

Notice of Meeting

Floodplain Management Advisory Committee Meeting

A Floodplain Management Advisory Committee Meeting of
Byron Shire Council will be held as follows:

Venue	Conference Room, Station Street, Mullumbimby
Date	Tuesday, 11 October 2022
Time	2.00pm

Phil Holloway
Director Infrastructure Services

I2022/1403
Distributed 04/10/22



BYRON
SHIRE
COUNCIL

CONFLICT OF INTERESTS

What is a “Conflict of Interests” - A conflict of interests can be of two types:

Pecuniary - an interest that a person has in a matter because of a reasonable likelihood or expectation of appreciable financial gain or loss to the person or another person with whom the person is associated.

Non-pecuniary – a private or personal interest that a Council official has that does not amount to a pecuniary interest as defined in the Code of Conduct for Councillors (eg. A friendship, membership of an association, society or trade union or involvement or interest in an activity and may include an interest of a financial nature).

Remoteness – a person does not have a pecuniary interest in a matter if the interest is so remote or insignificant that it could not reasonably be regarded as likely to influence any decision the person might make in relation to a matter or if the interest is of a kind specified in the Code of Conduct for Councillors.

Who has a Pecuniary Interest? - a person has a pecuniary interest in a matter if the pecuniary interest is the interest of the person, or another person with whom the person is associated (see below).

Relatives, Partners - a person is taken to have a pecuniary interest in a matter if:

- The person’s spouse or de facto partner or a relative of the person has a pecuniary interest in the matter, or
- The person, or a nominee, partners or employer of the person, is a member of a company or other body that has a pecuniary interest in the matter.

N.B. “Relative”, in relation to a person means any of the following:

- (a) the parent, grandparent, brother, sister, uncle, aunt, nephew, niece, lineal descends or adopted child of the person or of the person’s spouse;
- (b) the spouse or de facto partners of the person or of a person referred to in paragraph (a)

No Interest in the Matter - however, a person is not taken to have a pecuniary interest in a matter:

- If the person is unaware of the relevant pecuniary interest of the spouse, de facto partner, relative or company or other body, or
- Just because the person is a member of, or is employed by, the Council.
- Just because the person is a member of, or a delegate of the Council to, a company or other body that has a pecuniary interest in the matter provided that the person has no beneficial interest in any shares of the company or body.

Disclosure and participation in meetings

- A Councillor or a member of a Council Committee who has a pecuniary interest in any matter with which the Council is concerned and who is present at a meeting of the Council or Committee at which the matter is being considered must disclose the nature of the interest to the meeting as soon as practicable.
- The Councillor or member must not be present at, or in sight of, the meeting of the Council or Committee:
 - (a) at any time during which the matter is being considered or discussed by the Council or Committee, or

- (b) at any time during which the Council or Committee is voting on any question in relation to the matter.

No Knowledge - a person does not breach this Clause if the person did not know and could not reasonably be expected to have known that the matter under consideration at the meeting was a matter in which he or she had a pecuniary interest.

Non-pecuniary Interests - Must be disclosed in meetings.

There are a broad range of options available for managing conflicts & the option chosen will depend on an assessment of the circumstances of the matter, the nature of the interest and the significance of the issue being dealt with. Non-pecuniary conflicts of interests must be dealt with in at least one of the following ways:

- It may be appropriate that no action be taken where the potential for conflict is minimal. However, Councillors should consider providing an explanation of why they consider a conflict does not exist.
- Limit involvement if practical (eg. Participate in discussion but not in decision making or vice-versa). Care needs to be taken when exercising this option.
- Remove the source of the conflict (eg. Relinquishing or divesting the personal interest that creates the conflict)
- Have no involvement by absenting yourself from and not taking part in any debate or voting on the issue as of the provisions in the Code of Conduct (particularly if you have a significant non-pecuniary interest)

RECORDING OF VOTING ON PLANNING MATTERS

Clause 375A of the Local Government Act 1993 – Recording of voting on planning matters

- (1) In this section, **planning decision** means a decision made in the exercise of a function of a council under the Environmental Planning and Assessment Act 1979:
- (a) including a decision relating to a development application, an environmental planning instrument, a development control plan or a development contribution plan under that Act, but
- (b) not including the making of an order under that Act.
- (2) The general manager is required to keep a register containing, for each planning decision made at a meeting of the council or a council committee, the names of the councillors who supported the decision and the names of any councillors who opposed (or are taken to have opposed) the decision.
- (3) For the purpose of maintaining the register, a division is required to be called whenever a motion for a planning decision is put at a meeting of the council or a council committee.
- (4) Each decision recorded in the register is to be described in the register or identified in a manner that enables the description to be obtained from another publicly available document, and is to include the information required by the regulations.
- (5) This section extends to a meeting that is closed to the public.

OATH AND AFFIRMATION FOR COUNCILLORS

Councillors are reminded of the oath of office or affirmation of office made at or before their first meeting of the council in accordance with Clause 233A of the Local Government Act 1993. This includes undertaking the duties of the office of councillor in the best interests of the people of Byron Shire and the Byron Shire Council and faithfully and impartially carrying out the functions, powers, authorities and discretions vested under the Act or any other Act to the best of one's ability and judgment.

BYRON SHIRE COUNCIL

BUSINESS OF MEETING

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2. DECLARATIONS OF INTEREST – PECUNIARY AND NON-PECUNIARY

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ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

Report No. 3.1 Adoption of Minutes from Previous Meeting

Directorate: Infrastructure Services

5 **Report Author:** Dominika Tomanek, Executive Assistant Infrastructure Services

File No: I2022/1399

10 **RECOMMENDATION:**

That the minutes of the Floodplain Management Advisory Committee Meeting held on 16 June 2022 be confirmed.

Attachments:

15 1 Minutes 16/06/2022 Floodplain Management Advisory Committee, I2022/697 , page 10 [↓](#) 

Report

The attachment to this report provides the minutes of the Floodplain Management Advisory Committee Meeting of 16 June 2022 .

5 Report to Council

The minutes were reported to Council on

Comments

10 In accordance with the Committee Recommendations, Council resolved the following:

22-348 Resolved that Council adopts the following Committee Recommendation:

Report No. 3.1 Adoption of Minutes from Previous Meeting

Committee Recommendation 3.1.1

That the minutes of the Floodplain Management Advisory Committee Meeting held on 21 April 2022 be confirmed.

22-349 Resolved that Council adopts the following Committee Recommendations:

Report No. 4.1 Byron Shire Council Flood Risk Management Plan-Actions and Accomplishments

Committee Recommendation 4.1.1

That Council notes:

1. The current Byron Shire Council Flood Mitigation Program, Attachment 1 (E2022/52007).
2. The Floodplain Management Advisory Committee will hold a workshop in July to re-prioritise the items in Attachment 1.

22-350 Resolved that Council adopts the following Committee Recommendation:

Report No. 4.2 Byron Bay Drainage Upgrade Project

Committee Recommendation 4.2.1

That Council notes the current progress of the Byron Bay Drainage Strategy and the Floodplain Management Advisory Committee receive a further report with a consultation plan for the project.

22-351 Resolved that Council adopts the following Committee Recommendations:

Report No. 4.3 Capricornia Canal and Marshalls Creek

Committee Recommendation 4.3.1

That Council endorses the Floodplain Management Advisory Committee receiving a further report with a proposed scope that includes recommendations received from the committee.

22-352 Resolved that Council adopts the following Committee Recommendation:

Report No. 4.4 Byron Shire Post 2022 Flood Analysis Update

Committee Recommendation 4.4.1

That Council notes the report and the Floodplain Management Advisory Committee continue to receive progress reports on the Post 2022 Flood Analysis.

22-353 Resolved that Council adopts the following Committee Recommendations:

Report No. 4.5 Voluntary House Raising

Committee Recommendation 4.5.1

That Council supports:

1. The Draft Byron Shire Council Voluntary House Raising Scheme Guidelines Attachment 1 (E2022/29988) being placed on public exhibition as per Council policy;
2. The benefiting landowner being responsible for the one third funding contribution under the NSW Floodplain Management Program Voluntary House Raising funding grant;

BYRON SHIRE COUNCIL

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1

3. That for any approved Voluntary House Raising dwellings, Council's development applications fees be waived in order to minimise the costs related to these essential works
4. The Floodplain Management Advisory Committee receives a further report that details the number of houses across the shire with floor levels below the 100-year flood level that are ineligible for funding under the NSW Floodplain Management Program Voluntary House Raising funding grant and the number of houses with floors between the 100 year flood level and the 500 year flood level.
5. The use of \$59,425.31 remaining funds from an approved State Government grant from 2000/01 financial year to cover all associated development application fees associated with approved voluntary house raising dwellings that are listed as priorities within Council's adopted Flood Risk Management Plans.

Minutes of Meeting

Floodplain Management Advisory Committee Meeting

Venue	Conference Room, Station Street, Mullumbimby
Date	Thursday, 16 June 2022
Time	2.00pm

BYRON SHIRE COUNCIL

FLOODPLAIN MANAGEMENT ADVISORY COMMITTEE MEETING MINUTES 16 JUNE 2022

Minutes of the Floodplain Management Advisory Committee Meeting held on Thursday, 16 June 2022

File No: I2022/697

PRESENT: Cr M Lyon (Mayor), Cr D Dey

Staff: James Flockton (Infrastructure Planning Coordinator)

Scott Moffett (Flood and Drainage Engineer)

Shelley Flower (Minute Taker)

Xavier Thacker (Flood and Drainage Engineer)

Rachel Sinclair (GIS Administrator)

Chloe Dowsett (Coast, Biodiversity and Sustainability Coordinator)

Orla Seccull (Coastal and Estuary Officer)

Invited Members: Ben Fitzgibbon (Dept of Planning and Environment)

Community: Karl Allen, Rebecca Brewin, Matthew Lambourne, Steven Harris

Cr Lyon (Chair) opened the meeting at 2.04pm and acknowledged that the meeting was being held on Bundjalung Country.

APOLOGIES:

Cr C Coorey, Phil Holloway, Martin Rose (Dept of Planning and Environment), Chad Ellis (State Emergency Service).

Committee Recommendation:

That Council accept the above apologies.

(Lyon/Lambourne)

The recommendation was put to the vote and declared carried.

DECLARATIONS OF INTEREST – PECUNIARY AND NON-PECUNIARY

There were no declarations of interest.

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FLOODPLAIN MANAGEMENT ADVISORY COMMITTEE MEETING MINUTES 16 JUNE 2022

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

Report No. 3.1 Adoption of Minutes from Previous Meeting
File No: I2022/586

Committee Recommendation:

That the minutes of the Floodplain Management Advisory Committee Meeting held on 21 April 2022 be confirmed.

(Dey/Lambourne)

The recommendation was put to the vote and declared carried.

BUSINESS ARISING FROM PREVIOUS MINUTES

There was no business arising from previous minutes.

Committee Recommendation:

That the order of business be amended to review Report 4.4 first.

(Lyon/Lambourne)

The recommendation was put to the vote and declared carried.

STAFF REPORTS - INFRASTRUCTURE SERVICES

Report No. 4.4 Byron Shire Post 2022 Flood Analysis Update
File No: I2022/651

Committee Recommendation:

That Council notes the report and the Floodplain Management Advisory Committee continue to receive progress reports on the Post 2022 Flood Analysis.

(Lambourne/Brewin)

The recommendation was put to the vote and declared carried.

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FLOODPLAIN MANAGEMENT ADVISORY COMMITTEE MEETING MINUTES 16 JUNE 2022

Report No. 4.1 **Byron Shire Council Flood Risk Management Plan-Actions and Accomplishments**
File No: I2022/632

Committee Recommendation:

That Council note:

1. **The current Byron Shire Council Flood Mitigation Program, Attachment 1 (E2022/52007).**
2. **The Floodplain Management Advisory Committee will hold a workshop in July to re-prioritise the items in Attachment 1.**

(Lyon/Harris)

The recommendation was put to the vote and declared carried.

Report No. 4.2 **Byron Bay Drainage Upgrade Project**
File No: I2022/633

Committee Recommendation:

That Council notes the current progress of the Byron Bay Drainage Strategy and the Floodplain Management Advisory Committee receive a further report with a consultation plan for the project.

(Lambourne/Harris)

The recommendation was put to the vote and declared carried.

Report No. 4.3 **Capricornia Canal and Marshalls Creek**
File No: I2022/636

Committee Recommendation:

That Council endorse the Floodplain Management Advisory Committee receiving a further report with a proposed scope that includes recommendations received from the committee.

(Lyon/Lambourne)

The recommendation was put to the vote and declared carried.

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FLOODPLAIN MANAGEMENT ADVISORY COMMITTEE MEETING MINUTES 16 JUNE 2022

Report No. 4.5 Voluntary House Raising
File No: I2022/686

Committee Recommendation:

That Council support:

- 1. The Draft Byron Shire Council Voluntary House Raising Scheme Guidelines Attachment 1 (E2022/29988) being placed on public exhibition as per Council policy;**
- 2. The benefiting landowner being responsible for the one third funding contribution under the NSW Floodplain Management Program Voluntary House Raising funding grant**
- 3. That for any approved Voluntary House Raising dwellings, Council's development applications fees be waived in order to minimise the costs related to these essential works**
- 4. The Floodplain Management Advisory Committee receives a further report that details the number of houses across the shire with floor levels below the 100 year flood level that are ineligible for funding under the NSW Floodplain Management Program Voluntary House Raising funding grant and the number of houses with floors between the 100 year flood level and the 500 year flood level.**

(Lyon/Lambourne)

The recommendation was put to the vote and declared carried.

There being no further business the meeting concluded at 4.19pm.

STAFF REPORTS - CORPORATE AND COMMUNITY SERVICES

Report No. 4.1 Report in response to Res 22-461 Outcome of NSW Flood Inquiries

5 **Directorate:** Corporate and Community Services

Report Author: Esmeralda Davis, Director Corporate and Community Services
Shannon Burt, Director Sustainable Environment and Economy
Phillip Holloway, Director Infrastructure Services

File No: I2022/1260

10 **Summary:**

This report was prepared for the Council (Planning) Meeting on 8 September 2022 and is being shared with the Floodplain Committee in accordance with Res 22-46.

15 In March 2022, the NSW Government commissioned an independent expert inquiry into the preparation for, causes of, response to and recovery from the 2022 catastrophic flood event across the state of NSW, resulting in 28 recommendations.

A Parliamentary select committee was established on 23 March 2022 to inquire into and report on response to major flooding across New South Wales in 2022, which subsequently tabled 21 findings and 37 recommendations.

20 This report provides an overview of the inquiries' terms of reference and recommendations, and outlines projects already supported by Council which align with and support the intent of some of the inquiries' recommendations.

25 **RECOMMENDATION:**

That the Committee notes the recommendations of the two NSW Flood Inquiry reports and that staff have commenced work to identify relevant actions to be pursued through Local, State and Federal avenues.

30

Report

This report was prepared for the Council (Planning) Meeting on 8 September 2022 and is being shared with the Floodplain Committee in accordance with Res 22-46.

1. Independent Flood Inquiry

- 5 In March 2022, the NSW Government commissioned an independent expert inquiry into the preparation for, causes of, response to and recovery from the 2022 catastrophic flood event across the state of NSW. The [Full Report](#) has now been published and can be found at Attachment 1 (E2022/81140).

Professor Mary O'Kane AC and Michael Fuller APM were engaged to lead the Inquiry.

- 10 The Inquiry was tasked with examining and reporting on:

- causes of and factors contributing to the frequency, intensity, timing and location of floods
- preparation and planning by agencies and the community for floods in NSW
- 15 • responses to floods, particularly measures to protect life, property and the environment
- the transition from incident response to recovery
- recovery, including housing, clean-up, financial support, community engagement and longer-term community rebuilding.

- 20 The Inquiry was asked to consider and, if warranted, make recommendations on matters, including:

- the safety of emergency services and community first responders
- current and future land use planning and management and building standards in flood prone locations across NSW
- appropriate action to adapt to future flood risks to communities and their surrounds
- 25 • coordination and collaboration between all levels of government.

Inquiry submissions

- 30 The Inquiry welcomed submissions from all flood-affected residents, emergency and support personnel, organisations and the general public. The Inquiry held 144 meetings with community and stakeholders and received 1,494 submissions in total. These included a meeting in Mullumbimby on 6 June 2022 and a comprehensive submission from Byron Shire Council (Attachment 3 E2022/47283).

Recommendations

The Inquiry makes 28 recommendations.

The [Government response](#) supports all 28 recommendations, either in full or in principle:

- Supports 6 recommendations
- 5 • Supports in Principle 22 recommendations

The 28 recommendations are summarised below with government supported recommendations in bold text. Full details are provided in Attachment 1:

1. Improve knowledge resources to support flood management
2. Fund climate and weather research
- 10 3. Establish permanent SEOCON
4. Increase flood rescue capability
5. Reshape 'Resilience NSW' and recovery activities
- 6. Create a Community First Responders Program**
- 15 7. Transfer role of Public Information Functional Area Coordinator (PIFAC) to Department of Customer Service
- 8. Develop NSW disaster app**
- 9. Reduce impact to essential services (telecommunications, electricity, water)**
10. Provide transition initiatives to improve the community's experience during immediate disaster recovery phase
- 20 **11. Establish a high-level Government standing committee, Task Force 'Hawk', that meets, trains and exercises to ensure Government is prepared to respond to any emergency**
12. Implement SES and RFS back-office merger
- 13. Commission studies into compound mental health issues**
- 25 14. Design, implement and deliver an evidence-based, targeted flood education campaign in schools
15. Establish a permanent state-wide agency - NSW Reconstruction Authority (NSWRA)
- 16. Adopt and utilise a Disaster Cost Benefit Framework for investment options in risk mitigation**

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STAFF REPORTS - CORPORATE AND COMMUNITY SERVICES

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17. Enable landholders to access information on previous disasters for affected land in NSW
- 5 18. The Government reinforce its adoption of a risk-based approach to calculating flood planning level (re-determinations for all high-risk catchments should be completed within 3 years)
19. Build disaster adaptation plans for all towns
20. Adopt guiding principles for floodplain management that treat flood plains as assets
21. Simplify the planning system disaster provisions
22. Relocate communities most at risk with good homes and amenities
- 10 23. Consider establishing housing and development funding options
24. Pursue a multi-pronged, decadal strategy for housing, especially social housing
25. Protect permanent residents in caravan parks and manufactured home estates from flood
- 15 26. Roads: ensure appropriate access and egress during and following a flood event, prioritising high risk communities
27. Environment: ensure Indigenous voices are well heard in land use planning and natural resource management
- 20 28. Ensure essential services and floodplain infrastructure is situated as much as possible above flood planning level and/or probable maximum flood level, and infrastructure is adequately maintained.

2. Parliamentary Inquiry - Response to Major Flooding across NSW in 2022

The select committee was established on 23 March 2022 to inquire into and report on response to major flooding across New South Wales in 2022, and in particular:

- 25
- the preparation, coordination and response to the Western Sydney and North Coast floods by the Government
 - the role, composition and resource allocations of Resilience NSW, the NSW State
 - Emergency Service and other relevant Government agencies
- 30
- coordination between the New South Wales Government, New South Wales Government departments and agencies, the Federal Government, Federal Government departments and agencies, local governments, private sector operators and the community, including requests or offers of assistance,

- public communication, systems and strategies,
 - the implementation of recommendations from inquiries into previous natural disasters,
 - the overall effectiveness of the flood response, and
- 5 • any other related matter

Inquiry submissions

10 The committee engaged through an online questionnaire, a series of public forums in flood affected areas and, early engagement with elected representatives living and working in flood affected regions.

15 The committee received 87 submissions, 4 supplementary submissions and 119 responses from individual participants to the online questionnaire. The committee held 6 public hearings, 1 each in Ballina, Lismore, Murwillumbah and Windsor and 2 at Parliament House, Sydney. The committee also held public forums in Ballina, Lismore, Murwillumbah and Windsor, and conducted site visits to a number of flood affected areas.

Recommendations

The committee tabled 21 findings and 37 recommendations which are outlined in the full report at Attachment 2 (E2022/81142) with a summary of the recommendations below.

20 There are 35 recommendations listed for the NSW Government, 1 for NSW State Emergency Service, and 1 for Service NSW:

That the NSW Government:

1. Consider a restructure of the NSW State Emergency Service
- 25 2. Consider abolishing Resilience NSW if it is unable to ensure the organisation's role is clear and its policies are focused on meeting community needs
3. Embed into its emergency plans the appointment of a senior police officer with combat experience to lead recovery efforts following natural disasters
4. Ensure that all emergency and recovery plans, are reviewed and updated regularly and provide clarity on the role of non-government partners
- 30 5. Work with the Commonwealth to develop a national cross-agency app to integrate all community services and agencies into a single platform

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7. Advocate through the National Cabinet for the Bureau of Meteorology to review its rain data infrastructure and flood modelling tools, to ensure forecasting locations, rain and flood gauges and other infrastructure are appropriately placed, maintained and updated
- 5 8. In consultation with telecommunication providers and satellite communication providers, investigate ways to minimise the complete loss of telecommunication services in natural disasters
9. Review its public awareness and communication strategies in relation to natural disasters
- 10 10. Work with the community broadcasting sector to identify ways in which community broadcasters could be better supported to provide critical services during natural disasters, with a view to providing them adequate long term funding
11. Invest in the required personnel, training and vessels to ensure that all agencies involved in flood rescue can be mobilised to their fullest potential
- 15 12. Allocate funding to the improvement of the Pitt Town Evacuation Route and other key possible evacuation routes in Sydney's northwest
13. Work with local governments to identify alternative routes to vulnerable roads, and that the NSW and Australian Governments fund the construction of these important routes to improve evacuation and access options in times of disaster
- 20 14. Consider reimbursing Xavier Catholic College and other community groups and organisations that operated evacuation centres
15. Ensure that the current review of evacuation centres considers the role, accreditation and support of community evacuation centres, with the outcomes of this review to be made public and incorporated into the update of state emergency plans
- 25 16. Develop a more proactive, rapid response to manage animal welfare following natural disasters which includes improved collaboration and communication with local veterinarians and animal welfare organisations
- 30 17. Ensure that community groups, both existing and emerging, including First Nations groups, are well integrated into disaster recovery, by incorporating them into state recovery plans and engaging with them in between and in the lead up to natural disasters
- 35 18. In partnership with community groups, including First Nations groups, develop initiatives to build community resilience, particularly in regions at high risk of future natural disaster events
19. Establish a standing workforce from within the public service to staff evacuation and recovery centres, with this workforce to be trained ahead of time and mobilised as soon as a natural disaster occurs

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20. Overhaul the way in which it conducts its grants process as it frustrated applicants and further traumatised them by repeatedly re-interviewing them and making them prove that they were flooded
- 5 21. Ensure that flood affected individuals can continue to access financial assistance for as long as there is demonstrated need
23. Consider entering into a service agreement with an organisation that has the resources and capacity to manage donations and activate quickly during natural disasters
24. Address the mental health needs of local communities following the February-March 2022 floods through capacity building services and funding
- 10 25. Accelerate its caravan program and ensure it is made available as an option to all displaced residents from the February-March 2022 floods
26. Consider investing in supporting relocations, land swaps and providing fair and adequate compensation for landowners who wish to relocate from severely flood-impacted areas
- 15 27. Review the provision of temporary and long term housing options provided to those affected by the February-March 2022 floods
28. Work with First Nations peoples to support Aboriginal organisations in their capacity to operate and respond in times of natural disasters
- 20 29. Work in partnership with key Aboriginal stakeholders, including the Jali Local Aboriginal Land Council, to prioritise the rebuild of Cabbage Tree Island, and ensure a safe and resourced evacuation plan is in place
30. Prioritise support for the full restoration of sewage treatment facilities on the Richmond River, for the benefit of communities in the Northern Rivers region
- 25 31. Provide an increased level of targeted support to flood affected communities contending with widespread mould
32. Advocate through the National Cabinet to widen eligibility under the Disaster Funding Recovery Arrangements to allow local councils to build back better
33. Invest in the restoration of the Wilsons and Richmond Rivers to include riparian restoration, water quality and river health improvement
- 30 34. Provide immediate support to the Hawkesbury City Council to remediate the riverbank erosion affecting Cornwallis Road, Cornwallis without any further delay
- 35 35. Significantly increase its investment in flood mitigation and preparation, including its support of local governments to do the same by increasing ongoing, long term funding and access to technical guidance and assistance for local councils and; ensuring that land-use planning and development takes a risk-based approach

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36. Work with local government, industry and sustainable planning experts, including the Government Architect, on policy initiatives in the New South Wales planning system that will help deliver more resilient and sustainable homes, buildings and places

- 5 37. Work with relevant agencies and local landowners to find ways to improve the management of drainage channels including looking for recommendations to reduce red and green tape

Other recommendations:

- 10 6. That the NSW State Emergency Service, in partnership with the Bureau of Meteorology, investigate ways in which local communities and local media with local knowledge can play a stronger role in flood predictions and warnings
22. That Service NSW establish teams of assessors that can be on the ground to assess and approve grant applications

The Government response to this report is due on 9 November 2022.

Next steps

- 15 Staff are currently reviewing the recommendations to identify relevant actions to be pursued through Local, State and Federal avenues.

Council has already supported a number of projects, funded by Natural Disaster grants, which closely align with and support the intent of some of the inquiries' recommendations. These include:

20 **Res 22-197**

- Individual Case Coordination (Mullumbimby & District Neighbourhood Centre)
- Community Engagement - resilience and recovery (Mullumbimby & District Neighbourhood Centre)
- 25 - Breakfast Co-ordinator at the Fletcher Street Homeless Hub (Byron Community Centre Fletcher Street Homeless Hub)
- Council Local Recovery Coordinator (1-year fixed term)
- South Golden Beach resilience betterment program
- Review of Disaster Preparedness Dashboard

Res 22-378

- 30 - Council Natural Disaster Planner
- Council Natural Disaster Policy Planner
 - Discussion Paper: 'After the floods: Working out possibilities together'

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- Business and Visitor Economy Strategy
- South Golden Beach Resilience Betterment Program
- Byron Shire Council Flooding and Drainage Easement Community Education Program
- Community Education Strategy and Review of Flood Options
- 5 - Byron Shire Events Strategy
- Review and Update of Byron DCP 2014 Chapter 'C2' - Areas Affected by Flood and DCP 2010 Part 'K' – Flood Liable Land
- Byron Shire Council Drainage Enhancement Program
- Supporting Community Resilience and Recovery: Emergency Communications
- 10 - Supporting Community Resilience and Recovery: Spontaneous Volunteering
- Northern Rivers Together – Regional marketing and promotion campaign

- 15 The Mayor has also recently written to the CEO of the Northern Rivers Reconstruction Corporation (NRRC) to confirm that the NRRC will work with Byron Shire Council to identify, prioritise and support projects that can rejuvenate local communities in the northern rivers with a particular focus on housing and infrastructure.

Strategic Considerations

Community Strategic Plan and Operational Plan

CSP Objective	CSP Strategy	DP Action
1: Effective Leadership We have effective decision making and community leadership that is open and informed	1.4: Enhance organisation capability through innovative practices and regional partnerships	1.4.1 Inter-governmental relationships - Develop and maintain effective relationships with other levels of government to advocate for the needs of the community
1: Effective Leadership We have effective decision making and community leadership that is open and informed	1.5: Empower community leadership through collaboration, capacity building, and cultivating community driven initiatives	1.5.2: Collaboration and capacity building - Collaborate with stakeholders to build community capacity

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CSP Objective	CSP Strategy	DP Action
3: Nurtured Environment We nurture and enhance the natural environment	3.3: Protect the health of our coastline, estuaries, waterways, and catchments	3.3.2: Floodplain management - Mitigate the impact of flooding on private and public property
4: Ethical Growth We manage growth and change responsibly	4.5: Support a resilient community that can adapt and respond to change	4.5.1: Emergency management and response - Support and participate in local emergency management
4: Ethical Growth We manage growth and change responsibly	4.5: Support a resilient community that can adapt and respond to change	4.5.2: Recovery - Support disaster recovery following the 2022 flood events
4: Ethical Growth We manage growth and change responsibly	4.5: Support a resilient community that can adapt and respond to change	4.5.3: Disaster preparedness - Support and coordinate disaster prevention, preparedness, response and recovery activities
5: Connected Infrastructure We have connected infrastructure, transport, and facilities that are safe, accessible, and reliable	5.1: Provide a safe, reliable, and accessible transport network	5.1.5: Restore road network - Restore the affected parts of the road network that were impacted by the 2022 flood events
5: Connected Infrastructure We have connected infrastructure, transport, and facilities that are safe, accessible, and reliable	5.3: Invest in renewable energy and emerging technologies	5.3.4 Telecommunications - Advocate for more disaster resilient communication networks
5: Connected Infrastructure We have connected infrastructure, transport, and facilities that are safe, accessible, and reliable	5.5: Provide continuous and sustainable water and sewerage management	5.5.3: Storm-water - Provide stormwater infrastructure to manage flood mitigation and improve social and environmental outcomes

Recent Resolutions

- Res 22-197
- Res 22-378
- Res 22-213
- Res 22-190

5 Legal/Statutory/Policy Considerations

N/A

Financial Considerations

The financial implications of any Council actions arising from the implementation of the inquiry recommendations are yet to be identified and will likely require budget allocations.

10 Consultation and Engagement

The independent panel and select committee engagement/consultation process with relevant stakeholders for the two inquiries has been listed in the body of the report.

STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

Report No. 4.2 Resolution 22-360 - Decreasing risk on the Shire's floodplain

5 **Directorate:** Sustainable Environment and Economy

Report Author: Shannon Burt, Director Sustainable Environment and Economy

File No: I2022/1100

Summary:

10 Council considered a Notice of Motion 9.4 Decreasing risk on the Shire's floodplains
 [Agenda of Ordinary \(Planning\) Meeting - Thursday, 11 August 2022 \(infocouncil.biz\)](https://infocouncil.biz) and
 resolved as follows:

Resolved 22-360 that Council:

- 15 1. *Bring a report to the next meeting of our Floodplain Management Advisory
 Committee on the following proposition, on how Council should approach new
 development going onto the Shire's floodplains:*
- that Council manage zoning and development on the Shire's floodplains to
 (i) minimise new flood-related risks; (ii) diminish current flood-related risks,
 and (iii) encourage flood compatible uses on land below current and future
 flood levels.*
- 20 2. *Investigate innovative design and new technology to address flood management*

This report responds to Resolution 22-360.

25 It should be noted that until further work and reports are received by Council staff, that
 Council's ability to respond to the terms of this resolution are limited, and potentially pre-
 emptive.

RECOMMENDATION:

30 **That the Floodplain Management Advisory Committee:**

1. **Notes the report on Resolution 22-360 and that Council staff continue to
 undertake technical work and receive reports from various sources to assist
 our community's flood event recovery and reconstruction actions.**

2. **Notes that updates to the Committee and Council will be provided periodically on this work.**

5

Report

10 As previously reported to Council there is a significant amount of work being progressed across the council directorates in response to the 2022 flood and storm events. This work has taken the form of response, recovery and now reconstruction actions.

Relevant to this work is updated data collation and modelling of the flood and storm events. Infrastructure Services staff are working on this and reporting separately as updates occur. Work on this is with state government agencies.

15 As well as the above, the release of the report on the Inquiry by [Select Committee on the Response to Major Flooding across New South Wales in 2022 \(nsw.gov.au\)](#) and the [2022 Flood Inquiry \(nsw.gov.au\)](#) is now of importance.

A report was received by Council on these [Agenda of Ordinary \(Planning\) Meeting - Thursday, 8 September 2022 \(infocouncil.biz\)](#)

20 Resolution 22-360 asks how Council should approach new development going onto the Shire's floodplains: in particular managing zoning and development on the Shire's floodplains to (i) minimise new flood-related risks; (ii) diminish current flood-related risks, and (iii) encourage flood compatible uses on land below current and future flood levels.

25 In response to this the Independent Flood Inquiry report provides both findings and recommendations – Finding O Recommendation 18, Finding Q Recommendation 20, Finding R Recommendation 21.

Resolution 22-360 also asks staff to Investigate innovative design and new technology to address flood management. It is understood that this point was specifically looking at new and different ways to house and rehouse people in high-risk floodplains.

30 In response to this the Independent Flood Inquiry report provides both findings and recommendations - Finding S Recommendation 22, Finding S Recommendation 23.

In addition to the above, as previously reported, Council considered a report 13.6 Proposal for a Discussion Paper - After the 2022 Floods: Working Out Possibilities Together [Agenda of Ordinary \(Planning\) Meeting - Thursday, 9 June 2022 \(infocouncil.biz\)](#)

35 This report acknowledged that the flood events have necessitated a rethink of how our communities and their built environments exist and can grow in the future. The resolution in June was to prepare a high-level discussion paper:

to set out a framework for a land use and planning response to 2022 Flood Events - and identify principles/actions that could apply across the Council's strategies, plans and programs more broadly as a result

5 It is envisaged that this discussion paper will start the conversation with the community about long-term planning for how and where people will live and work in the future given the wider consideration of climate change and natural disaster management. Ultimately, the feedback received from the community will inform Council's settlement strategies and other plans over coming years.

10 The discussion paper will mark a point in time. It is focused on questions about long-term resilience under four pillars being:

- **Build back better:** Where appropriate and possible to do so, how can we build back better to reduce our vulnerability to future events?
- **Build different:** Acknowledging limitations about where can be developed, how can we provide housing differently to meet future needs?
- 15 • **Build elsewhere** Thinking about potential new areas for people to live and work, where would these areas be and what needs to be considered in choosing them?
- **Build supporting infrastructure:** What are the communities' priorities in building supporting infrastructure to recover from recent events and to mitigate the impacts of future ones?

20 Extensive community engagement on the discussion paper is scheduled for October – November. A report back to Council on submissions to the engagement activities to follow. Ultimately, the feedback received from the community will inform Council's settlement strategies and other plans over coming years.

25 Strategic Considerations

Community Strategic Plan and Operational Plan

CSP Objective	CSP Strategy	DP Action	Code	OP Activity
4: Ethical Growth We manage growth and change responsibly		4.5: Support a resilient community that can adapt and respond to change		4.5.2: Recovery - Support disaster recovery following the 2022 flood events
3: Nurtured Environment We nurture and enhance the natural environment		3.4: Support and empower our community to adapt to, and mitigate our impact on climate change		3.4.2: Climate change adaptation - Enhance community resilience and ability to adapt before, during, and after climate events

Recent Resolutions

- 22-360

Legal/Statutory/Policy Considerations

N/A

Financial Considerations

N/A

5 Consultation and Engagement

N/A

STAFF REPORTS - INFRASTRUCTURE SERVICES

**Report No. 4.3 Flood Levee Repair and Maintenance
Program-Department Regional NSW**

5 **Directorate:** Infrastructure Services

Report Author: Scott Moffett, Drainage & Flood Engineer, IS - Works -
 Infrastructure Planning

File No: I2022/1256

Summary:

- 10 As a result of the recent flooding events across the NSW North Rivers Region, funding for urban flood levees has been announced by the NSW and Australian Governments under Category D of the Disaster Recovery Funding Arrangements (DRFA).
- 15 The projects eligible include those for the assessment, repair and practical betterment of levees and associated infrastructure that protect urban areas across 13 Local Government Areas impacted by the flood event funding bodies call AGRN 1012 in the NSW Mid and North Coast Regions.
- 20 The program is to be delivered by Public Works in partnership with the Department of Planning and Environment, Environment and Heritage Group and the various local councils.

25

RECOMMENDATION:

The Floodplain Management Advisory Committee recommends:

Council note the current Flood Levee Repair and Maintenance Program-Department Regional NSW

30

Report

As a result of the recent flooding events across the NSW North Rivers Region, funding for urban flood levees has been announced by the NSW and Australian Governments under Category D of the Disaster Recovery Funding Arrangements (DRFA).

- 5 The projects eligible include those for the assessment, repair and practical betterment of levees and associated infrastructure that protect urban areas across 13 Local Government Areas impacted by the flood event funding bodies call AGRN 1012 in the NSW Mid and North Coast Regions.

- 10 The program is to be delivered by Public Works in partnership with the Department of Planning and Environment, Environment and Heritage Group and the various local councils.

The main objectives of the program are to:

- Gain a greater understanding of the physical characteristics of each levee including landform and impacts from surrounding features.
- 15 • Accurately gather and record current asset data set and provide on ground confirmation of damage and likely the cause of that damage and overall condition as well as an operational assessment of levee banks, walls and levee infrastructure.
- Prepare a prioritised scope of works and construction costs estimates for works found necessary as a result of damage caused by recent floods.
- 20 • Identify and undertake further works that would improve the effectiveness and resilience of levees that protect urban areas.
- Gain an understanding of the reliability of levee structures affected by flooding in the case of further flood events in the near future.
- 25 • Build resilience across NSW Mid and North Coast regions by addressing the issues associated with damaged flood mitigation infrastructure and gathering asset data which can be used by Councils across the region and State Government decision making

- 30 The program is currently in early planning phase and Public Works acknowledge that coordination and input from Council, being the asset owner and a key stakeholder, is critical to the success of the program.

The Flood Levee Repair and Maintenance Program funding will be aimed on the three following focus areas:

- Repair / Maintenance
- 35 • Covering works not funded by the Natural Disaster Relief and Recovery Arrangements (NDRA)

- Betterment
 - Improvement and upgrades to existing infrastructure
- New Levees
 - New Levees identified in existing floodplain risk management strategies

- 5 The program will commence in the coming months with an independent asset condition assessment of all urban levee Infrastructure across the region, which will inform the prioritisation of the funding and subsequent remediation works.

Key issues

- Potential grant duplication

10 Next steps

- Council's flooding and drainage engineer to work with Public Works to scope works

Strategic Considerations

Community Strategic Plan and Operational Plan

CSP Objective	CSP Strategy	DP Action	Code	OP Activity
Community Objective 1: We have infrastructure, transport and services which meet our expectations	1.1: Provide a road network which is safe, accessible and maintained to an acceptable level of service	1.1.6: Provide stormwater infrastructure to manage flood mitigation, social and environmental outcomes	1.1.6.1	Review and update 10 year Stormwater Levy program

Recent Resolutions

- 15 Not applicable

Legal/Statutory/Policy Considerations

Not applicable

Financial Considerations

- Current financial flood recovery grants will require review for any duplication

- The works will be fully funded by Public Works

Consultation and Engagement

- Consultation with Council works department teams will be ongoing
- Consultation with the South Golden Beach communities will be required

Report No. 4.4 Byron Shire Post 2022 Flood Analysis Update

Directorate: Infrastructure Services

Report Author: Scott Moffett, Drainage & Flood Engineer, IS - Works - Infrastructure Planning

File No: I2022/1261

Summary:

Following the recent flooding and rainfall events in 2022, Council has been working closely with State Emergency Services (SES), the Department of Planning & Environment (DPE) and specialist flooding consultants to undertake a post event data collection and summary report.

This report provides a summary of actions and ongoing activities for discussion by the Floodplain Management Advisory Committee (FMAC).

RECOMMENDATION:

That the Floodplain Management Advisory Committee recommends:

Council notes the report and the Floodplain Management Advisory Committee.

Report

Following the recent flooding and rainfall events in 2022, Council has been working closely with State Emergency Services (SES), the Department of Planning & Environment (DPE) along with specialist flooding external consultants to undertake a post event/s data collection and summary report.

Council initiated the first phase internal post event survey protocols immediately following the recent events. Council's Flooding and Drainage Engineer was contacted by SES to collaborate in obtaining post event survey marks.

SES contracted Public Works Advisory (PWA) to provide survey resourcing across the Byron Shire. DPE then became involved to oversee the data collection. Council's Flooding and Drainage Engineer worked closely with SES, DPE and PWA to isolate the areas of interest with a focus on the main urbanised areas of the shire.

Post event survey has now been completed, including an SES, DPE and PWA, along with Council undertaking quality assurance checks. This data is now available for use by Council. Survey has covered the Brunswick River, Belongil, Tallow Creek catchments and Bangalow.

Council also initiated the second phase of post event survey protocols. This involved releasing media alerts to all shire residents to ask for assistance with collection of additional private property survey. This initiative was very successful with over 200 responses received. Council has mobilised survey resources collected all data from this survey.

DPE have agreed to fund all the post event technical analysis.

The post event technical analysis will cover the Brunswick River, Belongil, Tallow Creek catchments and Bangalow. Consultants WMA have been commissioned by DPE for the Brunswick River catchment and BMT have been commissioned by DPE for the Belongil and Tallow Creek catchments. QIT, Council Emergency Dashboard provider have also been commissioned to undertake a post event analysis of Councils flood warning system.

There is a large amount of works involved to complete the post event technical analysis and current estimates from DPE and consultants is likely to take two to three months as a minimum.

Unfortunately DPE has recently extended their proposed delivery month tentatively to October. Staff understand that many flood specialist consultants are experiencing staff change and staff resourcing issues which has caused delays.

Post such significant flood events it is natural that the industry will be under pressure from flood related areas including; insurance companies, developers and local governments.

Key issues

- Timing of works (reliance on DPE and third-party consultants)
- Privacy of data

Next steps

- 5 • Review draft post event technical analysis
- Finalise reporting and report back to the Floodplain Management Advisory Committee

Financial Considerations

- Council's Flooding and Drainage Engineer's time and resource allocation
- 10 • All other activities are fully funded by DPE and SES (approx. \$150 000)

Consultation and Engagement

Community consultation has been in the form of digital flood survey mark requests via media releases and Council's website.

Report No. 4.5 Capricornia Canal and Marshalls Creek

Directorate: Infrastructure Services

Report Author: Scott Moffett, Drainage & Flood Engineer, IS - Works -
Infrastructure Planning
James Flockton, Infrastructure Planning Coordinator

File No: I2022/1262

Summary:

Cr Asren Pugh raised a Notice of Motion detailed below at the 11th August Council meeting.

- 10 *“Refers the requests raised by the North Byron Shire community regarding dredging the Capricornia Canal and Marshalls Creek to Council’s Water and Sewer Advisory Committee, Coastal and ICOLL Advisory Committee, and Floodplain Management Committee with a view to consider the requests; in particular the option of removing the*
- 15 *Marshalls Creek rock walls at Brunswick Heads and its potential to reduce siltation of Marshalls Creek”.*



This report addresses this Notice of Motion.

RECOMMENDATION:

That the Floodplain Management Advisory Committee recommends:

Council notes that the actions proposed in attachment 2 (E2022/70063) will be completed prior to Council further considering the funding and completion of the scope of works provided in attachment 1 (E2022/77663)

Attachments:

- 1 FRMSP - Draft - Technical Review of Options - Marshall's Creek - Scope of Work - August 2022, E2022/77663 , page 42 
- 30 2 Project Plan - Community Education Strategy and Review of Flood Options, E2022/70063 , page 61 

Report

On the 11th August 2022 Council resolved (22-351):

Committee Recommendation 4.3.1

5 *That Council endorses the Floodplain Management Advisory Committee receiving a further report with a proposed scope that includes recommendations received from the committee.*

Following this resolution staff have developed a draft scope and this is provided at attachment 1 (E2022/77663). The scope will be for discussion at the committee meeting.

10 Staff have also prepared the project plan provided at attachment 2 which Council has been endorsed to be funded as part of the \$2.375 million AGRN1012 Local Government Recovery Grant Program. Staff are awaiting final approval from the funding body before commencing the project. \$50,000 has been allocated from the grant for this project.

Attachment 1 aims to directly support community and social recovery and well-being through exploration of the issues and deep-rooted community opinions, through:

- 15
- Stage 1:
- Desktop review of studies and investigations completed to date
 - Discussion on appropriateness of investigations to date and any gaps
 - Community education around what has been modelled, the results and what causes the results.
 - Facilitation of discussions with affected residents to understand issues.
 - Community survey
 - Discussion with key stakeholders and broader community engagement initiatives.
 - Reporting and recommendations to staff, committee and Council.
- 20
- 25

Stage 2:

- Exploration and further analysis of flood mitigation options should gaps be found, i.e. dredging, removal of rock training walls in Marshalls Creek, estuary siltation, ocean outlets, modelling 2022 flood event with these scenarios.
 - Further community consultation of results
 - Reporting and recommendations to staff, committee and Council.
- 30

35 The project involves a desk-top study/analysis (literature review, modelling peer review); flood modelling re-assessment and in-depth community engagement initiatives. Council seeks a consultant with significant technical experience in flood mitigation and community consultation. Community participation through engagement activities will form a key component of the project.

40 Staff believe that both stages 1 and 2 will be beyond the project budget of \$50,000, however, estimating the cost for stage 2 is difficult because the gaps are not known well enough.

It is proposed that stage 2 will be a separable portion that can be scaled in value dependent upon the number of model runs and iterations. A cost per iterations will be requested.

Key issues

- 5 The process followed in the North Byron Floodplain Management Plan has not resulted in the broader community accepting that dredging or rock wall changes will have limited impact on flood levels.

Options

1. Do nothing.
- 10 2. Complete further modelling
3. Complete further community consultation prior further modelling

Next steps

It is proposed to discuss the scope with the committee and upon receiving approval to proceed with the funding body:

- 15 1. Finalise the project scope and Request for Quote
2. Obtain prices
3. Award contract (actual scope will depend upon costs)
4. Project commencement will involve the consultant meeting with the committee
5. Complete project

20 Strategic Considerations

Community Strategic Plan and Operational Plan

CSP Objective	CSP Strategy	DP Action	Code	OP Activity
Community Objective 3: We protect and enhance our natural environment	3.3: Partner to protect and enhance the health of the Shire's coastlines, estuaries, waterways and catchments	3.3.1: Implement Coastal Management Program	3.3.1.1	Continue preparing a Coastal Management Program (CMP) in accordance with the staged process for Cape Byron to South Golden Beach

Recent Resolutions

- 22-351 (11/08/2022)

Legal/Statutory/Policy Considerations

Not applicable

5 Financial Considerations

Commencement of a Coastal Management Program for the Brunswick Estuary is currently unfunded. However, the planning of this process may commence in the 2022/23 Financial Year pending funding and staff capacity.

Estimating the costs of further studies is difficult without a clear scope.

- 10 A budget of \$50,000 has been endorsed by Council. Council are yet to receive final approval from the State funding body for this scope of works, but it is expected soon. Once this is received the scope can be released for quotation.

Consultation and Engagement

- 15 Extensive consultation and engagement was undertaken during the public exhibition stage of the North Byron Flood Risk Management Study and Plan prior to adoption in 2020.

Further consultation would be completed in accordance with the attachment 2.



BSC ref: E2021/145328

REQUEST FOR QUOTATION

Community Education Strategy and Technical Review of Flood Options

FROM:	<i>Chloe Dowsett</i>	EMAIL:	<i>cdowsett@byron.nsw.gov.au</i>
POSITION:	<i>Coast and Biodiversity Coordinator</i>	TEL:	<i>02 6626 7128</i>

Byron Shire Council invites you to submit a quotation for the supply of the following goods/services:

Byron Shire Council's employees, suppliers and customers are bound by Council's **Business Ethics Statement** when conducting all interaction. A copy of Council's Business Ethics Statement is available from its website at <https://www.byron.nsw.gov.au/Business/Doing-business-with-us/Council-procurement-policies>

A brief description of goods and/or services sought:

Summary

The project aims to directly support community and social recovery and well-being through exploration of the issues and deep-rooted community opinions, through:

Stage 1:

- Desktop review of studies and investigations completed to date
- Discussion on appropriateness of investigations to date and any gaps
- Community education around what has been modelled, the results and what causes the results.
- Facilitation of discussions with affected residents to understand issues.
- Community survey
- Discussion with key stakeholders and broader community engagement initiatives.
- Reporting and recommendations to staff, committee and Council.

Stage 2:

- Exploration and further analysis of flood mitigation options should gaps be found, i.e. dredging, removal of rock training walls in Marshalls Creek,

estuary siltation, ocean outlets, modelling 2022 flood event with these scenarios.

- Further community consultation of results
- Reporting and recommendations to staff, committee and Council.

The project involves a desk-top study/analysis (literature review, modelling peer review); flood modelling re-assessment and in-depth community engagement initiatives. Council seeks a consultant with significant technical experience in flood mitigation and community consultation. Community participation through engagement activities will form a key component of the project.

Introduction

Byron Shire Council is responsible for the development and implementation of Flood Risk Management Plans and recently adopted the North Byron Floodplain Risk Management Study and Plan (VMA Water 2020). The Study follows on from the North Byron Flood Study (2016) which covers the six townships within the catchment – Mullumbimby, Billinudgel, South Golden Beach, Ocean Shores, New Brighton and Brunswick Heads.

The Byron Shire recently experienced unprecedented floods in February and March 2022 where many residents in the northern villages (i.e. New Brighton, Ocean Shores and South Golden Beach) were impacted by flooding. After most flooding events, there tends to be a push from some within the community to seek blame and to identify reasons for the extreme flooding. Staff are aware that historical / legacy issues arise each time there is a flood event and/or community has been significantly impacted, and for the northern areas of the Shire – this tends to revolve around dredging (or lack thereof) of the Brunswick River and tributaries and siltation due to rock walls.

At the 26 May 2022 Council meeting, a Notice of Motion was brought to Council in relation to potential flood mitigation options for the North Byron Shire community and the requests for dredging of Marshalls Creek and/or modification to rock walls at Brunswick Heads.

Council subsequently resolved the below (**Res 22-212**):

That Council refers the requests raised by the North Byron Shire community regarding dredging the Capricornia Canal and Marshalls Creek to Council's Coastal and ICOLL Advisory Committee and Floodplain Management Committee with a view to consider the requests; in particular the option of removing the Marshalls Creek rock walls at Brunswick Heads and its potential to reduce siltation of Marshalls Creek.

It appears that the process followed in the North Byron Floodplain Risk Management Study Plan (henceforth 'Flood Plan') has not resulted in the broader community accepting that dredging or rock wall changes will have limited impact on flood levels. As such, staff prepared a report to Council's Coastal and ICOLL Advisory Committee and Floodplain Management Committee to discuss the following questions:

- Why haven't the outcomes of the North Byron Floodplain Risk Management Plan (WMA Water, 2020) been accepted by the community?
- Should Council complete further studies?
- If further studies were completed, what should be included in the scope?
- If further studies were to be completed, what funding may be available?

Committee recommendations are outlined below.

Committee Recommendation 4.3.1 (16 June 2022)

That Council endorses the Floodplain Management Advisory Committee receiving a further report with a proposed scope that includes recommendations received from the committee.

Committee Recommendation 3.5.1 (30 June 2022)

That the Coast and ICOLL Advisory Committee:

1. *Notes the report and outline of the issue.*
2. *Notes that the Floodplain Advisory Committee will receive a further report with a proposed scope that includes recommendations received from the Committee.*
3. *Advises Council as part of the review of the 2022 Floods, again consider options of:*
 - *dredging Capricornia Canal and Marshalls Creek, and*
 - *removing rockwalls at the south end of Readings Bay, as to:*
 - a) *what benefit would have resulted for the 2022 flood (lower flood levels);*
 - b) *what costs may be incurred (financial, environmental, social),*
 - c) *what prohibitions may be in place (eg disturbing seagrass in a Marine Park); and*
 - d) *what approvals would need to be sought; and*
 - e) *that the findings be shared with the public, including visually by way of representative creek cross sections for the dredging option.*

This RFQ provides an outline of a scope of work for consultant engagement and has been prepared by Council staff based on the above recommendations and with input from Council's Floodplain Advisory Management Committee.

Relationship to other Council work and State policies & plans

Flood risk and management of floodplain development primarily stems from the Government's Flood Prone Land Policy and the Floodplain Development Manual (Reference 4). Council prepares flood studies and plans in accordance with this policy and associated legislation.

Flood planning is generally about people, life and property however, there is an overlap with the coast and estuary space with flood planning and actions undertaken in rivers and estuaries within the coastal zone.

Council is presently preparing Coastal Management Programs (CMPs) under the *Coastal Management Act 2016* (CM Act) for its coastal zone.

With the dissolution of Catchment Management Authorities in 2013 there has been a reduced focus and resource availability for managing catchment issues impacting on river/estuary health. In recent years, guidance from the NSW Government has wavered on whether estuary CMPs should include a catchment-to-coast focus or to focus solely within the mapped coastal management areas (CMA's). The State Government has encouraged Council to prepare CMPs for its coastal zone including the tidal limit of the Brunswick River estuary in accordance with this framework and with funding and technical support provided. Whilst work has not as yet begun on a CMP for the Brunswick River catchment, Council prepared a Coastal Zone Management Plan (CZMP) for the estuary under the previous legislation in 2016.

There is need to consider flood planning and the implications of any flood mitigation options on the health and value of Byron Shire's coast and estuaries. The Marshalls Creek Nature reserve extends to the mean low-water mark and includes much of the lower estuarine section and floodplains of Marshalls Creek. The tidal waters and tidal lands to the mean high-water mark of Marshalls Creek, including its creeks, bays and tributaries, are within the Cape Byron Marine Park (for which zoning came into effect in 2006) resulting in the intertidal zone being both nature reserve and marine park. In addition, much of Marshall Creek is zoned as "Sanctuary zone" which has its own restrictions as to what can and can't be done.

Council's coast/estuary and flood staff work closely together to align projects and work within the catchment and coastal space. Council staff will provide input on the existing

work completed thus far and can provide further context if required about Council's strategic objectives in this space.

This RFQ has been prepared on the basis that the study aligns with many of the key objectives of the CM Act including the following:

- *"To protect and enhance natural coastal processes and coastal environmental values including natural character, scenic value, biological diversity and ecosystem integrity and resilience".*
- *"To facilitate ecologically sustainable development in the coastal zone and promote sustainable land use planning decision-making".*
- *"To mitigate current and future risks from coastal hazards, taking into account the effects of climate change".*
- *"To recognise that the local and regional scale effects of coastal processes...the inherently ambulatory and dynamic nature of the shoreline...and to manage coastal use and development accordingly".*
- *"To promote integrated and coordinated coastal planning, management and reporting".*
- *"To support public participation in coastal management and planning and greater public awareness, education and understanding of coastal processes and management actions, and*
- *"To facilitate the identification of land in the coastal zone for acquisition by public or local authorities in order to promote the protection, enhancement, maintenance and restoration of the environment of the coastal zone, and*
- *"To support the objects of the Marine Estate Management Act 2014.*

Of key concern is the consideration or assessment of whether the flood mitigation measures may negatively impact or threaten the coast and estuary environment or in a manner that is inconsistent with the CM Act. The consultant should keep this front of mind when considering or recommending further studies or actions.

Background

Council's North Byron Floodplain Risk Management Study and Plan

The North Byron Floodplain Risk Management Study and Plan (henceforth "Flood Plan") investigated a number of options such as dredging or rock wall changes, however due to their limited impact on flood levels they were not recommended to progress.

A brief overview of the options assessed is provided below.

Option DO – Dune Openings: This option modelled the impact of four dune ocean outlets with a 20m wide opening set to the existing level each side of the dune. This is approximately at 1.5 m AHD on each side of the dune.

Flood mitigation benefits from the dune openings for the 1% AEP flood event show that while benefits are widespread, reductions in levels are not substantial and range from approximately 0.05 m in Brunswick Heads and New Brighton to 0.1 m in Ocean Shores. Furthermore, during an ocean dominated event, flood levels may in fact increase as a result of the openings. Due to the limited impact on flood behaviour, and likely substantial costs and environmental impacts, it is not recommended this option is considered further.

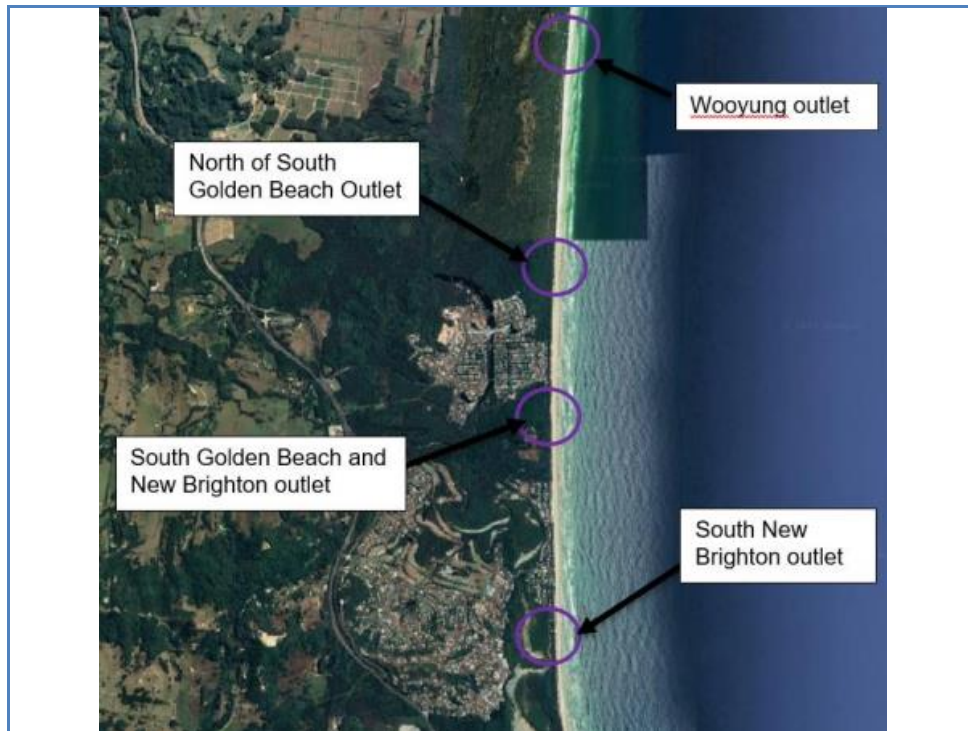


Diagram 28: Option RW – Rock wall modifications (page 103 of the Flood Study)

Option RW – Rock Wall Modifications: This option modelled the impact of complete removal of Marshalls Creek east wall and lowering of the minor wall at the confluence of Marshalls Creek and Brunswick River.

In the 1% AEP event this option had no impact on flood levels, as the walls are already submerged in larger flood events and therefore modification is not shown to improve flooding in the area. Consequently, it was not recommended that this option be progressed to detailed assessment. However, it was recommended that Council consider development of a sediment transport model to investigate modification to the rock walls for the purpose of improved sediment transport.



Diagram 28: Option RW – Rock wall modifications (page 103 of the Flood Study)

Option TW – Removal of Brunswick River Training Walls: This option modelled the removal of training walls located at the mouth of Brunswick River. Both training walls were removed in the model, and the ground level was set to the adjacent sea level (from 0 m AHD to -5 m AHD).

Preliminary modelling results for the removal of the Brunswick River training walls show a widespread decrease in flood levels, however this decrease is a maximum of up to 0.1 m at Brunswick Heads and 0.03 m (i.e. 3 cm) at New Brighton and at the Pacific Motorway. Benefits extent approximately 4 km upstream of the mouth, however are relatively minor. Due to the limited flood mitigation benefits that could be provided and the uncertainty of the potential impact on coastal processes in the area, this option was not recommended to proceed to detailed investigation.



Diagram 29: Option TW – removal of Brunswick River training walls (page 104 of the Flood Study)

Option MC – Marshalls Creek Dredging at Ocean Shores: Option MC investigated dredging along Marshalls Creek. The option was modelled assuming the riverbed was lowered by 0.5 m from just to the east of the Pacific Motorway Bridge near Billinudgel down to the confluence of Marshalls Creek with Brunswick River (approximately 7.5 km).

[This option does not include dredging of the urbanised parts of the Capricornia Canal, but of the approaches to the canal as per Diagram 32. It is noted that there is a flood tide plume at the entrance to the canal, just to the north of the bridge. It could be perceived that the plume and the bridge abutments are causing a constriction of flow from the Capricornia Canal].

Preliminary results for Option MC show a maximum decrease in flood levels of potentially up to 0.05 m (i.e. 5 cm) in Ocean Shores and New Brighton and 0.01 m in South Golden Beach. Due to the limited impact of dredging on flood behaviour, and the likely considerable economic and environmental impacts, this option was not recommended for further consideration.



Diagram 32: Option MC – Marshalls Creek Dredging (page 109 of the Flood Study)

A discussion of these options in general was provided by staff in reports to the Committee's in June 2022.

Dredging in General as Flood Mitigation Option

It is not unusual for dredging to provide limited if any flood mitigation results when modelled. Dredging of Marshalls Creek has been investigated many times before with minimal reduction in flood levels likely to be achieved. Dredging is generally undertaken for commercial purposes, sand extraction/beach nourishment and/or to improve navigation – generally not for flood mitigation. This is usually because it does not create more storage or a mechanism to greatly alter flood levels because the dredged area fills with water and only allows for an increase in flow velocities. Further it can fill in again quite quickly with sediment moving in the creek system. Dredging may also increase the tidal range in estuaries or otherwise transform the tidal signature.

The level of the ocean at the entrance of the Brunswick River has a major influence on flood levels in the lower reaches of Marshalls Creek, particularly downstream of the Orana Bridge. As such, much of the floodplain is prone to inundation due to elevated ocean water levels entering the estuary [i.e. lower catchment flood levels tend to be dominated by ocean levels].

Dredging campaigns in the Brunswick Estuary have historically been undertaken to improve the navigability of the estuary entrance for the commercial fishing fleet. Generally, the benefits have been short-lived with the dredging channels quickly filling in due to sediment deposits from the high littoral transport system along the coastline. Dredging activities have, however, changed the tidal prism of the Brunswick Estuary and have therefore altered the salinity regime, increased turbidity, and reduced areas of important habitat, such as shallow water, seagrass and intertidal mud banks.

The ecological value of the estuary is unique, falling within the Cape Byron Marine Park and National Park estate, and the impact of dredging to this waterway and aquatic ecosystems would be significant. As previously outlined, Marshalls Creek Nature reserve extends to the mean low-water mark and includes much of the lower estuarine section and floodplains of Marshalls Creek. The tidal waters and tidal lands to the mean high-water mark of Marshalls Creek, including its creeks, bays and tributaries, are within the Cape Byron Marine Park (Sanctuary Zone) resulting in the intertidal zone being both nature reserve and marine park.

Significant concern has been raised over the years regarding the environmental impacts of dredging and the overall benefits of dredging. The last dredging campaign in the Brunswick Estuary was [to staff's knowledge] completed by Crown Lands in 2015 where Council raised numerous concerns about the campaign. Additionally, past community consultation during the preparation of the Marshalls Creek Floodplain Management Plan (Patterson Consultants, 1997) rejected dredging as a means of dealing with the flooding issues along Marshalls Creek.

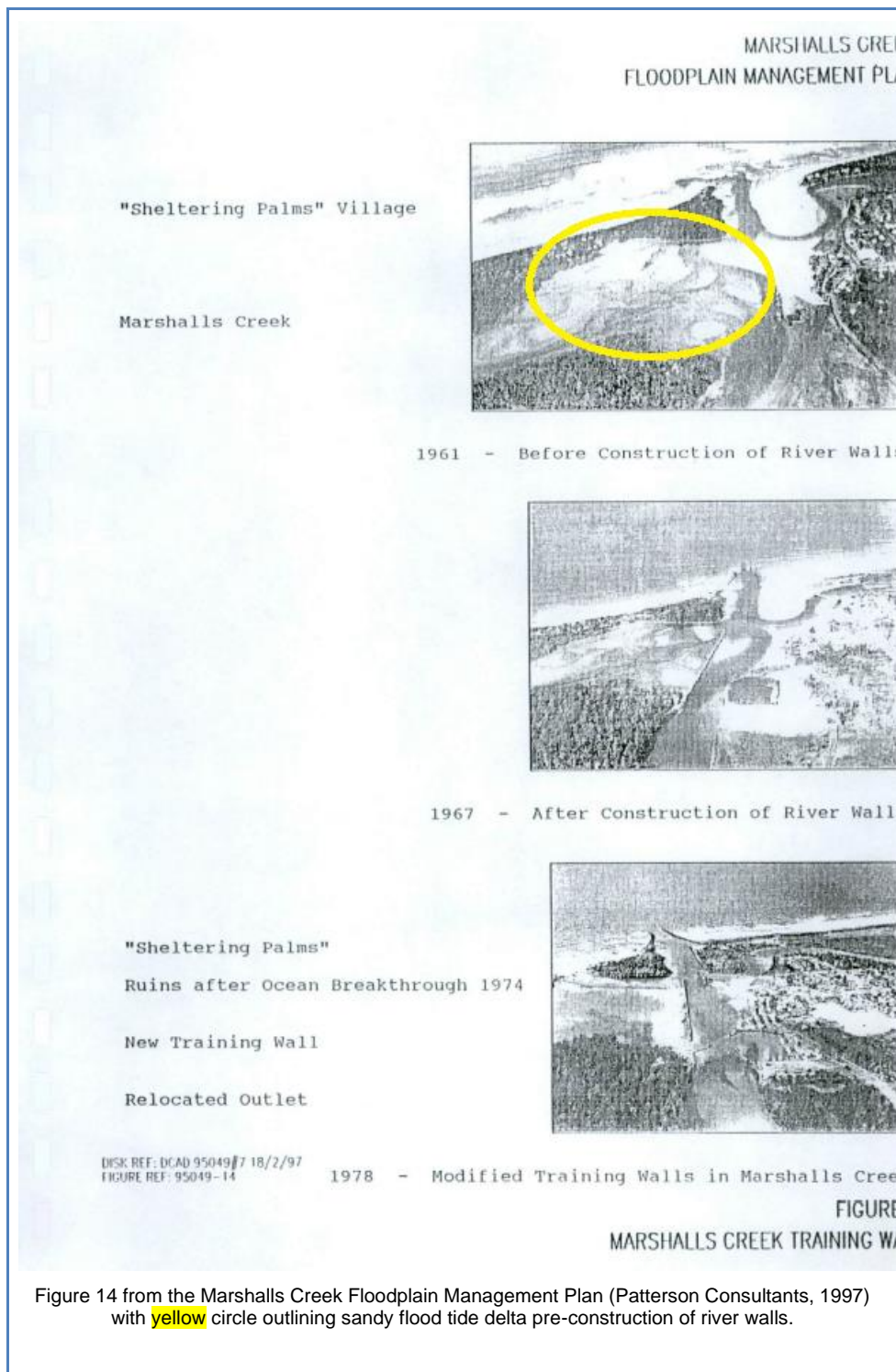
Siltation in Marshalls Creek

The Brunswick River Estuary is a system dominated by ocean processes in the lower reaches. There is a constant push of sand into the lower reaches due to the high littoral drift of sediment up the coast from south to north. This is evident in the formation of bars within the entrance and the flood tide delta (large body of sand that ingresses into the estuary during the flood/incoming tide).

Channel conditions of Marshalls Creek have been reviewed on a number of occasions as outlined in the Marshalls Creek Floodplain Management Plan (1997). A previous investigation (Robin Warner investigation, date unknown) indicates three sources of the materials namely:

- Fluvial (riverine) material upstream of Balemo Drive/Gooloo Close intersection
- Reworked coastal sand from Balemo Drive/Gooloo Close to Orana Bridge; &
- Marine sands downstream of the Orana Bridge that were considered as a flood tide delta.

The investigation indicated that the marine sand is very mobile in its upper layers and that much of the marine sand had probably been introduced since the construction of the Brunswick River training walls and north wall. However this view is discounted in the 1997 Flood Management Plan, "*The view that siltation has occurred solely as a result of the training walls is contradicted by historical oblique photographs of the estuary*". Historical photos are provided below which show the outline of the flood tide delta early-1960s, pre-construction of the training walls.





Aerial Photo (dated 1958) [flood_story33 \(brunswickvalley.com.au\)](https://www.brunswickvalley.com.au/flood_story33) with with yellow circle outlining sandy flood tide delta pre-construction of river walls.

Historical images available on <https://portal.spatial.nsw.gov.au/> show the extent of the flood tide delta as shown in the below images.

1958:



1966:



In general, none of these options outlined above provided a level of flood mitigation that resulted in them being a recommended action in the Flood Plan.

Study Objectives

The study objectives are:

- Re-assess flood mitigation options in consideration of the recent events early 2022 to understand if there are any improved benefit of the options.
- Engage with the North Byron Shire community and improve awareness of the recommended flood options.
- Provide greater awareness of and transparency of flood planning information and Council's projects.
- Justify any additional work required as based on technical assessment and consideration of costs and benefits.

Study Area

The project study area covers the Brunswick River Estuary, primarily Marshalls Creek within the tidal limits of the estuary and the lower reaches of the Brunswick River (for consideration of sediment transport purposes).

Goods/services required

- **Provide an overview of flood studies developed for the Northern Byron Shire:**
 - Collation and review of past flood studies developed (from 1997 onwards or within the last 30 years or so); methodology used and main actions recommended. Including depths modelled, events modelled and scenarios modelled.
 - Provide an overview of the consideration of dredging, ocean outlets and/or removal/modification of rock walls in the previous studies.
 - Summarise flood studies completed for Byron Shire Council as applicable to the consideration of dredging, sedimentation and rock wall modifications in the Brunswick.
- **Review and summarise dredging as a flood mitigation option:**
 - Brief review and analysis of dredging undertaken in NSW including:

- review of State Government policy and/or legislation regarding dredging
 - review of State or Local Government dredging projects for flood mitigation
 - consideration of any dredging for flood mitigation purposes
 - brief consideration of pros and cons / costs and benefits of dredging (financial, social, environmental and cultural)
- **Calibrate the flood model using current data based on the recent flood events**
 - Council will use the Department of Planning and Environment post 2022 event calibration model
- **Re-investigation of the flood risk management options:**
 - Review any discrepancies and/or opportunities for improvements to Council's existing flood model based on more recent data from the events this year (i.e. rainfall data, climate drivers and predictions, on-ground survey, community input).
 - Calibrate the flood model using current data based on the recent flood events.
 - Reinvestigate Option DO – Dune Openings:
 - Re-run the recalibrated flood model with the dune opening scenario.
 - Outline preliminary results and identify if the results provide any further benefit or improvement to the decrease in flood levels as assessed in the adopted Flood Plan.
 - Provide an updated assessment of whether the option should progress to further consideration.
 - Reinvestigate Option MC – Marshalls Creek Dredging at Ocean Shores:
 - This dredging option didn't consider dredging on the Capricornia Canal which should be included in the assessment.
 - Re-run the flood model using the current data based on the recent flood events. Run the recalibrated flood model with the dredging scenario including dredging of the Capricornia canal.
 - Outline preliminary results and identify if the results provide any further benefit or improvement to the decrease in flood levels as assessed in the adopted Flood Plan.
 - Provide an updated assessment of whether the option should progress to further consideration.
 - Reinvestigate Option RW – Rock Wall Modifications (south end of Readings Bay):
 - Run the recalibrated flood model with the rock wall modification scenarios
 - Outline preliminary results and identify if the results provide any further benefit or improvement to the decrease in flood levels as assessed in the adopted Flood Plan.
 - Provide an updated assessment of whether the option should progress to further consideration.
 - Reinvestigate Option TW – Removal of Brunswick River Training Walls:
 - Run the recalibrated flood model with the entrance training walls removed.
 - Outline preliminary results and identify if the results provide any further benefit or improvement to the decrease in flood levels as assessed in the adopted Flood Plan.
 - Provide an updated assessment of whether the option should progress to further consideration.
- **Analysis of sedimentation and coastal processes in Marshalls Creek:**
 - Review history of the Marshalls Creek rock walls – when constructed and purpose.

- Review and summarise known coastal and fluvial processes in the Marshalls Creek. [*Council is preparing a Coastal Hazard Assessment 2022 which will provide a contemporary of coastal hazards and sediment transport*].
- Summarise how these coastal and fluvial processes may influence sedimentation in Marshalls Creek.
- Review available historical aerial imagery/photogrammetry and other available data (LiDAR, Bathymetry, Sonar, sediment sampling etc) of Marshalls Creek (primarily the flood tide delta in Readings Bay and fluvial sedimentation in the upper reaches).
- Provide an outline of any old openings (as inferred by review of literature and historical imagery) and timeline of development on the area and any legacy issues etc.
- Consider sedimentation and the changes in Marshall's Creek and provide a synopsis of trends and/or any association with key natural events or infrastructure/development.
- Provide an outline as to potential impacts (positive or negative) on sediment transport through removal or modification of the rock walls.
- **Summarise potential impacts of options considered:**
 - Of key concern is the consideration or assessment of whether these flood mitigation options may negatively impact or threaten the coast and estuary environment.
 - Summarise the key estimated costs and benefits (financial, social, environmental and cultural) associated with each option.
 - Identify key constraints, prohibitions or barriers associated with further consideration of the options, i.e. Marine Estate legislation, Cape Byron Marine Park zoning; National Park reserve and tenure; conservations areas; Key Fish Habitat.
 - Identify potential approvals (and/or barriers) associated with the options and any potential planning pathways (and/or barriers), e.g. Marine Park Permit, Crown Lands Licence, Native Title, National Park Access Licence; Fisheries approvals for dredging and/or destruction of seagrass/fish habitat.
- **Consideration of any other novel options that have not been previously considered**
 - Any other options that are worthy for consideration and have not been investigated
- **Develop stakeholder and community engagement plan for the North Byron Shire Community:**
 - Review community consultation and engagement completed for the Flood Plan.
 - Evaluate the effectiveness of Council's consultation and engagement methods; identification of methods that worked or did not work.
 - Develop a key stakeholder and community engagement plan:
 - Establish a Project Reference Group with directly affected residents.
 - Consider one-on-one interviews and work with stakeholders and key community representatives to identify gaps in understanding and best methods for improving knowledge and education.
 - Consider expectation of community and improvement of messaging and communications for flood related planning.
- **Prepare educational and informative material:**
 - Consideration of contemporary methods and material for improving knowledge and understanding, including visual material (e.g. video) such as representative creek cross sections for the dredging option.
 - Identify any opportunities for improvements in consultation.
- **Reporting:**

- Findings from stakeholder engagement and provision of engagement material.
- Findings of re-investigation and modelling of options and recommendations as to which options (if any) should progress to further consideration or inclusion in an updated Flood Plan.
- Finding of the sedimentation analysis.

Delivery details

Key components of the project are provided in the table below:

Deliverable		Inclusions
1	Stage 1 - Engagement Plan (within 14 days of acceptance – to be confirmed at inception meeting)	TBC
2	Stage 1 - Project kick/off inception meeting (within 14 days of acceptance)	TBC
3	Stage 1 - Community survey and community education and consultation process	TBC
4	Stage 1 – Reporting, compilation of relevant reports and data sets	TBC
5	Stage 1 - Progress updates	TBC
6	Stage 2 - Flood Modelling	TBC
7	Stage 2 Community consultation	TBC
8	Stage 2 – Reporting, Reporting, compilation of relevant reports and data sets	TBC
9	Stage 2 – Progress updates	TBC

Accessibility

Byron Shire Council is committed to ensuring that everyone has equitable and dignified opportunities to participate and engage in matters that affect them and their community.

Key deliverables of the project will be posted to the project webpage. To assist people living with a disability to fully interact with the content on our website we must ensure the documents we publish are accessible. This applies to deliverables 3 and 4.

Council has provided an Accessibility checklist for consultants and suppliers to help them meet the accessibility requirements of documents that are published to any of Council's websites. Refer: [Council procurement policies - Byron Shire Council \(nsw.gov.au\)](https://www.byrondc.nsw.gov.au/council-procurement-policies)

Format for Delivery

Reports:

- Must meet Council accessibility requirements.
- Both draft and final reports are to be provided in both MS Word and PDF format.

- Front covers of documents shall bear the logo of Byron Shire Council.
- The structure and headings of the reports will be confirmed with Council prior to provision of each draft report.
- Information should be presented in appropriate form and in language that can be readily understood by the layperson.
- Text sections of the report should be in black text (A4 sized paper).
- Graphics, photographs and maps should be presented in colour where appropriate. A3 sized paper may be used for maps and figures where necessary.
- Graphics or maps should be provided in JPEG or TIFF format.

Data and resources are available to the consultant as follows and will be provided via a digital data agreement between Council and the consultant.

Key data sources relevant to this study are not limited to:

- North Byron Shire Flood Risk Management Study and Plan
- Marshalls Creek Floodplain Management Plan,
- Byron Shire Coastline Hazards Assessment Update, August 2013
- Byron Shire Coastal Hazards Assessment Study, 2022 (in preparation)
- Brunswick Estuary Management Study and Plan, Issue No 5, October 2007.
- Brunswick Estuary Management Plan, October 2008.
- Coastal Zone Management Plan for the Brunswick Estuary, Issue No. 5.1, April 2018

The Conditions of Contract that will apply are attached to this RFQ. **[Guide Note: attach relevant Conditions of Contract].**

Should you wish to submit a quotation please complete the form on the next page and return with any supporting documentation via email to *[insert email address]* by *[insert closing date and time]*.

If you have any questions please don't hesitate to contact the person named above.

Thank you for your consideration.

QUOTATION RESPONSE FORM

Respondent Information	
Company Name	[enter text]
ABN	[enter text]
Postal Address	
Business Email Address	
Website	
Contact Name	
Contact Mobile Phone	
Contact Office Phone	
Contact Email Address	

Bid Statement
<p><i>"I certify that this bid is made without prior understanding, agreement or connection with any corporation, firm or person submitting a quotation for the same goods or services, and is in all respect fair and without collusion or fraud. I agree to abide by all conditions of this bid, and certify that I am authorised to sign this quotation on behalf of the company I represent."</i></p> <p>By lodging a quotation, the proponent confirms that:</p> <ul style="list-style-type: none"> (a) It does not gain any financial benefit from Australia's offshore detention centres; and (b) It does not have any involvement with the construction of the Carmichael mine and has no ties with the Adani Group.
Authorised Representative's Name
Date
Authorised Representative's Signature

Quotation
<p>1. Please submit a proposed program for carrying out the work, including the proposed hours of work and working days, and a Gantt chart or similar showing the major milestones and duration of the project, and key consultation including inception meeting (within 14 days of acceptance) as well progress reporting schedule (fortnightly to Council's project manager via teleconference and email).</p>

Provide answer here.

2. Describe the proposed methodology and sequence of works to be performed under the contract.

Provide answer here

3. Provide details of all personnel who will be nominated to work on the project.

Staff member name	Position held	Role on the project	Qualifications and experience	% of time on the project

4. Provide details of recent contracts (within the last two years) that demonstrate expertise application to the services required.

Company Name				
Contact name, phone, email				
Description of services provided				
Contract value				
Date project completed				

5. Please attach the following documents to your quote:

- ☐ Certificate of Currency for Workers Compensation Insurance

- ☐ Certificate of Currency for Public Liability Insurance - \$20,000,000
☐ Professional Indemnity Insurance - \$10,000,000

6. Please provide any further information that is applicable to the provision of the goods/services.

Provide answer here.

7. Please complete the pricing schedule below

Item Description	Hours Required	Hourly rate (\$/hr)	Amount (ex GST)	Amount (inc GST)
		Total of quotation:		

Note that prices must include all overheads, profit and other expenses that the successful proponent may incur in relation to the supply of the services.

Please describe any additional charges that apply:



AGRN1012 Project Plan

Community Education Strategy and Review of Flood Options

Reference	E2022/70063
Project Name	Community Education Strategy and Review of Flood Options
Type	Community capacity recovery building and resilience
Project Location	Northern Byron Shire – New Brighton, Ocean Shores, South Golden Beach communities
Lot and DP Number	Lot 2 DP1227659
Commencement Date	1/09/2022
Anticipated Completion	30/06/2024
Eligibility Criteria	<p>The Byron Shire recently experienced unprecedented floods in February and March 2022 where many residents in the northern villages (i.e. New Brighton, Ocean Shores and South Golden Beach) were impacted to various degrees. After most flooding events, there tends to be a push from some within the community to seek blame and identify reasons for the extreme flooding. Staff are aware that historical / legacy issues arise each time there is a flood event and/or community has been significantly impacted, and for the northern areas of the Shire, this tends to revolve around flood mitigation options that have already been assessed as having limited impact on flood levels.</p> <p>Council has an adopted Flood Risk Management Study and Plan for the northern areas of the Byron Shire, however, the process followed in the development of the plan has not resulted in community understanding or effective comprehension of the issue or feasible potential flood mitigation options for implementation.</p> <p>Requests have been made to Council to further explore these options and complete further studies. There is strong community interest in the further exploration of these issues and flood options as demonstrated through request to Council from key stakeholder groups, Council resolution, community meetings and local Media.</p> <p>This project aims to directly support community and social recovery and well-being through exploration of the issues and deep-rooted community opinions through:</p> <ul style="list-style-type: none"> • Exploration and further analysis of [key community interest] flood mitigation options, i.e. dredging, removal of rock training walls in Marshalls Creek, estuary siltation, ocean outlets, modelling 2022 flood event with these scenarios.



AGRN1012 Project Plan

Community Education Strategy and Review of Flood Options

- Facilitate a Project Reference Group with directly affected residents.
- Discussion with key stakeholders and broader community engagement initiatives.
- Community education around what has been modelled, the results and what causes the results.

The project will involve a desk-top study/analysis (literature review, modelling peer review) and in-depth community engagement initiatives.

A consultant will be engaged to deliver the project, with support from relevant Council staff. Community participation through engagement activities would form a key component of the project.

The project will contribute to the social recovery of residents in the affected areas of the northern Shire, through being better informed about issues and solutions.

Project Criteria	Description
Diverse local recovery needs are balanced	The northern communities have a need for this project in order to move forward on this issue and be better informed about flood mitigation options for their homes and communities.
Alignment	This project is currently unfunded and would contribute to social recovery of residents and communities. It does not duplicate any other flood funded work being administered through other funding bodies.
Resilience building	This project would support the future preparedness of communities in understanding the issue and flood solutions that would work for their needs, rather than being caught up in stories and opinions that are inaccurate.
Local support and delivery	Council and Council's Committee members which include community members understand the necessity for the project and support it going ahead. Engagement with the broader community including Indigenous groups will be undertaken through targeted engagement activities. Where possible, engagement opportunities will aim to incorporate Indigenous knowledge and support active participation in the project.
Feasibility	The project is feasible with staff resourcing available to project manage the successful consultant. Consultant resourcing is becoming more available as flood insurance works reduces. Timing for the project to commence this year (2022) is extremely important in order to facilitate conversations with the community while the issue is still front-of-mind. Any delay for this project may result in less community participation – if the project does not go ahead sooner rather than later, this is a risk to Council's progress in



AGRN1012 Project Plan

Community Education Strategy and Review of Flood Options

	future flood preparedness in this space. This issue and similar projects are being delivered elsewhere in the Northern Rivers, and potential collaboration with other Council's may be valuable.
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Describe the expected Outcomes Or Benefits

- Increase community flood awareness and knowledge
 - Consult with community groups and the broader community in a direct and productive way
 - Facilitate a Project Reference Group with directly affected members.
 - Develop a Key Stakeholder and Broader Community Engagement Strategy (develop a variety of engagement material and resources, workshops etc).
- Improve community attitudes towards Council and efforts in the flood space.
- Increase community understanding of potential flood mitigations options available.
- Increase social recovery and community resilience.

Is the project on Council owned land/property

No ☒ Yes ☐

Is the Asset or property covered by Insurance?

No ☒ Yes ☐

If Yes, please provide details

Flood Grant contribution \$40,000

Council contribution \$10,000

Total Cost \$50,000

Other relevant comments

This project aligns with Council's existing Flood Risk Management Study and Plan action **RM06: Engage with the community to prepare an ongoing flood education program, with appropriate evaluation by Council and SES following implementation.**

Project location

Project Location 70 Station Street, Mullumbimby

Lot and DP Number Lot 2 DP1227659

**AGRN1012 Project Plan****Community Education Strategy and Review of Flood Options**

Scope of works and deliverables

- Exploration and further analysis of [key community interest] flood mitigation options, i.e. dredging, removal of rock training walls in Marshalls Creek, estuary siltation, ocean outlets, modelling 2022 flood event with these scenarios.
- Facilitate a Project Reference Group with directly affected residents.
- Discussion with key stakeholders and broader community engagement initiatives.
- Community education around what has been modelled, the results and what causes the results.

Governance

Project reporting and evaluation will be undertaken monthly by the Project Lead. Reporting will occur monthly via Council's internal project management platform (Pulse) and Project Status Report submitted to Council's Works Manager. This will form the basis for updates, internal and external communications. The monthly report will include:

- Key Deliverables and Milestones
- Major Activities
- Accomplishments
- Major issues and risks
- Financials
- Change Requests

Milestone Reporting will occur as per the funding agreement and on request of Office of Local Government.



AGRN1012 Project Plan

Community Education Strategy and Review of Flood Options

Project timeline

Timeframe/Milestones	Activity
PROJECT COMMENCEMENT	
01/09/2022	Prepare Request for Quote
PROJECT PROCUREMENT	
Nov 2022	Engage consultant
PROJECT DELIVERY	
Nov 2022 onwards	Desktop review and community engagement
EVALUATION	
XX/XX/20XX	Final reporting

Budget

ITEM	COST	FUNDING SOURCE
Engagement of consultant to undertake desktop review and community engagement	\$40,000	AGRN1012 Joint Commonwealth/NSW State Government Funding
	\$10,000	Byron Shire Council

Risks

Council integrates risk management into its project teams' day-to-day activities. Council developed a project-specific Risk Management Plan to ensure both the mitigation of risks posed to the NSW Government, Council, the community, and the successful execution of this project per its objectives.

Hazard and Risk Management Process

Council is obligated to ensure hazards are identified and eliminated as far as reasonably practicable. If the elimination of the hazard is not reasonably practicable, procedures are established to assess and control risks. Risk management techniques shall be implemented to ensure a proactive approach to risk management:

- a) Ensuring the funding agreement includes achievable outcomes for both parties
- b) When planning work processes
- c) During the establishment phase of the project
- d) Whenever changes are made to the project
- e) Whenever new information regarding the project becomes available
- f) Whenever potential risks are discovered through monitoring and evaluation of the project management
- g) When allocating necessary resources to meet commitments through design or redesign of services and projects.



AGRN1012 Project Plan

Community Education Strategy and Review of Flood Options

Risk Item	Risk Consequence	Risk Mitigation
Safety WHS while construction is happening	High	Ensure Safety in setting up workshops or meetings. Maintain safety and compliance WH&S.
Political / Reputational The project has negative impacts on local business, accessibility of the town centre and/or creates unforeseen impacts on the extended road network	Low	Robust engagement plan prepared to ensure inclusive community participation
Financial Project costs escalate and funding is inadequate to complete the project	Medium	Quotes will be provided with deliverables and project scope. If the budget doesn't align with the full scope and deliverables, they will be adjusted to ensure the budget is maintained.
Time overrun beyond completion date	Medium	Inform funding provider of cause of time overrun (eg wet weather, delay in contractor s/suppliers, NSW Health Regulations impacting on events due to COVID-19) and proposed alternative solutions.

Report No. 4.6 Byron Bay Drainage Upgrade Project

Directorate: Infrastructure Services

Report Author: Scott Moffett, Drainage & Flood Engineer, IS - Works - Infrastructure Planning

5 **File No:** I2022/1263

Summary:

Council have been successful in obtaining Commonwealth grant funding to deliver the Byron Bay Drainage Strategy Design (Total funding value \$1,282,000).

10 The request for tender was released in August 2022. Staff received eight tenders from the open tender process. Two consultants were chosen as the top two following interviews.

Staff will be preparing a final tender report at the next available Council meeting for engagement of the preferred consultant.

15

RECOMMENDATION:

That the Floodplain Management Advisory Committee recommend:

That Council:

1. **Notes the current progress of the Byron Bay Drainage Strategy.**
- 20 2. **The project team commence development of a Communications Plan with Council Communications Team.**

Report

The Byron Drainage Strategy will design the town centres flood mitigation plan and the prioritisation of stormwater drainage infrastructure upgrades.

- 5 The Strategy will include a technical assessment of work to date, model updates and modelling to prepare concept drainage layouts. Understanding, and resolving social and environmental conflicts, key stakeholder inputs. Once a concept layout is complete detail survey will be completed and detail designs prepared. Upon completion the project will be construction ready.

- 10 The Strategy will detail a drainage system adaptable to future projected sea-level rise, ocean storm surges and increased rainfall intensities associated with climate change. It will also provide updated information to the NSW State Emergency Service to effectively prepare and implement local flood plans to deal with flood emergency response within the Byron Bay town centre.

- 15 The request for tender was released in the month of August 2022 with the project due to commence in October/November 2022.

Council received eight tenders from the open tender process.

Three consultants were shortlisted and interviewed.

Two consultants were final listed following interviews.

Staff are currently in the processes of deciding the preferred tenderer.

20 Next steps

1. Report to be provided to the next Council meeting to complete tender process
2. Preferred consultancy engagement
3. Project initiation and inception

Strategic Considerations

25 Community Strategic Plan and Operational Plan

CSP Objective	CSP Strategy	DP Action	Code	OP Activity
Community Objective 1: We have infrastructure, transport and services which meet our	1.1: Provide a road network which is safe, accessible and maintained to an acceptable level of service	1.1.6: Provide stormwater infrastructure to manage flood mitigation, social and environmental outcomes	1.1.6.1	Review and update 10 year Stormwater Levy program

BYRON SHIRE COUNCIL

STAFF REPORTS - INFRASTRUCTURE SERVICES

4.6

expectations				
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Recent Resolutions

- 22-350 (11/08/2022)

Legal/Statutory/Policy Considerations

Not applicable

5 Financial Considerations

\$1,282,000 in funding is available. \$1,080,000 in grant funding (Preparing Australian Communities) and \$220,000 in Council funding.

Consultation and Engagement

- 10 A consultation plan will be prepared with Council's Communications team and the preferred consultancy to ensure the project consults with the committee, Council and community appropriately.

Report No. 4.7 **Byron Shire Council Flood Risk Management Plan-Actions and Accomplishments**

Directorate: Infrastructure Services

5 **Report Author:** Scott Moffett, Drainage & Flood Engineer, IS - Works - Infrastructure Planning

File No: I2022/1264

Summary:

10 Council has adopted three sets of Flood Risk Management Studies (FRMS) and Plans (FRMP) for the shires three main catchments. These are:

- Brunswick River Catchment (North Byron, includes Marshalls Creek)
- Tallow Creek Catchment
- Belongil Creek catchment

15 A summary of prioritised actions has been prepared based on the outcomes of the three adopted Flood Risk Management Plans.

As per resolution 22-349, the Flood Advisory Committee conducted a workshop on the 12th August 2022 to update priorities of flood mitigation works. Attachment 1 is the updated flood mitigation program.

20

RECOMMENDATION:

The Floodplain Management Advisory Committee recommend:

25 **That Council endorses the updated Byron Shire Council Flood Mitigation Program, attachment 1 (E2022/89966).**

Attachments:

1 BSC Flood Mitigation Program, E2022/89966 , page 74  

30

Report

Council has adopted three sets of Flood Risk Management Studies and Plans for the shires three main catchments. These are:-

- Brunswick River Catchment (North Byron)
- Tallow Creek Catchment
- Belongil Creek catchment

The Brunswick River Catchment is drained by three major tributaries, Marshalls Creek (North Arm), Simpsons Creek (South Arm) and the Brunswick River (West and Main Arm).

A North Byron flood study and subsequent FRMS and FRMP were developed and adopted in 2020. The FRMP listed 25 recommended actions with associated priority rankings.

The Tallow Creek Catchment is drained by Tallow Creek and receives a large proportion of the urban Suffolk Park district runoff. A flood study and subsequent FRMS and FRMP were developed and adopted in 2009 with an update being adopted in 2015. The FRMP listed 24 recommended actions with associated priority rankings. Tallow Creek opens to the ocean and is known as an intermittently closed and open lagoon system (ICOLL).

The Belongil Creek Catchment is drained by Belongil Creek and receives a large proportion of the urban Byron Bay central business district runoff in addition to wetland and agricultural runoff. A flood study and subsequent FRMS and FRMP were developed and adopted in 2015. The FRMP listed 10 recommended actions with associated priority rankings. Belongil Creek opens to the ocean and is known as an intermittently closed and open lagoon system (ICOLL).

An updated summary of prioritised actions has been prepared based on the outcomes of the three adopted Flood Risk Management Plans, in addition to the outcomes from a workshop held by the Floodplain Management Advisory Committee on 12th August 2022, as per attachment 1.

Key issues

Several key issues have been identified that will impact the delivery of the flood mitigation program. These include, however, not limited to:

- Available budget-Council budgets are limited. Grant funding will be required to financially assist Council with delivery
- Timing and community expectations - following the recent 2022 floods and natural disaster the community expect a quick delivery of the actions. Realistic delivery programs will need to be communicated effectively with the community highlighting budgetary and resource constraints
- Local Council and State responsibilities - following the recent 2022 flood and natural disaster the community has an expectation that Council can undertake any and all

works. This is sometimes not the case with many actions the responsibility of various state departments such as SES, Crown Land, Marine Parks, Fisheries and the National Parks and Wildlife Services. Realistic delivery programs will need to be communicated effectively with the community highlighting budgetary and resource constraints.

Next steps

Budget sourcing and delivery program development.

Strategic Considerations

Community Strategic Plan and Operational Plan

CSP Objective	CSP Strategy	DP Action	Code	OP Activity
Community Objective 1: We have infrastructure, transport and services which meet our expectations	1.1: Provide a road network which is safe, accessible and maintained to an acceptable level of service	1.1.6: Provide stormwater infrastructure to manage flood mitigation, social and environmental outcomes	1.1.6.1	Review and update 10 year Stormwater Levy program

Recent Resolutions

22-349

Legal/Statutory/Policy Considerations

Council has a general duty of care to provide reasonable infrastructure, as resources and priorities permit. Where existing infrastructure becomes known to be inadequate for any reason within the control of Council, repair, renewal and upgrade of drainage assets for the provision of stormwater drainage / flood mitigation is a fundamental component of meeting Council's obligations.

Provision of stormwater drainage / flood mitigation infrastructure is a legitimate function of local government under the Local Government Act 1993. To the extent that the provision of infrastructure protects public roads, other infrastructure, Council land, Crown land, private land and the community. Council is also responsible for drainage under the Roads Act 1993.

Financial Considerations

Grant funding will be required to financially assist Council with delivery of the flood mitigation program.

- 5 The most likely source of funding is via the Department of Planning and Environment grant program <https://www.environment.nsw.gov.au/topics/water/floodplains/floodplain-management-grants>

This program requires Council to fund one third of any funding application. Therefore, Council still needs to be finding funding solutions for its share. These are significant costs that Council have limited resources to fund at this time.

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BYRON SHIRE COUNCIL

Byron Shire Council - 2022 - Whole Shire Flood Mitigation Works Program

	Floodplain Management Plan	Proposed Mitigation Action	Original Priority	Responsibility	Approx Value	Comments	Updated Priority 2022
1	North Byron	Implement debris control measures for Federation Bridge and Billinudgel Railway Bridge.	Design underway	BSC - IPT	\$100,000	Grant funded for design phase only	1
2	North Byron	Further investigate raising eligible residential properties to reduce flood damages.	Moderate	BSC - IPT	Staff Time (pending Council decision on VHR Council/State contribution)	Proposed as part of VHR/VHP scheme	1
3	Belongil Creek	Preferred Byron Drainage Strategy Construction	High	BSC - IPT	\$15,000,000	Grant awarded for design phase only. Contract award by August 23. Construction phase grant application required.	1
4	North Byron	Development a whole of catchment drainage model and overland flow path investigation.	High	BSC - IPT	\$250,000	2:1 grant submitted May 22	2
5	North Byron	Undertake more detailed assessment of properties which may benefit from property level protection	High	BSC - IPT	\$50,000	Will form part of the scope of Shire overland flow path study	2
6	Belongil Creek	Voluntary House Raising Scheme	Medium Priority	BSC - IPT	\$8,550,000	Grant submitted May 22 for 2/3 funding for upto 2 houses. Total Scheme is 57 houses at \$150 per house.	3
7	North Byron	Implement the recommendations of the South Golden Beach levee audit.	Low	BSC - IPT	\$200,000	Funding to be sought	4
8	Tallow Creek	Upgrade Broken Head Road Crossing of South Tallow Creek	Medium	BSC - IPT	\$355,000	2009 price - needs to be increased to current day value	5
9	Tallow Creek	Upgrade Coogera Circuit Detention	Medium	BSC - IPT	\$380,000	2010 price - needs to be increased to current day value	5
10	Belongil Creek	Drainage Infrastructure Maintenance	High	BSC - Operations	\$1,092,400	One of clean of main drains in Byron Bay	6
11	North Byron	Further detailed assessment of Saltwater Creek upgrade assessment and mitigation options for Mullumbimby. (incl. influence of structures)	Moderate	BSC - IPT	Refer to item 6	Will form part of the scope of Shire overland flow path study	7
12	North Byron	Undertake an Evacuation Assessment for Mullumbimby.	High	SES (tech intel from IPT)	Staff Time	Underway by SES	8
13	North Byron	Identify key roads and implement automatic warning signs and depth indicators.	High	BSC - IPT	\$100,000	Grant being invstigated	9
14	Belongil Creek	Community Flood Awareness	Immediate	BSC - IPT / Comms	\$10,000	Funding to be sought	10
15	North Byron	Consider establishing a Voluntary House Purchase scheme for eligible properties.	Complete	BSC - IPT	Staff Time (pending Council decision on VHR Council/State contribution)	Grant submitted May 22	Grant submitted
16	North Byron	More detailed assessment of potential raising of River Street to provide improved flood immunity and evacuation.	Low	BSC - IPT	Refer to item 6	Will form part of the scope of Shire overland flow path study	Grant submitted
17	North Byron	Further consider viable options to implement the recommendations of the New City Road drainage assessment.	Low	BSC - IPT	Refer to item 6	Will form part of the scope of Shire overland flow path study	Grant submitted
18	Tallow Creek	New Byron Local Environment Plan to more robustly protect existing development from increased flooding impacts resulting from future development and update to be in line with NSW Floodplain Development Manual (2005)	Complete	Complete	Staff Time	Complete	Grant submitted
19	Staff Recommended Not Supported By A Plan	SGB Flood Pump Generator	High	BSC - IPT	\$140,000	Protection from power failures.	High
20	Staff Recommended Not Supported By A Plan	Investigate Options for SGB Flood Gate Upgrades	High	BSC - IPT	\$30,000	Alternate solutions - flood gates with automated knife valves for full closure as an example	High
21	Staff Recommended Not Supported By A Plan	Design SGB and Fern Beach Flood Levy Upgrades	High	BSC - IPT	\$100,000	Levy over topped in 2022. Propose to raise Levy. Public Works now investigating.	High
22	Staff Recommended Not Supported By A Plan	Investigate Flood Levy for Western SGB	Medium	BSC - IPT	\$30,000	Post 2022 flood, investigate the benefits of a levy for west of Capricornia Canal. Propose to request Public Works investigate as part of Levy program	High
23	Staff Recommended Not Supported By A Plan	Post Event Shire-wide Flood Planning Level Review	Medium	BSC - IPT	\$30,000	Proposed action following post event report	High
24	North Byron	Council and the SES to update the Local Flood Plan based on findings of the FRMS.	Moderate	SES (tech intel from IPT)	Staff Time	Underway by SES	Moderate
25	North Byron	Engage with the community to prepare an ongoing flood education program, with appropriate evaluation by Council and SES following implementation.	Moderate	SES/BSC - IPT / Comms	\$20,000	Funding to be sought	Moderate
26	North Byron	Further consideration of Avocado Court drainage modification.	Moderate	BSC - IPT	Refer to item 6	Will form part of the scope of Shire overland flow path study	Moderate
27	North Byron	Develop a sediment transport model to investigate modification to the rock walls, as part of the Coastal Management Program for the Brunswick Estuary.	Moderate	BSC - SEE / IPT	\$150,000	Being considered as part Coastal Management Plan	Moderate
28	North Byron	Further consideration of Billinudgel infrastructure improvements.	Moderate	BSC - IPT	Refer to item 6	Will form part of the scope of Shire overland flow path study	Moderate
29	North Byron	Develop guidance on the design and installation of fencing traversing waterways and channels.	Moderate	BSC - IPT	\$15,000		Moderate
30	North Byron	Flood Planning Levels revised based on the recommendations of the FRMS.	Complete	Complete	Staff Time	Complete	N/A
31	North Byron	Section 10.7 (5) certificates to provide further detail of flood behaviour. Consideration to providing property-level flood information via an online GIS platform	Complete	Complete	Staff Time	Complete	N/A
32	North Byron	Byron Shire Council and SES to consider the findings and recommendations of the FRMS in the development of the Flood Warning Network for North Byron.	Complete	Complete	Staff Time	Complete	N/A
33	North Byron	Changes to land use zoning should consider flood compatibility based on the recommendations of the FRMS.	Complete	Complete	Staff Time	Complete	N/A
34	North Byron	Form a committee, comprising council, state, emergency services and community member representatives to oversee the implementation of the FRMP	Complete	Complete	Complete	Complete	N/A
35	Tallow Creek	Commence undertaking to rezone the land identified as high flood hazard for the 1 in 100 year ARI flood to preclude these areas from future development	Complete	Complete	Staff Time	Complete	N/A
36	Tallow Creek	Adopt FPLs as part of the DCP 2002 as the extent of flood prone land in the Tallow Creek catchment that consider climate change conditions (Scenario 4)	Complete	Complete	Staff Time	Complete	N/A
37	Tallow Creek	Adopt prescribed areas of fill exclusion.	Complete	Complete	Staff Time	Complete	N/A

38	Tallow Creek	Ensure future developments within the catchment utilise on-site stormwater detention measures to maintain pre-development peak runoff characteristics.	Complete	Complete	Staff Time	Complete - is part of BSC DCP	N/A
39	Tallow Creek	Update 149 certificates and any lots with additional controls over them, including add 1495 certificates for lots effected by PMF and not within the FPL.	Complete	Complete	Staff Time	Complete	N/A
40	Tallow Creek	Adopt new version of the hydraulic model to allow for assessment of all proposed development	Complete	Complete	Staff Time	Complete	N/A
41	Tallow Creek	Establish relationship between flood return period, sand bar levels and flooding conditions in Tallow Lake to assist in SES flood evacuation planning	Underway	BSC - IPT	\$15,000	Contract awarded.	N/A
42	Tallow Creek	Install flood gauge at Broken Head Road culvert showing example flood levels	Underway	BSC - IPT	\$500	Sign ready to be installed	N/A
43	Tallow Creek	Install lake level and rainfall monitoring station on Tallow Lake and connect to Council's flood warning system	Complete	Complete	-\$25,000	Complete	N/A
44	Tallow Creek	Raise footpath at Tallow Lake footbridge to ensure trafficable up to a lake level of 2.5mAHD.	Complete	Complete	-\$44,000	Complete	N/A
45	Tallow Creek	Develop and implement asset management and maintenance plan	Complete	Complete	-\$20,000	Complete	N/A
46	Tallow Creek	Implement interim management plan through water level and quality monitoring	Complete	Complete	-\$100,000	Complete	N/A
47	Tallow Creek	Develop data collection program for variables such as sand bar and lake stored level, to support development of long-term management plan.	Complete	Complete	Staff Time	Complete	N/A
48	Tallow Creek	Inspect the sand bar and record its level every year prior to the onset of the rainfall season	Complete	Complete	Staff Time	Complete	N/A
49	Tallow Creek	Monitor the level of the opening during the rainfall season and undertake maintenance earthworks to restore the level as per the accepted Interim Sandbar Management Strategy.	Complete	Complete	Staff Time	Complete	N/A
50	Tallow Creek	Update Council Geographic Information Systems (GIS) to include outputs of this plan and update any lots with additional controls over them.	Complete	Complete	Staff Time	Complete	N/A
51	Tallow Creek	Ensure authority uses the GIS layers to prepare property reports.	Complete	Complete	Staff Time	Complete	N/A
52	Tallow Creek	Add adopted document to Council's website, plus additional A1 pdf of FPL	Complete	Complete	Staff Time	Complete	N/A
53	Belongil Creek	Preferred Byron Drainage Strategy	Immediate	BSC - IPT	\$1,300,000	Grant awarded for design phase only	N/A
54	Belongil Creek	Development Controls	Complete	Complete	Staff Time	Complete	N/A
55	Belongil Creek	Emergency Planning (SMS Messaging)	Complete	Complete	-\$220,000	As part of flood warning network and emergency dashboard	N/A
56	Belongil Creek	Flood Information Dataset	Complete	Complete	-\$220,000	As part of flood warning network and emergency dashboard	N/A
57	Belongil Creek	Belongil Creek Entrance Strategy	Complete	Complete	-\$125,000	Complete	N/A
58	Belongil Creek	Flood Gauges	Complete	Complete	\$75,000	Ongoing	N/A
59	North Byron	Revise the Flood Planning Area based on the recommendations of the FRMS.	Complete	Complete	Staff Time	Complete	N/A
60	North Byron	Council consider updating the DCP to incorporate the recommendations detailed in the FRMS; Provide more detailed guidance on the principles of wet proofing, appropriate design and materials, with direct reference to available guideliness; include a requirement for an assessment of property level protection as part of the DCP2014 planning matrix criteria FL4; Implement the recommendations regarding appropriate fill areas in the DCP2014	Partially complete	BSC - SEE / IPT	Staff Time	To be discussed with SEE	
61	North Byron	Byron Shire Council compliance team investigate illegal builds south of North Heads Road.	Ongoing	BSC - SEE	Staff Time	To be discussed with SEE	
62	Tallow Creek	Implementation of design measures and evacuation plans to minimise impacts on future planned community uses as identified in the DCP No. 9	Medium	BSC - SEE	Staff Time	To be discussed with SEE	
63	Tallow Creek	Prepare a section contribution plan for all civil works in this plan.	Complete	Complete	-\$20,000	Wasn't supported or adopted by previous Council	
	Tallow Creek	Support SES in inclusion of Suffolk Park in Flood Response Plan	Complete	SES (tech intel from BSC)	Staff Time	To be discussed with SES	
Total Program Value					\$27,218,900		