15 COMMUNITY STRATEGIC AND MANAGEMENT PLAN REPORTS

GOAL 1: To facilitate ecological and economical sustainable development in the Shire

1.3.1 Interim Policy - Incorporating Sea Level Rise Benchmarks In Flood Risk Assessments

File: FM515 Copy: 1048 {Folio No. 441255

SUMMARY

Reporting on the need to adopt interim modelled flood levels incorporating sea level rise benchmarks for the Lower Macleay River Floodplain and coastal estuaries pending final flood modelling.

RECOMMENDATION

That Council adopt the revised flood levels for the Lower Macleay Floodplain and coastal estuaries as a Interim Policy pending completion of the review of its Flood Risk Management Strategy Policy, as detailed in this report.

RECOMMENDATION IMPLICATIONS

Environmental: *It is projected that with rising sea levels there will be loss of land, increased flooding in estuaries and adjoining areas, threat to coastal public infrastructure and existing natural environment. The extent to which these factors will affect the Kempsey Shire Coastal zone will be better understood once the Coastal Management Plan has been prepared and finally implemented.*

Social: *The social implications of climate change in general including sea level rise in the Kempsey Shire are being addressed in the Adaptations to Climate Change Report currently being prepared for Kempsey Nambucca and Bellingen Shires.*

Economic (Financial): *Updating of existing flood studies will be required over time and Council will need to meet its proportion of these costs in conjunction with the State Government.*

Policy or Statutory: *The interim changes to Councils existing Floodplain Risk Management Strategy Policy will allow Council to comply with its statutory obligation to consider the effect of sea level rise projections on flooding in the Lower Macleay River Floodplain for those developments that are affected and for future rezoning of land. The results of modelling flood levels based on a 2100 sea level rise of 910mm represents the best information available to Council at this time and satisfies its obligations to demonstrate good faith in maintaining exemption from liability in determining subsequent DAs on flood liable land.*

REPORT DETAILS

GOAL 1

In 2007 the NSW Department of Climate Change and Water (DECCW) presented an addendum to the section on Climate Change contained in the 2005 *NSW Floodplain Development Manual* entitled the *Flood Plain Risk Management Guideline, Practical Consideration of Climate Change.* The guideline was required to be used as the basis for examining Climate Change (using IPCC projections) in projects undertaken under the State Floodplain Management Program.

The NSW Government adopted its Draft Sea Level Rise Policy Statement in October 2009 followed by the final *Flood Risk Management Guide: Incorporating Sea Level Rise Benchmark in Flood Risk Assessments* and the NSW *Coastal Planning Guidelines; Adapting to Sea Level Rise* in August 2010.

In respect to accommodating expected 2100 sea level rise, the guideline suggests:

1. Either, updating existing flood modelling to include the 2100 sea level rise benchmark of 900mm.

2. Or, adopting a conservative approach by simply adding 900mm to adopted flood levels on land below 4.0mAHD. Council would be aware that in respect to a recent Development Application for a dwelling on Plummers Lane this option was unnecessary restrictive with a modelled increase of only 200mm expected.

In 2008 WMA Water Pty Ltd at the request of NSW Department of Climate Change and Water (DECCW) produced a paper for the Flood Management Authority (FMA) which modelled the effects of sea level rise on flooding on the Lower Macleay River floodplain using the International Panel on Climate Change (IPCC) projections for 2100 of 910mm.

In October 2010 Council requested WMA to retrieve the modelled flood data and rerun the model before supplying Council with the final flood data on 24 November 2010.

Statutory and Policy Provisions

The NSW Government's *Sea Level Rise Policy Statement* 2009 is supported by Government policies, programs and legislation that allow for ecological sustainable growth in coastal areas, whilst reducing risk from coastal hazards and flooding.

The *NSW Coastal Policy* is given statutory effect through *State Environmental Planning Policy 71* – Coastal Protection and through a Ministerial Direction to local councils under Section 117 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to consider the effects of Climate Change and Sea Level Rise on development in the coastal zone.

Clause 5.5 of the new *Standard Instrument Order* (gazetted 2006) requires that development consent on land either wholly or partly located within the coastal zone must not be granted unless consideration has been given to the impact of coastal hazards, processes and potential impacts (including sea level rise).

The NSW Government's *Flood Prone Lands Policy* and Floodplain Development Manual 2005 supports the Sea Level Rise Policy Statement with its main objectives to reduce the impact of flooding, reduce private and public losses and liability on individual owners and occupiers.

The abovementioned polices are supported by NSW Government estuary and floodplain management programs, which offer ongoing technical support as well as

grant funds to identify and manage coastal hazards and flooding risk. Sea level rise was incorporated into these programs as early as 1990.

When considering a development application Council is bound by Section 79C of the *Environmental Planning and Assessment Act 1979* to take those matters prescribed in the Regulations into account. The NSW Government proposes to add the following section to the Regulation as a matter to consider: -

NSW Governments sea level rise planning benchmarks.

Changes to the Regulation are likely to take effect early in 2011.

Interim Policy

Council's *Floodplain Risk Management Strategy Policy* is currently being reviewed. It is anticipated that as more information is made available from the NSW Roads and Traffic Authority Flood Engineering Consultant (Kempsey Bypass project) and other sources that this additional information will be combined and included in this revised document with a view to presenting a draft document in 2011.

It is recommended that Council adopt the 2008 WMA Water modelled flood levels for the 1% AEP flood event incorporating IPCC sea level change projections as an interim measure, pending incorporating revised levels in the review of Council's Flood Risk Management Strategy Policy. **Note:** The IPCC projections for the 2100 Sea level rise is 910mm which is marginally above the NSW adopted benchmark of 900mm and its is intended to review the results of modelling in conjunction with the review of the Flood Risk Management Strategy Policy in 2011.

Council now has available to it updated modelled flood data (2008) which incorporates the IPCC sea level rise projections to the year 2100. The following table shows the extent of the sea level rise projections on flood levels on the Lower Macleay River Floodplain and Coastal Estuaries.

LOCATION	EXISTING 1% AEP FLOOD LEVEL (2004) m AHD	1% AEP INCORPORATING 0.91M SEA LEVEL RISE m AHD
MACLEAY RIVER		
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	2.14
Shark Island	2.30	3.18
HAT HEAD		
200m North Of Traffic Bridge	2.10	2.97
Hat Head Village	2.10	2.97

Ocean	2.60	3.47
CRESCENT HEAD		
Village East	2.6	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.