

1 Background

As stated in the Overview of the Draft Coastal Management Bill (2015):

“The object of this Bill is to provide for the integrated management of the coastal environment of New South Wales consistent with the principles of ecologically sustainable development for the social, cultural and economic well-being of the people of the State.

The Bill consequently repeals the *Coastal Protection Act 1979* and the *Coastal Protection Regulation 2011*.”

The Act recognises that sand and other sediment moves on a scale larger than local government boundaries (within areas known as Coastal Sediment Compartments). The coastal reforms move away from managing the coast as a single homogenous zone. Instead, the new Coastal Management Act will divide the coastal zone into four coastal management areas defined by unique features and management objectives. Where management objectives are inconsistent, it is proposed in the Draft Bill that the management objectives of the highest areas (as listed below) prevails to the extent of the inconsistency (refer to recommendations in **Section 3.1** regarding alternative priority setting scenarios). The four coastal management areas (from highest to lowest priority) are:

1. the coastal wetlands and littoral rainforests area;
2. the coastal vulnerability area;
3. the coastal environment area; and
4. the coastal use area.

As well as being defined in the new Act, the four coastal management areas are being mapped as part of a new Coastal Management State Environmental Planning Policy (SEPP) in close collaboration with local councils utilising existing mapping from Local Environment Plans (LEPs).

The new Coastal Management Act will establish requirements for the preparation of coastal management programs (CMPs). CMPs will give effect to the management objectives for the four coastal management areas with a strong emphasis on implementation. The new Act will ensure this by requiring coastal management programs to be given effect within the local government Integrated Planning and Reporting (IP&R) framework. This will include performance auditing powers to ensure that programs are appropriately implemented.

2 Preamble to this Submission

I have had a strong interest and direct involvement in coastal engineering since 1987 when I commenced my career as an undergraduate engineer involved in coastal engineering and other water engineering projects. I now have over 25 years professional experience in water, coastal and ocean engineering where I have led multi-disciplinary teams on major and award winning projects.

The following submission draws upon this experience, my personal attendance at some of the information sessions in late 2015, a thorough review of the Draft Bill, supporting explanatory documents and the Draft Coastal Management Manual (Parts A and B) and extensive supporting technical documents within the Coastal Management Toolkit (Part C) available from the Office of Environment and Heritage (OEH) public internet site last updated 4 February 2016 (<http://www.environment.nsw.gov.au/coasts/coastreforms-act.htm>).

It is my belief that existing coastal hazards and coastal erosion hot-spots in NSW have been well identified and extensively investigated in the last two decades. Complex and outdated legislation, ineffective community and stakeholder engagement and in particular, inadequate funding, however, have resulted in limited mitigation of the known coastal hazards and risks in the last two decades.

It is encouraging that the NSW coastal management reforms are understood to include substantially more significant funding than in the past and that this is strongly weighted towards implementation. This has been the area of greatest deficiency in the past and hence where the need is greatest. The success of the new Act is highly dependent on clear and realistic funding mechanisms to deliver the new regulatory framework for coastal management in NSW which is expected to have significant benefits to NSW coastal communities via a clear focus on Program delivery.

With the increased risks posed on the coastal zone by Climate Change and population growth, the NSW Government will face escalating costs and social discontentment if appropriate management actions are not taken soon. The proposed reforms are considered to provide a significant enabling mechanism to mitigate known coastal hazards and avoid future problems on our coast.

The following commentary and recommendations are provided within the requested category areas. In addition to these, it is recommended also that a strategic review of the Coastal and Estuary Management Programs delivered over the past 20 years (nominally) be undertaken to assess what types of investments and what levels of investigation are warranted in terms of being most effective in providing tangible benefits to risk mitigation in coastal communities. This strategic review would assist in focusing the limited funding on solutions with demonstrated benefits. A state wide strategic review of this type would provide valuable inputs to the Cost Benefit Analysis (CBA) and cost sharing agreements required under the new Coastal Management regulations to access funding requests to enable implementation of CMPs.

3 Draft Coastal Management Bill 2015

3.1 Part 2 Coastal zone and management objectives for coastal management areas

Clause 10 - Matters relating to identification of coastal management areas

(3) Hierarchy of management objectives if overlapping

The proposed hierarchy for inconsistent/conflicting management objectives is sound within the context of the objectives of the new Coastal Management Act for greenfield and low development areas. The proposed fixing of priorities, however, may be contra to these objectives for certain already developed areas, or areas identified for regional urban or commercial growth within established Regional Growth Plans.

To clarify this point, consider a well-developed open coast foreshore area (such as Manly Beach or Bondi Beach) in a future scenario where sea levels have risen to a level that it is no longer sustainable to maintain the beach amenity by beach nourishment. The proposed fixed priorities in the Draft Bill would encourage removal of the existing seawalls (by now in need of renovation to maintain adequate service levels) in order to maintain / restore the presence of the beach amenity within the priority (2) coastal vulnerability area and/or the priority (3) coastal environment area in preference to preserving or enhancing the socio-economic, cultural and heritage values of the priority (4) coastal use area characterised by coastal walkways, cafes and other foreshore amenities that are highly valued in such densely populated coastal use areas. Under this scenario, a well-considered Regional Growth Plan and/or the outcomes from community engagements could well identify the need to preserve foreshore amenities (sacrificing the subaerial beach) with alternative sustainable adjacent beach amenity areas identified for future use (refer to 'offsets' discussion in **Section 5.2**).

There could be other cases where it is beneficial to alter the hierarchy of priorities for coastal management areas to achieve "ecologically sustainable development for the social, cultural and economic well-being of the people of the State". For example, a littoral rainforest and adjacent existing urban development are being encroached upon by a landward migrating unstable foredune (such as areas north of Port Stephens). The coastal use area (urban development) is of lowest priority (4) while the littoral forest is of highest priority (1) under the fixed priorities of the Draft Bill. With limited available resources, it is unlikely the urban area would be sacrificed in preference to protecting the forest which could be argued to be susceptible to a naturally unstable transgressive dune. Sand mining of the unstable dune (a commercial activity of lowest priority) ironically has provided a solution to burial of littoral forests and urban areas in similar locations.

It is recommended therefore that provisions be made in the new Coastal Management Act to permit altering of the indicated "default priorities" for the four coastal management areas based on:

- a) priorities and values set out in approved Regional Growth Plans; or
- b) the outcomes of community engagement consistent with the requirements of Clause 21 (3) (d) explicitly to confirm community values around local and regional priorities.

To avoid possible poor outcomes in smaller communities susceptible to well organised and vocal activist groups founded on poor-science and urban myths, or an imbalance of private property interests over broader community and ecological priorities, it is recognised that the new legislation already requires that CMPs be prepared using quality information (including engineering, science and community/stakeholder input), insightful analysis and a robust decision-making process (Part A – Coastal Management Manual, Mandatory Requirements). Furthermore, Councils will be required to form and deliver their CMPs under their existing Integrated Planning and Reporting (IP&R) framework which means that they must be able to afford whatever the community may favour.

There are examples where community expectations are out of sync with local affordability and this emphasises the importance of undertaking effective community engagement, which importantly is another proposed Mandatory Requirement in the new Coastal Management Act.

Notwithstanding these safeguards, the objectives of the new Act could be further protected if the Minister were required to approve any special cases for adjusting the default priorities of the four Coastal Management Areas based on insightful analysis and robust decision-making processes.

3.2 Part 4 NSW Coastal Council

Clause 24 - Establishment of NSW Coastal Council

Appointment by the Minister for membership of the NSW Coastal Council requires that all members must have expertise in one or more of the seven nominated fields. There is a requirement for all members to disclose any pecuniary interests (**Schedule 2 Clause 8** of the Draft Bill), however, there is no explicit requirement to disclose any affiliations with political parties. Such disclosure would ensure all members act independently and in the best interests of the objectives of the new Coastal Management Act. A political disclosure requirement could be added to **Schedule 2 Constitution and procedure of NSW Coastal Council** to ensure that the Minister is aware of any political preferences that may be embedded in the advice of the NSW Coastal Council which may be inconsistent with providing long term ecologically sustainable development of the coastal zone for the social, cultural and economic well-being of the people of New South Wales.

3.3 Part 4 NSW Coastal Council

Clause 25 - Functions of NSW Coastal Council

The NSW Coastal Management Manual - Toolkit (Part C – refer to **Section 5.3** below) provides a range of technical studies and guidelines that currently represent established industry best practice methodologies. As new and emerging technologies evolve, with potential to provide innovative solutions for our coastal management areas, there will be a need for independent expert advice to ensure the contents of the Part C Toolkit do not become inconsistent, invalid or untested.

It is recommended that the NSW Coastal Council be required under the Act to endorse any proposed additions, revisions or deletions to the Part C Toolkit to add an independent and analytically robust review of all guidance provided within the Coastal Management Manual as it continues to advance.

4 Intended Effect for the Coastal Management State Environmental Planning Policy (SEPP)

I may comment on this aspect following release of the full draft of the SEPP and maps of the coastal management areas.

5 Draft Coastal Management Manual

5.1 Part A: Mandatory requirements and essential elements for the preparation of a coastal management program

Part A of the Draft Coastal Management Manual is considered to be useful, clear and concise. No further comment or recommendations are given at this time.

5.2 Part B, Stage 1 – Scoping a Coastal Management Program

In the context of substantial studies and other work already completed along the NSW coastline, Part B, Stage 1 provides a clear pathway to develop a Coastal Management Program (CMP) based on articulated strategic objects defined in a Scoping Report that draws upon existing knowledge to avoid undertaking unnecessary additional studies. The Scoping Report provides a direct pathway to Part B, Stage 4 – Finalise, exhibit, certify and adopt a CMP where sufficient studies have been completed.

It is my experience that where substantial studies have already been completed and an approved Coastal Zone Management Plan is NOT in place, this has occurred from ineffective stakeholder engagement to negotiate an agreed position between possible funding, local aspirations and technical/legislative requirements. This has often led to further studies and investigations over several decades which have created a cynical view about further studies in many coastal communities. It is recommended, therefore, that Part B, Stage 1 provide more explicit guidance regarding effective key stakeholder and community engagement essential to confirming preferred and affordable options to mitigate identified coastal hazards and enable fast tracking to Part B, Stage 4 (adopting a CMP).

The Part B, Stage 1 document could be further improved by emphasising the importance of undertaking the gap analysis based on the level of risk or consequences associated with decisions based on the adequacy/accuracy of available information. That is, a weight of evidence approach based on existing information and simple analytical techniques to identify the most likely causes and relative magnitudes of shoreline recession using a simple sediment budget approach, for example, will add more value at the scoping stages of developing a CMP than any detailed and sophisticated modelling techniques which may never be warranted unless major expenditure is proposed.

It is recommended also that the identified strategic objectives for management of the coast (Part B, Stage 1, 1.5.2) be explicitly linked to Regional Growth Plans, whereby the hierarchy of priorities for coastal management areas should include a discussion of local trade-offs to meet regional objectives (as discussed above in **Section 3.1**) – for example, loss of beach amenity to protect existing

development in one area may be offset by enhanced amenity, scenic values and/or ecology at an adjacent regional coastal area consistent with community aspirations and Regional Plans.

The NSW government has recently introduced a variety of mechanisms to better assess the impact of land use and development on biodiversity. The impacts of a proposed development on biodiversity values are considered at various stages through the planning process. Any unavoidable impacts must be 'offset' by protecting, in perpetuity, similar biodiversity values in another location. A very similar scheme could be introduced to offset any losses in beach amenity and/or scenic values in addition to ecological factors that may be associated with a particular Coastal Management Program.

There are already a number of tools in place to identify and manage offsets. In complex or unique environments, securing like-for-like offsets may prove challenging and could result in changed timing or viability of projects in areas that had previously been identified for growth.

Current schemes enable planning authorities to apply assessment and protection methods that are relevant to the characteristics of the site being investigated. They are supported by a range of tools that assist with identifying appropriate assessment methodologies, including public and private conservation schemes comprising the Biodiversity Certification Scheme (and Assessment Method), the Biodiversity Banking and Offsets Scheme, Voluntary Planning Agreements and The *NSW Biodiversity Offsets Policy for Major Projects*. Very similar schemes could be introduced to help resolve the present dilemmas between private and public interests at existing coastal hazard locations in NSW.

5.3 Part C Coastal Management Manual – Toolkit

There is presently a large number of technical documents and guidelines provided within the Toolkit. There is no explicit linkage, however, to the mandatory requirements of the new Act or guidance given about what sections of the Coastal Management Manual or stages for developing a CMP that these documents apply to. Without some strategic guidance, there is a risk that councils may omit to utilise important information provided within the Toolkit.

It is recommended, therefore, that a summary level flow chart of documents be provided for Part C that shows the linkages between each reference document and the relevant Clauses of the new Act as well as linkages to particular stages for developing a CMP and particular sections of the Coastal Management Manual. It is further recommended that hyperlinks be provided from each reference document in Part C to relevant stages for developing a CMP, in particular the detailed studies that may be required in Stage 2.

To ensure the currency and usefulness of the Coastal Management Manual – Toolkit, it has been further recommended that the NSW Coastal Council be required under the Act to authorise any changes to the Toolkit (as discussed in **Section 3.3** above).

5.4 Part C Coastal Management Manual – Toolkit (Funding and financing)

Using cost-benefit analysis to assess coastal management options: Guidance for councils

While Section 10, Step 7: Sensitivity testing, importantly discusses coastal hazards and erosion as inherently subject to very high levels of uncertainty due to the unpredictable nature of the underlying physical processes and the economic and social responses to these processes, there are no examples of this being applied. Completed coastal Cost Benefit Analyses (CBA) have presented the “do-nothing” option well and according to guidelines (demonstrating the base case is often the least favourable option). Sensitivity analyses, however, have only been presented to changes in the discount rate and CBA have failed to provide sensitivity of the preferred option to uncertainties in real world physical processes and the economic and social responses to these. For example, in the case of Old Bar Beach, the viable management options are highly sensitive to the adopted long term shoreline recession rate which has been poorly understood. Sensitivity to this real world parameter demonstrates that if the cause of sediment loss leading to long term recession can be identified and controlled, the preferred option for Old Bar would differ from the indicated option of retreat that has not been accepted by the local community.

Sensitivity analysis of real options should be further emphasised in this Guidance for councils using an updated case study that correctly applies the guidelines consistent also with NSW Treasury guidance on CBA as per tpp 07-6 Economic Appraisal Principles and Procedures Simplified.

Funding mechanisms for coastal management: Guidance for councils

Other potential funding mechanisms could be added to this Guidance for councils such as introducing a land tax above a certain land threshold value within each of the four coastal management areas similar to the land tax system in Queensland, but focussed only on the coastal strip. This would provide an opportunity to share costs more broadly between local and regional beneficiaries compared with the proposed direct levees on council rates.

A new Coastal Management Act initiation fund grant could also be introduced for capital works that address known coastal hazard hotspots within approved CMPs between 2017 and 2021 that recognises past planning decisions and provides limited amnesty obligations after which time councils are held responsible for ensuring all coastal development is compliant with the objectives of the new Coastal Management Act. These special funds would not be available until after completion of Part B, Stage 4 of the Coastal Management Manual and would cease after initiation of the new Act is completed by 31 December 2021. The suggested amnesty and initiation funding is recommended to provide strong incentive for councils to implement solutions to longstanding problems on the coast, while recognising obligations from the past.

5.5 Part C Coastal Management Manual – Toolkit (Upcoming Information)

While it is noted that details concerning coastal hazard and risk assessment are yet to be provided under Part C, the following is provided based on recently presented industry Conference papers regarding coastal hazard lines.

Consistent with earlier commentary (**Section 5.2**), the level of detail required to establish coastal hazard lines should be consistent with the level of risk inherent in the planning decisions associated with a particular coastal management area. As Gordon (2015) pointed out, the hazard lines should be defined based on the levels of each process uncertainty, not by simply adding additional processes of higher uncertainty like sea level rise. Notwithstanding this, risk based hazard lines need not be established by overly rigorous probability analysis when the consequences of over-design or under-design are of low economic or social consequence (a no regrets strategy). Only where the consequences of planning decisions being made from hazard lines are significant and/or irreversible should more rigorous evaluation of probability risk matrices be recommended.