

25 May 2022

Our ref: JW.bm:CI20/2730

Professor Mary O'Kane AC and Michael Fuller APM
Co-Chairs
2022 NSW Flood Inquiry

Dear Prof O'Kane & Mr Fuller

Lismore City Council Submission to Flood Inquiry

Thank you for the opportunity to make a formal submission to this important inquiry.

Whilst we have had the benefit of meeting personally with you both and the people of Lismore have been able to voice their views on many occasions, it is important that Lismore City Council provides you with an overview of events that transpired before, during and after the floods, from its perspective.

We have therefore attached 4 documents:

1. Submission and review of the technical aspects of both the February and March flood events with 31 recommendations covering preparedness, response and recovery
2. A flood response overview containing statistics, details of damage to Council and community infrastructure, broad community impacts, effects on community, business and the economy
3. Discussion Paper on future Land Use Management Strategy in Lismore local government area, incorporating recommendations on depopulating South and North Lismore, protecting the existing CBD, land swaps and voluntary house buyback schemes, reclaiming the Lismore Golf Course for residential and commercial development, additional residential and industrial land zonings, water and sewage infrastructure and affordable housing
4. Comments and personal reflections from the Mayor of Lismore, Cllr Steve Krieg

Collectively these documents provide our story and our views.

The City is grateful for the outstanding support given to it during these last few months by both the State and Federal Governments and agencies.

We are very supportive of the creation of the Northern Rivers Reconstruction Corporation and support it being given maximum speed. We are also extremely supportive of the CSIRO study being undertaken, as effective flood mitigation solutions are essential.

Thank you for listening. As you would appreciate there is still much to be done. Your recommendations are eagerly awaited and will no doubt form the blueprint for future action.

Lismore City Council stands ready to continue its leadership role over the coming years.

Yours sincerely

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Lismore City Council acknowledges the people of the Bundjalung Nation, traditional custodians of the land on which we work.

LISMORE CITY COUNCIL

SUBMISSION TO NSW INDEPENDENT FLOOD INQUIRY

FLOOD EVENTS

FEBRUARY AND MARCH 2022



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1.0 Executive Summary

In February and March 2022 the NSW Northern Rivers region experienced a catastrophic flood event. In Lismore, this event consisted of a record flood where the Wilsons River reached a peak of 14.4m on 28 February 2022, some 2.3m (approx.) higher than the previous record of 12.11m and 2.0m higher than the predicted 1 in 100 year flood level of 12.38m. This was followed by a second flood where the river reached 11.4m on 30 March 2022.

Both flood events saw the city's levee, which protects the CBD and South Lismore to river levels of approximately 10.6m, breached, causing widespread flooding and devastation throughout our CBD, to the environment, in rural areas and to Council and private infrastructure.

Five lives were lost in this region across the two events and the mental toll on those that experienced these events cannot be underestimated.

The current estimated cost of damage from the flood for Lismore City Council (LCC) is \$350-400 million. The required repair work will take years to complete, and the human toll may never be fully understood or remedied.

This submission outlines a series of recommendations for improvements based on the experiences of Council staff and our community during the event and are summarised in section 7.0 of this document. LCC urges the Inquiry to consider these recommendations and adopt them in its recommendations to the Premier.

2.0 Introduction

The NSW Government has commissioned an independent inquiry into the catastrophic flood events in the Northern Rivers in February and March 2022. The terms of reference for the inquiry can be found here:

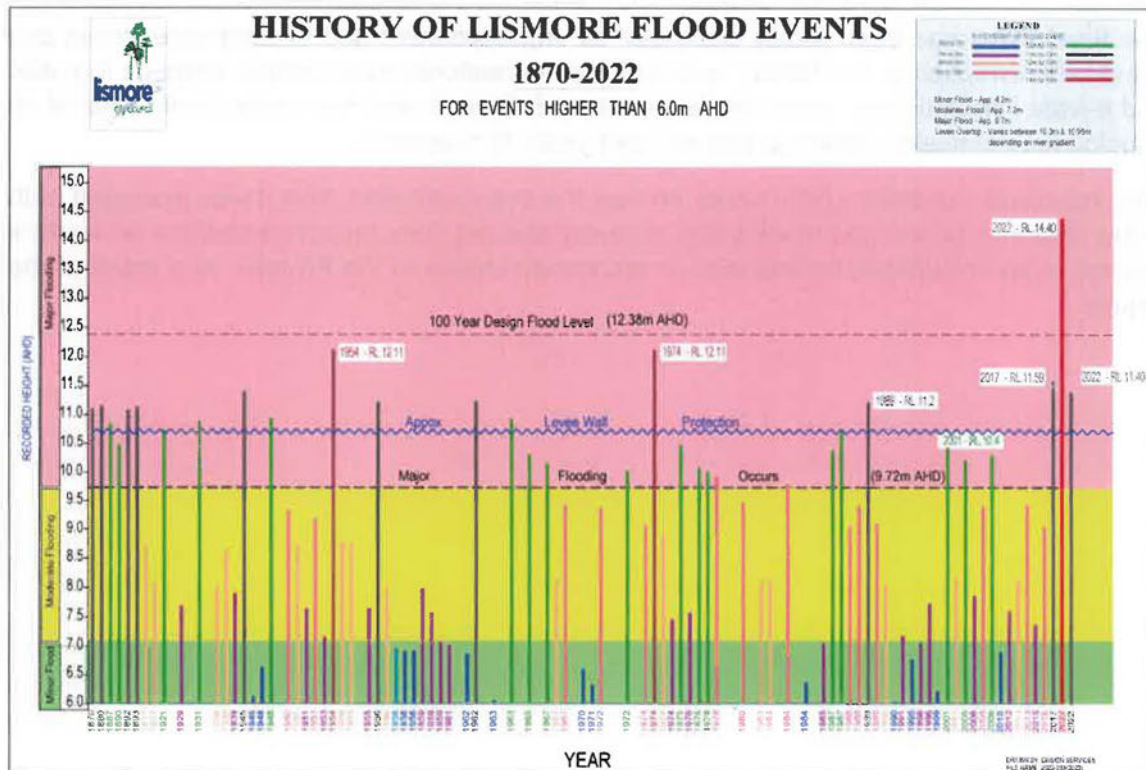
https://www.nsw.gov.au/sites/default/files/2022-03/CS1111%20Terms%20of%20Reference_V4.pdf

The flood event has been widely described as unprecedented and caused widespread and significant disruption to residential, business and recreational communities; damage to public and private infrastructure; social displacement and distress; and has undoubtedly created an ongoing mental health challenge that will take years to overcome.

This submission outlines LCC's views on how the event unfolded, how it was managed both in the response phase and moving into recovery and provides recommendations on lessons learned to be considered for inclusion in recommendations to the Premier as a result of the Inquiry.

3.0 Background

Lismore and more broadly the Northern Rivers experience regular flooding - it is a part of living in the region. As such communities in the region are in general very aware of the risks associated with riverine and flash flooding and are reasonably well prepared for such events. The image below shows the history of recorded floods in Lismore above a river level of approx. 6m.



However, the scale and severity of the event of 28 February 2022 was well beyond anything previously experienced in Lismore. To have a second major flood that also overtopped the levee less than a month later delivered a second blow to our community when it was only just coming to terms with the first event.

Appendix 2 contains a separate document that outlines the response that Council provided to these events and the impacts to the Lismore and surrounding communities. It also contains some reflections on the event and suggestions for consideration as to how our community can be supported to get back on its feet.

4.0 Preparation for Floods

As a community that regularly experiences floods, there are a number of measures and processes in place to prepare our communities for floods.

4.1 Local Emergency Management Committee

LCC is a member of the Northern Rivers Local Emergency Management Committee (LEMC). The Committee consists of the Kyogle, Lismore and Richmond Valley Councils. The three councils agreed to merge their previously separate committees in 2016/17 to provide greater coordination of resources, reduce triplication for local and state agency representatives on the separate committees and because any disaster in this region generally always effects all three council areas, albeit to varying extents and duration.

Richmond Valley Council provides administrative support to the combined committee for a modest fee to the other member Councils.

The LEMC has prepared an Emergency Management Plan (EMPLAN) and associated sub-plans and documents. The latest revision of the EMPLAN was adopted by the LEMC on 12 February 2021 and endorsed by the Regional Emergency Management Committee on 17 May 2021. A copy of the EMPLAN has been provided to staff assisting the Inquiry.

4.2 Lismore City Council Preparedness Activities

LCC has a number of processes that assist with community preparedness as follows:

- Council publishes via its website a diagram of every property within the Lismore urban area that is affected by flood showing:
 - Floor level of the property,
 - Road level at centre of the road,
 - Level at the front boundary of the property,
 - Predicted level of a 1 in 100 year flood.

An example of this is included as Appendix 1.

- Council operates an SMS service that provides information/warnings etc. in the lead up to expected flood events and during flood events. The service is generally used to repeat warnings and other information published by the SES, or to advise of relevant operations of the Council levee system eg. levee gates being closed and will prevent access to riverside carparks – please move your vehicle. Anyone can subscribe to this service.
- Council was the architect of the MYROADINFO website where road closures are recorded and available for public access. This solution has since been adopted throughout NSW and in other states as a key for public facing information on road closures. It has also been linked to the Transport for NSW Live Traffic website.
- Council operates a disaster dashboard on its website whereby relevant information for various sources is collated in one place eg. SES websites and Facebook pages where warnings are issued, Bureau of Meteorology (BOM) websites, road closures information.

- Council is an active participant in the various community forums and information sessions run by the SES. Council's Local Emergency Management Officer (LEMO) attends these events when requested/required to participate, explains how the levee system works and generally provides information and answer questions.
- A separate section is provided on the Lismore Flood Levee system – see below.
- LCC owns and maintains a series of flood gauges and rain gauges throughout the catchment. The data generated by these devices is used by the BOM and SES in flood analysis and predictions. It is suggested these devices should be owned and maintained by the relevant state or federal agency.
- Council actively pursues funding to improve the network of stream and rain gauges within the catchment and provide other warning systems to the public. Ironically, Council made application in late 2021 for a series of additional warning measures through the 2021-22 Floodplain Management Program, only to be advised by letter dated 25 February 2022 that the application was unsuccessful and that:

"The State Flood Mitigation Assessment Panel were of the view that this work is premature as Council need to complete the revision of the floodplain risk management study and plan."

- Whilst perhaps understandable, this response demonstrates a lack of flexibility in the system and lack of recognition of the importance of warning systems in the catchment. Regardless of whether and when a new floodplain management plan (FMP) is prepared, adequate and functioning flood warning measures will always be part of the approach taken by response agencies. Receiving funds from programs designed to improve flood preparedness should not be contingent on having a review of your FMP. Indeed the FMP is primarily focussed on solutions that mitigate and/or manage floodwater, not warning systems or processes used by response agencies.

There is always more that can be done and the biggest challenge is getting the general community to focus on what might happen and to be ready for it rather than what has previously happened in floods. The reference point for most people is the last flood they experienced or the worst flood they have experienced. People tend to plan around this scenario. We need to change that thought process and have people more focussed on what is coming or might be coming and being ready for any possibility.

4.3 SES Flood Watch and Flood Warning System

The SES messaging around floods is based on a system of first issuing Flood Watch messages when there is a risk of flooding occurring and then Flood Warnings once rivers start to rise.

There have been significant changes and improvements to this system since the 2017 floods and the SES are to be commended for the changes made as a result of the review from that event. However, there are considered to be further improvements that can be made as a result of lessons learnt in these latest events. Weather is unpredictable and messaging needs to be more focussed on what could happen looking forward and how people need to prepare for that.

The current messaging system contains detailed information based on predictions from the BOM and includes how much rain has fallen, how high the river is because of that, but then only limited general information about what might happen looking forward. There seems to be

a reluctance from the SES and BOM to move into this space because it is understandably highly variable and could be very wrong.

However, the lack of specific information about what might be possibly coming contributes to the general approach of many that their reference point is the last flood or the biggest flood they have experienced.

Further, the speed of the escalation of this event was such that by the time messaging and warnings came out at the nominated times, the situation had changed and that information was already redundant.

It is a fact of life that weather is unpredictable and this needs to be acknowledged and better planning be put in place on this basis. Messaging that is built around a range of possible scenarios would provide the community with enough information to assist them make informed and logical decisions to protect their own lives, possessions and property. It would also perhaps relieve the BOM and SES of the angst that goes with providing a single prediction that could well prove wrong.

Changes to messaging around bushfires in the last five years have been very successful in changing the way people think about their bushfire survival plan. Bushfires are similarly unpredictable and it seems the general community has been able to recognise the importance of planning to not get caught in a fire. We need a similar approach to floods.

An example of the structure of such messaging could include:

- What has happened?
 - how much rain has already fallen?
 - what is the current river height?
 - what is the predicted river height?
- What could happen into the immediate future?
 - is more rain predicted?
 - provide 2 – 3 scenarios over the next 6 – 12 hours based on predicted rainfall,
 - If we get (scenario 1) rainfall, a river height of (scenario 1) is predicted which means,
 - If we get (scenario 2) rainfall, a river height of (scenario 2) is predicted which means..... etc.
 - Scenarios are based on BOM advice of likely/predicted rainfall plus possibly a "worst case" scenario.

In order to provide messaging of this nature, further development of existing flood/catchment models would be required.

4.4 Emergency Services Premises Location

Emergency response agencies in Lismore all have premises located in the flood zone – Fire & Rescue NSW (FRNSW), Police, Ambulance and SES. All of these agencies were forced to evacuate their premises as a result of these events and in the case of FRNSW, Ambulance and Police will be operating from temporary premises for a long time until repairs are undertaken.

FRNSW and Ambulance premises were also flooded in the 2017 flood in Lismore and those agencies were unable to use their premises for a long time after that event.

These services need to be relocated out of the flood zone. Having to manage an evacuation from their own premises and coordinate the arrangements associated with securing and establishing temporary premises takes frontline workers away from response. Having premises located out of the flood zone will ensure they can serve their communities in the best possible way during disaster events.

4.5 Flood Levee

Parts of South Lismore and the CBD are protected by a levee system that includes earth levees, concrete levees, flood flaps, flood gates and flood pumps.

The levee system is owned by Rous County Council as the flood mitigation authority for this area and operated by LCC under a Memorandum of Understanding (MOU) and Service Level Agreement (SLA). LCC pays the costs of operation and maintenance of the levee system but is not responsible for the renewal (including funding) of the levee system when it requires replacement. This responsibility lies with Rous County Council as outlined in the MOU and SLA.

The levee system is designed to overtop in a controlled manner when river heights exceed the levee height. There are also protective measures installed in parts of the CBD to protect buildings where floodwater impacts those buildings in the designated floodways once overtopping occurs.

The levee system is operated in accordance with an Operations Manual. The manual was first developed when the levee was constructed in 2005 and is reviewed as required. The last review of the levee operations manual was completed in June 2015. A further review of the manual is currently in progress and being undertaken by NSW Public Works Advisory (PWA). The review commenced in late 2021 and is due for completion in the second half of 2022.

Council staff consult and coordinate with the SES on the operation of the levee system.

Regular audits of the levee system are undertaken every 3 months and/or after any flood event where the levee was required to be operational.

The levee system was fully functional and operational at the time of the first flood on 28 February 2022. It was operated in accordance with the Operations Manual before, during and after that event and functioned as expected.

The levee system sustained an amount of damage in the event of 28 February 2022, most notably the four pump stations associated with the levee system were all completely submerged including electric motors and switchboards. All four of those pump stations were non-operational after the first event as a result of the damage. There was also some superficial damage to sections of the concrete levee wall that protects the CBD.

Following the audit of the levee system after the event of 28 February 2022, flood gates etc. were cleared of debris and a workaround temporary repair was undertaken to the Browns Creek Pump Station. As such this pump station was operational for the second event on 30 March. The other three pump stations were not. All other aspects of the levee system were operational for the second event on 30 March 2022.

Further information regarding the levee system in Lismore is included in the flood response document in Appendix 2.

4.6 Flood Mitigation Funding

The Productivity Commission has established that the Australian Government spends 3% on disaster mitigation projects compared with 97% on disaster recovery. Clearly this needs to change and targeted spending on appropriate mitigation projects can and will reduce future liabilities from disaster events.

As outlined earlier in section 4.2 of this submission, processes to consider and approve flood mitigation funding applications are unnecessarily tied to progress of a floodplain risk management plan. This causes delays in rolling out beneficial projects and reduces the capability of councils, response agencies the BOM and SES to be better placed in their preparedness and response activities.

Projects that have a clear benefit to flood preparedness and mitigation and are consistent with the principles of a floodplain risk management plan should be considered on merit regardless of the progress of the plan itself or other associated documents.

The severity and scale of the recent events will also place increased focus on existing voluntary house acquisition and house raising programs. More funding is needed for these programs, especially acquisitions.

The current funding model whereby councils have to provide one third of the funding for an acquisition also needs to be reviewed. Councils do not have the funds to commit to a large-scale house acquisition program. The benefits derived from acquiring a property subject to significant flood risk do not accrue to councils – they accrue to state and federal governments. Whilst councils may end up owning the land, it cannot be used for building or community assets as the land is flood prone. In effect it becomes a liability as the land must be maintained without any meaningful opportunity to generate income. The state and federal governments accrue all of the financial benefit in that a property that would otherwise be inundated in flood events, and therefore qualify for financial assistance from state and/or federal governments through the various support programs they operate is removed. The state and federal governments should therefore meet the entire cost of these acquisitions.

4.7 Insurance

It is virtually impossible for business owners or residents in flood prone areas to obtain flood insurance. Where it can be obtained it is cost prohibitive. Council has anecdotal evidence from local small businesses and residents that live or operate in these areas of quoted premiums in the order of \$30,000 - \$120,000 per annum being the norm. It is simply unaffordable.

This issue not only affects residents and business owners, but Council itself. LCC, through its membership of Statewide Mutual, had flood insurance coverage to the value of \$5,000,000 for the 2017 flood event. As a result of that event, this coverage was reduced to \$2,000,000 for the same premium. It is unclear whether Council will be able to secure flood insurance at all after these latest events.

As a result of these circumstances, the NSW and Australian Governments are effectively insuring the nation against natural disasters through the various financial support programs made available once a disaster occurs. It would therefore seem that an opportunity exists for the NSW and Australian Governments to explore alternative sources of insurance for those living in flood affected areas. This could include establishing a national insurance scheme underwritten by the government. Such insurance would not necessarily have to cover all and every loss associated with a flood event.

4.8 Land Use Planning and Flood Mitigation

Rous County Council (RCC) is the Flood Mitigation Authority for the Lismore LGA, and through the Lismore Floodplain Management Committee, LCC and RCC have historically coordinated flood mitigation activities. The Lismore Floodplain Risk Management Plan 2014 has guided Council's recent land use planning and flood mitigation activities. The plan is supported by the Lismore Local Environmental Plan 2012, and a supporting Development Control Plan.

Land use planning decisions and regulatory compliance activities under this statutory planning framework have been undertaken by Council consistent with the terms of these planning documents. Upon request, Council is willing to respond to the Inquiry regarding specific flood planning considerations on specific land zonings, development applications and compliance activities to demonstrate Council's ongoing commitment to managing development on the floodplain.

The NSW Department of Planning, Industry and Environment (DPIE) provides funding under the NSW Government's Floodplain Management Program for the Voluntary House Raising Scheme on a 2:1 basis (landowner contributes 1/3), with the scheme managed by RCC on Lismore's behalf.

The Lismore Floodplain Risk Management Plan 2014 identified flood modification measures in section 5 detailing projects that have since been implemented as per the plan. The completed projects are:

- Airport Floodway Bypass
- Wilson River Channel Improvement

RCC is one of the last stand-alone flood mitigation authorities in NSW. Flood mitigation in NSW is typically managed by one entity, being the local council or a Water Corporation. When the former Richmond River County Council was amalgamated into RCC by proclamation in July 2016 the former roles, asset ownership and ongoing arrangements were not reviewed or updated as part of the amalgamation process.

The circumstance where RCC is the asset owner of flood mitigation assets in the Lismore LGA, and LCC operates and maintains these assets under an MoU is an outdated arrangement that blurs roles and responsibilities for flood mitigation activities and should be reviewed to a more contemporary model that clarifies the asset ownership and roles for flood mitigation across the catchment.

4.9 Preparedness Recommendations

1. The SES to conduct a concerted public information campaign to raise community awareness of the need for residents and business owners to have a flood plan ready to implement when there is a risk of flooding.
2. The campaign draw heavily from the approach taken to improve community preparedness for bushfires and some of the messaging used in that program eg.
 - a. There isn't a fire truck (or flood boat) to come to every house,
 - b. It may not be safe or possible for emergency services to come and rescue you,
 - c. Fires (or floods) may cut off road access long before your home is threatened directly – leave early.

3. Review messaging and information provided by the SES in the lead up to and during flood events to provide greater focus on what could occur if rainfall continues or escalates rather than what has already happened. This messaging to be based around a number of scenarios of what could happen, including a worst case scenario.
4. To assist with item 3, further develop the existing flood models that councils in the region hold to be a predictive tool that can be used to model scenarios during weather events. Use these scenarios as community facing information to raise awareness of the risks associated with a given event and ensure residents and businesses can make early decisions to ensure people's safety and move possessions, equipment, stock etc. to higher ground.
5. Consider using the model as an interactive tool available online where residents could provide their own inputs and generate relevant information to assist in their decision making.
6. To assist with item 3 and 4, install additional rain and river height gauges throughout the catchment to improve data collection and information as input to modelling.
7. The NSW and Australian Governments review the current ownership of stream and rain gauges whereby local councils own and maintain many of these and consider transferring ownership and maintenance/operational responsibility to the BOM or SES as the agencies most reliant on the data generated by these instruments.
8. The NSW Government commit to relocating its emergency services out of the flood zone in Lismore.
9. The NSW and Australian Governments increase spending on disaster mitigation activities and projects to improve resilience to future disasters.
10. The NSW and Australian Governments review the funding model for voluntary house acquisition programs to equally share the cost of these acquisitions and remove the current requirement for local councils to fund one third of any acquisition.
11. The NSW Government review its processes for considering applications for funding under the Floodplain Management Program ensure that applications for improved flood warning systems are not unnecessarily tied to the progress or adoption of FMP and remove any requirement for review of floodplain risk managements studies and plans to be completed and allow nominated projects to considered on their merits.
12. The NSW and Australian Governments investigate opportunities to establish alternate insurance schemes, including the possibility of a government underwritten scheme, for those living or operating businesses in flood prone areas.
13. The NSW Government undertake a review of RCC's role as Flood Mitigation Authority for constituent councils and how it is meeting statutory obligations – with options and recommendations to address any identified governance risks and outcomes of the review process.

5.0 Response to Floods

5.1 Emergency Operations Centre

As the weather system developed and it became apparent there was going to be flooding across the region, and Emergency Operations Centre (EOC) was established at the request of the Local Emergency Operations Controller (LEOCON), Superintendent Scott Tanner. The EOC was established in the LCC Corporate Centre at Oliver Avenue, Goonellabah.

All response and support agencies were requested to attend the EOC as is normal practice. There were challenges around staff from some agencies being able to physically get to the EOC because of roads being cut by floodwaters. In some instances, relevant staff were flown into Lismore from other places by helicopter when no other option was available.

The response agencies are generally well resourced and where there are resource gaps or a need for surge capacity, are able to call upon additional resources from other parts of the state or interstate, where necessary. There were some challenges with non-local people and/or non-EOC experienced staff at times including:

- Lack of familiarity with EOC processes and available documentation,
- Lack of understanding of the roles of the various agencies represented in the EOC,
- No understanding or knowledge of the status of matters already in progress and within the remit of their own agency – lack of handover from predecessor.

Whilst in general these issues were able to be readily overcome, and the team in the EOC worked very well together throughout the event, it nevertheless was a cause of frustration at times.

The support agencies sometimes struggled to provide the required resources to the EOC or other functions when needed eg. staff for Evacuation Centres, representatives to the EOC when primary contact was required to stand down for fatigue management.

Support agencies were at times overwhelmed as a result of the scale of the event, the level of disruption caused within their own agency by the event and as a result of a lack of suitable back up staff being available to backfill roles. Examples of this include:

- LCC having to provide staff to establish and operate an Evacuation Centre at Goonellabah Sports & Aquatic Centre. Council staff were still required even after Department of Communities and Justice (DCJ) provided a staff member to “manage” the venue,
- Community led evacuation and support centres standing up at Nimbin, The Channon and Dunoon. These centres were required as people from surrounding areas were unable to come to Lismore because roads were cut and staff from DCJ, even if they had any available, were unable to get out to those areas for the same reason.
- No representative for the TELCO Authority being present in the EOC for the entire response phase of the first event. Given the severe and ongoing challenges around communication in this region during the event, it is incomprehensible that no representative was available to the EOC.
- A DCJ staff member who worked considerable hours at the Southern Cross University (SCU) Evacuation Centre from when it was first opened having their own home in Ballina inundated by floodwaters later in the week. When they were stood

down, both because of fatigue management and to allow them to deal with the inundation of their home, a suitable replacement was not provided. The person was then publicly named and shamed on social media for supposedly abandoning their role. This also contributed to a situation where a member of the public took it upon themselves to be the self-appointed Manager of the Evacuation Centre at SCU for a period of time.

- A staff member from NSW Health working a considerable number of consecutive days without a break as the representative to the EOC, but then not being replaced when taking a well-deserved break.

LCC would like to formally recognise the outstanding efforts of Essential Energy staff throughout the response and recovery stages of the event. They were able to work closely with all agencies to find solutions to most problems and went above and beyond what might normally be expected. For example:

- Flying LCC staff in a helicopter out to Nimbin to assess the considerable damage to the water main that supplies water to the Nimbin township. A 4km section of main and the road that it followed was completely destroyed in the event, cutting off water supply to the town.
- Providing generators for multiple locations around town when the mains supply was unavailable.
- Working closely with Council staff between the first and second event to implement a temporary solution for repairs and power supply to the Browns Creek Pump Station (part of the levee system) such that it was available for the second event on 30 March 2022.
- Deploying considerable additional resources to the area to assist with the repairs to their network and assist private property owners with reconnection of power to their premises.

5.2 Evacuation and Community Support Centres Recognition

Community led evacuation and support centres were established in three villages within the Lismore LGA. These were located at Nimbin, The Channon and Dunoon. The centres were established by those local communities as a result of a genuine need given the scale and severity of the event. People from surrounding areas that needed to evacuate their homes could not get to Lismore because the roads were cut and indeed staff from relevant agencies could not get to those locations for the same reason.

LCC also established a second evacuation centre in Lismore at the request of the LEOCON – the primary Evacuation Centre was located at SCU, using its own staff as the DCJ did not have sufficient staff to run it. This was done due to the predicted scale of the event and expected number of displaced people.

All of these centres played a vital role in supporting people from those areas. They were also a source of important intelligence for the LEMO in the EOC regarding damage to local infrastructure, isolated people and local river/stream conditions. The Nimbin Neighbourhood and Information Centre was also a vital link to the large number of multiple occupancy communities located in that part of the LGA.

However, because these centres were not established through the formal process normally used via the EOC and LEOCON, and not staffed by the relevant NSW Government agencies,

they were not formally recognised in the EOC processes. For example, no statistics were taken as to numbers of people located in these places – noting numbers were collected for GSAC once DCJ was able to get a staff member to the site.

Given the important role they played in this event, and that NSW Government agencies had no capacity to provide a similar service, even if they could have physically made it to those places, the NSW Government should harness the goodwill and capability of these centres for future events. A process needs to be developed to support these centres through formally recognising their role and capability, appropriate training, and support once operational whether that be through financial support or designated contact pathways (ie. online or phone) with appropriately scalable resourcing. The absence of this formal recognition means that people operating or supported within these centres are not captured in statistics for reporting purposes and the cost of response activities is subsequently underestimated.

5.3 Australian Defence Force Role

The provision of resources from the Australian Defence Force (ADF) was most welcomed. Having them here meant a great deal to the local community and allowed a lot of work to be done that would not otherwise have been possible in the timeframes achieved.

There were however a couple of lessons to be learnt from their time here.

The ADF were unable to undertake any tasks that may have carried a professional or ongoing liability. For example, they were unable to undertake works on private property to restore a damaged driveway or remove a damaged ceiling. This was despite there being qualified engineering and other staff within their ranks. This led to some inefficiency where the ADF was tasked with certain things, only to decline those tasks such that they had to be reallocated to other agencies. This caused delays in responding to requests for assistance in those circumstances.

When the ADF first arrived, they had personnel and the vehicles that they travelled in. Heavy machinery arrived later but could have been used earlier if it was available. In particular heavy machinery such as excavators and body trucks were required to clear landslips, trees and other debris from roads. High clearance vehicles were also of great use for transporting staff and supplies via flooded roads.

5.4 Tasking in the EOC

Each of the emergency service agencies has their own software and management system for receiving, recording, allocating and monitoring progress of tasks. Support agencies have little or no systems in place like this and rely on the work of staff in the EOC to keep on top of what they have been asked to do.

In a disaster event, the EOC structure means that tasks are generated and allocated in a different way to normal times. In particular, support agencies get a lot of tasks allocated to them and need to keep track, especially when there are staff changes due to shifts, stand downs for fatigue management etc.

There is a need for either a central tasking and tracking system that is used by all response and support agencies, or for a system that sits above the others and distributes tasks through to each agency to manage within the system they already have.

This was recognised early in the event and the NSW Police were able to develop a system known as the “Blue Portal”. Whilst this was a central place to record tasks they were then sent

to each agency and managed by those agencies within their own systems. There was no feedback loop to close tasks out unless agencies reported back on progress or completion.

Whilst it was good that there was a central system to record tasks, it was far from perfect and very reliant on manual processes. It was highly inefficient given the way it operated and that very senior Police Officers with limited keyboard skills were asked to do data entry and management. This was not good use of their time given their considerable skills in other areas.

5.5 Mental Health

A common theme and concern of all agencies throughout the event was the mental health effects on the community, emergency services and support agency staff. It was regularly identified at most briefings by almost every agency involved.

The scale and severity of the event was the obvious cause of the challenges. NSW Health were not resourced to meet the demand for mental health support. Whilst it did the best it could with the resources available, there was clearly a far greater need for mental health support services than could be provided.

Mental health support will be an ongoing need of the community for a considerable time post the event.

A review of the resourcing and surge capacity for mental health services during and post disaster events is required.

5.6 Evacuation Orders and Safe to Return

As part of the response the SES issued evacuation orders for suburbs and localities likely to be affected by floodwaters as the rivers systems rose. Once the peak of the flood has passed and waters start to recede, the SES issues "Safe to Return" orders for those areas once it has been assessed as safe to do so ie power has been switched off, rapid damage assessments complete, hazardous materials dealt with etc.

These "Safe to Return" orders are generally issued for large areas at once, even entire townships or suburbs. The reality is that residents and business owners do not wait for these orders to be issued. They will return to their homes or business premises as soon as water has receded sufficiently for them to gain access. Some simply want to assess damage whereas others will immediately commence the clean-up process.

A Flood Evacuation Warning for Lismore was issued by the SES at 4.20pm on Sunday 27 February 2022 with Evacuation Orders issued at 9.30pm that same night.

The water levels from the first flood took several days to recede from the peak of 14.4m at approx. 3.00pm Monday 28 February to approx. flood levee height of 10.6m in the early hours of Wednesday 2 March. The water took a further 3 days to recede to below minor flood levels on Saturday 5 March 2022 where affected business and residential premises were largely no longer inundated. The "Safe to Return" Order for the Lismore CBD, North and South Lismore was then issued on Sunday 6 March at 5.30pm.

This was effectively a full week where residents and business owners of affected premises were in theory not permitted to be in those areas subject of the evacuation orders. So those people in premises in the highest parts of Lismore affected by floodwaters, and were the first properties to come out of the water as the flood receded, in theory had to wait a full week before returning to assess damage and/or start clean up.

As the waters receded, different areas became accessible and some were “safer” than others to be moving around in. A staged approach to the “Safe to Return” process would provide clearer messages to the community and allow them to be working in areas where it is safe to do so at the earliest possible opportunity. A daily assessment and publication of areas where it is safe for people to return would seem appropriate for these large scale events.

The reality is there is no enforcement of the evacuation orders once flood waters recede and people start to return.

5.7 Communications

There were significant challenges with communications during the event. Widespread disruption to the mobile phone network, NBN and fixed line internet caused significant challenges for emergency and support services and the community in general. Rural areas that already experience challenges with communications were the worst affected. There were also issues with the radio network.

The causes of these issues were that:

- physical damage was caused to critical infrastructure and distribution networks, either through water inundation or actual physical destruction,
- equipment at communication towers lost electricity supply,
- backup generators and batteries ran out of fuel and/or power,
- Access was difficult or impossible to undertake repairs or to re-supply.

A review needs to be undertaken and program developed and funded to relocate critical communications infrastructure out of flood prone areas, and improve redundancy.

5.8 Response Recommendations

14. All agencies ensure any staff coming into the EOC are properly trained in emergency management processes and have access, either electronically or in hard copy, to required documentation such as EMPLANS and contact lists.
15. All agencies ensure where there is a changeover of staff in an EOC as a result of rosters, shift changes etc. that a proper handover procedure is in place and implemented.
16. NSW Government support agencies be better prepared to provide staff to the EOC, especially to provide suitable replacement staff once their primary contact is required to stand down for a break.
17. The NSW Government review its approach to the establishment of Evacuation Centres, Support Sites etc. during disaster events to harness resources in community groups and similar organisations that are effectively already providing the same or similar services to local communities.
18. The NSW Government develop a process to formally recognise and support community groups identified in Recommendation 13 through provision of information, training and financial assistance where appropriate.
19. The NSW Government review its arrangements with the Australian Government for deployment of the ADF in disaster response such that tasks/work undertaken by the

ADF is properly insured for any ongoing liability. This will allow the ADF to undertake a broader range of tasks when deployed.

20. The NSW Government develop with the Australian Government a plan that identifies what type of equipment is likely to be required from the ADF in specific disaster events such that it can be deployed at the earliest opportunity when called upon.
21. The NSW Government develop a single task management process and software solution to be utilised in any multi-agency response event such that all agencies can utilise the system to record, allocate and monitor progress of requests for assistance logged through an EOC.
22. The NSW Government review its processes and resourcing, including surge capacity, to provide mental health support to disaster affected communities both during and post event to deliver significantly increased capacity compared to existing.
23. The SES review its "Safe to Return" processes to provide a daily list of suburbs, streets and/or localities where safe to return orders can be issued to facilitate the quick return of residents and business owners as the flood recedes.
24. A review be undertaken to identify and relocate critical communications infrastructure out of flood prone areas.
25. Greater redundancy be provided within communications networks to ensure communication services remain available to the community and emergency and support services during emergency events.

6.0 Recovery

The process of recovery for our community will take a long time and is complex.

In terms of the emergency management arrangements, and the formal transition/handover from response to recovery, this was challenging. The community is not at all aware or interested in the processes of government regarding this transition. They simply want to get on with their lives. Whether an activity that is there to support them falls under a response or recovery structure/funding arrangement is irrelevant to them.

The handover process was challenging because as flood waters are receding in Kyogle, and response activities wind down those communities in the higher parts of the catchment start moving into recovery activities when those in the middle and lower parts of the catchment are still in response, or may not even have had their peak floods in the case of lower river areas such as Broadwater, Woodburn and Ballina.

Different parts of the region were in different modes as the event unfolded. This creates challenges for response and support agencies to manage resources and processes to support the community.

6.1 Waste Collection

The waste collection challenge was enormous in this event. In previous events, Council has had to coordinate this task and it has been problematic in regard to logistical challenges, managing contractors and coordinating the claim for reimbursement of costs incurred.

The model adopted in this event whereby NSW PWA coordinated the waste collection effort was much appreciated by Council. Council would not have been unable to manage the task

in any event as substantial damage was sustained at Council's waste facility as result of the flood. Advantages of this model are:

- Local waste facilities are not geared up for a task of this size and duration – the temporary transfer stations established at Coraki, Alstonville and in the Lismore CBD for smaller trucks were a good solution to managing the task.
- Transporting the waste to large facilities in Queensland makes sense rather than consuming significant volumes of capacity in local tips.
- The considerable workload associated with Council meeting the costs and having to claim through disaster funding arrangements is avoided.
- The cashflow challenge of Council funding this activity is avoided – LCC did not have cash reserves to meet the up-front costs of the clean-up.

Council would also like to recognise and thank TfNSW and PWA for recognising the damage caused to the local road network on the haul route to the Coraki facility, arranging significant repairs and meeting the costs of the work.

There were however some lessons to be learnt and improvements that can be made for next time under this model as follows:

- There was some confusion as to whether contractors engaged by PWA were being supervised by PWA or Council. This potentially has significant ramifications for PCBU under the WHS Act should incidents or accidents occur.
- There was a position taken by some staff within PWA that Council should pay accounts for contractors engaged by PWA.
- After floodwaters subsided, residents immediately began cleaning out flood affected premises and placing flood waste in the kerbside area for collection. The waste was not sorted into different waste streams as a rule. The sorting of waste at the source into categories such as "hazardous" (eg. asbestos), putrescible (eg. food waste) from other waste such as furniture/fittings would significantly improve the efficiency and cost reduction of the collection and disposal processes. Flood planning documents need to have pre-prepared community education information to help flood affected residents sort waste at the source for more efficient flood waste collection from road kerbside areas by public authorities.
- There were some streets where kerbside waste was collected multiple times as residents and business owners progressively cleaned up their premises. This caused frustration for emergency response agencies, contractors and ADF staff and lead to inefficiency in those processes.
- There were issues around the definition of "flood waste" vs "building waste". Many people commenced stripping out buildings very early and deposited the building waste generated on the footpath for collection. This is not what the general kerbside waste collection is for and indeed is a cost factored into the various government financial packages that are available. Anyone with insurance would also have those costs covered. As such the NSW and Australian Governments are potentially paying twice for rubbish removal in many instances – for the free kerbside collection where owners strip their properties early and deposit the waste on the footpath, and in providing financial assistance to those property owners for building repairs.

6.2 Multiple Occupancy Community Infrastructure

Lismore has a significant number of multiple occupancy (MO) communities, especially in the northern parts of our LGA around the villages of Nimbin and The Channon. These communities are generally large, single parcels of land with multiple dwellings. They are generally managed through a body corporate structure and can vary in size from a few acres with a couple of dwellings to hundreds and even thousands of acres with dozens of dwellings.

These MO communities have significant infrastructure on those properties to support their community. This infrastructure can include roads, bridges, culverts and other stormwater drainage structures, buildings, water tanks/storage and supply systems. The responsibility to maintain this infrastructure rests with the body corporate for that community.

Significant damage was caused to this infrastructure and private dwellings on those properties as a result of this event – it was no different to the damage caused to public infrastructure and dwellings on other single owner private properties. The type of damage caused included land slips – both minor and major, affecting roads, dwellings and land generally, road and culvert washouts, bridge damage and stormwater drainage pipe washouts.

Hundreds of people living in these communities were isolated as a result of the event and there are large numbers that remain isolated at the time of writing this report. The biggest challenge for them is major land slips have blocked internal access roads.

NSW Government agencies have been unable to find a way forward to support these communities. The issue was first raised in week two of the event by Council's LEMO in briefings in the EOC. There were various reconnaissance missions flown by the Rural Fire Service (RFS) and ADF helicopters as well as some on-ground inspections undertaken. Council was also receiving information from the community-based support centres at Nimbin and The Channon with details of affected communities and the damage that had occurred.

A further information gathering exercise was organised by Resilience NSW (RNSW) but took four weeks to plan and execute – happening on Thursday 7 and Friday 8 April 2022. It is acknowledged that the second flood event caused this exercise to be delayed by a week. The purpose of the exercise was to ground truth previously gathered information and try to establish the extent of the problem such that a support package could be developed for these properties. The primary purpose of the support package was to re-establish vehicle access through provision of relevant technical advice such as geotechnical engineering, and financial support to have works undertaken.

As of 20 May 2022, some 6 weeks after the exercise on 7 and 8 April, no program has been developed or approved, no communication with Council or affected communities has occurred, large numbers of residents remain isolated in these communities and there is no sign any support will be forthcoming.

This is an example of a situation whereby the challenge to be met does not sit neatly within any existing government support process or program and the government agency responsible cannot move quickly to address the challenge. This needs to be improved, not just to address this issue, but more generally to allow government agencies to respond more quickly to situations that are new or different to previous events.

6.3 Housing Crisis

The housing crisis in this region is well known and documented. These flood events have shone an additional spotlight on the issue and severely exacerbated an already critical housing shortage in this region. Swift and decisive action is needed to address it, particularly for those affected and displaced by the flood events.

Displaced businesses and residents need to make decisions about the future. The slow pace with which government can respond makes that process frustrating and potentially financially detrimental to some because individuals are affected in different ways, want to move at different speeds to that which government is able to respond and might be thinking differently to decision makers in all levels of government.

For example, a resident of South Lismore that has had their home severely damaged by the flood and has had to move out needs to know and decide:

- What is the level of damage to the property and can it be repaired?
- If it can be repaired what is the cost?
- Do they want to stay in their current home, regardless of whether it can be repaired?
- What level of financial support will be provided by government for repairs?
- Will the Council/NSW Government allow the home to be repaired or will it be eligible to be acquired?
- If it is to be acquired, will that be compulsory or will it be voluntary?
- If the home is acquired, what compensation will be paid?
- Will any additional financial support be made available to help with the costs of buying or building a new home on higher ground?

All of this information, and more, is needed to allow residents and business owners to make the best decision for their future and ensure they can move forward from the events of February and March 2022. In particular, there is no point in a person that has decided they want to move elsewhere spending money on fixing a home they do not wish to return to.

A key issue in the decisions for those not wanting to stay in their current homes will be how to bridge the “gap” between what funds they might be able to secure for their current home and what the cost of a similar home will be on higher ground.

Many of the homes and businesses affected by the flood are the cheapest real estate in Lismore. This is because it is well known they are in areas subject to flood and are some of the oldest homes in Lismore. The flood event has made these properties even less attractive to a potential buyer, both in terms of the damage that has been caused and the realisation of how susceptible those areas are to floods. It leaves the current owners in a completely untenable and invidious position and facing financial ruin. They will effectively be unable to sell their properties, or at best achieve a sale price well below what is fair and reasonable, or could have been achieved prior to the flood.

The NSW Government, in consultation with LCC and other stakeholders, needs to develop a plan to financially support people that want, or must, move their business or home to a flood free location as a result of either voluntary or compulsory property acquisition and could consider:

- Provision of low or interest free loans to bridge the cost difference – capped at a reasonable amount,
- Provision of grants to assist with costs of relocation,
- Working with the Australian Government to provide tax and other incentives for businesses that wish to relocate.

6.4 Disaster Funding Claims Process

A key challenge for councils in managing the works in both response phases and restoration of damaged infrastructure is bank rolling to cost of the works up front.

It is acknowledged this challenge has been somewhat mitigated through upfront payments of funding.

In the past LCC as experienced significant delays in having funding claims processed under the NDRRA arrangements. Key challenges experienced in regard to the claims process include:

- Insistence of funding providers that exhaustive lists of transactions from ledger accounts be provided,
- Interpretation of those managing and/or auditing the claims process being different from agency staff consulted as the event unfolds,
- Apparent different audit/validation processes between the NSW and Australian Governments where joint funding is provided.
- Entire value of a large claim being held up by a request for additional information on relatively small items/amounts included in the claim,
- Levels of documentation required to support claims being unclear in guidelines,
- Additional requirements for documentation imposed by claims assessors than what is necessarily required by funding guidelines.

To streamline these processes it is suggested that the NSW and Australian Governments review the claims process to streamline it and ensure quick turnaround of payments to councils by:

- Involving suitable staff that process claims with councils early in the process ie. when funding is announced and periodically throughout the time that work is being undertaken to progressively check that supporting documentation/records etc. are being kept,
- Changing the claims assessment and audit process to remove the need for large volumes of material to be provided by Council to the funding assessor/auditor,
- Implement a process whereby the claims assessor/auditors, if necessary from both NSW and Australian Governments, to physically visit the council and spend a few days or a week auditing the claim. The process would be similar to council's annual financial audit where auditors visit and go through relevant documentation etc. with staff present. Any additional information required can be asked for and provided during this time and issues identified dealt with expeditiously.
- Commit to a one month turnaround.

6.5 Recovery Recommendations

26. Maintain the model whereby PWA manages the waste collection task for future events with some further refinement of roles and responsibilities to address who is the PCBU under Workplace Health and Safety legislation, who is paying accounts when received and who is generally monitoring and supervising those contractors.
27. The NSW Government ensure suitable arrangements for temporary waste transfer stations are in place on an ongoing basis for future events.
28. A communications strategy for kerbside collection of waste needs to be developed in advance of future events and messaging to the public provided regarding what will and won't be collected, and how waste should be sorted or placed. The issue of "flood waste" vs "building waste" and the cost benefits of sorting waste at the point of collection needs to be resolved and clarified ready for implementation for future events.
29. The NSW Government develop systems and processes that allow support agencies to respond in a timely manner to developing and implementing programs to support all community members, especially in situations that do not fit neatly into existing programs or services already available.
30. The NSW Government expedite its processes and decisions around:
 - a. What level of financial support will be provided to residents by government for property repairs?
 - b. What homes, if any, in those areas of Lismore affected by the floods will be considered for voluntary and/or compulsory acquisition?
 - c. For those residents and businesses that wish to relocate elsewhere and have their properties' acquired, what additional financial support and/or mechanisms would be provided by the NSW and/or Australian Government to facilitate this?
31. The NSW and Australian Governments review the disaster funding claims process to:
 - a. Streamline the process for all parties,
 - b. Reduce or eliminate the need for large volumes of material to be provided between councils and the funding assessors,
 - c. Allow for assessors/auditors to physically visit Councils to assess claims such that any identified issues can be worked through and resolved immediately with relevant staff,
 - d. Commit to assessing and paying claims within one month of the date of lodgement.

7.0 Summary of Council's Recommendations

A full list of recommendations from Lismore City Council is as follows:

PREPAREDNESS

1. The SES to conduct a concerted public information campaign to raise community awareness of the need for residents and business owners to have a flood plan ready to implement when there is a risk of flooding.
2. The campaign draw heavily from the approach taken to improve community preparedness for bushfires and some of the messaging used in that program eg.
 - a. There isn't a fire truck (or flood boat) to come to every house,
 - b. It may not be safe or possible for emergency services to come and rescue you,
 - c. Fires (or floods) may cut off road access long before your home is threatened directly – leave early.
3. Review messaging and information provided by the SES in the lead up to and during flood events to provide greater focus on what could occur if rainfall continues or escalates rather than what has already happened. This messaging to be based around a number of scenarios of what could happen, including a worst case scenario.
4. To assist with item 3, further develop the existing flood models that councils in the region hold to be a predictive tool that can be used to model scenarios during weather events. Use these scenarios as community facing information to raise awareness of the risks associated with a given event and ensure residents and businesses can make early decisions to ensure people's safety and move possessions, equipment, stock etc. to higher ground.
5. Consider using the model as an interactive tool available online where residents could provide their own inputs and generate relevant information to assist in their decision making.
6. To assist with item 3 and 4, install additional rain and river height gauges throughout the catchment to improve data collection and information as input to modelling.
7. The NSW and Australian Governments review the current ownership of stream and rain gauges whereby local councils own and maintain many of these and consider transferring ownership and maintenance/operational responsibility to the BOM or SES as the agencies most reliant on the data generated by these instruments.
8. The NSW Government commit to relocating its emergency services out of the flood zone in Lismore.
9. The NSW and Australian Governments increase spending on disaster mitigation activities and projects to improve resilience to future disasters.
10. The NSW and Australian Governments review the funding model for voluntary house acquisition programs to equally share the cost of these acquisitions and remove the current requirement for local councils to fund one third of any acquisition.
11. The NSW Government review its processes for considering applications for funding under the Floodplain Management Program ensure that applications for improved flood warning systems are not unnecessarily tied to the progress or adoption of FMP and

remove any requirement for review of floodplain risk managements studies and plans to be completed and allow nominated projects to be considered on their merits.

12. The NSW and Australian Governments investigate opportunities to establish alternate insurance schemes, including the possibility of a government underwritten scheme, for those living or operating businesses in flood prone areas.
13. The NSW Government undertake a review of RCC's role as Flood Mitigation Authority for constituent councils and how it is meeting statutory obligations – with options and recommendations to address any identified governance risks and outcomes of the review process.

RESPONSE

14. All agencies ensure any staff coming into the EOC are properly trained in emergency management processes and have access, either electronically or in hard copy, to required documentation such as EMPLANS and contact lists.
15. All agencies ensure where there is a changeover of staff in an EOC as a result of rosters, shift changes etc. that a proper handover procedure is in place and implemented.
16. NSW Government support agencies be better prepared to provide staff to the EOC, especially to provide suitable replacement staff once their primary contact is required to stand down for a break.
17. The NSW Government review its approach to the establishment of Evacuation Centres, Support Sites etc. during disaster events to harness resources in community groups and similar organisations that are effectively already providing the same or similar services to local communities.
18. The NSW Government develop a process to formally recognise and support community groups identified in Recommendation 13 through provision of information, training and financial assistance where appropriate.
19. The NSW Government review its arrangements with the Australian Government for deployment of the ADF in disaster response such that tasks/work undertaken by the ADF is properly insured for any ongoing liability. This will allow the ADF to undertake a broader range of tasks when deployed.
20. The NSW Government develop with the Australian Government a plan that identifies what type of equipment is likely to be required from the ADF in specific disaster events such that it can be deployed at the earliest opportunity when called upon.
21. The NSW Government develop a single task management process and software solution to be utilised in any multi-agency response event such that all agencies can utilise the system to record, allocate and monitor progress of requests for assistance logged through an EOC.
22. The NSW Government review its processes and resourcing, including surge capacity, to provide mental health support to disaster affected communities both during and post event to deliver significantly increased capacity compared to existing.
23. The SES review its "Safe to Return" processes to provide a daily list of suburbs, streets and/or localities where safe to return orders can be issued to facilitate the quick return of residents and business owners as the flood recedes.

24. A review be undertaken to identify and relocate critical communications infrastructure out of flood prone areas.
25. Greater redundancy be provided within communications networks to ensure communication services remain available to the community and emergency and support services during emergency events.

RECOVERY

26. Maintain the model whereby PWA manages the waste collection task for future events with some further refinement of roles and responsibilities to address who is the PCBU under Workplace Health and Safety legislation, who is paying accounts when received and who is generally monitoring and supervising those contractors.
27. The NSW Government ensure suitable arrangements for temporary waste transfer stations are in place on an ongoing basis for future events.
28. A communications strategy for kerbside collection of waste needs to be developed in advance of future events and messaging to the public provided regarding what will and won't be collected, and how waste should be sorted or placed. The issue of "flood waste" vs "building waste" and the cost benefits of sorting waste at the point of collection needs to be resolved and clarified ready for implementation for future events.
29. The NSW Government develop systems and processes that allow support agencies to respond in a timely manner to developing and implementing programs to support all community members, especially in situations that do not fit neatly into existing programs or services already available.
30. The NSW Government expedite its processes and decisions around:
 - a. What level of financial support will be provided to residents by government for property repairs?
 - b. What homes, if any, in those areas of Lismore affected by the floods will be considered for voluntary and/or compulsory acquisition?
 - c. For those residents and businesses that wish to relocate elsewhere and have their properties' acquired, what additional financial support and/or mechanisms would be provided by the NSW and/or Australian Government to facilitate this?
31. The NSW and Australian Governments review the disaster funding claims process to:
 - a. Streamline the process for all parties,
 - b. Reduce or eliminate the need for large volumes of material to be provided between councils and the funding assessors,
 - c. Allow for assessors/auditors to physically visit Councils to assess claims such that any identified issues can be worked through and resolved immediately with relevant staff,
 - d. Commit to assessing and paying claims within one month of the date of lodgement.

Appendix 1 – Property Floor Height Diagram

Lismore Flood and Floor Levels – Lismore

1. Floor levels were initially recorded December 1996 with updates in March 2006 and at various times since. The first column in the table below notes the dates where updates have occurred. Where no colour is shown the data was collected in 1996.
2. All levels are in metres AHD (Australian Height Datum).
3. Rowing Club Gauge reading for expected flood events 1 in 10 year ARI is 10.95 metres AHD // 1 in 100 year ARI 12.4 metres AHD.
4. Note during a flood event the estimated flood height is measured at the Rowing Club Gauge. Due to flood gradient the flood height at the property will not be the same as that estimated at the Gauge and could differ by up to 0.6 metres or more (lower or higher), depending on the property's location.

July 2014
Mar 2006
Jul 2005
Jan 2005
July 2004
June 2004
January+ 2004
July 2003
May 2003
March 2003
January 2003
October 2002
August 2002
May 2002

Date	Street Address	Floor Level	Gate Level	Road Centre	Description	1in10yr Level	1in100yr Level
	16 Ballina Road Lismore	8.723	8.397	8.858	Ampol Service Station		12.3
	28 Ballina Road Lismore	9.35	8.81	9.17	McCann Car Sales		12.3
	34 Ballina Road Lismore	10.11	8.91	9.28			12.3
	36 Ballina Road Lismore	11.2	9.01	9.35			12.3
	38 Ballina Road Lismore	9.81	9.33	9.51	LISMORE POOL SCENE		12.3
	38 Ballina Road Lismore	9.58	9.02	9.41	SUBWAY		12.3
	38 Ballina Road Lismore	9.6	9.02	9.41	DOMINOES PIZZA		12.3
	38 Ballina Road Lismore	9.6	9.02	9.41	Handi Ghandi		12.3
	38 Ballina Road Lismore	9.61	9.02	9.41	BWS		12.3
	38 Ballina Road Lismore	9.59	9.02	9.41	FISH 4 T		12.3
	38 Ballina Road Lismore	9.59	9.02	9.41	Video 2000		12.3
	40 Ballina Road Lismore	11.32	9.11	9.56			12.3
	42 Ballina Road Lismore	9.64	9.53	9.89	Raamons Pizza/Coin-op Laundromat		12.3

Appendix 2 – Lismore City Council Flood Response 2022



lismore  city council

Flood Response

May 2022



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Introduction

The Lismore City Local Government Area, together with large parts of northern NSW and southern QLD, were impacted by unprecedented flooding events during February and March 2022. These floods have had devastating impacts across the community, with lives lost, homes and businesses destroyed and critical infrastructure sustaining major damage.

Lismore has been at the epicentre of this natural disaster, with flood levels unmatched in recorded history. With the major flood event of 2017 as a point of comparison, flood waters were nearly three metres higher than those that devastated the Lismore community at that time.

The compounding effect of a further major flood event in the second half of March, after communities had spent countless hours cleaning, repairing, and rebuilding homes and businesses, has resulted in a sense of exhaustion and frustration across our fragile community.

Lismore City Council has played a critical role in the immediate aftermath of this disaster, working to restore essential infrastructure, reopen roads and support emergency services.

We are grateful for the support of our emergency response agencies including NSW Police, the State Emergency Services, the Australian Defence Force, the Rural Fire Service, the Department of Public Works and Resilience NSW among others. We are also grateful to the countless community organisations who have offered support and resources.

As flood waters recede and the community begins the painful and lengthy process of recovery, the sheer magnitude of the challenges facing us becomes clear.

While the impacts of this flood event are still being assessed, initial estimates have more than 3000 businesses across Lismore impacted, affecting more than 18,000 jobs including almost 1000 agricultural jobs. Nearly 1400 houses across the Local Government Area have sustained major damage with at least 37 destroyed completely.

Five lives were tragically lost during these flood events, and the wellbeing and mental health challenges that will impact our community in coming months and years will be difficult to quantify and even harder to manage.



“ It is estimated that the cost to rebuild our community will come close to \$1 billion.

The impacts on our local infrastructure and community assets have been overwhelming. Lismore City Council owned assets have sustained significant damage. This includes large sections of our roads network, our water and wastewater facilities, our resource recovery centre and key community assets including Lismore Regional Gallery, Lismore Memorial Baths, Lismore City Hall, the Lismore branch of the Richmond Tweed Regional Library and Lismore Regional Airport. It is estimated that the cost to rebuild our community will come close to \$1 billion.

Lismore is in critical need of support from all levels of Government to fund our recovery, support our people and – importantly – to put in place strategies to prevent this type of devastation in the future. We have been grateful for the commitments made to date, which must be delivered on in a timely and coordinated way. We will need significant ongoing financial support and assistance to rebuild our City and our community - short term assistance will not have a meaningful impact given the scale of this disaster.

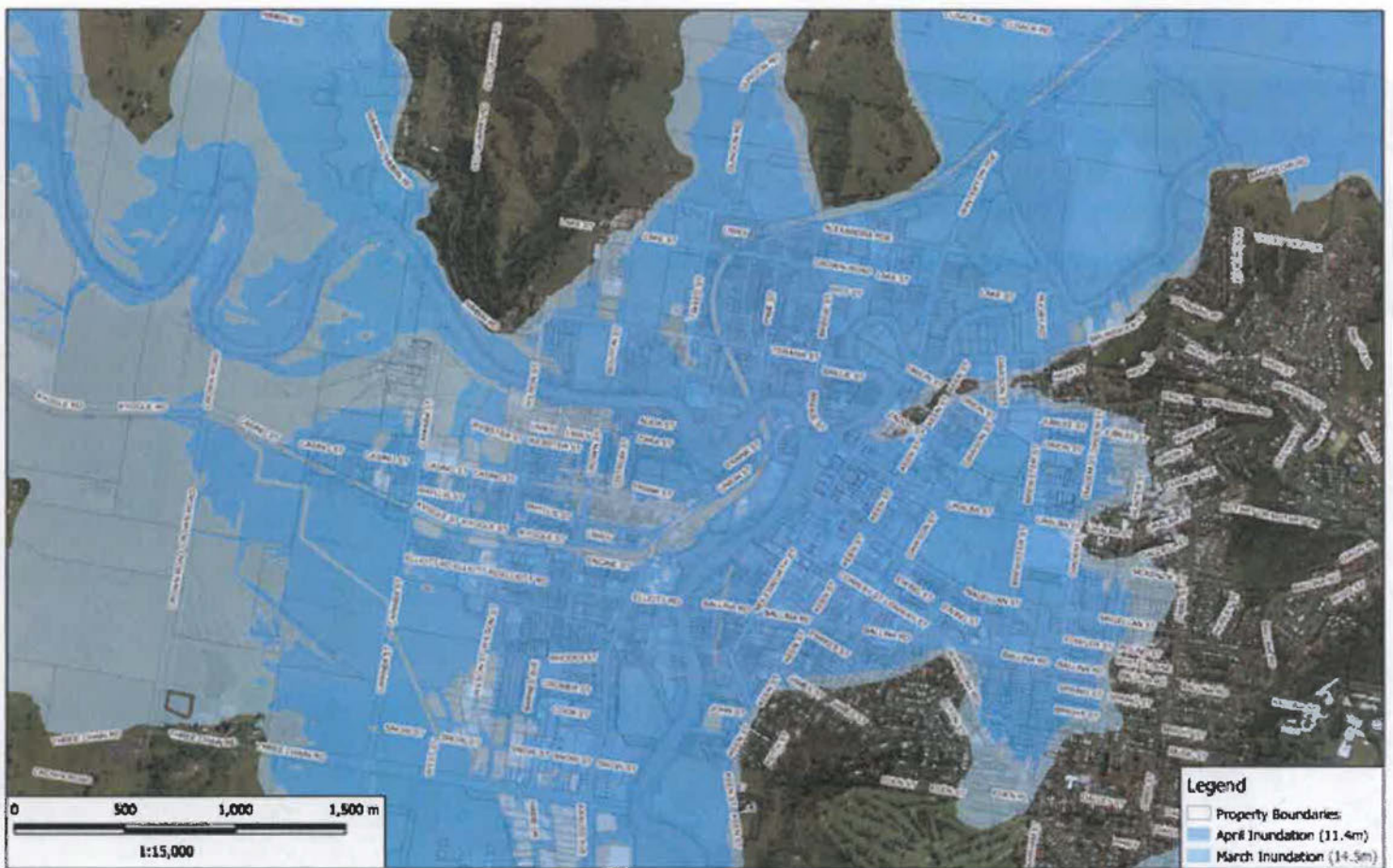
Tough decisions will need to be made in the coming weeks and months around flood

mitigation, future housing strategies, business reinvestment and attraction. Lismore City Council will be fully engaged in all these discussions, to ensure the local perspective forms the foundation for these key decisions.

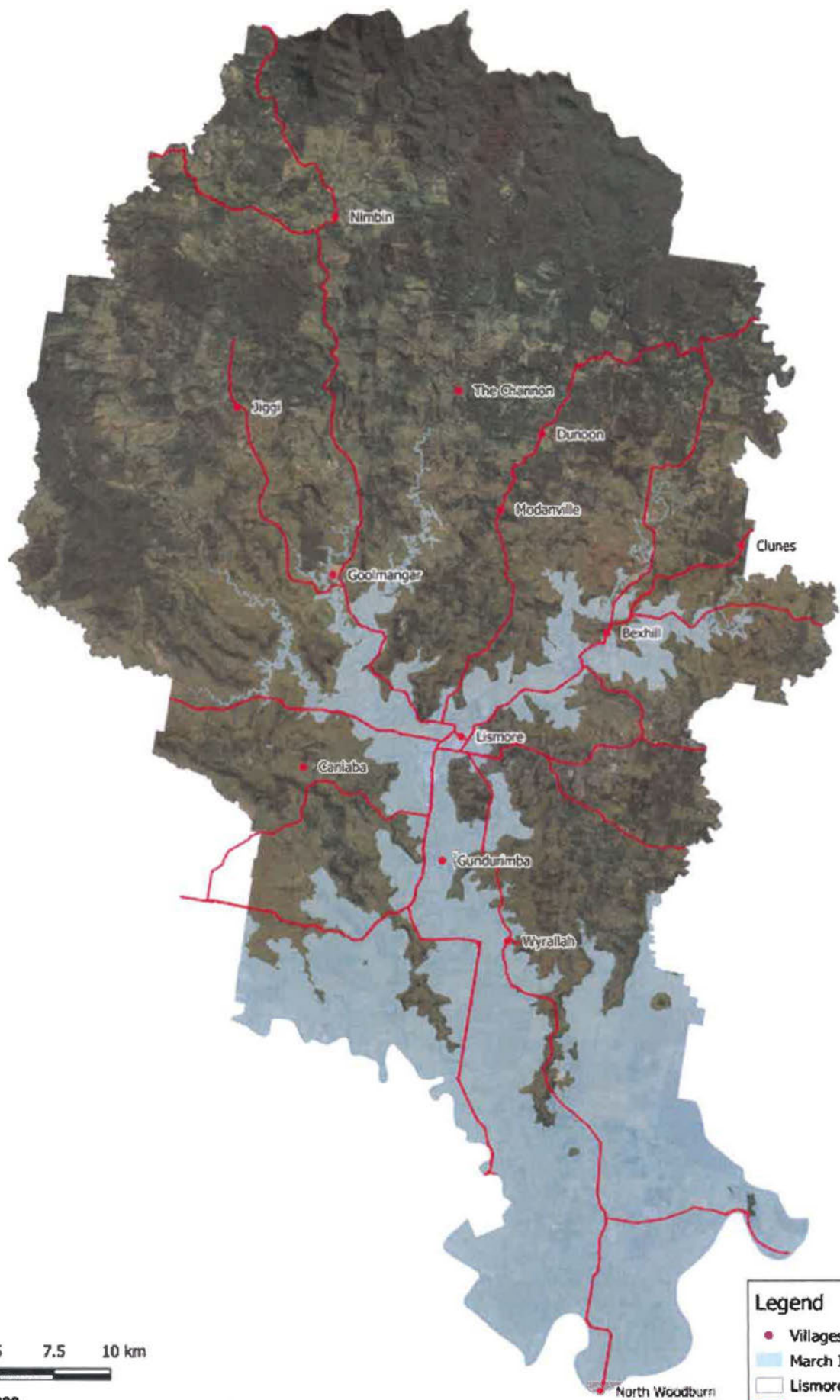
We are committed to ensuring businesses can reinvest with confidence, and families can rebuild their homes knowing their lifestyle will be secured into the future.

Lismore City Council extends its heartfelt gratitude for the tremendous outpouring of support across our region. We thank those who stepped into tinnies to pull friends and strangers alike to safety as flood waters rose at alarming heights. We thank those who volunteered in the immediate aftermath at our Evacuation Centres, Recovery Centres and Distribution Centres, as well as those who made generous donations to these sites. We thank the Mud Army for working tirelessly, knee deep in mud and debris, to help clean and rebuild our community. Lismore has heart and resilience, and we thank everyone who offered support to this community in its hour of need.





- Legend**
- Property Boundaries
 - April Inundation (11.4m)
 - March Inundation (14.5m)



Legend

- Villages
- March Inundation (14.5m)
- Lismore LGA
- Main Roads

Printed: 18.02.2016



LISMORE CITY COUNCIL

While the information on this map was prepared, the Council has not been able to verify the accuracy of the information. It is the user's responsibility to ensure the information is correct and to use it for the purpose intended. The Council is not responsible for any loss or damage arising from the use of this information.



**Lismore LGA Flood Inundation
March 2022 - 14.5m (Average)**

The Impact to Lismore Local Government Area: Key figures

Essential & Community Infrastructure (Council owned)



Roads & Bridges
\$150-200M



Water & Wastewater
\$108M



Waste and
Resource Recovery
\$10-20M



Council Facilities
and Depots
\$20M+

**TOTAL = Over \$350M in
damage to Council assets**

Preliminary estimates of landslip remediation
for our road network is \$90M

The Impact to Lismore Local Government Area: Key figures

Property damage (Homes and businesses)



Estimated volume of flood waste collected



70,000 tonnes
(14,000 truckloads)



Our community at a glance...

Total population

43,798

Total households

18,548

Urban population

27,641

Average household size

2.43

Rural population

16,157

Average weekly income

\$1,062

Unemployment (pre-flood)

7.8%

Average age

43

Compared to NSW, Lismore has a higher proportion of:

Children and young people aged 5 to 19 and older people aged 45 to 64

Labourers, community and personal service workers and sales workers

People employed in education, health and food industries

People that travel to work by car

People who speak a language other than English

4.5%

One parent families

21.1%

Single person households

27.5%

Aboriginal and Torres Strait Islander people

4.5%

People born in Australia

86%

Reported needing help in their day-to-day lives due to disability

5.7%

Our Immediate Response

Emergency Management

The peak of the 2022 flooding disaster across the Northern Rivers was experienced in the early hours of 28 February. However, Council's flood management response commenced more than a week before, on 22 February when Council activated procedures for the operation of the Lismore flood levee system in response to heavy rains and minor flood warnings.

As the situation intensified, Council staff worked with emergency services including the State Emergency Services (SES) to ensure that emergency messaging was shared via social media and through our SMS alert system.

Staff also volunteered across the weekend to man sandbag stations and support community readiness.

As the flooding reached "major flood" level, the Emergency Management Committee (EMC) took over the regional approach to disaster management. The EMC is chaired by NSW Police and has representatives from all key emergency services including the SES and Australian Defence Force (ADF). The EMC's role is to address immediate safety concerns and mobilise emergency response efforts. Both Council's General Manager and its Local Emergency Management Officer played a key part in this Committee, with the Emergency Operations Centre based at Council's Corporate Centre in Goonellabah.

The Monday morning following the overtopping of the levee, Council took the following actions, as agreed with the EMC:

- Made the Council Chambers at Goonellabah available to the EMC as the headquarters for the regional emergency response. This site became the base for key emergency personnel including the Police, SES, ADF and various state and local government organisations.
- Stood up and managed an additional "overflow" Evacuation Centre at the Goonellabah Sports and Aquatic Centre, housing around 300 impacted residents as well as an emergency food bank and clothing supply.



Essential Council Infrastructure

During the flood event and in the immediate aftermath, Council sustained significant damage to critical infrastructure. This included:

- Council's sewage treatment plants, with the plant and pump stations at South Lismore impacted by power outages, and the plant in East Lismore completely inundated.
- Damage to Council's waste management facility, with landfill cells and leachate pumps inundated and unable to function. Waste collection services were immediately postponed, as a result of this and access challenges.
- Impact to 90% of our road network.
- Destruction of the water supply main to Nimbin village.

Large parts of the community were isolated as a result of flood waters and/or access roads being washed away or damaged. Large landslips blocking roads were cleared on Nimbin Road, Rock Valley Road, Jiggi Road, Tuntabale Falls Road, Terania Creek Road, Gungas Road, Blue Knob Road and many other minor roads. Emergency Works and Restoration of access became a key priority for Council teams and local contractors, in conjunction with emergency services.



Community Support

Together with other Government agencies, Council played a key role in establishing a number of community hubs to assist in the immediate aftermath of the flood events.

- **Lismore Recovery Centre:** In conjunction with Resilience NSW, Council is the site manager for the Lismore Recovery Centre at Southern Cross University where vital community services are co-located in order to help residents deal with the losses they have sustained. Services onsite include Service NSW, Services Australia, as well as community services including St Vincent de Pauls and the Salvation Army.
- **Lismore Distribution Centre:** Council mobilised the Lismore Distribution Centre at the Lismore Showgrounds, transferring responsibility for managing this site to Lifeline shortly after opening. The Distribution Centre has helped thousands of families with access to essential items including food and water, as well as clothing and personal care items.
- **Lismore Community Hub:** Working with Resilience NSW, Council has supported the establishment of a Community Hub in the Harold Fredericks Carpark, with essential services, mental health support services, pop-up stores and personal care facilities including showers and laundry services.
- **Relocation of critical support services:** Council worked with Commonwealth and State Government agencies to identify temporary sites for operation, including Services NSW, Services Australian and the NSW Ambulance Service.
- **Local Emergency Response Network (LERN):** In advance of the formal Recovery structure being set up, Council convened and chaired a committee consisting of government services such as Resilience NSW, Department of Communities and Justice and NSW Health as well as not-for-profit organisations such as St Vinnies, Lifeline and the Salvation Army. This committee worked to ensure that the various agencies involved in the human-centric aspects of flood recovery were aligned and working in an integrated way for the benefit of the community.

Lismore Community Hub



What have we done so far?

- Emergency repairs to Council's waste facility, sewage treatment plants and water infrastructure
- Participated in the EOC, Northern Rivers Recovery Committee, Local Recovery Committees
- Advocated for significant funding from State and Federal Governments to support recovery
- Majority of flood waste removed from Lismore CBD and surrounding impacted areas
- Established usage agreement and EPA licensing for temporary waste transfer point to service the entire regions flood clean-up effort
- Emergency repairs to all flood damaged roads to ensure safety and access
- Assessed more than 90 percent of our 1200km road network for flood damage
- Restored water and sewerage services to basic operations
- Restored kerbside waste collection services across the LGA
- Reviewed initial damage assessments on 1720 residential properties, with more than 80% of these classified as either being destroyed or suffering major or severe impact.
- Reviewed initial damage assessments on 800 commercial, industrial or community properties, with around 65% of these properties classified as either being destroyed or suffering major or severe impact
- Coordinated the establishment of a Recovery Centre at Southern Cross University and Distribution Centre at the Lismore Showgrounds
- Identified suitable sites for temporary accommodation and supported State agencies to source and supply emergency housing
- Opened the Lismore City Council Flood Appeal and created a Lismore Flood Appeal Committee to agree on the process to distribute funds.
- Engaged with business community to promote and support funding opportunities



Next Steps

- Finalise flood waste collection as people continue to clean and empty their properties
- Remediate temporary waste transfer point in East Lismore
- Collaborate with PWA to transport waste to interstate landfill
- Complete assessment of the road network and bridges
- Work with TfNSW, Resilience NSW and PWA on planning, administration and delivery of restoration work programs across all of Council's assets including major landslips which require specialist expertise
- Deliver relief on water rates and interest on outstanding rates and continue to lobby for increased powers to deliver substantive rate relief
- Continue to engage with State and Federal members to ensure funding availability
- Complete repairs to the South Lismore Sewage Treatment Plant and East Lismore Sewage Treatment Plant
- Repair community buildings and facilities, including the Regional Art Gallery, Lismore Memorial Baths, Lismore Library and Lismore Regional Airport
- Advocate for more assistance for local businesses
- Ongoing participation in the Northern River Reconstruction Corporation, and key regional bodies including:
 - The State, Regional and Local Recovery Committees
 - Northern NSW Health and Wellbeing Subcommittee
 - Infrastructure Coordination Office & the Regional Infrastructure Sub-Committee
 - Regional Economic and Tourism Recovery Committee
 - Waste and Environment Regional Subcommittee
- Support the Lismore Flood Appeal Committee to distribute over \$1.1M to affected parts of our community.



Counting the cost

Essential Infrastructure

Roads

90% of our 1200km road network has suffered extensive damage, with an estimate of \$150-200 million to rebuild and repair.

An extended period of wet weather over summer and the subsequent February and March 2022 major flood events has taken a huge toll on the Lismore road network. From 21 November 2021 to the end of April 2022, Lismore has had rain on 3 days out of 4, resulting in many potholes across the network. This damage has been exacerbated by increased highway bypass traffic and bulk waste clean-ups after the flood events.

Emergency repairs on more than 80 roads have been carried out to support access and safety for residents. Several construction crews worked extended hours to ensure damaged roads were reopened/made safe as soon as possible.

There are more than 90 areas of major damage to the road network, with each having the potential restoration cost of \$1M or more, including major landslips that have resulted in roads that are still closed including:

- Keerrong Road
- Koonorigan Road
- Mountain Top Road
- Quilty Road
- Tuntable Creek Road
- Woodlawn Road

Landslips have also reduced traffic to single lanes on key access roads including:

- Nimbin Road
- Rock Valley Road
- Stony Chute Road
- Wallace Road

There has been damage to many bridges, causeways, reinforced concrete pipes, reinforced concrete box culverts, footpaths and road furniture within the network. Further geotechnical assessments will be required before final costs are known.

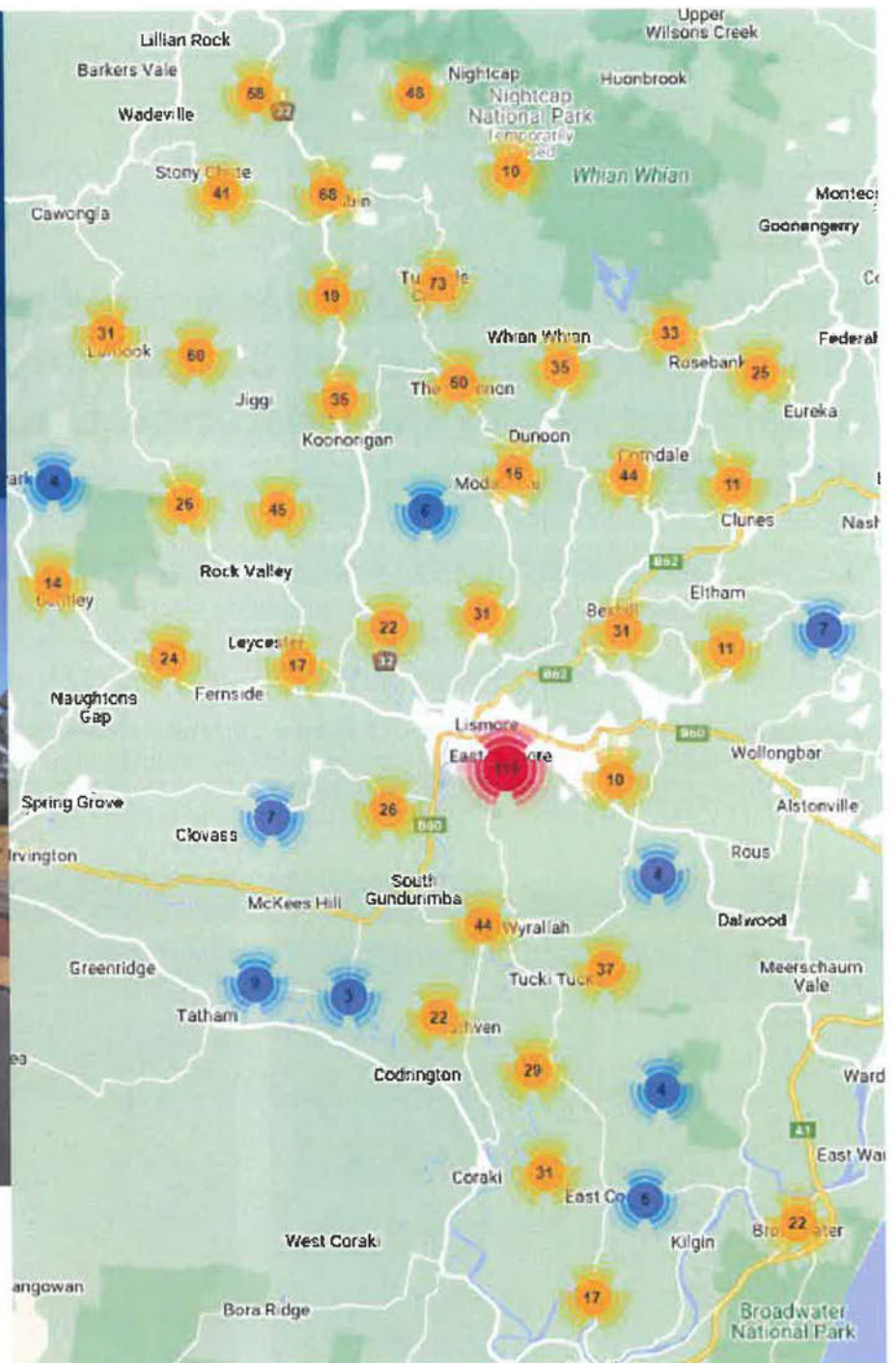




By the end of April 2022, inspections of the road network had identified more than 1200 incidents of road damage across the Local Government Area as indicated on the heat map to the right →



Bruxner Highway, South Gundurimba



Our next steps are to continue emergency work to ensure access to rural properties and undertake immediate restoration works to restore flood damaged road surfaces, road drainage systems and the like.

For more significant damage, we need to work with geotechnical engineers and start design and investigation work to deliver restoration. Restoration work of this nature can be quite complex to deliver, and is exacerbated by demand for contractors in the area. Council will work with state agencies and other local councils in the Northern Rivers to coordinate efforts where possible.

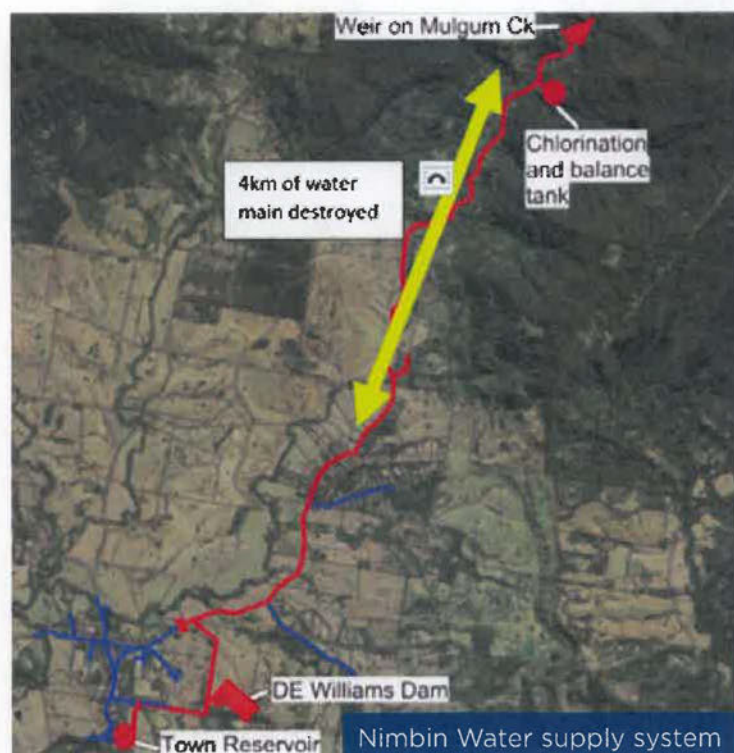
Counting the cost Essential Infrastructure

Water

Emergency road and water supply restoration works were completed on 30 March 2022, with a damage repair cost estimated to be in the order of \$3.5M.

Immediately following the February flood event, the Lismore reticulated water network experienced substantial water loss in the High Street Reservoir catchment which serves the Lismore Base Hospital, resulting in significant consumption of our bulk water supply. Council staff worked to isolate sections of the reticulated water supply network to arrest the loss of water within 24 hours, which was largely attributable to damaged hot water systems in flood affected properties.

In Nimbin, a 4km length of water main from the chlorination and balance tank was destroyed because of flooding and debris along Mulgum Creek. This section of Gungas Road was effectively destroyed, and the river path was re-directed.



This section of destroyed water main resulted in the water supply for Nimbin township being limited to the capacity held within the DE Williams dam – a supply of 60 days, resulting in water restrictions for Nimbin residents. Eighty properties connected directly to this destroyed rural supply main no longer had access to water. The urgency of this work resulted in Council water and roads crews coordinating with the Australian Defence Force to construct a new access road and lay 4km of poly pipe to restore security of the water supply for the Nimbin township.



Emergency repair works were completed by the end of March 2022 to restore water supply to Nimbin village.

The next steps are to complete repairs to Gungas Road and bury the water pipeline to protect that infrastructure from future damage.



Counting the cost Essential Infrastructure

Wastewater

Estimated costs to repair Lismore's Sewage Treatment facilities: \$17.7M

Estimated costs to flood-proof these facilities for the future: \$80M

South Lismore Sewage Treatment Plant

South Lismore Sewage Treatment Plant suffered inundation of flood waters to lower levels of the plant. It was able to be restored to emergency operation and was treating and discharging effluent within EPA licence limits within a short timeframe.

However, sewage pump stations (SPS) transferring sewage to the South Lismore Sewage treatment plant were impacted by the flood. All of the Lismore CBD, North and South Lismore, Lismore Heights and parts of Girards Hill rely on these sewage pump stations to dispose of sewage to the South Lismore sewage treatment plant. There are 12 of these pump stations located around those areas and none of them were functioning post February 2022 flooding.

These pump stations sustained severe damage because of the flood inundation and there was no power supply to any of them. Council staff immediately commenced work to restore them to operation and worked on an interim solution to manage sewage in these areas via the use of pump out tankers and temporary pumps.

It is estimated that the cost of repairing the South Lismore treatment plant and pump stations to pre-flood operation will be in the order of \$11M. Future proofing this sewer pump network to prevent future recurrence of this damage is estimated to cost \$24M.



East Lismore Sewage Treatment Plant

East Lismore Sewage Treatment Plant (ELSTP) suffered major damage and has been non-operational since the first flood event.

The influent received at East Lismore immediately post-flood (estimated volume was 4.2ML/day or nearly two Olympic swimming pools) was initially undergoing partial treatment only (i.e. primary screening) before being discharged into Monaltrie Creek and the Wilson River. Public Works Advisory and the Environment Protection Authority were engaged at an early stage to develop temporary and longer-term treatment and restoration solutions in conjunction with Council staff.

The date to return ELSTP to full treatment capability is still to be determined.

The 19 East Lismore Pump Stations (SPS) were undamaged and transferring sewage to East Lismore treatment plant via the network, however, a temporary pumping solution was required at Wade Park and anticipated to be in place up to 10-12 weeks. The Wade Park SPS was inundated and suffered a major environmental overflow which was reported to the EPA.

Counting the cost Essential Infrastructure

Waste management

Estimated cost to repair Lismore Recycling and Recovery Centre:

Estimated cost to remediate facility: \$10-20M

Lismore Recycling and Recovery Centre:

Lismore Recycling and Recovery Centre (LRRC) is the central waste hub for the Lismore Local Government Area and surrounds. It has recycling and landfill capabilities and utilises the sewer treatment plant adjacent to the site for leachate treatment.

The LRRC experienced flooding impacts which damaged much of the centre's infrastructure. The associated leachate flow and level monitoring systems, power generators and leachate pumps were damaged beyond repair. Inundated by flood waters, the cells contents were pushed into the surrounding area east of the site.

As well as securing its own site to minimise the environmental impact of the damage caused, Council worked with Public Works Advisory in the days immediately following the flood to establish a temporary flood waste transfer site while regional facilities were set up in Alstonville and Coraki. This temporary facility was used for the transfer of bulk refuse from houses and businesses destroyed in the floods. Public Works undertook coordination of the kerbside removal and disposal of flood waste across the LGA, in collaboration with the ADF.

It is estimated that the total clean-up of flood-affected items will reach 70,000 tonnes or the equivalent of 14,000 truckloads.

The total cost for the recovery and remediation works at Council's facility are estimated at around \$10-20M dollars, including:

- solid waste recovery and clean up,
- waste cell leachate pump & monitoring systems repair
- waste cell leachate liner damage removal and repair, flood impact leachate management, contaminated resource stockpiles and municipal asset recovery (the cell liner repairs require specific expertise and a scope of repairs is currently being finalised)



Cell 2B before flood



Cell 2B during flood

Counting the cost

Essential Infrastructure

Lismore Regional Airport

Estimated cost of repairs \$1M

Lismore Regional Airport (LRA) was impacted by over 2 metres of water through the terminal and across the runways and apron. Damage was sustained to the security fencing surrounding the airport, to facility lighting and telemetry systems and the loss of the airport server room.

The airport was out of operation for two weeks. Limited operations were able to recommence after that.

LRA is currently operational (at a higher risk level) for RPT (Rex) passenger operations, Army aircraft movement and some charter flight activities. Fuel is now on site, however no normal terminal access is available. Twenty privately owned hangars were also damaged, as well as a number of privately owned aircraft.

Work required to restore the airport to full operations include restoration of the security fence, repair of the apron, and restoration of the runway lights, telemetry, and weather station.



Counting the cost Essential Infrastructure

Blakebrook Quarry

Blakebrook Quarry was inundated but has since been returned to normal operations. Some damage to plant onsite was experienced, but this has not resulted in any impacts to service delivery.

Asphalt production capability will be critical in the next stages of recovery as we seek to rebuild and repair our roads network.



Counting the cost

Essential Infrastructure

Council's Fleet

Council lost 53 vehicles due to flooding, including 13 utes, 4 cars, 10 trucks, 6 tractors and 1 garbage truck. The Richmond Tweed Mobile Library semi-trailer was also lost.

These vehicles had been relocated in advance of the flooding to areas which had not been subject to flooding in previous flood events.

Council also lost a substantial portion of its small plant, including chainsaws, mowers, and whipper snippers, which was located at the Brunswick St Depot. Again, the Brunswick St Depot had not previously been subject to flooding.

Council is currently liaising with insurers to address these losses. Sourcing replacement vehicles will be a challenge, due to the ongoing supply chain impacts of COVID. Council was facing delays of up to 12 months for new fleet prior to the flood.

Council has traditionally sourced its plant and equipment from local or regional suppliers wherever possible. These suppliers have now suffered extensive flood damage and stock that was on order has been lost.

In the case of small plant, Council is also working with neighbouring councils to source immediate replacements on loan, to minimise impact on service levels.



Counting the cost Community Assets

Lismore Regional Gallery

Cost to repair Gallery: \$2.5M

Cost of artworks lost/impacted: \$3.6M

Lismore Regional Gallery was inundated across all levels, with every artwork in the Gallery submerged.

Working with our insurers, Council has transferred all art pieces into offsite storage where they are being reviewed to determine whether any can be salvaged. Initial analysis suggests that some artwork may be able to be recovered.

Council's insurance covers all Council-owned artworks, art held and temporarily managed by the Gallery, and separate cover for the Hannah Cabinet.

The Hannah Cabinet was fully submerged in flood waters and floated through the Gallery during the peak of the flood. Pleasingly, we expect to be able to fully restore the Hannah Cabinet although the restoration process will take close to 12 months to complete.

The Regional Gallery itself has sustained considerable damage and will be out of operation until repair work has been completed. We currently have no estimate on this work, as it is dependent on funding.



Counting the cost Essential Infrastructure

Richmond Tweed Regional Library – Lismore Branch

Estimated cost to repair Library: \$1.3M

The Lismore Branch of Richmond Tweed Regional Library sustained flood damage across its ground and first floor.

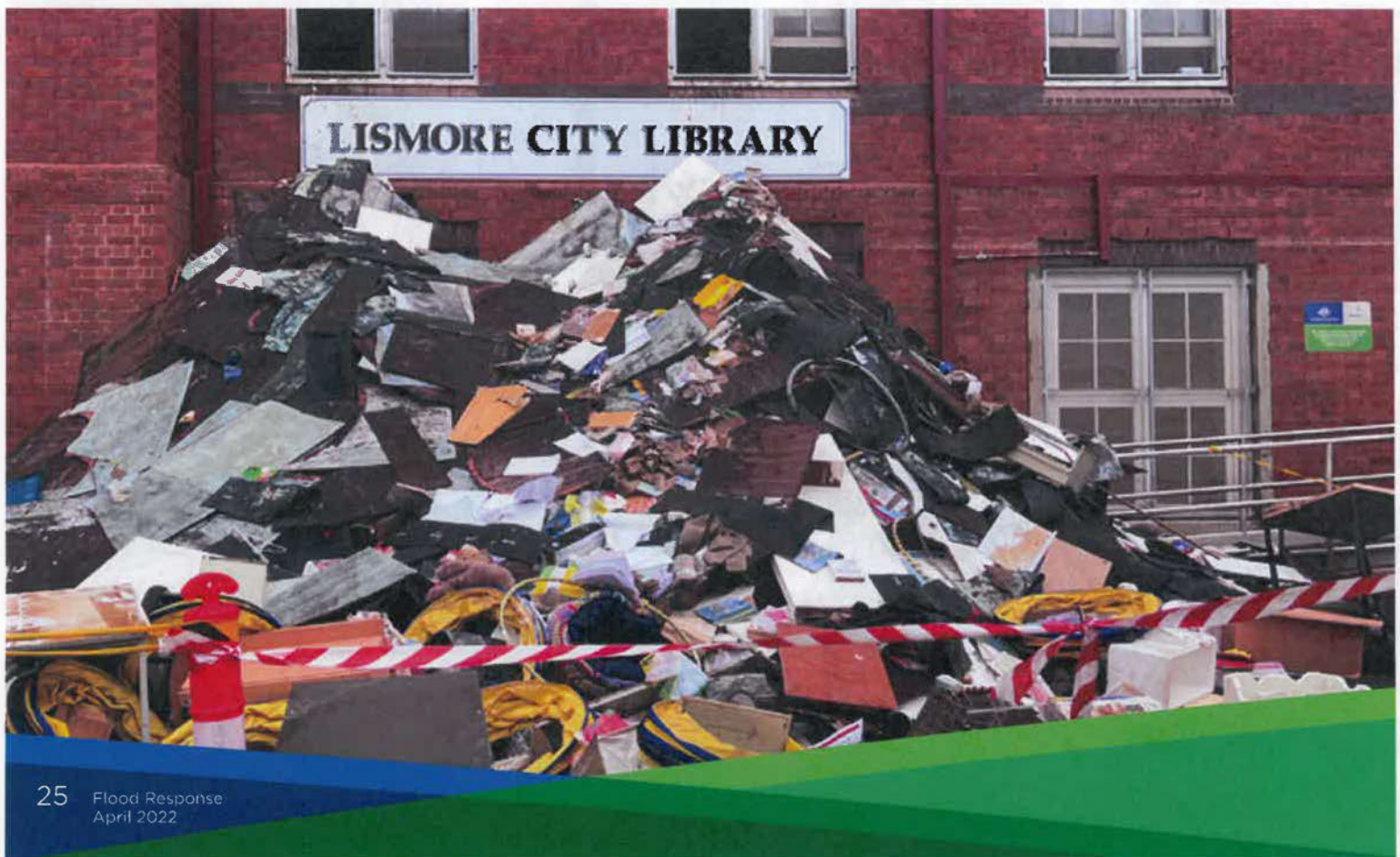
Several collections – over 29,000 books - were destroyed including:

- Adult Fiction
- Large Print Books
- Junior & Young Adult Books
- Children's Story Books
- Children's DVDs
- Jigsaws
- Audio Books
- Parenting Collection (non-fiction books on parenting topics)
- Junior Non-Fiction Books

The RTRL Mobile Library Truck sustained severe damage and will need to be replaced. A temporary solution has been put in place until a replacement truck can be sourced and fitted out.

While the scope of repair works is being assessed, an additional Goonellabah Library site has been established to ensure the community retains library access.

We have seen overwhelming community support for a series of book drives, seeking new and near-new books across the collections that were impacted.



Counting the cost Essential Infrastructure

Other Council assets

Estimated total cost to repair other Council buildings: \$15M

Many other Council-owned buildings suffered flood inundation and will need to be repaired. This includes:

- Lismore Memorial Baths (pictured below)
- Lismore City Hall
- Visitor Information Centre
- Terania Building
(currently leased by ACE)
- Gundurimba Building
(currently leased by Binney's Funerals)
- Brunswick Street Workshop
- Lismore Caravan Park
- Laurie Allen Centre
- Lismore Transit Centre
- Stockpot Kitchen
(former Regional Art Gallery)
- Cattle Saleyards
- Old Council Chambers Municipal Building
- All impacted public toilets
- All impacted sports facilities
(including sporting fields, grandstands,
clubhouses and kiosks):
 - Albert Park
 - Oakes and Crozier Oval
 - Mortimer Oval
 - Nesbitt Park
 - Arthur Park
 - Wade Park
 - Caniaba St Reserve
 - Humbley Oval
 - Marie Mackney Netball Courts
 - Richards Oval
 - Elaine Blanche Tennis Courts
 - Nielson Park
 - Riverview Park



Counting the cost Essential Infrastructure

City Safe CCTV network

The City Safe Closed Circuit TV network in the CBD will cost \$330K to replace.

The existing CCTV camera system was installed approximately 3 years ago and was not due for replacement for a further five years.

An agreement has been reached with Resilience NSW to fund the full replacement of this network immediately, in order to ensure public safety in the CBD. Cameras are located across 23 locations.



Major project delays

Prior to floods Council was in the middle of a \$66M capital works program.

These works are predominately funded by State or Federal Grant programs or stimulus funding from previous disasters or COVID.

Council has been liaising with the relevant grant funding bodies and reviewing these projects to revise delivery timeframes resulting from flood impacts. No major projects have been cancelled, so work will continue to deliver major projects including:

- Lismore Employment Lands (Oliver Ave link)
- Oakes and Crozier Oval upgrades
- Nimbin Rainbow Road Walking Track
- Northern Rivers Rail Trail
- Lismore Regional Airport upgrades
- CBD footpath replacement

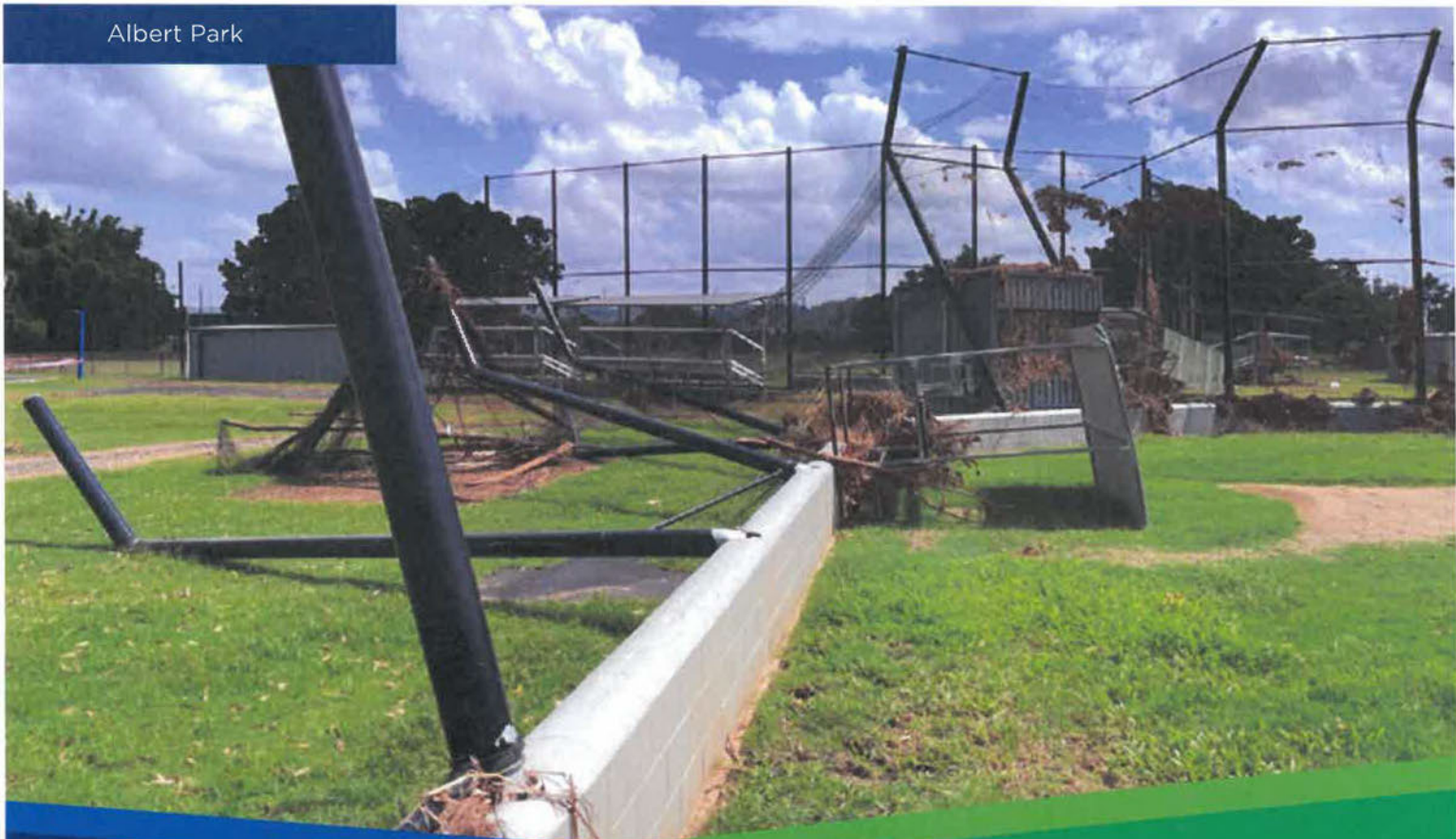
Road, bridge, water and sewer projects that were disrupted are now being completed, and delayed works will be re-scheduled.

Council events that were to be held in the first half of 2022 will be postponed. This includes scheduled events to be held out of the Art Gallery, Quad, Lismore Library and Lismore Memorial Baths. The Lismore Masters Games will also be postponed.

Other projects that will continue:

- Affordable Housing developments at Bristol Circuit and Cynthia Wilson Drive.
- Clyde Campbell Solar car park
- Lismore Laneways Revitalisation
- Heritage Park shadesail
- Pedestrian spine from City Hall to the river
- Albert Park (pictured below)
- Lismore Walking Trails

Albert Park



Our community

Residential Homes

Across the Lismore LGA, 2520 buildings have been assessed by the SES as damaged (as of 10/3/22). Of those 1720 were classified as residential with the level of damage categorised as follows:



Destroyed	37
Severe Impact	482
Major Impact	880
Minor Impact	215
Nil Impact	106



It is estimated that more than 2000 people have been rendered homeless because of the floods.

Lismore, like many parts of the Northern Rivers region was facing a housing crisis prior to the floods, with a rental vacancy rate of 0.4% and rising house prices making both rentals and home ownership increasingly unaffordable or unavailable. The loss of such a significant amount of housing stock, primarily in the less expensive parts of the town, will exacerbate the housing crisis.

The level of residential construction work required is likely to be impacted by shortages of materials and labour resulting in significant delays and price increases.



Our community

Business impact

Of the 2520 buildings assessed by the SES as being damaged, 656 were classified as commercial or industrial and 144 as 'other' (includes categories such as schools and community facilities etc). The level of damage to commercial and industrial buildings has been categorised as follows:



Destroyed	7
Severe Impact	241
Major Impact	264
Minor Impact	133



The Lismore LGA has 4,145 registered businesses, with 3,170 estimated to have experienced some level of disruption (based on location), be it supply, distribution, accessibility, or total flood inundation.

The LGA had 23,232 jobs across all industries. Based on business location, it is estimated 18,098 jobs have been impacted by the flood.

The agricultural sector output was valued at \$92 million in 2015/16 and directly employs over 1000 people. It is estimated that 875 farmers have been either directly or indirectly impacted by the flood.

The ripple effects of the business disruption to the wider Lismore economy are so widespread as to be incalculable at this time.

Lismore City Council's Economic Development Team have provided ongoing support to businesses since the City's inundation, helping to access grants, complete applications, get the right referral advice and address general Council matters.



Environmental impacts

The prolonged and intense rainfall in the upper catchment, and the resultant major flooding, have had very significant environmental impacts across the entire LGA.



Due to their scale and complexity thorough assessment of these impacts is a huge task, and it is not possible at this stage to precisely quantify them.

Lismore City Council's Environmental Strategies Team has commenced assessment of impacts on riparian vegetation and other high conservation value vegetation in the CBD and urban bushland reserves. We have reached out to current and past partners of the Rural Landholder Initiative to understand the impacts on their habitat restoration projects, and on the rural environment generally.

Landslips have been reported from across the upper catchment, ranging from small-scale to very significant. As well as damage to homes and infrastructure, these landslips have caused loss of soil and vegetation, and continue to be a source of sedimentation of creeks and the river.

The volume and velocity of water coming down the creeks and into the Wilsons and Richmond Rivers has caused significant erosion of banks, as well as damage to riparian vegetation. This includes riparian vegetation that had previously been restored with both public and private funds and countless volunteer hours. Exposed banks are now vulnerable to continued accelerated erosion which may also cause further sedimentation of waterways.

Other areas of vegetation, including revegetated and restored habitat, have also been affected by floodwaters. Prolonged inundation, foliage coated by mud and pollutants, and the impact of high velocity water and flood debris are all causes of loss of or damage to vegetation.

Areas where vegetation has been lost or damaged, particularly riparian areas, are now vulnerable to establishment and spread of exotic weed species.

Waterways have been polluted with sediment, industrial and agricultural chemicals, waste and debris.

In turn, these impacts on vegetation and waterways represent potential decline in the habitat (homes and food sources) available to native fauna species including the koala and platypus.

Council will continue to work with government agencies and non-government organisations such as Landcare, Ngulingah Local Aboriginal Land Council, wildlife rescue organisations, industry groups and landholders to understand the profound impacts of these events, and to develop and implement strategies to repair damage and restore the integrity of our precious natural environment.



“

In turn, these impacts on vegetation and waterways represent potential decline in the habitat (homes and food sources) available to native fauna species including the koala and platypus.



Mental Health and Welfare

The trauma experienced by residents who have lost their homes and possessions is anticipated to have long-term mental health impacts.

The uncertainty around housing and employment is also contributing to high levels of anxiety and stress. The loss of social networks through clubs, sporting associations, schools, social and civic spaces is contributing to a general sense of social breakdown

Lismore is a community still in shock and will require significant mental health services in the months ahead. Funding for such services have been announced but details of how this will be delivered is unclear. Ongoing communication through mainstream and social media will be required.

Lismore prides itself on its reputation as a creative hub for the region. The ability to continue to hold iconic events such as the Lismore Lantern Parade and Eat the Street will aid the return to a level of normalcy.

The One from the Heart community concert was held on 15th May at the Lismore Showgrounds. 12,000 free tickets were made available to people living in the most affected postcodes, with 1000 tickets available for sale to the wider community.

With performances from Daryl Braithwaite, Jon Stevens, Paul and Dan Kelly, Grinspoon, Lime Cordiale, Sheppard, Darlinghurst and the Buckleys, the Concert provided some respite and joy to our community during this difficult time.

Thank you to Chugg Entertainment, to all the artists involved and to those who worked so hard to make this concert become a reality including the 60 Council staff who volunteered their time on the day.





The Future of Lismore

Flood mitigation and resilience

Prior to the recent flood event, Council was in the process of updating its Floodplain Risk Management Plan, designed to provide a suite of flood mitigation measures including:

- engineering (i.e. structural mitigation),
- planning (land use zoning and development controls)
- property modification (house raising, house purchase etc.) and
- emergency management (flood response, flood warning, community awareness, etc.)

In 2021 the NSW Government engaged the CSIRO to review options being considered for the Far North Coast Water Strategy. This review is now being expedited, and the government has committed to a range of funding to implement recommended solutions.

Council has already passed a resolution seeking clear understanding of the Terms of Reference of this Study and intends to participate fully in this work to ensure local perspectives are fully considered.

The Future of Lismore

Reconstruction

On 19 April, the NSW Premier announced the formation of the Northern Rivers Reconstruction Commission (NRRC). The NRRC will sit within the Department of Regional NSW and report to the Deputy Premier.

The NRRC will coordinate planning, rebuilding and construction work of essential services, infrastructure, and housing across multiple government agencies to help people in the Northern Rivers communities to rebuild their homes and lives as quickly as possible.

The NRRC will have a long-term remit for reconstruction of flood-hit communities in the Northern Rivers, which will continue beyond the immediate response and recovery phase, which is being led by Resilience NSW. The term for the NRRC is between 3 to 5 years.

The NRRC will be supported by an advisory board consisting of local representatives, such as local members of parliament and mayors, as well as leaders in the community.

Council looks forward to fully engaging with the NRRC to ensure that there is a strong local perspective considered in all decisions made by the NRRC.

Council takes comfort from the series of announcements made to date around recovery funding, including commitments to fund Lismore's road repairs, repairs to sewage treatment services and recovery of Council's building assets where those costs exceed the insurance limit.



The Future of Lismore

Housing Response

Solving the short-term housing crisis is critical to Lismore's economic and social recovery. Returning people to their homes as quickly as possible will ease local housing pressures and reduce the mental health impact of the flood emergency.

It is imperative that Lismore is able to keep its local community together, to ensure critical skills are available to support recovery, including trade and contractor skills which will be in high demand in the coming years. Without suitable accommodation solutions, residents will have no other choice than to leave the region.

Resilience NSW, working with the Department of Planning and the State Housing Taskforce, are accountable for short- and medium-term housing solutions across Lismore and other affected parts of the Northern Rivers. Council is pleased to note one such site has been established in Wollongbar (pictured below), with further sites to be announced in the coming weeks.

Council's role in supporting Lismore's housing crisis is:

- Working with relevant agencies to identify appropriate sites for temporary housing
- Streamlining the development application process to facilitate short to medium term housing solutions
- Participating in meetings across the region, in order to align services and support.
- Council is currently reviewing its Growth Management Strategy and Housing Strategy in order to ensure that Council's position on key issues is clear and well understood by the Reconstruction Commission.

This will include consideration of key strategic issues including:

- Opportunities for new flood-free land to be released for residential and business purposes,
- Potential for increased density in suitable flood free locations
- Advocating for land-swaps to relocate people from high-risk areas
- Feasibility and design work for a new commercial precinct
- Support for flood resilient rebuilding opportunities
- Voluntary housing buy-back schemes
- Voluntary house raising schemes



Economic recovery

Many of Lismore's businesses are at an inflection point. The cumulative impact of the flood in 2017, a global pandemic and the current natural disaster event has left people questioning whether they have the appetite to reinvest and rebuild their businesses in our local government area.

Council has welcomed the support provided to date to large organisations in Lismore, including Norco, in order to encourage the reinvestment that our community so desperately needs. We also note the grant programs available through government departments such as the Department of Regional NSW, Services NSW and the Rural Assistance Authority which have targeted opportunities to support recovering businesses.

Businesses must have confidence that they can reinvest in Lismore and its surrounds. Key to this confidence will be a defined program of work to build stronger flood resilience across the LGA, together with sufficient investment to support businesses that are keen to rebuild.

We note the impact of a national shortage of building materials, skilled contractors and supply chain constraints arising from the recent construction boom on our ability to rebuild our community. A program to ensure areas that have been declared as part of the national emergency have priority is required to ensure the rebuild is not further delayed by a lack of access to building materials.

Further consideration should also be given to how flood insurance operates in Lismore and surrounds. Flood insurance is generally unavailable or unaffordable to residents and businesses in high-risk areas and this situation has been exacerbated by the most recent flood. The Insurance Council of Australia has commented that insurance is unlikely to be available to large areas of Lismore unless there are strategies to 'de-risk' through flood mitigation and adaptation activities.

Responses to Council's Business Flood Impact Assessment Survey has identified that 89.8% of respondents (264 respondents completed the survey) did not have any form of flood insurance. Estimates by business completing the survey have identified over \$38.5M in expected building repair costs identified to date.

In 2021, the Prime Minister, Scott Morrison, announced a cyclone reinsurance pool for northern Australia, backed by a \$10bn government guarantee, which aims to protect more than 500,000 properties. The government expects the pool will reduce premiums by more than \$1.5bn over 10 years and it is set to launch in July 2022. This scheme needs to be extended to cover Lismore and the Northern Rivers.



Reflections

During this natural disaster, and its immediate aftermath, a number of opportunities to improve preparedness and response have become clear. Council is contributing to the various inquiries into the Floods, and will work with stakeholders to raise concerns and take actions to improve in the following areas:

- * Power outages impacted both emergency response and early recovery. How can this be better managed?
- * Our pumps are critical to our flood response, but also susceptible to flood damage. How can we best ensure our pumps are deployed where they are most needed, yet also protected from damage?
- * What steps can we take to ensure that emergency warning capability is improved, and aligned across all agencies?
- * Our emergency response was unprepared for an event of this magnitude. How can we ensure essential emergency services can scale up quickly and effectively?
- * Are there better ways to manage Evacuation Centres so that consistent support is provided at each?
- * What are the barriers to a more timely regional response on emergency housing?
- * How can we enable affordable flood insurance for people living in flood-prone areas?
- * In large scale emergencies, how can we work with our state and federal government stakeholders to minimise red tape and bureaucracy to deliver fast support where it is needed.

Our lived experience: A message from the Mayor

Lismore's last significant flood was in 2017. It caused huge damage across the community, largely because the flood topped the levee for the first time since its construction in 1999, sending water flowing through the CBD and other low lying areas. Floods hit their peak at 11.59m.

On Sunday, 28 February 2022, the community started preparing for another possible flood. Initial predictions were that it could possibly hit the heights of the 2017 experience. In activating their flood plans, local vendors removed stock and equipment from their stores, and moved this to higher ground, or to purpose-built shelving onsite so that flood water wouldn't reach it. Most included a buffer of a metre or so above the 2017 flood levels just to be safe. Sandbag stations were set up to stop water entering properties. People in low-lying areas went to stay with family and friends to wait out the weather.

This was simply not enough.

During the course of the evening, as the deluge continued, water rose much faster than expected. By 3am, flood waters yet again topped the levee and rushed into town. At their peak, flood levels reached around 14.4 metres. The height of these floods were unmatched in living memory.

Those three metres made all of the difference.

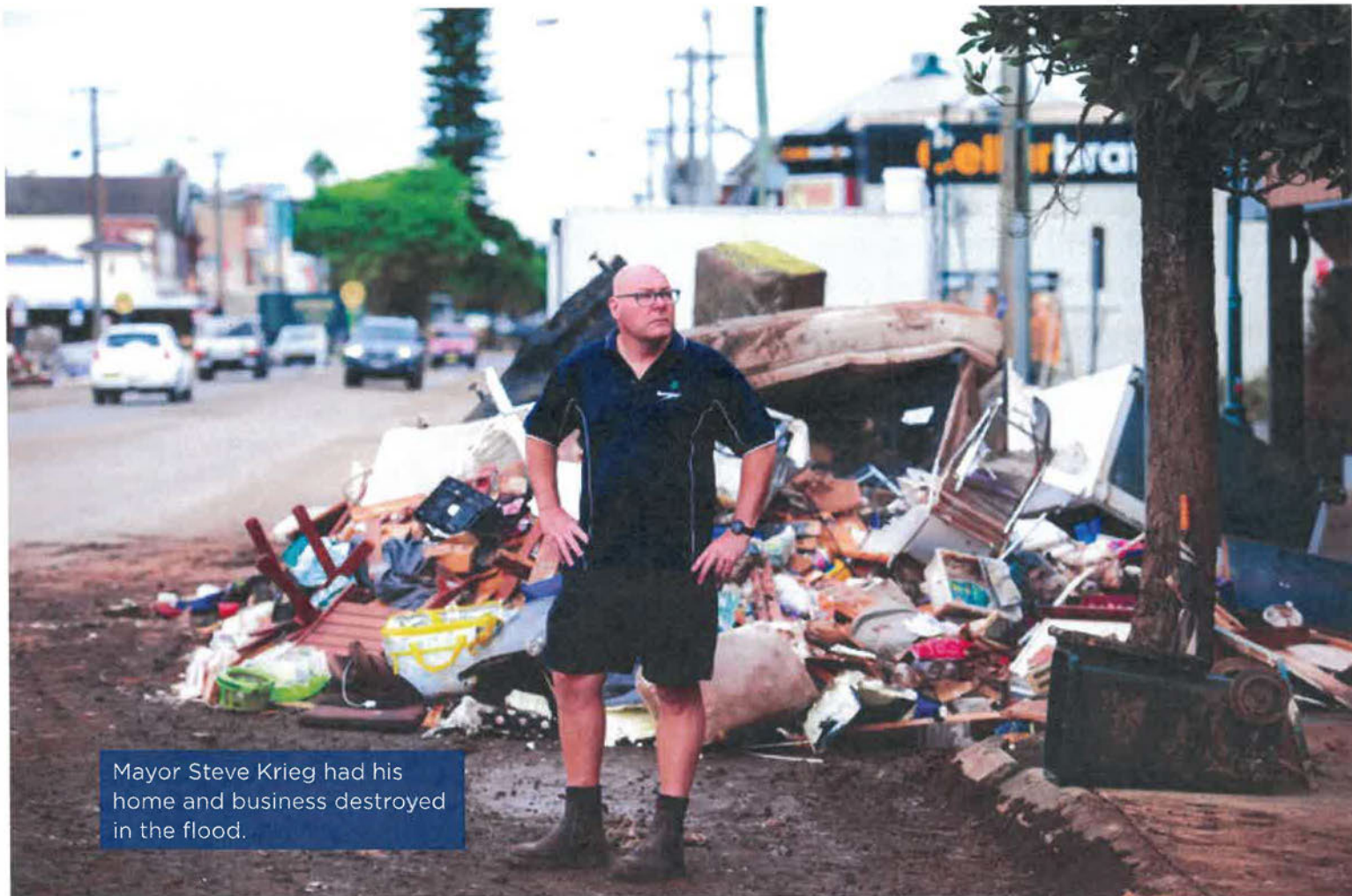
They meant that people who thought they were safe on their second storey got trapped in their roof cavity as waters rose at terrifying speeds. They spent hours calling for help, climbing through windows, trying to break through roof panels to climb to relative safety.

They meant that people who thought they had "flood proofed" their place saw all of their belongings placed at height destroyed anyway.

They meant that people who didn't need to evacuate the 2017 flood were caught unawares and found themselves clinging to their roof and waiting for rescue. Many people were sleeping as waters crept up, missing that critical evacuation window.

They meant that the emergency response, which may have been suitable for a 11.59m flood was simply unable to respond to the significance of the event. Rescues were effected by locals in tinnies, kayaks and jetskis.





Mayor Steve Krieg had his home and business destroyed in the flood.

“

As waters receded, the streets of Lismore came to resemble a war zone.

Piles of refuse lined the streets as people cleaned and emptied their flood-ravaged houses. Many will never be suitable for occupation again. People assessed the damage to their properties and businesses - many require gutting, rewiring, new walls and floors before they're habitable again - which will take months if not years depending on the availability of qualified tradespeople in the area.

The “mud army” spent countless hours, exhausted and dirty, hosing out properties, scrubbing walls and floors and trying to return their homes and businesses to space that could be used again. Just as the community started to see a light at the end of the tunnel, a further significant flood swept through the CBD, sending many residents back to square one.

As well as having been entrusted with the role of Mayor during this difficult time, I have been personally impacted by this disaster. I've lost my two businesses in the CBD and my family lost our home and most of our belongings. I, like many others, am piecing my life back together. I continue to have faith in Lismore - that we will work together to rebuild the city that we love, and that we will retain our hope and positivity as we do so.

The people of Lismore are resilient and courageous. We will build back, better than before.

Conclusion

While we remain optimistic about the level of support committed by the State and Federal Governments to assist Lismore's recovery, we have a long road ahead of us.

Three key factors will be critical in meeting this overwhelming challenge:

1

Funding must be available in a timely manner, without red-tape. Lismore City Council is constrained in its financial resources, and cash-flow limitations mean that it is not able to fund large-scale recovery works upfront, with costs recovered from various government departments at a later date. Council is hopeful that the Reconstruction Commission will streamline access to funding.

2

Decisions made by State and Federal bodies such as the Reconstruction Commission need to reflect local perspectives and be made in consultation with those communities that these decisions will impact. Coordination between those in a position to assist will be crucial in order to ensure decisions are informed by local views and able to be delivered efficiently.

3

Short term assistance will not be enough. Commitment to supporting Lismore over the medium term will be core to any recovery effort.

“

Lismore City Council is committed to rebuilding Lismore as a strong, vibrant Regional City. We look forward to working with the Reconstruction Commission and other government departments to ensure that the right investments are made in Lismore's future, to support housing, business and social outcomes for our community.

lismore  city council

Appendix A: How you can help

Lismore City Council Flood Appeal



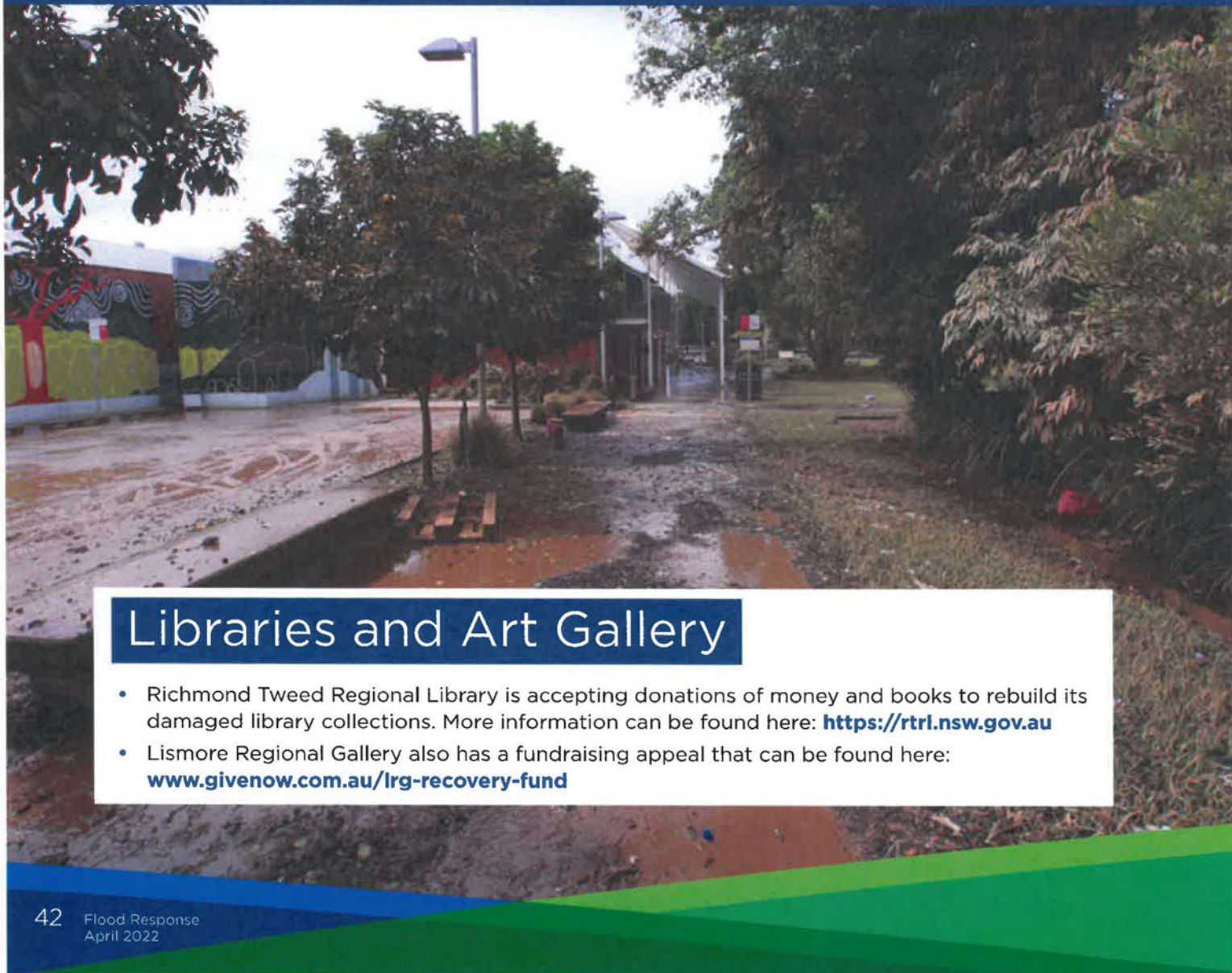
To help with our flood affected community, you can donate to the Lismore Flood Appeal by direct bank transfer.

The bank details are:

Name: Lismore City Council Flood Appeal Account
BSB: 062 565
Account: 10864633

Council has established a Flood Appeal Committee comprising all Councillors, Council staff representatives and members of the community. This Committee will agree the process by which funding is allocated to those most in need.

Council is accepting donations for the purpose of disaster recovery and community support arising from the current Lismore flooding disaster. In making a donation, you acknowledge that Council retains full discretion as to how any and all donated funds are used, which may include distributing funds to other organisations or persons for those organisations to use and distribute as they determine. Council has no obligation to enforce any use of funds by a third party.

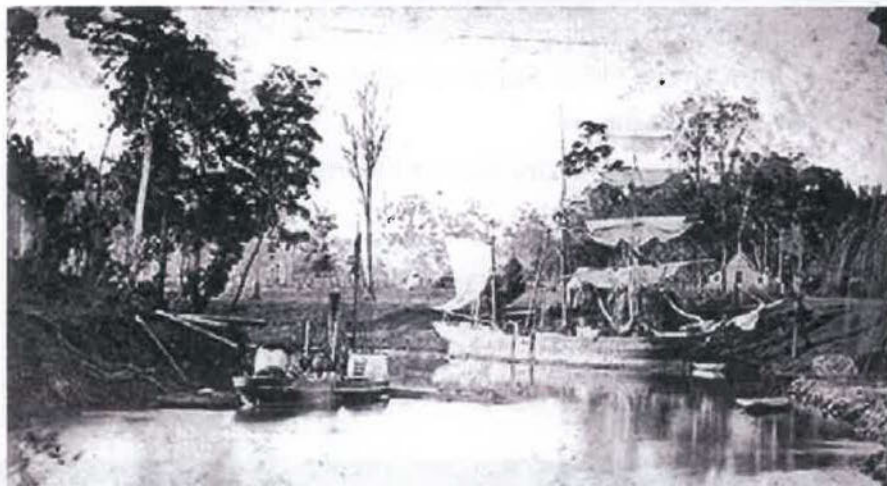


Libraries and Art Gallery

- Richmond Tweed Regional Library is accepting donations of money and books to rebuild its damaged library collections. More information can be found here: <https://rtrl.nsw.gov.au>
- Lismore Regional Gallery also has a fundraising appeal that can be found here: www.givenow.com.au/lrg-recovery-fund

Appendix B:

A short history of flooding in Lismore



Lismore was first settled by red cedar cutters and farmers looking for high quality fertile land. All transport was by boat, using the river system as a major trade route to the sea.

Ships could not travel upstream much further than the junction of Leicester Creek and the Wilsons River. This junction was also suitable for the ships to turn around.

Lismore grew rapidly around the river trade, timber and

agricultural industries, becoming one of the major North Coast towns. In the 1890s the railway linked the river and rail systems, further confirming Lismore's status as a regional centre.

The importance of the river diminished as road transport improved after WWII. By this time Lismore was a major city, established adjacent to the Wilsons River.

While the location of Lismore is ideal as a service and trading centre for produce and freight, floods come very quickly and consequently have a major impact.

During heavy rain, rainfall from the high surrounding hills comes down the steep creeks and rivers meeting at Lismore, then slowing down and spreading across the floodplain before moving out to sea.

In 1954 and 1974 Lismore experienced very severe flooding, creating major problems for the community.

Following the 1974 flood, the government of the day commissioned several studies to consider ways to overcome Lismore's flood problems.

The then government assisted with the purchase of land at Goonellabah to create a new commercial area and new planning schemes to limit growth in floodplain zones. A voluntary purchase scheme aimed at assisting people to move out of the seriously affected flood zones was also introduced. The study concluded by stating that it would be very difficult to construct a levee system for Lismore.

Following the 1989 flood the concept of a levee to protect the CBD was again investigated. After examining the hydraulic effects of more than 20 possible levee schemes, it became clear that it was both practical and financially feasible to construct a limited levee system around South and Central Lismore.

In 1999 a government-funded scheme to protect the CBD and South Lismore from a 1-in-10-year flood event was approved. This proposal would mean that most of the smaller floods would not enter the central area of Lismore and substantially improve the time available for the evacuation of residents and the business community in larger floods.

In March 2017, the Lismore flood levee was overtopped for the first time, causing one of the most damaging floods in living memory in terms of material and community destruction. Following the flood, Lismore City Council launched its Flood Ready project to develop a comprehensive, community-wide action plan for natural disasters. Working with emergency services, local agencies and community groups, the Lismore Flood Ready plan provides a clear framework on how to be prepared and resilient before, during and after a natural disaster.

Appendix C:

The Levee, our pumps and gates

How our pumps work

There is a range of large and small pumps that are activated during a flood event to extract rainwater from within the levee walls and pump it into the Wilsons River.

The largest two pumps are at the Browns Creek Pump Station. They are the original pumps from the 1960s when Browns Creek was first filled in and the carpark built over the tunnel that the creek now runs through. When the CBD levee was constructed, the pumps were refurbished and upgraded to increase their capacity.

Once the river height reaches 5.2m, the Browns Creek gate is closed and the first pump automatically kicks in. If the height reaches 5.4m, the second pump automatically starts. They both operate until the height of the river drops below 5.4m, when pump 2 stops, with pump 1 continuing until the height drops to 4.8m. If the height rises again to 5.2m, the cycle restarts and will do so while ever the gates are closed.



The levels are dictated by the intake levels of the pumps and the depth of water required to operate the pumps without damaging them.

Each pump has a capacity of 3000 litres per second.

The Gasworks Creek gate is closed at 4m and also has two pumps that operate on the same principle at Browns Creek pumps but start at different heights. Pump 1 starts at 6.4m and pump 2 at 7m. Both stop at 5.5m. Each pump has a capacity of 2000L/s

Lower Hollingworth and Upper Hollingworth Gates close at 4m. The one pump at the Lower Hollingworth Gate starts at 4m. This pump is designed to keep water out of South Lismore.

There are six additional smaller pumps in the CBD near the old RSL, Bowling Club/Spinks Park, the Transit Centre, Glasgow Lane, Woodlark Street (near bridge) and an optional one at Three Chain Road (near Coates Hire) if required.

Levee keeps out a rising river

The CBD and South Lismore levees are designed to protect the city from a 1-in-10-year flood.

There have been numerous floods but has only been overtopped once in the March 2017 flood.

The lowest and first overtopping point is at the spillway opposite the old Police Station in Molesworth St. However, even though the design height of the levee is 10.95m at the spillway, the levee may actually overtop when the official Wilsons River Height gauge at the Rowing Club is around 10.2 - 10.6m (with 10.2m being possibly the worst case). This depends on the amount of rain falling in the Leycester and Wilson catchments and the downhill slope of the surface of the flood water.



The slope varies from flood to flood. The variable level at which the river will overtop is due to the overtopping point being located some 500m or so up river from the official gauge site.

The second overtopping point is at Gasworks Creek south of the CBD which has a design level of 11.3m. The third overtopping point is in Spinks Park where the levee wall has a design level of 11.6m.

The inundation is staged and the overtopping points positioned in order to minimise the impacts of fast flowing water on properties and infrastructure as it flows in.

Our second levee is designed to protect South Lismore also from a 1-in-10-year flood. It has two sections which are between the Bruxner Highway and Wilson Street (4.7km) and Riverview Park to Wardell Street (400m).

The South Lismore Levee is designed to overtop at Caniaba Street, North of Three Chain Road at 11.55m, flowing into Hollingworth creek, but can overtop anywhere north from here, depending on flows from Leycester Creek.

Gates

There are 32 gates along the levee that Council staff close at varying stages depending on the river level.

The first three gates at Upper and Lower Hollingworth Creek (South of Kyogle Road and at Riverview park) and Gasworks Creek are closed when the river reaches 4m. All other gates are closed in a specific sequence when the river reaches or is predicted to reach 5, 6 and 7m. The final gates under 11 Molesworth Street are closed at 9m. The temporary pop up deflector walls in Keen Street and Richmond Lane are constructed when it is predicted that the levee will over-top.

Timing of the closure of some gates can vary depending on whether cars are still parked in the Kirklands Riviera, Rowing Club, and the Upper and Lower Hensley carparks behind the levee wall.

If vehicles are not removed from these carparks and the gates need to be closed, they may be towed. Depending on the number of vehicles, this can take a long time. If the gates need to be closed quickly the remaining cars may unfortunately be stranded on the river side of the levee.

Deflector Walls

There are five Deflector Walls within the Brown Creek Floodway.

These are designed to provide some protection to the buildings within the floodway from fast flowing water when the levee overtops through the Browns Creek Floodway.

They are at the Clive Campbell Carpark toilet block, at the driveway to bottle shop behind Mary G's, in Keen Street at Singh's Tyre and Mechanical and Lismore Antiques and in Richmond Lane.





Bice Rd, Leycester



24t excavator clearing landslip over Bice Rd, Leycester



Keerrong Rd: Culvert washout



Dunoon Rd: Culvert washout



Towns Bridge: Temporary crossing after 2nd flood

March 11, 2022 9:53 am
-28.654776, 153.275051
Wallace Road | Wallace Road | 1.36



Wallace Road, The Channon

March 9, 2022 9:55 am
-28.713419, 153.159038
Quilty Road | Quilty Road | 4.9



Quilty Road, Rock Valley



Terania Creek Road



Terania Creek Road



Mountain Top Road, Georgia



Mountain Top Road, Georgia



Coraki Road: Pavement damage caused by haulage of flood waste



Coraki Road: Pavement damage caused by haulage of flood waste



Active landfill site: Cell 2B

Appendix 3 – Review of Lismore’s Land Use Management Strategy

Review of Lismore's Land Use Management Strategy

A Discussion Paper on Growth and Rebuilding in Lismore.

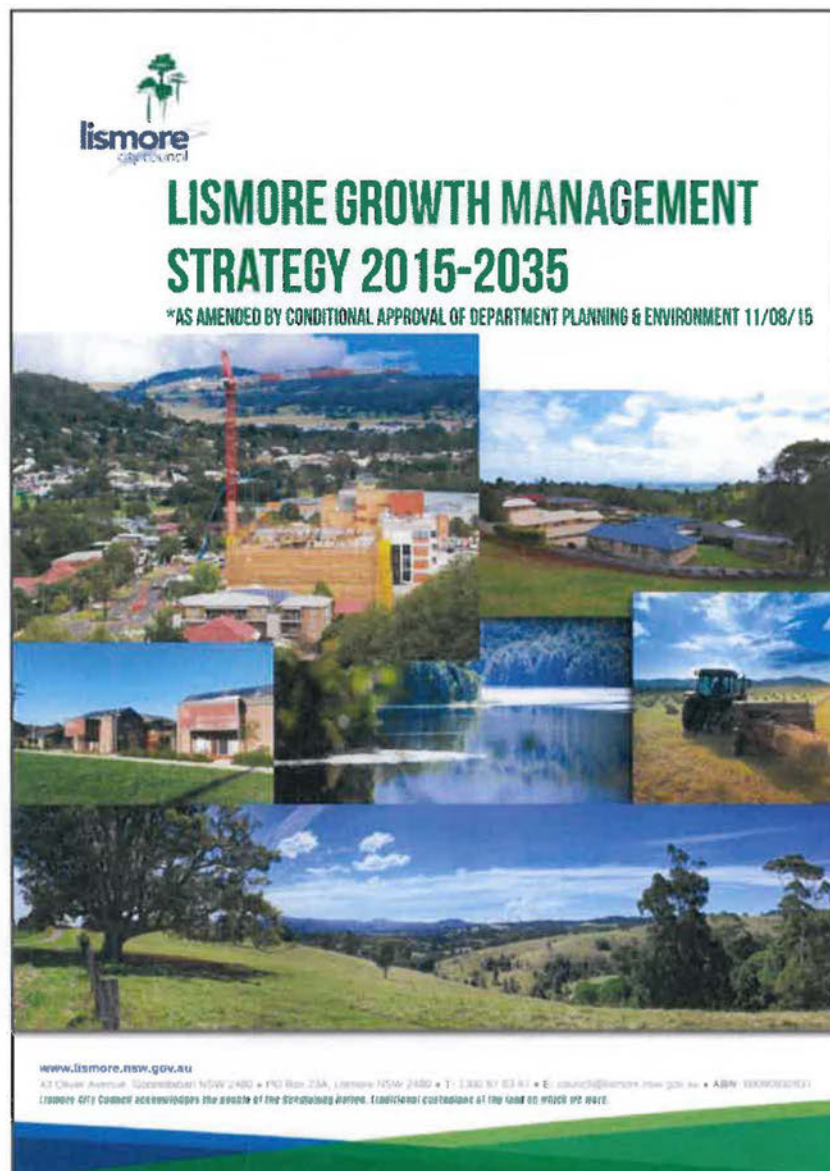


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Abbreviations & Acronyms

AHCS	Affordable Housing Contributions Scheme
AHD	Australian Height Datum
DA	Development Application
DPE	Department of Planning and Environment
EP&A Act	Environmental Planning and Assessment Act 1979
ERP	Estimated Resident Population
GMS	Growth Management Strategy
LEP	Local Environmental Plan
LSPS	Local Strategic Planning Statement
PP	Planning Proposal
RLSC	Rural Land Sharing Community

Executive Summary

The Lismore Growth Management Strategy 2015-2035 (GMS) is a key strategic planning document that identifies land for future residential, commercial and industrial use. It was due to be reviewed in 2022 and incorporated into *Inspire Lismore 2040* which is a relatively new document required under the *Environmental Planning and Assessment Act (EP&A Act)* and adopted by Council in 2020.

The floods that hit Lismore in February and March 2022 caused untold physical, social and emotional damage to communities in the affected areas. Rising temperatures are predicted to significantly increase the likelihood of more frequent and heavier rain events leading to more frequent and severe flooding. This requires a complete re-think about how we plan to rebuild a regional city located at the convergence of two rivers. There can no longer be a 'business as usual' approach to planning for Lismore. Rather, it is time for big ideas about how we can adapt, mitigate and live with the flood risk so that we are not endlessly repeating the same heartbreaking clean-up processes.

The aim of reviewing our land use planning documents now is to set a strategic direction for growth and rebuilding in Lismore and to ensure that in the long-term there is a suitable supply of land available for new and existing businesses and a suitable supply of flood-free residential land. This document also identifies land that is available in the short to medium term.

This discussion paper presents some broad brushstrokes for how Lismore can build back better. It recommends that in the short to medium term (0-10 years) we protect and "de-risk" the CBD through mitigation measures and that we "de-populate" other more vulnerable areas. Ideally this would be through a 'land swap' program for eligible residents in North and South Lismore, whilst house raising and other flood protection measures will be encouraged. This paper also recommends the rezoning of new flood free industrial land at Goonellabah and that preliminary feasibility and design work is undertaken for the creation of a new commercial centre on the golf course land at East Lismore. ***All of this will require significant and ongoing support from both State and Federal Governments.*** At the time of writing the Northern Rivers Reconstruction Corporation had just been announced and Council aims to work collaboratively with this new agency and will also play an advocacy role to other levels and sectors of government as required.

The recommendations at Section 7 also include an expansion of the medium density 'health precinct' around Lismore Base Hospital and a new medium density precinct at East Lismore are also proposed, along with potential height increases on land zoned for mixed use development near the Northern Rivers Football Academy. The introduction of an Affordable Housing Contribution Scheme is also recommended. This is a mechanism in the EP&A Act that allows Council to levy developer contributions from landowners who benefit from an 'upzoning' of their land that is used to provide new affordable housing.

Council is seeking feedback on the recommendations made in this report from landowners, business and industry and the general Lismore community. All feedback received will be considered by strategic planning staff and addressed in a report to Council. Once adopted by Council, maps identifying future growth areas and any related recommendations will be added as an addendum to the *Imagine Lismore 2040* Local Strategic Planning Statement (LSPS).

1. Background

1.1 What is the Growth Management Strategy?

Council adopted the Lismore Growth Management Strategy 2015-2035 in May 2015. The Growth Management Strategy (GMS) identifies land that is potentially suitable for future housing, commercial and industrial purposes to accommodate future population and employment growth until 2035. It is a key strategic document as it ensures development is planned and located in areas that have minimal constraints and can be serviced with necessary and appropriate infrastructure. It does this by defining the community's preferred pattern of settlement and identifying areas that are constrained for development or are resource areas, such as prime agricultural land, and need to be retained for that purpose.

Identification of land in the GMS precedes site or locality specific applications to rezone land, often from a rural zone to a residential or other urban zone, but also from one type of urban zone to another, for example, a general residential zone to a medium density zone.

1.2 Why review the Growth Management Strategy?

A periodic review of the GMS is recommended every 5 years with the aim of monitoring the requirements for new land and ensuring there will be a sufficient supply to satisfy forecast demand. This review timeframe allows for consideration of population change, new land constraints mapping and data and new Council strategies (e.g. the Local Strategic Planning Statement requires consideration of climate change risks in the review of the GMS).

In 2020 Council adopted *Inspire Lismore 2040*, its Local Strategic Planning Statement (LSPS) as required by Section 3.9 of the *EP&A Act*. The LSPS sets out Councils' 20 year vision for land use planning and reflects the community's priorities in regards to economic, social and environmental matters. The LSPS reflects a range of other Council and regional strategies and sets out 14 Planning Priorities that will guide the future growth and character of Lismore.

Upon completion of this review, maps of future growth areas will be incorporated into the LSPS which has superseded the GMS as Council's principal strategic land use planning document. Legislation stipulates the LSPS is reviewed every 7 years.



Figure 1: Local Strategic Planning Statement Themes and Planning Priorities.

1.3 Post flood considerations

It has been calculated that 3045 residential, commercial and industrial buildings were directly affected by above floor inundation when the catastrophic flood event hit the region on February 28, 2022. It caused untold physical, social and emotional damage to communities in the affected areas. Lives were lost, hundreds of millions of dollars of critical infrastructure was damaged, thousands of people were made homeless and thousands of businesses were impacted. There has also been a litany of environmental disasters from landslips to polluted waterways and downstream fish kills, to the 70,000 tonnes of waste sent to landfill. Then on March 30 another major flood hit the town, compounding and exacerbating these impacts on an already traumatised city.

Lismore was built on the convergence of two rivers in the mid-19th Century as a way of transporting the high value timber that was at the heart of its early settlement and development. As a consequence, the town centre and adjoining residential areas are susceptible to regular flooding as shown in the graph below. The February 28 flood peaked at 14.4m AHD, well above previous flood peaks of 12.27m (1954) and 12.15m (1974). The March 30 flood peaked at 11.4m AHD. The Probable Maximum Flood (PMF) for Lismore has been modelled at 16 -16.5m AHD. As the atmosphere warms it holds more moisture which will significantly increase the likelihood of more frequent and heavier rain events leading to more frequent and severe flooding.

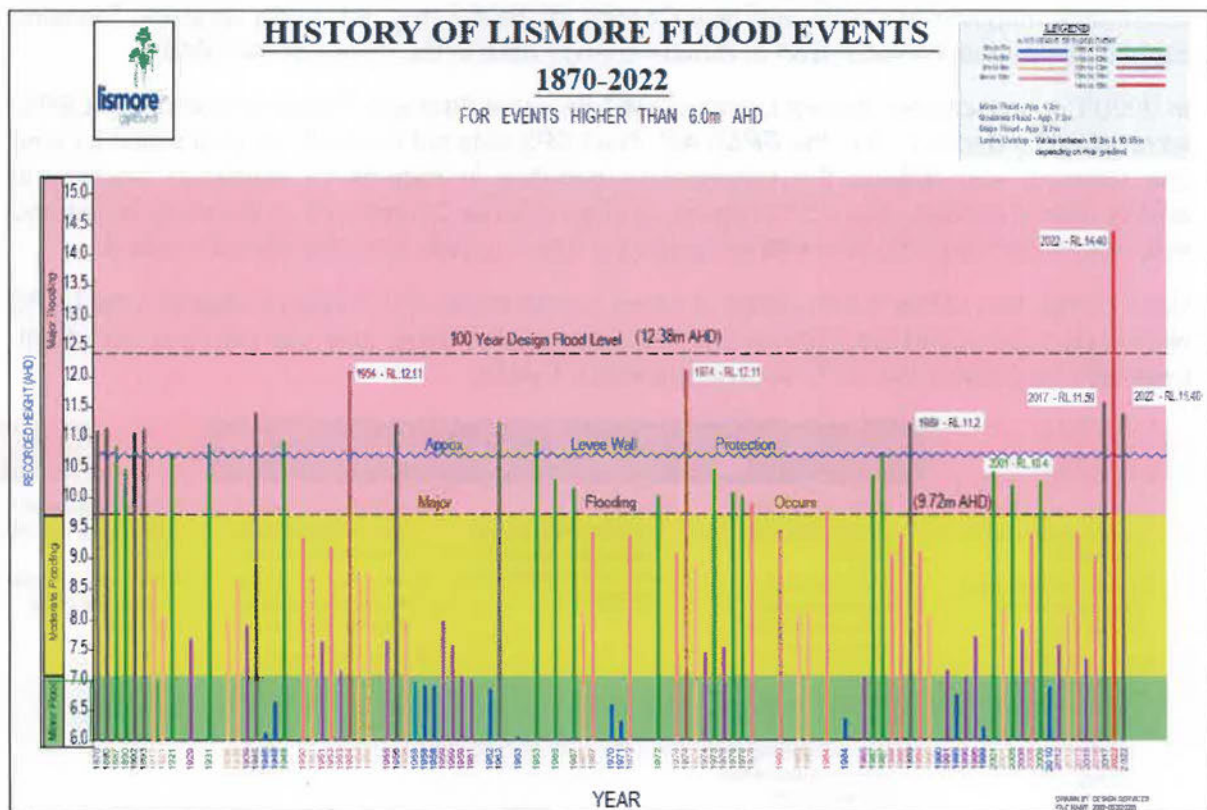


Figure 2: Lismore Flood Heights through the years

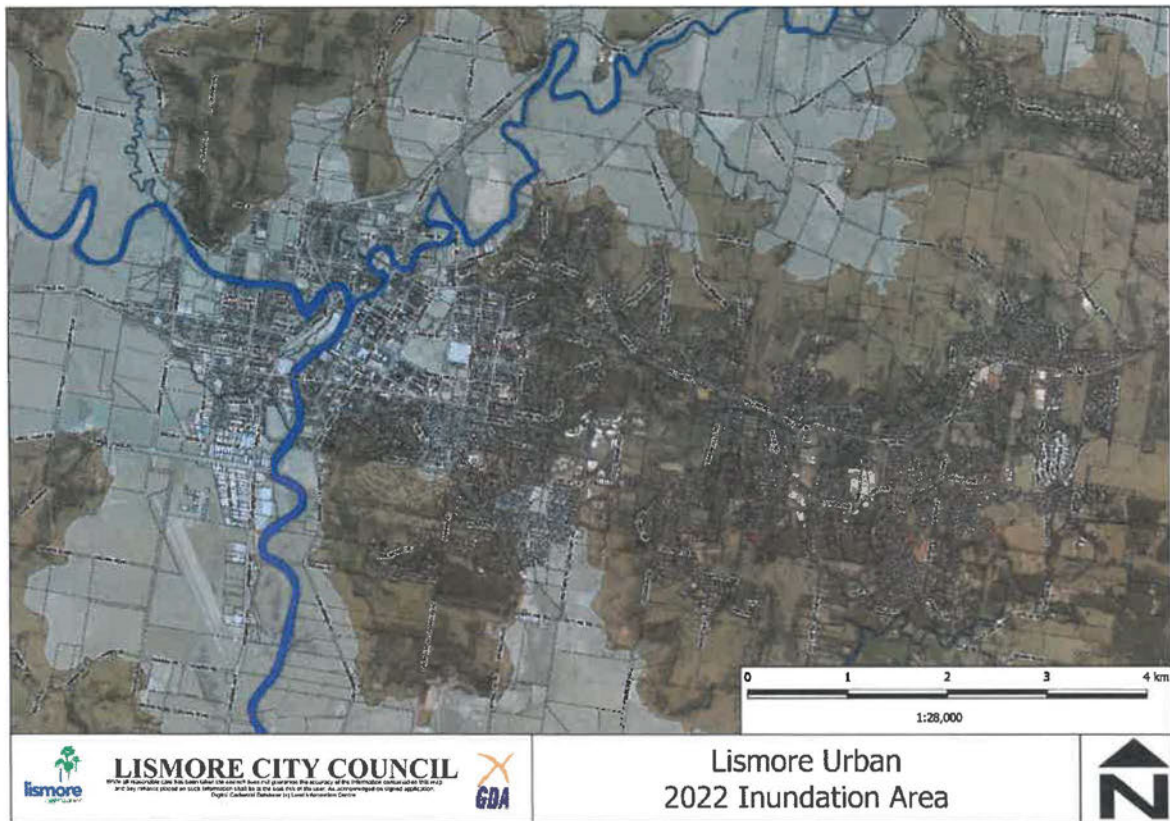


Figure 3: Lismore Urban Inundation Area, February 28, 2022

An earlier version of this discussion paper was scheduled to go out for community consultation in early March. But Lismore is not the same place as it was prior to the February and March floods. There can no longer be a 'business as usual' approach to our planning. It is time for big ideas and to rethink how we can adapt, mitigate and live with the flood risk so that we are not endlessly repeating the same heartbreaking clean-up processes.

As a regional city with an urban population of 27,650 Lismore plays an important role in the Northern Rivers region. It is a centre for jobs and high-level services, particularly in the health and education sectors, as well as providing regionally significant sporting and cultural facilities. This discussion paper proposes a series of long-term planning strategies that will underpin the growth and rebuilding of Lismore into a regional growth centre - the beating heart of the Northern Rivers. All of the recommendations in this discussion paper will require significant and ongoing support from both State and Federal Governments. Lismore must grow and change because the alternative is that it may die, and it is too big to fail.

1.4 Purpose of this Discussion Paper

The aim of reviewing our land use planning documents now is to set a strategic direction for growth and rebuilding in Lismore and to ensure that in the long-term there is a suitable supply of land available for new and existing businesses and a suitable supply of new flood-free residential land.

This discussion paper presents some broad brushstrokes for how Lismore can build back better. It recommends that in the short to medium term (0-20 years) we protect and "de-risk" our most valuable asset, the CBD, through mitigation measures, and that we "de-populate" other more vulnerable areas. New residential land release areas and higher density

developments in existing residential areas unconstrained by flooding will need to be accelerated, as well as ensuring there are provisions for the delivery of affordable housing. New areas of flood-free industrial and commercial land are also required. In the longer term (20+ years) the building of a new flood-free commercial centre should be undertaken, with planning to commence in the short term.

This paper also provides information on what has occurred since the GMS was adopted in 2015 including the amount of land that has been rezoned and the lot yield realised in any subsequent DA approvals. It also provides the most recent (pre-flood) population and demographic projections and addresses infrastructure delivery and constraints.

This discussion paper seeks feedback from landowners, business and industry and the general Lismore community with regards to the conclusions and recommendations presented. All feedback received will be considered and addressed in a report to Council. Once adopted by Council, maps identifying future growth areas and any related recommendations will be added as an addendum to the *Imagine Lismore 2040* LSPS.

2. Flood Response Strategies

2.1 Depopulate North and South Lismore

After the February 28 flood, the damage impact assessment carried out by the SES identified the following information for residential dwellings in North and South Lismore:

North Lismore –Total Residential = 222	South Lismore – Total Residential = 675
Destroyed = 18	Destroyed = 9
Severe Impact = 176	Severe Impact = 223
Major Impact = 26	Major Impact = 369
Minor Impact = 2	Minor Impact = 74

Flood mitigation measures such as raising of the levee wall to provide greater protection to the CBD and land to the east of the Wilsons River would also lead to significant adverse impacts upon North and South Lismore. Even without further works to the CBD levee, there are areas of North and South Lismore that will continue to be impacted by future flood events and are not suitable for ongoing habitation. These areas should be subject to a managed retreat over time.

A detailed cost / benefit analysis would provide a better understanding of the ongoing cost of continually rebuilding versus a planned retreat from the most flood impacted areas. This is a body of work that Lismore Council will endeavour to undertake to support our advocacy efforts to State and Federal Governments for a voluntary buy out and land swap scheme similar to that undertaken in Grantham (Queensland) after the 2011 floods. The concept of a land swap rather than just a buy out is important to keep people in the area, close to their social networks and jobs.

Lismore's current Floodplain Risk Management Plan (2014) includes provision for voluntary house purchases in areas mapped as being within the 'floodway' and 'high flood risk' categories. A total of 209 properties containing residential dwellings were identified. However, due to lack of funding for this program, only a handful of properties were purchased. It is proposed that new criteria are developed and suitable areas for relocation are identified to support the staged relocation of residents from the most flood-prone areas to higher ground. In some circumstances landowners may be able to relocate existing dwellings. Where landowners elect not to relocate, voluntary house raising and other flood adaptation work will be encouraged.

The long-term use of residential land that is purchased and a strategy for commercial and industrial land uses in these areas must be the subject of future strategic planning work by Lismore City Council. But in general terms the land should be utilised for open space, recreation and revegetation. This would then allow for the re-purposing of existing open space and parklands in areas outside of flood or where additional protection is provided through flood mitigation measures.

2.2 Protect the CBD

The Lismore CBD is the social, cultural and commercial heart of the town. The Insurance Council of Australia has indicated that it is uninsurable unless mitigation measures are undertaken to reduce the risk of frequent flood inundation. Business owners need some certainty that they can be protected, up to a certain point, from future flood events. Council will also advocate for a Federal Government reinsurance guarantee similar to that announced for North Queensland in May.

Details of future flood mitigation measures will be determined in a new Floodplain Risk Management Plan and the CSIRO flood mitigation study for the Richmond and Wilsons catchments. But in general terms, the principal that we protect the CBD and land on the eastern side of the Wilsons River is a key strategic planning objective that should be identified and imbedded in all of Council's planning documents.

Once future flood mitigation measures are determined and delivered, there may be opportunities for future residential and commercial developments to be undertaken where the floor level is above the 1:500 AEP or PMF flood level. Further investigation into sewage capacity constraints will also be required to support any future development in this area.

2.3 New flood-free industrial land

Even prior to the February and March floods, feedback from industry was that although Lismore has large areas of undeveloped industrial land, the size of lots, the location and/or flood considerations meant there was a shortage of suitable land for mid-sized businesses looking to establish or grow.

The \$14 million Lismore Employment Lands project that includes construction of the Oliver Avenue link to the Bruxner Highway and associated upgrades is under way and designed to facilitate an expansion of the Goonellabah Industrial Precinct. Further investigation into the rezoning of land for industrial use in this precinct (approximately 60ha - subject to site constraints and servicing) is recommended as shown in Figure 4. It is noted that this land is identified as State Significant Farmland and will likely require the support of the NSW Department of Primary Industries. Future realignment of the Bruxner Highway in this vicinity may also be required to support additional truck movements.

Lismore City Council will consider submissions for other areas to be considered for future employment lands where it can be demonstrated there is appropriate infrastructure servicing available; the land is not otherwise constrained and the location is consistent with the Planning Priorities in the LSPS and the GMS Growth Principles in **Appendix 2** of this discussion paper.

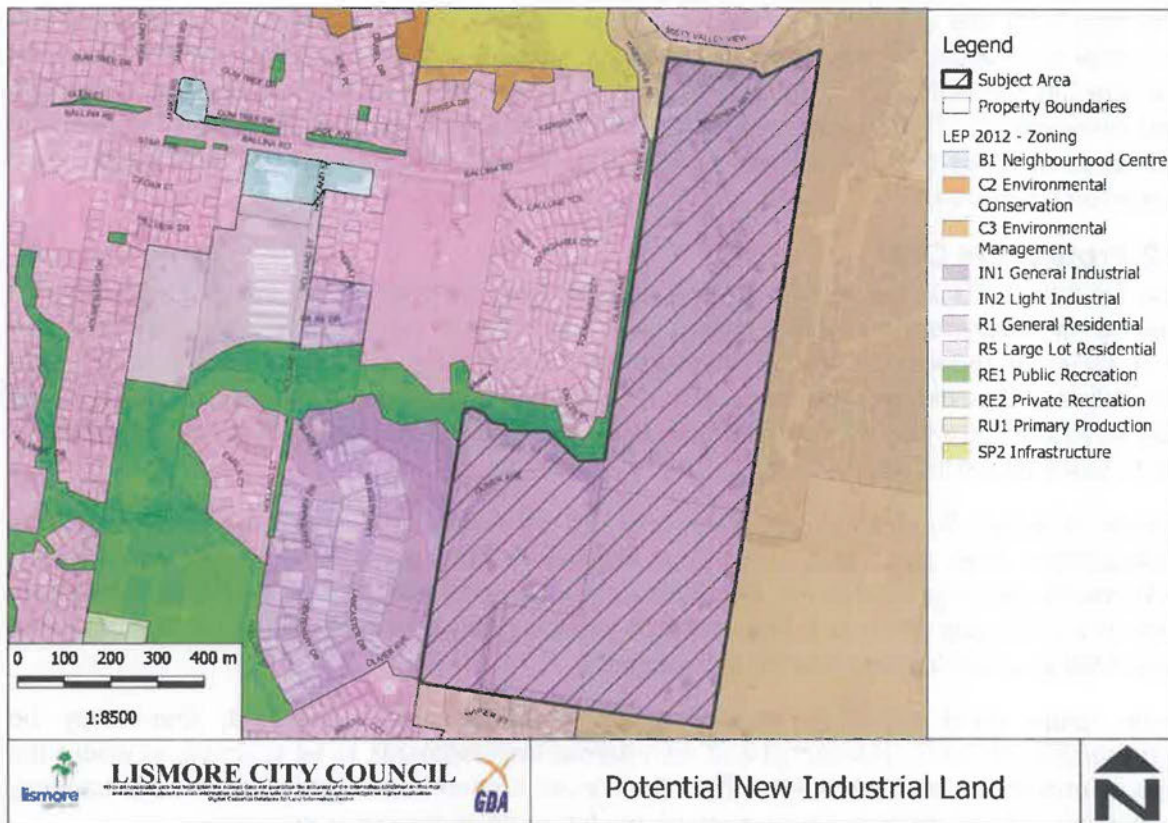


Figure 4: Potential new industrial land at Goonellabah

2.4 New Commercial Centre

In the short to medium term (0-20 years) protection and adaptation of the existing CBD will be supported and encouraged. But if Lismore is to grow and function as a truly regional city for the Northern Rivers then the long-term development of an alternative, flood-free another commercial centre is recommended. Figure 3 shows the inundation of the Lismore urban area in the February 28 flood.

This discussion paper recommends that preliminary feasibility, design and planning work is undertaken to determine whether the site of the Lismore Golf Course could be utilised as a future mixed-use commercial and residential hub. The site is outside of the flood impact area and strategically located close to existing residential and commercial land uses, as well as St Vincent's private hospital and Southern Cross University.

This initiative will take years of careful planning and design to come up with a masterplan for the site, but the recommendation acknowledges that Lismore will continue to experience flooding and that no amount of mitigation measures will ever keep extreme events out and that we must plan to adapt for future generations.

It is envisaged that a new golf course could be created on residential land that is recommended for a planned retreat and conversion to open space in North and South Lismore.



Figure 5: Location of the Lismore Golf Course

3. What level of growth are we planning for?

3.1 Population growth and projections

Based on data at the time, the GMS forecast a population increase for the Lismore LGA from 44,350 (2011) to 50,200 (2031) and that an additional 3,600 dwellings would be required to house the increase in residents. These projections anticipated an annual growth of 0.7% to 2021 and then a slightly lower level of growth to 2031. Since 2011 Lismore's population has experienced a slight decline, with the Estimated Resident Population (ERP) in 2016 being 44,122 and in 2020 it was 43,667.

The North Coast Regional Plan prepared by DPE set a minimum target of 3350 new dwellings for Lismore for the period 2016-2036. For the period 2015-2021, a total of 796 new residential development DAs were approved, including 10 'multi-dwelling housing' developments and two 'residential flat buildings'.

Population projections undertaken in 2021 by .id (Informed Decisions) found that Lismore's ERP was 44,926 and projected to increase to 47,616 by 2031 and to 51,023 by 2041. This is a net increase of 13.6% over 20 years with an additional 3,105 dwellings anticipated to be required in that time.

However, all of these projections were based upon a set of pre-flood assumptions. The impact of the floods on anticipated inward and outward migration of residents is simply unknown at this time.

It is assumed that there will continue to be a high level of demand for residential dwellings outside of the flood impact areas and that this will be exacerbated by any program to relocate

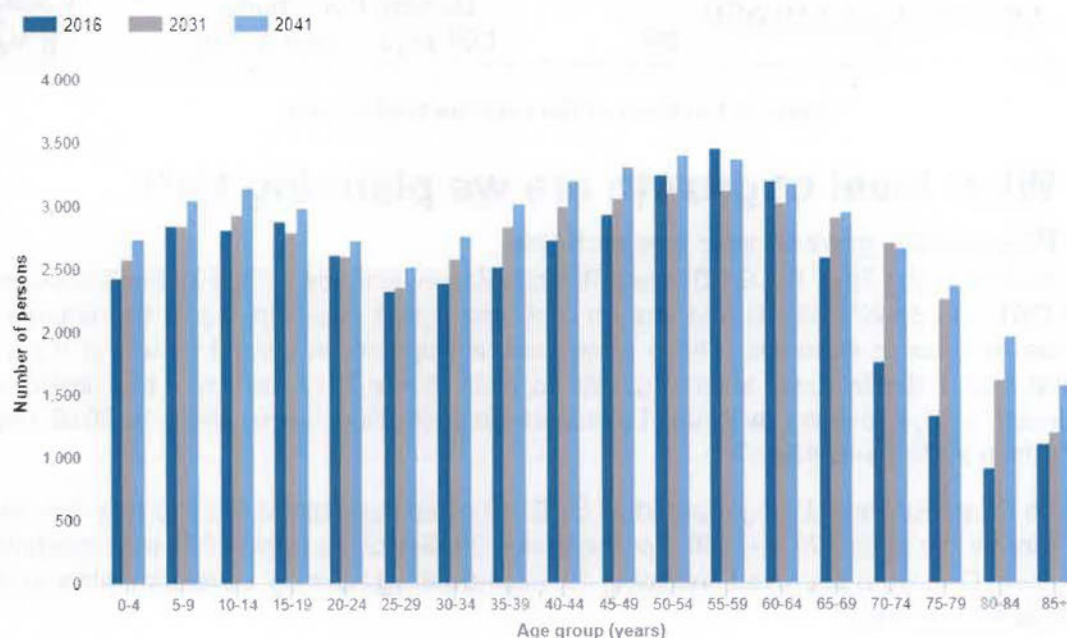
residents out of North and South Lismore. Council's aim is that there is sufficient residential, commercial and industrial land zoned and able to be serviced for a high growth scenario.

Residential growth is closely aligned to jobs growth so Lismore's population growth (or decline) will be closely linked to post-flood business and economic development. A new strategy for economic recovery and growth will be required and a separate body of work is to be undertaken by Lismore City Council.

The demographic and population projections undertaken in 2021 indicate that the largest increases in age cohorts for Lismore will be in the 70-84 age brackets, with an additional 2,573 people forecast in these age groups by 2031. Lone person households will continue to be the largest type of household and will continue to grow, (from 5,218 in 2016 to 6,022 households by 2031), which would be 30.3% of all households. The average household size will continue to decline over time. This will require changes to the types of housing that is currently built which is overwhelmingly dominated by 3-4 bedroom stand alone dwellings. A separate Affordable and Diverse Housing Strategy has been developed to stimulate additional affordable and medium density housing in Lismore's urban area.

Forecast age structure - 5 year age groups

Lismore City - Total persons



Source: Population and household forecasts, 2016 to 2041, prepared by [id](#) (informed decisions), November 2021

Figure 6: Population age structure forecasts

3.2 Urban residential

At the time the GMS was adopted in 2015, there were significant areas of land zoned for residential use that were considered adequate to meet the 20 year dwelling projections provided by the DPE at that time. This included the North Lismore Plateau area which is anticipated to provide at least 1200 new lots.

Of the 3600 dwellings projected to be required in 2015, it was estimated that 2270 of these would be in the urban area. The GMS identified three new greenfield urban release areas known as Pineapple Road, Trinity Drive and Lagoon Grass that were estimated to provide 975 lots / dwellings. In addition, a number of smaller infill and urban fringe development sites were identified. Table 1 at **Appendix 1** provides an overview of what has occurred with all of these sites since the GMS was adopted.

An analysis undertaken by strategic planning staff in early 2022 indicates that Lismore has a significant amount of urban residential land either in the development pipeline or identified for potential future residential subdivision, as shown in the map at Figure 7.

Areas identified in blue are sites that have DA approval and sites in yellow have had DAs lodged for new subdivisions. The estimated yield from these developments is 2444 residential lots which includes 222 Strata Units and 24 units in a multi-dwelling housing development. The areas shown in orange are sites that are either zoned for residential use or identified in the GMS for potential residential rezoning. The estimated lot yield from all of these areas is 1616 residential lots. The timelines for infrastructure delivery is the key constraint to accelerating the delivery of new housing in these areas.

Additionally, there are small pockets of undeveloped residential zoned land not shown on the map at Figure 7 and there is potential for increased density on existing residential lots that are outside of high flood risk areas that will contribute to an increase in the overall housing supply for Lismore.

Submissions for further new urban residential land areas will be considered by Council where it can be demonstrated appropriate infrastructure servicing can be provided; the land is not otherwise constrained and the location is consistent with the Planning Priorities in the LSPS and the GMS Growth Principles provided at **Appendix 2** of this discussion paper.

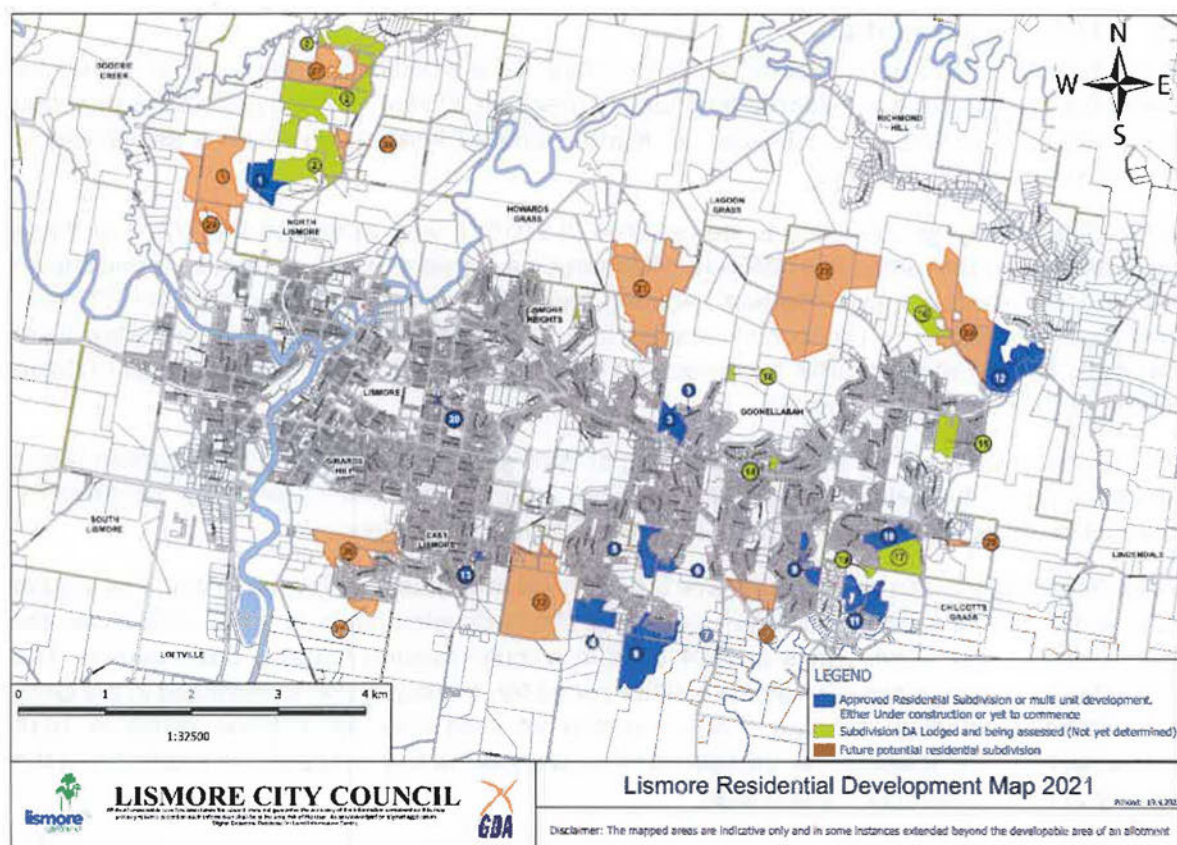


Figure 7: Lismore Residential Development Map

3.2.1 Medium density residential growth

The GMS nominated an area for medium density housing around the Lismore Base Hospital and Lismore Square Shopping Centre. This area is known as the 'Health Precinct' and was intended to signal to the development industry the preferred area for medium density development. An area of 51.4 hectares was rezoned to R3 Medium Density in 2017, allowing for a maximum building height of 16m. However, the market has not responded with an influx of medium density developments, with only one DA approved seeking to take advantage of the increased density provisions. A market analysis was undertaken in 2018 by AEC Group on behalf of the DPE that looked at the feasibility of high-density housing in the North Coast Regional Cities (Tweed Heads, Lismore, Coffs Harbour and Port Macquarie). The AEC report concluded that:

Higher-density development in Lismore is not feasible and is a direct function of existing housing options that are available and the comparatively high construction costs of higher density typologies. Across the Lismore Study Area, detached housing priced from \$250,000 to \$450,000. This effectively places a price ceiling on the potential prices paid for new apartments.

Like many regional areas, Lismore has experienced a significant shift in the demand and price of housing as a result of Covid-19 migration and other factors, with a median sale price of \$560,000 for dwellings in the 12 months to December 2021. Given the change to market conditions and a desire to facilitate higher density residential living in this area, Council is seeking feedback with regards to expanding areas zoned R3 Medium Density. The proposed expansion areas are on the eastern side of Lismore Base Hospital as shown in Figure 8 and an area of East Lismore adjacent to St Vincent's Hospital and the golf course as shown in Figure 9. It is proposed these area and would be rezoned from R1 (General Residential) to R3 (Medium Density Residential).

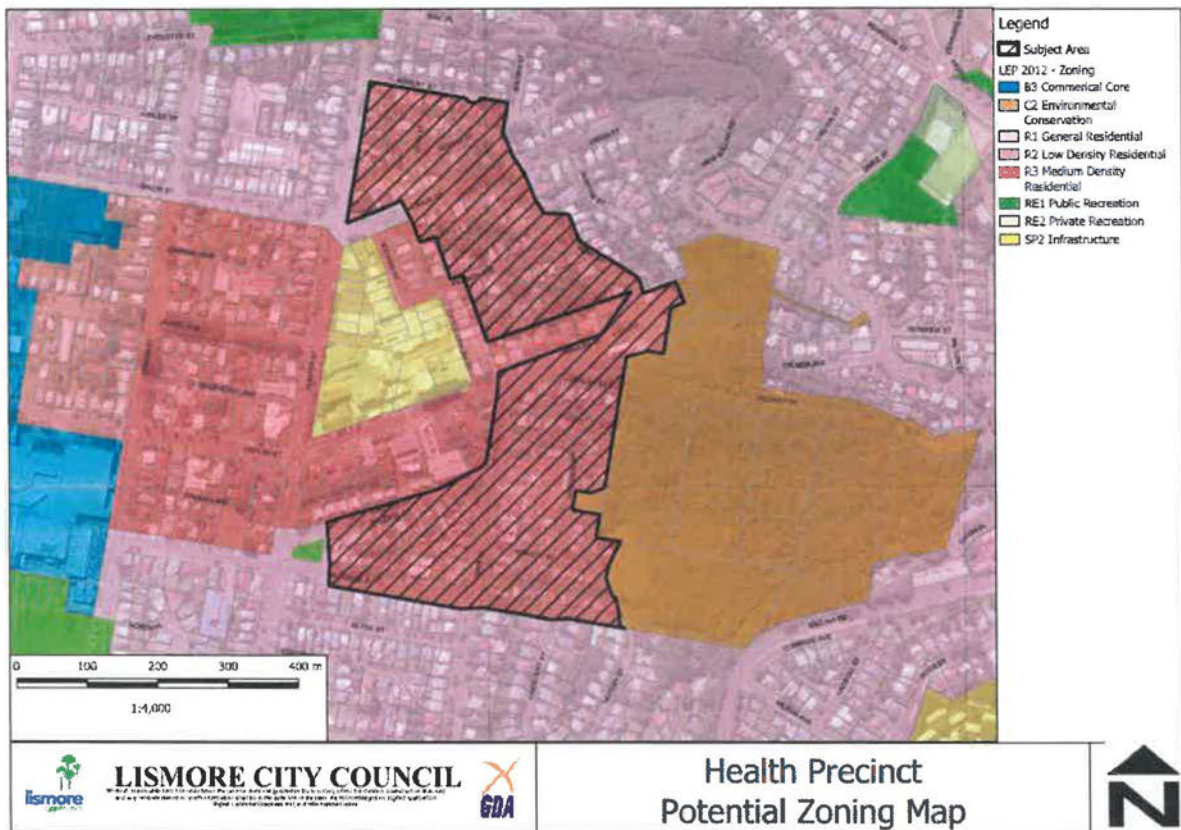


Figure 8: Potential R3 Medium Density Health Precinct Expansion Area (Hatched)

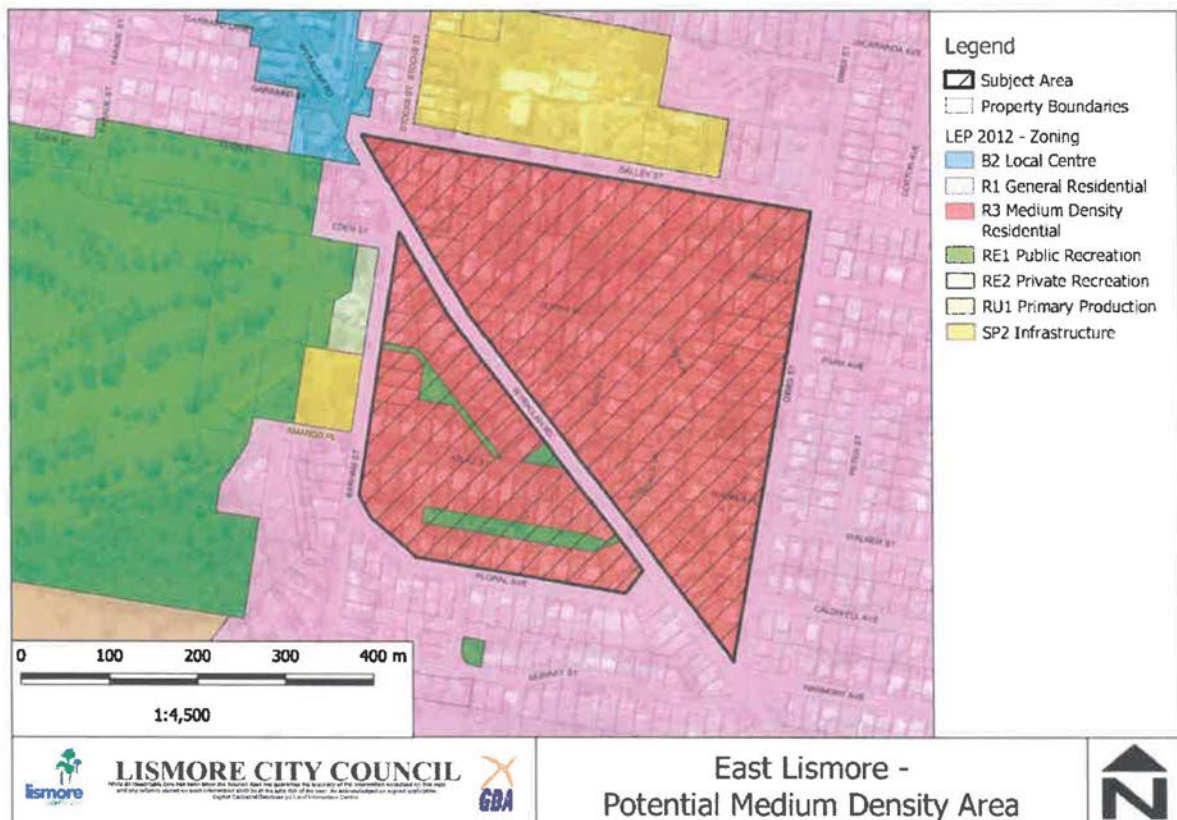


Figure 9: Potential New East Lismore R3 Medium Density Area.

In addition to these areas, Council will consider an increase in the maximum Height of Building (HOB) controls for the mixed use (B4) zoned land along Crawford Road (East Lismore) that leads to the Northern Rivers Football Academy (Figure 10). This land is owned by Southern Cross University, is predominantly flood-free and has been identified as potentially suitable for a range of future commercial and/or residential development options.

As identified at Section 2.4, the land currently occupied by the Lismore Golf Club will be subject to preliminary feasibility and design to work to determine its suitability for a future commercial or mixed used precinct that could accommodate some medium density housing. This land is predominantly Crown Land managed by Lismore City Council.

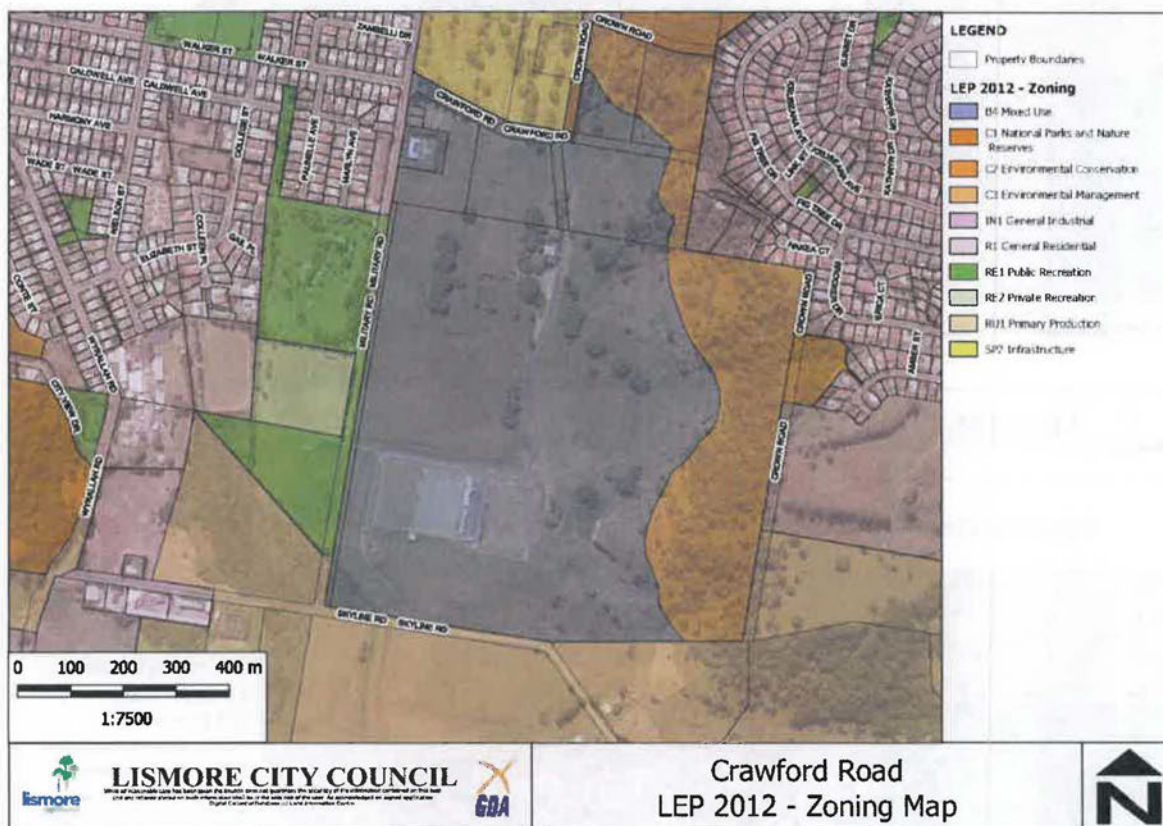


Figure 10: Potential increased height limit for B4 zoned land at Crawford Rd.

3.3 Village & Rural Residential

The GMS recognises that Lismore's villages provide a lifestyle and housing choice for residents and that some limited level of expansion will continue to support our villages whilst maintaining their unique character. Detailed constraints mapping was undertaken to protect important areas of farmland and biodiversity and to exclude land impacted by physical constraints such as flooding and steep slopes etc.

In order to meet contemporary on-site wastewater management requirements, an LEP amendment requiring a minimum lot size of 2500m² for new RU5 village lots where there is no reticulated sewer was introduced in 2014. This has resulted in there being less of a distinction between new 'village' lots and 'large lot residential' lots adjacent to a village.

The GMS included maps identifying areas for future growth adjacent to Lismore's existing villages as well as four areas for rural residential development that were outside of the existing

villages. Tables 2 & 3 at **Appendix 1** outline what has occurred in those areas since the GMS was adopted. In addition to these areas, two planning proposals were received and supported for separate properties on Dunoon Road Tullera to amend the minimum lot size which has resulted in DA approvals for three additional Large Lot Residential lots.

Other future village and large lot residential development in the pipeline includes:

- further stages of the Perradenya estate at Caniaba (15+ lots)
- further stages of the Alternative Way estate in Nimbin (approximately 45 lots)
- Sibley Street and Gungas Road subdivisions in Nimbin (41 lots)
- Dunromin Drive in Modanville (9 lots)

There are also small pockets of undeveloped village and large lot residential zoned land at Clunes, Richmond Hill, McLeans Ridges and Tullera.

The GMS identifies a further 170 hectares (approximately) of land for potential rezoning around the villages. This is excluding the Gungas Rd / Tunttable Falls Rd land that Council resolved to remove after feedback from the Nimbin community in 2021.

Based upon demand for village and large lot residential housing in recent years, there appears to be sufficient land identified to support anticipated growth.

Submissions for further new village and rural residential land release will be considered by Council where it can be demonstrated the land can be adequately serviced; the land is not otherwise constrained and the location is consistent with the Planning Priorities in the LSPS and the GMS Growth Principles provided at **Appendix 2** of this discussion paper.

3.4 Other rural housing

There is a very limited number of “existing holdings” that may be eligible for dwellings and a limited number of rural properties that may be capable of further subdivision. The main source of new dwellings in the rural areas will be from additional dwellings on existing lots (‘dual occupancies’). Since the GMS was adopted, an additional 114 rural dual occupancies have been approved and it is anticipated that this form of housing will continue to be relatively popular for expanded families or as a source of rental income on existing rural lots. A further amendment to the LEP to allow for a third dwelling on rural land will be considered as part of the Affordable and Diverse Housing Strategy.

The GMS and the Lismore LEP also identify areas that are potentially suitable for new Rural Land Sharing Communities (Multiple Occupancies). However, since the GMS was adopted, no DAs for Rural Land Sharing Communities (RLSC) have been approved. This is largely due to financial institutions being unwilling to lend money for this type of land tenure. Contemporary bushfire and other environmental planning requirements have also increased the cost and complexity of this type of development that was a popular and affordable form of rural housing from the 1970s-90s. An amendment to the Lismore LEP in 2018 allowed previously approved RLSC to be approved for subdivision under the *Community Land Development Act 1989*. The clause does allow for additional housing and does not apply to any RLSC approved after the introduction of the clause. To date four RLSC have been converted to Community Title.

3.5 Employment land

A commercial and industrial land needs analysis was undertaken by Hill PDA in 2013 that examined the existing and proposed supply of employment lands in the Lismore LGA and the

extent to which additional land should be zoned for such purposes for the period up to 2036. A total of 516 hectares of zoned business and industrial land was identified as shown in Figure 11 below and identified in blue in the map at Figure 12.

Precinct	Area (hectares)							
	B1	B2	B3	B4	B6	IN1	IN2	Total
Central (CBD) Lismore			79.6	9.1			8.9	97.6
Goonellabah	6.0	13.5				22.7	11.1	53.3
East Lismore		5.1		58.7			14.1	77.9
North Lismore	9.4					20.8	10.6	40.8
South Lismore	5.8				60.4	124.2	15.7	206.1
Monaltrie						20.1		20.1
Tuncester						20.3		20.3
Total	21.2	18.6	79.6	67.8	60.4	208.1	60.4	516.1

Source: LCC GIS data. Note to zone names: B1 Neighbourhood Centre, B2 Local Centre, B3 Commercial Core, B4 Mixed Use, B6 Enterprise, IN1 General Industrial, IN2 Light Industrial

Figure 11: Employment land and localities

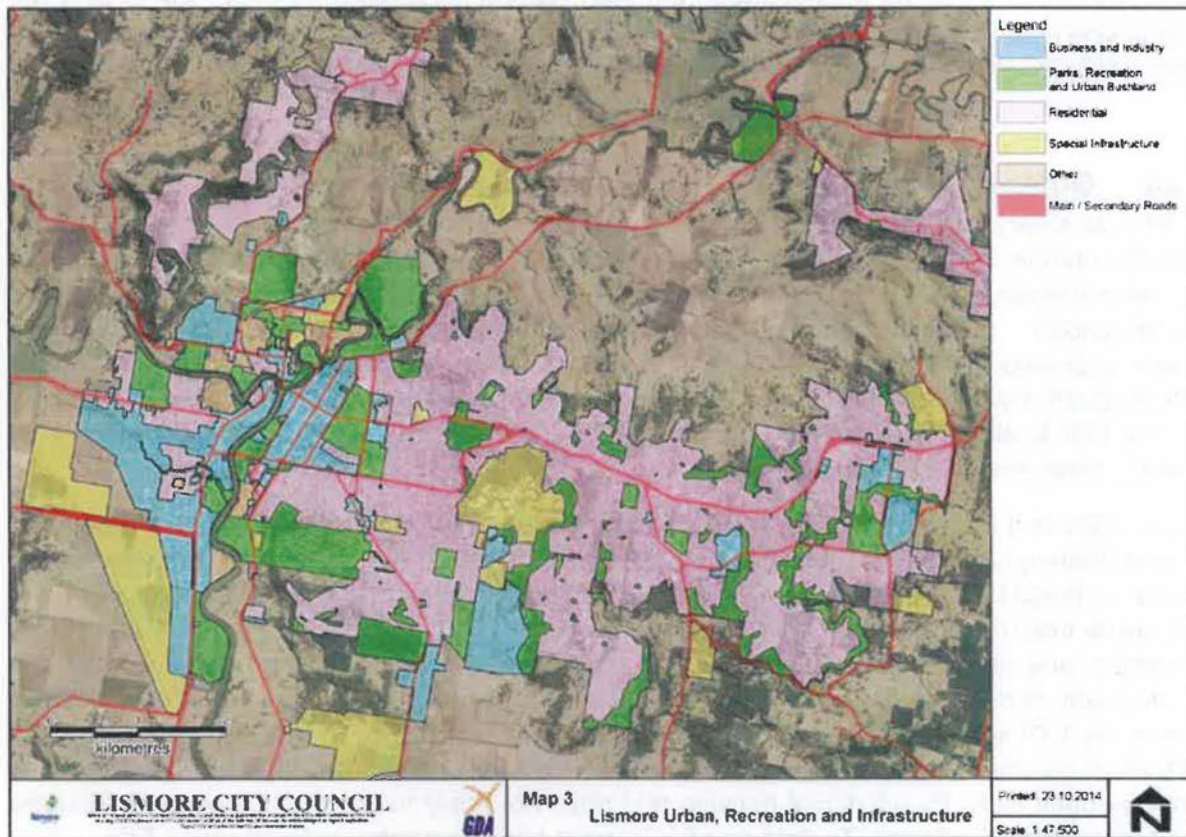


Figure 12: Employment land areas (shown in blue).

There was 116 hectares of vacant employment land identified at that time. Utilising a high-growth forecast scenario, the Hill PDA report concluded Lismore has sufficient quantities of zoned industrial and commercial land to meet future demand.

Since the GMS was adopted in 2015 there have been 75 approvals on land zoned IN1 (General Industrial), 22 approvals on land zoned IN2 (Light Industrial) and 18 approvals on land zoned B6 (Enterprise Corridor). Council's data doesn't differentiate between large DAs such as new buildings or subdivisions from small DAs such as a change of use of an existing building or minor works such as alterations and additions, fences and retaining walls etc. Therefore the amount of 'new' industrial development is difficult to quantify.

Feedback from industry indicates that Lismore has large areas of undeveloped industrial land, however the size of lots, the location and/or flood considerations means there is a shortage of suitable land for mid-sized businesses looking to establish or grow.

Seven recommendations were made in the Hill PDA report to ensure the availability of employment lands is responsive to market needs. Some progress has been made in response to these recommendations but a post-flood rethink of commercial and industrial land requirements for Lismore is needed to ensure suitable land is available to support jobs growth.

The map at Section 2.3 (Figure 4) identifies potential new flood-free industrial land at Goonellabah and the commentary at Section 2.4 recommends preliminary feasibility and planning work is undertaken to establish a major new commercial hub on the site of the existing golf course at East Lismore (Figure 5).

Data from the SES damage impact assessments provides the following snapshot of the impact on commercial and industrial buildings in Lismore:

Total Commercial & Industrial = 649

Destroyed = 11

Severe Impact = 241

Major Impact = 264

Minor Impact = 133

Similar to the proposal for a land swap for the most vulnerable residential areas, a cost/benefit analysis should be undertaken to provide a better understanding of the ongoing cost of flooding in industrial areas and the impact of any future mitigation works on the CBD levee, versus a relocation to new industrial land outside of flood.

Submissions for further new commercial and industrial land release will be considered by Council where it can be demonstrated the land can be adequately serviced; the land is not otherwise constrained and the location is consistent with the Planning Priorities in the LSPS and the GMS Growth Principles provided at **Appendix 2** of this discussion paper.

4. Infrastructure Delivery

A key growth principle is that infrastructure provision is aligned with population and household growth. The following table provides an update on infrastructure delivery and constraints since the GMS was adopted in 2015.

Infrastructure	GMS comments	Updated comments
Urban Road Network	Council's Strategic Road Review (2013) is a 20-year strategy that guides the	The roads strategy is to be updated in conjunction with the Section 7.11 Contributions Plan

	provision of new roads to meet the growth of the city.	in 2022 to ensure money collected from development contributions is adequate to meet new road infrastructure demands.
Rural Road Network	Due to competing priorities, Council's allocated maintenance and renewal funding for the rural road network is restricted. It is therefore important to contain rural growth.	Planning Priority 1 in the LSPS states growth is consolidated around Lismore City, the CBD and villages. Rural roads are included in the existing roads strategy which is to be updated in 2022.
Public Transport	Public transport options are limited. The GMS does not provide a public transport strategy but consideration of the suitability of land for new housing has included access to bus routes and proposed new development areas will be located close to existing services.	No change.
Bulk Water Supply	Rous Water's Future Water Strategy guides long term planning for water infrastructure development in the Northern Rivers.	No change.
Reticulated Water and Sewerage	Council's Strategic Business Plan for Water Supply and Wastewater Services (2014) is a 30-year operational and financial plan to ensure long term financial sustainability of water and wastewater services. This plan was developed in conjunction with the GMS. There are also policies in place for the use of private sewage pump stations and pressure sewer systems that cannot be economically serviced by gravity sewer infrastructure.	The Strategic Business Plan for Water Supply and Wastewater Services is periodically reviewed to ensure water and sewer infrastructure delivery is aligned with new land release areas. An Infrastructure Delivery Strategy is currently underway. Water and sewer infrastructure delivery will need to be accelerated to meet anticipated demand for new land releases outside of flood affected areas.
Rural and Village Water supply	Lismore City Council is responsible for the bulk water supply to Nimbin. Rous Water is responsible for bulk supplies to Caniaba, Clunes, Dunoon, The Channon, Modanville, Tullera and North Woodburn with Council responsible for the local network. Bexhill and Wyrallah have bulk water and reticulation supplied by Rous. Rural housing and most rural residential areas are required to supply their own water storage in rainwater tanks.	No change. Infrastructure upgrades to the Nimbin water supply are in the process of being delivered. Capacity limitations will continue to be a constraint on future growth in Nimbin.
Rural and Village Sewerage	All rural areas and villages except Caniaba, Nimbin and North Woodburn are reliant upon on-site sewerage disposal.	No change.

5. Affordable Housing Contributions Scheme

An Affordable Housing Contributions Scheme (AHCS) is a mechanism enabled by the *EP&A Act* that allows Councils to levy developer contributions from landowners who benefit from an 'upzoning' of their land. The contribution may be in the form of land, housing or a monetary contribution made to Council that is to be utilised for the purpose of providing affordable housing by a registered Community Housing Provider.

If land is considered suitable for 'upzoning' and is identified in a housing strategy, Council may then apply to the State Government to amend its LEP to include a clause to levy a contribution that is considered 'viable'. This means the landowner can still achieve a suitable investment return and housing supply will not be negatively impacted.

Lismore City Council is seeking to implement an AHCS for all land that is identified for future residential rezoning or where increased density may be achieved by changes to zoning and height controls.

Land that is identified in the revised LSPS will then be subject to a process of determining a viable affordable housing contribution rate. Different rates may be applied to different areas.

6. Conclusions

Urban Residential

Prior to the floods, there was sufficient land zoned for residential use, or identified for potential residential rezoning within the GMS, to meet anticipated population growth. However Council's desire for a planned retreat away from the most flood affected areas of North and South Lismore will require a similar amount of housing to be established in areas outside of flooding, on top of the forecast growth.

Increased density in existing residential areas outside of high flood risk areas will be encouraged. The expansion of the medium density 'Health Precinct' and a new medium density precinct at East Lismore have the potential to provide increased housing choice and density in strategically important locations. New greenfield areas will be considered where it can be demonstrated that they can be adequately serviced, are not otherwise constrained and are consistent with the Planning Priorities in the LSPS and the GMS Growth Principles provided at **Appendix 2** of this discussion paper.

To ensure new affordable housing is delivered as part of Lismore's growth, all future urban residential growth areas will be identified as part of the proposed Affordable Housing Contributions Scheme and subject to viability testing to determine an appropriate affordable housing contribution rate.

Village and Rural Residential Housing

Prior to the floods, there was sufficient land zoned or identified within the GMS for village and rural residential housing to support anticipated growth. The land identified in the GMS at Gungas Rd / Tuntabla Falls Rd, Nimbin will be removed in accordance with the Council resolution of July 2021.

Additional areas of village or large lot residential land may be considered if it can be demonstrated that it is consistent with the Planning Priorities in the LSPS and the GMS Growth Principles at **Appendix 2** of this discussion paper. All future village and rural residential growth areas will be identified as part of the proposed Affordable Housing Contributions Scheme and subject to viability testing to determine an appropriate affordable housing contribution rate.

Employment Lands

New areas of flood free industrial and commercial land are a priority to ensure that there are jobs to support Lismore's future growth. Investigations into the expansion of the Goonellabah Industrial Precinct along Oliver Avenue as shown in Figure 4 will be undertaken, along with preliminary design and feasibility work to establish whether a new commercial or mixed-use centre could be established in the location of the golf course at East Lismore in the longer term (20+ years).

Lismore City Council will consider submissions for other areas to be considered for future employment lands where it can be demonstrated that they can be adequately serviced; the land is not otherwise constrained and the location is consistent with the Planning Priorities in the LSPS and the GMS Growth Principles at **Appendix 2** of this discussion paper.

7. Recommendations

Recommendation 1: *A planned retreat of residential dwellings from the most high flood risk areas of North and South Lismore is identified as a strategic objective. Lismore City Council will advocate for a State and Federal Government funded land swap arrangement to allow residents to move to higher ground but remain close to existing social networks and jobs. Where landowners elect not to relocate, voluntary house raising and other flood adaptation work will be encouraged.*

Recommendation 2: *Protection of the CBD and land on the eastern side of the Wilsons River is identified as a strategic objective. Details of future flood mitigation measures will be determined in a new Floodplain Risk Management Plan and the CSIRO flood mitigation study for the Richmond and Wilsons catchments. Lismore City Council will advocate for a Federally funded reinsurance guarantee similar to that announced for North Queensland to provide additional certainty to CBD businesses.*

Recommendation 3: *Investigations into the expansion of the Goonellabah Industrial Precinct along Oliver Avenue as shown in **Figure 4** will be undertaken. A new strategy for economic recovery and growth will be undertaken by Lismore City Council, along with a cost / benefit analysis for the relocation of existing industrial land.*

Recommendation 4: *Preliminary design and feasibility work is undertaken to establish whether a new commercial or mixed-use centre could be established in the location of the golf course at East Lismore in the longer term (20+-years).*

Recommendation 5: *New areas are zoned R3 for medium density residential use as shown in **Figures 8 & 9**, along with consideration for increased height limits for existing mixed use (B4) zoned land on Crawford Rd adjacent to the Northern Rivers Football Academy (**Figure 10**).*

Recommendation 6: *To ensure affordable housing is included as part of Lismore's growth, all land identified for future residential rezoning, (including village and large lot residential zoning) or a change in LEP controls to allow for greater density, will be included in Lismore's Affordable Housing Contribution Scheme and subject to a process of determining a viable rate.*

Recommendation 7: *In recognition that the delivery of water and sewer infrastructure is the key constraint to accelerating the delivery of new housing, Lismore City Council will undertake a review of the Infrastructure Delivery program to identify measures to fast-track infrastructure to new land releases outside of flood affected areas.*

8. Providing Feedback & Next Steps

Thankyou for taking an interest in the future growth and development of Lismore. You can provide feedback via Council's Your Say website.

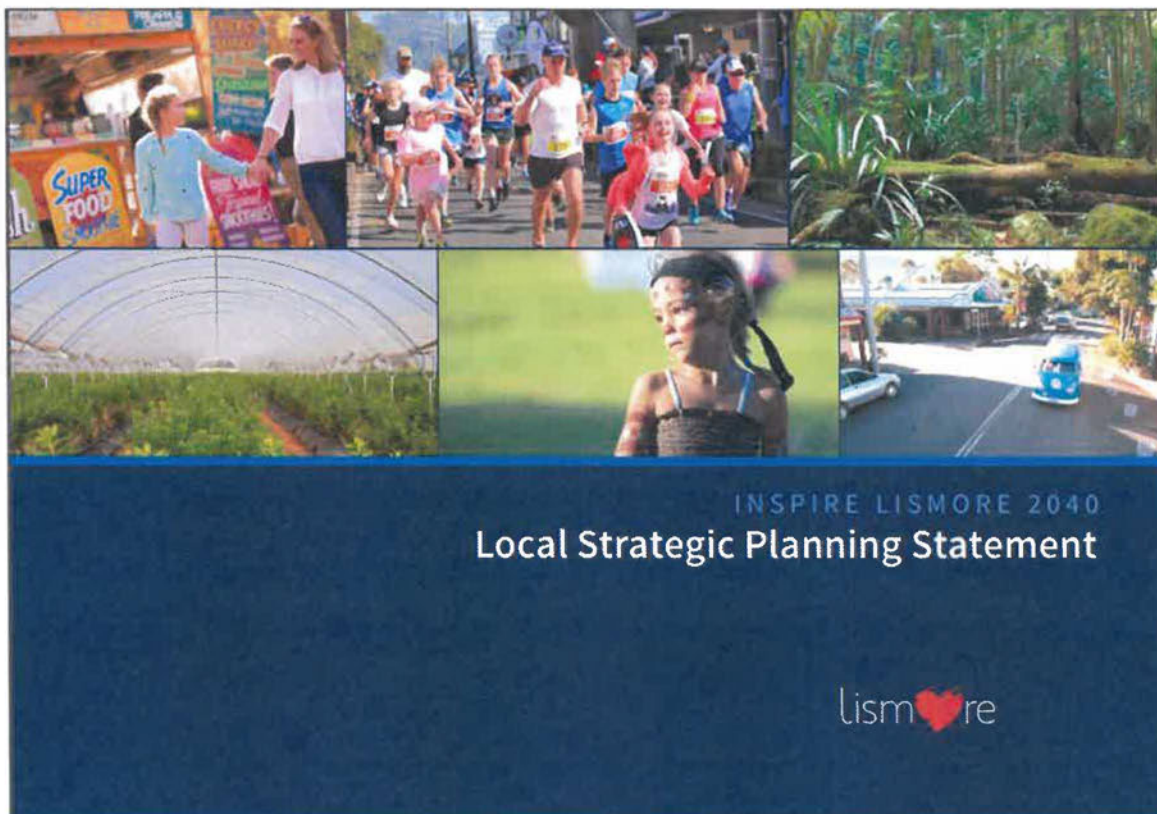
Or you can make a written submission by emailing council@lismore.nsw.gov.au

Or writing to PO Box 23A, Lismore NSW 2480.

Please include the subject 'Land Use Management Strategy Review' if submitting via email or post.

The closing date for submissions will be June 10, 2022.

All submission will be considered by our strategic planning staff and presented at a workshop to the elected councillors. A report will then be prepared with final recommendations to Council for adoption.



Appendix 1- Tables

Table 1: Urban Residential Growth Areas identified in the GMS (2015)

Site	Estimated Lot Yield in GMS	Status	Comment
Pineapple Road	380 lots and a site for an estimated 140 seniors living dwellings	This land was rezoned in 2015.	Initial DA approved for 82 lots. First stage complete. DA for next stage lodged - 60 lots. Another 280 lots & 140 units yet to be realised. Servicing of development dependent on upgrade of Council's sewerage system. Future upgrade of Council's water supply may be required.
Trinity Drive	280 lots	No Planning Proposal for rezoning has been received by Council.	
Lagoon Grass	175 lots	No Planning Proposal for rezoning has been received by Council.	
East Lismore	150-200 lots	Planning Proposal (PP) for rezoning part of this area is in progress.	The PP for the area extending from Felicity Drive is being progressed, however is significantly reduced from the area identified in the GMS and is likely to yield approximately 30 lots. No PP has been received for the area identified directly south of the golf course.
Waterford Park Extension	30 Lots	This land was rezoned in 2015.	A DA for 117 residential lots (incorporating other land within Waterford Park estate) was being assessed at the time this paper was prepared.
123 Taylor Rd Chilcotts Grass	None provided	The land has been rezoned.	A DA for approximately 6 residential lots was being assessed at the time this paper was prepared.
1A Northcott Drive, Goonellabah	None provided	The land has been rezoned.	A DA for 20 residential lots was being assessed at the time this paper was prepared.
209 Bangalow Rd, Howards Grass	None provided	The land has been rezoned.	DA approval for two new lots issued.
2 Opal Crescent, Lismore Heights	None provided	No Planning Proposal for rezoning has been received by Council.	The site is constrained by access to water and sewer infrastructure and only limited lot yield would be possible.
Rous Rd Goonellabah	35 lots	No Planning Proposal for rezoning has been received by Council.	
Blue Hills Ave, Goonellabah	None provided	The land has been rezoned.	No DA lodged. The site is likely to yield approximately 4 large lot residential lots.

Table 2: Village Growth Areas Identified in the GMS (2015)

Village	Description of Area(s) identified in GMS	Status	Comment
Bexhill	1. East of Bangalow Rd / Clunes St. 2. South of existing residential lots on Grace Rd. 3. South of Gibson Rd.	1. Land rezoned in 2019. 2 & 3. No Planning Proposal (PP) for rezoning has been received by Council.	1. Initial DA for 11 lots approved. Another DA for 24 lots was being assessed at the time this paper was prepared.
Caniaba	1. North of Caniaba Rd / East of Fredericks Rd. 2. South of Caniaba Rd & Caniaba School.	1. Two separate PPs received and both resulted in land being rezoned. 2. No PP for rezoning has been received by Council.	1. DA approval for 2 new lots for the first site. No DA has been received for second site. It is likely to yield 10-15 rural residential lots.
Clunes	Northern end of the village, accessed from James Gibson Road and Avalon Ave.	One parcel has been rezoned. No PP has been received for the remaining land.	No DA has been received for the rezoned land. It is likely to yield 3 new lots. The GMS provides an estimate of 60-70 lots for the remaining land.
Dunoon	Northern end of the village adjacent to the hall.	This land has been rezoned.	DA approval for 1 new lot.
Nimbin	1. Blue Knob Road 2. Gungas Rd / Tuntabla Falls Rd.	1. This land has been rezoned. 2. No PP for rezoning has been received by Council.	1. DA approval for 33 lots. 2. Council resolved in July 2021 that this area be removed from the GMS as part of this review.
The Channon	Three areas NE, NW and SE of the existing village area were identified.	No PP for rezoning any of this land has been received by Council.	
Wyrallah	1. North of Campbell St & west of Skyline Rd South. 2. South of Breckenridge St.	1. One parcel was rezoned. No PP for rezoning the remaining land has been received by Council. 2. No PP for rezoning has been received by Council.	1. DA approval for one new lot.

Table 3: Large Lot Rural / Residential Growth Areas Identified in the GMS (2015)

Area	Description of land identified in the GMS	Status	Comment
Eltham	Federation Drive.	This land has been rezoned.	DA approval for 2 new lots.
McLeans Ridges	1. Baldock Drive 2. Lincoln Ave.	1. This land has been rezoned. 2. A PP was received but later withdrawn by the landowner.	1. DA approved for 1 new lot.
Monaltrie	Monaltrie Lane / Durham Drive	A PP was received in 2016. Council did not support or reject the PP.	The site is identified as containing core koala habitat.

Richmond Hill	407 Richmond Hill Rd.	This land has been rezoned.	No DA received. It is expected to yield approximately 30 lots, adjacent to Stage 1 of the Pineapple Rd development.
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Appendix 2- Principles for Managing Growth Areas

The principles for managing growth are included in Chapter 4 of the GMS. These principles are presented below and will continue to guide Council in its consideration of potential locations for new development. These principles broadly align with the 14 Planning Priorities in the LSPS.

Growth and Sustainable Development - *Population growth is supported and encouraged to ensure that the services, facilities, social cohesion and diversity that the community values remain viable and sustainable. Sustainable development and growth that supports the existing urban centre, villages and other settlements and makes the provision of services and infrastructure more efficient and viable will be encouraged. This means a greater emphasis will be placed on concentrating new housing in and around existing population centres. Development will not be supported where servicing is not feasible and will place an unreasonable economic burden on future generations. The delivery of infrastructure will be planned to coincide with preferred future growth areas including rural residential and village development.*

Regional Centre - *Emphasise the importance of Lismore as a major regional centre in the Northern Rivers and promote Lismore's commercial, cultural and community infrastructure as an asset to the Northern Rivers.*

Commerce, industry and economy - *Support the expansion of the Lismore Base Hospital and any future expansion of St Vincent's Private Hospital. Confirm and support the retail and commercial hierarchy that promotes the CBD as the commercial, cultural and entertainment heart of Lismore. Goonellabah and Wyrallah commercial centres will not compete with the CBD but will support the economic growth of Lismore and the needs of the local communities they serve. A more than adequate supply of industrial land in suitable locations that respond to market demand will be maintained.*

Housing - *The majority of new housing will be located within or immediately adjacent to the Lismore urban area and villages that offer a range of community and commercial facilities. The provision of a diversity (in location and form) of affordable and suitable housing options will be facilitated and promoted. Opportunities for well-designed medium density and infill housing close to the CBD and the Base and St Vincent Hospitals will be promoted and facilitated.*

Movement - *Council will advocate for better public and/or community transport within and between Lismore urban centre and villages. Future release areas will be located close to the Lismore urban area and villages to help reduce the number of vehicle trips.*

Community - *Facilitate the achievement of the desired identity, character and amenity of Lismore and its communities. Facilitate the provision of affordable health care to the Lismore community. Planning for growth shall occur with the participation of the community, with intelligence and transparency.*

Environment, natural resources, hazard - *Agriculture will be supported by locating future development on the least productive farmland and ensuring that potential land use conflict between agricultural and non-agricultural uses is minimised. The variety and quality of Lismore's significant and distinctive urban*

and rural green spaces that are greatly valued by the community will not be compromised. The character of the rural landscape will be maintained and the visual impact of expansion along ridgelines minimised. Future development will avoid areas of high flood risk, bushfire hazard and steep and unstable land. Development will be located away from ecologically important areas.

In addition the *North Coast Settlement Planning Guidelines 2019* prepared by the Department of Planning, Industry and Environment (DPIE) contains four growth management principals and additional land release criteria that must be applied in the preparation or amendment of any GMS, LSPS or housing strategy.

- Principle 1: Avoid new urban growth areas in coastal areas.
- Principle 2: Consider a regional approach to land supply
- Principle 3: Prioritise increased housing diversity and choice in existing urban growth areas
- Principle 4: Planning for future growth shall reflect different urban contexts

Appendix 4 - Mayor's Submission

2022 NSW Flood Inquiry submission

1. Whilst our local SES did an amazing job during the rescue and recovery stage of the disaster, they are a volunteer organisation with a headquarters in Wollongong. Given the unprecedented scale and size of the emergency, I feel it would have been better to have professional emergency services as the lead agency, ie the Police in this instance. This is a model that can be applied statewide, with Police taking command during an emergency. An organised service with a designated command structure and the authority to task jobs is logical, sensible and responsible.
2. Coordination of disaster evacuations needs work. Again, in my opinion, this should be led by the Police, as trained professionals to coordinate the establishment of emergency accommodation within the crucial first few hours of recognising a need. It is then up to Resilience NSW to take charge. This organisation, although very well-funded and resourced, has not produced one positive outcome throughout this flood crisis. If this organisation is to survive, it needs clear definitions of its role and must action these immediately, not weeks after the event.
3. Through the lead agency (preferably the Police) access to the help of the ADF resources needs to be streamlined. This is a unique, and hopefully isolated situation, and our local ADF battalion were the first on the ground to assist, however more resources were needed in a much timelier manner. This should not mean that the ADF are called "on a whim" and there were factors, such as road blockages which prevented a quicker arrival, but a lead agency should have the authority to call for help without going through the different tiers of government for that help to arrive.
4. Given the statistics around the Northern Rivers, our rainfall, and our propensity to flood, there are a few issues around information gathering and sharing. It is clearly obvious that the rainfall, river and flood monitoring equipment is inadequate. It appears that no level of government, and no organisation within any level of government want to take any form of responsibility for any of the above. If it is the Bureau of Meteorology (BOM) whose task it is to monitor rainfall and river heights, and then send out alerts, is it not its responsibility to ensure the equipment used is adequate and accurate? There are too many organisations arguing, all denying any form of responsibility, and nobody wants to fund the infrastructure that is so desperately needed for early accurate warnings to occur. The same applies to the Lismore levee and pump stations. This serious issue needs to be rectified if we are to move forward.
5. Timely government support is critical in the wake of a natural disaster. The politicians, at every level have done an exceptional job of realising the need and addressing those needs. However, from the time of announcement to the distribution of funds is far too long. Support needs to be streamlined and simplified to make it easier for people to access the help required.

6. Following on from point five, the overwhelming response that has to be considered in any disaster is the humanity factor! People, regardless of position, wealth, or other standing in life are at their most vulnerable when faced with a natural disaster. The wellbeing and basic needs of humans must to be at the forefront of any decision-making process. To be a little Lismore centric, the flood literally washed away peoples lives and livelihoods. The trauma and loss will remain long after infrastructure is repaired. The emotions are very much like losing a loved one. The seven stages of grief come to mind when dealing with what we have lived through.
7. Now for some good news. The clean-up response has been amazing. The immediate actioning of Public Works Advisory to not only coordinate the clean-up, but also pay for the waste removal has eased a possible insurmountable burden from Lismore City Council. It must be remembered that in the aftermath of any natural disaster, councils simply don't have the funds, manpower or resources to carry out these works by themselves. The level of support from the NSW Government in particular has been very reassuring. There is still so much work to do, and I will continue to lobby for my city until all of the works are complete, but it is important to highlight what has worked effectively so far.

Thank you for your time and efforts in helping our community rebuild.

Steve Krieg
Mayor