

4th Asia-Pacific Climate Change Adaptation Forum

Adapting our Infrastructure for Rising Sea Levels

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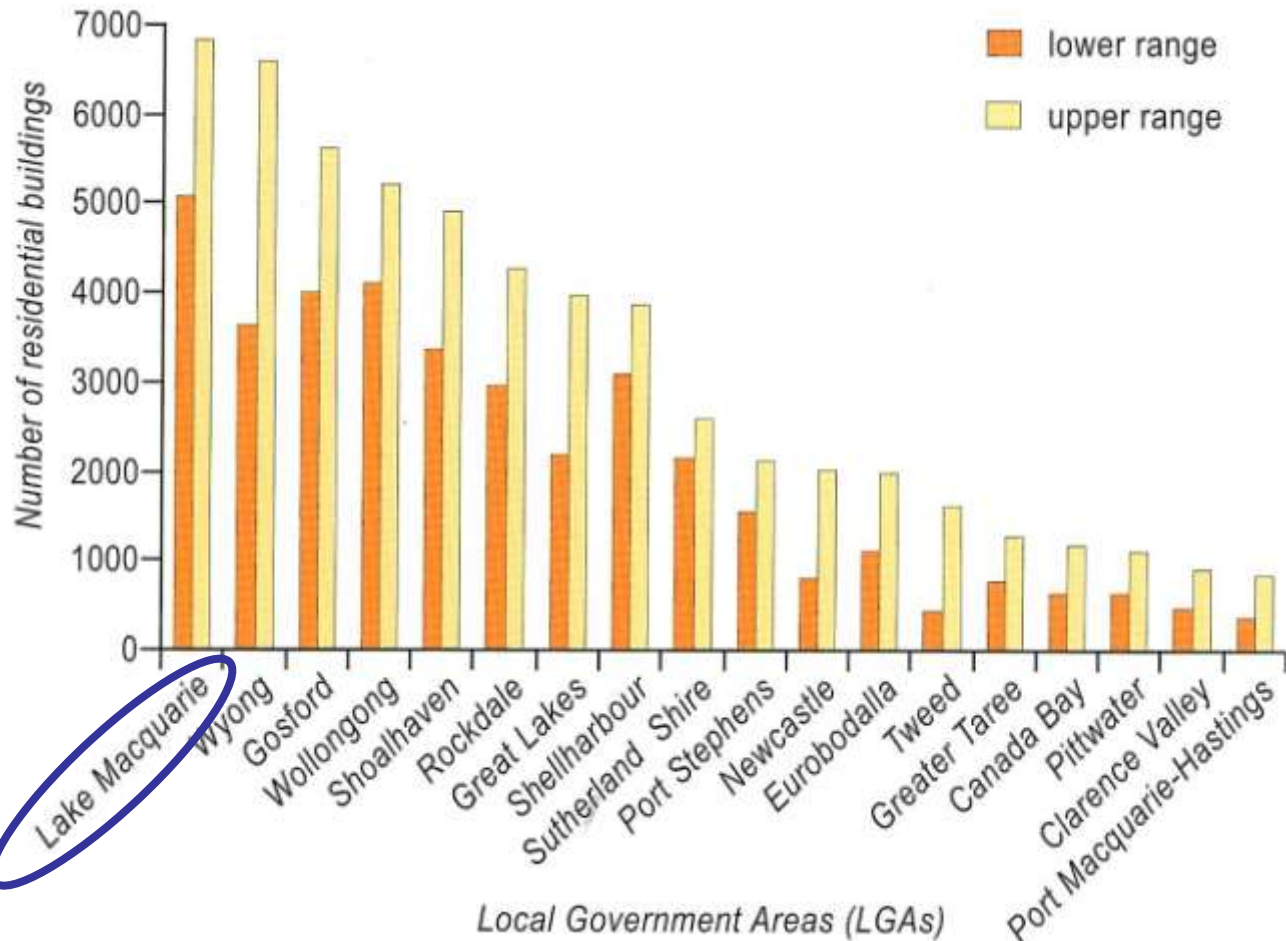
3 October 2014

City of Lake Macquarie



Inundation and Flooding Risk Profile

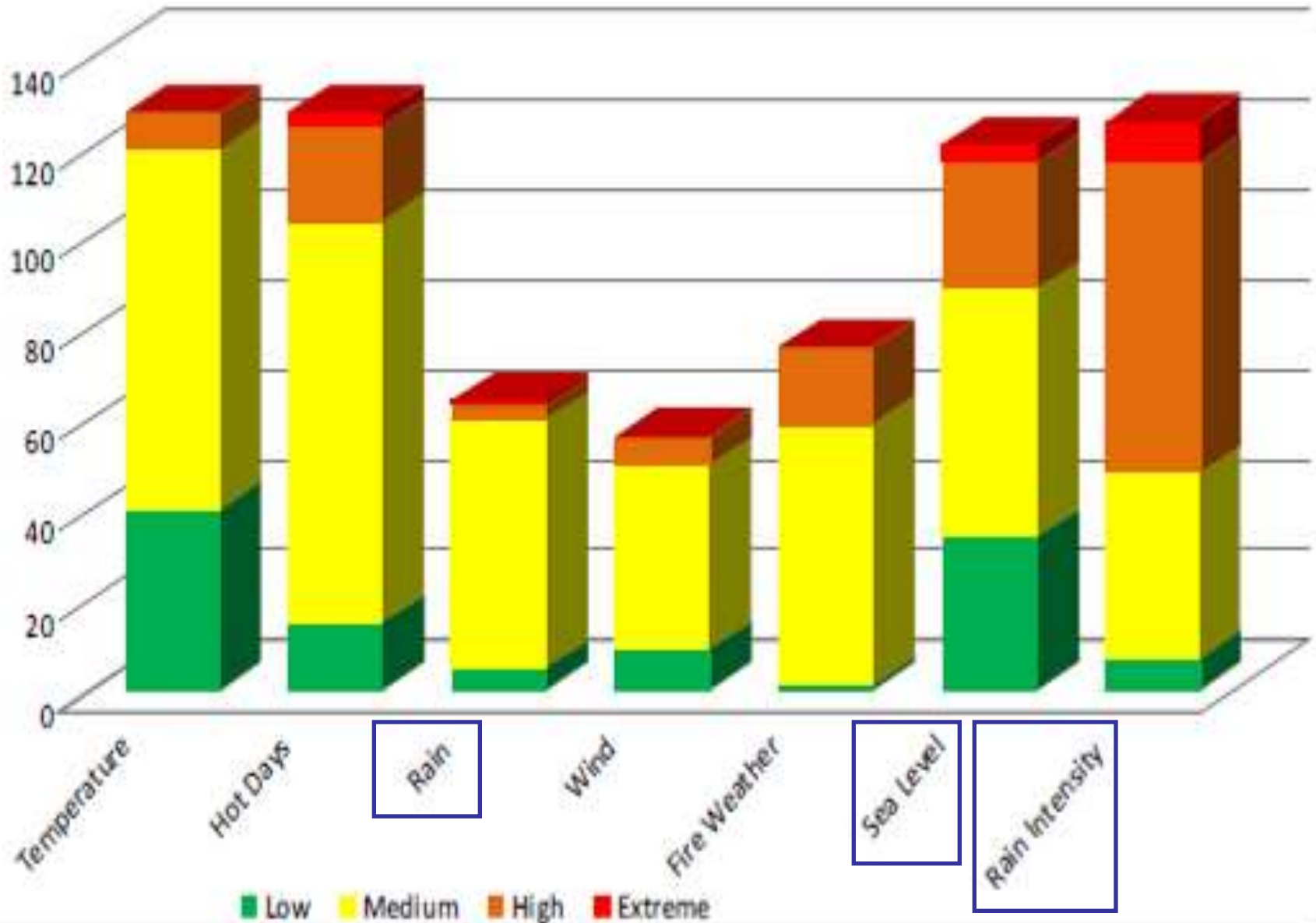
Residential building at risk of inundation (flood+1.1 m sea level rise)



Local Government Areas (LGAs)

Source: Department of Climate Change, 2009

Climate Change Impacts to Council Operations



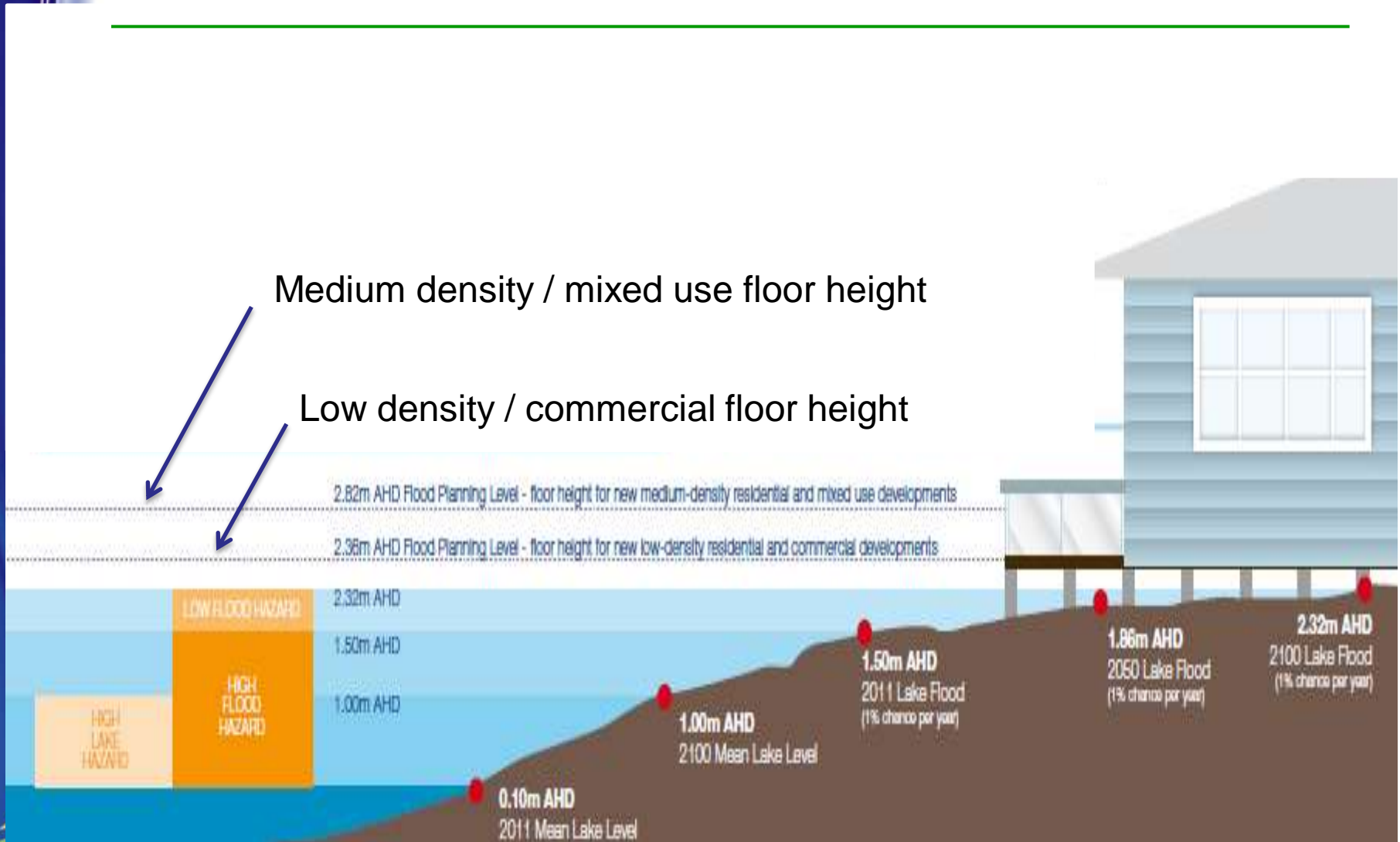
Foreshore Flooding & Tidal Inundation



Foreshore Infrastructure Risks

Asset	Flood planning area (3m)	
Pits, basins, outlets	3125	} Council Assets
Stormwater pipes	69 km	
Roads	200 km	
Sewer mains	284 km	
Water mains	162 km	
Railway	1.9 km	

Planning Approach for Residential Development



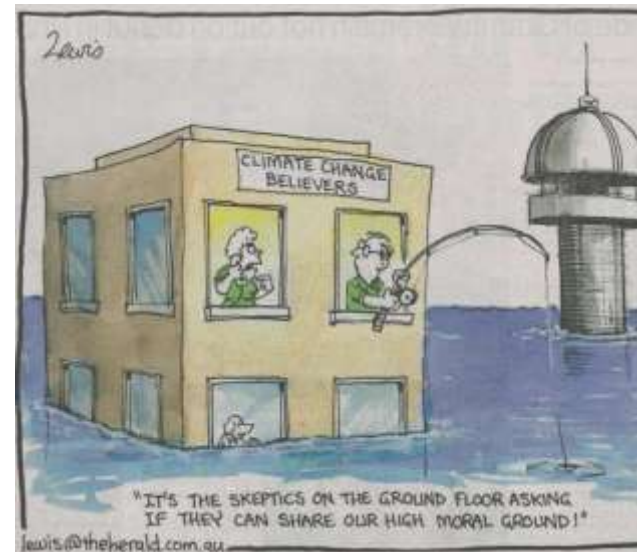
Planning for Future Assets

Asset Class	Asset Category	Proposed Asset Life (years)	Design Flood Recurrence Interval	Rise in Sea Level (metres)
Roads, Cycleways & Footpaths				
Bridges				
Stormwater Drainage				
Civic Buildings & Amenities				
Other Land Uses				
Foreshore Protection				

Asset Class	Asset Category	Proposed Asset Life	Design Flood Recurrence Interval	Rise in Sea Level (m)
Roads, Cycleways & Footpaths	Major roads	50	1:100 (at least one lane)	0.40
	Minor roads	50		1:10
	Cycleways	40	1:10	0.32
	Footpaths	40	1:10	0.32
Bridges	Steel & concrete	50	1:100	0.40
	Timber	20	1:100	0.16
Stormwater Drainage	Natural watercourses	-	-	-
	Vegetated channels	30	1:10	0.24
	Lined channels	50	1:10	0.40
	Inlet pits & pipes	50	1:10	0.40
	Kerb & guttering	50	1:10	0.40
Civic Buildings & Amenities	Community halls	50	1:100 + 0.5m	0.40
	Schools	100	1:100 + 0.5m	0.90
	Sports club buildings	50	1:100 + 0.5m	0.40
	Amenities blocks	30	1:20	0.24
	Boat ramps	30	1:20	0.24
	Minor structures	-	No requirement	
Other Land Uses	Golf courses	50	1:20	0.40
	Marinas	50	1:100	0.40
	Special uses e.g. airport	Case by case		-
Foreshore Protection	Seawalls, groynes & revetments	50	1:20	0.40
	‘Soft’ and temporary protection	30	1:20	0.24

Where to from here?

- apply consistent flood planning principles to all asset classes
- contribute towards consistent planning approach with other coastal councils and state government
- advocate for policy reform to provide wider range of economic and planning instruments for adaptation



Thank You

