

10.5 Infrastructure Services Directorate

10.5.1 Public Exhibition of Draft Macquarie Rivulet Floodplain Risk Management Study and Plan

To the Chief Executive Officer

Directorate: Infrastructure Services

Business Unit: Technical and Recreation Services

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Executive Summary

The purpose of this report is to seek Council endorsement of the Draft Macquarie Rivulet Floodplain Risk Management Study and Plan for the purposes of public exhibition, for a period of 21 days beginning Wednesday 28 February 2024.

The draft Study and Plan is now complete, has been reported to the Coastal and Flood Risk Management Advisory Committee, and is now ready to be placed on public exhibition. The public exhibition of the draft Study and Plan will allow the community to view the findings of the study and provide feedback via submissions.

Recommendation

That:

- 1. Council endorse the Draft Macquarie Rivulet Floodplain Risk Management Study and Plan (Attachment 2) to be placed on public exhibition for a period of 21 days, beginning 28 February 2024.**
- 2. If no submissions are received as a result of public exhibition that require further consideration, that Council adopt the Macquarie Rivulet Floodplain Risk Management Study and Plan as attached to this report (Attachment 2).**

This resolution is a policy position of Council.

Background

Council manages flood prone land in accordance with the NSW Government's Flood Prone Land Policy. The procedures for the management of flood prone land are detailed in the NSW Government's Flood Risk Management Manual (the Manual). The NSW Department of Climate Change, Energy, the Environment and Water (formerly Department of Planning and Environment) provides annual grant funding to support Councils with their flood risk management programs. This grant funding is based on a 2:1 funding agreement, meaning the state government provides \$2 for every \$1 contributed by Council.

The Macquarie Rivulet catchment encompasses the suburbs of Albion Park, Tullimbar, Calderwood, Yellow Rock, Tongarra and the northern areas of Albion Park Rail as shown in **Attachment 1**.

The development of the Macquarie Rivulet Floodplain Risk Management Study and Plan (Study and Plan) (**Attachment 2**) has been undertaken by consultants WMA Water who commenced in November 2018. The Study and Plan updates the previous Macquarie Rivulet Flood Study (2017) with the new flood estimation and modelling methods outlined in Australian Rainfall and Runoff 2019 (ARR2019) and has defined the existing flood behaviour for all major tributaries and drainage lines within the catchment.

The Study and Plan reviews management issues, investigates flood mitigation options, and recommends suitable options to form Council's plan for managing flood risk in the catchment. The specific objectives of the Study and Plan are:

- to identify and describe the various potential flood problems and specific future flooding issues.
- to review the flood provisions in Council's existing environmental planning policies and instruments.
- to identify and assess potential management and mitigation measures for existing developed areas.
- to assess the benefits and cost of the potential management and mitigation measures.
- to identify modifications required to current policies in the light of investigations.

To date, consultation has been undertaken in a number of stages, including a Community Newsletter and Questionnaire, Project Stakeholder Consultation and Consultation via Council's Coastal and Flood Risk Management Advisory Committee.

The Study and Plan identifies a number of measures to manage flood risk within the catchment that can generally be classified as either Flood

Modification, Property Modification or Response Modification options. The options recommended by the Study and Plan are summarised below:

Response Measures

RM01 Coordination of Emergency Services and Response Agencies
RM02 Community Flood Education and Awareness
RM03 Flood Warning System
RM04 Improvements to Driver Safety
RM05 Amend Local Flood Plans with Flood Information Derived from this Study

Property Modification Measures

PM01 Adoption of Flood Planning Levels
PM02 Adoption of Flood Planning Area
PM03 Provision of flood information to residents via section 10.7 Planning Certificates
PM04 Managing Development in Flood Prone Areas
PM05 Flood Proofing Measures for Non-Residential Properties

Flood Modification Measures

FM01 Basin Downstream of Terry Street
FM02 Tongarra Road Basin
FM03 Tripoli Way Drainage Upgrade
FM04 Tongarra Road Upgrade
FM05a Terry Street and Taylor Road Civil Works
FM05b Terry Street and Taylor Road Civil Works
FM06 Airport Runway Raise
FM07a Illawarra Highway Drainage Upgrade
FM07b Illawarra Highway Drainage Upgrade
FM08 Illawarra Highway Road Upgrade
FM09 Drainage Maintenance
FM10 Vegetation Management

The Study and Plan has identified that there are only a small amount of properties impacted by over-floor flooding within the catchment; therefore, Flood Modification options have generally low benefit-cost outcomes. Instead, the proposed Flood Modification options provide better outcomes for public infrastructure and transport, which is a high priority for this area.

Flood Planning Area

The Flood Planning Area (FPA) is an important tool in floodplain risk management. The FPA is derived from a combination of a Defined Flood Event (DFE) and a freeboard and is utilised by Council to provide development controls for managing future flood risk. The methodology and guidance of

ARR19 and the Manual require Council to consider climate change impacts when determining its DFE for the catchment and is defined as:

DFE = 1% AEP flood + Sea Level Rise + Increased Rainfall due to Climate Change + Blockage Factors + Local Factors (if applicable)

The FPA is then determined as:

FPA = DFE + freeboard*

* Freeboard is applied to account for uncertainty in modelling and prediction as well as localised hydraulics that aren't captured in models (e.g. the wake that is created from a vehicle driving through flood waters or floating debris).

Council's Climate and Sustainability Policy (2022) recognises that as a coastal community Council has a role in building climate resilience for our current community and future generations, which includes reducing flood risk. Representative Concentration Pathways (RCP) 8.5, a very high emissions scenario, is the most aligned model to the currently implemented global policies. Australia's CSIRO and Taskforce for Climate-related Disclosures recommends RCP8.5 models for testing assets and systems for the physical risks of Climate Change and have been adopted in the development of this Study and Plan.

The following parameters have been determined as the most appropriate for the evaluation of the DFE:

Sea Level Rise = 0.9m

Rainfall Increase = 16.9%

Blockage Factors = 50%

Local Factors = Nil

Freeboard = 0.5m

Council Implications

FINANCIAL / RESOURCES

The Macquarie Rivulet Floodplain Risk Management Study and Plan project is grant funded by the NSW Department of Climate Change, Energy, the Environment and Water (formerly Department of Planning and Environment) based on a 2:1 funding agreement, meaning the state government provides \$2 for every \$1 contributed by Council. Public exhibition and engagement with the community on the Study and Plan is a key milestone within the project and is funded accordingly.

The Study and Plan identify a number of management and mitigation measures

to address the flood risk within the catchment. However, implementation of a number of actions will be a shared responsibility between Council and a number of NSW State Agencies. Projects will be implemented when resources and funding is available. In addition, with the adoption of a Final Floodplain Risk Management Plan, Council will be able to apply for grant funding under the NSW Floodplain Management Program to implement the measures identified in the final plan and in accordance with State Government priorities. The future financial considerations will be identified in council Delivery Programs.

It is important to exhibit and finalise this study to meet the grant funding milestones for this phase of the project.

LEGISLATION AND POLICY (INCLUDING ADVOCACY, STRATEGIC AND OTHER PLANS)

Council has a statutory responsibility for land use planning and management under the Environmental Planning and Assessment Act 1979. Council's planning responsibilities include management of flood prone land in accordance with its flood susceptibility. Council's policies are required to be consistent with state planning policy which in respect to flooding is outlined in the NSW Government's Flood Risk Management Manual.

The Draft Macquarie Rivulet Floodplain Risk Management Study and Plan (**Attachment 2**) has been developed in a manner consistent with the NSW Flood Prone Land Policy and the NSW Floodplain Management Process.

If adopted, the Macquarie Rivulet Floodplain Risk Management Study and Plan will become a policy position of Council.

SOCIAL IMPACT

The intent of the NSW Government's Flood Prone Land Policy and Flood Risk Management Process as outlined in the Manual, is to reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone land and to reduce private and public losses resulting from flooding.

The public exhibition of the Draft Macquarie Rivulet Floodplain Risk Management Study and Plan (**Attachment 2**) will increase public awareness of flooding within the catchment and assist Council and key emergency personnel in creating community readiness for the risk associated with flood.

SUSTAINABILITY CONSIDERATIONS

Council's Climate and Sustainability Policy outlines Council's commitment to applying sustainability principles into decision-making processes across the organisation that integrate climate risk assessment into decision making to build resilience into strategic planning, development activities, projects and asset management.

The Draft Macquarie Rivulet Floodplain Risk Management Study and Plan defines the current and future flood risk to the community and identifies a number of actions to ensure future development and flood response is compatible with that risk.

LEGAL CONSIDERATIONS

Not applicable

RISK CONSIDERATIONS

- Business Risk - The findings of the Study and Plan will be used to better plan for and manage natural flooding hazards within the Macquarie Rivulet catchment and by doing so will ensure better continuity of services.
- WHS and Public Risk - Implementing the actions identified within the Study and Plan will help to reduce risks to the public from flooding as well as improve safety of staff responding during flood events.
- Environmental Risk - The Study and Plan responds to environmental risk and potential impacts of climate change to Council and the community. The proposed actions within the Study and Plan seek to minimise environmental risk and to ensure the community is resilient to flood risk, now and into the future.
- Delivery Program Risk - Once adopted, actions from the Study and Plan will be prioritised and programmed into future delivery programs. Resourcing and funding will also be subject to future grant funding opportunities as appropriate.

Link to Community Strategic Plan

This report supports the following objectives, strategies and actions of the Community Strategic Plan:

2.2 We are a beautiful and connected City

- 2.2.1 Our planning reflects the unique character of our city and natural environment and is responsive to the evolving needs of our community

2.2.1.07 Manage stormwater and floodplains across the City by developing strategies and plans that inform the community and increase resilience.

Previous Council Resolutions (including type and date of meeting)

11 April 2017

6 February 2018

Consultation

Internal

Coastal and Flood Risk Management Advisory Committee
Executive Manager Strategic Planning and Environment
Executive Manager Works and Services
Manager Asset Planning
Manager Environment
Team Leader Zero Emissions and Sustainability
Construction and Maintenance Manager
Senior Strategic Planner

External

Wollongong City Council
NSW Department of Climate Change, Energy, the Environment and Water
Transport for NSW
State Emergency Services

In addition, external consultation has been undertaken in a number of stages, including a Community Newsletter and Questionnaire, Project Stakeholder Consultation and Consultation via the former Flood Risk Management Committee (now Coastal and Flood Risk Management Advisory Committee).

The Newsletter and Questionnaire framed the first contact for the residents' involvement in the Study and Plan. The Community Newsletter and Questionnaire was distributed to all residents and landowners within the study area in March 2020. The key objective of the questionnaire was to gain an understanding of residents' opinions on flood management options as well as an understanding of historical flooding that has occurred within the catchment.

Political Donations Disclosure

Nil

Options

Option 1:

That Council endorse the public exhibition of the Draft Macquarie Rivulet Floodplain Risk Management Study and Plan, to allow for the progression and future adoption and implementation of the Study and Plan.

Option 2:

That Council endorse the public exhibition of the Draft Macquarie Rivulet Floodplain Risk Management Study and Plan, with any amendments considered appropriate, to allow for the progression and future adoption and implementation of the Study and Plan.

Conclusion

Council has engaged consultants WMA Water to develop the Macquarie Rivulet Floodplain Risk Management Study and Plan. The Study and Plan has been developed in consultation with the community and Council's Coastal and Flood Risk Management Advisory Committee and has identified a number of measures to manage flood risk within the Macquarie Rivulet catchment.

It is now proposed to place the draft Study and Plan on public exhibition for a period of 28 days and if no submissions are received as a result of public exhibition that require further consideration, Council will adopt the Macquarie Rivulet Floodplain Risk Management Study and Plan as attached to this report (**Attachment 2**). Once adopted, the Macquarie Rivulet Floodplain Risk Management Study and Plan will become a policy position of Council.

Attachments

1. Study Area Catchment Map
2. Draft Macquarie Rivulet Floodplain Risk Management Study and Plan