

Department of
Environment, Climate Change and Water NSW

Coastal Management Reforms

Mike Sharpin
Urban and Coastal Water Reform Branch

Department of Environment & Climate Change NSW

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Context

- Some 300 houses currently at risk in NSW from coastal erosion
- Many unresolved coastal erosion management problems evident after severe storms
- Progress on coastal management planning has been slow, with some plans taking over 10 years
- Need for erosion risks to be understood and planned emergency responses need to be in place
- Local communities need to know what these hazards mean and what property owners can or can't do
- Sea level rise tracking at upper end of projections and expected to continue

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Coastal Management Reforms

- Sea Level Rise Policy – now finalised
- Draft guidelines on coastal and flood risk assessment
- Coastal Erosion Reforms
 - Emergency Management Action Plans
 - Legislative Amendments
- Relevant Coastal Management Guidelines
- Grants Reform

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Sea Level Rise Policy

- Outlines NSW Government's proposed strategies to minimize the impacts from sea level rise
- Adopts sea level rise benchmarks for planning purposes - 40cm at 2050 and 90cm at 2100
- Benchmarks based on best available science - IPCC and CSIRO
- Released with draft DECCW and DoP guidelines on implementation of benchmarks

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Sea Level Rise Policy - Key points

- State Government funding for coastal management is limited
 - Priority to protecting public infrastructure
- Government will continue to support councils
 - Coastal hazard assessments and planning, grants, technical guidance
- Enable appropriate development in areas affected by sea level rise
- Make sea level rise information publicly available
 - Enable informed decisions by purchasers

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Sea Level Rise Policy - Consultation

- Over 100 submissions received
- Generally supported by most councils
- Range of views on sea level rise benchmarks
 - Too high to too low
- Councils raised related issues e.g. indemnity from liability

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Sea Level Rise Policy - Changes

- No significant changes
- Sea level rise benchmarks unchanged
- Benchmarks consistent with Victoria and Queensland (0.8m by 2100)
 - NSW regional variation (0.1m) - CSIRO
- Use of benchmarks required in undertaking coastal and flood hazard assessments

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Draft coastal and flood risk guides

- Guidance on incorporating sea level rise benchmarks in
 - Coastal hazard assessment
 - Flood risk assessment
- Extends guidance in current manuals
 - Coastline management manuals – hazard lines
 - Floodplain development manual – flood planning areas



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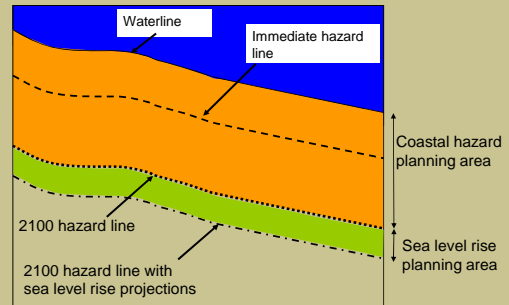
8

Draft guides – SLR planning areas

- Both guides define a “sea level rise planning area”
 - Additional land projected to be subject to coastal hazards and flooding due to sea level rise
 - Located landward of hazard lines or uphill of flood planning areas



Coastal guide – SLR planning area



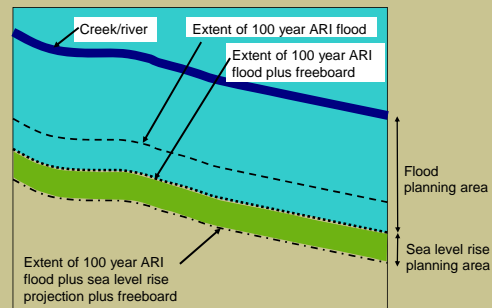
Coastal hazard planning area
Sea level rise planning area

Coastal Guide - Incorporating SLR benchmarks

- Considerations:
 - Increased design still water levels – increased oceanic inundation hazards
 - Recession of unconsolidated (sandy) shorelines
 - Bruun rule: 1 m sea level rise \approx 50-100 m recession



Flood guide – SLR planning area



Flood planning area
Sea level rise planning area

Guidance on ocean boundary conditions

- Coastal flooding due to ocean and/or catchment flooding
- Appendix provides interim advice on considering joint probability of ocean and catchment flooding occurring
- Entrance type affects ocean boundary condition (eg ICOLL differs to trained river)

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Draft Guides - Consultation

- Feedback invited on draft guides
- Email coast.flood@environment.nsw.gov.au
- Comments due Friday 11 December

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Coastal Erosion Reforms

- Aim:
 - To expand the range of tools for councils to deal with the coastal erosion issues on private property
 - To clearly define what people can and cannot do to protect their properties
 - To make it clear that public beaches are to be protected as a priority for Government
 - coastal protection works that benefit private landowners are to be paid for by landowners who directly benefit

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Emergency Management

- Council Coastal Erosion Emergency Action Plans – DECCW guidelines to be prepared with SES
- Code of Practice for appropriate temporary protection measures
- Infrastructure SEPP, Marine Parks and Crown Lands legislation to be amended to permit temporary works
- Temporary works must be consistent with Emergency Action Plan and Code of Practice

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Legislative Amendments

- **Coastal Protection Act amendments:**
 - Include sea level rise adaptation as an objective
 - Powers to stop unapproved works, increased penalties
 - Expand coastal zone management plan requirements to include coastal hazards, estuary health and climate change
 - Ministerial direction to some councils to complete coastal zone management plans

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Legislative Amendments

- **Local Government Act amendments**
 - Permit councils to levy a coastal protection service charge on beneficiaries – to manage maintenance of works and offsite impacts of landowner-funded seawalls in perpetuity
 - Strengthen indemnity provisions for local councils for coastal management if acting in “good faith”

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Legislative Amendments

- **Infrastructure SEPP amendments**
 - Permit “appropriate” landowner-funded long term protection works with consent
 - Works need to comply with stringent environmental and engineering requirements as specified in DECCW guidelines

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New Coastal Zone Management Planning Guidelines

- Replace 1990 Coastline Management and 1992 Estuary Management Manuals
- Support *Coastal Protection Act* requirements
- Provide clear of coastal zone management principles and objectives
- Guide the technical assessment and management of coastal hazards and estuary health
- Aim - Draft out for consultation by February 2010

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Further sea level rise information:

www.environment.nsw.gov.au/climatechange/sealevel.htm

Further coastal zone management information:


<http://www.environment.nsw.gov.au/coasts/index.htm>

Questions?

NSW Planning

Draft NSW Coastal Planning Guideline: Adapting to Sea Level Rise

November 2009



NSW Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

Scope, aims and context

- Consideration of sea level rise in land use planning and development assessment
- For councils, State agencies, planners and development proponents
- Applies to all coastal areas of NSW
- Coastal risks include coastal erosion, tidal inundation and coastal flooding
- Builds on relevant planning policies, manuals, plans and strategies

4/12/2009 | pg 2

NSW Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

Policy Context

- NSW Coastal Policy
- SEPP 71
- NSW Coastal Design Guidelines
- Coastal Regional Strategies and Sydney Metro Strategy
- Coastline and Floodplain manuals
- Section 117 Direction 2.2 – Coastal Protection
- Section 117 Direction 4.3 – Flood Prone Land
- Standard Instrument Clause 5.5
- Sea Level Rise Policy Statement provides sea level rise benchmarks to be used in the context of the above policies

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NSW Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

SIX Guideline Principles

| CLIMATE CHANGE COASTAL PLANNING PRINCIPLES | | | | | |
|--|---|---|--|--|--|
| Principle 1 - Assess & evaluate coastal risks taking into account sea level rise | Principle 2 - Make coastal risk known to the public | Principle 3 - Avoid intensifying land use in coastal risk areas | Principle 4 - Consider options to reduce land use intensity in coastal risk areas where feasible | Principle 5 - Minimise exposure to coastal risks from proposed development | Principle 6 - Implement appropriate management responses and adaptation strategies |
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| SECTION 2 Identifying coastal risk areas | | SECTION 3 Strategic and land use planning in coastal areas | | SECTION 4 Development assessment in coastal areas | |

4/12/2009 | pg 4

DECC Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

Identifying coastal risk areas

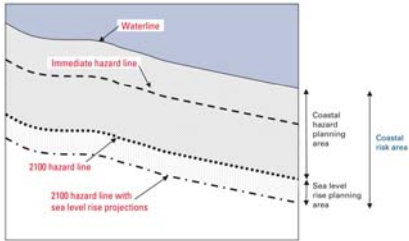
- Sea level rise planning benchmarks – 0.4m to 2050 and 0.9m to 2100
- DECCW manuals & draft guides (coast & floodplain)
- Investigation areas – prior to completing new studies
- Make information public



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DECC Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

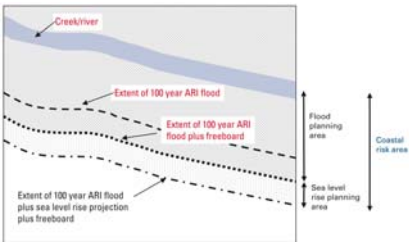
Coastal erosion



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DECC Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

Coastal flooding



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DECC Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

Factors for strategic planning

Regional strategies, LEPs and local studies

- Incorporate coastal risk studies
- Consider effects of coastal protection works
- Accommodating new growth
- Managing existing developed areas
- Maintain foreshore access, amenity and open space and protect coastal environments

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DCPP Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

Regulating coastal development in LEPs and DCPs

- Land use zones – regulate land use, additional objectives
- Principal development standards – minimum lot size, building height, floor space ratio
- Clause 5.5 – consent authority to consider effects of coastal hazards/processes on and by development
- DCPs – additional matters for consideration or development standard eg construction design and material, relocatable buildings
- Consultation question: model LEP clause for coastal risk areas

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DCPP Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

Development assessment

- Pre-DA site selection – locate outside coastal risk areas if possible
- Proponent – site design & layout, management responses, adaptation strategies, information requirements
- Consent authority - assess **risk** (location and type of development) and **merit**
- Consent authority – have consideration for Planning Criteria when making determination
- Exemption for minor development



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DCPP Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

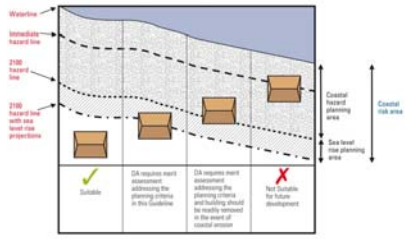
Planning criteria for assessing DAs

- Avoid or minimise exposure to immediate coastal risks
- Provide for safety of residents, workers and occupants on-site
- Do not adversely affect safety of public off-site
- Do not increase coastal risks to nearby properties
- Ensure infrastructure and services maintain their function
- Accommodate natural coastal processes
- Protect coastal ecosystems
- Maintain existing amenity and access

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DCPP Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

Example of coastal erosion assessment



| | | | |
|---------------|---|--|--|
| ✓ Suitable | DA requires merit assessment addressing the planning criteria in this Guideline | DA requires merit assessment addressing the planning criteria and building should be readily removed in the event of coastal erosion | ✗ Not suitable for future development |
|---------------|---|--|--|

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Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

Example of coastal flooding assessment

| | | |
|--|--|--|
| <p>Flooding assessment not required, note urgent consideration of emergency response to flooding</p> | <p>CA requires merit assessment addressing the planning criteria of the Guidelines</p> | <p>CA requires merit assessment addressing needs of consideration in flood planning process in coastal CA to planning criteria in the Guidelines</p> |
|--|--|--|

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Planning Draft Coastal Planning Guideline – Adapting to Sea Level Rise

What next?

- Submissions due 11 December 2009 – email, fax or post (see DoP website)
- Seeking general comments as well as responses to the 11 consultation questions

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Collaroy-Narrabeen Coastline Hazard Lines

Presentation by Daylan Cameron
Sydney Coastal Councils Group Workshop
1 December 2009





Coastal Erosion Collaroy/Narrabeen Beach

- Long history of storm damage and coastal erosion
- Nationally - 3rd area most at risk from coastal processes



Coastal Erosion Collaroy/Narrabeen Beach

- Storms caused considerable damage in the 1920s, 1940s, 1960s and 1970s.
- Cause of the problem:

"The problem stems from the fact that the initial sub-division was too close to the beach with properties extending into the active beach zone." (Nielsen Lord Associates, 1988).





Collaroy Beach circa. 1907 showing the ladies dressing 'shed' — M.A.B. photo, National Library of Australia.



Collaroy beach front following the great storm of 1920. The surf club is visible in the background — Faviell Collection.



The Sydney Morning Auditor, 14.06.1945.



'Flight Deck' Apartment Building, 1967.

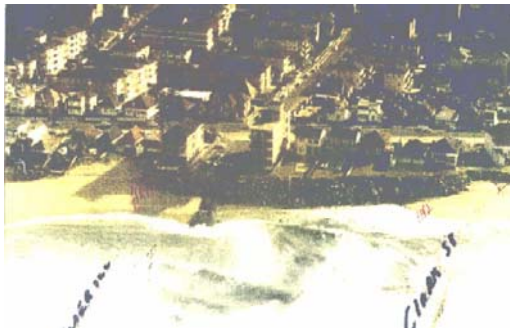




1974 coastal surveillance



Goodwin St to Wetherill St, 1977.



Wetherill St, pre-1980



Collaroy Beach, April 1995





Collaroy Beach, April 1995.



Narrabeen Beach, June 2007



Collaroy Beach, June 2007



Source: SMH, 12 Jun 2007





Wetherill St, June 2007



History of Storm Damage

- A detailed history of the storm damage from 1880 to 1986, is provided in:

Collaroy/Narrabeen Beaches - Coastal Process Hazard Definition Study (PWD 1987).



Early actions to minimise property damage

- Building lines were established following severe storms in 1967 and 1974:
 - 15m setback north of Goodwin St
 - 23m setback south of Goodwin St to Jenkins St



Studies and reports

- *Coastal Management Strategy*, prepared for Council in conjunction with the Public Works Department of NSW (WSC 1985);
- *Collaroy/Narrabeen Beaches Coastal Process Hazard Definition Study*, prepared for Council by the Public Works Department (PWD 1987);
- *Collaroy/Narrabeen/Fishermans Beach Coastal Management Strategy - Phase One: Hazard Definition*, prepared for Council by Nielsen Lord Associates (NLA 1988);
- *Collaroy/Narrabeen/Fishermans Beach Coastal Management Strategy - Management Options and Appendices*, prepared for Council by Nielsen Lord Associates and Travers Morgan Pty Ltd (NLA 1989).



Studies and reports (cont.)

- *Narrabeen-Collaroy Fishermans Beach Coastal Management Strategy – Management Options*, prepared for Council by Nielsen Lord Associates & Travers Morgan P/L (1989);
- *Collaroy-Narrabeen Beach – Hazard Mapping*, prepared for Council by Nielsen Lord Associates (1990);
- *Criteria for the Siting and Design of Foundations for Residential Development*, prepared for Council by Geomarine P/L and Coffey Partners International P/L (1991);
- *Collaroy/Narrabeen Beach Nourishment Investigations*, prepared for Council by Patterson, Britton & Partners (1993)



Key Reports re Hazard Lines

1. *Collaroy-Narrabeen Beach – Hazard Mapping*, prepared for Council by Nielsen Lord Associates (1990)

Provided basis for the development of a set of *Interim Building and Development Guidelines*.

Contained maps showing:

- “immediate” impact lines for the beachfront
- predicted “50 year” impact lines (should no action be taken to protect existing development)



Key Reports re Hazard Lines

2. *Criteria for the Siting and Design of Foundations for Residential Development*, prepared for Council by Geomarine P/L and Coffey Partners International P/L (1991)

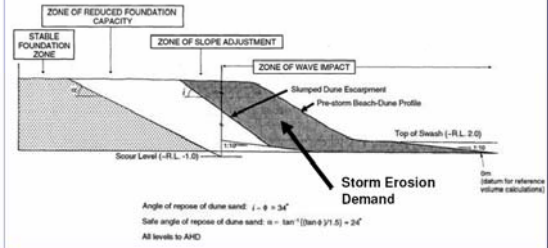
Provided a series of Hazard Maps for the beach, delineating the following hazard zones:

- Wave Impact Zone
- Zone of Slope Adjustment
- Reduced Foundation Zone

NB - Maps used were based on the "immediate" hazard lines.

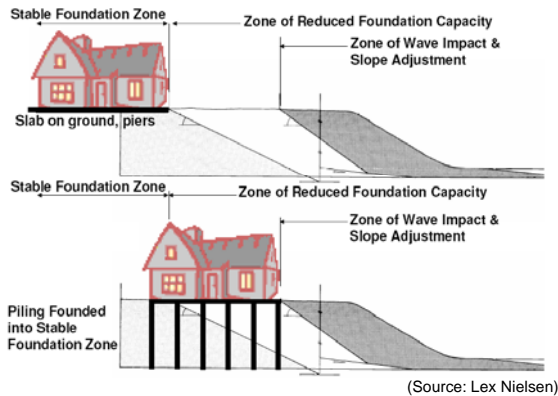


Dune Stability Schema



(Source: Lex Nielsen)


Dune Stability - Foundation Considerations





Studies and reports

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Collarooy/Narrabeen Coastline Management Plan (1997)

Adopted in 1997

Identifies management strategies for dealing with coastal erosion along the beach.



Management Strategies include:

1. Undertake protective works
2. Environmental planning measures
3. Development control and conditions
4. Dune Management



Implementation Progress

- Substantial progress
- Of the 13 actions, only two have not been started (ie. A2 and A3), with actions relating to moderate beach nourishment on hold pending State & Federal Government support.
- All high priority actions are at various stages of implementation, being either complete, ongoing or underway.
- Some of the actions have not proven to be sustainable in the long term (eg B6 - purchase of properties), or popular with the community (eg. A2 - seawall).



Discussion Points & Issues

- Incorporation of the Hazard Lines and Hazard Maps into planning documents a testament to the robustness and quality of the scientific and engineering studies that underpin them.
- However, the Hazard Lines Council has been using for the last 18 years, are the “immediate” Hazard Lines as calculated in 1991.
- They do not account for any future long term recession of the beach due to net sediment loss or sea level rise.



Discussion Points, Issues (cont.)

- Plan’s intention was that a review of the Development Guidelines for Collaroy/Narrabeen Beach would be undertaken following the “*Selective reconstruction of existing seawalls and minor construction to infill gaps in existing walls*”.
- It was thought that after the seawall was built and nourishment undertaken, the Hazard Lines would become obsolete.



Proposed Seawall Upgrade 1998 - 2003

- Detailed proposal to upgrade the 1.1km of ad-hoc built seawall that exists in front of approximately 55 properties
- 2002 – Public exhibition of proposal





Proposed Seawall Upgrade Public Exhibition 2002

- Over 550 submissions were received - the vast majority objected to the seawall.
- Due to the widespread community opposition, Council resolved on 25 February 2003:
 - *Not to proceed with the proposed seawall upgrade;*
 - *To investigate alternative options for protecting properties against coastal erosion, particularly the sourcing of offshore sand for beach nourishment.*



Have the Hazard Lines been successful?

- Have served Council well
- Used by Council staff in assessing/considering DAs
- Some applicants, that have had DAs refused, have exercised their right of appeal through the Land & Environment Court.
- Such appeals have had very limited success (eg, Cranswick-Smith v Warringah Council 2002, and Welsh v Warringah Council 1999).



Why review the Hazard Lines?

- Action in Coastline Management Plan.
- They hadn't been examined / reviewed since 1990.
- Used by Council officers on a daily basis.
- Seawall option not being pursued, and the prospect of nourishing the beach with offshore sand could be a long way off.
- **CLIMATE CHANGE AND SEA LEVEL RISE.**
- Council has a 'duty-of-care'



"Life's a beach, and then it disappears"
(SMH, 19/07/2006)

What if the Hazard Lines move as a result of the Review?

- 'Wind-fall' gains or losses?
- If Seaward – new DAs/increased development?
- If Landward - claims for compensation?



Review deliverables

1. Assess the validity and methodology used to determine the Hazard Lines currently in place (ie. 1991 lines).
2. Calculate and determine the locations of the following sets of Coastline Hazard Lines (CHL):
 - 2009 CHL
 - 2059 Mid-Range CHL (i.e. 0.2m SLR)
 - 2059 High-Range CHL (i.e. 0.4m SLR)
 - 2109 Mid-Range CHL (i.e. 0.6m SLR); and,
 - 2109 High-Range CHL (i.e. 0.9m SLR).



Review deliverables (cont.)

3. Provide a detailed explanation and justification for any change to the current Hazard Lines.
4. Prepare updated sets of Hazard Maps.
5. Provide advice and recommendations on any actions Council should undertake resulting from the findings of this Review.
6. Final Report



Project chronology

- Apr 2007 - Call for Quotations
- Jun 2007 - Appointment of successful consultant (Patterson Britton & Partners P/L)
- Jun 07 – 09 - Review period



Current status of project

- Council has received a Final Draft Report.
- Council staff and management currently reviewing report.
- Mayoral Minute to be considered by Council on 8 December 2009.
- Councillor briefing scheduled for February 2010



Matters for consideration

- Draft Warringah LEP and DCP (2009)
- Consultation with land-owners and residents.
- NSW Reforms to the management of coastal erosion.



Other Council initiatives relating to sea level rise

- Partnership projects with Sydney Coastal Councils Group (SCCG).
- Consideration of impacts on coastal lagoons and floodplain planning.
- Emergency Management of Coastal Erosion.
- Collaborative coastline monitoring research.



Thank You



Sydney Coastal Council Group
 Workshop on NSW Government Sea Level Rise Policy Statement,
 Risk Management Guides and Draft Coastal Planning Guideline
 Marconi Room, Town Hall House
 Tuesday 1st December 2009

APPLICATION OF FLOOD RISK MANAGEMENT GUIDE

MAPPING FLOOD HAZARDS

Sue Ribbons
 Project Leader, Floodplain Management,
 Pittwater Council

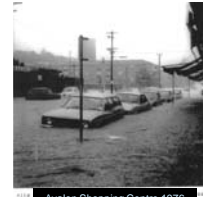


Types of Flood Mapping

- sea level rise only
- catchment flooding:
 - with no climate change impacts
- catchment flooding:
 - with sea level rise
 - no increase in rainfall intensities
- catchment flooding:
 - with sea level rise
 - with increase in rainfall intensities.



Mona Vale, 1989



Avalon Shopping Centre 1976

Mapping Sea Level Rise Only

- "bath-tub" or "still water" map
- easiest impact to map
- does not include wave set up and wave run up:
 - so difficult to use along open coast
- documents to use:
 - Draft Flood Risk Management Guide
 - Draft Coastal Risk Management Guide.



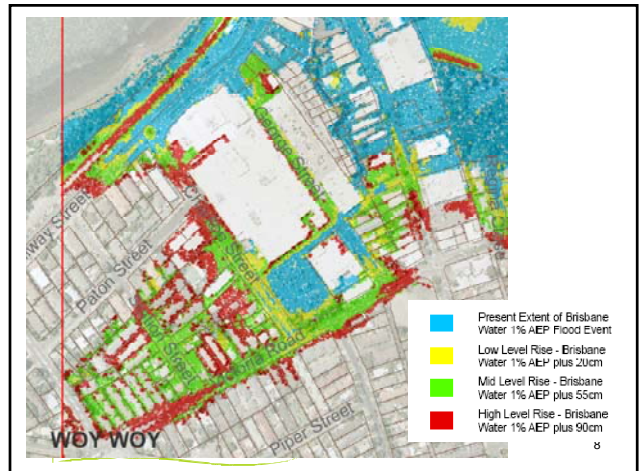
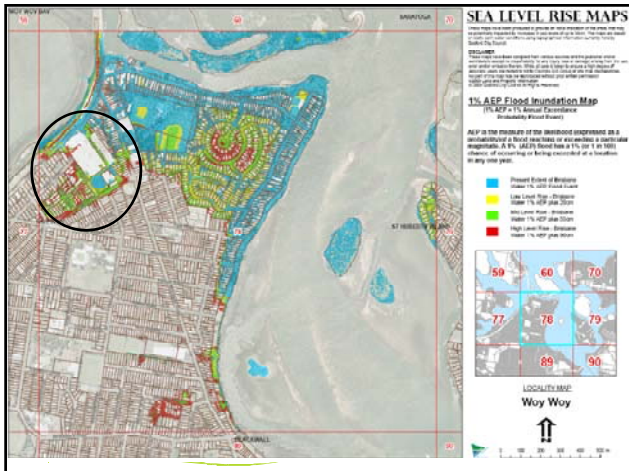
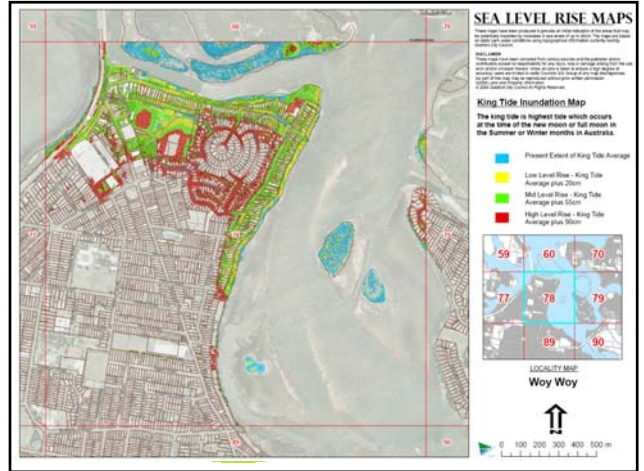
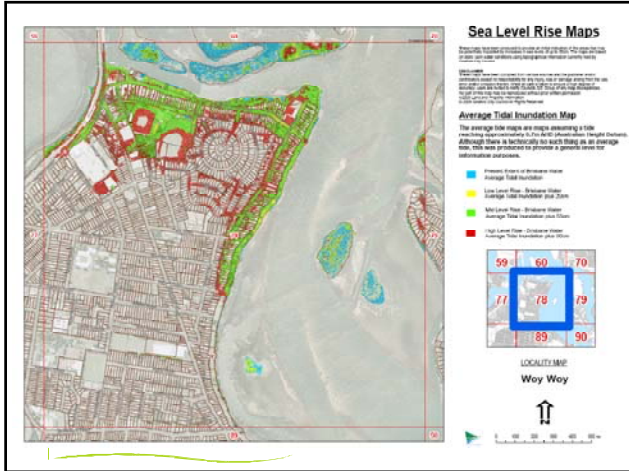
Newcastle, 2007

Mapping Sea Level Rise Only

- Preliminary mapping to get idea of impacts:

| All levels in metres AHD | Existing (2009) | 2050 (+ 0.4m from 1990) | 2100 (+ 0.9m from 1990) | Preliminary Mapping to get idea of impacts | |
|--------------------------|-----------------|-------------------------|-------------------------|--|----------------------|
| | | | | Add say 0.5m freeboard | Nearest 0.5m contour |
| Average Tide | 0.6 | 1.0 | 1.5 | 2.0 | 2.0 |
| Weekly Tide | 1.0 | 1.3 | 1.8 | 2.3 | 2.5 |
| Yearly King Tide | 1.2 | 1.6 | 2.1 | 2.6 | 2.5 |
| 1%AEP Storm Tide | 1.4 | 1.8 | 2.3 | 2.8 | 3.0 |

- OR guesstimate 4.0mAHD if catchment flood as well



Mapping of Catchment Flooding

- requires a Flood Study:
 - defines nature and extent of flood behaviour and flood problem
 - flood extents
 - depths of inundation
 - speed of floodwaters
 - flood hazard
- document to use: Floodplain Development Manual:
 - defines Floodplain Management Process.



Flooding in Western Sydney, late 1980s

Mapping of Catchment Flooding

- flood modelling required (no climate change to start):
 - 20% AEP (1 in 5 year)
 - 5% AEP (1 in 20 year)
 - 2% AEP (1 in 50 year)
 - 1% AEP (1 in 100 year)
 - 0.5% AEP (1 in 200 year)
 - 0.2% AEP (1 in 500 year)
 - 0.01% AEP (1 in 1000 year)
 - probable maximum flood
- flood planning level:
 - 1% AEP + 0.5m freeboard



Wollongong, 1998

Mapping of Catchment Flooding

- incorporate climate change into catchment flooding:
 - sea level rise:
 - draft Coastal Risk and Flood Risk Management Guides
 - increased rainfall intensity / peak rainfall / storm volume:
 - 2007 DECC Guideline "Practical Consideration of Climate Change"
 - Sensitivity of impacts:
 - Low → 10% increase
 - Medium → 20% increase
 - High → 30% increase



Elaine Avenue, Avalon, 2008

Mapping of Catchment Flooding

- all Flood Studies required to have Sensitivity Analysis:
 - what happens if change rainfall intensities
 - what happens if change lake or sea level downstream
- information used to get idea of:
 - additional extents of inundation
 - additional number of properties affected
 - additional infrastructure affected
 - if new or worse floodways or high hazard areas could occur.



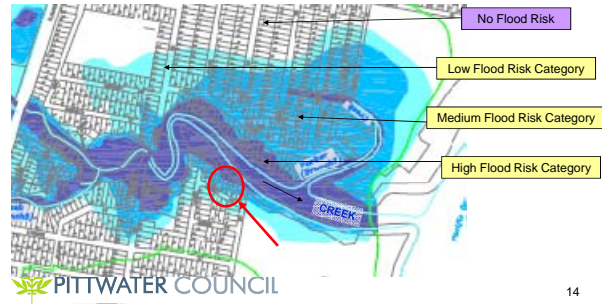
Toongabbie and Main Western Rail line, late 1980s

Mapping Catchment Flooding and Sea Level Rise

| Flood Size | No climate change | With sea level rise | | With sea level rise | | With sea level rise | |
|------------------------|-------------------|-------------------------|------|--------------------------|------|--------------------------|------|
| | | No increase in rainfall | | 10% increase in rainfall | | 30% increase in rainfall | |
| | | 0.4m | 0.9m | 0.4m | 0.9m | 0.4m | 0.9m |
| 20% AEP (5 year) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 5% AEP (20 year) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1% AEP (100 year) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Probable Maximum Flood | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Extent vs Property Based Mapping

- Extent-based Mapping:
 - All flood risk categories applied to properties ...



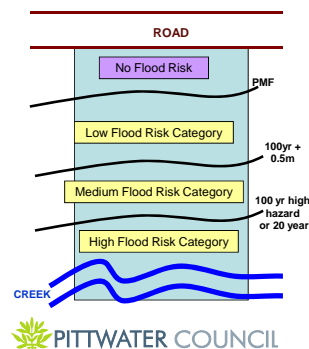
Extent vs Property Based Mapping

- Property-based Mapping:
 - Flood Risk Category applies to lowest point on property



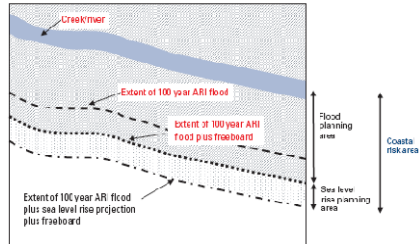
Extent vs Property Based Mapping

- Which risk category to apply?:
 - all four categories?
 - one category relating to lowest part of property?.



Mapping Flood Planning Areas & Sea Level Rise Planning Areas

Figure 2 – Coastal risk areas relating to coastal flooding



Note: Flood planning areas and sea level rise planning areas are established in Part 4 of the Ordinance in accordance with the Planning Development Act and the Act of Flood Risk Management (Local Government Act 2009). Coastal risk area is the term used in this Guide to identify the land covered by both the flood planning area and sea level rise planning area.



Thank you



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Integrating NSW Coastal Planning Guideline into Strategic Planning

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Sydney Coastal Councils Group Workshop
1 December 2009

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1. Overview

- Rapid urban expansion
- Hazards and increased exposure and vulnerability
- Responsibility for planning – boundaries
- Collision between private property rights and public interest law

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2. Existing Legislative & Policy Framework

- National Initiatives – National Co-operative Approach to Integrated Coastal Zone Management (2003) - Standing Committee Report October 2009
- NSW Umbrella framework
 - Coastal Protection Act 1979
 - Environment Planning and Assessment Act 1979
 - Local Government Act 1993
 - State Environment Planning Policy No 71
 - S.117 Directions
 - NSW Coastal policy 1997
 - NSW Coastline Hazard Policy 1988 (to be superseded by the Draft Sea Level Rise Policy Statement)
 - NSW Coastal Management Manual 1990
 - Coastal Design Guidelines for NSW
 - Various regional strategies
 - Coastal Management Plans
 - Local Environmental Plans
 - Standard Instrument – c. 5.5

3. Sea Level Rise Policy Statement

- **Primary Objective**

"To minimise the social disruption, economic costs and environmental impacts resulting from long term sea level rise. To achieve these objectives the NSW Government will:

- *promote an adaptive risk based approach to managing sea level rise impacts*
- *provide guidance to local Councils to support their sea level rise adaptation planning*
- *encourage appropriate development on land projected to be at risk from sea level rise*
- *continue to provide emergency management support to coastal communities during times of flood and storms*
- *continue to provide updated information to the public about sea level rise and its impact."*

4. Goal – Guidance?

*"The benchmark is not intended to be used to preclude the development of land projected to be affected by sea level rises. The goal is to ensure that such development recognises and can appropriately accommodate the projected impacts of sea level rise on coastal hazards and flooding over time, through appropriate site planning and design". **

* sea level rise policy.

- **How? Does not mandate any particular outcome**

5. Current Management Options – Coastal Manual

- **Environmental Planning**
 - Buffer Zones
 - Restrictive Zoning
 - Planned Retreat
 - Voluntary Purchase
- **Development Control Conditions**
 - Building Setback
 - Building Types
 - Dune Protection
 - Flood Mitigation
 - Foundation Design
 - Emergency Access
 - Relocatable Buildings
 - Planned Retreat
- **Dune Management**
 - Dune Management Planning
 - Community Involvement
 - Dune Reconstruction
 - Dune Revegetation
 - Dune Protection
 - Dune Maintenance
- **Protective Works**
 - Seawalls
 - Training Walls
 - Groynes
 - Beach Nourishment
 - Offshore Breakwaters
 - Artificial Headlands
 - Configuration Dredging

6. Existing & Future Development

- Existing Development at Risk
- Location & Design of future development to meet population needs

"First, do no more harm?"

7. Planning Tools & Trials

- Environmental Land Use Planning
- Development Assessment
- Civil Enforcement & Compliance
- S.149 Certificates

"Umbrella Controls" are contained in subordinate legislation and comprise "Motherhood Statements" – objectives and options which are required only to be considered or taken into account when preparing instruments or assessing development.

8. LEP

- Template LEP
- Aims / objectives – threshold clause
- Zones – Environmental management
- Clause 5.5 - Standard instrument
- Environmental protection works
- Minimum lot size
- FSBL - Coastal Hazard Planning Area
- Exempt and complying development
- EUR – (amend c. 41 of Regulations)

9. DCP

- Guidelines – weight to be given
- Include DA information requirements (p 15 Guidelines)
- Controls
 - Architectural responses
 - Relocatable modular buildings
 - Building setbacks from hazards
 - Foundation design
 - Services
 - Limit intensity
 - Emergency Management Protocols – avoid ad hoc works
- Prescriptive / performance or deemed to comply models

10. Investigation Areas – Planning Policy

- **How – resolution / policy**
- **Weight – ground truthing / challenge**
- **Stockland v. Manly (2004) NSWLEC 472**
 - the extent, if any, of research and public consultation undertaken when creating the policy
 - the time during which the policy has been in force and the extent of any review of its effectiveness
 - the extent to which the policy has been departed from in prior decisions
 - the compatibility of the policy with the objectives and provisions of relevant environmental planning instruments and development control plans
 - the compatibility of the policy with other policies adopted by a council or by any other relevant government agency
 - whether the policy contains any significant flaws when assessed against conventional planning outcomes accepted as appropriate for the site or area affected by it.

11. Implementation & Enforcement

- Imposition of conditions
- Removal / relocation on hazard trigger
- Restrictions as to user – suspension clauses (template LEP)
- Orders regime EPA Act / LG Act
 - No ability to enter private land
- CZMP – Part 3 Coastal Protection Act 1979

12. Hidden Traps

- Building Certificates
 - Seven years?
- Planning Certificates
- Part 3A – Projects
 - Excludes Part 4 and 5 EPA Act
 - LEP's, CMP's, DCP's and SEPP's do not apply
 - Part 3 Coastal Protection Act regulating use and development in coastal zone
 - Can't approve a "prohibited" project in sensitive coastal location
 - Minister may, but is not required to take into account EPI's
 - If go through "concept" plan process – a prohibited project may be approved.

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