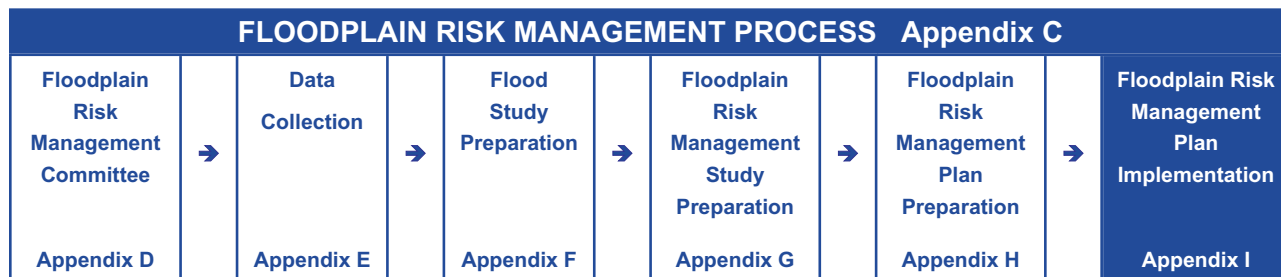


# APPENDIX I FLOODPLAIN RISK MANAGEMENT PLAN IMPLEMENTATION



TECHNICAL SUPPORT APPENDICES (Those directly supporting this Appendix are highlighted)								
Floodplain Risk Management Measures		Flood Planning Levels		Hydraulic & Hazard Categorisation		Flood Damages		Emergency Response Planning for Floods
Appendix J		Appendix K		Appendix L		Appendix M		Appendix N

## I1 Introduction

Management studies and plan provide an informed basis for decision making by the local councils to enable flood risk to be effectively managed to an acceptable and understood level.

However, the completion and adoption of a management plan itself does not manage flood risk. This relies on implementation, which is a critical step in the management process.

Implementation is overseen by a reduced committee (discussed in Appendix D) and undertaken in accordance with a priority for management measures developed in the management plan. This is based upon:

- how soon they can be implemented;
- resourcing required;
- the constraints that exist (including financial and physical);
- how these can be addressed; and
- how effective the measures are.

Therefore, low cost measures that can be readily implemented and are effective in reducing damage or personal danger are likely to have a high priority.

This appendix discusses plan implementation and covers the following specific issues:

- objectives;
- management plan review;
- information provision to the public;
- application of development controls to flood prone land;
- the local flood risk management policy;
- suggested information for planning certificates under Section 149 of the EP&A Act;
- the approvals processes for recommended management works; and
- interaction with the local flood plan developed under the leadership of SES.

Funding for implementing management measures is discussed in Section 2.9.

## I2 Objectives

The objective of implementing the management plan is to manage the full range of flood risk through a range of measures and in accordance with the implementation schedule outlined in the management plan.

## I3 Management Plan Review

Review of an adopted management plan is discussed in Section 2.7. This should include a review of the implementation plan, particularly where impediments may affect priorities or timing of measures.

## 14 Information Provision to the Public

The community needs to be made aware of their risk of flooding and has a right to access information held by public authorities about flooding. The necessary information relates to:

- the affectation of their current property and prospective future property and associated development controls;
- what to do during a flood event; and
- provision of an avenue for further discovery of information and interpretation for the individual property itself.

This can be provided through:

- public education to raise general and specific awareness of flood affectation, as discussed in Section 14.1;
- planning certificates issued by councils under Section 149(2) of the EP&A Act as discussed in Section 17.2. These are required on contracts for land sale and provide information in relation to whether council has policies to restrict development of the property for a range of reasons, including flooding;
- planning certificates issued by councils under Section 149(5) of the EP&A Act or similar documents as discussed in Section 17.3;
- Planning controls including LEPs, DCPs and the local floodplain risk management policy, to provide additional information on development constraints, as discussed in Sections 15 and 18; and
- access to council staff for further discussion.

### 14.1 Public Education

Changes in people's response to a flood can reduce flood losses and thus people who use the floodplain need to be ready for floods.

However, education of the public is a difficult task as unless people have actually experienced a flood, they tend to be sceptical when they are informed that there can be floods in their area. Thus, as experienced people move out of the floodplain area they take their knowledge with them and those who replace them add to the increasing number of people who may have little direct experience or awareness of flooding.

The tendency to ignore that an area is flood prone can be aggravated by flood mitigation measures, effective planning controls and floodplain risk management measures. This is particularly the case where levees are built. Levees traditionally engender a false sense of security by implying that all future floods will be excluded from the area. The more successfully these measures reduce the losses in frequent flooding, the fewer the number of people in the community who have experienced a flood. A continuing flood readiness campaign will be necessary to try to ensure the community remains aware of its risk and ready to act.

For those people who are unprepared for a flood, the shock of being flooded can affect their physical as well as their mental health. Indeed, people who have suffered from a flood often find that the social impacts are worse than the financial losses. Further, those who are unprepared suffer more than those who accept that a consequence of deriving benefit from the floodplain is that they may have to cope with one or more floods while they occupy that floodplain.

Public education is therefore an essential element in implementation of a management plan. This is an ongoing task which must be kept alive, for example, through local media, SES activities and, regular advice from council to affected residents. It needs to be targeted to all areas of flood prone land, not just the area below the FPL, and consider the ramifications of the PMF event.

## 15 Development Control

Management of development of flood prone land is through a combination of land use restrictions and development controls, as discussed in Sections G6.

These are ideally included within a combination of the relevant EPIs as discussed in Section J2.

A local floodplain risk management policy, as described in Section 16, may also be used to assist in implementing development control. The policy is unlikely to be as obvious as inclusions in LEPs, and DCPs and it deals with issues beyond development control. The development related issues in the policy are relevant for consideration in DCPs.

## 16 Local Flood Risk Management Policy

A key outcome of the management plan is the formulation of a local flood risk management policy or update of an existing policy. In essence, such a policy would be a succinct written summary of council's floodplain risk management plan. As such, the policy would serve as a comprehensive introduction to the local community on flooding matters and the management of flooding and its consequences. An important component of the policy would be council's views on the use and development of flood prone land.

The policy, as an integral part of the plan, should be reviewed with the management plan and risk management measures implemented under the plan should be reflected in the policy.

The policy may apply to an area covered by a single management plan or the whole local government area covered by a single or multiple management plans in which general and area specific issues may be addressed.

Policy inclusions are outlined below and should, where appropriate, be included in councils EPIs and DCPs, when these are updated.

### 16.1 Local Policy Aims and Objectives

The overall objectives of the policy document should aim, amongst other things:

- to alert the community to the extent and degree of hazard of flood prone land;
- to inform the community of council's policy in relation to the development and use of flood prone land and the existence of the relevant LEPs, DCPs and local approvals policies;
- to reduce flood risk and damage to existing areas of development;
- to ensure that future land use and development is compatible with flood risk;
- to reduce flood risk to future development to an acceptable level through appropriate land use controls. This includes, but is not limited to, definition of FPLs for floodplain development and planning purposes;
- to put in place and complement flood warning procedures and local flood plans

for the protection of and/or evacuation of flood prone areas, the relief of evacuees and the recovery of flooded areas;

- to ensure, whenever possible, that buildings and services required for evacuation and emergency needs are sited above the PMF level; and
- to put in place response plans to protect essential infrastructure and services (such as telephones, power, water supply and sewerage) during the onset of a flood and to ensure the speedy restoration of these services in a flood's aftermath.

In general, formulation of a policy should recognise the extent of investment, both public and private, in existing development in flood-prone areas. It should take into account the value of this development when considering alterations and additions to existing development. It should indicate the requirements to be used for new development consistent with the local policy and management plan.

This policy should succinctly present councils considered view on the use and development of flood prone land.

The policy may be developed and updated throughout the floodplain risk management plan and background study preparation process as discussed in Section C9.

### 16.2 Contents of Policy

#### 16.2.1 Introduction

The introduction to the council policy should:

- canvass the NSW Government's Flood Prone Land Policy;
- include a statement of council's aims and objectives;
- indicate the area covered by the policy;
- provide background to development of the policy; and
- indicate the relationship of the policy with other council policies and regulations.

#### 16.2.2 Definitions

Under this heading it would be advisable to include definitions covering authorities, flood prone land, hydraulic and hazard categories,

risks, development categories, plans, FPLs, ESD, etc. Some can be sourced from the manual glossary.

### ***16.2.3 Flood Extents & Flood Planning Levels***

The policy should indicate, as fully as possible, the extent of flood prone land (as determined by the PMF), and specify the FPLs adopted for planning and control purposes. The extent of flood prone land should be indicated on broad scale maps, together with the various hydraulic and hazard categories for the flood upon which the FPL is based. The policy should include broad details on the basis of adoption of the FPLs for planning purposes and associated risk exposure.

Based on these decisions, standards for the determination of land use categories and the necessary controls, usually detailed in DCPs, can be stated.

### ***16.2.4 Applications for the Development of Flood Prone Land***

This section of the policy should explain the process whereby developers seek council permission for developments on flood prone land. In particular, the various steps and factors that are taken into account in the preparation and submission of a development application for flood prone land should be itemised.

## ***16.3 Local Development under Part 4 of the EP&A Act***

Part 4 of the EP&A Act provides for assessment of “exempt” and “complying” developments. These categories of development could only be introduced through an EPI and the types of development need to be listed. Unless councils have included exempt and complying development in their EPIs and amended SEPP60 to remove them from its operational coverage, they will be covered by SEPP60.

Exempt and complying development and developments requiring consent need consideration in the management plan and local policy, as discussed in Section 3.1.3.

The policy needs to identify the flood related constraints and limitations applying to both exempt and complying developments and detail the conditions that will be set for developments requiring consent.

Indicative constraints, for consideration in the local policy, for specific types of development on flood prone land are indicated below. Additional considerations for development outside those identified as appropriate in the floodplain risk management plan are discussed in Section 16.3.6.

### ***16.3.1 New Residential Developments***

Applications for new residential development in areas below the appropriate FPL should require the applicant to lodge a survey plan showing ground levels (relative to AHD), floor levels and location of existing buildings. This information is essential to allow the application to be considered.

Floor levels of habitable rooms should be specified and should be not less than the relevant FPL. A certificate by a registered surveyor certifying the level of the completed building should be required.

Where, in the opinion of the council, a proposed development could sustain structural damage by flooding, no work should be allowed to commence until the applicant obtains and submits a certificate of structural adequacy from a qualified structural/civil engineer considering the potential flood affectation.

### ***16.3.2 Existing Residential Developments***

Where additions and alterations to existing buildings include habitable rooms, the requirements outlined in Section 16.3.1 should apply, except in particular circumstances where, in the opinion of council, the floor level requirement is impractical or unreasonable.

Where additions and alterations do not involve habitable rooms, applicants should be notified by council of the likelihood of the proposed structure being flooded and should be required to ensure that new structures do not adversely affect the existing flow of floodwaters. The use of flood compatible materials below the FPL should be recommended.

### ***16.3.3 New and Existing Commercial and Industrial Developments***

Where applications for development in flood prone areas are considered, council should require the applicant to lodge a survey plan prepared by a registered surveyor showing ground levels, floor levels (relative to AHD) and location of existing or proposed buildings.

Floor levels should be set at a minimum of the appropriate FPL. This floor level requirement may apply to the whole or part of the structure (providing a location for storage of goods during a flood event). A certificate by a registered surveyor certifying the level of the completed building should be required. The use of flood compatible materials below the FPL should be recommended.

All applications should be accompanied by a certificate from a qualified structural/civil engineer stating that the building will not sustain structural damage from the forces and impact debris associated with floodwaters in the event used to derive the FPL.

Any development consent in relation to applications for new commercial or industrial buildings, alterations to existing buildings or changes of use, should be endorsed by council with advice on matters affecting the land, including flood damage.

In view of the large damages that can be inflicted on commercial and industrial properties, council, by way of a development condition, may require the occupant of such properties to produce detailed on-site response plan to minimise flood damage.

Issues relating to hazardous industries or hazardous storage establishments are discussed in Section G9.7.

### ***16.3.4 Essential Community Facilities and Critical Services***

Special consideration must be given to essential community facilities and critical services, as discussed in Section 3.1.7 and Appendix G. It is essential that requirements for these types of developments are addressed in a local policy.

### ***16.3.5 Other Developments***

Developments such as sporting grounds and open car parks should be considered for flood prone land. Consent for such developments should require certificates from surveyors and engineers as described above.

Developments such as land fill and fencing may require more specialised treatment. It is essential that these issues be addressed in the floodplain risk management process, prior to any inclusion in the local policy.

### ***16.3.6 Developments Outside those Identified as Appropriate by the Management Plan***

Applications for types of developments that are outside those identified as appropriate in the floodplain risk management plan and EPIs fall into two categories, those not originally foreseen, or those that have been rejected, in preparation of the management plan.

The first type may be permissible under a particular zoning in councils EPIs and needs to be treated sensitively. Once council becomes aware of the potential for a new type of development, it should instigate review of the management plan and associated local policy, at the earliest possible stage. This review should consider the cumulative impacts of these types of development on the full range of flood related issues in the management plan. This review may result in changes to the management plan, the local policy and consequently council's EPIs.

The second type, because it is outside those identified as appropriate in the floodplain risk management plan and EPIs, will require rezoning as discussed below.

### ***16.3.7 Rezoning to Permit Purposes Outside those Identified as Appropriate by the Plan***

Consideration of rezoning land to permit purposes outside the development types identified as appropriate in the management plan should be based on additional investigations to address the full range of issues considered in the management plan to an equivalent depth.

From a flood risk management perspective, rezoning applications need to be considered within the strategic framework of the management plan. The development is to be assessed both on a cumulative and individual basis to ensure:

- it will not increase the flood risk experienced by other current floodplain occupants. This includes not altering the danger to personal safety of existing floodplain inhabitants or flood damage to other properties, or adversely affect them in any way (such as elongation of inundation times) during flooding;
- it has to be designed and constructed in such a manner as to ensure that

potential loss of life in an extreme flood event is minimal. The development does not significantly adversely impact upon emergency response management of other sites or areas.

This may involve incorporation of permanent, fail-safe, maintenance free measures into the development to ensure the timely, orderly and safe evacuation of people from that area, should a flood occur. In addition, it should also be demonstrated that the displacement of these people during times of flood will not significantly add to the overall cost and community disruption caused by the flood;

- it has to be undertaken, designed and constructed in such a manner as to hold potential financial losses from flooding at an acceptably low level; and
- it will also not adversely impact on the social, economic, cultural or environmental requirements of the floodplain.

Where the rezoning is considered appropriate and is to be approved or where the findings alter the management plan, it along with the local flood risk management policy and councils EPIs should be reviewed.

### ***17 Planning Certificates issued under Section 149 of the EP&A Act***

Councils issue planning certificates to potential purchasers under Section 149 of the EP&A Act. The function of these certificates is to inform purchasers of planning controls and policies that apply to the subject land. The principles for using these certificates are provided in Section 3.1.4. Their use is discussed below.

Planning certificates are an important source of information for prospective purchasers on whether there are flood related development controls on land.

Section 149 certificates are not seen as a broad community education tool. They have limited circulation as they are generally triggered by property sale, therefore they reach only prospective purchasers and some existing owners. They do not reach the majority of property owners (in a given year) and other occupants of property, who form a large part of the target audience for flood education.

Unfortunately, advice that land is not subject to flood related development controls is often colloquially understood to mean that the land is flood free. Therefore, it is important that flood-related information on planning certificates is clear and unambiguous. Care should be taken to ensure that the information provided is not misunderstood by the general public to mean that the land is flood free when in fact it is only free of constraints to development. Appropriate information can be provided:

- through application of council's local flood risk management policy to all flood prone land, ie, land inundated by the PMF. Under this approach, land up to the FPL for development control may be subject to specific development controls, whilst land between this and the PMF has advice that a flood risk exists even though development controls do not impact on the property;
- through explicit information concerning historical floods or estimated flood levels with various chances of occurrence or FPLs.

To become fully aware of the flood risk prospective purchasers need to rely upon the use of information provided on planning certificates under both Sections 149(2) and 149(5) of the EP&A Act, using either planning certificates or other appropriate means.

Because of the wide range of different flood conditions across the State, there is no standard way of conveying information. As such, councils are encouraged to determine the most appropriate way to convey information for their areas of responsibility (see Section G8.1). This will depend upon the type of flooding, whether from major rivers or local overland flooding, and the extent of flooding (whether widespread or relatively confined).

Councils may consider providing a combined certificate (incorporating information under both Sections 149(2) and 149(5) of the EP&A Act) to prospective property purchasers for the fee charged for the mandatory certificate containing information under only Section 149(2). Alternatively council could, if it has the necessary ground and floor level survey information, provide a flood report indicating flood levels in relation to land and building floor levels for a separate fee. Either approach would enable prospective property purchasers to be

provided with the available flooding information relevant to the land.

### 17.1 Initial Subjective Assessment

In certain circumstances, particularly in relation to local overland flooding, definitive flood level data may not be available to enable determination of properties that should be covered by development controls and therefore covered under Section 149 of the EP&AA Act. In such cases, as a first step, an initial subjective assessment should be made to determine the properties likely to be at risk. The methodology used to undertake this assessment should be documented and based upon historical information and reasonable assumptions given the catchment and channel size and terrain.

This assessment should only be used in the first instance and be updated as studies are undertaken to provide a better assessment of flood extents as part of the preparation of a management plan for the area.

### 17.2 Typical Examples of Information Provided on Planning Certificates under Section 149(2)

One means of enabling prospective purchasers to become fully informed is for councils to adopt a local flood risk management policy which relates to all flood prone land. This would enable councils to provide advice on planning certificates under Section 149(2) as to whether the property:

- is flood affected to the extent that council applies development controls such as minimum floor levels (for properties within the area affected by the FPL); or
- whilst not affected by flood related development controls (areas above the FPL), could be flooded in rarer events than that adopted as the basis of the FPL.

Examples of information provided under Section 149(2) of the EP&AA Act in relation to flood risk are as follows:

- A property above the FPL  
*“Council considers the land in question to be above the flood planning level and therefore its local flood risk management policy does not impose flood related development controls.*

*However, the property may be subject to flooding in very rare flood events. Information relating to this flood risk may be obtained from Council.”*

- A property below the FPL  
*“Council considers the land in question to be below the flood planning level and therefore subject to flood related development controls. Information relating to this flood risk may be obtained from Council.*

*Restrictions on development in relation to flooding apply to this land as set out in Council’s local flood risk management policy, which is available for inspection at Council.”*

This enables prospective purchasers to become aware of the location of prospective purchases within the floodplain, and provide them with the indication that additional information does exist and where this information can be sourced.

### 17.3 Typical Examples of Information Provided on Planning Certificates under Section 149(5)

Examples of information provided on planning certificates under Section 149(5) of the EP&AA Act in relation to flood risk are as follows:

- Where information on various design floods is known  
*“The information available to Council indicates that the estimated 1 in 100 and 1 in 20 year average recurrence interval flood levels are 5.7m AHD and 5.0m AHD respectively. The probable maximum flood level is 8.3m AHD.”*
- Where only historical information is known  
*“Flooding to a level of 6.9m AHD, as determined by debris marks, occurred in the storm event of November 1996. However, no information is available on the average chance of a storm of this magnitude happening in any given year at this stage.”*

### 17.4 Additional information that could be provided on Certificates under s149(5)

Councils may consider they need an additional statement when specific information on flood levels is provided under Section 149(5):

*“Council does not have sufficient accurate ground level information to indicate the extent of the land that may be affected by flooding. A registered surveyor may be able to assist in determining flood extents on the site and flood levels relative to building floor levels.”*

### ***18 Approvals for Recommended Management Works***

Prior to undertaking any works recommended in the floodplain risk management plan all necessary approvals are to be obtained. Development consent (under Part 4 of the EP&A Act) may be required and council’s planning staff should be consulted to determine the level of environmental assessment required. Otherwise environmental assessment in accordance with Part 5 of the EP&A Act must be undertaken and appropriate approvals gained.

Controlled work, as defined in the Water Act or Water Management Act, which also require development consent are considered integrated development and are to be dealt with under Sections 91 to 93B of the EP&A Act. Other integrated development assessment provisions may also apply.

In addition, it may be necessary to consider the provisions of the Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth) and Threatened Species Conservation Act 1995 (NSW), Fisheries Management Act 1994 (NSW), and Native Vegetation Conservation Act 1997 (NSW), as they relate to environmental impact assessment.

Other legislation and policies may also need to be considered.

### ***19 Interaction with the Local Flood Plan***

Implementation of management measures can impact on the emergency management planning for floods documented in the local flood plan (discussed in Appendix N).

Changes in flood behaviour, or flood warning systems, or critical levels for evacuation can impact upon flood response and associated planning.

Therefore, it is important that the SES be informed of any such changes, as and when they occur, so adjustments, as necessary, can be made to the local flood plan.