

5 INTERIM DEVELOPMENT CONTROL

5.1 Background Considerations

As outlined in Section 2.4.3, the Coastline Hazard Definition Study has identified zones which are subject to immediate and longer term threats from coastal erosion. Existing land zoned for development occurs within these areas, particularly at Lennox Head north of Byron Street.

While the future Coastline Management Plan will put in place strategies for dealing with these threats, the presence of the hazard zones (which is noted on Planning Certificates issued under Section 149 of the Environmental Planning and Assessment Act 1979) has immediate implications for landowners. Therefore, there is a need to establish a policy for dealing with applications for development in the interim period prior to finalisation of the Coastline Management Plan. This policy needs to take into consideration likely future coastline management strategies as well as the associated risks of development.

All land identified as being affected by coastal hazards is included within the 'coastal zone', as defined in the NSW Coastal Policy. Development on land within the coastal zone will predominantly be dealt with by Ballina Shire Council as the consent authority. Along with the primary local environmental planning instruments (i.e. Ballina Local Environmental Plan 1987 and Development Control Plan No. 1) development must be assessed against the provisions of State Environmental Planning Policy No. 71 – Coastal Protection (SEPP 71). SEPP 71 requires that the likely impact of coastal processes and coastal hazards on development and any likely impacts of development on coastal processes and coastal hazards, are considered for all developments within the coastal zone.

For 'significant coastal development' (such as two storey residential buildings within 100 metres of the high tide mark) and 'state significant development' (such as tourist developments), DIPNR will have a role in the approval process, either as a referral or consent authority.

Therefore, coastal hazards are an issue that must be considered by both Council and DIPNR in assessing any development application along the Ballina coastline. Adoption of an interim policy will provide greater certainty to land owners and a consistent approach to development assessment.

5.2 Policy Development Process and Policy Basis

Comparative research was undertaken to identify various development control measures that have been implemented elsewhere on the NSW and QLD coastline in relation to coastal hazards. This research was limited to a brief internet and library search and phone discussions with DIPNR, Tweed Shire Council and Clarence Valley Shire (formerly Maclean) Council. Research findings are summarised in Sections 5.2.1 to 5.2.7.

A range of potential development control options were discussed by the project technical team and subsequently the consultant team prepared the policy options outlined in Section 5.5. During the process it was identified that interim development control policy measures may have significant legal implications.

5.2.1 Wyong Shire Council

Wyong Shire Council has adopted Development Control Plan No. 77 – Coastal Hazards, as an interim development control measure pending completion of the Wyong Shire Urban Areas Coastline Management Plan. For beach systems without existing protection, the DCP identifies hazard zones that accord with land identified as seaward of the 50 year erosion line. No development or improvements are permitted within the hazard zone. Where development is proposed landward of the hazard zone, a coastal engineers report is required to assess the threats to a site and ensure that structural loads are carried into the zone of stable foundation. In certain areas, minimum floor levels are required to be identified by the coastal engineers' assessment to reduce the threat of inundation from wave runnup.

Given that Wyong is at a similar stage in the coastal planning process and is subject to similar coastal threats, their approach is relevant.

5.2.2 Gosford City Council

Gosford City Council has adopted Development Control Plan No. 125 – Coastal Frontage, to regulate development affected by coastal hazards. The DCP follows adoption of a Coastline Management Plan. For beach systems, it designates hazard areas as being either seaward of the 50 year or 100 year erosion lines. Where protection works are proposed in the future, development is permitted within the hazard zone subject to appropriate foundation design and floor levels being incorporated into the proposed development and provision of an indemnity to Council. Renovations and maintenance activities are permitted within the hazard zone provided they do not increase the risk of loss or increase the level of coastal hazard and an indemnity is provided to Council.

Given that similar coastal threats exist, Gosford's approach is relevant to this policy development process.

5.2.3 Byron Shire Council

Byron Shire Council has adopted Part J of Development Control Plan 2002 – Coastal Erosion Lands to regulate development on land that is affected by coastal hazards. A Coastline Management Study has recently been on public exhibition but the Coastline Management Plan is yet to be prepared. The existing DCP implements development controls that reflect a planned retreat approach to addressing the threat of coastal hazards.

No new buildings or works are preferred seaward of the immediate impact line. The policy does permit, with the consent of Council, development within this zone that is of a community nature provided that the building is easily removable. Only one extension per existing building is permitted within this precinct and extensions are limited to:

- Where the gross floor area is less than 100sqm, extensions that will make the gross floor area no greater than 100sqm;
- Where the gross floor area is greater than 100sqm, 10% of the gross floor area of the existing building at the date of commencement of the policy.

Development between the immediate and 50 year erosion lines is generally permitted subject to the buildings being removable if the erosion scarp retreats to a certain distance from the buildings. There have been numerous compliance difficulties and legal proceedings associated with this policy.

Given that the future coastline management strategy at Lennox Head is not likely to be planned retreat, Byron's approach has minimal relevance.

5.2.4 Pittwater Shire Council

Pittwater Shire Council has adopted Policy 144 – Interim Geotechnical Risk Management, as a mechanism for regulating the impact of coastal hazards. The policy applies a risk management matrix to development and requires a geotechnical report with coastal engineering assessment and structural engineering design. The policy requires interim geotechnical certification during construction and post construction.

Pittwater's approach represents a geotechnical engineering approach that seeks to implement a site by site risk assessment process, rather than broad planning provisions. The approach presents a risk assessment process that is a valuable reference for the implementation of planning policy.

5.2.5 Clarence Valley Shire Council (Maclean Office)

Clarence Valley Shire Council (Maclean Office) does not have a specific DCP or policy for coastal erosion hazards but has in place a Draft Geotechnical Risk Management Policy (2004) for new coastal development on the top of a coastal escarpment at Yamba. This Policy has been based largely on Pittwater Council's Interim Geotechnical Risk Management Policy as outlined above.

The Council has also implemented certain principles in the assessment of development applications at Brooms Head that are subject to coastal erosion and storm bite. The principles were included in a Report to Council regarding a 'Proposed dwelling on Lot 10 Sec 5 DP 758167 (No. 15) Ocean Road, Brooms Head' in June 2004. Although the coastline planning process to date has identified that several private properties are subject to coastal erosion, land owners have rejected the study findings. Accordingly, no formal development control plan/policy has been adopted to deal with development within the hazard zone. Notations have been placed on Section 149 Certificates and the design principles have been applied to developments through an assessment under Section 79C. The principles include foundation and floor level design measures.

5.2.6 Ballina Shire Council

Ballina Shire Council has adopted Development Control Plan No. 3 – Coastal Hazard Protection Lennox Head in relation to land landward of existing revetment wall and levee south of Byron Street. Although protection works have been provided in this area, minimum floor levels are required to mitigate against coastal inundation and piling is required to mitigate against failure of the protection works. Further, building lines have been set for all properties.

This DCP has relevance as it is an approach that has been adopted to coastal hazards within the study area. The format of the plan is also relevant.

5.2.7 Tweed Shire Council

Tweed Shire Council has recently exhibited a Draft Coastline Management Plan. Tweed has restricted development on land affected by coastal hazards by the application of an environmental protection zone since about 1987. A draft DCP was prepared to address coastal hazards but was not pursued. The only major area where development is under threat is in Kingscliff and protection works have been and are being implemented there (pers. Comm.. Jardine, 2004). Accordingly, Tweed does not offer any approaches that are relevant.

5.2.8 Policy Basis

Policy options have been developed for each coastline compartment based on an analysis of the:

- nature of coastal hazards,
- scale and intensity of existing and potential development,
- nature of existing and potential threats,

that currently exist or may potentially occur within each compartment.

The potential positive and negative impacts of development controls were analysed within the context of the coastline management process and likely future management strategies. General implications of each policy option are then discussed.

5.3 Future Coastline Management and Legal Considerations

As outlined in Section 3.3, it is likely that the final Coastline Management Plan will include strategies for protection of development at Lennox Head. However, there is no guarantee that this will be adopted and furthermore, the nature and timeframe for implementation are unknown. The interim development policy needs to take these matters into consideration.

Future coastline management options will not be compromised if development is prohibited on erosion prone land in the interim period and this is an option for Council. However, this may also be unduly restrictive for landowners with an as of right use, particularly if protection strategies are adopted in the future.

Permitting development on the other hand has associated risks and potential consequences which may compromise future coastline management options. It will increase the scale, extent and value of assets placing more pressure on adopting a protection strategy and making a planned retreat policy more costly to implement. While it is unlikely that planned retreat would be the preferred option, it cannot be eliminated until a full assessment of options is undertaken.

If planned retreat is preferred and is able to be adopted in the future, the consent will need to lapse and the land will have to be acquired at additional cost either to the landowner or the Government depending on the conditions imposed and mechanisms involved.

If protection strategies are adopted and successfully implemented in the future, this would effectively remove the erosion threat and constraints on development. However, a risk would remain that the

protection strategies are delayed and/or not maintained effectively such that permitted development may still be under threat in the future.

Consideration could be given to permitting development on designated erosion prone land subject to recognition and acceptance of the above risks. If planned retreat is able to be adopted ultimately, a decision would need to be made as to whether the land is acquired with or without compensation depending on who accepts the risk at this time. If the landowners accepted that risk, they could potentially be made responsible for the increased value of the new development and hence no or reduced compensation would be payable. This option therefore does not unduly compromise planned retreat from a broader community perspective. Alternatively, if the Council/State Government accepts that risk, they may be liable to pay full market value to acquire the property at additional cost to the community.

Development conditions could be included to reduce the threat of erosion or inundation to permitted development in the event of protection strategies being delayed or not maintained. However, a risk still remains that damage or loss could occur and reinstatement or removal costs would be involved. Liability for those costs also needs to be considered.

There are a number of legal and indemnity considerations associated with the implications of the various options outlined above which Council should take into account in adopting an interim policy.

5.4 Policy Aims

The following policy aims were formulated to guide option development and recommendation:

- Ensure that interim planning policy provisions do not significantly compromise longer term management strategies that will result from a Coastline Management Plan.
- Ensure that the type, scale and/or location of new developments reflect the level of risk posed by coastal hazards in the interim term.
- Provide development controls that seek to minimize the damage potential to existing and proposed developments posed by specific coastline threats.
- To minimize amenity, social, economic and environmental impacts associated with coastal hazards and their management in the interim period.

5.5 Policy Options

Policy options and recommendations are provided for several coastline compartments and areas based on the considerations outlined in Section 5.1, 5.2, 5.3 and 5.4 as well as an analysis of the threats facing existing and potential assets.

Terms used in policy option analysis

Development – as defined in Section 4 of the Environmental Planning and Assessment Act 1979, excluding *minor improvements and renovations*.

Minor improvements and renovation – are defined as development defined as ‘exempt development’ in DCP No. 7 and alterations and additions that do not result in the floor area of a building exceeding

1.2 times the floor area of that building (as measured at the date of commencement of the policy) nor cost more than 20% of the current value of the building. (The cost of the alterations and additions and the current value of the building shall be compared at equivalent current prices and identified in Development Applications, for approval by Council).

Maintenance – is defined as replacing defective, worn-out, rotten and/or damaged materials within the building with similar new materials.

Zone of reduced bearing capacity – refers to land that is located landward of a receding erosion scarp where slumping may occur. Definition of the extent of the zone of reduced bearing capacity requires professional assessment on a site by site basis.

5.5.1 Lennox Head – Southern Section

This section of the beach is covered by the existing Lennox Head Beach Management Plan and associated Development Control Plan No. 3.

Recommendation

That DCP No. 3 Coastal Hazard Protection Lennox Head continue to be implemented.

5.5.2 Lennox Head – Central Section

This section covers areas identified in the Coastline Hazard Definition Study as being subject to coastal hazards and extends north of Byron Street to the southern boundary of the Lake Ainsworth Sport and Recreation Centre.

5.5.2.1 Land Seaward of Immediate Hazard Line

The immediate hazard zone is generally within the beachfront public reserve except at the southern end where the zone, as assessed in the Hazard Definition Study, extends across Pacific Parade and slightly into private property by varying distances up to a maximum of about 10m (see Figure 2-2). Existing standard setback controls (6m) will generally ensure that any new development on the majority of the lots will not be within the designated hazard zone. However, some existing structures are partially within the designated zone. Furthermore, the zone also extends landward of the standard building line on a few lots. On these lots, any new developments which extend to the standard setback or further seaward where there is a relaxation of the standard building line would technically be within the immediate hazard zone.

As discussed in Section 2, the hazard zones have been determined on the basis of no outcropping bedrock or seawalls which are known to exist, but are presently buried beneath the sand. As further discussed in Section 2.4.1, the presence of this buried seawall which is likely to provide some resistance to erosion and the presence of the roadway seaward of the lots are such that the risk of a direct erosion threat to private property in this area is very low. It is understood that these factors have been taken into consideration by DIPNR in the recent assessment of a proposed motel which extends into the designated immediate hazard zone. The consent for this development included conditions requiring piled foundations to minimise the potential damage from coastal processes such

as erosion and inundation. These factors have also been similarly taken into consideration in the assessment of development control options below.

Table 5-1 provides a development analysis for the immediate hazard zone, while Table 5-2 sets out and assesses various development control options.

Table 5-1 Development Analysis (Immediate Hazard Zone)

Hazards	Existing development / assets / ownership	Potential future development trend (given current planning regime)	Threats
<ul style="list-style-type: none"> Storm erosion and failure of old seawall. Wave runup/ overtopping of dune/wall. 	<ul style="list-style-type: none"> Public foreshore reserves and road reserves. Minor structures and works (except for SLSC and car park) and the front of 18 private lots between Byron Street and Foster Street. Buildings are generally setback landward of the immediate hazard line – except for buildings south of Lennox Street. These lots include the hotel, a proposed motel and new single dwelling. 	<ul style="list-style-type: none"> Minor community facilities on foreshore reserves. Part of proposed motel (that involves building and structures seaward of the immediate hazard line but consent conditions require piled foundations). Redevelopment of private residential properties (although most will be setback landward of the immediate hazard line given 6 metre building line control). 	<ul style="list-style-type: none"> Storm erosion to Pacific Parade (at southern end). Storm erosion to properties between Byron and Foster Streets (although limited by the presence of a buried seawall). Limited overwash and inundation of floors Storm erosion to Surf Club building and car park (although limited by the presence of a buried seawall).

Table 5-2 Potential Development Control Options and Assessment of Implications (Immediate Hazard Zone)

Option No.	Option Controls	Positives	Negatives	General Implications
1.	<ul style="list-style-type: none"> No development, minor improvements, renovations or maintenance are permitted on any land. 	<ul style="list-style-type: none"> Does not compromise future management options. Minimizes threats to assets (except that threats may increase post storm event without public works repair). 	<ul style="list-style-type: none"> Does not enable routine maintenance of roads or services. Does not enable repair of public works post storm event. Potential limitations on access to private property and beach foreshore post storm event. Potential degradation of built environment in prominent location. Threat to private properties may increase post storm if public works are not reinstated. 	<p>This option is unlikely to have significant implications for the majority of development or future management options, as existing building setback controls generally ensure that private development will not be sited within the hazard zone.</p> <p>However, it will restrict any private development which is proposed to extend into the hazard zone.</p> <p>Restrictions upon public works may increase threats to private property and public assets post storm.</p> <p>Restriction on any maintenance and improvements to the existing hotel is not desirable given its visual prominence.</p>

Option No.	Option Controls	Positives	Negatives	General Implications
2.	<ul style="list-style-type: none"> No development, minor improvement or renovations are permitted on private land. No development on public land (other than outlined below). Minor community facility improvements and renovations permitted on public land, as long as they are able to be removed if threatened. Routine infrastructure maintenance and repair works post storm are permitted on public land. Maintenance is permitted on all land. 	<ul style="list-style-type: none"> Does not compromise future management options. Minimizes threats to private assets. Enables maintenance and repair of public works and existing private buildings. Retains access to private properties and the beach foreshore post storm. Enables the existing built environment to be maintained in a prominent location. 	<ul style="list-style-type: none"> Potential degradation of existing private built environment in prominent location (older housing stock can be maintained but not redeveloped). 	<p>This option is unlikely to have significant implications for the majority of development or future management options, as existing building setback controls generally ensure that private development will not be sited within the hazard zone.</p> <p>However, it will restrict any private development which is proposed to extend into the hazard zone.</p> <p>Maintenance and renovation of public roads and works should be allowed to enable the existing road and reserve buffer to be retained.</p>
3.	<ul style="list-style-type: none"> As for Option 2 except that minor improvements and renovation are permitted on all land. 	<ul style="list-style-type: none"> Enables the existing built environment to be maintained and improved in a prominent location. Enables maintenance and repair of public works. Retains access to private properties and the beach foreshore post storm. 	<ul style="list-style-type: none"> May compromise future management options (if planned retreat is preferred). May increase the value of private assets that may be threatened in the immediate term (although the potential extent for improvements and the risk of erosion threat are limited). 	<p>Although this option does not allow major development within the hazard zone it does allow minor improvements and renovations to existing buildings.</p> <p>As no specific mitigation measures are required for such works (given their limited extent), Council should consider seeking an indemnity in relation to damages from coastal hazards.</p> <p>It is unlikely to result in a substantial increase in the value of private assets however any increase may result in higher acquisition costs (with a planned retreat strategy) or an increased loss of assets if threatened in the immediate period.</p>
4.	<ul style="list-style-type: none"> Development is permitted on private land between Byron and Foster Streets, subject to design by an appropriately qualified engineer to 	<ul style="list-style-type: none"> Enables the built environment to be maintained and improved in a prominent location. 	<ul style="list-style-type: none"> May compromise future management options (if planned retreat is preferred, subject to who accepts liability for increased value). 	<p>This option does not restrict private development within the limited designated immediate hazard zone and is consistent with the recent DIPNR assessment of a</p>

Option No.	Option Controls	Positives	Negatives	General Implications
	<p>accommodate erosion and inundation potential. Foundations must address the effect of the zone of reduced bearing capacity and minimum floor levels may apply where there is the threat of inundation (refer Appendix B for criteria).</p> <ul style="list-style-type: none"> Minor improvements and renovation are permitted on private land between Byron and Foster Streets. No development on public land (other than outlined below). Minor community facility improvements and renovations permitted on public land, as long as they are able to be removed if threatened. Routine infrastructure maintenance and repair works post storm are permitted on public land. Maintenance is permitted on all land. 	<ul style="list-style-type: none"> Enables maintenance and repair of public works. Enables minor public infrastructure improvements and renovations, if required. Retains access to private properties and the beach foreshore post storm. 	<ul style="list-style-type: none"> Substantially increases the value and hence future acquisition cost of private assets that may be threatened in the immediate term (although the potential extent for new development and the risk of erosion threat are limited). Increases the cost of development (although proportion unlikely to be high for redevelopment). 	<p>motel development.</p> <p>Given the 6 metre building line that applies, the redevelopment of private residential land north of the hotel and motel sites is unlikely to extend into the immediate hazard zone.</p> <p>In addition to the effect of the 6 metre building line the option ensures that no development is undertaken within the majority of land (i.e. public land) that is within the immediate hazard zone.</p> <p>Development on public land is restricted but maintenance and renovation of public roads and works should be allowed to enable the existing road and reserve buffer to be retained.</p> <p>It may increase the value of assets within the immediate impact zone and this would result in higher immediate acquisition costs with a planned retreat strategy. Further, if a protection strategy was adopted but delayed it may increase the value of assets that would be under immediate threat.</p> <p>Council should consider seeking an indemnity in relation to damages from coastal hazards, particularly with respect to minor improvements and renovations which do not require specific mitigation measures.</p> <p>Council could consider measures to limit liability for increased acquisition costs and thereby not compromise planned retreat as a future coastline management option.</p>

Option No.	Option Controls	Positives	Negatives	General Implications
5.	<ul style="list-style-type: none"> Development is permitted on all land, subject to design by an appropriately qualified engineer to accommodate erosion and inundation potential. Foundations must address the effect of the zone of reduced bearing capacity and minimum floor levels may apply where there is the threat of inundation (refer Appendix B for criteria). Minor improvements and renovation are permitted on all land. Maintenance is permitted on all land. 	<ul style="list-style-type: none"> Enables the built environment to be maintained and improved in a prominent location. Enables maintenance and repair of public works. Enables new public infrastructure, if required. Retains access to private properties and the beach foreshore post storm. 	<ul style="list-style-type: none"> May compromise future management options (if planned retreat is preferred, subject to who accepts liability for increased value). Substantially increases the value and hence future acquisition costs of assets that may be threatened in the immediate term. Increases the cost of development (although proportion unlikely to be high for redevelopment). 	<p>It may substantially increase the value of assets within the immediate impact zone and this would result in higher immediate acquisition costs with a planned retreat strategy. Further, if a protection strategy was adopted but delayed it may increase the value of assets that would be under immediate threat.</p> <p>Council should consider seeking an indemnity in relation to damages from coastal hazards, particularly with respect to minor improvements and renovations which do not require specific mitigation measures.</p> <p>Council could consider measures to limit liability for increased acquisition costs and thereby not compromise planned retreat as a future coastline management option.</p>
6.	<ul style="list-style-type: none"> No development controls. 	<ul style="list-style-type: none"> Minimizes effect on property values prior to storm event. 	<ul style="list-style-type: none"> Would compromise future management options (if planned retreat is preferred). Not in the public interest. Ignores known threats. Potential adverse amenity and environmental impacts. Substantially increases the value of assets that may be threatened in the immediate term. 	<p>This option is inconsistent with the existing building setback applied to new development along Pacific Parade.</p> <p>It would allow unrestricted public and private investment within the immediate hazard zone and this would result in an increase in the value of assets that could be threatened in the immediate time period, increase the cost of acquiring private land and/or a premature loss of public buildings/facilities.</p>

Discussion and Recommendation

Options 1 to 3 do not allow any major development during the interim period and are inconsistent with the recent State Government development consent for a motel in this area. However, they do not significantly compromise future coastline management options and are viable options which Council could consider.

Option 6 does not include any development controls and is considered to be not appropriate.

Options 4 and 5 allow development subject to conditions which minimise the potential damage from coastal processes such as erosion and inundation. Option 4 limits development on public land to minor community improvements and renovations while Option 5 also allows new public infrastructure. They are also consistent with the most likely future management option (i.e. protection in some form) but may compromise planned retreat as a potential option.

On balance, Policy Option 4 is recommended as the preferred approach. It allows development on private land to occur subject to conditions as discussed above which is also consistent with the recent DIPNR motel consent.

However, it may compromise future coastline management options by increasing the value of assets and thereby acquisition costs for a future planned retreat option. Such costs and the associated implications for planned retreat could be minimised with measures which limit future liability and it is therefore recommended that Council give consideration to such measures.

While Option 4 includes conditions to minimise the potential damage to development from coastal processes, there is still a risk that such damage could occur. Furthermore, no such controls are required or are practical for minor improvements and renovations which would also be at risk from damage. It is therefore recommended that Council give consideration to seeking an indemnity in relation to any damage suffered as a result of coastal hazards.

This option will have limited practical implications on the development of private land as only the frontage of a restricted area of private allotments is within the immediate hazard zone. Further, the existing building line control in DCP No. 1 of 6 metres, should ensure that most new residential development/redevelopment of private lots is not sited within the immediate hazard zone.

5.5.2.2 Land Between the Immediate Hazard Line and the Maximum 50 year Hazard Line

The 50 year hazard zone extends into all beach front properties north of Byron Street (see Figures 2-2 and 2-3). However, within the planning period for this interim policy, the 50 year erosion limits are unlikely to be reached. Consideration needs to be given to any direct threat which may occur during this interim period as well as the implications for future longer term situations. On the basis of information from the Coastline Hazard Definition Study (WBM Oceanics Australia, 2003), the erosion threat for a (say) 10 year interim planning period relates to:

- The immediate short term erosion as designated by the immediate hazard line; plus
- An upper limit of long term recession of 7m (10 years at 0.7m/yr); plus

- An allowance of 2m for climate change (sea level rise effects over 10 years); and
- An allowance for a zone of reduced bearing capacity that will exist landward of the erosion scarp. Based on typical figures presented in Table 7-1 of the Coastline Hazard Definition Study, the width of this zone is unlikely to exceed 13m.

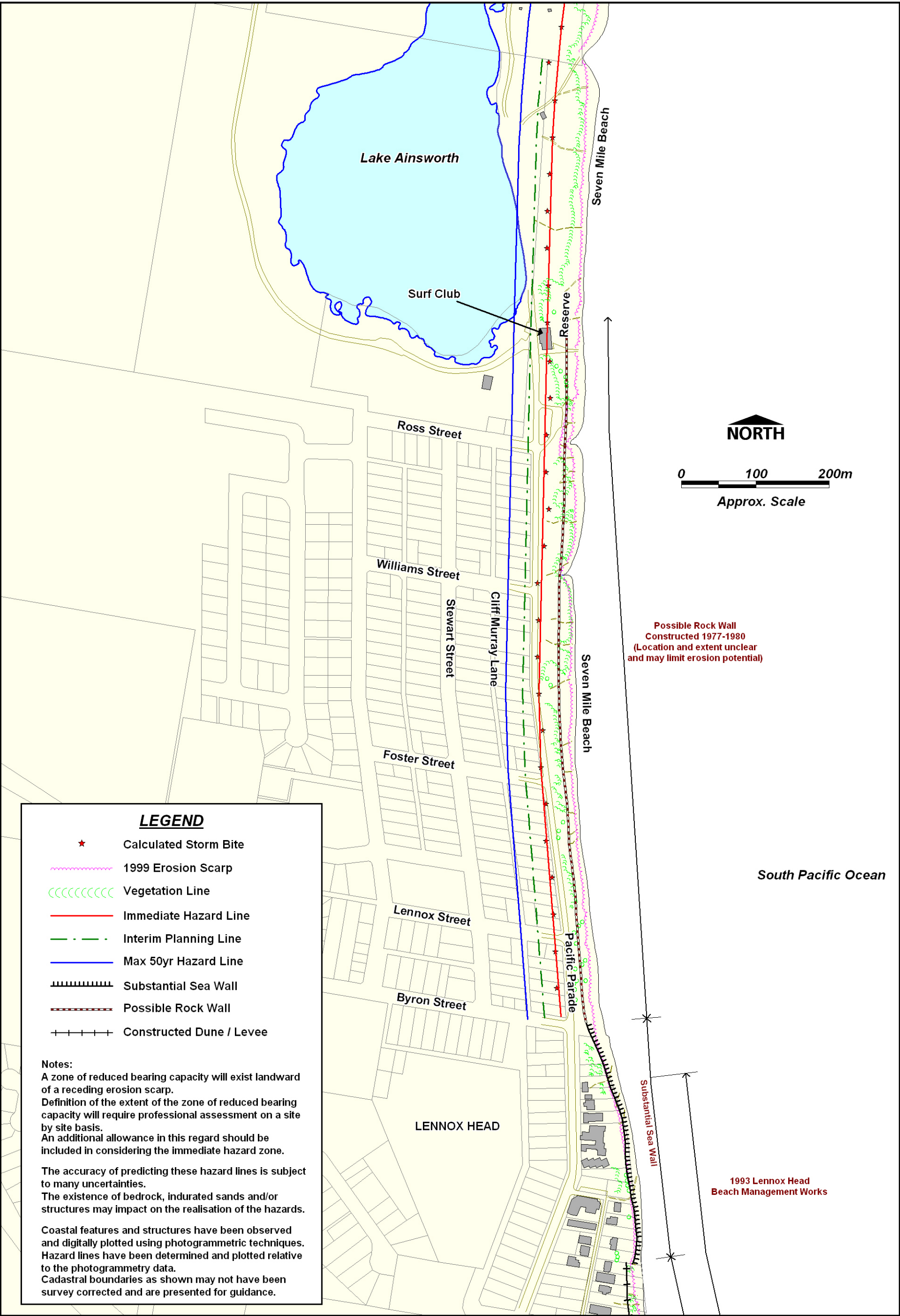
Accordingly, within a 10 year planning period, any development sited 22m or more landward of the immediate hazard line is unlikely to be threatened by the effects of coastal erosion. This distance will vary with the planning period and be larger for longer planning periods. An interim planning line landward of which development is unlikely to be threatened could therefore be established with the distance depending on the planning period.

For this interim policy, the abovementioned 10 year period and associated interim planning line distance of 22m landward of the immediate hazard line are considered to be appropriate (see Figure 5-1). Should Council consider that a longer time frame is required for the determination and implementation of final Coastline Management Plan strategies, a larger distance will be required. The assessment of the erosion hazard, interim planning line distance and consequences for the interim policy as set out below should be reviewed following any severe storm or in the event of new information coming to hand.

Table 5-3 provides a development analysis for the 50 year hazard zone, while Table 5-4 sets out and assesses various development control options.

Table 5-3 Development Analysis (50 Year Hazard Zone)

Hazards (Present)	Existing development / assets / ownership	Potential future development trend (given current planning regime)	Threats (Present)
<ul style="list-style-type: none"> ▪ Storm erosion and failure of old seawall. ▪ Wave runup/overtopping of dune/wall. 	<ul style="list-style-type: none"> ▪ Public foreshore reserves (to north) and road reserves. ▪ All private lots fronting Pacific Parade and the majority of those with western frontage to Cliff Murray Lane (about 46 lots). ▪ Eastern edge of Lake Ainsworth Caravan Park. ▪ Lake Ainsworth. 	<ul style="list-style-type: none"> ▪ Redevelopment of older housing stock and vacant land into large dwelling, duplex or triplex development with dual access from roads and laneways. ▪ Renovation of existing buildings. 	<ul style="list-style-type: none"> ▪ Post storm slumping of foreshore land, Pacific Parade and private properties within the zone of reduced bearing capacity ▪ Limited overwash and inundation of low floors



Lennox Head Central - Interim Planning Line

Figure 5-1

Table 5-4 Potential Development Control Options and Implications (50 Year Hazard Zone)

Option No.	Option Controls	Positives	Negatives	General Implications
1.	<ul style="list-style-type: none"> No development, minor improvements, renovations or maintenance are permitted on any land. 	<ul style="list-style-type: none"> Does not compromise future management options. Does not increase the value of assets that may be threatened (except that threats may increase post storm event without public works repair). 	<ul style="list-style-type: none"> Does not enable routine maintenance of roads or services. Does not enable repair of public works. Potential limitations on access to private property and beach foreshore. Potential degradation of built environment in a prominent location. Threat to private properties may increase if public works are not reinstated. Potential downward pressure on property prices. Potential social and economic hardship for private property owners <i>(Note: this impact is not felt significantly for land within the immediate hazard zone due to limited extent of private land affected).</i> 	<p>This option would have significant socio-economic impacts upon private landowners.</p> <p>Given that the most likely long term management strategy is to involve protection, this option may be unduly conservative.</p>
2.	<ul style="list-style-type: none"> No development, minor improvement or renovations are permitted on private land. No development on public land (other than outlined below). Minor community facility improvements and renovations permitted on public land, as long as they are able to be 	<ul style="list-style-type: none"> Does not compromise future management options. Does not increase the value of assets that may be threatened. Enables maintenance and repair of public works. Retains access to private properties and the beach foreshore. Enables the existing built environment to be maintained in a prominent location. 	<ul style="list-style-type: none"> Potential degradation of existing private built environment in prominent location. Potential downward pressure on property prices. Potential social and economic hardship for private property owners. 	<p>This option would have significant socio-economic impacts upon private landowners as redevelopment of land is likely to form a major share of property improvements within the affected area.</p> <p>Further, there is likely to be a significant demand for renovation and maintenance of much of the housing stock within the interim period.</p> <p>Given that the most likely long term management strategy is to involve protection, this option may be unduly conservative.</p>

Option No.	Option Controls	Positives	Negatives	General Implications
	<p>removed if threatened.</p> <ul style="list-style-type: none"> Routine infrastructure maintenance and repair works post storm are permitted on public land. Maintenance is permitted on all land. 			
3.	<ul style="list-style-type: none"> As for Option 2 except that minor improvements and renovation are permitted on all land. 	<ul style="list-style-type: none"> Enables the existing built environment to be maintained and improved in a prominent location without a substantial increase in the value of existing private assets. Enables maintenance and repair of public works. Retains access to private properties and the beach. 	<ul style="list-style-type: none"> May compromise future management options (if planned retreat is adopted) by increasing the value of assets. Potential downward pressure on property prices. Potential social and economic hardship for private property owners (as redevelopment is not permitted). 	<p>This option would have significant socio-economic impacts upon private landowners redevelopment as of land is likely to form a major share of property improvements within the affected area.</p> <p>Given that the most likely long term management strategy is to involve protection, this option may be unduly conservative.</p> <p>Council should consider seeking an indemnity in relation to damages from coastal hazards with respect to minor improvements and renovations which do not require specific mitigation measures.</p>
4.	<ul style="list-style-type: none"> Development is permitted on land which is landward of an adopted interim planning line (22m landward of the designated immediate hazard line based on a 10 year planning period – see Figure 5-1). Development is permitted on all other land, subject to design by an appropriately qualified engineer to accommodate erosion and inundation potential. 	<ul style="list-style-type: none"> Allows for an informed risk-based assessment for development based on an adopted planning period. Enables the built environment to be maintained and renewed in a prominent location. Enables the pressure for redevelopment of sites to be met. Enables maintenance and repair of public works. Retains access to private properties and the foreshore. 	<ul style="list-style-type: none"> May compromise future management options by increasing the scale, extent and value of assets (i.e. place more pressure on adopting a protection strategy and make planned retreat more difficult subject to who accepts liability for the increased value). May substantially increase the value of assets that may be threatened within the 50 year period if protection strategies are not implemented. Increases the cost of development (although the proportion unlikely to be high for redevelopment). 	<p>This option allows for likely future development trends to continue and thus does not result in the socio-economic impacts that the more conservative approaches would result in.</p> <p>The option is consistent with the most likely future management option (i.e. protection). However, increasing the value of assets seaward of the 50 year erosion line does increase the pressure to ensure that protection measures are undertaken in a timely manner and may compromise planned retreat as a future coastline management option.</p> <p>It enables implementation of an assessment of risk based on the likely storm erosion scarp, zone of reduced bearing capacity and long term</p>

Option No.	Option Controls	Positives	Negatives	General Implications
	<p>Foundations must address the effect of the zone of reduced bearing capacity and minimum floor levels may apply where there is the threat of inundation (refer Appendix B for criteria).</p> <ul style="list-style-type: none"> Minor improvements and renovation are permitted on all land. Maintenance is permitted on all land. 		high for redevelopment).	<p>zone of reduced bearing capacity and long term erosion potential for an adopted planning period.</p> <p>The major risk of this option is that if protection works are delayed beyond the adopted planning period, assets constructed without measures to minimise damage from coastal erosion may be threatened.</p> <p>Council should consider seeking an indemnity in relation to damages from coastal hazards, particularly with respect to minor improvements and renovations which do not require specific mitigation measures as well as development which may be threatened/damaged if implementation of long term protection is delayed beyond the adopted interim planning period.</p> <p>Council could consider measures to limit liability for increased acquisition costs and thereby not compromise planned retreat as a future coastline management option.</p>
5.	<ul style="list-style-type: none"> No development controls. 	<ul style="list-style-type: none"> Enables the pressure for redevelopment of sites to be met. 	<ul style="list-style-type: none"> Would compromise future management options (if planned retreat is preferred). Not in the public interest. Ignores known threats. Potential adverse amenity and environmental impacts. Substantially increases the value of assets that may be threatened in the 50 year period. 	<p>The major risk of this option is that new development or major investment is permitted without measures to ensure protection of the asset in the interim period. Likewise, if protection works are delayed, new investment may be damaged.</p> <p>This option ignores known threats and may have significant legal and financial implications for Council.</p>

Discussion and Recommendation

Options 1 to 3 do not allow any major development during the interim period and are inconsistent with the recent State Government development consent for a motel in this area. They also introduce potential social and economic hardship for landowners by not permitting development. However, they do not significantly compromise future coastline management options and are viable options which Council could consider.

Option 5 does not include any development controls and is considered to be not appropriate.

Option 4 allows development subject to conditions which minimise the potential damage from coastal processes such as erosion and inundation seaward of an interim planning line based on an adopted (say 10 year) planning period. Development is permitted landward of this interim planning line. This option is consistent with the most likely future management option (i.e. protection in some form) but may compromise planned retreat as a potential option. It also minimises potential social and economic hardship by permitting development.

On balance, Policy Option 4 is recommended as the preferred approach. It allows development on private land to occur subject to conditions as discussed above which is also consistent with the recent DIPNR motel consent.

However, Option 4 may compromise future coastline management strategies by increasing the value of assets and thereby acquisition costs for a future planned retreat option. Such costs and the associated implications for planned retreat could be minimised with measures which limit future liability and it is therefore recommended that Council give consideration to such measures.

While Option 4 includes conditions to minimise the potential damage to development from coastal processes, there is still a risk that such damage could occur. Furthermore, no such controls are required or are practical for minor improvements and renovations which could be at risk from damage. Development landward of the adopted interim planning line may also be at risk if protection strategies are delayed beyond the adopted planning period. It is therefore recommended that Council give consideration to seeking an indemnity in relation to any damage suffered as a result of coastal hazards.

The coastal hazards and associated risks to development including the adopted setback line in Option 4 should be reviewed following any major storm and/or as any new information comes to hand.

5.5.2.3 Land between the Maximum 50 year Hazard Line and the Maximum 100 year Hazard Line

No new development controls are recommended for this land as assets are unlikely to be threatened in the interim period and new development will not significantly compromise the coastline management planning process.

5.5.3 Lennox Head – Northern Section

This area covers the Lake Ainsworth Sport and Recreation Centre.

The Hazard Definition Study has identified that the Lake Ainsworth Sport and Recreation Centre is under threat from coastal hazards in the absence of protective seawalls. Existing protection measures provided for the site include a 370 metre length of buried seawall, of which a 75 metre section was upgraded in 1998 as a condition of consent for development on the site. The development consent also requires the upgrading of the remainder of the seawall to provide protection to the site. However, the remainder of the upgrade has yet to take place.

5.5.3.1 Existing seawall upgraded

If during the interim period the existing seawall is upgraded to comply with outstanding conditions of consent, then the site will benefit from protection against coastal hazards. Under this scenario, it would be appropriate for development to be permitted landward of the upgraded protection works subject to a site specific risk-based assessment by a coastal engineer and the incorporation of recommended design measures into the development to mitigate against any coastal hazards that may still threaten the site.

5.5.3.2 Existing seawall not upgraded

If during the interim period the existing seawall is not upgraded, then no new development should be permitted seaward of the Maximum 50 year Hazard Line. Maintenance of existing buildings seaward of the 50 year Hazard Line would be permitted.

This approach ensures that future management options are not compromised by the placement of additional assets within the hazard zone. The approach is imperative on this site given that the site is less developed and is more likely to be scrutinised for the full range of management options, from protection works to planned retreat.

5.5.4 Ballina Pocket Beaches

These beaches have exhibited relative stability in recent decades. The coastal hazards affecting the beaches are unlikely to generate significant threats given predominant public ownership of the land, existing planning controls, and no existing or potential development (other than an isolated property north of Skennars Head).

Recommendation

That existing planning controls continue to apply.

5.5.5 South Ballina

There has been an observed rate of long term accretion at South Ballina likely to be due to groyne effects and dune rehabilitation. However it is uncertain that this process will continue. The coastal hazards affecting South Ballina are unlikely to generate any threats given the predominant public ownership of the land, existing planning controls, and no existing or potential development.

Recommendation

That existing planning controls continue to apply.

5.5.6 Patches Beach

Storm bite and shoreline retreat are the primary hazards, although there is no existing development seaward of the Maximum 50 Year Hazard Line and no significant private land, seaward of the Maximum 50 Year Hazard Line.

Recommendation

That existing planning controls continue to apply and that no development be permitted seaward of the Maximum 50 Year Hazard Line.

5.6 Recommended Policy

Apart from the Lennox Head Central Section (between Byron Street and the southern boundary of the Lake Ainsworth Sport and Recreation Centre), existing planning controls and development consents should be adequate for the interim period. It is recommended that Council prepare an interim Development Control Policy or Plan for the Lennox Head Central Section with key components as follows:

- no development on public land within the immediate hazard zone apart from minor community facilities, improvements and renovations as long as they are able to be removed or sacrificed if threatened;
- development is permitted on private land within the immediate hazard zone between Byron and Foster Streets subject to design by an appropriately qualified engineer to accommodate future short term storm erosion and the zone of reduced bearing capacity landward of the resultant erosion scarp;
- development is permitted on all land in the 50 year hazard zone (landward of the immediate hazard zone) with that development seaward of an adopted interim planning line being subject to design by an appropriately qualified engineer to accommodate short term erosion and future long term erosion including sea level rise over a specified (10 year) planning period as well as the zone of reduced bearing capacity landward of the resultant scarp;
- minimum floor levels to apply where there is a threat of inundation.

Council should also give consideration to including provisions which:

- seek an indemnity in relation to any damage suffered as a result of coastal hazards; and
- limit future liability for the increased value of approved developments and the associated cost of acquisition if planned retreat is adopted as a future coastline management option.

Where development is permitted subject to design by an appropriately qualified engineer to accommodate erosion and inundation potential, the specified design criteria in this regard are set out in Appendix B. Foundations must address the effect of the zone of reduced bearing capacity and minimum floor levels may apply where there is the threat of inundation. Plans are to be submitted illustrating reduced levels to AHD.

The areas where such conditions apply have been based on available information from the Coastline Hazard Definition Study (WBM Oceanics Australia, 2003) and an adopted interim planning period of