

Southern Floodplain Risk Management Committee

Meeting Date: Wednesday, 04 June, 2025
Location: Jervis Bay Room, City Administrative Centre, Bridge Road, Nowra
Time: 4.00pm

Please note: Council's Code of Meeting Practice permits the electronic recording and broadcast of the proceedings of meetings of the Council which are open to the public. Your attendance at this meeting is taken as consent to the possibility that your image and/or voice may be recorded and broadcast to the public.

Agenda

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Membership

Chairperson – Cllr Patricia White

All Councillors (Non-voting members)

Chief Executive Officer or nominee (Non-voting member)

Michael Brungs

Adam Crossley

Holly Gunton

David Laidlaw

Carol Saad

Government Agency representatives:-

Local Aboriginal Land Council

NSW State Emergency Services

Department of Planning & Environment (DPE)

Other relevant Government Agency representatives

Quorum – Three (3) (provided that a minimum of one (1) Councillor as the Chair or Acting chair and two community representatives are present)

Note: Any non-voting Councillor in attendance at any Committee meeting may act as an alternate voting member in circumstances where achievement of a quorum is required, noting that this doesn't apply when quorum specifies the quorum to require community member attendance.

Purpose:

The principal objective of the Southern Floodplain Risk Management Committee is to assist Shoalhaven City Council in the development and implementation of one or more floodplain risk management plans for the southern area of the Council. This will need to be in accordance with the NSW Floodplain Development Manual. The southern area applies to the following catchments:

- Lake Conjola;
- Narrawallee;
- Mollymook;
- Ulladulla;
- Burrill Lake;
- Lake Tabourie; and
- Willinga Lake

Role:

- a. To assist the Council in the development and implementation of a Flood Study, Floodplain Risk Management Study and Floodplain Risk Management Plan for the areas listed under 'Purpose' (see above);
- b. To assist the Council monitoring and assessing the effectiveness of the management plans during and after their implementation;
- c. To assist the Council by providing input into known flood behaviour as part of the Flood Study; and
- d. Facilitate broader community consultation and participation in floodplain risk management through informing and liaising with member community groups.

MINUTES OF THE SOUTHERN FLOODPLAIN RISK MANAGEMENT COMMITTEE

Meeting Date: Wednesday, 4 December 2024
Location: Jervis Bay Room, City Administrative Centre, Bridge Road, Nowra
Time: 4.02pm

The following members were present:

Clr Patricia White - Chairperson
Clr Matthew Norris (Remotely)
Mr Michael Brungs
Ms Carol Saad (Remotely)

Others present:

Mr Colin Bron - (NSW SES) State Emergency Service (Remotely)
Mr Bill McInnes - (NSW SES) State Emergency Service (Remotely)
Ms Amanda Pollock - (NSW SES) State Emergency Service (Remotely)
Ms Tracey Provest - (NSW SES) State Emergency Service - Joined remotely at 4.17pm
Mr Leon Collins - Worley (Remotely)
Mr Luke Evans - Rhelm (Remotely)
Mr Nathan Pomfret - DCCEEW Biodiversity & Conservation (Remotely)
Dr Michael Roberts - Manager Environmental Services
Mr Mark Stone – Lead – Floodplain Management
Mr Alexander Aronsson – Floodplain & Stormwater Quality Engineer

Apologies / Leave of Absence

Nil.

Confirmation of the Minutes

RESOLVED (Clr White / Michael Brungs)

That the Minutes of the Southern Floodplain Risk Management Committee held on Wednesday 22 November 2023 be confirmed.

CARRIED

Declaration of Interests

During the meeting, Cllr White declared a non-pecuniary significant interest in relation to item SFM24.3 - Clyde River Flood Study and Flood Risk Management Study and Plan Public Exhibition - Cllr Whites son and daughter in law owns a property along the river in Eurobodalla Shire Council that is outlined in this report and as discussed during the Rhelm presentation - Cllr will remain in the room and take part in the discussion and vote.

PRESENTATIONS AND REPORTS

SFM24.1 Clyde River Flood Study and Floodplain Risk Management Study & Plan

HPERM Ref:
D24/488572

Mr Luke Evans - Rhelm provided a presentation to the Southern Floodplain Risk Management Committee on the Clyde River Flood Study and Floodplain Risk Management Study and Plan.

Cllr White queried if Eurobodalla Council are involved in this study as the plan outlines areas within this LGA. Mr Mark Stone – Lead – Floodplain Management clarified Shoalhaven Council reached out to Eurobodalla to seek their involvement and collaboration on this study and plan however, due to funding Eurobodalla were unable to contribute. The outcomes of this study will be published and the flood model made available to Eurobodalla upon completion although it is worth noting, Eurobodalla would still require to conduct their own study and plan, however, they can significantly leverage off the flood model developed as part of this study.

The presentation is attached to the minutes.

SFM24.3 Clyde River Flood Study and Flood Risk Management Study and Plan Public Exhibition

HPERM Ref:
D24/479290

Note: Cllr White declared a significant non-pecuniary interest - Cllr Whites son owns a property along the river that is outlined in this report and as discussed during the Rhelm presentation - Cllr remained in the room and took part in the discussion and voted.

Recommendation (Item to be determined under delegated authority)

The Committee:

1. Receive the draft Clyde River Flood Study, draft Floodplain Risk Management Study and draft Floodplain Risk Management Plan reports for information; and
2. Endorse the commencement of public exhibition and community consultation for the draft Clyde River Flood Study, draft Floodplain Risk Management Study and draft Floodplain Risk Management Plan.

RESOLVED (Michael Brungs / Cllr White)

The Committee:

1. Receive the draft Clyde River Flood Study, draft Floodplain Risk Management Study and draft Floodplain Risk Management Plan reports for information; and
2. Endorse the commencement of public exhibition and community consultation for the draft Clyde River Flood Study, draft Floodplain Risk Management Study and draft Floodplain Risk Management Plan.

CARRIED

SFM24.2 Willinga Lake Flood Study and Floodplain Risk Management Study & Plan**HPERM Ref:
D24/488574**

Mr Leon Collins - Worley provided a presentation to the Southern Floodplain Risk Management Committee on the Willinga Lake Flood Study and Floodplain Risk Management Study and Plan.

The presentation is attached to the minutes.

SFM24.4 Willinga Lake Flood Study and Flood Risk Management Study and Plan Public Exhibition**HPERM Ref:
D24/480636****Recommendation (Item to be determined under delegated authority)**

The Committee:

1. Receive the draft Willinga Lake Flood Study, draft Floodplain Risk Management Study and draft Floodplain Risk Management Plan reports for information; and
2. Endorse the commencement of public exhibition and community consultation for the draft Willinga Lake Flood Study, draft Floodplain Risk Management Study and draft Floodplain Risk Management Plan.

RESOLVED (Michael Brungs / Cllr White)

The Committee:

1. Receive the draft Willinga Lake Flood Study, draft Floodplain Risk Management Study and draft Floodplain Risk Management Plan reports for information; and
2. Endorse the commencement of public exhibition and community consultation for the draft Willinga Lake Flood Study, draft Floodplain Risk Management Study and draft Floodplain Risk Management Plan.

CARRIED

SFM23.5 General Update on Flood Projects**HPERM Ref:
D23/429501****Catchments Flash Flood Warning Systems**

It was advised that the Total Flood Warning System detailed design is now completed and ready to be implemented subject to funding. Council has applied for 2/3 grant funding through the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) Flood Program. It is expected the outcome of this funding application will be announced by the end of the year. If successful, Council would need to allocate 1/3 funding for the project to be implemented.

Lake Conjola Flood Information Letters

The Committee discussed the letters Council sent to the Lake Conjola residents regarding flood information. Cllr White queried if there were any complaints received in response from these outgoing letters. It was advised that out of the approx. 166 letters there were approx. 2 complaints received.

Recommendation (Item to be determined under delegated authority)

The Committee receive the General Update on Flood Projects report for information.

RESOLVED (By consent)

The Committee receive the General Update on Flood Projects report for information.

CARRIED

GENERAL BUSINESS

SFM24.5 Additional Item - Update on Floodplain Risk Management and Coastal Management Program Advisory Committees

Dr Michael Roberts – Manager Environmental Services provided a verbal update on the Floodplain Risk Management and Coastal Management Program Advisory Committees following a recent Council resolution (MIN24.647) on 26 November 2024.

Council resolved to combine the Floodplain Risk Management and the Coastal Management Program Committees by geography (northern / central / southern). This is to come into effect once a new Terms of Reference has been established and adopted by Council. It is expected this will occur by mid-2025. The membership will be reviewed and discussed with further advice to be provided to all committee members following the establishment of the Terms of Reference and the determination of the membership process.

SFM24.7 Additional Item - Request Report Back - Big Map Educational Tool

The Committee discussed the 'Big Map' that was recently displayed for Lake Conjola community at the Lake Conjola Community Centre. The Big Map shows the size of the Lake Conjola catchment and demonstrates how restricted the outlet is in comparison.

Recommended (Item to be determined under delegated authority)

That Council provide a report back to the next Floodplain Risk Management or Coastal Management Program Advisory Committee on how the community can use the Lake Conjola Big Map as an educational tool.

RESOLVED (By consent)

That Council provide a report back to the next Floodplain Risk Management or Coastal Management Program Advisory Committee on how the community can use the Lake Conjola Big Map as an educational tool.

CARRIED

There being no further business, the meeting concluded, the time being 5.13pm.

Clr Patricia White
CHAIRPERSON

SFM25.1 General Update on Flood Projects Report

HPERM Ref: D25/158784

Department: Environmental Services

Approver: Lindsay Usher, Acting Director - City Development

Purpose:

To provide the Southern Floodplain Risk Management Committee (SFRMC) with an update on various flood related projects in the SFRMC region.

Summary and Key Points for Consideration:

An update for the committee's information is provided on the following projects:

- Intermittently Closed and Open Lake and Lagoon (ICOLL) Catchments Flash Flood Warning System Scoping Study.
- Flood Alert Network Upgrade.
- Enviromon Replacement.
- Lake Conjola Big Map Educational Tool.
- Lake Conjola Entrance Management Policy and Review of Environmental Factors.

Recommendation (Item to be determined under delegated authority)

The Committee receive the General Update on Flood Projects Report for information.

Options

1. The Committee receive the General Update on Flood Projects report for information.

Implications: Nil.

2. The Committee could choose to provide an alternative recommendation for consideration by Council.

Implications: Unknown.

Background and Supplementary information

Intermittently Closed and Open Lake and Lagoon (ICOLL) Catchments Flash Flood Warning System Scoping Study

Council engaged a consultant, Manly Hydraulics Laboratory (MHL), to complete this study.

The primary objectives of this study were to scope the requirements and determine feasible options for the implementation of a fit-for-purpose location-based flash flood warning system for the catchments of Lake Conjola, Burrill Lake and Tabourie Lake to proactively improve flood warning and evacuation capabilities within the townships of these areas.

The ICOLL Catchments Flash Flood Warning System Scoping Study investigation has been successfully completed for the Lake Conjola, Burrill Lake and Tabourie Lake catchments and the grant is currently being acquitted.

Council has received grant funding from the NSW Government Floodplain Management Program for 2/3 of the cost to implement the proposed Total Flood Warning System in each catchment. When the final 1/3 funding contribution from Council has been made available, Council will proceed to engage a contractor to implement the proposed Total Flood Warning System in each catchment.

When eventually implemented, these Total Flood Warning Systems will predict lake levels in a flood event, provide early warning, and assist with flood event response and pre-flood entrance management procedures.

Flood Alert Network Upgrade

Council has funding for the staged upgrade of existing rainfall and water level gauges to Alert 2 equipment.

The existing Burrill Lake rainfall gauge has been recently relocated, and the Burrill Lake water level gauge is planned to be relocated and upgraded in May 2025.

Enviromon Replacement

Council's Enviromon software (historically provided and supported by the Bureau of Meteorology) allows rainfall and water level gauge data to be accessed in real time. Enviromon also allows alerts to be sent to Council and NSW SES staff based on predetermined trigger levels.

The Bureau of Meteorology is replacing Enviromon software from mid to late 2025 and only providing technical support to third-party Enviromon users (such as Shoalhaven City Council) until late-2025. Council therefore needs to transition to an Enviromon replacement system and has requested funding for the 2025/26 financial year via Council's Delivery Program Operational Plan (DPOP) and Budget process. If this budget is made available, Council will implement an Enviromon replacement system in the 2025/26 financial year.

Lake Conjola Big Map Educational Tool

The Lake Conjola Big Map was discussed at the 4 December 2024 SFRMC meeting. Council was asked to report back (SFM24.7) to the next Floodplain Risk Management or Coastal Management Program Advisory Committee on how the community can use the Lake Conjola Big Map as an educational tool.

Council have obtained feedback from the NSW Reconstruction Authority on the whereabouts and ownership of the Lake Conjola Big Map.

Council has been advised that the Lake Conjola Big Map is being looked after by the Conjola Community Association and that contact should be made with Dirk Treloar or Lynne Wright to discuss any planned future use of the Lake Conjola Big Map.

Lake Conjola Entrance Management Policy and Review of Environmental Factors

Council has completed a review of the entrance management arrangements for Lake Conjola. This involved the preparation of a Review of Environmental Factors (REF) to implement the draft Lake Conjola Entrance Management Policy (EMP).

The draft Lake Conjola Entrance Opening REF (2025) was on public exhibition until Sunday 11 May 2025 and can be viewed in the Document Library on the Shoalhaven Entrance Management Policy Review Get Involved webpage.

The EMP takes into consideration a range of environmental factors and includes the outcome of an evidence-based, technical review of the trigger levels to inform the entrance management options within the document.

The REF and EMP have been developed in consultation with several NSW Government agencies.

The draft Lake Conjola EMP can also be viewed in the Document Library on the Shoalhaven Entrance Management Policy Review Get Involved webpage.

At the conclusion of the public exhibition period a report will be prepared seeking endorsement by the Committee prior to reporting to Council for adoption. This report will include the outcome of the community consultation and any amendments to the EMP.

Internal Consultations

Staff have collaborated with Council's Coastal Management Unit to deliver the Lake Conjola EMP and REF.

The Floodplain Management Unit collaborate closely with ShoalWater technicians to deliver the Flood Alert Network Upgrade.

External Consultations

The NSW SES and NSW DCCEEW have been consulted as part of the delivery of the ICOLL Catchments Flash Flood Warning System Scoping Study project.

The Floodplain Management Unit is consulting with the Bureau of Meteorology in relation to the Enviromon Replacement.

Community Consultations

The Lake Conjola, Burrill Lake and Tabourie Lake communities have been consulted through the delivery of the ICOLL Catchments Flash Flood Warning System Scoping Study project.

Policy and Statutory Implications

Implementing the Total Flood Warning System will improve Council's ability to pre-emptively implement the relevant Entrance Management Policies. These policies will need to be updated accordingly to capture the Total Flood Warning System, once implemented.

Upgrading the Flood Alert Network improves the network's reliability during flood events. This system is used by all levels of government.

Financial Implications

This report provides an update on ongoing projects and does not in itself have any financial implications. No additional funding is sought from this report.

Risk Implications

This report provides an update on ongoing projects and does not in itself have any risk implications. The works listed in this report are business as usual activities for the Floodplain Management Unit.

SFM25.2 Clyde River Flood Study and Floodplain Risk Management Study and Plan

HPERM Ref: D25/159248

Department: Environmental Services

Approver: Lindsay Usher, Acting Director - City Development

Purpose:

To provide the Southern Floodplain Risk Management Committee (SFRMC) with an update on the outcomes of the draft Clyde River Flood Study and Clyde River Floodplain Risk Management Study & Plan public exhibition and community consultation. Then seek endorsement from the SFRMC for Council to adopt the Clyde River Flood Study, Clyde River Floodplain Risk Management Study and Clyde River Floodplain Risk Management Plan.

Summary and Key Points for Consideration:

Council has completed the Clyde River Flood Study and Clyde River Floodplain Risk Management Study & Plan.

These studies document the flood behaviour and risk within the Clyde River catchment.

A broad range of flood risk mitigation measures has been investigated. Practical, feasible and suitable measures has been recommended for adoption in the Clyde River Floodplain Risk Management Plan for implementation into the future.

Recommendation (Item to be determined under delegated authority)

That the Committee endorse the *Clyde River Flood Study (Rhelm, 2025)*, *Clyde River Floodplain Risk Management Study (Rhelm, 2025)* and *Clyde River Floodplain Risk Management Plan (Rhelm, 2025)* and endorse that these documents be provided to Council for adoption.

Options

1. That the Committee endorse the *Clyde River Flood Study (Rhelm, 2025)*, *Clyde River Floodplain Risk Management Study (Rhelm, 2025)* and *Clyde River Floodplain Risk Management Plan (Rhelm, 2025)* and endorse that these documents be provided to Council for adoption.

Implications: Nil.

2. The Committee could choose to provide an alternative recommendation for consideration by Council.

Implications: This option could incur costs on Council given the Clyde River Flood Study and Floodplain Risk Management Study & Plan project has been completed and there are no remaining grant funds available for further work on this project. By not endorsing the studies, Council may not meet its obligations under the NSW Flood Prone Land Policy by not implementing best available flood information to inform strategic land-use and flood risk management decisions on flood liable land. This could jeopardise Council's exemption from liability for decisions made within the Clyde River catchment relating to flood liable land under section 7.33 of the Local Government Act 1993.

Background and Supplementary information

Council received grant funding from the Australian Government's Preparing Australian Communities Program to undertake the Clyde River Flood Study and Floodplain Risk Management Study and Plan to investigate the flood risk within the catchment.

The primary study area is the 50km reach of the Clyde River from upstream of the Yadboro River confluence through the localities of Yadboro, Mogood, Morton, Brooman and Currowan to the southern boundary of the Shoalhaven City Council LGA at the confluence with the Currowan River.

This stretch of the Clyde River comprises large areas of land owned by the NSW National Parks and Wildlife Service (NPWS) and State Forests of NSW, but with private land tenures along the river length. The focus of the flood study is predominantly privately owned land and public roads but investigating the full 50km length is necessary to better understand flow times and discharge relationships between different waterway crossings over the Clyde River. The catchment includes properties that quickly, and for an extended period, become isolated due to inundation of existing low-level waterway crossings.

This project was undertaken in accordance with the NSW Flood Prone Land Policy, the *NSW Flood Risk Management Manual (2023)* and in close collaboration with the NSW State Emergency Service (SES), the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW), and other agencies and stakeholders as required.

Council engaged a consultant, Rhelm, to assist with the preparation of the Clyde River Flood Study and Floodplain Risk Management Study and Plan. This study will improve Council's understanding of flood behaviour and impacts on the community and better inform management of flood risk in the study area.

Community consultation was undertaken at the commencement of the project from 24 July to 25 August 2023. Public exhibition and community consultation of the draft studies was held over a 28-day period from 28 January to 24 February 2025. More details are provided below under the Community Consultation section of this report

The following amendments have been made to the final project deliverables following the public exhibition period:

Clyde River Flood Study (Rhelm, 2025)

- Updated to final revision.
- Section 2.9, Historical Flooding Data. Additional paragraph added noting some historic flood information made available to Council during the public exhibition period.
- Section 3.4, Public Exhibition. This section was updated to summarise the outcomes of the public exhibition period.
- Section 9, Tidal Influence. Additional paragraph added regarding some photos received of Shallow Crossing tidal inundation during the public exhibition period.
- Appendix B, Community Survey. The online survey questions from the public exhibition have been included in Appendix B.

Clyde River Floodplain Risk Management Study (Rhelm, 2025)

- Updated to final revision.
- Section 2.4, Public Exhibition. This section was updated to summarise the outcomes of the public exhibition period.

- New Section 5.4, Shelter in Place Guideline for Flash Flooding added. This considers the suitability of shelter in place in the Clyde River catchment in accordance with the final Shelter in Place Guideline which was released at the same time as the public exhibition.

Clyde River Floodplain Risk Management Plan (Rhelm, 2025)

- Updated to final revision.
- No changes were made to the flood risk management measures included in the Plan as these were all supported or strongly supported by the community based on feedback from the public exhibition period.

Clyde River Map Compendium (Rhelm, 2025)

- Updated to final revision.
- No changes have been made to any flood maps.

The final Clyde River Flood Study, Clyde River Floodplain Risk Management Study, Clyde River Floodplain Risk Management Plan, and Clyde River Map Compendium can be viewed at the following link: <https://flooddata.ses.nsw.gov.au/flood-projects/clyde-flood-study-and-floodplain-risk-management-study>

Internal Consultations

No formal consultation has occurred, but relevant internal stakeholders have been consulted on an as needs basis throughout the project.

External Consultations

The Floodplain Management Unit has worked closely with the NSW SES and NSW DCCEEW to deliver this project.

Community Consultations

Public Exhibition and Community Consultation

The first round of community consultation was undertaken from 24 July to 25 August 2023. A project Get Involved website was published by Council to inform the community about this project. The website has been developed to provide the community with detailed information about the study and to gather information. The website has been updated during the duration of the project to provide relevant information at each stage of the study.

Council received endorsement from the SFRMC in December 2024 to undertake public exhibition and community consultation of the draft Clyde River Flood Study and Clyde River Floodplain Risk Management Study & Plan.

The aim of the public exhibition and community consultation phase was for Council to seek feedback from the community regarding the draft *Clyde River Flood Study* (Rhelm, 2025) and mitigation measures included in the draft Clyde River Floodplain Risk Management Plan (Rhelm, 2025) such that comments could be considered prior to finalisation of the Flood Study and Floodplain Risk Management Study & Plan.

The public exhibition and community consultation was held over a 28-day period from 28 January to 24 February 2025. The following community consultation was undertaken:

- Media release to inform the community of the public exhibition and community consultation period.

- Notification of the public exhibition and community consultation period in the In Your Neighbourhood Community Newsletter and on Council social media pages.
- Notification of Community Consultative Bodies (CCBs) and community groups of the public exhibition and community consultation period.
- Mail out to property owners within the study area. This letter provided a link to the project Get Involved webpage. Forty nine (49) letters were sent.
- The Get Involved webpage, included the following information:
 - *A Summary Report of the Clyde River Flood Study and Floodplain Risk Management Study & Plan (Rhelm, 2025).*
 - *Clyde River Flood Study (Rhelm, 2025) draft report.*
 - *Clyde River Floodplain Risk Management Study (Rhelm, 2025) draft report.*
 - *Clyde River Floodplain Risk Management Plan (Rhelm, 2025) draft report.*
 - *Clyde River Map Compendium (Rhelm, 2025) draft report.*
 - A Video Presentation that discusses the Flood Study and Floodplain Risk Management Study & Plan development and key outcomes.
 - Link to an online Community Survey.
 - NSW State Emergency Service (NSW SES) FloodSafe brochure.
- Hard copies of the Flood Study, Floodplain Risk Management Study, Floodplain Risk Management Plan and Map Compendium reports were made available at Council (Ulladulla and Nowra) for viewing.
- General enquiries via phone calls and community members visiting the Nowra Administration Building throughout the community consultation period.
- A community drop-in session was held on Wednesday 12 February 2025 at the Ulladulla Civic Centre attended by Council staff, DCCEE staff, local SES volunteers and consultants from Rhelm working on this project.

A number of online surveys were completed by the community and a small number of Clyde River catchment residents attended the drop-in session at the Ulladulla Civic Centre.

Feedback from Public Exhibition

The online survey during the public exhibition period asked for any feedback on the draft Clyde River Flood Study and whether each flood mitigation measure included in the draft Clyde River Floodplain Risk Management Plan were either strongly supported, supported, neutral, opposed or strongly opposed. This community feedback was used to identify the level of community support for the flood mitigation measures included in the draft Clyde River Floodplain Risk Management Plan.

No feedback was provided on the draft Clyde River Flood Study or Map Compendium.

All flood mitigation measures included in the draft Clyde River Floodplain Risk Management Plan were either supported or strongly supported in the completed surveys and by drop-in session attendees.

Policy and Statutory Implications

Following adoption of the Clyde River Flood Study and Floodplain Risk Management Study & Plan deliverables, the outcomes from this investigation will be used as follows:

- Final Clyde River Flood Study and Floodplain Risk Management Study & Plan reports and Map Compendium will be made available on Council's website. The mapping will be made available on Council's online flood mapping.
- This data will be available via flood certificate requests and be included in Section 10.7 planning certificates for the Clyde River catchment.
- This information will be used to assess proposed development on flood prone land in accordance with the Shoalhaven LEP 2014 and DCP Chapters G9 and G10.

All flood information completed in the Clyde River Flood Study and Floodplain Risk Management Study & Plan investigation will be provided to the NSW SES. This information ensures that Council satisfies its obligations from the *NSW Flood Prone Land Policy (2023)* and the *NSW Flood Risk Management Manual (2023)*.

The final Clyde River Floodplain Risk Management Plan includes the following flood risk management measures for adoption.

Table 1: Summary of recommended floodplain risk management measures

Management Scenario	ID	Name	Priority
Emergency Response Management Measures	EM1	Data handover to SES	High
	EM2	Update of Emergency response documentation	High
	EM3	Installation of additional gauges	High
	EM4	Flood education	High
	EM5	Campground education campaign	Medium
	EM6	Flood depth markers	Medium
	EM8	Online reporting of road closures	Medium
	EM14	Improve Immunity of Flood Crossings	Low
Property Management Measures	FP1	Planning and Development Controls	High
	FP4	Voluntary house purchase	Low
	FP5	Voluntary house relocation	Low
	FP6	Post flood data collection	Medium

Financial Implications

The Clyde River Flood Study and Clyde River Floodplain Risk Management Study & Plan is fully funded by the Australian Government's Preparing Australian Communities Program – Local Stream.

The Clyde River Flood Study and Clyde River Floodplain Risk Management Study & Plan investigation has been completed, and the grant is in the process of being acquitted.

Risk Implications

By completing and adopting these studies, Council meets its obligations under the NSW Flood Prone Land Policy to manage flood risk within the Clyde River catchment. The completed studies present best available flood information that should be implemented to inform strategic land-use and flood risk management decisions on flood liable land within the study area. Should the committee choose not to adopt these studies, it may jeopardise Council's exemption from liability for decisions made within the Clyde River catchment relating to flood liable land under section 7.33 of the Local Government Act 1993.

SFM25.3 Willinga Lake Flood Study and Floodplain Risk Management Study and Plan

HPERM Ref: D25/159371

Department: Environmental Services

Approver: Lindsay Usher, Acting Director - City Development

Purpose:

To provide the Southern Floodplain Risk Management Committee (SFRMC) with an update on the outcomes of the draft Willinga Lake Flood Study and Willinga Lake Floodplain Risk Management Study and Plan public exhibition and community consultation. Then seek endorsement from the SFRMC for Council to adopt the Willinga Lake Flood Study and Willinga Lake Floodplain Risk Management Study and Plan.

Summary and Key Points for Consideration:

Council has completed the Willinga Lake Flood Study and Willinga Lake Floodplain Risk Management Study & Plan.

These studies document the flood behaviour and risk within the Willinga Lake catchment, and local catchments along Bawley Point Road and Murramarang Road.

A broad range of flood risk mitigation measures has been investigated. Practical, feasible and suitable measures has been recommended for adoption in the Willinga Lake Floodplain Risk Management Plan for implementation into the future.

Recommendation (Item to be determined under delegated authority)

That the Committee endorse the *Willinga Lake Flood Study (Worley, 2025)* and *Willinga Lake Floodplain Risk Management Study and Plan (Worley, 2025)* and endorse that these documents be provided to Council for adoption.

Options

1. That the Committee endorse the adoption of the *Willinga Lake Flood Study (Worley, 2025)* and *Willinga Lake Floodplain Risk Management Study and Plan (Worley, 2025)* and endorse that these documents be provided to Council for adoption.

Implications: Nil.

2. The Committee could choose to provide an alternative recommendation for consideration by Council.

Implications: This option could incur costs on Council given the Willinga Lake Flood Study and Floodplain Risk Management Study and Plan project has been completed and there are no remaining grant funds available for further work on this project. By not endorsing the studies, Council may not meet its obligations under the NSW Flood Prone Land Policy by not implementing best available flood information to inform strategic land-use and flood risk management decisions on flood liable land. This could jeopardise Council's exemption from liability for decisions made within the Willinga Lake catchment relating to flood liable land under section 7.33 of the Local Government Act 1993.

Background and Supplementary information

Council received grant funding from the Australian Government's Preparing Australian Communities Program to undertake the Willinga Lake Flood Study and Floodplain Risk Management Study and Plan to investigate the flood risk within the catchment.

The Bawley Point and Kioloa villages are all accessed by Bawley Point Road which is occasionally inundated when water levels are elevated in Willinga Lake. The nature of the flood risk in the Willinga Lake Catchment is mainly from potential isolation to more than 1,000 properties, businesses, including three large caravan parks. Few properties are at risk from direct flood inundation.

The flood risk to these communities is expected to be exacerbated by predicted climate change impacts, both in terms of frequency and magnitude. The Studies recommend management measures to reduce the flood risk within this catchment and include infrastructure upgrades and emergency management procedures.

This project was undertaken in accordance with the NSW Flood Prone Land Policy, the *NSW Flood Risk Management Manual (2023)* and in close collaboration with the NSW State Emergency Service (SES), the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW), and other agencies and stakeholders as required.

Council engaged a consultant, Worley, (previously Advisian), to assist with the preparation of the Willinga Lake Flood Study and Floodplain Risk Management Study and Plan. This study will improve Council's understanding of flood behaviour and impacts on the community and better inform management of flood risk in the study area.

Community consultation was undertaken at the commencement of the project from 24 July to 25 August 2023. The formal public exhibition and community consultation was held over a 28-day period from 28 January to 24 February 2025. A detailed overview of this is provided under the Community Consultation section of this report.

The following amendments have been made to the final project deliverables following the public exhibition period:

Willinga Lake Flood Study (Worley, 2025)

- Updated to final revision.
- Updated referencing for cover image and Figure 2-1.

Willinga Lake Floodplain Risk Management Study and Plan (Worley, 2025)

- Updated to final revision.
- Updated referencing for cover image.
- Section 5.5 Public Exhibition. This section was updated to summarise the outcomes of the public exhibition period.
- Some amendments were made to the wording for recommended planning measure PM.2.
- Some amendments to emergency response measure ER.3 to remove the flood warning signage from the private road within Willinga Park. This reduced the number of locations with recommended flood warning signage from 10 to 9.
- Recommended measure FM.1. The priority has been changed to high and timeframe to short i.e. less than 5 years.
- New Section 8.5 Shelter in Place Guideline for Flash Flooding added. This considers the suitability of shelter in place in the Willinga Lake catchment in accordance with

the final Shelter in Place Guideline which was released at the same time as the public exhibition.

Willinga Lake Map Compendium (Worley, 2025)

- Updated to final revision.
- Updated referencing for cover image.
- Updated Acknowledgements which had an outdated reference to DPE rather than DCCEEW.
- Figure 9-1. Removed Forster Road flood depth marker location as this is on a private road within Willinga Park.
- No changes made to any flood mapping.

The final Willinga Lake Flood Study, Willinga Lake Floodplain Risk Management Study and Plan, and Willinga Lake Map Compendium can be viewed at the following link: <https://flooddata.ses.nsw.gov.au/flood-projects/willinga-lake-flood-study-and-floodplain-risk-management-study-plan-2025>

Internal Consultations

No formal consultation has occurred, but relevant internal stakeholders has been consulted on an as needs basis throughout the project.

External Consultations

The Floodplain Management Unit has worked closely with the NSW SES and NSW DCCEEW to deliver this project.

Community Consultations

Public Exhibition and Community Consultation

The first round of community consultation was undertaken from 24 July to 25 August 2023. A project Get Involved website was published by Council to inform the community about this project. The website has been developed to provide the community with detailed information about the study and to gather information. The website has been updated during the duration of the project to provide relevant information at each stage of the study.

Council received endorsement from the SFRMC in December 2024 to undertake public exhibition and community consultation of the draft Willinga Lake Flood Study and Willinga Lake Floodplain Risk Management Study and Plan.

The aim of the public exhibition and community consultation phase was for Council to seek feedback from the community regarding the draft *Willinga Lake Flood Study* (Worley, 2025) and mitigation measures included in the draft *Willinga Lake Floodplain Risk Management Plan* (Worley, 2025) with these comments then considered prior to finalisation of the Flood Study and Floodplain Risk Management Study and Plan.

The public exhibition and community consultation was held over a 28-day period from 28 January to 24 February 2025. The following community consultation was undertaken:

- Media release to inform the community of the public exhibition and community consultation period.

- Notification of the public exhibition and community consultation period in the In Your Neighbourhood Community Newsletter and on Council social media pages.
- Notification of Community Consultative Bodies (CCBs) and community groups of the public exhibition and community consultation period.
- Mail out to property owners within the study area. This letter provided a link to the project Get Involved webpage. Eighty eight (88) letters were sent out to flood affected properties.
- Get Involved webpage, including the following:
 - *A Summary Report of the Willinga Lake Flood Study and Floodplain Risk Management Study & Plan (Worley, 2025).*
 - *Willinga Lake Flood Study (Worley, 2025) draft report.*
 - *Willinga Lake Floodplain Risk Management Study and Plan (Worley, 2025) draft report.*
 - *Willinga Lake Map Compendium (Worley, 2025) draft report.*
 - A Video Presentation that discusses the Flood Study and Floodplain Risk Management Study and Plan development and key outcomes.
 - Link to an online Community Survey.
 - NSW State Emergency Service (NSW SES) FloodSafe brochure.
- Hard copies of the Flood Study, Floodplain Risk Management Study and Plan and Map Compendium reports were made available at Council (Ulladulla and Nowra) for viewing.
- General enquiries via phone calls throughout the community consultation period.
- A community drop-in session was held on Tuesday 11 February 2025 at the Bawley Point RFS (Thrush Street) attended by Council staff, DCCEEW staff, local SES volunteers and consultants from Worley working on this project.

A number of online surveys were completed by the community in addition to attendance from Bawley Point residents at the drop-in session at the Bawley Point RFS.

Feedback from Public Exhibition

The online survey during the public exhibition period asked for feedback on the draft Willinga Lake Flood Study and whether each flood mitigation measure included in the draft Willinga Lake Floodplain Risk Management Plan were either strongly supported, supported, neutral, opposed or strongly opposed. This community feedback was used to identify the level of community support for the flood mitigation measures included in the draft Willinga Lake Floodplain Risk Management Plan.

No feedback was provided on the draft Willinga Lake Flood Study or Map Compendium.

Feedback on the flood mitigation measures included in the draft Willinga Lake Floodplain Risk Management Plan is summarised in Section 5.5 of the Willinga Lake Floodplain Risk Management Plan report. The key outcomes are summarised below.

The Get Involved webpage received 139 visitors, 18 responses to the survey, 18 downloads of the Summary Report, 12 downloads of Volume 2: Floodplain Risk Management Study and Plan, 9 downloads of Volume 3: Flood Mapping Compendium, 8 downloads of Volume 1: Flood Study Report, and 9 views of the video.

Community responses as to whether they support or oppose the specific flood risk management measures recommended in the draft Floodplain Risk Management Plan report are summarised in Figure 1 below.

While the public exhibition survey identified minor opposition to some measures recommended in the draft Willinga Lake Floodplain Risk Management Plan, at least 72% of respondents (and as many as 94%) were supportive of each measure. On this basis, no changes have been made to the flood mitigation measures included in the Willinga Lake Floodplain Risk Management Study and Plan report. However, further consultation should be undertaken as the implementation of each measure progresses to gain an understanding of attitudes across a broader section of the community and the reasons for any opposition.

It should also be noted that Bawley Point Road is a Council asset that, regardless of the flood-related upgrades recommended in the Floodplain Risk Management Study & Plan, will be required to adapt to future climate change including sea level rise, associated impacts on entrance berm level, and other flow on impacts such as subgrade saturation which would reduce the structural integrity of the road and lead to higher maintenance and rejuvenation costs over time. Accordingly, it is expected that the eventual upgrade of Bawley Point Road adjacent to Willinga Lake is inevitable.

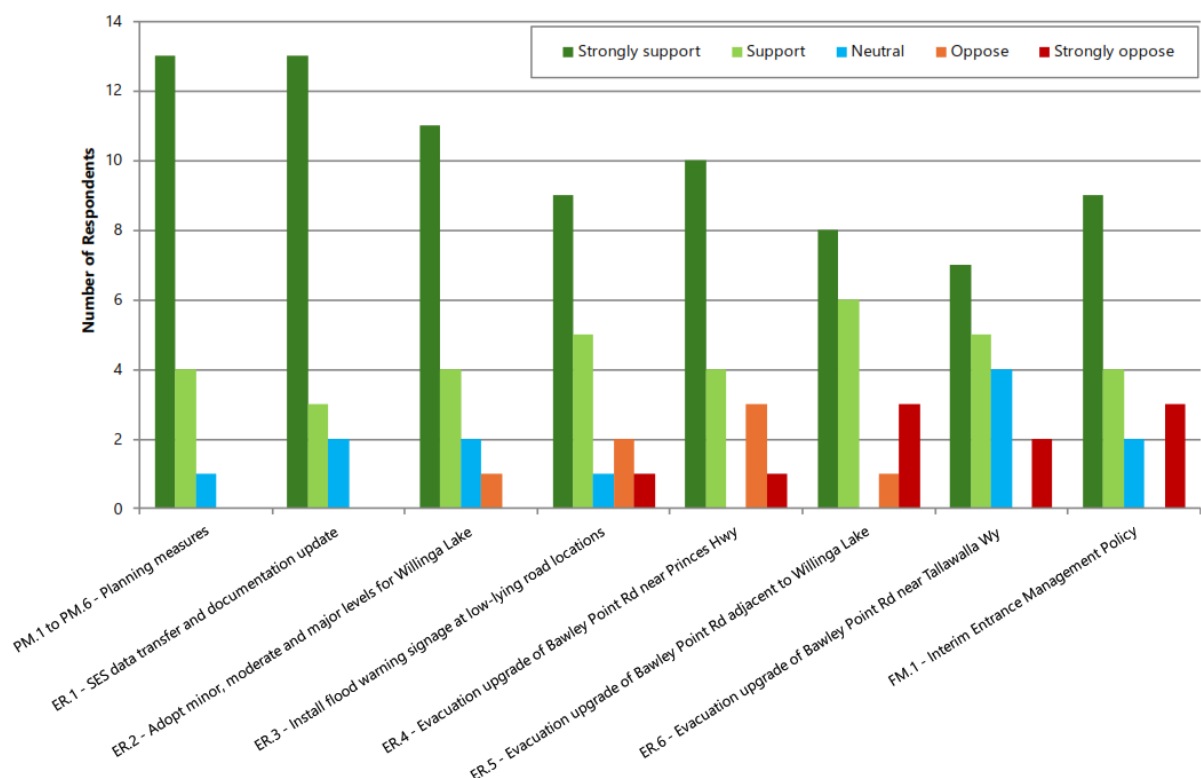


Figure 1. Community feedback on support for recommended flood risk management measures

The reasoning for each negative response is not known, however inferring from limited additional comments received through the survey and discussions at the drop-in session themes include the following:

- A preference for the Willinga Lake entrance to operate in a natural state.
- A low level of concern regarding flooding due to limited historical occurrence within their lived experience.
- Environmental concerns.
- Concerns regarding costs to Council.
- Concerns that improved road access may facilitate further development.

Policy and Statutory Implications

Following adoption of the Willinga Lake Flood Study and Floodplain Risk Management Study and Plan deliverables, the outcomes from this investigation will be used as follows:

- Final Willinga Lake Flood Study and Floodplain Risk Management Study and Plan reports and Map Compendium will be made available on Council's website. The mapping will be made available on Council's online flood mapping.
- This data will be available via flood certificate requests and be included in Section 10.7 planning certificates for the Willinga Lake catchment.
- This information will be used to assess proposed development on flood prone land in accordance with the Shoalhaven LEP 2014 and DCP Chapters G9 and G10.

All flood information completed in the Willinga Lake Flood Study and Floodplain Risk Management Study and Plan investigation will be provided to the NSW SES.

This ensures that Council satisfies its obligations from the *NSW Flood Prone Land Policy (2023)* and the *NSW Flood Risk Management Manual (2023)*.

The final Willinga Lake Floodplain Risk Management Plan includes the following flood risk management measures for adoption.

Table 1: Summary of recommended floodplain risk management measures

Management Scenario	ID	Name	Priority
Planning Measures	PM.1	Update LEP Clauses 5.9 and 5.9A	Medium
	PM.2	Updated LEP Land Zoning to limit residential subdivision	Medium
	PM.3	Develop Site-Specific Flood Related Development Controls for Willinga Lake catchment	High
	PM.4	Adopt Flood Planning Area (FPA) and Flood Planning Level (FPL) mapping	High
	PM.5	Adopt Combined Flood Hazard/Hydraulic Category mapping	High
	PM.6	Adopt Flood Planning Constraint Categories (FPCCs)	High
Emergency Response Measures	ER.1	SES Data Transfer and Documentation Update	High
	ER.2	Adopt Minor, Moderate and Major Levels for Willinga Lake Gauge	High
	ER.3	Install Flood Warning Signage	Medium

	ER.4	Flood Evacuation Route Upgrade - Bawley Point Road near Princes Highway (BPR-1)	Medium
	ER.5	Flood Evacuation Route Upgrade - Bawley Point Road adjacent to Willinga Lake	Medium
	ER.6	Flood Evacuation Route Upgrade - Bawley Point Road near Tallawalla Way (BPR-2)	Low
Flood Modification Measures	FM.1	Entrance Management	High

Financial Implications

The Willinga Lake Flood Study and Willinga Lake Floodplain Risk Management Study and Plan is fully funded by the Australian Government's Preparing Australian Communities Program – Local Stream.

The Willinga Lake Flood Study and Willinga Lake Floodplain Risk Management Study and Plan investigation has been completed, and the grant is in the process of being acquitted.

Risk Implications

By completing and adopting these studies, Council meets its obligations under the NSW Flood Prone Land Policy to manage flood risk within the Willinga Lake catchment. The completed studies present best available flood information that should be implemented to inform strategic land-use and flood risk management decisions on flood liable land within the study area. Should the committee choose not to adopt these studies, it may jeopardise Council's exemption from liability for decisions made within the Willinga Lake catchment relating to flood liable land under section 7.33 of the Local Government Act 1993.