

POL-E9.2 Floodplain Management and Development

1. OBJECTIVE

The intent of this policy is:

- To conserve the environmental features of the floodplain.
- To ensure that development is compatible with flood management in order to minimise the risks and effects of flooding.
- To encourage development which maintains or enhances the physical and visual amenity of the floodplain.
- To provide guidelines for the use and development of the floodplain.

2. BACKGROUND

The impact of development on the floodplain is of concern to Council and Government departments such as the Water Authority of WA and Swan River Trust. Council, through landuse planning control powers, has a direct role in floodplain management to ensure that development is compatible with the environmental capability of the floodplain and that the risks of flooding and the associated hazard and damage to life and property are minimised. Equally important is the need to conserve the environmental features and amenity of the floodplain.

The floodplain is defined by the Water Authority of WA Flood Study Maps and relates to land which will be inundated by a flood expected to occur on average once every 100 years. Copies of these maps are available for inspection at the Shire offices.

This policy sets out the criteria used by Council in determining planning proposals in the floodplain where Council has the overall development control responsibility.

Applications in or abutting the Swan River Trust's "Management Area" will be subject to the policies of the Trust or the Department of Planning & Urban Development and will be determined according to the procedures set out in the booklet, "Swan River Trust - Development Approval Procedures 1989". The "Management Area" comprises "Parks and Recreation" and "Waterways" reserves in the Metropolitan Region Scheme.

3. POLICY STATEMENT

1. Planning Proposals:

- 1.1 Council will determine planning proposals for flood prone land according to the guidelines in this policy, and may seek and have regard to the comments of the Water Authority of Western Australia.
- 1.2 Within the flood fringe areas defined on the Flood Study Maps, Council will consider each planning application on its merits and will determine the development standards, specify building envelopes or refuse approval for that development after taking into account:
 - a) The specific site characteristics of the development site and the surrounding areas (e.g. natural surface or fill levels, existing floor levels);
 - b) The areas of environmental significance;
 - c) The potential impact of the proposal on existing developments in the area (e.g. localised flooding);

- d) The potential impact of the proposal on the hydrology, ecology and amenity of the floodplain; and
 - e) The favourable aspects of the development.
- 1.3 Council, in permitting any development on flood prone land, may:
- a) advise the applicant of the flood hazard to the development; or
 - b) require the applicant to indemnify Council against any liabilities for damages or loss caused by flood and may require the applicant to enter into an agreement to secure the indemnity.
2. Environmental Conservation:
- 2.1 Council will have regard to the impact of development on areas within the floodplain which it considers to be of environmental significance. These areas may include Aboriginal sites, river banks, wetlands and stands of vegetation. The retention, protection or rehabilitation of these areas by fencing, replanting, and other measures may be required as conditions of planning approval.
- 2.2 Council may seek the advice of the relevant government departments in determining the significance and treatment of such areas within or adjoining development sites.
3. Flood Management:
- 3.1 As far as possible, the topography of the floodway should be left in its natural state to safeguard the effective discharge of floodwaters. Preferably, rural and recreational uses which will not impede flood flow should be developed (e.g. sports oval, controlled stock grazing).
- 3.2 Uses which will not be permitted within a floodway except public works associated with flood mitigation, are:
- a) Any form of building, including sheds;
 - b) Any land filling above the natural surface level;
 - c) Any excavation;
 - d) Any road or car park above the natural surface level, except with the approval of the Water Authority;
 - e) Any solid walls or wire mesh fences;
 - f) Any ancillary residential uses (e.g. swimming pools);
 - g) Any intensive agriculture (e.g. orchards, vineyards) that will impede the flood flow;
 - h) Any caravan park; and
 - i) Any other uses which the Council considers will impede the flood flow, be damaged by the flood, or may cause damage to other properties in the event of a flood.
- 3.3 The following guidelines will apply to development in the flood fringe areas:
- a) Building floor levels: and all electrical installations should be a minimum of 0.5 metres above the 100 year Average Return Period Flood level, except:
 - i) garages, where the floor levels may be above the 25 year Average Return Period Flood level but all electrical installations should be placed 0.5 metres above the 100 year Average Return Period Flood level or otherwise satisfactorily insulated from flood waters; and
 - ii) minor non-habitable outbuildings which will not be used to store hazardous chemicals, may be permitted at a minimum of the 10 year Average Return

Period Flood level if fill requirements will cause severe economic hardship or a visual blight on the flood plain, and there is no suitable alternative location.

- b) Land Filling: should not encroach into the floodway and the height and location of fill will be determined by Council having regard to the advice of the Water Authority. Subject to site conditions, the following standards generally apply:
 - i) Grassed embankments with fill batters at a slope no steeper than 1:4 and the toe of the batter to not extend beyond the floodway boundary; or
 - ii) Where fill is prone to flood impact due either to its proximity to the mainstream of the river or its exposure to the increased velocity of flood waters, the fill to be protected from erosion by a retaining wall which is designed to the engineering standards specified by Council and maintained by the applicant.

4. Landscape Amenity:

4.1 Council, in considering planning proposals in or abutting the floodplain, will have regard to the visual and physical relationship of the proposals to the character and landscape amenity of the floodplain. In the case of Guildford particularly, Council will have special regard to preserving the integrity of the floodplain as the Guildford townsite's "green belt" and will support the development of traditional mixed uses of grazing and public recreation on the floodplain.

4.2 The following guidelines will apply to development in the flood fringe areas:

- a) Building bulk and design: should be integrated with the floodplain landscape using the following design features:
 - i) As far as possible, building should occur outside the flood plain and the flood plain areas of a development site should be integrated with the development as open space;
 - ii) Building materials and finishes should be sympathetic to adjoining development;
 - iii) The tree canopy line should not be exceeded; and
 - iv) Where necessary, the building bulk should be modified by supplementary landscaping.

In the case of Guildford, the design of buildings should also incorporate the dominant features of the buildings in the precinct (i.e. the vernacular architecture) and the roof pitch should be consistent with the predominant roof pitch in the precinct.

- b) Fences: which are visible from the flood plain should be unobtrusive:
 - i) Post and rail fences are preferable, particularly in the floodway;
 - ii) Cyclone fences are acceptable in most areas but should be of a suitable colour (e.g. dark green) to merge with the floodplain landscape; and
 - iii) Solid screen walls, including asbestos fences, are not appropriate in the floodplain landscape, but may be permitted if the materials and colours used are not visually intrusive or are adequately screened by landscaping.

In the case of Guildford, the type of fences and materials used, particularly on the sides of the development visible from the floodplain, should be consistent with the Guildford Design Guide. Screen walls will only be permitted in exceptional circumstances and should be constructed of red brick to reflect the traditional built form.

- c) Land fill: height and location will be determined on the basis of the following guidelines:

- i) As far as practicable, land fill within the floodplain should be minimised and the floodplain left intact to preserve its integrity and amenity;
- ii) For aesthetic reasons, the maximum height of fill should not exceed the existing surface level of adjoining development except for reasons of flood mitigation;
- iii) Land fill should preferably reflect the natural topography;
- iv) Slopes steeper than 1:4 should be retained using either:
 - materials and colours prevalent in the locality; or
 - stone pitching, Humes crib blocks and equivalent which should be planted with creepers and groundcovers and adequately reticulated.
- v) Retaining walls higher than 1.5 metres are visually intrusive and restrict access to the floodplain and will only be permitted if:
 - there is no other practical alternative; or
 - the Water Authority advises Council that the height of a retaining wall is required to protect the development from flood damage.

High retaining walls, where permitted, should have a setback of at least 1 metre for every interval of a maximum 1.5 metres in height. The setback area should be planted with shrubs and creepers to provide relief to the visual height of the wall.

- 4.3 Landscaping may be used to supplement existing vegetation or to minimise the visual impact of development on the floodplain landscape. In either case, the landscaping should be consistent with the species and density of natural vegetation occurring in the floodplain and should incorporate the environmentally significant areas wherever possible. Appendix A lists the recommended plant species.
- 4.4 In the case of the Guildford floodplain, landscaping may also incorporate the traditional exotic species listed in Appendix B in developments within the flood fringe areas.
- 4.5 A landscaping plan for the development site may be required to be submitted with development applications showing the extent of clearing, the environmental areas and the proposed type and layout of landscaping. Council may require the landscaping plan to be prepared by a qualified landscape architect/ planner.
- 4.6 Council may impose the following as conditions of development approval;
 - a) the carrying out of landscaping according to a plan approved by Council;
 - b) the rehabilitation of existing vegetation;
 - c) the retention of areas which it considers to be of environmental significance; and
 - d) the installation of reticulation in landscaped areas.

5. Special Areas:

- 5.1 Notwithstanding Clause A, sub-clause 2 for the double frontage lots that extend between Victoria Street and Swan Street, Guildford, no property will be permitted to be filled in the floodplain fringe to a height above the road pavement level of Victoria Street for a distance of one third of the length of the lot and to a level higher than between 0.5m and 0.75m above the 100 year average return period flood level for that distance between one third and one half of the length of the lot, measured from Victoria Street.

The northern half of the lot is to be retained at the level existing at the date of adoption of this amendment to the policy.

ATTACHMENTS:

- A. Floodplains of the Swan and Helena Rivers - Recommended plant species for landscaping and re-vegetation.
- B. Guildford Floodplain - Recommended traditional exotic plant species for landscaping.

Document Control

Document Approvals:			
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