

**Submission
No 201**

**INQUIRY INTO PLANNING SYSTEM AND THE IMPACTS
OF CLIMATE CHANGE ON THE ENVIRONMENT AND
COMMUNITIES**

Name: Mark Ellis

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SUBMISSION TO
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Planning and Environment Inquiry into the planning system and the impacts of climate change on the environment and communities

By Mark Ellis
PhD Student -Bond University

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Introduction

Thank you for the opportunity to submit to the legislative council's enquiry into the planning system and the impacts of climate change on the environment and the community. This submission is based on research into the NSW planning system and climate risk adaptation to coastal erosion. There is also comment on the other terms of reference from my lived experience in the planning field.

Summary

The Climate is changing but the planning system isn't. In NSW Houses are enabled to be built-in high-risk zones such as eroding beach fronts, flood Plains and bushfire zones. Why, because of private rights and the planning and court system enabling the rights.

The current state of the NSW planning system is failing the communities, people, and environment of NSW as we continue into the trajectory of the climate crisis of warming and rising oceans, intense rain and flooding events and extreme fire danger.

The best method to ensure that people, the natural and built environment are protected from climate change impacts is to mitigate the problem and stop carbon intensive energy output. Whilst the current NSW government has presented a climate neutral bill by 2050, the Government needs to legislate higher targets in a quicker time frame, and the planning system needs to stop approvals of coal mines.

The IPCC aim of keeping the world below 1.5 degrees is out of reach and the world is heading towards a scenario of a 3-degree world. The impacts of such a scenario can be read at the Australian Academy of Science report The risks to Australia of 3°C warmer world <https://www.science.org.au/supporting-science/science-policy-and-analysis/reports-and-publications/risks-australia-three-degrees-c-warmer-world#:~:text=At%203%C2%B0C%20of,processes%20such%20as%20habitat%20maintenance.>

To move forward, the planning frameworks need to adopt Climate Adaptative pathways and risk principals highlighted in the Sendai framework and the National disaster risk reduction. These need to be integrated into the local government legislatives controls and implemented across the state via the regional plans. Like the mandatory requirements of the coastal guidelines for planning proposals, Development applications in coastal zones and beach fronts need to be linked to climate adaptation strategies that restrict housing in high-risk beach zones based on breach retreat rates, inundation impacts and sea level rise. We have a chance to act now to reduce long term risk to coastal

communities, or wait until the properties become stranded assets with costly ongoing post disaster reconstruction

Other key points

- **Stop building in flood prone river areas, high risk beach fronts and coastal communities that will be inundated.**
- **Directing people and development away from vulnerable risk zones.**
- **Implement adaptive strategic planning actions to remove legacy development from high-risk areas.**
- **Establish a sea level benchmark at a minimum of 0.80m and adopt a climate risk transparency model that alerts property purchasers and owners of the climate risks that may impact the property, (like the old section 49) The rcp 8.5 should be the basis.**
- Implementation of a sea level benchmark removes inconsistencies across the various LGA'S For example, Euroballa lg has 23-centimetre, Bega 35cm and the Central Coast 20 cm.
- **Provide stronger statutory procedures for development in climate risk zones, not just guidelines that landowners, developers, and councils can skate around.**
- Strengthen the role of DCPs to remove any issues considering the primacy of them. A lot of the requirements are in the DCPs, yet the statutory basis is in the LEPS.
- The risk tolerance model may work for flooding and fire hazards, but not for coastal erosion, risk tolerance needs to be removed from high-risk beachfronts that are eroding and will continue to retreat.
- **Most states are moving towards adaptive strategies of avoidance and are implementing nature-based solutions before hard fixed engineering initiatives. Examples of Cairns Local government coastal hazard strategy which is based on the Qld Q coast hazard reduction strategy. Western Australia and South Australian governments also place avoid before Protect when it comes to coastal hazard reduction.**
- **Funding and support for councils to Engage vulnerability mapping needs to be a pre-eminent requirement, as it is a key component of the Coastal management act that hasn't been implemented within the 5 years since the act was assented. Currently only one local council area in the state has vulnerability mapping adopted. The framework within the NSW coastal management act is in place, councils need to implement the vulnerability mapping to enact the legislation that will reduce risk and address the problem that landowners are unwilling to accept the physical reality sea level rise and safe land use.**
- Implementation of the Vulnerability mapping will lead to restriction of further building on eroded beaches, then additional measure will be needed to remove legacy beachfront development.

- The best science is not on 1.5 degrees but over 2.5 degrees, we cannot rely on past meteorological records, wave records, and river heights as clearly seen in the Hawkesbury valley, Lismore and greater northern rivers recent rainfall and floods.
- Enable the requests of Byron Bay Council for coastal hazard and allow planned relocation of housing as a valid long term adaptation model that is funded in a tri government agreement.
- Rework the NSW Coastal Lands Protection Scheme under the NSW EP&A ACT as the legislative basis for land purchases of housing in high-risk beach environments, This funding should be supported by the commonwealth.
- Holiday rentals can be purchased under the same scheme and become lease backs to council. This could allow the houses to be rented out on short term basis to provide economic benefit for property owners yet remove long term risk. If beach retreat and erosion become impractical and unsafe for building habitation, then the Council just resume the land into open space.

Response to terms of reference

in relation to the terms of reference (a) (i) The NSW Planning system should be moving towards a risk-based approach that removes peoples from fire, flood and erosion hazards and should not be enabling development in such locations. **These comments are specifically related to high-risk residential beachfront developments and coastal environments.**

PART - A (ii) Many coastal locations along the NSW coastline suffer increasing erosion, these are identified in the 1st pass assessment on coastal erosion. These areas are vulnerable to rising sea levels and storm surges, to reduce the vulnerability and risk, existing legacy houses need to be removed and further development should not be allowed on high-risk beachfronts. Adaptive planning pathways that lead to property retreat, would be based on triggers that are related to beach erosion rates will inform. However, there is still no political will to look towards engaging adaptive retreat pathways for impacted beachfront residences, that is why we have the current cycle identified below.

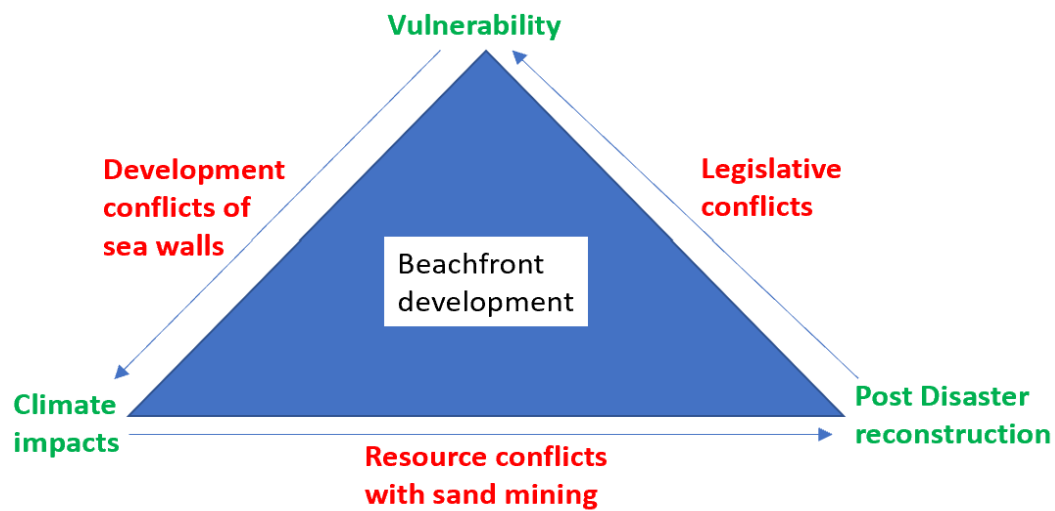


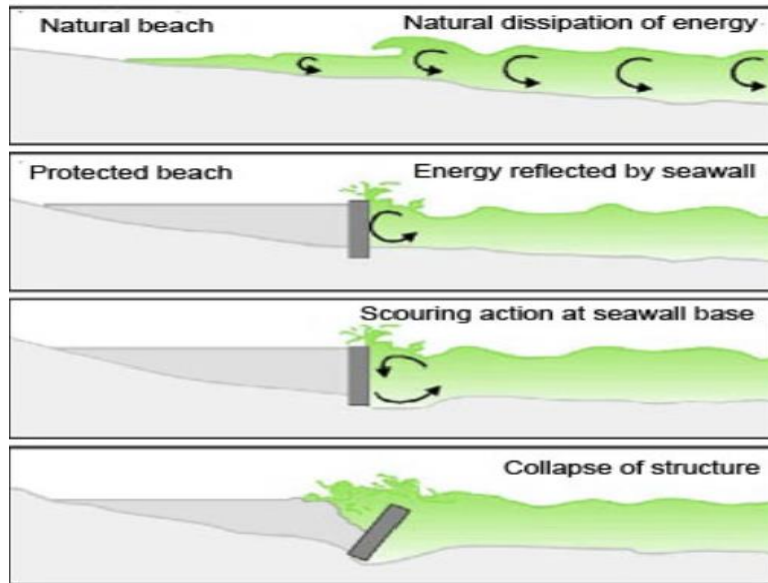
Image 1 Current practice of development in high-risk beach environment

Vulnerability is perpetuated with ongoing climate risks, and land owners want a wall to protect their property. The placement of sea wall creates conflicts within the community, environmental conflicts and financial conflicts from building maintenance and upkeep along with sand nourishment. The resource conflicts are highlighted by the Marine Estate vulnerability report that lists dredging, sand nourishment of beaches and development impacts and climate change. Why would the planning system enable something that impacts beaches of the marine estate and can implement fixed engineering structures that are unable to quickly react to an uncertain climate of storm surges and east coast lows.

The legislative conflict also includes *HOW DO VERTICAL SEA WALLS COMPLY WITH "The objects of the NSW coastal Act which are to manage the coastal environment consistent WITH THE PRINCIPLES OF ESD AND PROTECT AND ENHANCE COASTAL ENVIRONMENTS to name just one of the conflicting objectives.*

There are obvious effects seawalls have on natural habitat, reducing the amount of shoreline conducive for organisms. Plants and animals are unable to travel between terrestrial and marine environments reducing the connectivity between the two communities. In the past, as sea level rises, ecosystems have been able to adjust, slowly moving inland. With a concrete barrier, inland migration is extremely difficult, if not impossible for plants and animals. This could lead to a loss of nursery and foraging grounds for birds and fish (Bulleri & Chapman, 2010). These vertical structures reduce the size of the intertidal zone, crowding intertidal species into smaller areas. This zone is the bridge for energy exchange between marine and terrestrial environments (Sobocinski, Cordell, & Simenstad, 2010). Abundances and assemblages of organisms are changing due to the difference in substrate. The lack of crevices and protection from predators and wave energy reduce the likelihood of larval survival (Bulleri & Chapman, 2010). There is also the impact on Benthic organisms and migratory species like terns and turtles from mass sand nourishment.

The reflected energy from sea walls impact natural environments and other houses and structures as confirmed in the NSW land and environment court cases.



Erosion occurring at the base of the seawall. Scour erodes sediment that leads to an unstable structure and possible collapse. (ctmirror.org)

Image 2 Impacts of sea walls

Apart from causing coastal squeeze on beaches and many other impacts on beaches and their amenity, building brutalist vertical sea walls perpetuates the risk and forms a maladaptation to the uncertainty of sea level rise and storm surges. The implementation of mass sand nourishment is environmentally destructive and doesn't align with the marine estate objectives. Considering the Stockton beach renourishment program is over \$21 million are such programs financially feasible to enact across the state.

The increasing wave heights and power from the storm surges aligned with the eventuality of rising sea level, increasing and ongoing cost and environmental impacts of sand nourishment along with the perpetuation of risk from sea walls leads you to the conclusion that the planning system needs to change and business as usual planning to protect private rights of beach front land owners to submit development applications for beachfront mansions and sea walls (whether they be revetments or vertical) needs to be changed.

There is a disconnect between the planning system and the reality of climate risk and sea level rise leading to coastal inundation and beach erosion. The following image 3 from the Central Coast Council Environmental controls clearly show the ability to allow development in high and immediate risk coastal hazard zones. Whilst it states single dwelling, these are multistory within the existing footprint that will be impacted by rising sea level. Why have development control plans (DCP's) and local environmental plans (LEP's) that allow housing to be built on eroded beach fronts that perpetuate systemic risk. Whilst it's acknowledged the coastal guidelines for planning proposals are moving in the right direction, the statutory basis for approvals is within the LEP's

The following **Table 1** indicates development types (non-exhaustive) which may be considered on merit within the Risk Zones of the CVA, via the Development Assessment process. The Risk Zone lies seaward of the relevant Risk Planning Line.

← Coastal Vulnerability Area →

Outside Coastal Hazard Planning Area	Low Risk Coastal Hazard Planning Zone	High Risk Coastal Hazard Planning Zone	Immediate Risk Coastal Hazard Planning Zone
<p>Merit Assessment as per Land Use Tables for the relevant Zone within CCLEP, 2022, together with compliance with provisions relating to Coastal Management Areas within <i>State Environmental Planning Policy (Resilience and Hazards) 2021</i> & the Coastal Management Act 2016.</p> <p>Note: The Act and SEPP define the following CMAreas in order of hierarchy of controls (highest to lowest):</p> <ul style="list-style-type: none"> Coastal Wetlands and Littoral Rainforests Area; Coastal Vulnerability Area; Coastal Environment Area; and Coastal Use Area. 	<ul style="list-style-type: none"> New single dwellings Maintenance work to existing dwellings / developments Works to make existing developments relocatable New ancillary residential development - sheds, garages, swimming pools, timber gazebos, timber decks & viewing platforms New commercial developments Tourist development Caravan parks (tourist sites) Recreation facilities Landscaping structures, paving or drainage works 	<ul style="list-style-type: none"> Removal of an existing dwelling and replacement with a new single dwelling within, and/or landward of, the pre-existing dwelling footprint. Additions and alterations within, or landward of, the pre-existing dwelling footprint. Maintenance work to existing dwellings / developments, e.g., re-cladding Works to make existing developments relocatable Timber decks & viewing platforms (max. 20m², max. 1m from ground) Timber gazebos (max. 20m²) Sheds, garages, swimming pools and ancillary development no further seaward, or closer to the hazard, than the principal dwelling. Tourist development Caravan parks (tourist sites) Recreation facilities 	<ul style="list-style-type: none"> Removal of an existing dwelling and replacement with a new single dwelling within, and/or landward of, the pre-existing dwelling footprint. Additions and alterations within, or landward of, the pre-existing dwelling footprint. Maintenance work to existing dwellings / developments, e.g., re-cladding Works to make existing developments relocatable Timber decks & viewing platforms (max. 20m², max 1m from ground) Timber gazebos (max. 20m²) Sheds, garages, swimming pools and ancillary development no further seaward, or closer to the hazard, than the principal dwelling.

Image 3 Central Coast Council Planning controls of Coastal Hazards.

The forecasts for sea level rise beyond 2050 requires that receiver cities are planned for, as some coastal locations cannot be protected by walls or ocean barriers. The Planning system should be preparing for the implementation of RELOCATION OF HIGH-RISK BEACHFRONT LEGACY DEVELOPMENT to improve long term resilience. Whilst this blends into part c of the terms of reference, further reading on this can be found in my current paper attached to this submission.

Ellis, M., & Bajracharya, B. (2023). Reducing community risk to coastal erosion with managed relocation. *Australian Journal of Emergency Management*, 38(4), 52

58. <http://classic.austlii.edu.au/au/journals/AUJEmMgmt/2023/63.html>

Part -A(iii) The Application of c2 zones is used to protect land that has high conservation values, e.g., littoral rainforest, coastal wetlands, endangered ecological communities, threatened species habitat and over-cleared vegetation communities.

However, the planning system allows proponents to request rezoning of c2 land to allow development that can engage the failed biodiversity certification and offset scheme. The Henry review into the biodiversity conservation act 2016 found.

“Biodiversity is not being conserved at bioregional or State scale. The diversity and quality of ecosystems is not being maintained, nor is their capacity to adapt to change and provide for the needs of future generations being enhanced. Yet these are the principal purposes of the legislation. It is clear to the Review Panel that the operative provisions of the Act are incapable of supporting its objectives. Too many rests upon the operation of other pieces of

legislation that have their own, competing, objectives. This must be addressed. Of more concern, the objects of the Biodiversity Conservation Act 2016 are already obsolete.”

<https://www.parliament.nsw.gov.au/tp/files/186428/Independent%20Review%20of%20the%20Biodiversity%20Conservation%20Act%202016-Final.pdf>.

PART B The adequacy of planning powers. How many times have councils said this land is to be afforded the 2nd highest protection. Only to have a developer purchase land and rezone it for housing or education. This system is failing the environmental protections that eec and threatened species deserve in a biodiversity crisis. Why are environmental zones allowed to rezone?

Why have planning controls and zones if they are to be manipulated and changed. We wouldn't allow land to be rezoned for a meat abattoir to be built in the middle of the suburbs, just as we shouldn't enable and permit rezoning of environmental sensitive land for development.

Three recent examples of how environmental zonings have been ignored and the intrinsic value of their biodiversity benefits rendered useless.

These include the land at Charmhaven NSW.

The first example is where St Philip's Christian College, applied to rezone conservation land for development of a school. The plan after rezoning then would remove over 50% of the 40-hectare site that had EEC, and endangered flora and fauna. (Application number SSD-14082938). Whilst a BIDAR was submitted it failed on many aspects. The response from the Major projects team was to reduce the footprint, not you can build on this land because of the Sensitive environment.

The second example is of the land at Kariong NSW. The Kariong site is a 13ha parcel of land located at 300 Woy Woy Road, Kariong the planning proposal seeks to rezone C2 land for low density residential development via a. Development Delivery Plan prepared by Department of Planning and Environment, and Darkinjung Local Aboriginal Land Council. Whilst there is the added complexity of a DDP backed by a State Environmental Planning Policy (Planning Systems) 2021 – Chapter 3 Aboriginal Land (the SEPP) which (applies to 31 sites in which the Darkinjung Local Aboriginal Land Council (Darkinjung LALC) has an interest) Again, C2 land being rezoned for development should not be allowed.

The third example is related to a push by a development consultant on behalf of a landowner of shopping centre in the Woy Woy CBD to push the council into the rezoning and then sale of community land that has significant remnant vegetation adjoining the shopping centre. This land is flood prone with over 50 mature trees including Melaleucas, Casuarina and Mangroves in the adjacent tidal channel. Considering the Woy Woy Peninsula is an ever-increasing heat sink, and the Councils own greening strategy states that no more trees should be removed and more should be planted to reduce the urban heat island effect. The council under administration continues persisting in the reclassification and

rezoning of the land. This manipulation of the planning system is contrary to the aims of ESD, climate mitigation, flood resilience and provides an example of the cumulative impacts of development.

PART B - (i) Cumulative impacts of development. Within the urban sector of the Woy Woy Peninsula as more and more infill development progresses, there is continuing concrete which reduces water infiltration, increases flooding, and increases the heat island effect. Then to consolidate the problem trees are removed for gun barrel developments.

The Cumulative impacts of beach front developments perpetuate climate risk and lead to maladaptation.

PART C - Long term resilience - How does the planning system implement long term resilience when the political roller coaster of government keeps changing the guidelines. This can be changes of government and changes within government. The key example of the latter occurred in 2021 when the planning minister released the Planning principles and SEPP consolidation. These principles included. *Managing risks and building resilience in the face of hazards* And the Design and place SEPP that required all developments to mitigate and adapt to the risks of climate change as part of the plan to move building to zero emission before 2050. However, the Design and place SEPP was repealed on the 5th of April 2022 by the new planning minister it is state in the SMH under the behest of the development industry. (<https://www.smh.com.au/national/nsw/minister-bows-to-developers-and-scrap-draft-net-zero-planning-rules-20220405-p5aazn.html>)

Another example of the how climate change policy and climate risks are altered by change of governments is the 2012 sea level rise benchmarks in the coastal risk management guide. Shown below, these benchmarks were abandoned and devolved to Local councils.

4 Application of sea level rise planning benchmarks

4.1 Sea level rise benchmarks

Increasing mean sea level over time will have two primary impacts within and adjacent to tidal waterways:

- increasing still water levels over time and
- subsequent recession of unconsolidated shorelines.

In circumstances where it is necessary to consider physical coastal processes and/or the influence of tidal waters, it is recommended that the additional impact of projected sea level rise up to the planning benchmarks be considered. This will enable sea level rise to be appropriately considered in planning decisions, hazard mitigation strategies and infrastructure design.

For land-use planning purposes, 2050 and 2100 sea level rise benchmarks should be used. For other purposes (e.g. infrastructure design), linear interpolation between the 1990 base sea level and the 2050 and 2100 sea level rise benchmarks can be used to estimate projected sea level rise for coastal planning horizons or asset life other than those corresponding to the benchmark years.

For consideration of sea level rise beyond 2100, an additional 0.1 metres per decade allowance can be used above the 2100 benchmark level. This approach assumes a linear rise beyond 2100 at rates equivalent to that projected for the last decade of the twenty-first century (2090–2100). These sea level rise projections will need to be discounted to accommodate the sea level rise measured between 1990 and present. This can be assumed to be approximately 3 millimetres/year from 1990 (CSIRO, 2009).



Figure 4.1. Erosion at North Entrance, Wyong Shire (12 June 2009).

Image 4 - From the 2012 coastal risk management guide

The image displayed as figure 4.1 shows erosion along the north entrance beach in 2009. In 2022 erosion of North entrance still exists. This is a failure of the planning and political system.



Image 5 Eroded beach front scarp North Entrance 2022

Considering these two examples, the question then is. How is long term resilience of coastal development from inundation and eroding beaches going to be addressed in an ever-changing political landscape and a planning system beholden to private rights and court judgements?

As a society we need to reframe our way of living in coastal locations to reduce systemic risk, And not lock in more into maladaptation's. Once built, the historic infrastructure and housing shape and constrain future choices and developments, leading to people living in high-risk areas today and into the future.

Society has the option to move forward and be prepared for the removal of beachfront and coastal housing or keep the ongoing post disaster reconstruction and lock in hard adaptations that will be overrun by increasing storm surges and sea level rise.

The primary aim of the 1989 NSW coastal policy was to protect the coastline and beaches for the enjoyment of future generations, now it seems the current policy is to protect the houses on those beaches with a move towards a one size fits all application to planning in NSW that has removed the local out of the local environmental planning approach.

There have been 25 national enquiries into coastal management since 1971 including the 2010 house of representative's report into managing our coastal zone in a changing climate, and there has been a whole raft of reports on coastal risk and, there was a lot of work done by NCARF, the planning institute of Australia and the National disaster risk reduction framework which ties into the Sendai framework Which Australia is a signatory.

- Whilst there HAS BEEN CHANGES TO THE NSW COASTAL MANAGEMENT ACT implementation of A HAZARD AND resilience Sepp, coastal development guidelines for crown land and risk analysis of the NSW MARINE ESTATE. The current planning practices in NSW are still enabling beach front development in high-risk environments.

“The disasters experienced in Australia in recent years have highlighted the need for policy settings that more consciously consider the relationship between land-use planning and extreme weather risk” (Pg.4 Insurance Council of Australia Building Australia's Resilience)

Conclusions and suggestions for resilience.

- **Short term resilience** IS NATURE BASED SOLUTIONS OF DUNE ENHANCEMENT, LIMITED BEACH RENOURISHMENT (WHERE FOUND SUITABLE AND LEAST ENVIRONMENTAL IMPACT) TRIGGERED BY SEVERE CUTBACKS HAVE OCCURRED FROM STORM SURGES.
- Follow up on the marine estate threats analysis.
- Fund the vulnerability mapping of coastlines.
- Increase funding to the NSW Coastal Lands Protection Scheme under the NSW EP&A ACT as the legislative basis for land purchases, supported by the commonwealth.

➤ LONG TERM RESILIENCE

- Engage with federal government national risk assessment and implement a national settlement strategy based on climate data and sea level rise. Image 6 on governance arrangements I a bout how a NSW could be part of a National Coast line reserve, implemented via a federal government Act that has support of the state and local Government.

GOVERNANCE ARRANGEMENTS



Source: After Federal report Managing our Coastal zone in a changing climate: The time to act is now, 2009

Image 6 governance arrangements

A national coast line reserve removes housing and infrastructure risk from increasing erosion and SLR. It would also:

- **Protects beaches from coastal squeeze from sea wall impacts.**
- **Removes ongoing costs of sand renourishment required by wall construction and repair.**
- **Increases open space for the public.**
- **Enables ongoing public beach use and intergenerational equity**

The process of engaging planned relocation through the NSW Planning system would need to Remodel regional plans, LEPs and strengthen the coastal management guidelines for planning proposal that restrict housing being built on high-risk beachfront. A diagrammatic representation of this process is displayed in image 7. Similar models can be utilised to Implement an adaptive plan FOR removal of legacy development from high erosion beach fronts

The funding would be derived from current Federal and state funding programs that are boosted. Ongoing funding of councils would be required to assist in the management of open space after housing relocation.

Framework for Managed Relocation:



Image 7- framework that engages the 3 levels of government to address the issue of legacy development and relocation of houses in high-risk beach and coastal communities.

Take Aways for Long Term Resilience

- Connecting strategic policies that integrate the value of nature within ecological-based planning
Move beyond engineering
- Implement land-use approaches that:
Direct people and property away from hazardous coastal areas in the long term
- Employing **Managed Relocation for legacy development.**
- Connect national settlement & climate risk strategy to Local Government planning frameworks
- **Creation of the National Coastline reserve**



Image 8 Takeaways for long term Coastal resilience

If you wish to discuss any of these points or wish me to present to the committee, please do not hesitate contact me via the supplied email address.

Yours Sincerely,

Mark Ellis.