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Coastal Management - Tuncurry - Addendum to Coastal Processes, Hazards and Planning Study

1 Introduction

The North Tuncurry Urban Release Area (NTURA) is situated, in part, within the coastal zone of NSW – as defined by the *Coastal Management Act 2016* (Coastal Management Act).

Landcom has previously commissioned a report, *North Tuncurry: Coastal processes, hazards and planning study* (2019), prepared by Worley Parsons (hereafter ‘the Worley Parsons report’), to examine the current knowledge and provide an understanding of local coastal processes and hazards relevant to the NTURA. The Worley Parsons report considered coastal processes and coastal hazards impacting the coastline, and assessed these hazards to determine the projected hazard lines for current and future (2060, 2100) timeframes in the vicinity of the NTURA site.

EMM Consulting (EMM) has been engaged by Landcom to address feedback provided by MidCoast Council (Council), the Department of Planning, Industry and Environment – Planning and Assessment Group (DPIE-Planning) and Department of Planning, Industry and Environment – Biodiversity and Conservation Division (BCD) in mid-2020 regarding the adequacy of the Worley Parsons report and its implications for the proposed rezoning of the NTURA Site.

The advice in this letter serves as an addendum to the Worley Parsons report. The Addendum has been prepared to address feedback raised by State agencies and MidCoast Council, relating to the proper application of planning and coastal management instruments. More specifically, this Addendum seeks to:

- consider matters related to the application of the Coastal Management Act and the State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP);
- consider the relevant land-use planning statutory provisions and policy documents, including Ministerial Direction 2.2 Coastal Management and the Great Lakes Coastal Zone Management Plan (amongst others); and
- respond to feedback provided by Council and BCD in response to the Worley Parsons reports adopted assumptions for hazard horizon planning, beach recession rates and likely wave overtopping risks.

The Addendum presents information in three parts:

- advice and additional information regarding the applicable statutory instruments and policies, and the alignment of the Worley Parsons report with the relevant provisions;
- responses to adopted assumptions; and

- detailed itemised responses to individual comments made in submissions provided by Council and State agencies in mid-2020 .

2 Background

Landcom, a State-Owned Corporation, entered into the Project Delivery Agreement with the (then) Department of Lands on 23 January 2007 for the purpose of rezoning and developing the North Tuncurry Urban Release Area (NTURA) Site for residential purposes. Since then, Landcom has been pursuing a rezoning process with the DPIE's Newcastle office, initially through the former State significant site process and more recently a State led rezoning proposal to amend the Great Lakes Local Environmental Plan 2014.

On 28 February 2011, pursuant to Clause 8 of the former State Environmental Planning Policy (Major Development) 2005 (now the State Environmental Planning Policy (State Significant Precincts) 2005), the (then) Minister for Planning (the Minister) formed the opinion that the NTURA Site was a potential State Significant Site (herein referred to as a State Significant Precinct). In doing so, the (then) Minister also formed the opinion that a study be undertaken to consider a revised planning framework, including amendments to land use zoning and planning controls applicable to the NTURA Site. The preparation of a coastal process investigation was required to support the study.

The State Environmental Planning Policy (Major Developments) 2005 (Major Development SEPP) was amended and renamed the State Environmental Planning Policy (State Significant Precincts) 2005. For all intents and purposes, the process and requirements previously set out in Part 2 of the Major Development SEPP were largely transferred to Part 2 of the State Significant Precincts SEPP and are to be construed to be the same thing. For this reason, and in consultation with the DPIE, Landcom has continued to fulfil the Study Requirements issued by the Director General (now Secretary) on 8 December 2011, in recognition that the proposed land use was declared to have potential State Significant planning significance and that rezoning of the NTURA Site should be addressed through a State led rezoning pathway.

The proposal is yet to progress to public exhibition. The proposal was initially delayed between 2015 and 2018 while Landcom undertook additional ecological investigations to support a concurrent biodiversity certification process in parallel with the rezoning. Since then, Landcom has been requested to reconfirm the proposal is of State Significance (which also necessitated Ministerial consideration) and has been required to update various supporting studies several times to address agency feedback however it is only in the most recent agency engagement process (early 2020) that the Coastal Processes, Hazards and Planning Study has been the subject of any feedback.

The current Minister for Planning and Public Spaces, the Hon Rob Stokes, endorsed the preparation of a self-repealing SEPP Amendment to Great Lakes LEP 2014 on the 18 March 2020. Landcom has prepared a masterplan for the NTURA that illustrates the proposed rezoning, which has been informed by a range of investigations. The masterplan, rezoning study and supporting technical investigations were submitted to the DPIE in May 2020 to determine whether the documentation is fit for public exhibition. Submissions were received from several State and local authorities regarding the adequacy of the proposal and particularly in relation to the Worley Parsons report, including DPIE Policy, DPIE Biodiversity and Conservation Division (BCD), and MidCoast Council.

3 The current phase in the land-use planning context

Landcom is seeking to rezone the NTURA under Division 3.4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

One of the important aspects of the current deliberations is to ensure that the debate acknowledges and responds to those matters relevant to a rezoning proposal, rather than a development proposal.

Not all of the provisions in key coastal management instruments relate to rezoning proposals. Many provisions are specifically applicable only at the stage when a development application is made to a consent authority. It is acknowledged that there may be a future stage when those development controls need to be applied but, at this early rezoning proposal stage, it is the contents of Ministerial Direction 2.2 Coastal Management which prescribe which instruments and policies, and which sections of those instruments and policies, must be addressed.

3.1 Planning proposal process

The NTURA Site is currently zoned RU2 Rural Landscape and RE1 Public Recreation (golf course) under the Great Lakes Local Environmental Plan (LEP), 2014. Refer to Figure 1.

The implementation of the masterplan for the NTURA Site will require changes to land zoning and a number of development controls. The amendments to the Great Lakes Local Environmental Plan 2014 are proposed to be facilitated via Division 3.4 of the EP&A Act.

The EP&A Act also provides, at section 9.1(2)(b), for the Minister to direct public authorities to include certain matters when considering a planning proposal (i.e.: a rezoning proposal). The relevant Ministerial Direction for land within the coastal zone, is Ministerial Direction 2.2 Coastal Management, a copy of which is provided at Attachment 1.

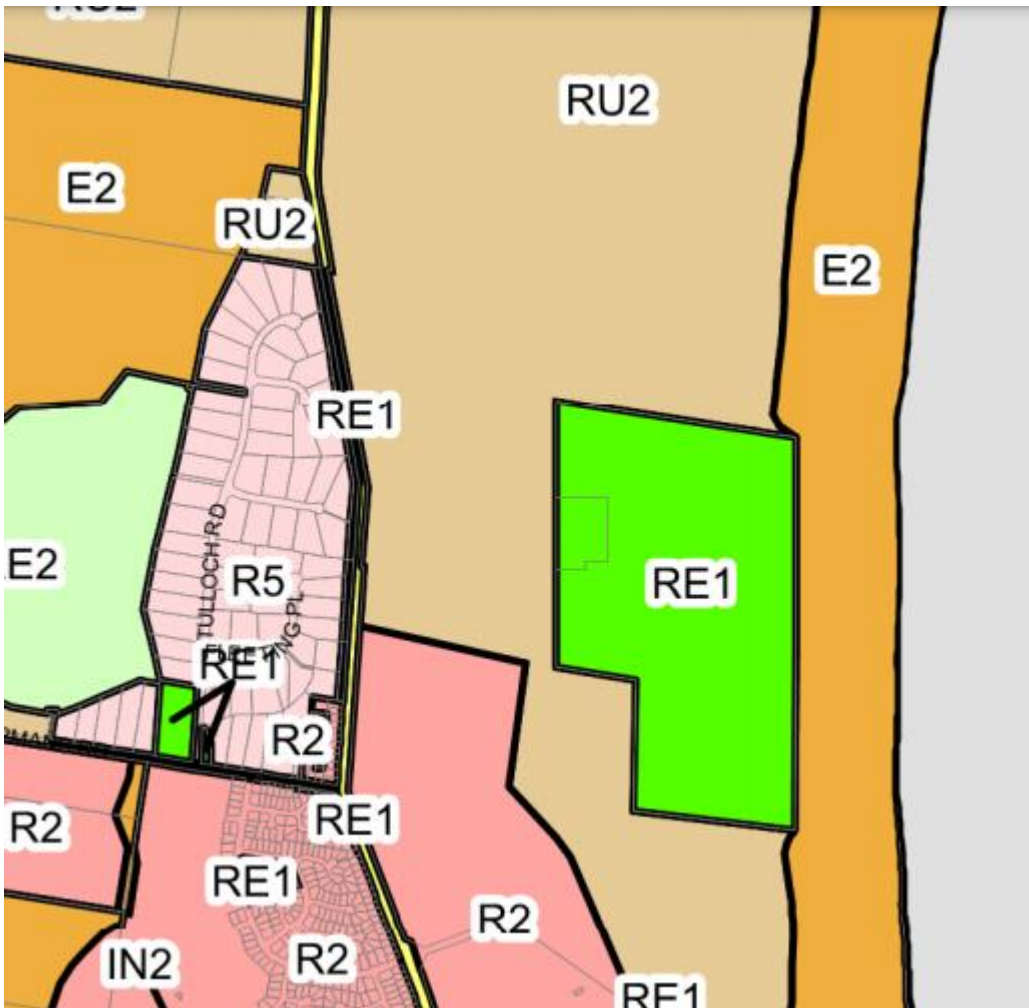


Figure 1 Current land zoning

Source: Great Lakes LEP, Land Zoning Map LZN_011 (detail)

4 Statutory instruments

The primary statutory instruments which require consideration at this stage of the NTURA project are:

- *Environmental Planning and Assessment Act, 1979; and*
- Ministerial Direction 2.2 Coastal Management (made pursuant to Section 9.1 of the EP&A Act).

The EP&A Act and Ministerial Direction 2.2 collectively identify which other statutory instruments and strategic policy documents must be considered; which provisions within those instruments and documents are relevant; and how the process works.

The statutory instruments and strategic policy documents called up by the EP&A Act and Ministerial Direction 2.2 are those which have a role pursuant to the primary instruments of the planning system. The relevant secondary instruments are:

- *Coastal Management Act, 2016;*
- *Marine Estate Management Act, 2014;*
- State Environmental Planning Policy (Coastal Management) 2018;
- Great Lakes Coastal Zone Management Plan;
- NSW Coastal Management Manual and Toolkit; and
- Coastal Design Guidelines for NSW.

5 Land-use planning instruments

5.1 Environmental Planning and Assessment Act, 1979

The EP&A Act provides for the making and amendment of local environmental plans (LEPs) at Division 3.4.

This Division also includes provision for the Environmental Planning and Assessment Regulation 2000 to make further provisions for matters such as consultation and the preparation of reports and supporting documents.

5.2 Ministerial Direction 2.2 Coastal Management

The EP&A Act Division 9 provides for a range of Ministerial powers. Those powers include directions regarding matters to be included in planning proposals (i.e.: a rezoning proposal). The proposed amendment to the Great Lakes Local Environmental Plan 2014 is proposed to be undertaken by way of a self-repealing SEPP, and consequently the rezoning proposal is not strictly a planning proposal. Notwithstanding this, the relevant Ministerial Directions have been considered during the preparation of the rezoning proposal.

In relation to coastal processes and hazards, the relevant Ministerial Direction issued pursuant to section 9.1 of the EP&A Act is Direction 2.2 Coastal Management (reproduced at Appendix A). This Direction applies when a planning proposal authority prepares a planning proposal for land within the coastal zone (as defined under the Coastal Management Act).

Notably, Ministerial Direction 2.2 (item 4) states that:

A planning proposal must include provisions that give effect to and are consistent with:

- a) the objects of the Coastal Management Act 2016 and the objectives of the relevant coastal management areas;*
- b) the NSW Coastal Management Manual and associated Toolkit;*
- c) NSW Coastal Design Guidelines 2003; and*
- d) any relevant Coastal Management Program that has been certified by the Minister, or any Coastal Zone Management Plan under the Coastal Protection Act 1979 that continues to have effect under clause 4 of Schedule 3 to the Coastal Management Act 2016, that applies to the land.*

Each of these matters is addressed in the subsequent sections of this Addendum.

Items 5 and 6 of the Ministerial Direction do not apply as the NTURA is not within a coastal vulnerability area (as none of the Site is mapped) and is not within land identified as coastal wetlands or littoral rainforests under the Coastal Management SEPP.

It is noted that Item 8 of the Ministerial Direction provides for some inconsistency with the terms of the Direction if justified by a study or strategy, and to the satisfaction of the Secretary of DPIE. As this Addendum demonstrates, the rezoning proposal is not inconsistent with the applicable considerations of Ministerial Direction 2.2.

It is important to recognise the role of Ministerial Direction 2.2 in directing proponents of a planning proposal, such as the NTURA rezoning proposal, to address specific coastal instruments and policy documents.

5.3 Coastal Management Act 2016

The Coastal Management Act sets out the four coastal management zones which make up the coastal zone in NSW, and prescribes management objectives for each management area, as well as overall objectives for the Act.

The Coastal Management Act also, relevantly, provides for coastal management programs to be prepared, and the matters to be dealt with under those programs.

One other important provision to note is that the Coastal Management Act includes savings provisions for certified coastal zone management plans (made under the former Coastal Protection Act 1979 – now repealed) to remain in force until 31 December 2021.

The stipulation under Ministerial Order 2.2 is for the planning proposal (i.e.: rezoning proposal) to give effect to, and be consistent with, the objects of the Coastal Management Act 2016 and the objectives of the relevant coastal management areas.

The Worley Parsons report has satisfactorily addressed the objects of the Coastal Management Act at Section 3, and the objectives of each coastal management area at Sections 6, 7, 8 and 9.

5.3.1 The objects of the Coastal Management Act

To be clear, it is the rezoning proposal which needs to give effect to the objects of the Act, and the Worley Parsons report – as a supporting document – is focussed on selected objects rather than seeking to address all thirteen objects. The studies supporting the rezoning proposal should, in aggregate, address the full suite

of objects for the Coastal Management Act. Individual technical studies will, to varying degrees, address some objects more than others. All objects are within the scope of matters to be considered for the rezoning proposal, but not all objects are within the scope of technical studies undertaken to consider selected attributes of the rezoning proposal.

The Worley Parsons report is not deficient if it does not specifically address (say) how the rezoning proposal ensures co-ordination of the policies and activities of government (Object 3(j)) or the use of the coastal zone by Aboriginal peoples (Object 3(c)).

i The primary object

It is important to understand that the 'primary' object for the Act is:

to manage the coastal environment of New South Wales in a manner consistent with the principles of ecologically sustainable development for the social, cultural and economic well-being of the people of the State

Ecologically sustainable development (ESD) has the same meaning as in section 6(2) of the Protection of the Environment Administration Act 1991 (POEA Act).

As noted in Section 6(2) of the POEA Act, ecologically sustainable development requires the effective integration of social, economic and environmental considerations in decision-making processes. Section 6(2) also identifies the standard principles of ESD as being

- the precautionary principle;
- inter-generational equity;
- conservation of biological diversity and ecological integrity; and
- improved valuation, pricing and incentive mechanisms.

Of particular relevance, it is noted that the precautionary principle does not require the avoidance of development but rather it requires:

- careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
- an assessment of the risk-weighted consequences of various options.

The Worley Parsons report adopts an approach consistent with the careful evaluation of risk and consequence. The report considers projections of underlying risk drivers, such as sea level rise, to the fullest extent possible and using international accepted methods.

ii Particular objects

The particular objects listed below the primary object focus on specific aspects of coastal management, many (but not all) of which relate to coastal processes and coastal hazards – being those coastal management issues which are addressed in the Worley Parsons report.

Of the range of objects for the Coastal Management Act, some of the more relevant objects for the Worley Parsons report are:

(a) to protect and enhance natural coastal and coastal environmental values including natural character, scenic value, biological diversity and ecosystem integrity and resilience, and

(f) to mitigate current and future risks from coastal hazards, taking into account the effects of climate change, and

(g) to recognise that the local and regional scale effects of coastal processes, and the inherently ambulatory and dynamic nature of the shoreline, may result in the loss of coastal land to the sea (including estuaries and other arms of the sea), and to manage coastal use and development accordingly, and

(i) to encourage and promote plans and strategies to improve the resilience of coastal assets to the impacts of an uncertain climate future including impacts of extreme storm events.

The Worley Parsons report considers regional processes, particularly those of the open coast and Wallis Lake entrance. The Worley Parsons report also considers the current and future risks from coastal hazards, and takes into account the effects of climate change with respect to those risks. The hazards, as defined under the Coastal Management Act, are considered as appropriate, including beach erosion, shoreline recession, inundation and slope/cliff instability.

The resilience of coastal assets is also considered in the Worley Parsons report. Coastal hazard zones include aspects such as the zone of reduced foundation capacity and the zone of slope adjustment, which are additional to the standard hazard lines for 'wave impact'. These factors are important considerations for built asset resilience and are factored into the immediate, 2060 and 2100 projections in the report.

5.3.2 The objects of the coastal management areas

The only two coastal management areas within or adjacent to the NTURA Site are the Coastal Use Area and the Coastal Environment Area. The relevant objectives of each are addressed below.

Coastal vulnerability is not mapped under the Coastal Management SEPP, and therefore the NTURA is not identified as a coastal management area for which the objectives of a Coastal Vulnerability Area must be considered. There is however an existing and certified Coastal Zone Management Plan (CZMP) which does include hazard mapping, and this is considered separately below.

i Coastal Use Area

A portion of the proposed NTURA development footprint is within the Coastal Use Area (refer to Figure 5.1).



Figure 5.1 Coastal Use Area

Source: NSW Coastal Viewer (CM SEPP) - detail

The relevant objectives for the scope of the Worley Parsons report are:

- (a) to protect and enhance the scenic, social and cultural values of the coast by ensuring that—
 - (iv) adequate public open space is provided, including for recreational activities and associated infrastructure, and
 - (v) the use of the surf zone is considered,
- (b) to accommodate both urbanised and natural stretches of coastline.

While the Worley Parsons report does not explicitly itemise these objectives, the report does satisfactorily address the relevant matters for consideration, and consequently gives effect to, and is consistent with, the above objectives. For example, the Worley Parsons report addresses the need to maintain controlled beach access and surf life saving facilities such as observation towers (refer to report section 7.1.1) and the ‘rolling back’ of foreshore uses over time. The majority of the NTURA Site that falls within the Coastal Use Area is not proposed to be developed and instead will be set aside as the dune area. Formal and curated public open space, for recreational activities, are not proposed in this area. The report also adequately considers the capacity of the NTURA Site to accommodate both urbanised and natural stretches of coastline (refer to report section 7.1). On this basis the relevant objectives of the Coastal Use Area, as provided for under the Coastal

Management Act, have been satisfactorily addressed for the proportion of the Site being located within the Coastal Use Area.

ii **Coastal Environment Area**

The Coastal Environment Area is seaward of the proposed NTURA development footprint as illustrated in Figure 5.2.



Figure 5.2 Coastal Environment Area

Source: NSW Coastal Viewer (CM SEPP) - detail

The relevant objectives for the scope of the Worley Parsons report are:

- (a) to protect and enhance the coastal environmental values and natural processes of coastal waters, estuaries, coastal lakes and coastal lagoons, and enhance natural character, scenic value, biological diversity and ecosystem integrity,
- (b) to reduce threats to and improve the resilience of coastal waters, estuaries, coastal lakes and coastal lagoons, including in response to climate change,
- (e) to maintain the presence of beaches, dunes and the natural features of foreshores, taking into account the beach system operating at the relevant place,

(f) to maintain and, where practicable, improve public access, amenity and use of beaches, foreshores, headlands and rock platforms.

There is no urban development proposed within the Coastal Environment Area.

The Worley Parsons report nevertheless adequately considers the relevant objectives for the Coastal Environment Area, as provided for under the Coastal Management Act, and aligns with the management intent, including the need to protect coastal processes, maintain the presence of dunes, and to maintain and control beach access (refer to report section 7.1)

5.4 State Environmental Planning Policy (Coastal Management) 2018

The Coastal Management SEPP applies to the coastal zone and sets out the controls and heads of consideration for development requiring consent.

There is no specific requirement under Ministerial Order 2.2 which triggers the provisions within the Coastal Management SEPP. Nevertheless, one of the aims of the SEPP is to establish a framework for land use planning to guide decision-making in the coastal zone. To that end, it is possible to consider the alignment of the anticipated future development at the NTURA Site with the provisions of the Coastal Management SEPP, noting Landcom is not currently seeking consent for any physical works to carry out the development. The project is at rezoning stage only. The provisions of the SEPP will be triggered if, and when, development consent is sought.

Some of the principles articulated in the Coastal Management SEPP are that development should not cause increased risk of coastal hazards in the subject land or other land (SEPP clause 15) and that the siting and design of the development should avoid or minimise impact on coastal environmental values.

The fundamental design and siting consideration is the avoidance of development on land within the 2100 hazard line.

A planning horizon of 2100 is the conventional limit for coastal hazard projections. There are established and accepted reasons for limiting projections beyond that horizon, principally due to the inherent uncertainty of underlying data.

5.5 Marine Estate Management Act, 2014

Consideration of the *Marine Estate Management Act, 2014* (MEM Act) is triggered indirectly by Ministerial Direction 2.2 because the Direction requires a planning proposal (i.e.: a rezoning proposal) to give effect to the objects of the Coastal Management Act, which include “to support the objects of the *Marine Estate Management Act, 2014*”.

Fundamentally, the objects of the MEM Act provide for the management of the marine estate consistent with the principles of ecologically sustainable development (ESD).

The ESD principles are to be applied in a manner that:

- (i) promotes a biologically diverse, healthy and productive marine estate, and
- (ii) facilitates—
 - economic opportunities for the people of New South Wales, including opportunities for regional communities, and
 - the cultural, social and recreational use of the marine estate, and
 - the maintenance of ecosystem integrity, and

- the use of the marine estate for scientific research and education.

The Worley Parsons report does not specifically reference the objects of the MEM Act, however the principles are reflected in the consideration of coastal processes and hazards. The ESD principles seek a balance between development and use of the marine estate, and the maintenance of ecological system integrity and biodiversity.

The design and siting of the NTURA development area, supported by technical considerations such as hazard projections, enables that balance to be found between maintaining ecological functions and providing economic opportunities.

5.6 Coastal Management Manual and Toolkit

The Coastal Management Manual and Toolkit are policy documents supporting the implementation of the Coastal Management Act and Coastal Management SEPP.

5.6.1 Coastal Management Manual

The Manual is published in two parts.

Part A of the Manual provides guidance on the mandatory requirements for a coastal management program.

Part B of the Manual provides a more detailed guide on how to prepare and implement a coastal management program.

It needs to be noted that Landcom is not seeking to prepare a coastal management program (CMP). CMPs are typically prepared by the local council.

It is also noted that there is no CMP in place for the Tuncurry coastline. There is, however, a Coastal Zone Management Plan, prepared under the former Coastal Protection Act. The CZMP is a relevant consideration and is addressed at Section 4.7.

5.6.2 Toolkit

The Coastal Management Toolkit is also provided to assist councils in managing the coastal zone and preparing CMPs.

Notwithstanding the role of the Toolkit primarily as an aid to councils, there are a range of helpful websites and information sources which are inherently valuable for any application in coastal management.

The Toolkit, for example, refers to publicly available facilities such as Adapt NSW, CoastAdapt, and Sea Level Rise – Science and Synthesis for NSW.

The Worley Parsons report is consistent with the government and academic resources listed in the Toolkit. For example, the Adapt NSW website uses planning horizons up to 2100 and the report Sea Level Rise – Science and Synthesis for NSW (Glamore et al 2015) uses the same planning horizons. This method is consistent with the IPCC, CSIRO and Bureau of Meteorology.

5.7 Great Lakes Coastal Zone Management Plan

The Great Lakes Coastal Zone Management Plan (CZMP) covers the open coast including Tuncurry Beach and Nine Mile Beach.

The CZMP has been adopted by Council and was certified by the Minister in 2017. It therefore has effect until 31 December 2021.

The Worley Parsons report is not inconsistent with the CZMP and notes that the same values were applied for storm erosion modelling, as well as the same 'sea level rise benchmarks' of 40 cm by 2050 and 90 cm by 2100.

The Great Lakes CZMP does not identify any land within the development footprint of the NTURA Site as being exposed to a current or future hazard.

The management options within the CZMP are also consistent with the methods used in the Worley Parsons report. The Management Options Assessment: Coastal Hazards recommends three approaches being:

- avoid the risk, by not permitting vulnerable developments within high-risk areas (considered over the full design life of the development);
- accommodate the risk by including provisions that reduce the consequence of impacts (e.g. having minimum floor levels to reduce property damage resulting from future coastal inundation); or
- accept the risk where appropriate to the level of risk over the design life of the development.

It is noted that the development footprint for the NTURA Site is not within an identified high risk area, meaning that the first option for future development, as identified in the CZMP, is satisfied (refer to CZMP Options Study, p 61).

5.8 Coastal Design Guidelines for NSW

This document seeks to promote best practice in urban design for the NSW coast.

The underlying principles are again based on ESD and consider how best to accommodate and plan for a diversity of settlement types in the coastal zone.

The Coastal Design Guidelines can be applied at a number of different scales and stages of development. This includes local plans, settlement strategies and master plans. It also informs council initiatives such as the preparation of development control plans.

At the local scale, the stated objectives are:

- to protect and enhance the cultural, ecological and visual characteristics of a locality;
- to limit coastal sprawl by establishing separation and greenbelts between settlements;
- to integrate new development with surrounding land uses;
- to integrate land use with transport;
- to protect local character;
- to encourage new coastal settlements to be appropriately located; and
- to create neighbourhoods centred around services and facilities.

While all objectives are relevant to coastal planning, the most relevant objective for the scope of the Worley Parsons report is that new urban settlements are to be appropriately located.

The detail for that objective (Guidelines Part 1, p 9) states that "new development and subdivisions should be located and planned in the context of revised settlement strategies and consistent with provisions in SEPP 71".

The former State Environmental Planning Policy No. 71 – Coastal Protection ('SEPP 71') has been repealed and is replaced by the current Coastal Management SEPP. Notwithstanding that, the former SEPP 71 did make reference to master plans and specifically sought to prevent residential subdivision in a "sensitive coastal location". Further there was a requirement for master plans to consider "the natural features of the site, including coastal processes and coastal hazards" (SEPP 71, Clause 20(2)(c)).

This is the applicable provision when considering the Worley Parsons report and it is clear that coastal processes and coastal hazards are considered in that report.

The reference to 'sensitive coastal locations' is broadly consistent with the current use of the term in coastal management legislation and includes land within 100 m of the mean high water mark of the sea; within 100 m of a mapped coastal wetland; and within 100 m of the edge of a coastal lake. The SEPP 71 definition does not refer to current or future coastal hazards.

The NTURA Site is likely to be characterised as a 'new coastal settlement' under the Coastal Design Guidelines (Guidelines Part 1, p 30). That section of the Guidelines states that the relationship between the village and the coast should promote "setting back properties to ensure their long-term protection from coastal erosion and sea level rise" (p 31); that "foreshore and estuarine vegetation is protected" (p 32); and that "setbacks ... protect properties from coastal hazards" (p32-33).

Part 2 of the Coastal Design Guidelines address the need for analysis of the local area and key considerations.

In terms of locational considerations, the Guidelines state that

It is advisable not to locate development on lands:

- affected by coastal processes, coastal erosion and sea level rise

The focus of the Worley Parsons report is precisely these coastal constraints, such as erosion and other coastal processes, and the proposed NTURA development footprint satisfies that locational consideration.

6 Adopted assumptions

6.1 Hazard horizon planning

Planning for future coastal hazards can be calibrated on projections using a point-in-time or a point-in-rise, or both in combination. The State Government previously published a set of sea level rise benchmarks (40 cm for 2050 and 90 cm 2100 relative to 1990 sea levels) which were developed in 2009.

The conventional timeframe of 2100 is used widely due to diminishing confidence in projections beyond that horizon. While the IPCC projections indicate that it is virtually certain that global mean sea level rise will continue beyond 2100, the projections beyond 2100 have inherent uncertainties (Glamore et al (2015) Sea level rise: Science and synthesis for NSW). This is the basis for generally limiting any quantitative modelling or projections beyond 2100.

In addition, NSW Government guidance materials, such as Guidelines for using cost-benefit analysis to assess coastal management options (2018) do not reference any time horizon beyond 2100.

Furthermore, the Worley Parsons report makes recommendations for the nature and tenure of structures beyond the 2100 hazard line and within the 2060 – 2100 horizon which would be relevant considerations as development progresses.

Adopting a horizon beyond 2100 is not considered necessary for the purposes of the rezoning proposal on the basis that the level of analysis provided within the Worley Parsons report is considered appropriate for a rezoning proposal. The Worley Parsons report has relied on existing State Government policy and

consequently the rezoning proposal should not be precluded from progressing based on the evidence provided to date. Recognising that climate change will almost certainly extend beyond 2100, it is acknowledged that future development applications will have an opportunity to re-assess coastal hazards at the time of assessment, if required.

Refer to Attachment 2 for more detailed responses to specific issues raised by public authorities.

6.2 Beach recession rates

Section 5 of the Worley Parsons report details the interaction of the NTURA proposal with the full suite of coastal hazards, as defined under the Coastal Management Act. The modelling included in the Worley Parsons report includes figures indicating the potential coastal inundation for contemporary and future (2100) timeframes.

For the reasons outlined in Attachment 2, the recession rate for the NTURA Site is expected to have a recession rate closer to the 0.5m/year for Tuncurry Beach, or at least within the range of 0.5 m/year to 1 m/year rather than strictly 1 m/year.

The proposed NTURA development footprint is approximately 200 m landward of the current mean high water mark (compared to the 42 m of predicted recession cited in agency submissions). This is reflected in the Great Lakes Coastal Hazard Study (SMEC, 2013) which states that the Golf Club at Tuncurry is “approximately 200 m from the beach”. The risk exposure for shoreline recession, modelled to the broadly accepted long-term planning horizon of 2100, is therefore not predicted to encroach upon the proposed NTURA development footprint. Notwithstanding this, future development applications will have an opportunity to re-assess the interface between future development and the occurrence and rate of beach recession at the time of assessment, if required.

Refer to Attachment 2 for more detailed responses to specific issues raised by public authorities.

6.3 Wave overtopping risks

The final numbers for wave run-up adopted in the Worley Parsons report have been reviewed and are not disputed.

The matters raised by public authorities include a perceived discrepancy between the findings of the *Great Lakes Coastal Zone Management Plan Options Study* (BMT, 2015) (the Options Study) and the Worley Parsons report with respect to wave overtopping scenarios.

This table for wave overtopping in the Options Study is derived from the wave run-up assessment conducted by SMEC (2013) in the *Great Lakes Coastal Hazard Study*. The apparent discrepancy arises due to the key assumptions behind the projections.

The assumptions that underpin the calculations for the *Great Lakes Coastal Hazard Study* are noted to be highly conservative. The wave run-up figure of 5.9 m AHD represents the vertical run-up from the single most significant wave, generated by a 1-in-1000-year storm event, and during an astronomical high tide. The adoption of cumulative assumptions is what might be described as the extreme worst-case scenario, and of a ‘rare’ likelihood ranking. The design storm itself has an annual exceedance probability of 0.1%, and the probability of this design event occurring at the peak of an astronomical high tide reduces that probability further.

This means that the interpretation of the SMEC data to suggest that dune overtopping will be “possible and likely during a coastal storm by 2100” does not properly represent the risk profile.

For the reasons outlined in Attachment 2, the concerns raised regarding the wave overtopping of sections of the frontal dune and into the proposed NTURA development footprint during a coastal storm by 2100 is not fully supported by the findings of SMEC (2013) or the Options Study (2015) or EMM.

The rezoning proposal should not be precluded from progressing based on the evidence provided to date. It is however acknowledged that future development applications along the eastern edge of the NTURA Site will have an opportunity to re-assess wave overtopping risks at the time of assessment, if required.

Refer to Attachment 2 for more detailed responses to specific issues raised by public authorities.

7 Summary

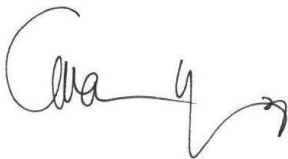
The Worley Parsons report achieves the intended scope, being the consideration of the proposed development footprint for the NTURA site relative to current and future coastal processes and hazards.

This approach is consistent with the statutory provisions and policy intent of the key documents.

Some of the matters of interest, as raised by public authorities, are legitimate issues to be resolved at subsequent stages in the planning process. It is important to apply the appropriate provisions at the appropriate stage, and to focus now on matters relevant to consideration of a planning proposal.

Individual matters raised by public authorities are addressed in the table provided at Appendix B. The itemised matters are limited to those issues related to coastal management provisions in the planning system, coastal management statutes, and relevant policy documents.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Allan Young', with a stylized flourish at the end.

Allan Young
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Appendix A

Ministerial Direction 2.2 Coastal Management

2.2 Coastal Management

Objective

- (1) The objective of this direction is to protect and manage coastal areas of NSW.

Where this direction applies

- (2) This direction applies to land that is within the coastal zone, as defined under the *Coastal Management Act 2016* - comprising the coastal wetlands and littoral rainforests area, coastal vulnerability area, coastal environment area and coastal use area - and as identified by the *State Environmental Planning Policy (Coastal Management) 2018*.

When this direction applies

- (3) This direction applies when a planning proposal authority prepares a planning proposal that applies to land identified in (2) above.

What a planning proposal authority must do if this direction applies

- (4) A planning proposal must include provisions that give effect to and are consistent with:
- the objects of the *Coastal Management Act 2016* and the objectives of the relevant coastal management areas;
 - the NSW Coastal Management Manual and associated Toolkit;
 - NSW Coastal Design Guidelines 2003; and
 - any relevant Coastal Management Program that has been certified by the Minister, or any Coastal Zone Management Plan under the *Coastal Protection Act 1979* that continues to have effect under clause 4 of Schedule 3 to the *Coastal Management Act 2016*, that applies to the land.
- (5) A planning proposal must not rezone land which would enable increased development or more intensive land-use on land:
- within a coastal vulnerability area identified by the *State Environmental Planning Policy (Coastal Management) 2018*; or
 - that has been identified as land affected by a current or future coastal hazard in a local environmental plan or development control plan, or a study or assessment undertaken:
 - by or on behalf of the relevant planning authority and the planning proposal authority, or
 - by or on behalf of a public authority and provided to the relevant planning authority and the planning proposal authority.
- (6) A planning proposal must not rezone land which would enable increased development or more intensive land-use on land within a coastal wetlands and littoral rainforests area identified by the *State Environmental Planning Policy (Coastal Management) 2018*.
- (7) A planning proposal for a Local Environmental Plan may propose to amend the following maps, including increasing or decreasing the land within these maps, under the *State Environmental Planning Policy (Coastal Management) 2018*:
- Coastal wetlands and littoral rainforests area map;
 - Coastal vulnerability area map;
 - Coastal environment area map; and
 - Coastal use area map.

Such a planning proposal must be supported by evidence in a relevant Coastal Management Program that has been certified by the Minister, or by a Coastal Zone Management Plan under the *Coastal Protection Act 1979* that continues to have effect under clause 4 of Schedule 3 to the *Coastal Management Act 2016*.

Note: Under section 10(2) of the *Coastal Management Act 2016*, any provision of an LEP that identifies a coastal management area (or part of such an area) must not be made without the recommendation of the Minister administering the *Coastal Management Act 2016*.

Consistency

- (8) A planning proposal may be inconsistent with the terms of this direction only if the planning proposal authority can satisfy the Secretary of the Department of Planning and Environment (or their nominee) that the provisions of the planning proposal that are inconsistent are:
- justified by a study or strategy prepared in support of the planning proposal which gives consideration to the objective of this direction, or

LOCAL PLANNING DIRECTIONS

Section 9.1(2) of the *Environmental Planning and Assessment Act 1979*

- (b) in accordance with any relevant Regional Strategic Plan or District Strategic Plan, prepared under Division 3.1 of the *Environmental Planning and Assessment Act 1979* by the relevant strategic planning authority, which gives consideration to the objective of this direction, or
- (c) of minor significance.

"Coastal hazard" and "Coastal Management Program" are defined in the *Coastal Management Act 2016*.

Direction 2.2 – issued 3 April 2018

Appendix B

Itemised responses to agency comments

B.1 Itemised responses to agency comments

7.1 Department of Planning, Industry and Environment (DPIE) Biodiversity and Conservation Division

Submission Comments	Response
<p>Coastal hazards and risks have not been considered</p> <p>Item 6 of BCD’s letter of 23 May 2020 (DOC20/326888-4) highlights that the proposal is located in the ‘coastal use’ area defined in State Environmental Planning Policy (Coastal Management) 2018 (the CM SEPP). The water management measures proposed as part of the development will also discharge into areas defined as the ‘coastal environment’ area under the CM SEPP.</p> <p>The planning proposal does not include a coastal hazard assessment or consideration of coastal issues and the RTS does not indicate how the proponent intends to address this.</p> <p>Recommendation 5</p> <p>Prior to any further consideration of the proposal, the proponent should undertake a coastal hazard assessment that includes consideration of all matters specified for consideration of development under the Coastal Management Act 2016 and CM SEPP.</p>	<p>Response to Recommendation 5</p> <p>The EMM Addendum demonstrates that the Worley Parsons report has satisfactorily addressed the relevant matters for consideration under the <i>Coastal Management Act, 2016</i> (Coastal Management Act) and State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP).</p> <p>Detailed response to commentary associated with Recommendation 5</p> <p>The Coastal Management SEPP adopts the definitions of the Coastal Management Act, which provides that the coastal zone means the area of land comprised of the following coastal management areas:</p> <ol style="list-style-type: none"> a) the coastal wetlands and littoral rainforests area, b) the coastal vulnerability area, c) the coastal environment area, d) the coastal use area. <p>Of those coastal management areas, only two – Coastal Use Area and Coastal Environment Area – coincide with, or are proximate to, the NTURA Site.</p> <p><u>Coastal Use Area</u></p> <p>The coastal use area is the land identified as such by the <i>Coastal Use Area Map</i>. As shown in Figure 1 below, the NTURA Site falls partly within the Coastal Use Area. Land mapped as Coastal Use Area is specifically subject to clause 14 of the Coastal Management SEPP. Clauses 15 – 18 of the Coastal Management are also applicable by virtue of applying to all land in the coastal zone.</p>

Submission Comments

Response



Figure 1 - Coastal Use Area

Importantly, clause 14 identifies heads of consideration when a consent authority is considering an application for development consent. It might be reasonably expected that pending the outcome of the NTURA rezoning proposal, there may be development requiring consent on the NTURA Site for subdivision, infrastructure or dwellings, however clause 14 is not an applicable during the assessment of a planning proposal (i.e.: rezoning).

The consideration of coastal processes and coastal management objectives as part of any planning proposal (ie: rezoning proposal) process is provided for under section 3.33 of the EP&A Act. Section 3.33 provides that a planning proposal (i.e.: rezoning proposal) must, include the following—

- a) a statement of the objectives or intended outcomes of the proposed instrument,
- b) an explanation of the provisions that are to be included in the proposed instrument,
- c) the justification for those objectives, outcomes and provisions and the process for their implementation (including whether the proposed instrument will give effect to the local strategic planning statement of the council of the area and will comply with relevant directions under section 9.1),
- d) if maps are to be adopted by the proposed instrument, such as maps for proposed land use zones; heritage areas; flood prone land—a version of the maps containing sufficient detail to indicate the substantive effect of the proposed instrument,

Submission Comments	Response
	<p>e) details of the community consultation that is to be undertaken before consideration is given to the making of the proposed instrument.</p> <p>Section 3.33(2) also provides that the Planning Secretary may issue requirements with respect to the preparation of a planning proposal. Landcom’s rezoning proposal (including the Study prepared by Ethos Urban and all supporting technical appendices) satisfies the requirements of Section 3.33 of the EP&A Act, as well as the Study requirements that were issued by the DPIE Director General (now Planning Secretary) on 11 December 2011.</p> <p>Most relevantly, Section 3.33(2)(c) requires a planning proposal (i.e.: rezoning proposal) to demonstrate how the proposal will give effect to the local strategic planning statement of the council of the area and will comply with relevant directions under section 9.1. The Rezoning Study (Ethos Urban) addresses the Local Strategic Planning Statement, while the EMM Addendum demonstrates the Worley Parsons report is consistent with Ministerial Direction 2.2 Coastal Management.</p> <p>The EMM Addendum also demonstrates that clauses 15 – 18 of the Coastal Management SEPP have been satisfactorily addressed for the purposes of a rezoning proposal.</p> <p><u>Coastal Environment Area</u></p> <p>The Coastal Environment Area, is seaward of the proposed NTURA development area footprint as illustrated in Figure 2. Clause 13 (which applies to development in the Coastal Environment Area) is consequently not triggered by virtue of not physically being mapped but also as clause 13 identifies heads of consideration when a consent authority is considering an application for development consent. Clause 13 is not an applicable during the assessment of a planning proposal (i.e.: rezoning).</p>

Submission Comments	Response
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Figure 2 - Coastal Environment Area

Coastal management	
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<p data-bbox="152 916 725 943">Coastal hazards and risks have not been considered</p> <p data-bbox="152 981 300 1008">[Sub-issue A]</p> <p data-bbox="152 1046 891 1206">The proposal is located in the 'coastal use' area defined in State Environmental Planning Policy (Coastal Management) 2018 (the CM SEPP). The water management measures proposed as part of the development will also discharge into areas defined as the 'coastal environment' area under the CM SEPP.</p> <p data-bbox="152 1244 763 1305">The planning proposal does not include a coastal hazard assessment or consideration of coastal issues.</p> <p data-bbox="152 1343 869 1404">The Great Lakes Coastal Zone Management Plan – Options Study Dec 2015 includes an erosion and recession risk map for the 2100</p>
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<p data-bbox="904 916 1263 943">Response to Recommendation 6</p> <p data-bbox="904 981 2112 1075">The EMM Addendum demonstrates that the Worley Parsons report has satisfactorily addressed the relevant matters for consideration under the <i>Coastal Management Act, 2016</i> (Coastal Management Act) and State Environmental Planning Policy (Coastal Management) 201 (Coastal Management SEPP).</p> <p data-bbox="904 1114 1682 1141">Detailed response to commentary associated with Recommendation 6</p> <p data-bbox="904 1179 1032 1206"><u>Sub-issue A</u></p> <p data-bbox="904 1244 2112 1339">Section 5 of the Worley Parsons <i>North Tuncurry: Coastal processes, hazards and planning study</i> (2010) details the interaction of the proposed NTURA development footprint with the full suite of coastal hazards, as defined under the <i>Coastal Management Act, 2016</i>. The modelling included in the Worley Parsons Report includes figures</p>
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Submission Comments	Response
<p>planning horizon which shows the proposed development area will be impacted by coastal erosion and recession. A recession rate of one meter per year has been adopted for this area. Further, the study shows that the land seaward of the proposed development area will be subject to 0.84 metre sea level rise by 2100 and 42 metres of coastal recession (as a consequence) by 2100.</p> <p>[Sub-issue B]</p> <p>While the likelihood of coastal inundation has been assessed as low by 2100, the minimum dune height in the study area has been stated as being 4.8 metres AHD. The maximum wave runup level by 2100 seaward of the Nine Mile Golf Club has been assessed at 5.9m AHD. This suggests that wave overtopping of sections of the frontal dune and into the proposed development area are possible and likely during a coastal storm by 2100.</p> <p>Clauses 13 and 14 of the CM SEPP 2018 outline matters that consent authorities must consider when assessing development proposals in the coastal use and coastal environment areas. It follows that rezoning of land to permit development of the type proposed should not be considered unless the proponent can demonstrate that these provisions can be met.</p> <p>Recommendation 6</p> <p>Prior to any further consideration of the proposal, the proponent should undertake a coastal hazard assessment that includes consideration of all matters specified for consideration of development by the Coastal Management Act 2016 and CM SEPP.</p>	<p>indicating the potential coastal inundation, and also coastal hazard risk, for contemporary and future (2100) timeframes.</p> <p>With respect to the hazard lines mentioned as being provided in the Great Lakes Coastal Zone Management Plan Options Study (BMT, 2015), the erosion and recession risk map referenced in the BCD response is not available as part of the on-line version of the Options Study.</p> <p>It is noted however that the Options Study identifies the Forster-Tuncurry Golf Course as having a low risk exposure for erosion and recession at both the 2060 and 2100 time horizons (Table 5-1) and that the seaward limit of the proposed NTURA development footprint is generally aligned with the seaward limit of the golf course. It could be reasonably assumed therefore that the level of coastal hazard exposure for the Tuncurry Golf Course would be shared by development similarly situated relative to the open coast shoreline.</p> <p>Further, the statement that “a recession rate of one metre per year has been adopted for this area” is not entirely supported by the Options Study which identifies two beaches – Nine Mile and Tuncurry Beach – in Table D-2 (adopted recession rate) and notes that Nine Mile Beach has an adopted recession rate of 1 m/year, and Tuncurry Beach has a recession rate of 0.5 m/year. The exact demarcation between the two beaches is not shown in the report but logically Tuncurry Beach would be applied to the southern end of the embayment near the town of Tuncurry, and Nine Mile Beach refers to the northern sections of the beach towards Black Head. It might be expected that the recession rate for the NTURA Site, being generally towards the southern extent of the embayment, would have a recession rate closer to the 0.5m/year for Tuncurry Beach, or at least within the range of 0.5m/year to 1m/year rather than strictly 1 m/year.</p> <p>It is agreed that the study adopts a recession distance of 42m landward by 2100 (using the Bruun Rule as a ‘rule-of-thumb’ measure). The proposed NTURA development footprint is approximately 200m landward of the current mean high-water mark. This is reflected in the Great Lakes Coastal Hazard Study (SMEC, 2013) which states that the Golf Club at Tuncurry is “approximately 200m from the beach”. The NTURA Masterplan (refer to Figure 3) suggests there will be a ribbon of development east of the golf course, the development footprint is still landward of the 42 m recession line projected for 2100. The risk exposure for shoreline recession, modelled to the broadly accepted long-term planning horizon of 2100, does therefore not encroach upon the proposed urban development footprint.</p>

Submission Comments

Response



Figure 3 - Masterplan

Sub-issue B

Table D-3 in the Great Lakes Coastal Zone Management Plan Options Study (BMT, 2015) provides a summary of wave run-up levels for Great Lakes assuming a 0.1% AEP (1-in-1000-year) storm event. This table is derived from the wave run-up assessment conducted by SMEC (2013) in the Great Lakes Coastal Hazard Study.

The dune heights cited are the minimum dune heights based on LiDAR.

The Great Lakes Coastal Hazard Study (SMEC, 2013) notes a number of key assumptions behind the calculation of maximum run-up at 2100. It assumes “Maximum runup calculations assumed a 1% AEP ocean water level of 1.5 m AHD as derived from Lord and Kulmar (2000). This is a conservative assumption, as the 1% AEP water levels would not necessarily occur concurrently with 1% AEP wave heights.” The conservatism of the methodology needs to be considered when looking at the results. The application of two variables in particular – the design event of a 1-in-1000-year storm, and the maximum wave run-up – need to be understood.

A 1-in-1000-year storm (0.1% annual exceedance probability ‘AEP’) is a very rare event. The usual annual recurrence interval for land-use planning purposes is a 1-in-100-year event (1% AEP). Further, the nature of wave attack is that there will be a range of wave period, wave direction and wave heights. The maximum wave run-up represents the single maximum vertical extent of wave run-up in that spectrum. Again, generally for planning and engineering purposes, the top 2 percent of incident waves – not the maximum – are considered

Submission Comments	Response
	<p>when calculating wave run-up risk. This is because the consequence of any over-topping potential depends on the frequency of occurrence and the amount of water flowing over the dune.</p> <p>The statement by DPIE (emphasis added) that “This suggests that wave overtopping of sections of the frontal dune and into the proposed development area are <u>possible and likely</u> during a coastal storm by 2100” is therefore not fully supported by the findings of SMEC (2013) or the Options Study (2015).</p> <p>The term ‘likely’ is a defined term in the Options Study, and is based on the Australian Standard for Risk Management (AS/NZS ISO 31000:2009). Table 2-1 in the Options Study articulates the likelihood for coastal hazards at a 100 year time horizon and it describes a ranking of ‘likely’ as meaning “It is likely the event will occur as there is a history of casual occurrence”. A risk ranking of ‘likely’ is therefore not suitable to be applied with respect to the maximum wave run-up calculations.</p> <p>The DPIE reference to ‘a coastal storm’ is also too vague to be meaningful. The type of storm that is the basis for the cited 5.9 m AHD maximum run-up is a 1-in-1000-year event. It does not refer to simply any storm event.</p> <p>In summary, the final numbers for wave run-up are not disputed but the assumptions that underpin the calculations are noted to be highly conservative. The wave run-up figure of 5.9 m AHD represents the vertical run-up from the single most significant wave, generated by a 1-in-1000-year storm event, and during an astronomical high tide. Factoring in the future sea level rise etc is acceptable and reasonable but the picture painted is what might be described as the extreme worst-case scenario, and of a ‘rare’ likelihood ranking. The design storm itself has an annual exceedance probability of 0.1%, and the probability of this design event occurring at the peak of an astronomical high tide reduces that probability further. There is a question of risk tolerance here that needs to be considered.</p>

7.2 Department of Planning, Industry and Environment Planning and Assessment Group

Submission Comments	Response
<p>The Environmental Policy team does not object to the in-principle development of the proposed North Tuncurry urban land release area.</p> <p>To ensure adequate documentation is made available for exhibition, we recommend the issues we have identified below are considered as part of the exhibition package.</p>	<p>Noted. The EMM Addendum and this table have addressed the issues raised by DPIE Planning as set out below.</p>
<p>Coastal hazards</p>	
<p>The Coastal processes study identifies current and future coastal hazards to 2100.</p> <p>The proposed subdivision footprint relies on the coastal processes report to propose a development footprint immediately behind the 2100 coastal hazard line, with only temporary or moveable items east of the 2100 line.</p>	<p>Noted. Refer to detailed response below.</p>
<p>Suggestions</p> <p>Coastal hazard planning horizons</p> <p>[Sub-issue A]</p> <ul style="list-style-type: none"> • The coastal processes report adopts a standard timeframe for considering coastal hazards, which is particularly relevant to existing or infill development. • As this is a greenfield site that is government owned land, we would encourage the proponent to be especially conservative 	<p><u>Sub-issue A</u></p> <p>Planning for future coastal hazards can be calibrated on projections using a point-in-time or a point-in-rise, or both in combination. The State Government previously published a set of sea level rise benchmarks (40 cm for 2050 and 90 cm 2100 relative to 1990 sea levels) which were developed in 2009. These benchmarks were subsequently withdrawn in 2012 in favour of locally derived benchmarks by local councils.</p> <p>There is not, therefore, any “standard timeframe” although it is acknowledged that most councils continued to apply a similar point-in-time – being 2050 and 2100 – for coastal planning purposes. The reason that the</p>

Submission Comments	Response
<p>around measures to avoid, mitigate and/or manage coastal hazards.</p> <ul style="list-style-type: none"> It is NSW Government policy that we avoid exposing life, public and private assets, and the environment to current or future coastal hazards. The Government's policy is set out in the <i>Coastal Management Act 2016</i>, and is given land use planning effect by State Environmental Planning Policy (Coastal Management) 2018 For example, consider going beyond 2100 to a 100-year time horizon, which will also be more compatible with the likely engineering life of the housing, other development, and public and private infrastructure including roads and stormwater drainage. <p>[Sub-issue B]</p> <ul style="list-style-type: none"> We recommend you take into account the relevant provisions of the Great Lakes Coastal Zone Management Plan as it relates to North Tuncurry. Further, any future Coastal Management Programs developed by the local council will need to be taken into account as they may constrain future landowners: <ul style="list-style-type: none"> Under <i>State Environmental Planning Policy (Coastal Management) 2018</i>, clause 16, development consent must not be granted to development on land within the coastal zone unless the consent authority has taken into consideration the relevant provisions of any certified coastal management program that applies to the land. 	<p>conventional timeframe of 2100 is used so widely is due to diminishing confidence in projections beyond that horizon.</p> <p>While the IPCC projections indicate that it is virtually certain that global mean sea level rise will continue beyond 2100, the projections beyond 2100 have inherent uncertainties (Glamore et al (2015) <i>Sea level rise: Science and synthesis for NSW</i>). This is the basis for generally limiting any quantitative modelling or projections beyond 2100.</p> <p>It is also noted that there is nothing in the Coastal Management instruments, Manual or Toolkit which suggests a different approach to coastal planning time horizons for infill vs greenfield development. Indeed, NSW Government guidance materials, such as <i>Guidelines for using cost-benefit analysis to assess coastal management options</i> (2018) do not reference any time horizon beyond 2100.</p> <p><u>Sub-issue B</u></p> <p>Consistent with the advice noted elsewhere regarding Coastal Management SEPP clause 16 (and other clauses), it is the action of making application for development consent, rather than a proposed change to land-use zoning, which triggers that clause.</p> <p>Notwithstanding that, the need to consider the Great Lakes Coastal Zone Management Plan (CZMP) is a valid point. The obligation to consider the CZMP is required, not by clause 16 of the Coastal Management SEPP as suggested by DPIE Planning, but by item 4(d) in Ministerial Direction 2.2 Coastal Management, which provides:</p> <p><i>A planning proposal must include provisions that give effect to and are consistent with: ...</i></p> <p><i>(d) any relevant Coastal Management Program that has been certified by the Minister, or any Coastal Zone Management Plan under the Coastal Protection Act 1979 that continues to have effect under clause 4 of Schedule 3 to the Coastal Management Act 2016, that applies to the land.</i></p> <p>The Great Lakes CZMP was certified by the Minister for the Environment on 16 November 2017. Further the provisions of clause 4 of Schedule 3 to the Coastal Management Act state that the CZMP continues to have effect until replaced by a coastal management program (under the Coastal Management Act) or until 31 December 2021.</p>

Submission Comments	Response
	<p>On that basis it is agreed that the rezoning proposal will take into account the provisions of the Great Lakes CZMP.</p> <p>The Worley Parsons <i>report</i> is not inconsistent with the CZMP and notes that the same values were applied for storm erosion modelling, as well as the same ‘sea level rise benchmarks’ of 40 cm by 2050 and 90 cm by 2100. Both studies find that the development footprint of the NTURA Site is outside the projected hazard areas for 2100.</p> <p>The CZMP identifies the hazards for the southern section of Tuncurry Beach as being erosion, recession and wave run-up (refer to Table 1-1 in the CZMP Options Study). All of these are addressed in the Worley Parsons report</p> <p>The CZMP Options Study notes that the consequence of erosion and recession for Tuncurry Beach (and others) is ranked as major and that beaches backed by development will impede the landward migration of the active beach (refer to Table 2-4 in the CZMP Options Study). The Worley Parsons report considers erosion and recession rates and the positioning of development beyond areas projected to experience those impacts over the broadly agreed maximum forecast period (2100). The Rezoning Study prepared by Ethos Urban considers the CZMP in more detail.</p>
<p>Legacy issues</p>	
<ul style="list-style-type: none"> • We would recommend against any development that is likely to cause legacy issues for future state and local governments. We have a number of areas along the NSW coast that are subject to coastal hazards and which are the source of significant land use conflict. • In our experience, future engineering or other costly solutions (E.g. coastal protection works such as seawalls, sand mining and beach nourishment) have proven very difficult to achieve. In addition to the capital costs of such solutions, there are practical challenges such as sourcing of sand for beach nourishment, the inability of private landholders to contribute to the funding of such works, the adverse impacts on the environment of such 	<p>The matter under consideration is a proposal to rezone land. Landcom is not currently seeking consent for any physical works to the carrying out of the development. Notwithstanding this, the Worley Parsons report makes recommendations for the nature and tenure of structures beyond the 2100 hazard line and within the 2060 – 2100 horizon which would be relevant considerations as development progresses. Future development applications will provide an opportunity to assess and verify coastal hazard risks to avoid the legacy issues DPIE Planning is referring to.</p> <p>The rezoning proposal outlines an indicative staging strategy for future development. The eastern most portions of the NTURA Site are currently located within proposed Stages 4, 12, 14, 16, 17, 21, 22 and the B2 Local Centre. Development applications for these stages will detail the proposed subdivision, infrastructure and construction</p>

Submission Comments	Response
<p>works and the social impacts (such as loss of beach access or amenity) associated with needing to put such measures in place.</p> <ul style="list-style-type: none"> • The proposed land release and timing of its staged development should be adaptive to respond to risks as known now and in the future. • It should not rely on the future availability of high-cost solutions to address future problems. These issues are likely to create future costs and liability to private landholders and state and local government. <ul style="list-style-type: none"> – Please also note that section 27 of the Coastal Management Act 2016 is a precondition to development consent for all coastal protection works and requires consideration of impacts on public access and safety, and that satisfactory arrangements have been put in place to apportion private and public capital and maintenance costs for the works (including beach restoration works). Landowners may also be liable to pay a coastal protection charge under the Local Government Act 1993 to maintain these works. • Removal of dune vegetation should be avoided to prevent worsening of existing coastal hazards. 	<p>details and will need to be assessed at that time for coastal hazard risks in the context of contemporary evidence available at the time that the development application is being prepared/assessed.</p> <p>References to clause 27 of the Coastal Management SEPP are premature because the provisions of that clause relate to coastal protection works which may or may not be required in the future. No coastal protection works are currently proposed at this NTURA Site. The NTURA proposal does not currently rely on high-cost solutions to address future problems as suggested.</p> <p>The funding of coastal protection works is acknowledged to be a challenging issue and the matter is appropriate to consider as and when development is proposed. The Explanatory Note which accompanies Landcom's offer to enter into a Voluntary Planning Agreement with Council provides a commitment towards funding the preparation of a coastal zone management plan, and maintenance of beach access trails only if determined to be required at the relevant stage.</p> <p>It is also important to understand that the land, if <u>not</u> rezoned, still provides for development and the use of the NTURA Site. For example, under the current zoning of RE1, development permitted with consent includes eco-tourist facilities, function centres and major recreation facilities. Development currently permitted with consent on the land zoned E2 includes community facilities and dwelling houses.</p> <p>Dune vegetation is not proposed to be removed. The dunes are located within the proposed biobanking area and will therefore be subject to a plan of management which will preclude the removal of dune vegetation.</p> <p>Notwithstanding this, the Worley Parsons report acknowledges there are remnant sand dunes in the west of the NTURA Site, and more active dunes in the beach fluctuation zone. It is noted however that the proposed NTURA development footprint does not include the area from the foredune to the mean high-water mark. The maintenance of stabilising vegetation on active foredunes is acknowledged as a sensible means of managing aeolian movement of beach sediment (sand drift). The Worley Parsons Study (2019) addresses this matter at section 4.10.</p>
Sale of future at-risk lots	

Submission Comments	Response
<ul style="list-style-type: none"> • We note the site is proposed to be developed over a multi-decade time horizon. • We recommend you consider alternative tenure arrangements and staging of the development to assist with management of future coastal hazards. For example: <ul style="list-style-type: none"> – Sites most exposed to coastal hazard should not be sold and instead be leased out, to enable retreat from the site in future if necessary. – Avoid release and sale of ‘super-lots’ for sections of the site that may be exposed to future coastal hazards, as this may lock in developer or landowner expectations before the future risk exposure of these sites is clearly understood. – Staging of the land release should prioritise areas closest to existing development in Tuncurry and radiate out to stage most at risk subdivisions last, allowing future Governments the opportunity to consider whether these areas should still be developed. – We note that any future developments must take into account the provisions of <i>State Environmental Planning Policy (Coastal Management) 2018</i>, including that a proposed development must not adversely affect coastal processes, or increase the risk of coastal hazards on that land or any other land. 	<p>Tenure arrangements are not a matter contemplated under the Coastal Management Act or Coastal Management SEPP but may form part of the matters considered during subsequent development stages. Land tenure is also not a relevant matter for a rezoning proposal. Notwithstanding this, Landcom continues to engage with Council and relevant State agencies on the future ownership arrangements.</p> <p>The rezoning proposal outlines an indicative staging strategy for future development. The first five (5) stages are at the southern end of the NTURA Site and prioritise areas closest to existing development in Tuncurry and radiate out to as suggested by DPIE Planning.</p> <p>It is acknowledged that a planning proposal (i.e.: rezoning proposal) must, as required by Ministerial Direction 2.2 Coastal Management, give effect to and be consistent with the objects of the Coastal Management Act and the objectives of the relevant coastal management areas. As a point of clarification, these are found within the Coastal Management Act not the Coastal Management SEPP.</p> <p>Nevertheless, the objects for the Coastal Management Act include:</p> <ul style="list-style-type: none"> • <i>to mitigate current and future risks from coastal hazards, taking into account the effects of climate change; and</i> • <i>to recognise that the local and regional scale effects of coastal processes, and the inherently ambulatory and dynamic nature of the shoreline, may result in the loss of coastal land to the sea (including estuaries and other arms of the sea), and to manage coastal use and development accordingly.</i> <p>In this regard, the NTURA proposal has been informed by a detailed study of coastal processes and hazards to respond to the Ministerial Direction, Coastal Management Act 2016, Coastal Management SEPP and Great Lakes CZMP.</p> <p>It is noted that Ministerial Direction 2.2 Coastal Management (item 5) does prohibit the rezoning of land which would enable increased development or more intensive land-use on land within a coastal vulnerability area or within land identified in the LEP or DCP or a study undertaken by the relevant planning authority (Council) which identifies the land as being affected by a current or future hazard. The NTURA site does not include any land within a Coastal Vulnerability Area pursuant to the Coastal Management Act</p>

Submission Comments	Response
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	<p>Further, the Great Lakes CZMP does not identify any land within the subject site as being exposed to a current or future hazard (refer to Figure 4 below).</p>  <p>The figure is a map titled 'Figure 4 - CZMP hazard map'. It shows a coastal area with a green area labeled 'Tuncurry Golf Course' and a yellow area labeled 'NINE MILE BEACH'. A red line indicates the coastline. A legend on the right side of the map provides details on 'Coastal Erosion Risk - 2100' and 'Erosion Likelihood - 2100'. The risk levels are Low (green), Medium (yellow), High (orange), and Extreme (red). The likelihood levels are Almost Certain (solid line), Likely (dashed line), Unlikely (dotted line), and Rare (dashed line). A 'KEY PLAN' inset map shows the location of the study area within the Great Lakes region.</p>
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Figure 4 – CZMP hazard map

Coastal Design

<ul style="list-style-type: none"> The land release site should maximise public and environmental benefit. 	<p>The Rezoning Study prepared by Ethos Urban (and accompanying technical appendices) demonstrate that the public and environmental benefits of Landcom’s NTURA proposal.</p>
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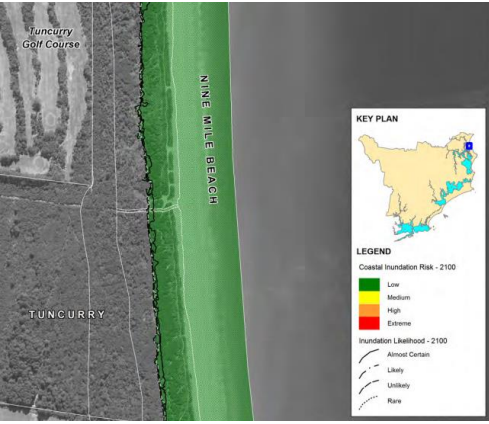
The Rezoning Study prepared by Ethos Urban (and accompanying technical appendices) demonstrate that the public and environmental benefits of Landcom’s NTURA proposal.

<p>Suggestions</p> <ul style="list-style-type: none"> As noted above, the NSW Government’s policy on coastal management is set out in the Coastal Management Act 2016. It includes objectives to ensure beaches and key coastal environmental assets are protected and maintained for their own 	<p>Noted.</p> <p>More specifically, the Government’s requirements for planning proposals in the coastal zone are set out in Ministerial Direction 2.2 Coastal Management. The Ministerial Direction references policy directions set out in</p>
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Noted.

More specifically, the Government’s requirements for planning proposals in the coastal zone are set out in Ministerial Direction 2.2 Coastal Management. The Ministerial Direction references policy directions set out in

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<p>intrinsic value and for the benefit of current and future generations.</p>	<p>the Coastal Management Act, but also in the Coastal Management Manual and Toolkit, the NSW Coastal Design Guidelines and any relevant Coastal Management Program or CZMP.</p> <p>The EMM Addendum confirms the Worley Parsons report has considered the relevant provisions noting the stage of the planning process the project is in. The EMM Addendum augments the Worley Parsons report with additional consideration of relevant matters for consideration during a planning proposal (i.e.: rezoning proposal).</p>
<ul style="list-style-type: none"> It may be more appropriate to reduce the footprint of double-fronted beach-facing lots and instead increase the amount of public open space behind the beach. This will also provide opportunities for adapting the layout to respond to coastal hazards and reducing the Government's future exposure to risks and liability, and for a better integration of the site with the existing golf course. 	<p>The Rezoning Study prepared by Ethos Urban (and accompanying technical appendices) demonstrate that master plan is a suitable outcome for the NTURA Site and the proposed distribution and quantum of residential and open space uses is appropriate for the future community.</p> <p>The proposed approach is also considered to strike an appropriate balance, through detailed design measures outlined in the Urban Design Report and Draft DCP, between maintaining public access and use, reducing coastal hazards, and ensuring suitable activation and passive surveillance of public areas for community safety.</p>
<p>Impacts on the coastal environment</p>	
<ul style="list-style-type: none"> Poor water quality and flow are significant issues in coastal catchments, from an environmental health perspective and the perspective of flood and coastal risk (including the combination of both). 	<p>Noted. The EMM Integrated Water Cycle Management Strategy Addendum addresses water quality issues.</p> <p>Refer also to the Great Lakes CZMP which identifies the area projected to incur coastal inundation by 2100 (Figure 5 below). This area does not extend into the NTURA site.</p>

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	 <p data-bbox="913 735 1299 762"><i>Figure 5 – CZMP coastal inundation</i></p>
<ul style="list-style-type: none"> <li data-bbox="159 815 898 1007">• We recommend that the proponent avoid creating high-cost infrastructure that cannot be effectively maintained into the future, by the state or local government, or by a private entity. Further work is required to identify how effectively infrastructure maintenance arrangements, currently proposed to be held under community title. 	<p data-bbox="913 847 987 874">Noted.</p> <p data-bbox="913 911 2107 975">As outlined above. detailed infrastructure design and measures for ongoing maintenance of site infrastructure would be subject to further development and planning processes subsequent to the planning proposal.</p>
<ul style="list-style-type: none"> <li data-bbox="159 1038 898 1198">• We recommend working closely with the council to identify cost-effective measures, particularly where the council may be the asset owner in the future, or it has limited legal capacity to levy private landholders for infrastructure maintenance, such as stormwater. 	<p data-bbox="913 1070 2107 1134">Noted. Landcom has, and will continue to, work collaboratively with Council to reach an agreement as part of the Voluntary Planning Agreement negotiations.</p>

7.3 MidCoast Council

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<ul style="list-style-type: none"> • The Rezoning Study includes information about the intended remodelling of the existing golf course. It is noted that this remodelling appears to be directly related to the release of beach-front land for development purposes. In particular, land identified for development of the Village Centre, Stages 21 and 22 are currently occupied by the golf course. This is realignment to enable development is not supported given the proximity of these areas to the identified 2100 coastal hazard line. In this regard it is noted that the density of development and infrastructure proposed within this location is also considered to be contrary to recommendations within the Study: <ul style="list-style-type: none"> - 2060 to 2100 hazard line: only demountable structures or permanent structures with a lifecycle consistent with the timeframe for coastal risk (i.e. 50 years) should be contemplated within this zone, as well as uses and structures which are not as sensitive such as passive recreation areas, sporting fields, walking trails etc. - 2100 hazard line landward: no immediate limitations, however the urban structure should allow retreat from this line if required in the future.” • The proximity of the proposed development and potential timeframe for implementation would warrant additional funding for review and confirmation of coastal hazard analysis and mapping prior to the commencement of Stages 12, 14, 16, 17, 21, 22 and the Village Centre. Appropriate funding for this analysis and deterministic modelling to be undertaken, is also required to be provided and identified within the Planning Agreement. 	<p>The proposed configuration of lots and facilities in the Master Plan are not contrary to the recommendations articulated in the Worley Parsons report. There is therefore no reason to redesign the golf course or indeed any aspect of the proposal as suggested by Council.</p> <p>The residential development is envisaged to be located landward of the 2100 hazard line and the Worley Parsons report simply ascribes “no immediate limitations” for this area while noting that the urban structure should allow retreat from this line if required in the future.</p> <p>There are a number of means by which risk management measures, such as ensuring the ‘relocatability’ of fixed assets, can be facilitated and this will be explored further in subsequent development stages.</p> <p>Landcom is in the process of negotiating the terms of a future Voluntary Planning Agreement for the provision and funding of local infrastructure. The terms have been prepared in the context of the coastal hard risks as defined by the Worley Parsons report and the EMM Addendum. The Explanatory Note which accompanies Landcom’s offer to enter into a Voluntary Planning Agreement with Council provides a commitment towards funding the preparation of a coastal zone management plan, and maintenance of beach access trails only if determined to be required at the relevant stage.</p>

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<ul style="list-style-type: none"> The proposal as submitted therefore, represents significant future liability and risk to Council and residents of the development. On this basis, the redesign of the golf course to facilitate 'beach-front' development; and dedication of the eastern corridor to Council are not supported. It is acknowledged that these concerns may warrant a redesign of the proposal. 	
Statement of intent for future planning agreement and council correspondence	
<ul style="list-style-type: none"> The proximity of the proposed development and potential timeframe for implementation would warrant additional funding for review and confirmation of coastal hazard analysis and mapping prior to the commencement of Stages 12, 14, 16, 17, 21, 22 and the Village Centre. Appropriate funding for this analysis and deterministic modelling to be undertaken is to be provided and identified within the Planning Agreement. 	<p>Landcom is in the process of negotiating the terms of a future Voluntary Planning Agreement for the provision and funding of local infrastructure. The terms have been prepared in the context of the coastal hard risks as defined by the Worley Parsons report and the EMM Addendum. The Explanatory Note which accompanies Landcom's offer to enter into a Voluntary Planning Agreement with Council provides a commitment towards funding the preparation of a coastal zone management plan, and maintenance of beach access trails only if determined to be required at the relevant stage.</p>
Urban design report	
<ul style="list-style-type: none"> Locating public assets such as buildings, roads, services and infrastructure within 200m setback of coastal MHWL (as stated) is not supported. 	<p>Infrastructure has been positioned in accordance with NSW coastal land use requirements.</p>
<ul style="list-style-type: none"> Reliance on community title subdivision for management of water basins and areas at future risk of coastal hazards is not supported. 	<p>Tenure arrangements are not a matter contemplated under the Coastal Management Act or Coastal Management SEPP, but may form part of the matters considered during subsequent development stages. Land tenure is also not a relevant matter for a rezoning proposal. Notwithstanding this, Landcom continues to engage with Council and relevant State agencies on the future ownership arrangements.</p> <p>Community title presents a suitable and logical option for ownership and management of these areas where Council has indicated that it does not wish to accept dedication.</p> <p>There is no prescribed requirement to avoid community title (in favour of other land titles) for coastal land under any of the coastal management instruments.</p>

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<ul style="list-style-type: none"> Report identifies 22 stages in the Staging Plan over 30 years. Additional information and consideration is required, in regard to the: <ul style="list-style-type: none"> B2 area that is identified, but not allocated a stage - highest development density and investment in closest proximity to coastal hazard; Beach-front residential areas in stages 21 & 22 - highest development density in closest proximity to coastal hazard. 	<p>As outlined in the Rezoning Study (Ethos Urban), detailed staging of the development will be subject to overall market demand as well as demand for specific housing types and support employment/commercial uses that may be located within the B2 Local Centre. Delivery of open space, infrastructure and retail facilities will be staged to keep pace with housing delivery, however, it is anticipated that initial stages will rely on existing retail and community facilities within Tuncurry until a critical mass of housing within the site is developed to support dedicated facilities for the NTURA Site.</p> <p>The eastern most portions of the NTURA Site are currently located within proposed Stages 4, 12, 14, 16, 17, 21, 22 and the B2 Local Centre. Development applications for these stages will detail the proposed subdivision, infrastructure and construction details and will need to be assessed at that time for coastal hazard risks in the context of contemporary evidence available at the time that the development application is being prepared/assessed.</p>
Coastal Processes, Hazards and Planning Study	
<ul style="list-style-type: none"> The report is outdated and does not address the Coastal Management Act 2016, Coastal Management Manual/s or associated Coastal Management SEPP (Coastal environmental area, Coastal use area, coastal vulnerability area, coastal wetlands and littoral rainforests area). 	<p>The Worley Parsons report satisfactorily references the Coastal Management Act and Coastal Management Manual.</p> <p>The role of the Worley Parsons report needs to be recognised and understood. It is specifically focussed on the coastal processes and hazards at the NTURA Site. The role of the report is to inform the consideration of the site characteristics. The task of addressing the objects of the Coastal Management Act, and other planning documents such as the Great Lakes CZMP, forms part of the planning proposal process - consistent with Ministerial Direction 2.2 Coastal Management.</p> <p>The EMM Addendum (in addition the Rezoning Study by Ethos Urban and all supporting technical studies) The augments the Worley Parsons report with additional consideration of relevant matters for consideration during a planning proposal (i.e.: rezoning proposal).</p>
<ul style="list-style-type: none"> The Study indicates beach erosion (1m recession rate — sect 5.3.1) will impact the site. Part 3 Division 2 Section 15 (e) of the CM Act states: if the local council's local government area contains land within the coastal vulnerability area and beach erosion, coastal inundation or cliff instability is occurring on that 	<p>The purpose of section 15 of the Coastal Management Act is to provide for certain matters to be included in a coastal management program. It specifically applies to Councils with land in the coastal zone (such as MidCoast Council) and not to other parties. Refer to section 11.</p> <p>The provision is noted but is not a relevant consideration for the purposes of the NTURA rezoning proposal.</p>

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<p>land, a coastal zone emergency action sub-plan is required. This does not form part of the proposal.</p>	
<ul style="list-style-type: none"> The Coastal Management Manual/s requires a review on population increase within affected areas and the Study does not address this. 	<p>The Coastal Management Manual, in making reference to demographic trends, is directing Councils in the preparation of a coastal management program. It requires, for example, that the scope of a coastal management program must include consideration of future population growth and development pressures (Coastal Management Manual, Part A, p 15 and p 24).</p> <p>This is an obligation placed on the local planning authority and not on the proponent of development or a planning proposal (i.e.: rezoning proposal).</p>
<ul style="list-style-type: none"> The Study does not comment on the Marine Estate Management Strategy (MEMS) and associated Threat and Risk Assessment (TARA). 	<p>It is acknowledged that one of the objects of the Coastal Management Act is to support the objects of the <i>Marine Estate Management Act 2014</i> (MEM Act).</p> <p>By inference, therefore, the requirements of Ministerial Direction 2.2 Coastal Management include support for the objects of the MEM Act (refer to item 4(a) in the Ministerial Direction).</p> <p>This does not, however, mean that the Worley Parsons report needs to ‘comment’ on the MEM Act. The report could identify the MEM Act as a component of the statutory framework within which the Study was conducted. Any commentary beyond such an acknowledgement is not warranted.</p> <p>The Marine Estate Management Authority (MEMA) prepared a Threat and Risk Assessment (TARA) in 2017. The TARA adopts a State-wide approach in its assessment, and makes no specific mention of Tuncurry, Forster or Great Lakes. The TARA does identify priority threats to the marine estate which include a wide range of stressors, including climate change, and foreshore and urban development. These are two stressors in a priority list of 11 stressors, which includes fishing, tourism and shipping. The breadth of the identified threats stems from the very broad scope of coastal values (including social and economic values) which are identified as being at risk. The TARA is therefore a State-wide tool which signals the need for local studies such as the one prepared by Worley Parsons, rather than a source of data to be considered in the Worley Parsons report itself. The EMM Addendum has also considered the MEM Act.</p>
<ul style="list-style-type: none"> The Study has not been prepared in consideration of other studies regarding ground water, stormwater, flooding or other management requirements that will be affected by coastal 	<p>Unsurprisingly, independent reports prepared by technical specialists tend to focus exclusively on the area of technical expertise.</p>

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<p>management issues. The only statement is that stormwater (section 5.3.6) at present is not an issue, with no regard to future scenarios.</p>	<p>Landcom has commissioned an extensive number of technical reports which should be read in conjunction with each other.</p>
<ul style="list-style-type: none"> In Section 7 the proponent recommends that land seaward of the 2100 hazard line be retained in public ownership i.e. dedicated to Council. Further consideration must be given to this recommendation given existing risk, liability, social and economic costs associated with beach-front development in the MidCoast, notably Jimmys Beach, Old Bar, Seal Rocks, Boomerang and Blueys beaches. 	<p>There are a number of options for the ongoing ownership, control and maintenance of foreshore lands, which are subject to ongoing discussions.</p> <p>Landcom acknowledges the issue is complex and needs to be balanced those matters noted by MidCoast Council with other considerations such as indigenous interests, public access and the ambulatory nature of what the community would consider a 'public beach'.</p>
<ul style="list-style-type: none"> The report does not comment on the current beach use by 4WD. Nor does the report comment on how this activity will continue with the proposed additional pedestrian access points from this development to the beach. 	<p>4WD access to Tuncurry Beach is managed by MidCoast Council using a permit system. This matter is therefore outside of Landcom's jurisdiction.</p> <p>The beach is already used by pedestrians, including dog walkers, and horse riders.</p> <p>The Barrington Coast website – which is the destination brand of MidCoast Council – notes the following regarding Tuncurry Beach: "It's quite a stretch of sand (10 km+) meaning you can always find your own section of beach to park up on, away from others".</p> <p>It is also noted in the Worley Parsons Study that existing dune vegetation is being damaged by 4WD access (p 41).</p>
<ul style="list-style-type: none"> There is no comment on how public recreation and access will be managed as the beach recedes, although the report acknowledges that Surf lifesaving towers and public access paths should be designed to be able to be removed. 	<p>There is a distinction to be made between how public access to Tuncurry Beach is to be managed at the NTURA Site, and how it is to be managed more broadly across the full 10 km length of the beach.</p> <p>The reference to life saving towers and related facilities in the Worley Parsons report is limited to the NTURA Site, and sensibly notes the need to balance proximity to areas of beach use for safety observation and the need to relocate such facilities if needed.</p>
<ul style="list-style-type: none"> The report only comments on coastal hazards to 2100. This is an 80-year horizon (from 2020). Given the staging of the proposal appears to recommend beachfront development in Stage 21-22 (at the end of the 30 year period), and these Stages will 	<p>Planning for future coastal hazards can be calibrated on projections using a point-in-time or a point-in-rise, or both in combination. The State Government previously published a set of sea level rise benchmarks (40 cm for</p>

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<p>incorporate the highest density of development, consideration of coastal hazards beyond 2100 is warranted.</p>	<p>2050 and 90 cm 2100 relative to 1990 sea levels) which were developed in 2009. These benchmarks were subsequently withdrawn in 2012 in favour of locally derived benchmarks by local councils.</p> <p>There is not, therefore, any “standard timeframe” although it is acknowledged that most councils (including MidCoast) continued to apply a similar point-in-time – being 2050 and 2100 – for coastal planning purposes. The reason that the conventional timeframe of 2100 is used so widely is due to diminishing confidence in projections beyond that horizon.</p> <p>While the IPCC projections indicate that it is virtually certain that global mean sea level rise will continue beyond 2100, the projections beyond 2100 have inherent uncertainties (Glamore et al (2015) <i>Sea level rise: Science and synthesis for NSW</i>). This is the basis for generally limiting any quantitative modelling or projections beyond 2100.</p> <p>NSW Government guidance materials, such as <i>Guidelines for using cost-benefit analysis to assess coastal management options</i> (2018) do not reference any time horizon beyond 2100.</p>
<ul style="list-style-type: none"> The study references the certified and gazetted Great Lakes Coastal Zone Management Plan August 2016 and associated Options Study in Section 5.2. These documents included a risk assessment of the coast and where development was established the risk consequence was raised. A similar risk assessment is recommended for the proposal to assist in determining the long-term viability, risks and potential costs associated with maintaining of ‘beachfront’ development, services and infrastructure. This technical study is being updated. 	<p>The Great Lakes CZMP states that it covers the open coastline in the local government area and specifically includes Tuncurry (Nine Mile) Beach. The focus is on the ‘developed beaches’ however the modelling and mapping of hazards includes the NTURA Site, presumably because there is development in the form of a golf course and club house in this area. More remote sections of Tuncurry Beach to the north are not modelled but the relevant sections for the purposes of this assessment are included.</p>