

**FLOOD RISK MANAGEMENT**

**Procedure 1.1.11**

Policy No. and Title	1.1	Development Control Policy
Procedure	1.1.11	Flood Risk Management
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**OBJECTIVES**

- To ensure that new development in flood prone lands is compatible with the degree of flood hazard and that adequate flood risk management measures are incorporated in the design of the development thereby minimising the possibility of loss of life and damage to property.
- To encourage the re-development of existing flood prone lands in a manner that will minimise the chance of loss of life and damage to property by future flooding.
- To prevent the creation of any "new area" of urban development on flood prone lands.
- To prevent any extension of existing urban zoned areas into flood prone lands.
- To seek the eventual clearance of the Kempsey Local Floodway Number 1 and its re-development for recreational, agricultural and limited commercial uses which will only have a minimal effect on the free flow of floodwaters and minimal risk of causing loss of life or damage to property; e.g. sporting fields; picnic grounds; nurseries' recreational facilities with minimal permanent buildings and no residential quarters.

**KEMPSEY SHIRE COUNCIL  
DEVELOPMENT IN FLOODWAYS AND IN FLOOD PRONE LANDS  
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### POLICY STATEMENT AND CODE

Development in Floodway's and in Flood Prone Lands.

**KEMPSEY SHIRE COUNCIL  
DEVELOPMENT IN FLOODWAYS AND IN FLOOD PRONE LANDS**

**1 INTRODUCTION**

**1.1 Development of Policy**

This policy was first adopted on the 23 May 1983, and the last review was in 2003.

**1.2 Basis of Policy**

The formulation of Council's policy is a result of awareness of the need to carefully consider development in flood prone lands. The flood plain management principles enunciated in the NSW Government's policy statements have provided the basis on which to develop its policy.

**1.3 Flood Protection Options**

This Policy addresses the effects on the pattern of flooding as a result of implementation of various protection options. The Lower Macleay Flood Plain Management Plan has been incorporated in this Policy which covers the flood plain and villages below Frederickton.

**1.4 Flood Mapping**

Flood mapping defines flood levels, flood extents, flood velocities and floodway's and where available is used to determine flood behaviour within the Shire. The mapping is generally limited to urban areas and mainstream flooding areas of the Lower Macleay River below Aldavilla. These maps are updated from time to time to reflect the latest understanding of flood behaviour and will be utilised in determining flood planning levels.

**1.5 Need for Policy**

Council has the responsibility of establishing and implementing a policy for the development of flood prone land. Accordingly, this policy incorporates the latest technical information available from Department of Land and Conservation data, and Council's own records.

**1.6 Future Refinement of Policy**

The policy shall be amended as further information relating to flood risk and/or levels become available and have been reported to Council comes to hand.

**1.7 Removal of Development within Floodway's**

This Council considers that it is neither practical nor appropriate to require the removal of existing urban development in urban centres with the exception of that defined at Annexure No. 3.

**1.8 Preparation of Local Environmental Plans**

Council will not be prepared to support the preparation of a Local Environmental Plan that is not consistent with this policy.

## 2 DEFINITIONS

### 2.1 "Flood Prone Land"

"Flood Prone Land" within this Policy is land which is inundated by a 1 in 100 flood.

### 2.2 "1 in 100 Flood"

Flood probabilities are expressed in terms of the chances of an event occurring, or being exceeded in any given year. For example, a "1 in 100" or "1%" AEP flood has 1 chance in 100 of occurring, or being exceeded, this year (AEP stands for annual exceedance probability).

#### **NOTE:**

The 1949 and 1950 floods were both of the order of 100 year events, and if repeated at the present time would achieve a flood height of 8.70m AHD (or approximately 8.20m gauge height) at the Kempsey Traffic Bridge.

### 2.3 Flood Planning Levels

Flood Planning Levels are the combination of the 1 in 100 flood levels and 0.5m freeboard and within the Policy are shown as minimum floor levels.

### 2.4 "Floodway"

"Floodway" is an area:

- a) Which is a main flow path for floodwaters once the river or stream has overflowed.
- b) In which developments may adversely affect the behaviour or discharge of floodwaters;
- c) In which developments may be adversely affected by the discharge of floodwaters, otherwise than by immersion;
- d) In which human life could be at risk from the discharge of floodwaters.

Some floodway's are identified on plans annexed to this Policy Document.

### 2.5 "Flood Statement"

"Flood Statement" is a written assessment of the nature of flooding at the site of the proposed development. It should contain details of flooding in relation to the development and details of how the information contained in the statement was obtained and any other relevant matters. The statement is to show that due regard has been given to the effects that development will have on the environment, including adjoining properties and land.

### 2.6 "Development"

"Development" in relation to land, means:

- a) The erection of a building on that land.
- b) The carrying out of a work in, on, over or under that land.

- c) The use of that land or of a building or work on that land.
- d) The subdivision of that land.

### **2.7 "Habitable Room"**

"Habitable Room" includes any living rooms and any rooms intended or adaptable for sleeping, eating or cooking but not including laundry and toilet.

### **2.8 "Existing Holding"**

"Existing Holding" is, all adjacent or adjoining land held in the one ownership as at 29 July 1988.

### **2.9 KLEP – Kempsey Local Environmental Plan applicable at the time.**

### **2.10 "Natural Surface"**

"Natural Surface" is the average level of an area of at least 1,000 square metres surrounding and inclusive of the proposed development in rural areas and likewise the average level of an area of at least 500 square metres in urban areas and in all instances the average level of specified areas shall be exclusive of fill".

## **3 OBJECTIVES**

The principal objectives of the policy are:

- a) To ensure that new development in flood prone lands is compatible with the degree of flood hazard and that adequate flood risk management measures are incorporated in the design of the development thereby minimising the possibility of loss of life and damage to property.
- b) To encourage the re-development of existing flood prone lands in a manner that will minimise the chance of loss of life and damage to property by future flooding.
- c) To prevent the creation of any "new area" of urban development on flood prone lands.
- d) To prevent any extension of existing urban zoned areas into flood prone lands.
- e) To seek the eventual clearance of the Kempsey Local Floodway No. 1 (as identified on Annexure 3) and its re-development for recreational and agricultural and limited commercial uses which will only have a minimal effect on the free flow of floodwaters and minimal risk of causing loss of life or damage to property; e.g. sporting fields; picnic grounds; nurseries; recreational facilities with minimal permanent buildings and no residential quarters.

## **4 RE-ZONING FOR URBAN DEVELOPMENT**

### **Need for Land to be Flood Free**

Council will not support the re-zoning of land for urban development unless it is shown to be at or above the flood planning level.

## **5 FLOODWAYS - IDENTIFIED AREAS**

The following floodway's have been identified and maps depicting the broad boundaries of these floodway's are attached as Appendices to this document. These maps will be subject to review as more information becomes available.

Larger scale maps showing the boundaries are available for inspection at Council's Office.

### **5.1 Macleay River Floodway - Downstream of Belgrave Falls**

High bank to high bank of the Macleay River and tributaries including all islands except those downstream of Jerseyville.

### **5.2 Macleay River Floodway - Upstream of Belgrave Falls**

Being the area adjacent to the Macleay River and its tributaries inundated by the 1 in 100 flood.

### **5.3 Glenrock/Pola Creek/Frogmore Floodway**

Annexure No. 1 to this document, "Kempsey Shire Floodway Plans – Sheet No. 1".

### **5.4 Bellimbopinni/Seven Oaks Floodway**

Annexure No. 2 to this document, "Kempsey Shire Floodway Plans - Sheet No. 2".

### **5.5 Kempsey Local Floodway No. 1**

Annexure No. 3 to this document, "Kempsey Local Floodway No. 1 – Sheet No. 3".

### **5.6 Kempsey Central Business District Floodway and other Kempsey Floodway's**

Annexure 4 to this document.

### **5.7 Macleay River - New Entrance to South West Rocks Creek**

The area between the Macleay River and South West Rocks Creek at New Entrance comprising Lots 850 and 851 DP 790816. This area exhibits floodway characteristics. Any development proposal for this land will require the submission of a detailed flood study.

## **6 DEVELOPMENT RESTRICTIONS**

### **6.1 Evacuation Planning**

In the case of development, evacuation planning is to be considered. New developments will not be considered unless a suitable practical evacuation plan is prepared which will demonstrate that the development will not place additional strain on emergency services.

## 6.2 Floodway's

### 6.2.1 Kempsey Local Floodway No. 1 and other floodway's identified within the township of Kempsey (except that described in 6.1.2 below)

Council's aim is to seek the eventual clearance of the floodway, but it is recognised there may be circumstances where it is appropriate for Council to consider repairs, renovations or extensions to existing buildings. In such cases the following will apply:

- a) Approval will be given to repairs and renovations provided they do not alter the basic structure of the buildings.
- b) Extensions will be permitted where they do not increase the floor area more than 10% of the existing floor area as at 25 February 1980. Open verandahs, patios and the like, will not be included in the 10% calculation.
- c) Encouragement will be given to owners of existing buildings to move to more suitable areas (preferably flood free).
- d) Council will waive building and development application fees for the relocation of dwellings from the floodway.
- e) Council will not consent to the conversion of existing dwellings into flats.
- f) In the case of undeveloped land no approval for any development of a residential nature will be granted.
- g) In the case of undeveloped land approval will only be granted to development which comprises mainly open space with minimal obstructions to the flow of floodwater, and incorporate design features to minimise the chance of loss of life and damage to property, e.g. recreation facilities.

### 6.2.2 Kempsey Central Business District Floodway

The Kempsey Central Business District floodway contains land included in the 3(a) General Business Zone, and the 3(c) Special Business (motor oriented) zone under Kempsey Local Environmental Plan 1987.

#### 6.2.2.1 Existing Development (Residential Extensions less than 10%)

In the case of existing development within the floodway the following will apply:

- a) Approval will be given to repairs and renovations provided they do not alter the basic structure of the buildings.
- b) Extensions will be permitted where they do not increase the floor area more than 10% of the existing ground floor area of that development as at 25 February 1980. Open verandahs, patios and the like will not be included in the 10% calculations.

#### **6.2.2.2 New Development (Residential and Residential Extensions greater than 10%)**

In the case of new development (or extensions to existing development greater than 10% of the ground floor area as at 25th February, 1980), proposed to be used for residential purposes. That is, dwellings and motels, the following criteria must be fulfilled:

- a) Submission of an acceptable Structural Engineer's Certificate with the development application, or when a condition is applied to a consent prior to issuing of a Construction Certificate, certifying that the building has been designed to withstand the forces created by floodwater and debris loadings anticipated for that area, and indicate any impacts on adjoining buildings and land.
- b) Habitable rooms are to have a floor level 500mm above the 1 in 100 flood level, i.e. the flood planning level.

Council will not consent to the erection of residential flat buildings, or the conversion of dwelling to residential flat buildings.

#### **6.2.2.3 New Development (Commercial and Commercial Extensions greater than 10%)**

- a) In the case of new development proposed to be used for commercial purposes (or extensions to existing development greater than 10% of ground floor area) Council will seek the provision of part of the floor level of the building to be 500mm above the 1 in 100 year flood level to facilitate the storage of goods during time of flood. The amount of space above flood level will be determined having regard to the size of the extension, but in the case of new buildings Council will require one fifth of the floor area (or a greater area if required by Council) to be a minimum of 500mm above the 1 in 100 flood level and specifically set aside for storage of goods in time of flood.
- b) This requirement may be reduced if an alternative acceptable flood proofing procedure can be demonstrated for the development.
- c) Council will not consent to residential flats being part of a new development proposed to be used for commercial purposes.

The following criterion must be fulfilled in respect of extensions and new development:

- d) Submission of an acceptable Structural Engineer's Certificate to be submitted prior to the issuing of a Construction Certificate certifying that the building has been designed to withstand the forces created by

floodwaters and debris loadings anticipated for that area, and indicate any impacts on adjoining buildings and land.

In the case of zone no 3(c) Special Business (motor oriented) zone, no extensions to existing caravan parks, or new caravan parks will be permitted by Council.

In respect to existing caravan parks, Council will need to be satisfied in respect of the following matters:

- e) A contingency plan to evacuate people and store caravans in time of flood, satisfactory to Council.
- f) All caravans located on the site are maintained in a mobile condition, annexes and associated structures are not to be of a rigid construction.
- g) Relocatable Homes, Cabins and the like will not be permitted in Caravan Parks on areas that are subject to flooding. In any other area the floor level is to be at or above the flood planning level and meet other relevant provisions of this policy.

### **6.2.3 Other Floodway's (Rural Floodway's)**

In the case of existing development within these floodway's the following will apply:

- a) Approval will be given to repairs and renovations provided they do not alter the basic structure of the building concerned.
- b) Extensions will be permitted where they do not increase the floor area more than 10% of the existing ground floor area as at 25 February 1980.
- c) Encouragement will be given to owners of existing dwellings to move to more suitable areas (preferably above the 1 in 100 flood level) and/or to lift the dwelling 500mm above the 1 in 100 flood level.
- d) Council will not consent to the conversion of existing dwellings into flats.

In the case of new dwellings, construction will not be permitted unless it can be shown that the product of the depth and velocity of flow of water during a 1 in 100 flood is equal to, or less than, one (1) (see Annexure 5).

A Structural Engineer's Certificate advising that the structure can withstand the force of flowing floodwaters, including debris and buoyancy forces as appropriate will be required, prior to the issuing of a Construction Certificate.

Council will need to be satisfied that there will be no undue risk of loss of life or damage to property during such a flood. The depth of flow is to be related to the "natural surface". The habitable floor levels of any

dwelling approved under this Clause must be at least 500mm above the 1 in 100 flood level for the particular site.

Council may make an exception in the case of replacement of an existing dwelling house used in conjunction with a bona fide agricultural use of the land. In many instances it would be appropriate to provide a mound for such a replacement dwelling.

Barns, dairies and other substantial rural buildings are not to be located in floodway's unless there is no other practical location on the property.

Lots 5 and 6, DP 1022342 and Lot 851, DP 790816 at New Entrance, South West Rocks, are considered to be within a probable floodway. Any development proposal for this land will require a detailed flood study to be undertaken.

#### **6.2.4 Subdivision in Floodway's**

The subdivision of land will not be permitted, other than for boundary adjustments and development which by its very nature must be located in close proximity to waterways. Such development might include oyster depuration plants and water based tourist facilities.

### **6.3 FLOOD PRONE LANDS (OTHER THAN FLOODWAYS)**

#### **6.3.1 Urban Development (Residential)**

- a) The difference between the 1 in 100 flood level and natural ground level should not be more than 2.5m.
- b) The floor level of habitable rooms shall be as specified in Section 7.
- c) Building development shall be restricted to single dwellings or such non-residential development as may be permissible.
- d) Filling or raising the site levels will require Council consent and will be restricted to locations where the affect on flood patterns is considered to be minimal and there is likely to be no adverse affect on nearby land.
- e) A Structural Engineer's Certificate advising that the structure can withstand the force of flowing floodwaters, including debris and buoyancy forces as appropriate will be required.
- f) Where the land is part of a Council approved subdivision, the building is to be located on the flood free area as indicated on the plan of subdivision. No additional filling will be permitted.
- g) Where a building is of 2 storeys only, rooms not designed for or capable of being used or adapted as habitable rooms will be permitted in the lower floor area.

#### **6.3.2 Rural Development (Residential)**

Council's aim is to restrict rural dwellings in flood prone areas to a minimum by only approving of:

- a) Dwellings proposed to be erected on existing holding as defined in the Kempsey Local Environmental Plan and where the product of the depth and velocity of flow of water during a 1 in 100 flood, is equal to or less than 1.
- b) Dwellings proposed to be erected on lots created by subdivision since August 1969, or existing portions that comply with the requirements of the Kempsey Local Environmental Plan and this Policy with regard to subdivision of existing holdings.
- c) Managers' or employees' dwellings approved in accordance with the KLEP Kempsey Local Environmental Plan 1987.

Council will need to be satisfied:

- d) That a Structural Engineer's Certificate advising that the structure can withstand the force of flowing floodwaters, including debris and buoyancy forces as appropriate has been provided.
- e) That the dwelling is to be erected on the highest practical area within the parcel or lot.
- f) That the difference between the 1 in 100 year level and natural ground level is not more than 2.5m. A survey certificate may be required to demonstrate compliance with this Policy.
- g) That the floor level of habitable rooms shall be as specified in Section 7.
- h) That if the dwelling is proposed to be sited upon an earth mound, the mound will extend 4m outside the extremities of the dwelling, contain storage area for at least one vehicle and be constructed of material compacted and battered to slopes of 1 in 5 to withstand flood damage.
- i) That suitable access from a building to a public road is provided.
- j) Where a building is of 2 storeys only, rooms not designed for or capable of being used or adapted as habitable rooms will be permitted in the lower floor area.
- k) That the building is to be erected on the 1000m<sup>2</sup> of land identified in the plan of subdivision, which is above the 1 in 100 flood level.

### **6.3.3 Other Development**

Each application will be treated on merit, and Council will consider the development providing such development incorporates mainly open space and adequate flood-proofing measures.

No new caravan parks will be permitted.

In respect to existing caravan parks, Council will need to be satisfied in respect of the following:

- a) A suitable contingency plan exists to evacuate people and store caravans in time of flood.
- b) The caravans located on the site are maintained in a mobile condition, annexes and associated structures are not to be of a rigid construction.
- c) Relocatable Homes, Cabins and the like are not permitted on caravan parks on areas that are subject to flooding. In any other area the floor level is to be at or above the flood planning level and meet other relevant provisions of this policy.

#### **6.3.4 Renovations to Existing Buildings**

- a) Where any building in flood prone areas within Kempsey Shire is proposed to be raised, the minimum floor level of habitable rooms shall be as specified in Section 7.
- b) Where it is intended to carry out additions to an existing building such increase shall be subject to a Structural Engineer's Certificate being provided which indicates that the structure can withstand the force of flowing floodwaters including debris and buoyancy forces as appropriate and restricted to a floor area not exceeding 10% of the ground floor area of the existing building or 20 square metres, whichever is the greater. Open verandahs, patios and the like are not to be included in the calculation. First floor additions will be unrestricted in area provided that this floor level is at a minimum level as specified in Section 7. A Structural Engineer's Certificate being provided which indicates that the structure can withstand the force of flowing floodwaters including debris and buoyancy forces as appropriate.
- c) Renovations such as re-cladding, brick veneering or re-roofing, may be carried out subject to Council's approval where necessary.

#### **6.3.5 Urban Subdivisions**

- a) When land is within a flood prone area, subdivisions will not be approved unless contour surveys of land by a Registered Surveyor or qualified Engineer show that at least 500 square metres of each proposed lot will be above the 1 in 100 and/or highest flood level
- b) The 500m<sup>2</sup> identified in the subdivision is to be utilised for the erection of buildings on the site.
- c) In respect to the villages subdivisions may be permitted provided that it can be shown that the product of the depth and velocity of flow of waters during a 1 in 100 flood is equal to, or less than, one (1). (See Annexure 5, and suitable and adequate arrangements can be made for evacuation.

If filling is to be considered, the maximum depth of filling is not to exceed 1 metre.

### 6.3.6 Rural Subdivisions

Subdivisions to create additional rural lots will not be allowed unless it can be shown:

- a) That subdivision is located in the highest practical area of the parcel to be subdivided.
- b) That there is an area of at least 1,000 square metres in the created and residual lots that is not more than 2.5 metres below the assessed 1 in 100 year flood and/or highest flood level for that area and it can be shown that the product of the depth and velocity of flow of waters during a 1 in 100 year flood is equal to, or less than, one (1). (See Annexure 5).
- c) The 1000m<sup>2</sup> identified in the subdivision plan is to be suitable and utilised for the erection of buildings on the site.
- d) The subdivision of lots in excess of 40 ha will be permitted, but approval to erect a dwelling on any lot so created will not be given unless it can be shown that the product of the depth and velocity of flow of water during a 1 in 100 year flood is equal to, or less than, one (1). (See Annexure 5).
- e) Excavations, drainage areas and the like are not to adversely impact on the flood levels on adjoining properties.
- f) Subdivisions will not be permitted within defined floodway's except for boundary adjustments and consolidations where no new dwelling entitlement would occur.

## 7 MINIMUM FLOOR LEVELS – FLOOD PLANNING LEVELS

Minimum habitable floor area levels as follows have been fixed. These levels may be varied from time to time based on information obtained from studies undertaken on Councils behalf.

(Note: All level is in metres to Australian Height Datum).

### 7.1 Kempsey

The town of Kempsey has been divided into district catchment areas as shown on Annexure 6.

#### Area 1

That area generally west of River Street and south of Elbow Street extending from the rail bridge to Short Street. Minimum habitable floor level of building to be graded from Short Street at RL 11.66 to the railway bridge to RL 10.49.

#### Area 2

That area of South Kempsey generally bounded by the river bank, Lachlan Street, Middleton Street, West Street, Bloomfield Street, and the railway. Minimum habitable floor level of buildings to be RL 10.26 minimum.

### **Area 3**

That area of Kempsey east of the North Coast Railway extending from the rail bridge to First Lane and including east bank properties from Apex Park to Sullivan Street generally bounded by Lord Street, Rudder Street, Bissett Street, Washington Street and Sullivan Street. Floor level of buildings to be graded from the rail bridge at RL 10.49 through the traffic bridge at RL 9.20 to First Lane at RL 8.70.

### **Area 4**

That area of East and South Kempsey, north of Sullivan Street and east of Lachlan, Lord, Gill, Macleay and Washington Streets. Floor level of building to be graded from RL 8.85 at the east bank of the Macleay River, generally opposite Sullivan Street to RL 7.20 at the Pola Creek Bridge on MR 198. Levels in South Kempsey north of the Crescent Head Road to maintain a minimum of RL 7.20.

### **Area 5**

That area of West Kempsey west of the North Coast Railway bounded by Elbow, River and Broughton Streets. Minimum habitable floor level of building to be graded from RL 11.50 on the river bank opposite Cooks Lane to RL 9.16 at Sea Street and maintaining that level through to the railway line.

### **Area 6**

That area of West Kempsey west of the North Coast Railway and North Street bounded by Broughton, River and Harold Coutman Streets and North Street. Minimum habitable floor level of building to be RL 8.40.

## **7.2 Villages**

The minimum habitable floor levels for the various villages will be:

* Crescent Head	As shown in Annexure No. 7
* Frederickton	As shown in Annexure No. 8
* Smithtown	North west corner 5.6m AHD Southern point 5.3m AHD Northeast corner 5.0m AHD
* Gladstone	5.3m AHD
* Kinchela	4.7m AHD
* South West Rocks	As shown in Annexure Nos 9 & 10
* Spencerville	4.05m AHD
* Jerseyville	4.05m AHD
* Hat Head	2.8m AHD at Korogora Creek traffic bridge to 2.6m AHD at the pedestrian bridge.

### **7.3 Rural Flood Prone Lands**

The minimum habitable floor levels of dwellings erected on such land shall be 500mm above the 1 in 100 flood level as determined by the Director – Engineering and shown on plans available at Council offices.

## **8 FLOODPROOFING**

### **8.1 Earth Mounds**

When the method of flood proofing a building is to elevate the structure on an earth mound it shall have a minimum crest level equal to the 1 in100 flood applicable and extending a minimum of 4m beyond the dwelling or structure. The habitable floor level to be at a minimum level of 500mm above the 1 in 100 flood level.

The mound is to be constructed of compacted earth material able to withstand flooding, with side batters a maximum of 1 in 5.

In rural areas where development may be subject to isolation in times of flood it is desirable that flood free storage areas are available for such items as motor vehicles, plant and equipment. Under exceptional circumstances Council may in rural areas, permit alternative methods of flood proofing such as that specified below.

### **8.2 Elevated Buildings**

Where earth mounds are not appropriate, for example, where they adversely affect the behaviour of flood flows by concentrating and diverting floodwaters to adjacent development, the building shall be supported on piers, columns or piles to enable floodwater to pass beneath. Enclosed stairways and laundries may be acceptable at ground level provided they do not exceed 10 square metres in area. The structure shall be designed by a practising Structural Engineer to ensure that all structural members will withstand the forces created by floodwater and debris.

### **8.3 Electrical Installations**

Electrical switchboards and fixed electrical installations should be located at a minimum level of 500mm above the 1 in 100 flood level; electrical circuits to areas below flood level should be separated from circuits serving areas above flood level. In the case of dairies located in flood prone lands, refrigeration and milk storage facilities should be located at a minimum level of 500mm above the 1 in 100 flood level.

## **9 DEVELOPMENT APPLICATIONS**

### **9.1 Flood Statements**

The Environmental Planning and Assessment Act provides that each development application should be accompanied by a statement of environmental effects to show that due regard has been given to the effects that development will have on the environment.

Statements prepared by a Registered Surveyor and based on measured data will generally be acceptable to Council.

Flood Statements will be required in respect of developments where Council determines that it does not have sufficient flooding information.

## **9.2 Site Plans**

If the contour plan submitted in conjunction with the plans of the proposed building indicates:

- a) That the building is on flood prone land and that the finished floor level is likely to be within 300mm of the minimum set by this Code, Council shall require a Surveyor's Certificate certifying the level of the finished floor when the building reaches floor level.
- b) That the building is proposed to be located in a "floodway" Council shall ask for Structural Engineer's Certificate certifying that the building has been designed to withstand the forces created by floodwaters and debris loading anticipated for that area and indicate any impacts on adjoining buildings and land.

## **10 MISCELLANEOUS**

### **10.1 Structural Engineer's Certificate**

Where an application is for a new building in a flood prone area and where the depth of inundation is greater than 0.8m, Council will require a Certificate from a Structural Engineer advising that the building has been designed to withstand the forces created by floodwaters and debris loading anticipated for that area.

### **10.2 Raising of Existing Building in Floodway**

Where the application is for the raising of an existing building located in a floodway (as defined in Section 3) such aforementioned certificate from a Structural Engineer will be required.

## **11 SECTION 149 CERTIFICATES**

Section 194(2) Certificates will indicate whether the land may be impacted by flooding and be below flood planning levels. The Certificate will suggest that contact should be made with Council in respect to possible flooding matters.

## **12 RESPONSIBILITIES FOR ADMINISTRATION OF POLICY**

### **12.1 Environmental Services Department**

Determine:

- a) Whether or not the building has received development approval and if not, what planning considerations should be taken into.
- b) Whether or not the subject site is within an urban flood prone area and, if so, whether or not a Survey Certificate as to finished floor level should be furnished.
- c) Whether or not the subject site is within a rural flood prone area and ensures that a Flood Statement is produced. Flood statements are to be charted by Council.
- d) Examine and verify all flood statements received by Council.

- e) Advise on necessity for Engineer's Certificate and likely flow velocities in relation to developments in floodway's.
- f) Liaise direct with applicants where additional information is required in connection with Flood Statements.
- g) Prepare plans based on contour plans for village and town areas and 1:25,000 topographical maps for rural areas showing:
  - i) Details of the expected levels of a 1 in 100 flood
  - ii) Floodway's.

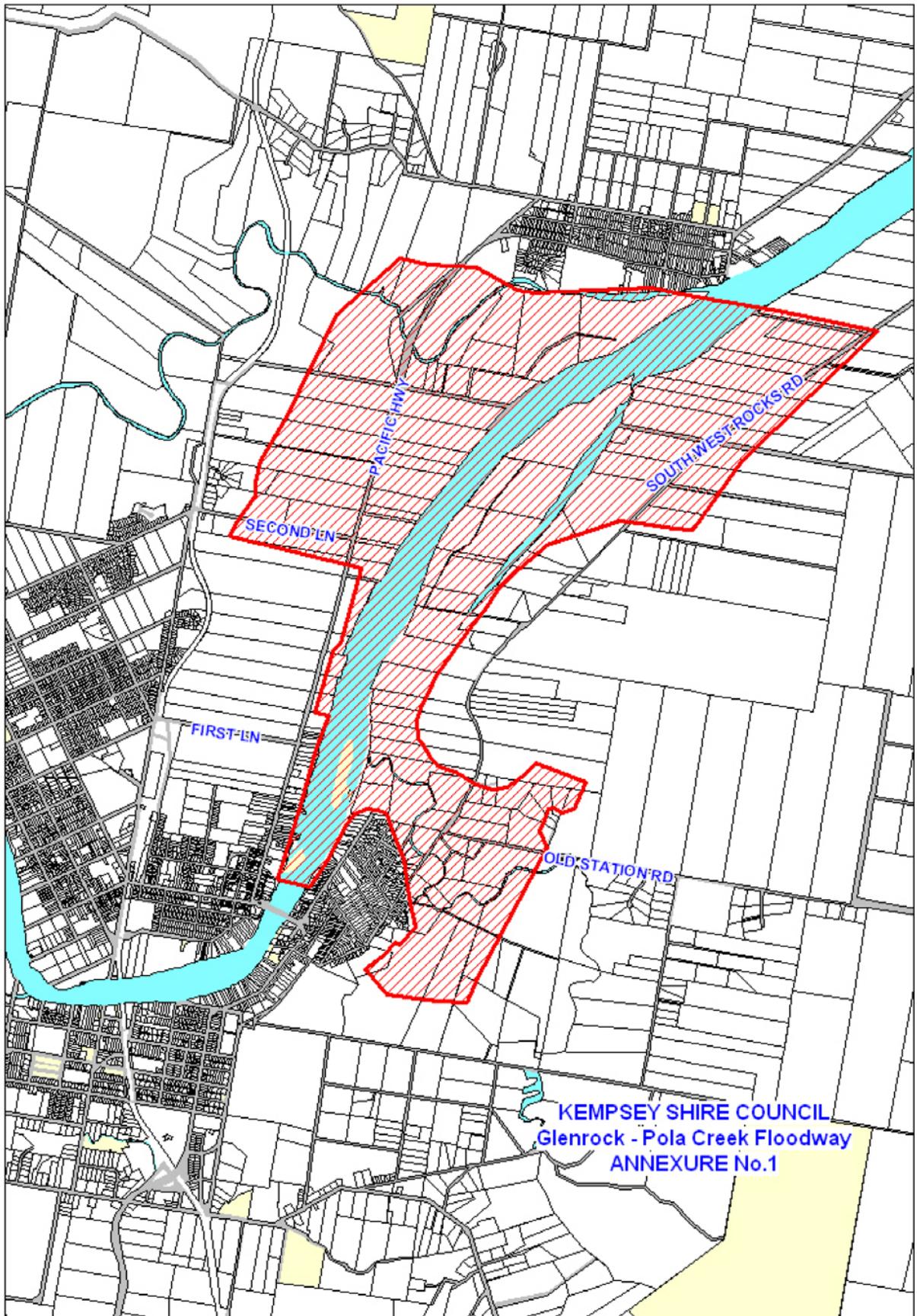
## **12.2 Engineering Department**

- a) Keep a Register of all bench marks established and confirmed by Registered Surveyors and make same readily available for public inspection.
- b) Ensure with practicable that all surveys for roads and other works are connected to a reliable established bench mark with a view to building up an extensive network, especially in flood prone areas.
- c) Provide input to requests for variations to pre-determined flood heights and velocities.
- d) Keep Council informed of any new developments in relation to Government Policy.

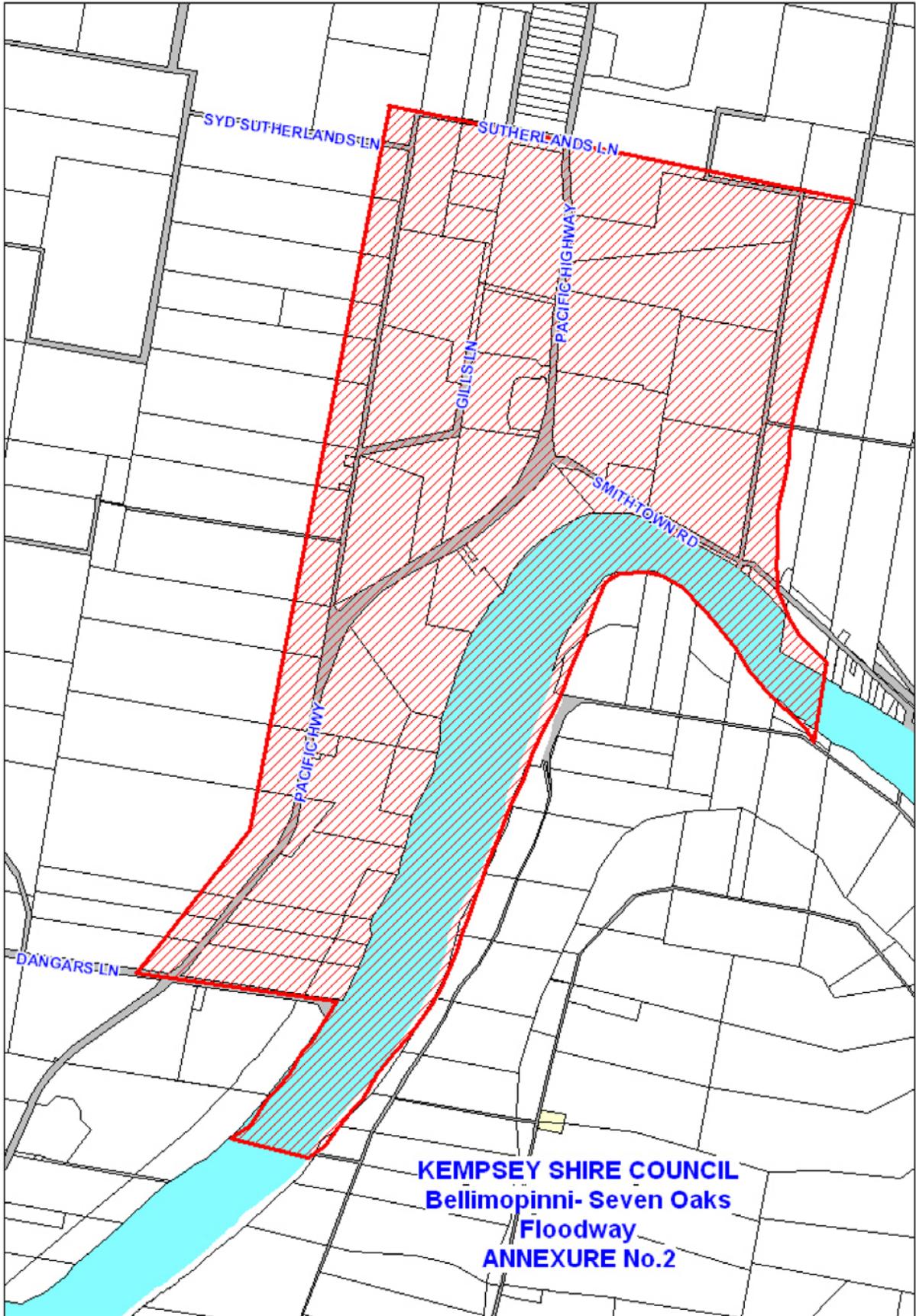
## **VARIATION**

Council reserves the right to review, vary or revoke this procedure which will be reviewed periodically to ensure it is relevant and appropriate.

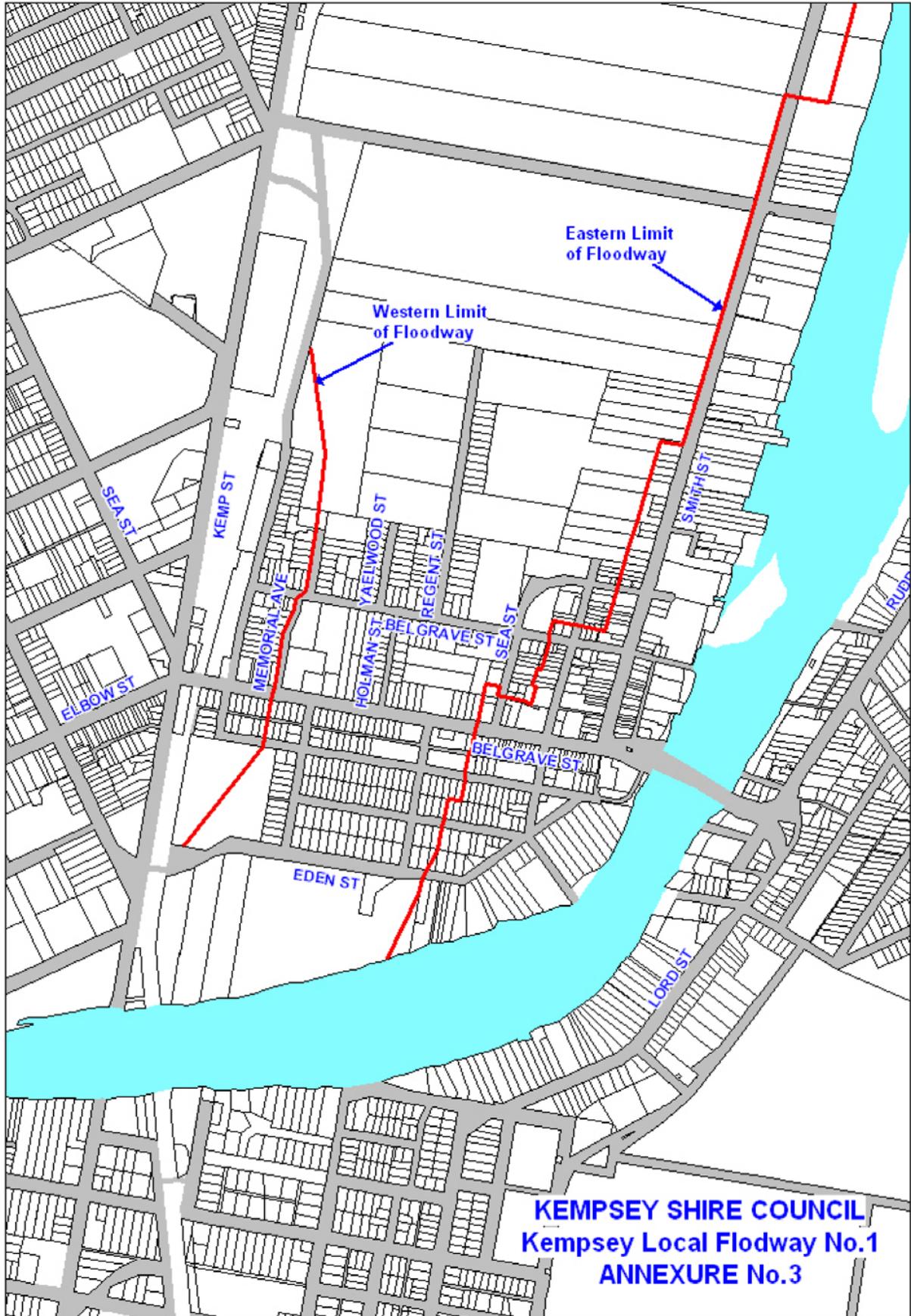
ANNEXURE 1



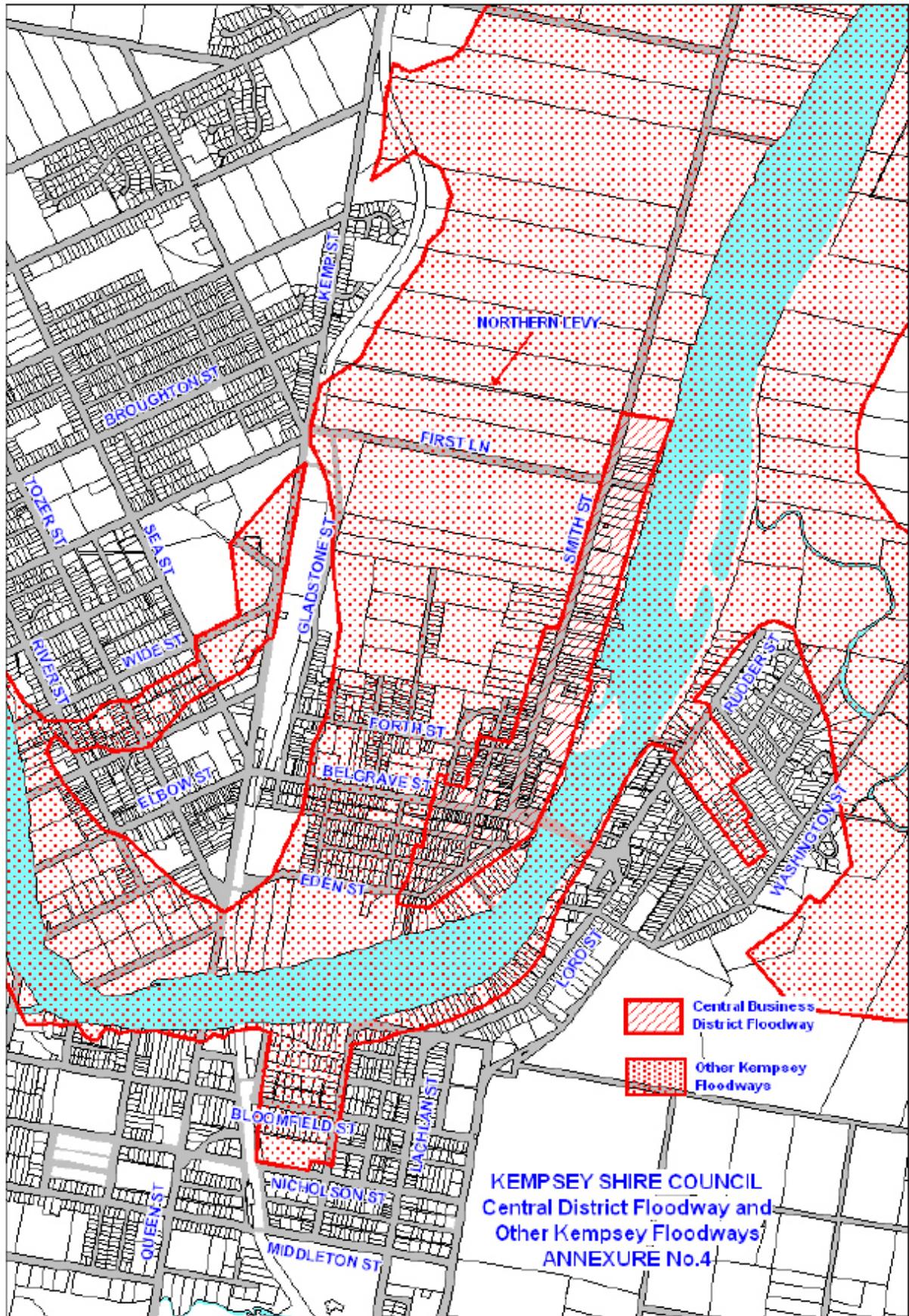
ANNEXURE 2



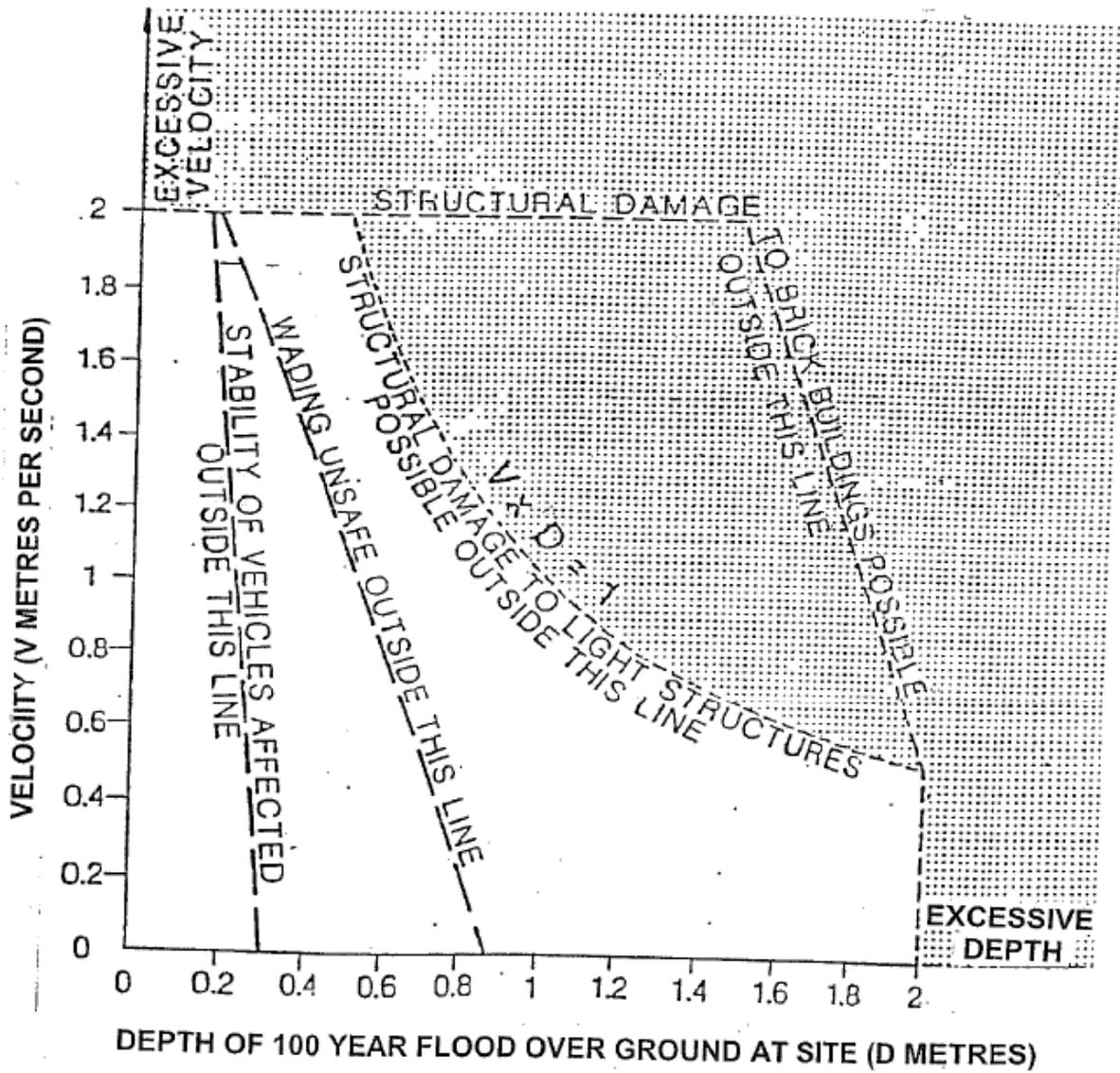
ANNEXURE 3



ANNEXURE 4

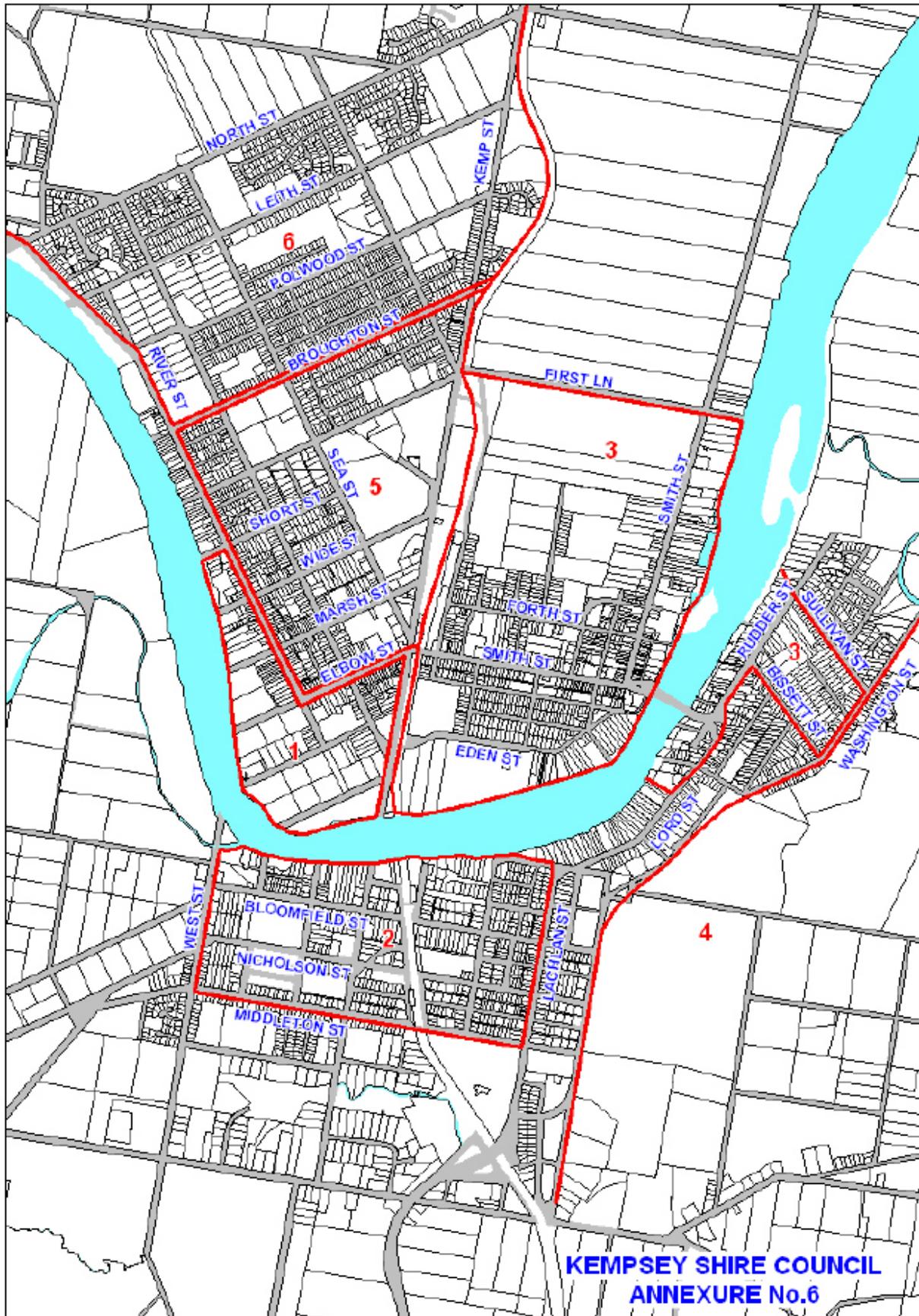


# FLOOD HAZARD DIAGRAM

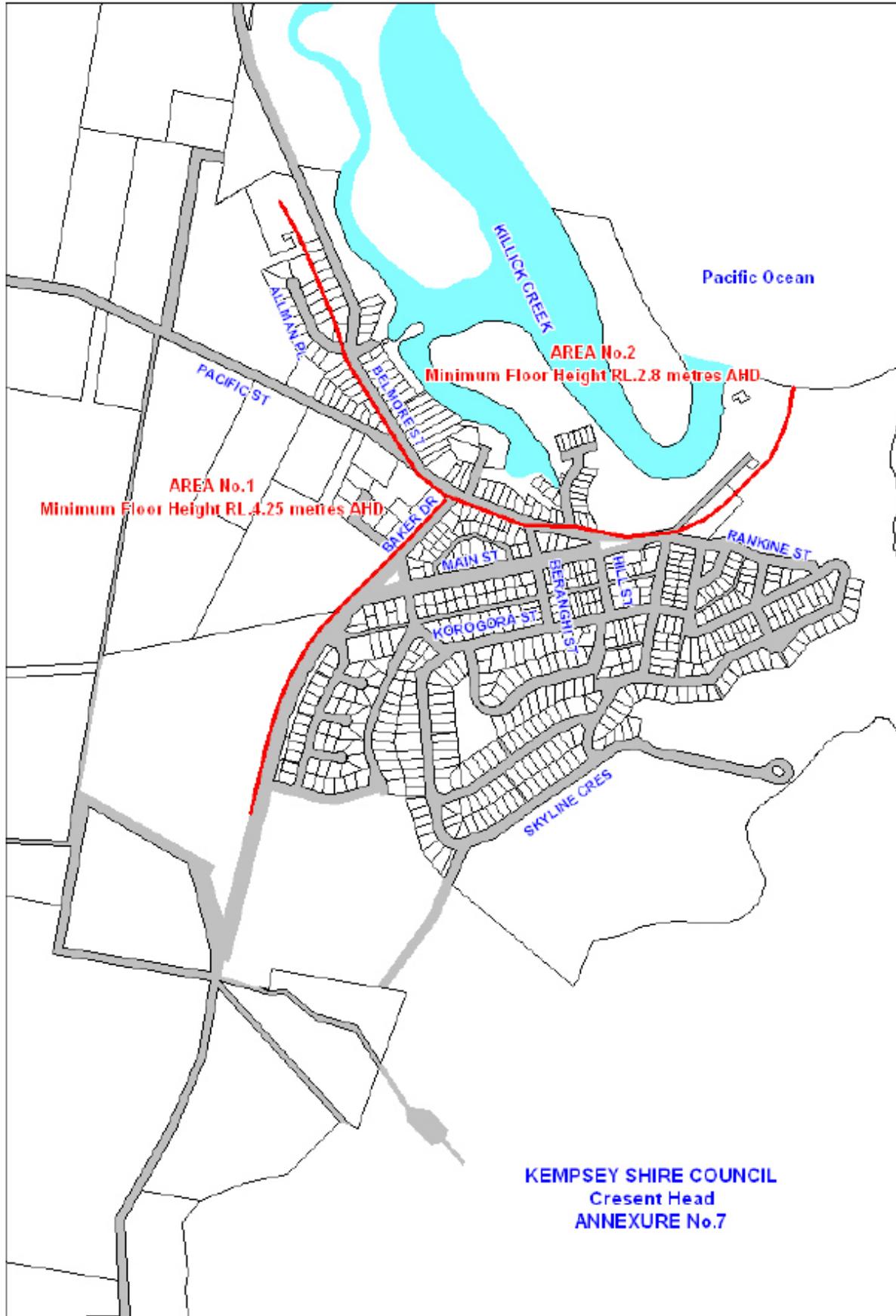


ANNEURE No.5

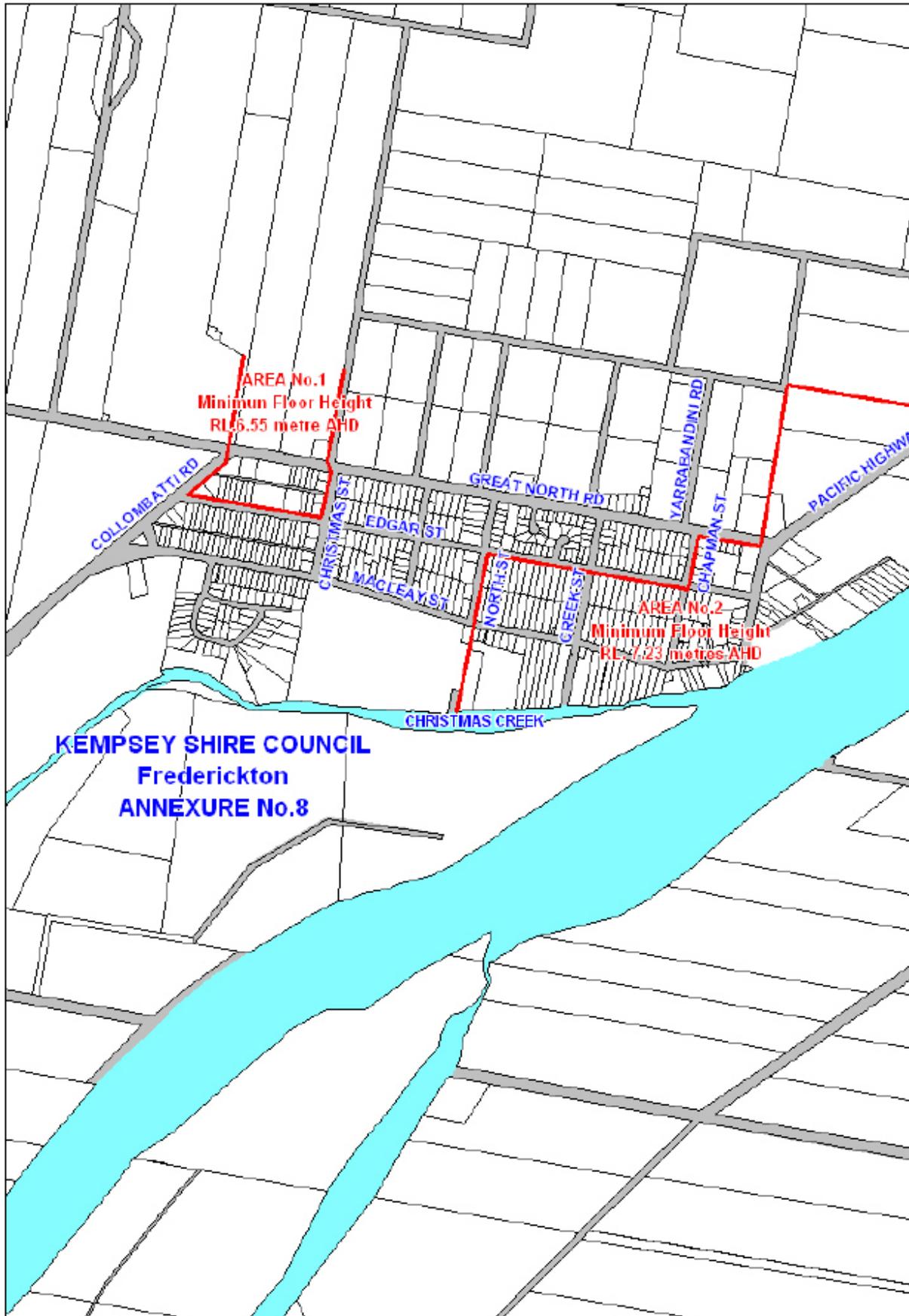
ANNEXURE 6



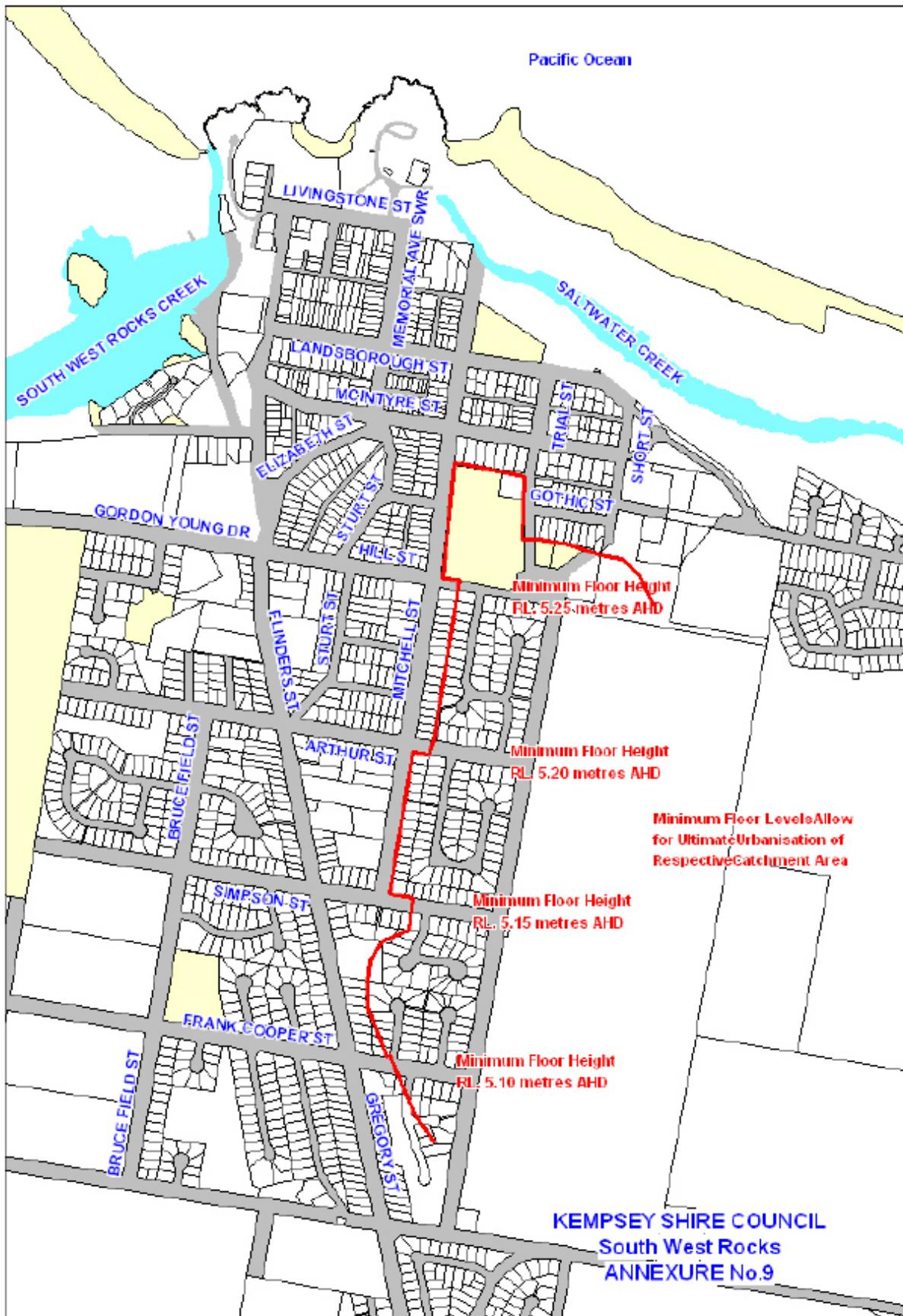
ANNEXURE 7



**ANNEXURE 8**



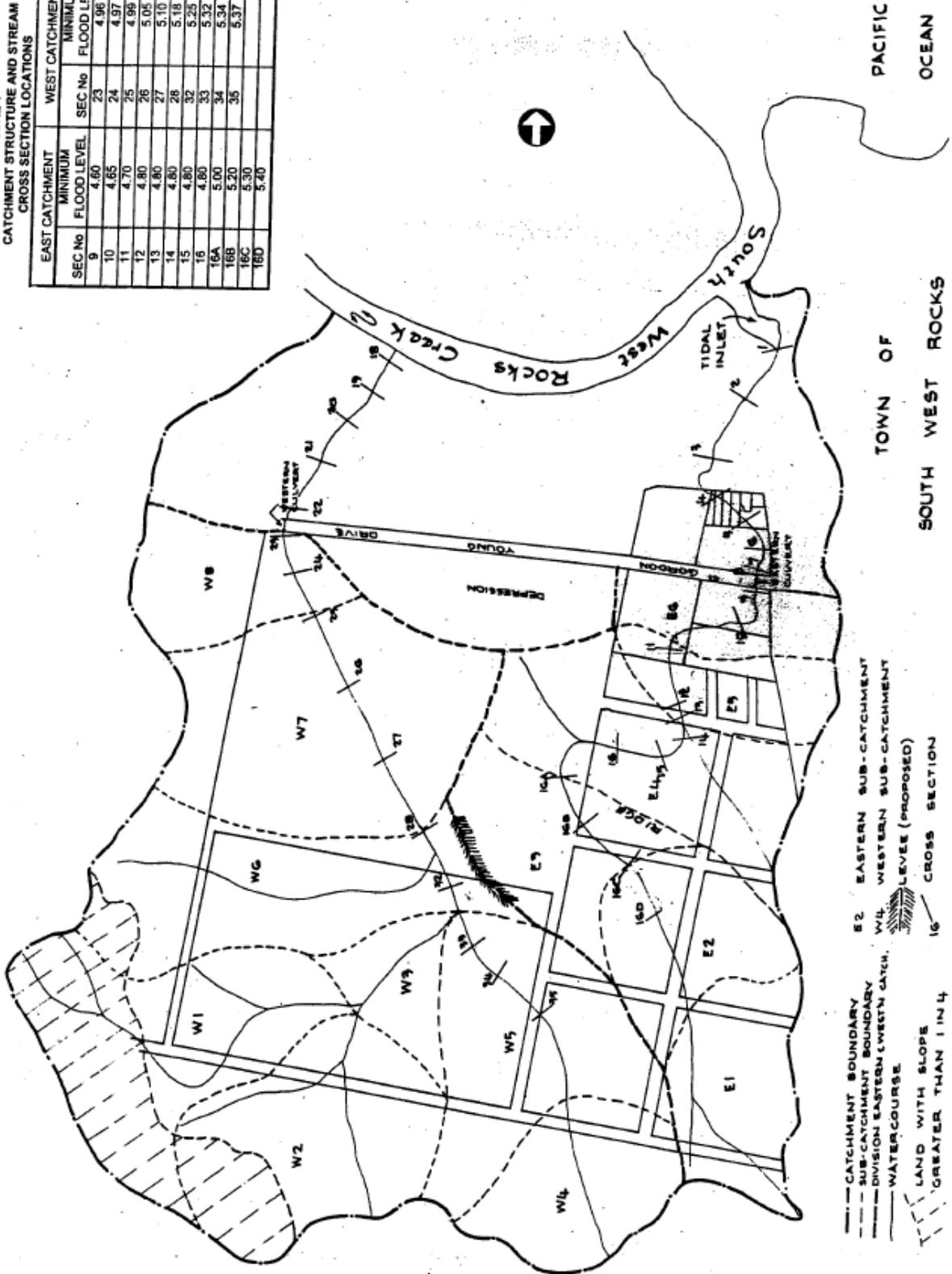
ANNEXURE 9



ANNEXURE 10

FIGURE 1  
CATCHMENT STRUCTURE AND STREAM  
CROSS SECTION LOCATIONS

EAST CATCHMENT		WEST CATCHMENT	
SEC No	FLOOD LEVEL	SEC No	MINIMUM FLOOD LEVEL
9	4.80	23	4.96
10	4.85	24	4.97
11	4.70	25	4.96
12	4.80	26	5.05
13	4.80	27	5.10
14	4.80	28	5.18
15	4.80	32	5.25
16	4.80	33	5.32
16A	5.00	34	5.34
16B	5.20	35	5.37
16C	5.30		
16D	5.40		



## ANNEXURE 11

Council has adopted these revised flood levels for the Lower Macleay Floodplain and coastal estuaries as an Interim Policy pending completion of the review of its Flood Risk Management Strategy Policy, as detailed below.

LOCATION	EXISTING 1% AEP FLOOD LEVEL (2004) m AHD	1% AEP INCORPORATING 0.91M SEA LEVEL RISE m AHD
<b>MACLEAY RIVER</b>		
Riverbank between Street No's. 481-515 Austral Eden Outer Road	5.13	5.13
North west corner of Smithtown village	5.03	5.04
Belmore River Junction	4.75	4.79
North east corner of Smithtown village	4.52	4.60
Fattorinni Island	4.37	4.48
Gladstone Drain Junction	4.25	4.41
Kinchela Creek Junction	4.16	4.33
Jerseyville Bridge	3.56	3.8
Spencerville	3.55	3.79
New Entrance Matty's Flat	2.52	3.08
Macleay Arm Fishermans Reach	2.53	3.14
Shark Island	2.30	3.18
<b>HAT HEAD</b>		
200m North Of Traffic Bridge	2.10	2.97
Hat Head Village	2.10	2.97
Ocean	2.60	3.47
<b>CRESCENT HEAD</b>		
Village East	2.3	2.46
Village West side	3.75	4.21 (assume rise of 0.46m based upon updated flood modelling undertaken for Killick Creek but at Ocean Boundary Level of 2.6m AHD )

The variation in the Macleay River at the Belmore River Junction is +40mm, Kinchela Creek junction +170mm, Jerseyville Bridge +240mm, New Entrance +560mm and ocean boundary +880mm.