12.6m</td> </tr> <tr> <td>Bogangar</td> <td>3.7m</td> <td>< 0.2%</td> <td>NA</td> </tr> </tbody> </table> <p>The Tweed Shire has a significant history of major flooding – these have occurred in cycles and it is not unusual for two or more major events to occur in close succession. This occurred in the 1950s, 1970s and now 2010/20s. Because of that history, Council has undertaken many flood studies of increasing complexity and sophistication. The flooding that has occurred is well within the realms of probability, with the 2017 and the 2022 floods approximating 1%-0.2% AEP events, and considerably less severe than a probable maximum flood (PMF). While these can be considered rare, or extreme events, they are entirely foreseeable and can be planned for.</p> <p>From observation of the 2017 and 2022 events, the weather systems appear to be escalating in severity in ways that the meteorological models are having trouble predicting. Both events were predicted to be severe several days prior, however both rainfall durations and intensities rapidly increased, at a rate that did not allow for adequate escalation of emergency preparedness and response. The predictions did not reflect the volumes of rain that occurred within 24 hours of the event.</p> <p>It must be noted that the predictions for more extreme rainfall intensities because of climate change, specifically ocean warming, has been known by practitioners for over a decade. This appears to be taking effect with natural disasters on Australia’s east coast since the Queensland floods in 2011.</p> <p>The community has raised a number of theories that certain structures, such as the Pacific Motorway, filling by development, and lack of intervention to maintain drainage through natural waterway areas (e.g. dredging Tweed River, Cudgen Lake) may have contributed to increased flood intensities. While these factors need to be properly investigated and may have had small contributions, they were unlikely to be significant in such a large scale flooding event.</p>	GAUGE	2022 LEVEL	ESTIMATED AEP	2017 LEVEL	Murwillumbah	6.5m	1%	6.25m	Tumbulgum	4.8m	1%-0.2%	4.0m	Chinderah	3.0m	1%	2.25m	Uki	13.4m	Unknown	12.6m	Bogangar	3.7m	< 0.2%	NA
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1b	<p>The preparation and planning by agencies, government, other entities and the community for floods in NSW, including the accuracy and timing of weather forecasts, current laws, emergency management plans, practices and mitigation strategies, their application and effect.</p>	<p>There has long been a focus on the accuracy of weather predictions in events such as the one experienced in February 2022. The reality is that predictions have improved over time, however they will never be 100% accurate. Greater focus is required on improving resilience and preparedness. There are many great examples of communities being prepared for this and taking proactive action, however there are many examples of communities not being prepared. For example, the Tumbulgum Community Association (TCA) and Hayes Toyota in South Murwillumbah both have examples of preparedness and in the case of the TCA, post-flood community support.</p> <p>In terms of public warnings, preparedness and resilience, educating the public on simple preparedness actions in relation to water supply, sanitation and hygiene could be very beneficial.</p> <p>There remains a hesitancy for agencies and the communities to be able to accept “low probability, high impact” weather scenarios as part of the forecasting suite. People are fearful of “crying wolf” scenarios and warnings losing effectiveness; however, this narrative needs to change to a “near miss” event, which could have been worse, but was still appropriately planned for – plan for the worst, hope for the best.</p> <p>It is the role of Councils to provide Local Emergency Management Officers. At Tweed, this role is carried out by the Emergency Management and Risk Officer. This means, each time and with increasing regularity, a disaster event occurs, Council’s risk management is put on hold, sometimes for extended periods of time. Funding for standalone, specific resilience and emergency management resources within Councils is required for improvements to occur in resilience and response.</p> <p>It appears significant investment in the Bureau of Meteorology is required to update the data that predictions are calculated from. The interrelationship between the BOM and the SES has shown an imbalance between the level of risk being projected to the community. Community education in the classifications is essential to build resilience. There is insufficient focus nor resources on preparedness and mitigation locally. SES is tasked with education etc to conduct programs however these are regionally based and ineffective locally, targeted local audience is not being engaged.</p> <p>The current SES response to “emergencies” does not follow the agreed principles of the State Emergency Management Plan (EMPLAN). Locally, agencies work well together, however regionally led responses to flood events result in a disconnect with the engagement of local resources to support the response. Better co-ordination would result in a better use of overall resources particularly when resources are stretched during initial response.</p>

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		<p>Much has been said about the response of the SES. Sadly and unfairly, what is not reported well is that the average age of the SES in Murwillumbah is about 65 and there are 10 active members.</p> <p>The Government cannot rely on the army each time there is a natural disaster. The army is great as a backup but their role is to prepare for war and be ready for war. Therefore, new out of the box thinking is required to increase active members of the SES/ Rural Fire Service. An alternative may be to consider an amalgamation of all volunteer emergency response agencies – SES, Rural Fire Service and Fire and Rescue into a response agency.</p> <p>Strategies around recruitment for the SES must be developed and implemented. Could tax reform allow businesses to provide support (for example consider payroll tax concessions for corporations) with incentives such as having a certain percentage target of their staff as active members of an emergency volunteer agency?</p> <p>Some businesses already provide 1 paid volunteer day a year. Council provides up to 5 days per year when an employee is actively involved in emergency management activity (payment out of sick leave). Perhaps a model similar to army reserves could be considered. For example, in the USA, university students get credit towards their study for joining and being active in a volunteer organisation. Perhaps an incentive to pay down FEE Help loans might incentivise volunteer service.</p>
	<p>RECOMMENDATION First responders</p> <ul style="list-style-type: none"> a) That consideration be given to the reform of emergency agencies, including the State Emergency Service, Rural Fire Service and Fire and Rescue to merge into one overall emergency response agency that works collaboratively with the Police. b) That the resourcing and structure of the SES be reviewed, and volunteer recruitment be increased. Alternatively, and more broadly review the provision and coordination of volunteer emergency services to support paid personnel. c) That Councils be provided with specific funding to provide facilities to the SES and local emergency management support staff. d) That funding be provided for the upgrade of priority emergency evacuation centres. e) That incentives be considered for businesses to support the training and deployment of emergency services volunteers. 	
1c	Responses to floods, particularly measures to protect life, property and the environment, including:	<p>i) As above and below.</p> <p>Timeliness of the issuing of warnings and evacuation orders was poor. Evacuation orders at times were issued too late for communities to evacuate due to roads being inundated. In terms of public warnings: While ABC radio is responsive and attempts to provide a useful service across the region, the current situation makes it difficult to provide timely and granular local information. The station is based in Lismore and in attempting to service all</p>

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	<p>i) immediate management, including the issuing and response to public warnings;</p> <p>ii) resourcing, coordination and deployment, including with respect to the Australian Defence Force; and</p> <p>iii) equipment and communication systems.</p>	<p>locations from Clarence to the Queensland border and west to Kyogle and Tabulam, the information is either general or not timely enough.</p> <p>There is a general lack of community understanding of weather warnings, flood readiness, and emergency response (such as evacuation) processes. Even had the warnings and orders for this event been more satisfactory and timelier, it is likely that a large percentage of the residential and business populations would not have responded appropriately to reduce flood risk to life and property. There is a reticence for people to leave their homes and businesses for safety and security reasons, particularly if previous flood events have not directly impacted their property. They will only associate their risk with what they have personally seen, not what might be a theoretical risk.</p> <p>Immediate public warnings on water consumption are critical if electricity supply and or water supply and sewage assets are impacted in a flood. It is also important to ensure the public are aware of the risk presented by contaminated waterways and floodwater. Sewage assets such as pipes, pump stations and treatment plants are often impacted for a number of days creating public health risks to the community with lack of sewerage conveyance as well as contributing to environmental impacts and hazards in waterways.</p> <p>In terms of public warnings, preparedness and resilience, educating the public on simple preparedness actions in relation to water supply, sanitation and hygiene could be very beneficial. Residents could plan ahead for water supply restrictions and or having no water by storing water for drinking, food preparation and basic hygiene ahead of the event (such as is common practice in cyclone areas during cyclone season). People need to consider the lack of sewage services in their plans for evacuations and return to premises.</p> <p>In particular, vulnerable water customers and businesses reliant on the water supply must be alerted as soon as possible. This includes home haemodialysis patients, hospitals and large commercial water customers. A SMS service may be very useful for this.</p> <p>Council's incident response is heavily reliant on communications such as the mobile phone network. Communications to coordinate and respond to the floods was very problematic. Communications should not be reliant on social media as in the Tweed Shire, many residents are elderly and do not regularly tap into social media platforms or Council's website. They still rely on radio and newspapers for their information.</p> <p>ii) The Council and State agency response to the Tweed Shire event was demonstrably improved compared to the support received in 2017, in terms of timeliness and preparedness. Due to the prevalence of other natural</p>






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		<p>disasters in NSW since 2017 (bushfires, floods, pandemic) lessons have been learnt and the primary importance of early assistance, in terms of manpower, finances (forward payments for infrastructure and resilience work have already been received worth several million dollars).</p> <p>Council welcomed the arrival of ADF personnel to the Tweed Shire, and saw their main role as assisting the civilian population (residents and businesses) in the clean-up effort e.g., moving rubbish from house to kerb. Council welcomed the ability to deal directly with ADF command to direct resources to known community and infrastructure needs. In the Tweed Shire, the ADF was not equipped with heavy machinery (e.g., tipper trucks, excavators) to assist the larger scale recovery effort. There has been criticism of the timeliness of the ADF deployment, however the area was difficult to access by road for the first week, as the event also tracked south, and had impacted to the north in Brisbane.</p> <p>ADF integration into the local EOC was effective. Communications between SES and local EOC was problematic. An SES liaison officers was not allocated initially to EOC. The SES OAA has limitations with lack of knowledge of local systems. Whilst the ADF were welcomed into our community, Council is conscious that we need to be careful it is not an ongoing expectation of the defence forces to provide support during all natural disasters. The primary role of the ADF is to prepare for war. If community expectation is for the same standard of recovery response, a secondary body may be required, similar to a national guard.</p> <p>Other agencies who were also timely, proactive and solutions-focussed were Fisheries (for emergency works e.g. on roads), EPA (for kerbside waste disposal, temporary storage of excavated materials from landslips, amendments to licencing and approvals and collection of waste from waterways), TfNSW (advice on essential public asset recovery and forward funding of grants) and PWA (organising kerbside & caravan park waste collection, engineering assessments and the Property Assessment & Demolition scheme).</p> <p>The scale of the flood event along the east coast has placed further pressure on resources already overheated due to COVID-19 stimulus. Immediate resourcing of contract plant and staff to undertake emergency restoration works, rubbish collection, and making assets safe was difficult.</p> <p>iii) The flood event severely impacted the power and telecommunications networks for the Tweed Shire and beyond, and this made the response and recovery task very difficult at times. There needs to be a review of redundancies in these networks as they relate to disaster response and getting essential infrastructure (e.g., water and sewerage systems) back online.</p>

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	<p>Recommendations Warning systems</p> <p>a) That a review be conducted into the required updates to standard data, forecasting and warning systems and remedial action be taken to improve the integrity of the system and account for current and projected changes to weather patterns and intensities.</p> <p>b) That funding and a set of minimum standards be provided to Councils and the NSW State Emergency Service for enhanced community education in relation to warning systems.</p> <p>c) That significant investment be made in community education of warning systems, terminology and preparedness.</p>	
1d	<p>The transition from incident response to recovery, including the roles, structure and procedures of agencies, government, other entities and the community.</p>	<p>Support provided by PWA in the clean-up effort was an improvement since the 2017 event. PWA advised Council very soon after the event that they had been engaged to lead on this task across the region. They undertook this in consultation with key Council staff and it provided enormous benefit to Council and the community. In past events Council staff and resources were deployed to undertake this role and it hindered Council's response and recovery efforts. Having a regional response also assisted with clear messaging to the community. However, PWA was also good at understanding the local issues and processes which led to greater efficiencies in the clean-up (it was effective that they did not try to force a one size fits all approach).</p> <p>Various community led and created hubs that provided vital on ground support, and largely worked effectively.</p> <p>Resilience NSW appointed a local Recovery Coordinator very early in the recovery process which provided key support for Council in the set up and operation of the Recovery Centre at the Murwillumbah Civic Centre. This was an improvement since the 2017 event and provided excellent support for the operation of the Centre.</p> <p>DRFA Cat B funding while welcome, is limited in the breadth of its coverage (in terms of infrastructure types) and timeframes for an event of this size. Public roads and bridges which are covered by DRFA suffered the greatest damage by value. However, other significant damages include many public buildings (most of which are not covered by insurance due to limitations on flood cover), water & wastewater infrastructure, waterways infrastructure, sports fields and natural riparian areas - none of which received funding under DRFA. In addition, the DRFA rules seem to be aimed at smaller disaster events where the bulk of the minor damage items can be completed within the 3 months with a funding limit for Emergency and Immediate works. However, for larger events such as the 2022 flood, the bulk of repairs will take much longer – creating an administrative burden on the already scarce engineering resources within councils and reviewing agencies. A trigger value to automatically extend those deadlines would benefit all parties and would ensure uninterrupted repair works continue within the community.</p>

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		<p>For an event of this size, Council's emergency response and initial recovery activities require significant expenditure on support from external consultants, contractors and service providers. Current procurement rules (LG Act and Regulations) require engagements over \$250,000 (incl GST) to go through a lengthy tender process that is not compatible with the rapid response expected by the community. The legislation does provide an exemption for emergency (Section 55, 3(k)), however it is not clear when recovery works are considered an emergency under that exemption. If they are not, the start of recovery works usually occurs much earlier than the timeframes for tendering or extenuating circumstances (Section 55, 3(i)) would allow, and Council tends to directly engage local and known service providers to carry out those works in a timely fashion. Council currently documents exemptions internally with reasoning recorded under Council's Procurement Policy, but a more specific exemption option within the legislation would assist in streamlining the process, while also clarifying the limits of those exemptions.</p>
	<p>Recommendations Funding and procurement</p> <ul style="list-style-type: none"> a) That the DRFA Cat B funding be reviewed in terms of breadth of coverage and timeframes, including expanding asset types, greater earlier resilience funding and longer repair timeframes for larger events. b) That the disparate and overwhelming number of new disaster and resilience grant funding programs be coordinated and consolidated to reduce the impacts on Council resources already stretched by flood recovery activities. c) That legislative reform be considered to provide greater clarity and flexibility for emergency procurement in response to natural disasters under the tendering provisions of the Local Government Act. 	
1e	<p>Recovery from floods, including:</p> <ul style="list-style-type: none"> i) immediate housing, clean-up, financial support and community engagement measures; and ii) longer-term community rebuilding support; and 	<p>State agencies such as TfNSW and PWA have been very proactive and supportive to date with their information and funding for recovery and repair of essential public assets. Expansion of the EPA list would be welcomed by Council, but we do note several exemptions for waste and water and sewerage operations have been granted for this event which has been welcomed.</p> <p>Due to the prevalence of landslips and flash flooding in the hinterland, there are many landowners who have lost property access beyond the limit of the public road network – whether on private land, crown road reserves, or council public road reserves. Council generally cannot enter private land and undertake repairs to these private access roads, from a resource perspective as well as a funding view – and these works are for the most part ineligible for disaster recovery payments. The scale of many of the necessary repairs are well beyond the means of many landowners, and further rainfall may result in further damage to these accesses isolating people or resulting in injury or death by continuing to use damaged access roads. This appears to warrant review and a system of support by Resilience NSW or similar.</p>

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		<p>Clean up using town water supply adversely impacted water supply at a critical time (i.e. when water was not available). Communication effectiveness on water restrictions is important in relation to this. Communication about water restrictions and water quality needs to be broad and include SMS, radio and newspapers, not rely heavily on social media and Council's website. NSW Health supports the boiled water communications, but government agencies such as EPA and DPE could actively assist the Council to get key messages out to the community.</p> <p>Council is a member of the Statewide Mutual insurance scheme. Council has been advised that it is unlikely to receive insurance coverage for flood events from next financial year. In 2017, insurance coverage was used to restore many flood affected community assets. However, in light of the recent event, and the precariousness of insurance coverage from the private sector, Council will need to consider demolishing and finding alternate sites for a number of community assets. This raises the question of whether a government-based insurance fund might be established to provide coverage to Councils that may find themselves without flood insurance coverage as a result of natural disasters.</p> <p>The Climate Council recently released a report "Uninsurable Nation: Australia's Most Climate-Vulnerable Places".</p> <p>Key findings in that report in relation to Tweed Shire were:</p> <ol style="list-style-type: none"> 1. Richmond NSW (being the federal electorate that Tweed sits in) is the second most at risk federal electorate in terms of climate change. 2. 15% of properties (or around one in seven properties in Richmond electorate will be uninsurable this decade. 3. 20% of properties in Richmond are at high risk (22,274), 14.5% of properties are at risk to riverine flooding, 5.2% of properties are at high risk to bushfire. 4. Richmond is one of five the most at risk electorates for riverine flooding. 5. There is an urgent need to upscale investment in national adaptation and disaster risk reduction to help Australians better prepare for worsening extreme weather events. 6. The latest available census data show median weekly family and household incomes in Richmond are well below the national average. Richmond workers are also overrepresented in part time work and underrepresented in full time work compared to national averages, demonstrating that climate impacts are being felt by those who can least afford them.

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		<p data-bbox="674 240 1290 261">Table 1: Top 20 most at-risk federal electorates to climate extremes, 2030.</p> <table border="1" data-bbox="674 276 1760 1066"> <thead> <tr> <th data-bbox="680 347 741 368">Rank</th> <th data-bbox="741 347 860 368">Electorate</th> <th data-bbox="860 347 920 368">State</th> <th data-bbox="920 347 1308 368">LGAs</th> <th data-bbox="1308 325 1413 368">Total properties</th> <th data-bbox="1413 325 1532 368">High risk properties</th> <th data-bbox="1532 303 1637 368">Medium risk properties</th> <th data-bbox="1637 303 1756 368">High risk properties (%)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Nicholls</td> <td>VIC</td> <td>Greater Shepparton, Moira, Campaspe, Mitchell, parts of Strathbogie</td> <td>94,280</td> <td>25,801</td> <td>9,057</td> <td>27.4</td> </tr> <tr> <td>2</td> <td>Richmond</td> <td>NSW</td> <td>Tweed, Byron, Ballina</td> <td>106,445</td> <td>22,274</td> <td>34,884</td> <td>20.9</td> </tr> <tr> <td>3</td> <td>Maranoa</td> <td>QLD</td> <td>17 LGAs including Diamantina, Longreach, Maranoa, Western Downs, Winton, and parts of South Burnett, Southern Downs and Toowoomba</td> <td>132,078</td> <td>19,551</td> <td>13,212</td> <td>14.8</td> </tr> <tr> <td>4</td> <td>Moncrieff</td> <td>QLD</td> <td>Part of Gold Coast</td> <td>131,924</td> <td>18,032</td> <td>9,545</td> <td>13.7</td> </tr> <tr> <td>5</td> <td>Wright</td> <td>QLD</td> <td>Lockyer Valley and parts of Gold Coast, Ipswich, Logan, Scenic Rim and Southern Downs</td> <td>88,952</td> <td>12,140</td> <td>28,502</td> <td>13.6</td> </tr> <tr> <td>6</td> <td>Brisbane</td> <td>QLD</td> <td>Parts of Brisbane</td> <td>145,103</td> <td>19,355</td> <td>22,461</td> <td>13.3</td> </tr> <tr> <td>7</td> <td>Griffith</td> <td>QLD</td> <td>Parts of Brisbane</td> <td>112,833</td> <td>14,812</td> <td>17,894</td> <td>13.1</td> </tr> <tr> <td>8</td> <td>Indi</td> <td>VIC</td> <td>Wangaratta, Alpine Shire, Benalla, Strabogie</td> <td>99,086</td> <td>11,215</td> <td>10,991</td> <td>11.3</td> </tr> <tr> <td>9</td> <td>Page</td> <td>NSW</td> <td>Parts of Ballina, Lismore, Richmond Valley, Clarence Valley,</td> <td>103,657</td> <td>11,691</td> <td>33,177</td> <td>11.3</td> </tr> <tr> <td>10</td> <td>Hindmarsh</td> <td>SA</td> <td>Port Adelaide, parts of Port Adelaide Enfield, Charles Sturt, parts of West Torrens</td> <td>97,274</td> <td>10,775</td> <td>10,500</td> <td>11.1</td> </tr> </tbody> </table>							Rank	Electorate	State	LGAs	Total properties	High risk properties	Medium risk properties	High risk properties (%)	1	Nicholls	VIC	Greater Shepparton, Moira, Campaspe, Mitchell, parts of Strathbogie	94,280	25,801	9,057	27.4	2	Richmond	NSW	Tweed, Byron, Ballina	106,445	22,274	34,884	20.9	3	Maranoa	QLD	17 LGAs including Diamantina, Longreach, Maranoa, Western Downs, Winton, and parts of South Burnett, Southern Downs and Toowoomba	132,078	19,551	13,212	14.8	4	Moncrieff	QLD	Part of Gold Coast	131,924	18,032	9,545	13.7	5	Wright	QLD	Lockyer Valley and parts of Gold Coast, Ipswich, Logan, Scenic Rim and Southern Downs	88,952	12,140	28,502	13.6	6	Brisbane	QLD	Parts of Brisbane	145,103	19,355	22,461	13.3	7	Griffith	QLD	Parts of Brisbane	112,833	14,812	17,894	13.1	8	Indi	VIC	Wangaratta, Alpine Shire, Benalla, Strabogie	99,086	11,215	10,991	11.3	9	Page	NSW	Parts of Ballina, Lismore, Richmond Valley, Clarence Valley,	103,657	11,691	33,177	11.3	10	Hindmarsh	SA	Port Adelaide, parts of Port Adelaide Enfield, Charles Sturt, parts of West Torrens	97,274	10,775	10,500	11.1
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		<div data-bbox="689 268 1034 831"> <p>#2 RICHMOND (NSW)</p> <p> 106,445 total property count</p> <p> 20.9% of properties at high risk (22,274 properties)</p> <p> 14.5% of properties at high risk to riverine flooding</p> <p> 5.2% of properties at high risk to bushfire</p> <p> 0.4% of properties at high risk to surface water flooding</p> </div> <p data-bbox="663 879 2130 943">https://www.climatecouncil.org.au/wp-content/uploads/2022/05/CC_MVSA0302-CC-Report-Federal-Election_V4-Single-1.pdf</p> <p data-bbox="663 983 1957 1023">Flood Free Employment Land - Tweed Land Swap No.1 (Industry Central)</p> <p data-bbox="663 1023 2130 1118">The Tweed Land Swap No.1 is a visionary initiative that seeks to deliver long-term economic security and growth for Murwillumbah and the Tweed Shire, whilst prudently preparing for and mitigating against devastating severe weather events.</p> <p data-bbox="663 1158 2085 1254">In March 2017, ex tropical Cyclone Debbie caused significant flooding throughout the Tweed Shire with many homes and businesses being severely damaged despite the existence of flood levees in some areas. An estimated \$46 million worth of council assets had been damaged during the floods.</p> <p data-bbox="663 1294 2123 1390">The damage was particularly devastating to the South Murwillumbah industrial precinct, a location of many medium sized enterprises, employing hundreds of staff and contributing significantly to the local economy and to the social fabric of the Tweed.</p>

Criteria No.	Inquiry Criteria	Council Comment
		<p>The cost of the damage in this precinct was estimated to be \$26 million dollars and became a major threat to jobs.</p> <p>Resulting from the direct impact to the employment lands at South Murwillumbah Council lobbied the state government to contribute towards a project to circumvent the flooding impact on small and medium sized businesses within this area.</p> <p>The Tweed Land Swap No.1 project is a strategic solution to assist businesses located within the high flood risk zone in the existing South Murwillumbah industrial precinct to relocate to land at Lundberg Drive (Industry Central) which is above the 1 in 100 Year flood level via a conditional land swap agreement. This project will provide a more secure location for flood prone enterprises in the high-risk zone allowing them confidence to reinvest and grow their businesses and to provide more local jobs.</p> <p>Through a \$3 million grant from the NSW Government, Council was able to acquired 14 ha of flood-free land at Lundberg Drive, South Murwillumbah, to develop as a new industrial estate. An additional \$3.6 million grant from the NSW Government is funding the necessary construction works.</p> <p>All flood impacted business in the South Murwillumbah area were invited to make a submission to an Expression of Interest process. A selection panel was formed comprising Council and NSW Government officers along with an independent probity advisor. The panel selected eight businesses who are set to move to the new site once completed.</p> <p>Council has engaged a contractor to commence the engineering design and construction of all public infrastructure at Industry Central, including roads, stormwater, reticulated sewer, water supply and telecommunications.</p> <p>The new allotments are due to be completed by the end of 2022 and once settlement has taken place, businesses can commence building at Land Swap No.1 (Industry Central).</p> <p>Tweed Land Swap No.2 Proposed (Quarry Rd Industrial Subdivision)</p> <p>After the flood event Council received calls from local businesses looking to join the first Tweed Land Swap No.1 project that was currently underway at Industry Central employment lands area at South Murwillumbah. This demand has demonstrated the need to create additional employment land out of the flood zone. The Tweed is growing and Council is keen to support our business sector wherever we can.</p>

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		<p>To create more employment lands such as Industry Central takes a considerable amount of time to obtain the numerous approvals and then construct the necessary infrastructure before businesses can actually start work on site.</p> <p>Given the interest in the project, Council is now asking flood-affected businesses to register their interest in any future potential Land Swap. This would require suitable land to be identified and for the NSW Government to provide financial support.</p> <p>Given the demand for the first parcels of land at Industry Central, Council is urging any businesses keen to participate in a second tranche to register their interest in a register on interested parties. To date this register</p> <table border="1" data-bbox="703 619 1552 730"> <tr> <td>Businesses applied</td> <td>11</td> </tr> <tr> <td>Combined total number of staff</td> <td>65</td> </tr> <tr> <td>Combined annual turnover</td> <td>\$11,500,000</td> </tr> </table> <p>THE KEY OBJECTIVES FOR TWEED LAND SWAP No. 2:</p> <ul style="list-style-type: none"> • assist businesses to relocate onto flood free employment land, • as a priority provide employment land to meet future jobs growth required in the Tweed, • provide an adequate supply of employment land encouraging small business in the Tweed to: <ol style="list-style-type: none"> 1. increase productivity, 2. have security of investment, 3. facilitate economic growth. <p>The land that has been identified for the Tweed Land Swap No.2 is owned by Council and is currently being developed as an industrial subdivision. The subdivision will be ready for market in late August 2022.</p> <p>If the NSW Government wishes to be involved in the Tweed Land Swap No.2, Council would be prepared to sell the site at a fair market valuation which in the current market is estimated at \$9.0 million dollars. Council would also be happy to facilitate in the delivery of the Tweed Land Swap No.2.</p>	Businesses applied	11	Combined total number of staff	65	Combined annual turnover	\$11,500,000
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Long Term Flood Free Employment Land (Potential Employment Lands Area 6)

The South Murwillumbah Potential Employment Lands Area 6 (PEL Area 6) is a future flood free employment area in South Murwillumbah. The area is currently zoned rural but has been identified in the NSW Government's North Coast Regional Plan 2036 (NCRP).

To facilitate the creation of additional employment lands in the Tweed, Council entered into a joint venture agreement with a major land holder for the preparation of a planning proposal (rezoning) over land which is now referred to as the Potential Employment Land Area 6 (PEL Area 6), as identified in Council's Urban and Employment Land Release Strategy.

The objectives of the proposed project are to provide priority future employment land and to relocate businesses from flood affected land so that they can increase productivity, have security of investment and are able to grow. This area will also address the strategic need to accommodate emerging clusters and accommodate existing business expansion.

Over the past five years there has been an increase in the number of businesses from Victoria and Queensland that have contacted Council regarding the availability of employment land in the Tweed. PEL Area 6 covers approximately 60 ha and is estimated to yield approximately 150 new lots. Tweed Shire Council as a joint partner owns 7 ha of the total 60 ha rezoning proposal.

Flood Free Employment Land – Availability

Of the three main precinct areas identified above, two, Tweed Land Swap No.2 and PEL Area 6 are at different stages of development and each may be available for sale at a commercial rate as serviced and subdivided employment lands at some point in the future. This would allow these areas to be made available for a possible Land Swap.

The table below identifies the development stage and land area of these holdings.

Tweed Land Swap No. 2		
Ownership	Development Stage	Probable Development Area (Ha)
Tweed Shire Council	Development Application for Subdivision approved. Civil / Subdivision works underway.	5
PEL Area 6		

Criteria No.	Inquiry Criteria	Council Comment														
		Ownership	Development Stage	Probable Development Area (Ha)												
		Tweed Shire Council	Gateway Determination for public exhibition of rezoning approved	7.0												
		Private		12.3												
		Private		41.7												
		<p>Infrastructure Sequencing</p> <p>The NSW Government's NCRP proposes to 'deliver an adequate supply of employment land through local growth management strategies and local environmental plans' and specifically for Tweed to 'deliver new employment and business park opportunities at Kingscliff, Pottsville and Murwillumbah to support jobs growth'. PEL Area 6 is one of the areas identified by the NCRP.</p> <p>To assist the progression of this land as flood free employment lands the development area must first have all civil infrastructure leading to the site upgraded to accommodate the proposed capacity as employment area. This includes; upgrades to water supply, waste water reticulation, drainage, roads, electricity and communications. It must be noted that these upgrades do not include infrastructure within the individual subdivisions area of all of the future employment areas identified in this report. The cost of internal infrastructure is the responsibility of each owner. The lots created will be sold and the development on each lot is the responsibility of the business that will occupy each lot.</p> <p>To facilitate the development of employment land in the South Murwillumbah area a large capital works expenditures need to be invested in the enabling civil infrastructure. Council has engaged an independent consultant to establish a base estimate of these infrastructure costs. These are summarised below.</p> <table border="1"> <thead> <tr> <th>Enabling Infrastructure</th> <th>Estimated Cost</th> </tr> </thead> <tbody> <tr> <td>Roads, transport and traffic</td> <td>\$13,260,000</td> </tr> <tr> <td>Energy and communication</td> <td>\$8,370,000</td> </tr> <tr> <td>Stormwater drainage</td> <td>\$4,135,000</td> </tr> <tr> <td>Water supply and sewerage</td> <td>\$8,901,240</td> </tr> <tr> <td>TOTAL</td> <td>\$34,666,240</td> </tr> </tbody> </table> <p>It is proposed that all external Enabling Infrastructure for PEL Area 6 identified in this report be funded and constructed to expedite the release of this land.</p>			Enabling Infrastructure	Estimated Cost	Roads, transport and traffic	\$13,260,000	Energy and communication	\$8,370,000	Stormwater drainage	\$4,135,000	Water supply and sewerage	\$8,901,240	TOTAL	\$34,666,240
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		<p><i>“The do-later option would see the funding for the project delayed for five years, the status will remain largely as described in the base case. This delay will lead to constrained economic growth within Tweed Shire, business remaining flood effected and continuation of the disadvantage to businesses and the wider Murwillumbah community. It is therefore not a preferred option.”</i></p> <p>The purchase of this site as a fully developed Land Swap site would be estimated at \$240 – \$280 million dollars.</p>
	<p>Recommendations</p> <p>Insurance</p> <p>a) That financial assistance be provided to Councils to support the significant cost difference between asset repairs and insurance coverage.</p> <p>b) That consideration be given to alternative insurance sources (such as government provided insurance coverage) for Councils who are no longer eligible for private coverage, or premiums become uneconomic because of a natural disaster.</p> <p>Employment lands</p> <p>a) That funding be provided to Council to undertake a second Industrial Land Swap over Council owned land located at Quarry Road and Lundberg Drive, Murwillumbah for the relocation flood affected business out of the flood zone and onto flood free employment land.</p> <p>b. That funding and planning support be provided to Council for the progression of a Planning Proposal and external capital infrastructure necessary to facilitate the creation of Employments Lands within the area known as PEL Area 6.</p> <p>Fees and charges</p> <p>a) That financial assistance be provided to Councils to offset financial assistance measures put in place because of a natural disaster, such as waiver of fees and charges for water costs associated with the clean-up of homes and businesses.</p> <p>b) That the existing emergency service levy model and additional legislative requirements placed on councils for the provision of facilities to SES and RFS be reviewed.</p>	
	Any other matters that the inquiry deems appropriate in relation to floods.	Nil.
2a	Safety of all emergency service personnel and	Council on call staff were placed in several life-threatening situations in trying to attend to road closures as the event escalated. The onus on Council to have signage and warnings in place for public road networks during

Criteria No.	Inquiry Criteria	Council Comment
	community first responders.	<p>widespread and extreme weather events is unrealistic, and the legal framework around Council's legal indemnity and personal responsibility could be reviewed.</p> <p>There were many spontaneous volunteers as "first responders" however with no resultant incidents of significant injury or death which would suggest community members are working with their own individual skill and knowledge limitations. There may be opportunities for improving safety of community, and emergency service personnel within known inundation areas, such as markers on power poles, or other infrastructure to assist in the identification of roadways or hazards no longer visible.</p>
<p>Recommendation Safety of all emergency service personnel and community first responder That funding be provided to improve safety of community, and emergency service personnel within known inundation areas, such as markers on power poles, or other infrastructure to assist in the identification of roadways or hazards no longer visible</p>		
2b	Preparation and planning for future flood threats and risks.	<p>Tweed Shire Council has detailed Floodplain Risk Management Plans recommending various measures to better manage flood risk. However, implementation of the recommendations is mostly dependent of the Department of Planning and Environment's Floodplain Management Grants program. Funding availability through this program is limited and this is the primary constraint on the roll out of flood risk management projects.</p> <p>Levees are a key way that Councils protect their communities from flooding. However, the exclusion of flood mitigation infrastructure from the power of entry provisions in section 191A of the Local Government Act limits Council's ability to maintain their levees. Clarence Valley Council has made various submissions on this issue to both Government and Industry bodies.</p> <p>While we are aware that DPE is reviewing available flood modelling across the flood impacted catchments, our observations are that the flooding occurred in close correlation with flood mapping and modelling already held by Councils, state agencies, insurers and emergency services.</p> <p>It has been established by the Productivity Commission that the Australian government spends 3% on disaster mitigation projects compared with 97% on disaster recovery. This funding model needs to shift dramatically, in line with other countries such as Britain and Netherlands. Once funding is established, Councils need resource support to deliver a range of complex projects, which can also have huge social and community impacts e.g., land swaps and buy backs.</p>

Criteria No.	Inquiry Criteria	Council Comment
		<p>The current resilience building investment approach needs to be improved at the local level and coordinated across government and non-government organisations.</p> <p>The Motorway (M1) at Chinderah and other locations along the east coast of NSW was flooded and prevented critical access to many parts of the Tweed Shire for several days. Consideration needs to be given to improving the flood immunity of this road without impacting the flood path. An elevated viaduct could be one such solution for TfNSW to pursue.</p> <p>There is an advantage of LEOCONs having closer involvement with LEMCs and LEMOs particularly in areas of higher risk of flood occurrences. Currently Councils are responsible for providing a facility to the local SES, which is expected to be funded through Council's budget. Since 2017, Council has been working towards re-accommodating both the Murwillumbah and Tweed Heads SES units as their current facilities are past their expiry and no longer suitable. While a site has been purchased for the Tweed Heads unit, the site requires earthworks, and connection to services. The construction cost for this site is estimated at \$4.5million, which would need to be substantially, if not wholly funded by the State. Work has not progressed on this site given the need for funding. In relation to the Murwillumbah SES, a possible site has been identified (many sites have been rejected by the SES due to location/flood risk). This site acquisition and construction cost will require funding from the State to proceed.</p>
	<p>Recommendations</p> <p>Flood mitigation</p> <p>That government substantially increase its investment in flood mitigation schemes which in the case of Tweed Shire could include expansion, additional funding and acceleration of Voluntary House Purchase, and Voluntary House Raising schemes, a review of the Murwillumbah CBD levee and drainage study and enhancement of the Murwillumbah CBD levee and pump systems.</p> <p>Roads</p> <p>a) That TfNSW reviews the flood immunity of the M1 at Chinderah which restricts emergency access (and will do so to the new Tweed Valley Regional Hospital) as well as the supply and access to shops for food and essentials, schools, employment and emergency services.</p> <p>b) That regulatory clarity be provided for roles and responsibilities, including in relation to funding for the repair of Crown Land roads.</p>	

Criteria No.	Inquiry Criteria	Council Comment
2c	Use of flood gauges and other warning structures and/or strategies for improved flood prediction.	<p>The rain and stream gauge network in the Tweed Shire performed well in the February event with only a small number of outages or losses of infrastructure. At some critical times BOM's river gauge data was delayed by up to a few hours. Council's SCADA system may have had the information required and we might be able to make this available when needed. Contingencies to the river gauges needs to be understood by those who need the information as we have found that BOM can't always be relied on to provide timely data during these events.</p> <p>However, Bureau of Meteorology flood warnings (not weather warnings) are available only for catchment areas with lead times (time between onset of rainfall to onset of flooding) greater than 6 hours. This leaves many areas of the Tweed without flood warnings. For example, Bogangar, which experienced very rare (>1 in 500 AEP) flooding in February 2022, was not given any official flood warning other than severe weather warnings.</p> <p>"Flash Flood" warning systems are an emerging technology that attempts to fill this void. Council is trialling such as system. However, these are very complex systems that require specialist skillsets to develop and maintain. They are also risky undertakings for (non-specialist) organisations such as Councils.</p>
2d	Impact on essential services, including electricity supply, water supply and telecommunications.	<p>TELECOMMUNICATIONS</p> <p>The incident history in relation to the telecommunication experience of Council is detailed below:</p> <p>Monday 28 February 2022</p> <p><u>Key Points:</u></p> <ul style="list-style-type: none"> • Loss of major backbone Telstra link between data centres on 28 February 2022 at 03:00 • Private WAN Radio outage effecting a majority of council sites from early hours until mid-morning of 28th February when power restored to towers Murwillumbah Depot, and World Heritage Rain Forest Centre communications out due to sites being flooded <p><u>Impact:</u></p> <ul style="list-style-type: none"> • Some loss of network services for a majority of Water & Waste Water sites (SCADA network) • Majority of council sites operational with degraded service • Reduced bandwidth and degradation of services for users/applications due to backbone link outage • Data replication and backups impacted due to bandwidth degradation due to backbone link outage <p>Wednesday 2 March 2022</p> <p><u>Key Points:</u></p>

Criteria No.	Inquiry Criteria	Council Comment
		<ul style="list-style-type: none"> • Loss of ALL NBN and Telstra DSL services across the entire shire impacting a majority of sites due to major infrastructure outage in Lismore • Backup links and sites operating 4G all impacted by mobile service degradation (no data and limited voice services) • One Telstra Internet Direct service still operational • Private WAN radio still operational <p><u>Impact:</u></p> <ul style="list-style-type: none"> • Complete loss of network services for a majority of Water & Waste Water sites (SCADA) • Loss of some council branch sites due to NBN and 4G outages <p>Thursday 17 March 2022</p> <p><u>Key Points:</u></p> <ul style="list-style-type: none"> • Backbone link restored on 17th March 2022 at 13:15 <p><u>Impact:</u></p> <ul style="list-style-type: none"> • Normal operations resumed <p>Tuesday 29 March 2022 (Second Flood)</p> <p><u>Key Points:</u></p> <ul style="list-style-type: none"> • Outage for major backbone link at 02:09 between data centres (outage still ongoing) <p><u>Impact:</u></p> <ul style="list-style-type: none"> • Reduced bandwidth and degradation of services for users/applications due to backbone link outage • Data replication and backups impacted due to bandwidth degradation due to backbone link outage <p>WATER SUPPLY & SEWERAGE IMPACTS</p> <p>The incident history in relation to the water supply and sewerage impact experience of Council is detailed below:</p> <ul style="list-style-type: none"> • Water supply was impacted, and emergency water supply restrictions and conserve water notifications were put in place across the entire shire from 28th Feb to the 3rd March. The shire narrowly missed running out of water. Some reservoirs were completely drained meaning we had to switch supplies between reservoirs which caused dirty water complaints and low pressures in some areas. • Vulnerable water customers such as home haemodialysis patients, hospitals and large businesses reliant on water were contacted by phone one by one. This could be made more efficient by having appropriate email lists or an SMS service. However, there was no internet for a couple of days so this made contacting vulnerable customers and communities even more difficult.

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		<ul style="list-style-type: none"> • The township of Uki remained on Water Restrictions for much longer due to extensive damage to the Water Treatment Plant for that township (supply restrictions lifted on 17th March). The community did run out of town water supply during the days following the flood until water carting could be arranged. • Due to Water Quality Impacts, two areas of Tweed Shire Council were placed on Boiled Water Notices from the 28th February. The notice for South Murwillumbah and Dunbible was lifted on the 5th March and the Uki Boiled water notice lifted on 11th March in consultation with NSW Health • Sewerage services were impacted in several low lying areas of the shire. The village of Tumbulgum and residents along Tweed Valley Way had the longest impacts with services in Tumbulgum not restored until 11th March. (Note: Tumbulgum sewer was again impacted in the second event of the flood and took several days to recover once again) Just acknowledging that these outages are due to limitations of the vacuum sewer system. • Landslips have impacted Water Supply and Sewer mains and it is likely some assets will not be able to be repaired in these locations for some time to come (stabilisation of the land is required). Temporary mains and pump stations have been put in place but these have limited capacity for sewage conveyance in wet weather flows and can impact water supply pressures in some areas. <p>ELECTRICITY SUPPLY</p> <p>Our Water Supply and Sewerage System is heavily reliant on electricity supply to operate. Coordination at the operational level with Essential Energy was critical to reinstatement of key Water Supply and Sewerage Pump Stations, Treatment Plants and other assets. For example, without supply to power to our raw water pump station on the Tweed River, we would have no water supply to our Bray Park Water treatment plant and risked running out of water completely. Generators are not a viable option for many of these assets and dependence on the mains electricity supply thus remains critical. The on ground coordination with Council and the actions of the Essential Energy staff in the reinstatement of electricity supply to critical infrastructure was of a high standard.</p>
	<p>Recommendations</p> <p>Communication and Electricity networks</p> <ol style="list-style-type: none"> a) That consideration be given to creating greater redundancy in communication and electricity networks to increase their resilience in disaster events, to ensure ongoing modern and coordinated radio, mobile telephone and NBN/broadband services. b) That investment be made in alternative emergency broadcasting / internet connection, including and provision of community communications hubs that can be deployed to impacted communities rapidly and SMS notification technology. c) That a review of all communication infrastructure in flood risk areas be reviewed and relocated as needed. 	

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	d) That investment is required in diversifying the fibre network, including priority for additional fibre paths to be established to connect northbound.	
2e	<p>Land use planning and management and building standards, including:</p> <p>i) the instruments, policies and programs applying to existing development in flood prone locations across NSW; and</p> <p>ii) the instruments, policies and programs applying to proposed future developments in flood prone locations across NSW.</p>	<p>Changes to the existing planning system that impact on landholder's rights and land values are highly complex and costly to implement. If things are to change in this space the NSW Planning system needs provisions to deal with compensation, land acquisitions, sunset clauses on development approvals, and retrospective requirements to bring older developments up to contemporary standards e.g. caravan park legislation. This job cannot be left to Councils to negotiate and deliver, and it needs to occur rapidly as there is only a narrow window of political and social will for change following a catastrophe such as a major flood. Council does not support blanket approvals mechanisms to allow damaged properties to be put back as they were – there needs to be a review of natural hazard exposures and better resilience built into new dwellings and businesses.</p> <p>A range of flooding and floodplain management policies, strategies and plans require navigation, when trying to understand process and opportunities, at all levels of government. Such local plans include:</p> <ul style="list-style-type: none"> • Tweed LEP 2014; • Tweed DCP A3 Development of Flood Liable Land; • High flood hazard areas policy; • Flood controls for caravan park accommodation guidelines; • Unregisterable moveable dwellings on flood liable land policy; • Tweed Shire Flood Risk Management Policy; • Tweed Valley Floodplain Risk Management Study, and • Tweed Valley Floodplain Risk Management Plan 2014. <p>Tweed Shire's approach to managing flood risk can be found at: https://www.tweed.nsw.gov.au/property-rates/floods-stormwater/flood-risk-management</p> <p>While the process for developing a floodplain management plan is well documented and led to the development of Council's approach to floodplain development and management, without government support, the majority of people and properties impacted by recent events will remain unchanged, waiting for the next big event.</p> <p>Council's policies seek to raise awareness of the risks associated with living on flood liable land but stop short of prohibiting development in all but the high flood hazard areas.</p>

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		<p>As such, without the ability to exclude housing and inappropriate development on flood liable land, the potential risk to life and property, and evacuation safety risks will remain unchanged.</p> <p>Since 2008 when the NSW Government issued guidelines for councils to include climate change variables into flood studies, all of Council's flood studies have included climate change modelling that considers a sea level rise of 0.91 metres, and an increase in rainfall intensity of 10%.</p> <p>Notwithstanding this, it is imperative that the Australian Rainfall and Runoff rainfall intensity, duration frequency relationships be reviewed to ensure that projections accommodate the most up-to-date scientific findings.</p> <p>A range of agencies have shared or sole responsibility for flood related matters. While the NSW Department of Planning and Environment website https://www.environment.nsw.gov.au/topics/water/floodplains/managing-floodplains provides valuable information, a clear line-of-sight through the various websites of the responsible organisations, and accessible information is required. A 'plan-on-a-page' would assist in visualising the various players and key responsibilities.</p> <p>While the Resilience NSW website (https://www.nsw.gov.au/resilience-nsw) provides valuable information during an emergency, there is no clear link to the critical longer-term issue of how to strategically assess and plan for a different future where a transition of habitable dwellings away from flood prone land is a clear and implementable aspect of all levels of government policy and program implementation. Resilience is as much about designing and preparing for an alternative future, as it is the immediate search for short-term quick-fix options.</p> <p>While initiatives to support recovery by families, businesses and communities are supported the short term expediency should not jeopardise the longer term security of knowing that the extent of damage experienced in recent flood events will not be repeated.</p> <p>On 22 March 2022, it was reported that a requirement to consider the risks of floods and fires before building new homes had been removed along with the former Minister's nine principles for sustainable development in NSW. A failure to consider floods and fires before building new homes will not only perpetuate the unacceptable losses experienced in the past 5 years, but has the potential to exacerbate the problems.</p> <p>Clarity from the NSW Government on the need to reduce the number of dwellings in flood prone areas, and a clear pathway to implement such a reduction should be an essential recommendation arising from this inquiry.</p>

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		<p>While housing affordability might be, in its simplest terms, a relationship between disposable income and the price of houses, the Tweed is recognised as one of the most unaffordable locations to live in the world.</p> <p>Voluntary House Purchase and Raising Schemes</p> <p>DPE has a limited funding pool available to all NSW Councils for Voluntary House Purchase (VHP) and Voluntary House Raising (VHR) schemes. Tweed Council has access to this funding pool and active schemes in place however the process has proved to be extraordinarily complex, long, and constrained by eligibility criteria. At current funding levels, only 2 or three homes per year are able to be purchased or raised using DPE grant support, while we have dozens of properties in high hazard areas that have now been flooded twice in 5 years. The purchasing power of the schemes has diminished significantly with the rapid escalation in housing prices and construction costs in the last 2 years.</p> <p>The schemes rely on 1/3 contribution of costs by Council (for VHP) or the landholder (for VHR). There is no ability to use the scheme to purchase cheaper vacant land to prevent new development, buy back latent development land (land with development approvals that haven't been enacted and are no longer suitable due to natural hazards) or to consolidate flood prone lots to limit densities in high hazard areas. Homes built after 1986 are also ineligible, despite the land zoning and subdivision of unsuitable land occurring before this, and in many areas reliable flood data has only recently been determined. No VHP/VHR is available to non-residential development. An urgent review of government support for VHP and VHR is needed, as many flood impacted landholders need to make investment and rebuilding decisions now, which would be significantly influenced by the presence of expanded VHP/VHR schemes in their suburbs. Until then, they feel they are left in limbo.</p> <p>Council has provided the NSW Government with a list of homes under the current scheme and others that are continually impacted by flooding. The Government should first offer VHP to those homes identified as best removed from the food plain all together. Acting quickly on VHP options is essential before residents start rebuilding and reinvesting in the floodplain and remains the quickest way to get people back on their feet financially and socially. This is by far the best long term mitigation strategy.</p> <p>Planning reforms</p> <p>The role of lower priced rental accommodation in flood prone areas should recognise the need to develop policy which relates housing affordability to the locational disadvantages seen as a last resort for certain sections of the community.</p>

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		<p>Government should play a key and leading role in establishing a framework that prevents a repeat of the losses recently experienced.</p> <p>Stronger policy and alternative approaches should be fully explored to reduce the need to build in vulnerable locations. This could include transitional requirements and incentives for removal of dwellings in perpetuity from all flood prone areas, and funded alternatives, to escalate the ability to relocate businesses and dwellings to higher ground.</p> <p>The March 2022 event demonstrated that the risk is not just to floodplain areas in these severe rain events. Localised flooding, severe erosion and landslips were a feature of this event. There is a current debate about significantly increasing numbers of people living in rural areas through allowing secondary and multiple dwellings. Rural properties were especially impacted in this event with many communities and individuals isolated for prolonged periods of time. Allowing a significant increase in potentially vulnerable members of the community living in rural and remote areas with the projected increase in severity and frequency of weather events (rain, fire, hot days) could be considered negligent in Council's duty of care to the community.</p> <p>Rezoning that results in reduced development opportunities</p> <p>The planning system plays a fundamental role and is at the core of allocating permissibility of land uses. The ability of this system to provide clear guidance on the likely and probable implications of development being permitted in vulnerable locations should be fully investigated with recommendations to utilise this local 'anchor' policy to establish a new paradigm for development in flood prone areas.</p> <p>Where a council undertakes studies and investigations to assess vulnerability, risk and consequences, as part of a strategic assessment of local land use planning policy, support of government should facilitate changes where the vulnerability, risk, consequences breach a threshold that identifies where housing should no longer be allowed.</p> <p>While supported by a local strategy, where a change in land use zoning no longer supports housing, clear guidance is required from government regarding what an acceptable threshold might be, which once breached would trigger intervention in the housing market through a range of policy and fiscal measures.</p> <p>Objectively based local environmental plans is a general planning approach with broad acceptability. The ability of the planning system, and local legislation to better reflect the existing and desired future land uses, is a</p>

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		<p>fundamental aspiration that would contribute to meaningful changes to legislation that would lead in the longer term to better planning outcomes.</p> <p>Precedent has long been established for changes to permissibility where constraints have changed; for example, as Gold Coast Airport has expanded, the ANEF zones surrounding the runway have increased, leading to consequential changes in the permissibility of land uses sensitive to aircraft noise.</p> <p>While the issue of 'back-zoning' is discussed as an option when strategies are developed, there is a common fear of the personal and financial implications, there is nothing which says that rezoning should always result in increased development opportunities, although this is the common expectation.</p> <p>However, where strategically justified, rezoning to a 'lesser' land use that better reflects vulnerability, risk and consequence should be clearly supported by policy and legislation at all levels of government.</p> <p>Affordable Housing Contributions Scheme</p> <p>Division 7.2 of the Environmental Planning and Assessment Act 1979 (EPAA) provides an opportunity to require land or contributions for affordable housing within an area if a State environmental planning policy identifies that there is a need for affordable housing, along with other qualifying criteria.</p> <p>Tweed Shire Council has commenced preparation of a Growth Management and Housing Strategy, which will establish the housing and employment land needs for the next 20 years.</p> <p>Housing affordability is a fundamental issue that will be addressed in the strategy at the policy level, pathing the way for a more comprehensive Affordable Housing Strategy for the Shire later on.</p> <p>Opportunities to work with the government to develop a locally application of Division 7.2 of the EPAA should be a recommendation of this inquiry.</p> <p>While Tweed Shire Council has established an external Project Reference Group consisting of representative from across government, the ability to ensure government is aware of initiatives at the local level, and supportive of the approaches and involved in implementation can only benefit regional communities.</p>

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		<p>Many strategies may be well designed, and full of good ideas, it is the implementation phase that is most important but the area that often is most difficult. Having government involved in development of such strategies would ensure that the directions proposed are appropriate, and there is a smooth transition into the implementation phase, with commitments established as the strategy is developed.</p>
		<p>Recommendations Planning Reforms</p> <ul style="list-style-type: none"> a) That planning reform be considered which facilitates a reduction in the number of people living in, vulnerable high value assets and property located within, flood prone areas, and that fiscal support for this outcome be integrated into any legislative reform. b) Where supported by strategic assessment of land use patterns and policy, land use planning legislation and local provisions be amended to provide 'truth-in-planning' which ensures that land use zones more accurately reflect the desired future uses for the land. c) Where changes in land use occur, which propose a transition away from dwellings, that an approach be designed which supports relocations and compensation for landowners who experience potential reductions in land values. d) That the NSW Government implement a local housing strategy support team that works directly with local councils who are preparing housing strategies, with objectives to facilitate appropriate outcomes that can be easily implemented with financial and other support from key stakeholders who have been a party to development of the strategy. e) That expansion of the application of Division 7.2 of the Environmental Planning and Assessment Act 1979 be undertaken to establish opportunities for contributions to be directed to appropriate affordable housing targets, and secure greater involvement at the state government level. <p>Voluntary House Purchase and Raising Schemes</p> <ul style="list-style-type: none"> a) That these schemes be urgently reviewed to determine whether their eligibility can be expanded to apply to a greater number of residents. b) That a significant, one off, cash investment be made immediately to accelerate Council's existing Voluntary House Purchase (VHP) Schemes. This would need to be immediate before owners receive insurance payouts and decide to rebuild. Councils such as Lismore or Tweed in a rate capped environment would not have the financial capacity to do a bulk voluntary housing purchasing program therefore the state should prioritise and give consideration to a separate fund that would enable the 100% of the purchase price to be met by the State for homes that are under existing voluntary house purchase schemes that have been deemed uninhabitable through a flood natural disaster such as we have seen in 2022. This would require the State's annual budget program of \$2m to be lifted significantly in the order of \$300m in the first year and \$200 m in the second financial year to make a significant meaningful difference to the effectiveness of the program.
2f	Appropriate action to adapt to future flood	Tweed Shire Council has detailed Floodplain Risk Management Plans recommending various measures to better manage flood risk. However, implementation of the recommendations is mostly dependent of the Department of

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	risks to communities and ecosystems	<p>Planning and Environment’s Floodplain Management Grants program. Funding availability through this program is limited and this is the primary constraint on the roll out of flood risk management projects.</p> <p>Legacy planning decisions continue to result in growth of overall risk on our floodplains. For example, in the Tweed there exists many vacant parcels of flood prone land with “dwelling entitlements” associated with them. It is near impossible to prohibit the establishment of additional dwellings in this scenario without offering compensation to the owner of the property, which Councils cannot afford. Unless these scenarios can be addressed, overall flood risk on our floodplains will continue to grow incrementally.</p> <p>The current ‘affordable housing crisis’ limits options to reduce the impact of future flood events. Much of the flood prone real estate in the Tweed Shire is, by nature, the more affordable housing. This results in the community members who are economically least equipped to absorb and rebound from the impacts of flooding being most exposed to it. Due to affordability issues resulting in effectively ‘nowhere to go’ these residents are then stuck in a never-ending loop of flood and recovery. Affordable housing solutions, voluntary purchase schemes and/or land swap type projects are needed to break this cycle.</p> <p>Empowering local communities to improve their own resilience and preparedness has resulted in some very beneficial outcomes in recent years. There are many great examples of communities being prepared for and taking proactive action in the lead up to, and after, a flood event (for example, Tumbulgum Community Association). Unfortunately, there are many other examples where these groups and proactive action is absent (e.g., South Murwillumbah). The SES and Red Cross have been key supporters of these groups through their ‘Community Action Teams’ and Community Resilience Groups” respectively.</p> <p>State and Federal governments must continue to contribute to building resilience in environmental ecosystem assets such as riverbank and catchment restoration on public and private lands. Restoration of wetlands and natural floodplain habitats as opportunities arise and floodplain industries are no longer viable, providing R&D assistance in managing the land better, alternative uses – both agricultural and environmental restoration.</p> <p>Disaster funding for infrastructure (DRFA Cat B) provides funding for repairing like-for-like for a narrow group of assets without consideration of inter-asset impacts or geographical proximity. This results in a reactive and piecemeal approach, the outcomes of which could be significantly improved with greater betterment investment in a broader range of asset classes. One example of this is the large lengths and depths of riverbank erosion from this event which have now caused significant damage to road infrastructure.</p>

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		Historically, riverbank stabilisation has only been eligible for funding when erosion directly endangers the roadway – resulting in piecemeal short-length engineering repairs that exacerbate erosion immediately downstream and create the need for further short lengths of engineering intervention. A more cost effective (and environmentally superior approach) would be to provide greater funding for riverbank & riparian rehabilitation to stop the retreat of the bank with softer gradients and materials - thereby protecting the roadway, reducing isolated scouring at the edges of hard engineered revetment, reducing instream velocities, and improving habitat.
	<p>Recommendations</p> <p>Environment That State and Federal funding expand and accelerate their contribution to building resilience in environmental ecosystems assets.</p> <p>Community Enable councils to fund and support community resilience programmes that build a culture of preparedness and resilience. This would include education programs on preparedness and understanding of weather and emergency information including flood warnings and river level information.</p>	
2g	Coordination and collaboration between the NSW Government and the Australian Government.	Refer to item 2e above
2h	Coordination and collaboration by the NSW Government with other state and territory governments and local governments.	<p>Refer to item 2e above.</p> <p>NSW and QLD weather and emergency notifications in the lead up to the event are often different – creating uncertainty and confusion for border communities. Even BOM data and forecasting maps show an interface break-line that highlights the disconnect between states even within a Commonwealth agency.</p> <p>Other examples abound and have impacts as diverse as making it difficult for recovery resources to adapt to different processes, through to businesses having to negotiate two lots of disaster funding rules. The greater similarity that can be incorporated between states the less the impacts will be felt by communities at one of their greatest moments of need.</p> <p>Significant concerns were held when government announcements regarding grant funding were made for neighbouring areas, but which excluded Tweed Shire. Although the funding announcements were eventually</p>

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		<p>made, this caused distress within the community as the residents of the Tweed Shire felt they were being excluded.</p> <p>In terms of recovery, Resilience NSW has been of great assistance to Council. However, coordination of appropriate temporary housing sites has been challenging, as there are few suitable sites within the Tweed Shire with the facilities required. The NSW Government should have detailed and regularly updated natural disaster plans in place for each local government area, including in respect of housing facilities in the event of a natural disaster. These should be maintained in conjunction with local emergency management committees.</p>
<p>Recommendation</p> <p>15. State natural disaster management plans</p> <p>a) That the NSW Government develops, and regularly updates detailed natural disaster management plans for each local government area in respect to the State's role, including in relation to temporary housing plans post-event.</p> <p>b) That post-event announcements by the Commonwealth and State governments regarding grant funding be made within 24 hours of the declaration of a disaster and be distributed equally to all areas within that declaration.</p>		
2i	Public communication and advice systems and strategies.	<p>From a Water Supply perspective – it would be very beneficial to have SMS services to notify customers of boiled water alerts and emergency water supply restrictions (similar to how Communications and Electricity companies are able to issue SMS alerts to customers). For vulnerable water customers and key businesses, email lists and SMS services would also be helpful. Government agencies such as EPA, NSW Health and DPE could assist Council to get key messages out to the community. Investment is required in alternative emergency broadcasting / internet connection & provision that can be deployed rapidly.</p> <p>Connection of river level height predictions and impacts likely to be experienced by property owners need to be better communicated as does the meaning of a minor, moderate and major flood. Various projects have been commissioned in the past including signs around the various flood effected localities indicating the 1954 flood level and totem poles marking the various flood levels. A broadening of these sorts of programs would greatly assist the community in preparing for flood events. .</p> <p>The coverage provided by the ABC was good and there was ample opportunities for the Tweed community and Council to provide input to their coverage, There was misinformation generated via ABC when interviewing locals. ABC need to follow up to correct the misinformation or seek information and not build instead on the perception of lack of information. If the ABC is to remain the emergency broadcaster it needs to also acknowledge its role and</p>

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		<p>responsibility to assuring our community and providing information and not grasping opportunities to be critical of responders and sensationalism.</p> <p>Investment is required in diversifying the fibre network. It was evident that communications were completely broken as the main backbone is located from the Tweed Shire south through Lismore. Council's own high-speed link between Murwillumbah and Tweed Heads traverses Sydney before heading to Brisbane on the main back haul (as Tweed Heads is consider QLD from an infrastructure perspective). For the benefit of the complete region additional fibre paths should be established to connect northbound. This a problem for NBN as well as Telstra as they often share infrastructure. For example, in order to reduce the complexity of our Telstra link going to Sydney, Telstra wanted \$222,000 upfront to go a more direct route north. Having other fibre routes northbound could have avoided the shire wide NBN outage that we had.</p>
	<p>Recommendation Community See Recommendation above Communications.</p>	



TWEED
SHIRE COUNCIL

tsc@tweed.nsw.gov.au

www.tweed.nsw.gov.au



PO Box 816

Murwillumbah NSW 2484