

Overview

The NSW State Government's Flood Prone Land Policy is directed towards providing solutions to existing flood problems in developed areas and ensuring new development is compatible with the flood hazard and does not create additional flooding problems in other areas.

Under the Policy, the management of flood liable land is the responsibility of Local Government with financial and technical support provided by the State Government. The Policy specifies a staged approach to the floodplain management process:

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Wingecarribee Shire Council has initiated this process by completing the Nattai Ponds Flood Study in 2014. Council is now proceeding with the preparation of a Floodplain Risk Management Study and Plan. The Floodplain Risk Management Study will evaluate measures for managing the existing, future and continuing flood risk across the catchment. This will include an assessment of a range of structural and non-structural measures to ensure the risk over the full range of floods is appropriately managed.

The outcomes from the Floodplain Risk Management Study will then be used to inform the Floodplain Risk Management Plan, which will outline a preferred set of measures that will guide the future management of flood prone land across the catchment.

Further detailed information on each stage of the process is presented below.

Data Collection

The Floodplain Management Process requires a range of data to define the flood risk and evaluate the advantages and disadvantages of potential risk management measures. The Data Collection stage of the process involves collating all available information that will inform subsequent stages in the process. This enables any data gaps to be identified and filled to

ensure that subsequent stages of the process can be successfully completed. Although an emphasis is placed on collating flood-specific information (e.g., historic flood information), a range of other data types are typically required including social, economic, cultural, ecological, land use and emergency management information (NSW Government, 2015).

Flood Study

The Flood Study provides a technical assessment of flood behaviour across the study area. The Flood Study typically includes the development of computer models which are used to define hydrologic (i.e., rainfall-runoff) and hydraulic (i.e., movement of water) processes across the study area. The computer models are used as the basis for establishing key flood characteristics including flood discharges, levels, depths and velocities for a range of design floods up to and including the Probable Maximum Flood.

Consultation with the community is also considered to be an important component of the Flood Study. The community will often be able to provide important information describing past floods, which can be used to assist in the calibration of the computer models. If the computer models can be shown to reproduce this past flood behaviour it will help to garner confidence in the models and the associated Flood Study outputs.

The flood study for the Nattai Ponds catchment was completed in 2014.

Floodplain Risk Management Study

The outputs from the Flood Study can be used to identify areas where the cost of inundation can be significant and where there is a significant risk to life and/or damage to property. This allows areas of significant flood risk to be identified which can be used as the basis for determining where management measures would be best implemented to assist in managing the flood risk. In this regard, the Floodplain Management Study draws upon the outputs from the Flood Study to serve as the basis for identifying, evaluating and comparing measures for managing the flood risk.

It is unlikely that a single management measure will suitably address the full range of flood risk (i.e., existing, future and continuing flood risk). Therefore, a typical Floodplain Management Study will investigate a range of flood modification (e.g., levees, detention basins), property modification (e.g., development controls, voluntary house raising) and response modification (e.g., evacuation) measures in an attempt to manage the full range of risk. Each potential measure is assessed against a range of economic, ecological, social and cultural criteria with a

goal of achieving a net positive outcome (individually or in combination with other measures). Due to the wide range of potential measures that need to be investigated, the Floodplain Management Study often requires input from engineers, planners and emergency response personnel to ensure that each measure is appropriately considered. This will ultimately determine which of the potential measures is considered to be a viable option for managing the flood risk and move forward for consideration as part of the Floodplain Management Plan.

As with the Flood Study, community consultation is also a critical component of the Floodplain Management Study to ensure the community is appropriately informed and engaged with the study and that they are actively involved in the evaluation of potential measures.

Floodplain Risk Management Plan

The Floodplain Management Plan provides a document that outlines how the existing, future and continuing flood risk will be managed across the study area. It comprises a preferred set of measures that reduce the social, economic and environmental impacts of flooding across the study area based upon the outcomes of the Floodplain Management Study.

The Floodplain Management Plan is developed so that it is integrated with other relevant plans, policies and instruments. Most notably, the Floodplain Management Plan should be strongly linked with planning documents as well as local flood plans to ensure that there are no conflicts and all documents fully utilise the latest available information.

The Plan will also include a program outlining how the management measures will be implemented. This includes funding, staging, responsibilities, constraints and monitoring (NSW Government, 2005). Further information on the implementation of the Plan is outlined below.

Implementation of the Plan

The Floodplain Management Plan provides an informed basis for Council to effectively manage the flood risk across the study area. However, for the risk management measures outlined in the Plan to be effective, they need to be appropriately implemented. Accordingly, implementation of the Floodplain Management Plan is arguably the most important stage of the Floodplain Management Process.

Implementation of the Plan is typically facilitated by Council. The implementation process is

dependent on a range of factors including costs and available funding, required resources, constraints and the effectiveness of the proposed measures. Accordingly, not all recommendations outlined in the Plan may be achievable and the optimal implementation process will need to balance available resources and constraints with the perceived reductions in flood risk. Therefore, the implementation may need to extend over an extended timeframe and should be completed in conjunction with continual monitoring to ensure the best application of resources to manage the flood risk.

