



Draft  
State Planning Policy 2.6  
**State Coastal Planning Policy**

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*Planning and Development Act 2005* by the  
Western Australian Planning Commission



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## 1. Citation

This is a State Planning Policy made under Part 3 of the *Planning and Development Act 2005*. This Policy may be cited as State Planning Policy No. 2.6 State Coastal Planning Policy.

## 2. Introduction and background

### 2.1 The Western Australian coast

The Western Australian coast is a significant asset of the state in terms of its environmental, economic, social and cultural resources.

The Western Australian coast varies in character and patterns of use and includes:

- urban coasts – where the adjacent uses are predominantly residential and commercial and there is a high demand for recreational activity;
- natural coasts – with less intensive hinterland uses and concentrations of tourism and associated recreational and cultural activities; and
- remote coasts – with limited opportunity for low key tourism and associated recreational and cultural activities.

There are pressures on the coast for use by different groups in the community for a variety of purposes including a mix of recreational, residential, industrial and commercial uses. Planning for coastal land is about balancing these often competing needs and desires in a way that takes into account the values of the coast, which include its scenic, aesthetic and ecological qualities; recreational opportunities; and social, indigenous, cultural and economic importance. The overall effect of these values contributes to the psychological wellbeing and health of the Western Australian community. The presence of coastal hazards is also an important consideration.

There is also growing pressure on coastal resources as the state's population increases, coastal-based industries expand and technological changes make remote areas more accessible. Successful coastal planning today will ensure that current and future generations of Western Australians can benefit from the opportunities presented by the values and resources of the Western Australian coast.

### 2.2 The policy context

Section 77 of the *Planning and Development Act 2005* requires local governments, when preparing or amending a local planning scheme, to have due regard to this State Coastal Planning Policy where it affects its district. The local governments may decide to make a new or amended scheme consistent with particular aspects of this State Coastal Planning Policy, or include in a new or amended scheme a provision that this State Coastal Planning Policy is to be read as part of the scheme.

The *State Planning Strategy* provides a strategic basis for coordinating and promoting land use, transport and land development in a sustainable manner throughout Western Australia. The Strategy sets out the guidance for achieving the state goals of generating wealth and prosperity; preserving and enhancing the environment; and building vibrant and safe communities for enjoyment of current and subsequent generations of Western Australians.

*State Planning Policy No. 1 State Planning Framework Policy (SPP1)* brings together existing state and regional policies and plans that apply to land use and development in Western Australia, into a State Planning Framework. SPP1 identifies the policies, plans, strategies and guidelines as well as regional strategies, regional and sub-regional structure plans, strategic policies and operation policies and guidelines prepared from time to time and used by the Western Australian Planning Commission (WAPC) and the Department of Planning in making decisions.

*State Planning Policy No. 2: Environment and Natural Resources Policy (SPP2)* sets out the broad environment and resource management policies for sustainable development.

Under SPP2 planning strategies, schemes and decision-making will identify and, where appropriate, include provisions for the sustainable use of the coast.

This State Coastal Planning Policy is consistent with and complementary to the State Planning Strategy, SPP1 and SPP2 and should be read and applied within the context provided by these policies.

### **2.3 Relationship to other WAPC policies and guidelines**

SPP2.6 applies state-wide and draws on and is supported by other WAPC state planning policies, development control policies and guidelines relevant to the coast. Application of these other policies and guidelines is to be made in view of this policy, including but not limited to:

#### **State planning policies**

- *1 State Planning Framework Policy*
- *2 Environment and Natural Resources Policy*
- *2.9 Water Resources*
- *3 Urban Growth and Settlement*
- *3.4 Natural Hazards and Disasters*
- *3.6 Development Contributions and Infrastructure*
- *6.1 Leeuwin-Naturaliste Ridge Policy*
- *6.3 Ningaloo Coast.*

#### **Development control policies**

- *1.1 Subdivision of Land - General Principles,*
- *1.2 Development Control - General Principles,*
- *1.8 Canal Estates and other Artificial Waterway Developments,*
- *2.3 Public Open Space in Residential Areas and*
- *4.2 Planning for Hazards and Safety.*

#### **Coastal planning guidelines**

For coastal matters this State Planning Policy No. 2.6 State Coastal Planning Policy is to be viewed as the higher order and prevailing policy.

## 2.4 The policy purpose

The purpose of this Policy is to provide guidance for decision-making within the coastal zone including establishment of foreshore reserves; managing development and land use change; and to protect, conserve and enhance coastal values. This policy recognises and responds to regional diversity in coastal types; ensures coastal hazard risk management and adaptation is appropriately planned for; and encourages innovative approaches to managing coastal hazard risk.

The Policy is to inform and guide decision-making by the WAPC and its Committees, and in integrating and coordinating the activities of state agencies that influence the use and development of land on the coast. The Policy will also guide local governments, state government agencies, the State Administrative Tribunal and the State Government of those aspects of state planning policy concerning the protection of the coast that should be taken into account in planning decision-making.

There are many agencies with statutory responsibilities along the Western Australian coast. While recognising these responsibilities, this Policy provides a framework for coordinating those agency's activities with those of the private sector to ensure an integrated approach for coastal planning. The Policy also provides guidance for private landowners wishing to undertake development on or abutting the coast.

This Policy also provides guidance for situations where planning decisions occur outside the framework of the *Planning & Development Act 2005*, such as for unvested Crown land, pastoral lease, indigenous and conservation estate land.

## 3. Application of the policy

This Policy applies to the coast throughout Western Australia, including:

- sandy shorelines, rocky shorelines, mixed sandy and rocky shorelines, coastal lowlands, and tidal reaches of inland waters;
- near shore marine waters, state waters;
- all islands within the state lying seawards of the mainland; and
- land use and development abutting the coast.

The application of this Policy should be read in conjunction with policy of other relevant decision-making and management authorities.

## **4. Policy objectives**

The objectives of this Policy are to:

1. ensure that the location of coastal facilities and development takes into account coastal processes, landform stability, coastal hazards, climate change and biophysical criteria;
2. ensure the identification of appropriate areas for the sustainable use of the coast for housing, tourism, recreation, ocean access, maritime industry, commercial and other activities;
3. provide for public coastal foreshore reserves and access to them on the coast; and
4. protect, conserve and enhance coastal values, particularly in areas of landscape, nature conservation, indigenous and cultural significance.

## **5. Policy measures**

### **5.1 General measures**

- (i) Local and regional planning strategies, structure plans, schemes, subdivisions, strata subdivision and development applications, as well as other planning decisions and instruments relating to the coast should comply with the policy measures.
- (ii) The policy measures where relevant should be read in conjunction with Schedule One and the Coastal Planning Guidelines prepared and endorsed under this policy.

### **5.2 Development and settlement**

- (i) Encourage urban development to be concentrated in and around existing settlements, particularly those with established infrastructure and services. Continuous linear urban development along the coast should be discouraged or, where it has occurred, carefully controlled. Proposed major urban development outside existing settlements will only be supported where a genuine community need has been demonstrated and the environmental capability has been properly assessed.
- (ii) Ensure that when selecting a development location, regard is given to infrastructure capacity and where possible, existing infrastructure be upgraded and improved.
- (iii) Ensure that when identifying areas suitable for development, consideration is given to strategic sites for coastal access and commercial development that is demonstrably dependent on a foreshore location including ports, boat harbours and regional boat ramps.
- (iv) Ensure that use of the coast, including the marine environment, for recreation, conservation, tourism, commerce, industry, housing, ocean access and other appropriate activities, is sustainable and located in suitable areas.
- (v) Ensure that land use and development, including roads, adjacent to the coast is sited and designed to complement and enhance the coastal environment in terms of its visual, amenity, social and ecological values.
- (vi) Avoid significant and permanent negative impacts on the environment, either on or off site.

### 5.3 Water resources and management

- (i) Coastal development should manage water resources in accordance with the principles of water sensitive urban design and integrated water cycle management. This includes treating all urban water flows as potential resources, and giving consideration to all water users, including the community, industry and the environment.
- (ii) Development on or near the coast should maintain or restore pre-existing or desirable environmental flows and hydrological cycles within foreshore reserves. Development on or near the coast should not discharge any waste or stormwater that could significantly degrade the coastal environment, including the coastal foreshore reserve, coastal waters and marine ecosystems.
- (iii) Stormwater flows from development areas that comply with the Stormwater Management Manual for Western Australia may be incorporated into foreshore reserves. Permitted stormwater management measures within foreshore reserves are detention/infiltration areas and overland flow paths onto the beach for major flow events, subject to minimal landform modification within the dune system.
- (iv) There is a general presumption against the use of coastal foreshore reserves for the management of wastewater or to accommodate any portion of infrastructure or site works used for wastewater management.

### 5.4 Building height limits

- (i) Careful consideration should be given to building heights.
- (ii) The provisions of this part of the policy apply to all development within 300 metres of the horizontal shoreline datum, but do not apply to industrial or resource development, transport, telecommunications and engineering infrastructure, and Port Works and Facilities (as defined by the *Port Authorities Act 1999*).
- (iii) Building heights on the coast should have regard to the following development criteria:
  - (a) development is consistent with the overall visual theme identified as part of land use planning for a locality or in an appropriate planning control instrument such as a local planning strategy;
  - (b) development takes into account the built form, topography and landscape character of the surrounding area;
  - (c) the location is part of an identified activity node;
  - (d) the amenity of the coastal foreshore is not detrimentally affected by any significant overshadowing of the foreshore; and
  - (e) there is visual permeability of the foreshore and ocean from nearby residential areas, roads and public spaces.
- (iv) Maximum height limits may be specified as part of controls outlined in a regional planning scheme or local planning scheme, in order to achieve outcomes which respond to the desired character, built form and amenity of the locality.

## 5.5 Coastal hazard risk management and adaptation planning

- (i) Adequate coastal hazard risk management and adaptation planning should be undertaken by the responsible management authority and/or proponent where existing or proposed development is in an area at risk of being affected by coastal hazards over the planning timeframe. Coastal hazard risk management and adaptation planning should include as a minimum, a process that establishes the context, vulnerability assessment, risk identification, analysis, evaluation, adaptation, funding arrangements, maintenance, monitoring and review.
- (ii) Where a coastal hazard risk is identified it should be disclosed to those likely to be affected. On consideration of approval for development lot owners should be made aware of the coastal hazard risk by providing the following notification on the certificate on title: **VULNERABLE COASTAL AREA – This lot is located in a area likely to be subject to coastal erosion and/or inundation over the next 100 years.**
- (iii) Where risk assessments identify a level of risk that is unacceptable to the affected community or proposed development, adaptation measures need to be prepared to reduce those risks down to acceptable or tolerable levels. Adaptation measures should be sought from the following coastal hazard risk management and adaptation planning hierarchy on a sequential and preferential basis:
  - (1) **Avoid** the presence of new development within an area identified to be affected by coastal hazards. Determination of the likely consequences of coastal hazards should be done in consideration of local conditions and in accordance with the guidelines provided in Schedule One.
  - (2) **Planned or Managed Retreat** or the relocation or removal of assets within an area identified as likely to be subject to intolerable risk of damage from coastal hazards over the planning time frame.
  - (3) If sufficient justification can be provided for not avoiding development of land that is at risk from coastal hazards then **Accommodation** adaptation measures should be provided that suitably address the identified risks. Such measures would involve design and/or management strategies that render the risks from the identified coastal hazards acceptable.
  - (4) Where sufficient justification can be provided for not avoiding the use or development of land that is at risk from coastal hazards and accommodation measures alone cannot adequately address the risks from coastal hazards, then coastal **Protection** works may be proposed for areas where there is a need to preserve the foreshore reserve, public access and public safety, property and infrastructure that is not expendable.
- (iv) Where new information or methods become available that significantly modify the understanding of the coastal hazards then all areas within the newly defined risk areas should be reviewed again through the coastal hazard risk management and adaptation planning hierarchy above, as part of the ongoing monitoring and review process.

## 5.6 Infill development

- (i) Where development is likely to be subject to coastal hazards over the planning timeframe, coastal hazard risk management and adaptation planning measures (Section 5.5) should be implemented to reduce the risk from coastal hazards over the full planning time frame to an acceptable level.

## 5.7 Coastal protection works

- (i) There is a general presumption against new coastal protection works, except where such works are considered only after all other options for avoiding and adapting to coastal hazards have been fully explored, as part of a comprehensive coastal hazard risk management process.
- (ii) Existing coastal protection works that require significant upgrade or maintenance over the planning timeframe should be considered as new coastal protection works, including consideration of the most appropriate form.
- (iii) Coastal protection works should only be supported:
  - (a) where it is demonstrated there are no significant negative impacts on the adjacent environment within the sediment cell; and
  - (b) in conjunction with appropriate funding arrangements for the construction and ongoing care, control and maintenance being put in place.
- (iv) Coastal protection works, where necessary and justified should be:
  - (a) adequately considered and planned as part of making decisions about land use, subdivision and development within the coastal zone;
  - (b) primarily proposed in the public interest to ensure they maintain a coastal foreshore reserve, public access, public amenity and public safety as well as to protect high value property and infrastructure that is not expendable; and
  - (c) evaluated at a sediment cell level and take into consideration the future protection requirements of adjoining development.

## 5.8 Public interest

- (i) Ensure that adequate opportunity is provided to enable the community to participate in coastal planning and management, including the support and guidance of activities undertaken by voluntary coast care groups.
- (ii) Community consultation and engagement strategies should be developed to encourage informed community input into decision-making processes. Communities should have sufficient information to understand the risks to their communities arising from likely influence on coastal processes and coastal hazards. Consultation and participation should raise community awareness, understanding and education of risks and appropriate responses associated with their region(s).
- (iii) The provision of public access to the coast that is consistent with the values and management objectives of the area including, the interests of security, safety and protection of coastal resources as well as the recreational opportunities, both on and offshore, of that section of coast.

- (vi) Support public ownership of the coast, including where appropriate the provision of a coastal foreshore reserve and accommodation of regional and local recreational needs.
- (v) Support the removal of existing unlawful dwellings (squatter shacks) on coastal Crown land as per the State Government Squatter Policy (July 1989 and January 1999).

## 5.9 Coastal foreshore reserve

- (i) Coastal foreshore reserves are required to accommodate a range of functions and values. While local and site specific considerations will vary, the delineation of a coastal foreshore reserve will include the consideration of, and protection for, significant natural features such as coastal habitats and, for their biodiversity, archaeological, ethnographic, geological, geo-morphological, visual or wilderness, ecological, heritage, landscape, seascape, and visual landscape values; likely impacts of coastal hazards; and opportunities for public access, public recreation needs and safety to lives and property. Schedule One provides guidance on how to estimate the potential impacts of coastal hazards, however, this is only one input into the determination of a coastal foreshore reserve, which will be required to demonstrate that the values, functions and uses prescribed are available at the end of the planning timeframe.
- (ii) The required coastal foreshore reserve will vary according to the circumstances of any particular proposal. Each proposal must be assessed on its merits having regard to this policy, including the principles and guidelines of Schedule One and the Coastal Planning Policy Guidelines.
- (iii) Ensure that the identification of land to be set aside for public ownership for management, public access, recreation, and conservation is undertaken during the planning process. Generally this land should be given up free of cost at the time of development, subdivision or strata subdivision, over and above the required provision of public open space.
- (iv) Support vesting of the coastal foreshore reserve in the relevant local government for the purposes of coastal foreshore management, public access, recreation and conservation. Where the land has significant conservation value, vesting should generally be with the state body responsible for the conservation estate. Opportunities to improve and protect the conservation values of freehold land should also be pursued.
- (v) Ensure that the coastal foreshore reserve is separated from adjacent development in a way that provides a clear demarcation between public and private land.

## 5.10 Coastal strategies and management plans

- (i) Ensure that at rezoning, structure planning, subdivision, strata subdivision or development – whichever arises first and is appropriate in scale, a coastal planning strategy or coastal foreshore management plan is prepared and implemented, by the local government and/or proponent, for the coastal foreshore reserve and any abutting freehold land with conservation values of the subject land.

- (ii) Ensure that any structure plan, zoning, subdivision, strata subdivision or development proposal for public purposes, residential, industrial, commercial, tourist, special rural and similar uses on the coast is only approved based upon or in conjunction with a current detailed coastal planning strategy or foreshore management plan (whichever is appropriate for the stage and scale of development).
- (iii) Ensure that the coastal planning strategy or foreshore management plan is developed in consultation with the broad community and relevant public authorities, and achieve the approval of the local land manager and the WAPC if appropriate.
- (iv) A coastal planning strategy or foreshore management plan should address as a minimum, the matters set out in the Coastal Planning Policy Guidelines.

### **5.11 Precautionary principle**

- (i) Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation.
- (ii) The onus is on any proponent to show that development does not pose any likelihood of serious or irreversible harm to the environment.
- (iii) If the proponent cannot demonstrate there is not a likelihood of such harm, the onus is on the development proponent to show that the harm can be managed.

## **6. Implementation**

Implementation of this Policy will be through related state planning policies, regional strategies, local planning strategies and regional and local planning schemes. Implementation will also occur through the day to day process of decision-making on zoning, structure plans, subdivision, strata subdivision and development applications, and the actions of other state agencies in carrying out their responsibilities. New or amended region or local planning schemes should be consistent with the objectives, policy and guidelines contained in this Policy. Local governments and state agencies should take account of this Policy to ensure integrated decision-making.

Given the variation of coastal environments in the state and the range of development and use contexts that can be presented, it is important that this Policy, together with the Schedule One and Coastal Planning Policy Guidelines, be applied to each case under consideration on its merits using the best available information, common sense and a precautionary approach.

The Policy will be monitored on an ongoing basis and reviewed as required or at least within five years of its adoption.

## 7. Definitions

In this Policy, unless the context otherwise requires:

**‘accretion’** refers to shoreline movement where the shoreline shifts seaward increasing the width of a coastal foreshore reserve and or the distance to a fixed feature on the adjoining land.

**‘acceptable’** means the risks that do not need further treatment at this stage. The expression acceptable level of risk refers to the level at which it is decided that further restricting or otherwise altering the activity is not worthwhile. eg. additional effort will not result in significant reductions in risk levels.

**‘adaptation’** means an adjustment in natural or human systems in response to actual or expected stimuli or their effects, which moderates harm or exploits beneficial opportunities. Adaptation is the primary means for maximising the gains and minimising the losses associated with climate change.

**‘coastal compartment’** means length of shoreline bounded by broad scale changes in geology, geomorphic structures/landforms or changes in the aspect of the shore.

**‘coastal foreshore reserve’** is the area of land on the coast set aside in public ownership to allow for likely impacts of coastal hazards and provide protection of public access, recreation and safety, ecological values, landscape, visual landscape, indigenous and cultural heritage.

**‘coastal or foreshore management plan’** is a local scale plan, designating areas for various purposes such as public access, car parks, toilets and surf life saving club rooms, and providing advice on management needs. Foreshore management plans tend to deal with a smaller area, be more detailed and are prepared as part of a planning approval process or ongoing maintenance or upgrading program.

**‘coastal hazard’** means the consequence of coastal processes that affect the environment and safety of people. Potential coastal hazards include erosion, accretion and inundation.

**‘coastal planning strategy’** is generally a district or subregion scale plan focusing on the coast designating areas suitable for conservation, recreation and development purposes. It should include a strategic land use and access strategy and determination of an appropriate foreshore reserve.

**‘coastal processes’** means any action of natural forces on the coastal environment.

**‘coastal protection works’** means any permanent or periodic work undertaken primarily to alter physical coastal processes and/or manage the effects of coastal hazards. The influence of coastal protection works should be evaluated at the sediment cell level.

**‘consequence’** means the outcome or impact of an event. Consequence is expressed qualitatively or quantitatively – a loss, injury, expressed concern, disadvantage or gain. Consequence can be more than one consequence from one event, range from positive to negative and is generally considered in relation to achievement of objectives.

**‘cross-shore’** means perpendicular to the shoreline.

**‘development node’** is a distinct and discrete built area that may be located within a coastal foreshore reserve. Excluding permanent residential development, it may vary in size from a grouping of recreational facilities to an area of commercial and short stay accommodation within an urban locality.

**'environment'** means conditions or influences comprising built, physical and social elements, which surround or interact with the community (including the natural conditions, the natural as modified by human activity and the artificial).

**'erosion'** refers to shoreline movement where the shoreline shifts landward reducing the width of a coastal foreshore reserve and/or the distance to a fixed feature on the adjoining land.

**'event'** means any occurrence of a particular set of circumstances that can have an adverse impact(s) on the environment. The event can be certain or uncertain, and be a one-off occurrence or a series of occurrences of a particular set of circumstances.

**'height'** has the same meaning as in the Town Planning Regulations 1967, Appendix B–Model Scheme Text.

**'horizontal shoreline datum (HSD)'** defines the active limit of the shoreline under storm activity. It is the line from which a physical processes allowance will be applied from.

**'infill development'** refers to sites between existing developments.

**'intolerable'** means risk that is unacceptable in any circumstances or at any level.

**'inundation'** means the flow of water onto previously dry land. It may either be permanent (for example due to sea level rise) or a temporary occurrence during a storm event.

**'likelihood'** means the probability that something will occur. Likelihood is generally expressed qualitatively or quantitatively.

**'longshore'** means parallel to the shoreline.

**'peak steady water level (PSWL)'** means the highest average elevation of the sea surface caused by the combined effect of storm surge, tide and wave setup resulting from the storm events defined in Schedule One section 5.

**'precautionary principle'** means where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, decisions should be guided by:

- (i) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and
- (ii) an assessment of the risk-weighted consequences of various options.

**'risk'** is specified in terms of an event or circumstances and the consequence that may flow from it. Risk is measured in terms of a combination of the likelihood of an event occurring and the consequence of that event occurring.

**'risk assessment'** means the overall process or method for evaluating risks associated with a specific coastal hazard and includes risk identification, risk analysis and risk evaluation.

**'risk management'** means the measures taken to reduce, modify, offset or share risks associated with development in areas subject to coastal hazards. These include the coordinated activities to direct and control an organisation with regard to risk; and the culture, processes and structures that are directed towards realising potential opportunities whilst managing adverse effects.

**‘sediment cell’** means a length of shoreline in which interruptions to the movement of sediment along the beaches or near shore sea bed do not significantly affect beaches in the adjacent lengths of coastline. Within a sediment cell the sediments sources, transport pathways and sinks should be clearly definable.

**‘storm surge’** means the increase in water level at the shoreline due to the forcing of winds (wind-setup) and atmospheric pressure.

**‘tidal reaches of inland waters’** has the meaning in Schedule One section 3.5.

**‘tolerable’** means the willingness to live with a risk to secure benefits, on the understanding that it is being properly controlled. ‘Tolerability’ does not mean ‘acceptability’. Tolerating a risk does not mean that it is regarded as negligible, or something we may ignore, but rather as something that needs to be kept under review and reduced further, if and when able to be done so.

**‘updrift’** means the direction to which the predominant longshore movement of shoreline material approaches.

**‘vulnerability’** means the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity. Systems that are highly exposed, sensitive and less able to adapt are vulnerable.

**‘wave run-up’** means the rush of water up a shoreline or structure on the breaking of a wave.

**‘wave overtopping’** means water carried over the top of a structure or landform due to wave run-up or surge action exceeding the crest.

# Schedule One

## Calculation of coastal processes

### 1. Introduction

The specific objective of this Schedule is to provide guidance for calculating the component of the coastal foreshore reserve required to allow for coastal processes. **The width calculated from this Schedule does not necessarily delineate a coastal foreshore reserve width.** Factors other than coastal processes will often require additional width and should be considered on a case-by-case basis. These factors include ecological values, landscape, seascape, visual landscape, indigenous and cultural heritage, public access, recreation and safety to lives and property.

The component of the coastal foreshore reserve to allow for coastal processes should be sufficient to mitigate the impacts of coastal hazards (including erosion, accretion and inundation) by allowing for landform stability, natural variability and climate change. Notwithstanding this, where the affects of coastal processes would ordinarily preclude development, but where development is unavoidable, coastal hazard risk management and adaptation planning (Section 5.5) should be undertaken to reduce the risk from coastal hazards over the full planning timeframe, to an acceptable level.

An appropriate coastal foreshore reserve will include a component to allow for coastal processes and be of an appropriate width to ensure a coastal foreshore reserve continues to provide the values, functions and uses prescribed should the coastal processes be realised over the planning timeframe (Section 5.9 [i]).

### 2. Planning time frame

These guidelines are based on a 100-year time frame from when a subject proposal is being assessed. For erosion and accretion, consideration is given to ocean forces and coastal processes, which have a one percent or one-in-one hundred probability of being equalled or exceeded in any given year over the planning timeframe. For storm surge inundation, consideration is given to ocean forces and coastal processes that have a 0.2 percent or one-in-five hundred probability of being equalled or exceeded in any given year over the planning time frame.

### 3. Coastal classification

Calculation for coastal processes should be determined with regard to the physical and biological features of the coast. The following classification of coastal types shall be used and coasts that cannot be categorised within these types shall be considered on a case-by-case basis.

#### 3.1 Sandy coasts

Sandy coasts comprise unlithified/unconsolidated sediments, rock is either not present or not dominant. They typically feature gently to moderately sloping shores and are often backed by dunes or beach ridges, which may contain dune blowouts. The shoreline can quickly alternate between accretion and erosion but is likely to retreat as a result of sea level rise.

Examples include Swanbourne to Trigg Beach (Perth), Wylie Beach (Esperance), and 80 Mile Beach (Canning Coast).

## **3.2 Rocky coasts**

Rocky coasts comprise a continuous rocky substrate which extends to an elevation above the active limit of the shoreline. In most instances this elevation should be defined at least one metre above the HSD. Coasts with discontinuous or low elevation rock shall be classified as mixed sandy and rocky coasts. Rocky coasts shall be classed as one of the following three groups depending on their geomorphic/geological features.

### **3.2.1 Hard rock coast**

These coasts comprise hard, highly durable rock. They typically feature uniform slopes of a relatively low gradient, often with boulders at the base and are relatively free from fractures. Negligible shoreline change is expected over the planning timeframe.

Examples include the igneous/metamorphic headlands of Cape Naturaliste, Esperance, and the Dampier Archipelagos.

### **3.2.2 Soft sedimentary rock coast**

These coasts comprise relatively hard, strongly lithified, durable rock with distinct bedding layers. They typically feature high, steep cliff faces, which may be undercut. Shoreline retreat is generally slow and through rock-falls or slab collapse.

Examples include the Kalbarri cliffs, Zuytdorp Cliffs (near Shark Bay), Broome, and the Great Australia Bight.

### **3.2.3 Weakly lithified sedimentary rock coast**

These coasts comprise poorly cemented or semi-lithified, discontinuous, relatively soft or highly weathered, weak rock. They typically feature low steep cliffs which are easily undercut often forming wave cut platforms. Shoreline retreat is comparatively rapid compared to other types of rocky coasts and generally occurs by slumping, rock-falls, or slab collapse.

Examples include the coastal limestone of the Perth Region and the Cape to Cape Region.

## **3.3 Mixed sandy and rocky coasts**

Mixed sandy and rocky coasts shall be classed as one of the following three groups dependent on the location and continuity of the rock. These coasts may be sensitive to small variations in climatic conditions and often contain unstable/dynamic landforms.

### **3.3.1 Fringing reefs**

These shorelines comprise offshore or near shore rock in the form of a reef or island which results in a reduction in the wave energy reaching the shoreline. On sandy shorelines the wave sheltering often results in a bulge (salient) in the shoreline towards an offshore reef or island.

Examples include Shoalwater Bay (Perth), Lancelin, Horrocks, and Port Gregory.

### 3.3.2 Rocky platforms

These coasts comprise a continuous subtidal or intertidal rock platform overlain by unlithified/unconsolidated sediments. The rock platform is often created as the result of the historic retreat/erosion of a rocky shoreline. In many locations a sandy beach overlays the platform to form a perched beach. These are commonly backed by a remnant sand dune.

Examples include Robert Point (Mandurah), and Leighton to Mudarup Rocks (Cottesloe, Perth), Greenhead, Leeman.

### 3.3.3 Discontinuous rocky shorelines

These coasts comprise discontinuous subtidal or intertidal rock on a predominantly sandy shoreline. The subtidal rock may be present as a pavement or discontinuous outcrops of reef close to the shore.

Examples include the bay beaches Trigg Point to Sorrento (Perth), North Head to Sandy Cape (Jurien), and Drummonds Cove (Geraldton).

## 3.4 Coastal lowlands

Coastal lowlands typically feature flat to gently sloping shores often containing high percentages of finer sediments. In contrast to sandy coasts the landforms are generally the result of the historic geologic advance of a deltaic or outwash plain. The near shore environment often comprises tidal flats, salt marshes or mangroves. In many locations where there is an availability of sediments, a chenier plain or storm ridge may be present. These shorelines are strongly influenced by inundation and tidal processes.

Examples include the deltaic landforms of the Ashburton River (Onslow), Gascoyne (Carnarvon) and the outwash plains of Wooramel (Shark Bay), and Yannarie (Exmouth Gulf).

## 3.5 Tidal reaches of inland waters

Tidal reaches of inland waters are inland water bodies which are predominantly controlled by coastal related processes, particularly tides and fluctuations in sea level. They include river mouths and estuaries and generally comprise flat to gently sloping shores often containing high percentages of finer sediments. These shorelines are strongly influenced by inundation and tidal processes.

Examples include the non-deltaic coastal lagoons of the southwest, Princess Royal Harbour (Albany), Oyster Harbour (Albany), Peel-Harvey Estuary and the Swan Estuary.

## 3.6 Islands

Islands typically comprise a combination of sandy and rocky coasts. Examples include Rottneest Island, Garden Island, the Abrolhos, and the Dampier Archipelago.

## **4. Calculation of the coastal processes**

The site specific coastal foreshore reserve width to allow for coastal processes should be calculated based on the coastal classification, and should consider each of the factors listed for that coastal type.

The study area for the calculation of the coastal processes should be defined based on the coastal geology/geomorphology. The study area should include the entire sediment cell and extend to include adjacent coastal areas as required to define the coastal processes at the development site. Macro-level land use planning such as regional plans and strategies, should be extended to include the entire coastal compartment.

The values given for each factor have been based upon the best available data and are a conservative estimate of that factor and include allowance for uncertainty. As knowledge improves, the WAPC in consultation with and agreement of the Department of Planning will update the values and methods.

More detail and advice on the factors and the models used to calculate the value given for each factor can be obtained from the Department of Transport's Manager, Coastal Management.

### **4.1 Climate change**

Climate change will cause variations in many environmental variables including mean sea level, ocean currents and temperature, wind climate, wave climate, rainfall/run-off and air temperature. The allowance for coastal processes should include the impacts of sea level rise. Consideration of changes in other key environmental variables should be included as knowledge improves.

The allowance for sea level rise should be based on a vertical sea level rise of 0.9 metres over a 100-year planning timeframe to 2110.

### **4.2 Horizontal shoreline datum**

The horizontal shoreline datum should define the active limit of the shoreline under storm activity, and should be determined against the physical and biological features of the coast. In most instances it should be defined as the seaward shoreline contour representing the peak steady water level under storm activity resulting from the storm defined in section 5.

### **4.3 Coastal protection works**

Development that benefits from protection from coastal hazards by formal coastal protection works should be determined on a case by case basis with the allowance for coastal processes taking into account the works in question.

### **4.4 Allowance for erosion on sandy coasts**

On a sandy coast the allowance for erosion should be measured from the HSD and calculated as the sum of the factors: S1 Erosion; S2 Erosion; and S3 Erosion plus 0.2 metres per year allowance for uncertainty.

#### 4.4.1 (S1 Erosion) Allowance for the current risk of storm erosion

The allowance for absorbing the current risk of erosion should be based on the calculation of the maximum cross-shore storm erosion with consideration of the maximum longshore storm erosion. The cross-shore erosion should be determined using a credible sediment transport model appropriate for the subject location. When a model is used it should be run for three successive storm events and the distance should be the recession from the HSD to the land extent of the storm erosion as calculated by the model. In the absence of modelling a minimum value of 40 metres should be used to allow for cross-shore erosion coastal erosion on a typical sandy coast.

Consideration should be given to longshore erosion, especially where there may be a gradient/transition in longshore erosion during a storm. This may be caused by an obstacle (natural or manmade) which reduces updrift longshore sediment transport and is common on the tidal reaches of inland waters, sheltered embayments and gulfs.

Steeply sloping sandy coasts may also be subject to coastal recession as a result of slope failure. This may be the result of undercutting by storm erosion, changes in groundwater conditions or loading at the top of the slope. For steeply sloping sandy coasts the distance for absorbing the current risk of erosion should extend to the crest of the stable post storm shoreline slope. In the absence of a geological assessment the stable slope profile for a typical sandy shoreline should be 30 degrees from the horizontal.

#### 4.4.2 (S2 Erosion) Allowance for historic shoreline movement trends

The allowance for historic shoreline movement trends should be based on the review of available shoreline records. Aerial photography has been collected for the majority of the coast at about five-yearly intervals since around the 1950s and should be used to determine the historic position of the shoreline. In some locations historic beach and bathymetric surveys may exist and should also be used.

Consideration should be given to the cause of shoreline movement trends. Trends should be derived from shoreline movement time series and may include continuous erosion or accretion; erosion followed by accretion or visa-versa; longshore evolution of features; or shoreline rotation.

The allowance for historic shoreline movement trends should generally be calculated as 100 times the historic annual rate of erosion.

Where the historic annual rate of shoreline movement is accretion less than 0.2 metres per year the allowance for historic shoreline movement trends should be zero. Where the historic annual rate of shoreline movement is continuous accretion in excess of 0.2 metres per year and there is compelling evidence that accretion is likely to continue at the same rate for at least the next 50 years the allowance for historic shoreline movement trends should be calculated as minus 50 times the historic longer-term annual rate of accretion.

Where mobile dune systems exist, they should be included in the coastal foreshore reserve width, with a provision for dune migration calculated as 100 times the annual historic movement rate.

The coastal foreshore reserve width shall include the greatest of that calculated as a result of shoreline movement or dune migration.

#### **4.4.3 (S3 Erosion) Allowance for erosion caused by future sea level rise**

The allowance for erosion caused by future sea level rise on sandy coast should be calculated as 100 times the adopted sea level rise value of 0.9 metres over a 100-year timeframe or 90 metres. Consideration should be given to increasing the allowance where the impact of obstacles (natural or manmade) may influence future trends by reducing updrift longshore sediment transport.

### **4.5 Allowance for erosion on rocky coasts**

On the majority of rocky coasts the rate of coastal erosion is relatively slow. The allowance for the current and future risk of erosion should be based on a geotechnical assessment of the shoreline stability. The geotechnical assessment should include consideration of: slope elevation, slope angle, durability of material, consistency of material, angle of bedding layers and thickness of bedding layers.

### **4.6 Allowance for erosion on mixed sandy and rocky coasts**

#### **4.6.1 Allowance for erosion on fringing reefs**

The allowance for erosion on coasts with fringing reefs should generally be determined using the methods specified for sandy coasts. Where a dynamic landform is present, such as a salient, the coastal foreshore reserve width should include allowance for the fluctuation or reduction/loss of the landform.

The allowance for erosion caused by future sea level rise should include consideration of the potential reduction in wave attenuation by reef and the resulting impacts on shoreline stability.

#### **4.6.2 Allowance for erosion on rocky platforms**

The allowance for erosion on rocky platforms should be determined on a case-by-case basis. The allowance should be evaluated following a geotechnical assessment of the platform which should include consideration of: elevation, width, angle and durability and consistency of material.

#### **4.6.3 Allowance for erosion on discontinuous rocky coasts**

The allowance for erosion on discontinuous rocky coasts should generally be determined using the methods specified for sandy coasts. Particular consideration however, should be given to how a rocky outcrop may act as an obstacle to updrift longshore sediment transport.

### **4.7 Allowance for erosion on coastal lowlands**

The allowance for erosion on coastal lowlands should generally be determined using the methods specified for sandy coasts, rocky coasts, and mixed sandy and rocky coasts. However consideration should be given to potential changes in the landform.

## 4.8 Allowance for erosion on tidal reaches of inland waters

The allowance for erosion on tidal reaches of inland water should generally be determined using the methods specified for sandy, rocky, and mixed sandy and rocky coasts. It is however, acknowledged that these methods are principally derived for open ocean coast and case-by-case consideration should be given to the variation in underlying coastal processes and driving forces within sheltered inland waters.

## 4.9 Allowance for erosion on islands

Acknowledging that for most islands the allowance would preclude development, variation should be considered on a case-by-case basis.

## 4.10 Allowance for storm surge inundation on all coasts

The allowance for inundation should be the maximum extent of inundation calculated as the sum of S4 Inundation plus the predicted extent of sea level rise. Where inundation is limited by a coastal barrier (natural or manmade) consideration should be given to the stability of the barrier over the planning period.

### 4.10.1 (S4 Inundation) Allowance for the current risk of storm surge inundation

The allowance for the current risk of inundation should be the maximum extent of storm inundation, defined as the peak steady water level plus wave run-up. Where inundation is halted by a coastal barrier (natural or manmade) consideration should be given to whether the barrier may be breached or bypassed during a storm event over the planning period.

Where a continuous barrier dune is present the capacity of the dune to provide protection from inundation should be assessed based on the cross-sectional area of the dune. If the dune reserve, the cross-sectional area of the dune above the peak steady water level, is less than 100 cubic metres, it should be assumed that the dune will be removed during storm activity and the maximum extent of storm inundation should be calculated without the dune.

On low permeability/impermeable coasts where wave run-up can result in wave overtopping, the coastal foreshore reserve width for this coastal process should be the maximum extent of wave overtopping.

## 5. Definition of the storm event

The selection of the storm event for determining the allowance for the current risk of erosion and inundation is dependent on the coastal zone (Figure 1).

The allowance for the current risk of erosion should be based on a tropical cyclone storm event for zones one and two and a mid-latitude depression or extra-tropical low storm event for zones three and four.

The allowance for the current risk of inundation should be based on a tropical cyclone storm event for zones one, two and three; and a mid-latitude depression or extra-tropical low storm event for zone four.

Storm events will vary for each location and should be reviewed on a case-by-case basis. The path for the storm event should be determined so as to maximise the associated erosion and inundation. To assist in the determination of tropical cyclonic storm events the relative scales, central pressures and worst-case paths derived from historic records are available for the majority of locations. Non-tropical cyclonic storm events for coastal zones three and four should be based on recorded storm events and are available for the majority of locations.

## **5.1 Tsunamis**

Storm events currently do not include definition of tsunamis. As information becomes available however, the tsunamis should be considered as a storm event when determining the allowance for absorbing the current risk of inundation.

## **5.2 Sheltered coasts**

Some sections of the coast are sheltered from the direct impacts of offshore storm events. This may be as they form part of the tidal reaches of inland waterways or due to the presence of offshore islands/reefs. For these locations the storm event should be defined on a case-by-case basis either by the transformation of the offshore storm event or, for fetch limited locations, the hindcasting of an equivalent storm event based on recorded or modelled winds.

## **6. Variations**

It is recognised that in the circumstances described below development may need to occur within an area identified to be potentially impacted by physical coastal processes within the planning time frame. Such development should always be considered within a coastal hazard risk management and adaptation planning process and should only precede once adequate management and adaptation planning measures have been agreed, and which accord with the Avoid – Planned or Managed Retreat - Accommodate – Protect hierarchy stipulated in the policy General Measures.

### **6.1 Public recreation facilities with finite lifespan**

Development with an expected useful lifespan of less than 30 years for public recreation purposes on the proviso that the development is to be removed or modified should it be threatened by erosion or creates an erosion threat to other land. Such development may include for example minor car parks for coastal recreational users; recreational amenities such as public ablutions; barbeque/picnic/shade areas; playground and other recreational equipment; infrastructure for public safety; and pedestrian access structures such as ramps, stairs and paths.

### **6.2 Coastally dependent and easily relocatable development**

Temporary, easily relocatable structures that are demonstrably coastally dependent. Such structures may include for example fencing, for the purposes of protecting dunes and ecologically sensitive areas; sun shades; and facilities for public events.

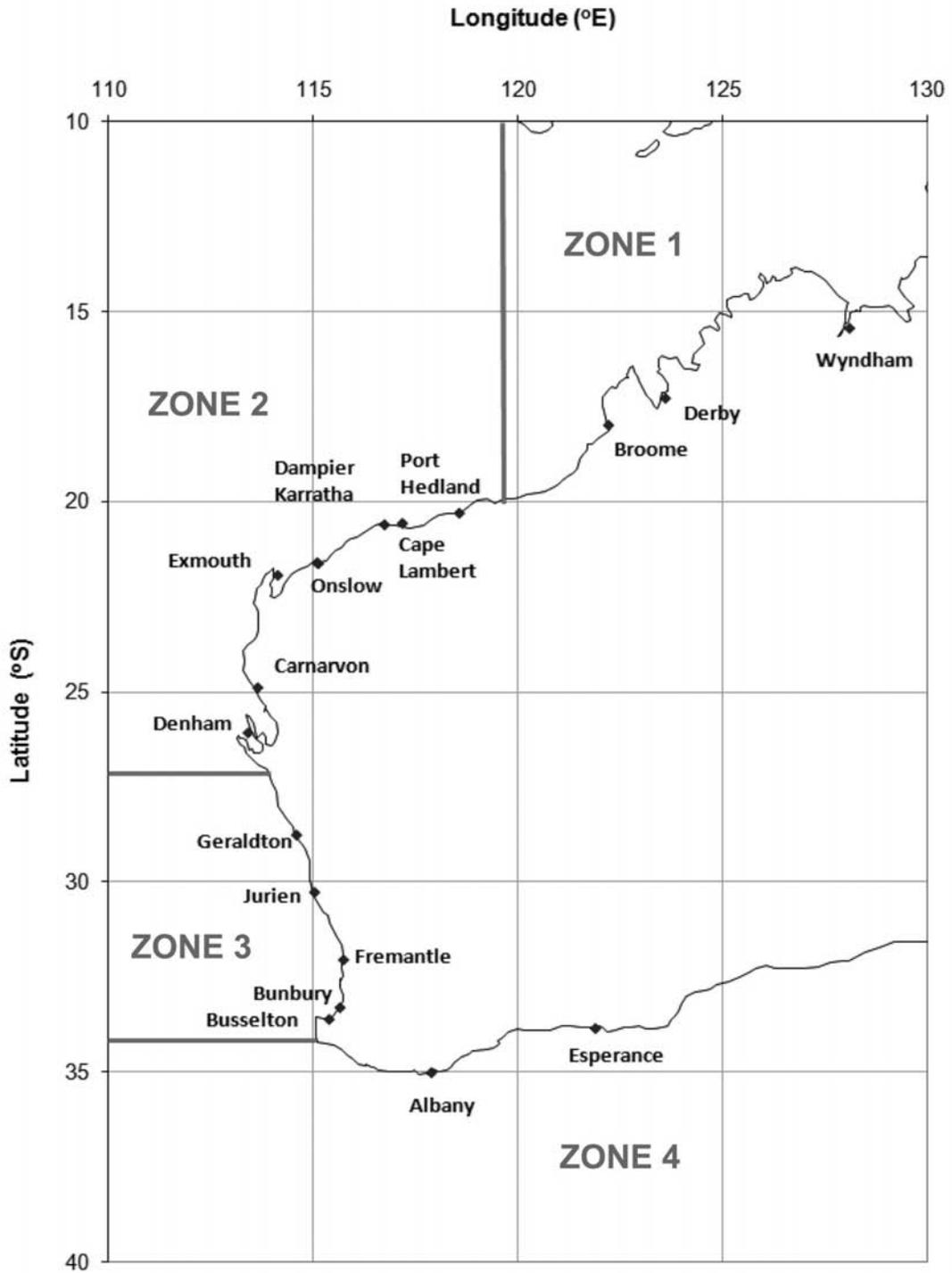


Figure 1. Coastal zones

### **6.3 Department of Defence**

Department of Defence operational installations that require foreshore location.

### **6.4 Industrial and commercial development**

Industrial and commercial development that is demonstrably dependent on a foreshore location. Such development may include, for example, marinas, cage based aquaculture operations, recreational boating facilities and port facilities.

### **6.5 Development nodes**

The need for the provision of development nodes on the coast is recognised and should provide for a range of facilities to benefit the broader public. Such nodes may be developed within the coastal foreshore reserve but should only be located where identified in a strategic plan. Nodes should be located on stable areas; should have no negative impacts on the adjacent environment; and should avoid areas of high natural landscape or resource value.

### **6.6 Surf life saving clubs**

Where there is a demonstrable need for coastal surf life saving club facilities including surf life saver lookouts in the public interest, preference should be given to clubs that are identified in a strategic plan and co-located with other facilities such as those described in sections 6.1 and 6.5.

Development that falls within the above general possible variations will be assessed on a case-by-case basis against the policy measures in Section 5 and in consultation with other relevant agencies and community as considered appropriate.

Development that is dependent upon location on the coast but which would not require a direct interface with tidal areas or placement in the foreshore – such as resort developments or tank based aquaculture – permanent infrastructure services and facilities such as sewerage pumping stations, drainage, communications, energy and water operation are not included in these possible variations.



Department of  
Planning



Western  
Australian  
Planning  
Commission

ATTACHMENT 2

Draft  
State Planning Policy 2.6  
**State Coastal Planning Policy  
Guidelines**

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## 1. Introduction

The key objective of these guidelines is to provide detailed guidance for the application of the policy measures.

## 2. General measures

The policy requirements should be applied at the earliest appropriate stage of any planning process, eg. the foreshore reserve width should be determined during the rezoning of land. In the event this has not occurred, the foreshore reserve width should be determined at the first planning process stage initiated post rezoning. Community engagement should occur during any management plan formulation and coastal hazard risk management and adaptation planning should occur at structure planning, and/or strategy planning stage. Should this not have occurred it should be done as part of subdivision.

## 3. Development and settlement

### 3.1 Development and settlement

State Planning Policy No. 3 Urban Growth and Settlement sets out the principles and considerations that apply planning urban growth and settlement. The aim is to facilitate sustainable patterns of urban growth and settlement by setting requirements of sustainable settlements and communities and accommodating growth and change. Coastal planning should reflect consideration of these guidelines where applicable.

State Planning Policy No. 2 Environment and Natural Resources Policy sets out the principles and considerations that apply planning in terms of the environment. Coastal planning should reflect consideration of these guidelines where applicable.

In addition to the above, the following elements should also be considered.

- Coastal planning should result in sustainable development which recognises the need to balance competing economic, social and environmental demands.
- Development should not result in discharges such as sewerage, fertilisers or toxic chemicals into the coastal environment.
- Development should not result in changes to water circulation patterns. Such changes may have an adverse impact on the ecology or public use of foreshore areas.
- Development should not substantially alter existing natural drainage patterns, nutrient and organic matter cycling processes, near shore sediment transport patterns or water quality.
- Coastal waters support primary food production for marine fauna and flora. Coastal habitats, particularly areas of high biological productivity, should be protected.
- Disturbance of existing vegetation during construction should be minimised. However, if unavoidable, the area should be rehabilitated after disturbance with native species to stabilise land in and around developments.
- Coastal vegetation corridors should be retained, not fragmented, and where possible, enlarged (widened and lengthened).

- Places of unique landscape, scientific and cultural significance should be conserved and managed including geomorphological, ecological, anthropological and historical sites.
- Coastal areas that provide nesting sites for marine reptiles, mammals and sea birds should be protected from impacts of development.
- Development should be designed to prevent invasion of native habitats by introduced species/pests.
- Off-road vehicle use should be managed and kept from degrading coastal dunes and vegetation.
- Disturbance of any endangered, threatened or priority listed species and communities present in the area should be avoided and assessed based on the applicable legislation.

### 3.2 Earthworks and soil

The *Acid Sulfate Soils Planning Guidelines* was released by the Western Australian Planning Commission in December 2008. The guidelines provide a practical guide outlining the range of matters required to be addressed during planning decision making processes ensuring land containing acid sulfate soils are planned and managed to avoid potential adverse effects on the natural and built environment. Ideally, coastal planning should reflect consideration of these guidelines where applicable.

In addition to the above, the following elements should also be considered.

- Development should not occur on or adjacent to unstable or mobile dunes.
- Development proposed on unconsolidated dunes or sand sheets should only be supported where an appropriate stabilisation and rehabilitation plan has been prepared.
- Natural sediment processes, including lithification and wind or water transport should not be significantly or permanently altered by development.
- Topsoil should be stockpiled (for as short a time as possible) and respread on bare areas. While being stockpiled topsoil should be reasonably protected from moisture to preserve the viability of the seed bank.
- Development may be restricted during certain times of the year when high wind rates may impact upon the amenity of surrounding land uses, particularly residential uses.
- Livestock should be kept from grazing in coastal dunes.

### 3.3 Water resources and management

State Planning Policy 2.9 Water Resources provides guidance for the protection and management of water resources and the implementation of total water cycle management principles in the land use planning system. Although not directly addressing coastal areas (SPP2.9 is to be referred to in relation to SPP2.6), any of the policy aims, objectives and measures are relevant and applicable to coastal planning.

The *Better Urban Water Management* document was released by the Western Australian Planning Commission in October 2008. The document provides guidance on the implementation of SPP2.9. It is designed to facilitate better management land use of urban water resources and provides a framework for how water resources should be considered at each planning stage by identifying various actions and investigations required to support planning decisions being made.

*Liveable Neighbourhoods* was released in 2007 to provide the strategic and operational framework for the planning and implementation of structure planning and subdivision development. Element 5 - Urban water management seeks to encourage water-sensitive urban design through the application of best planning practices and encourage innovative urban water management solutions through the application of best management practices to manage both the quantity and quality of urban stormwater run-off in a form that adds value to the adjacent land uses. The document provides guidance on the implementation of SPP2.6.

Water management issues are to reflect consideration of the SPP2.9, *Better Urban Water Management* and *Liveable Neighbourhoods*.

Piped drainage outlets shall not be constructed through foreshore areas directly onto the beach. Piped drainage outlets shall terminate outside foreshore reserve areas, unless approved in an urban water management plan.

In addition to the above, the following elements should also be considered.

- Development adjacent to enclosed or partly enclosed water bodies (such as bays, estuaries, lagoons and marshes) should not impact upon processes such as nutrient cycling and should seek to avoid eutrophication or altered nutrient loads.
- Development should not alter existing sediment movement processes either towards or into water bodies from natural (or current) levels.
- Natural water movements, including ocean water and groundwater should not be significantly altered or affected by development.
- Polluted and contaminated run-off should be treated at the source. The Contaminated Sites Act 2003 sets out obligations and responsibilities for contaminated land.
- Well vegetated margins of water bodies should be maintained to act as natural nutrient and sediment filters.
- Waste discharge into enclosed or poorly circulated water bodies should be prevented.
- Where on-site effluent treatment and disposal systems are proposed, account must be taken of sod depth, sod absorption rates, soil absorption ability and whether the superficial water table is in hydrologic connection with the sea and enclosed water bodies.
- All waste disposal facilities including rubbish tips, waste transfer stations, septic tanks, liquid and industrial waste holding areas and similar facilities shall be located landward of the foreshore reserve boundary and be designed/lined to isolate waste from the sea and other enclosed water bodies and prevent leaching.
- Stormwater retention and/or infiltration areas and, for major flow events, overland flow paths onto the beach are permitted, subject to minimal landform modifications within the dune system.

### **3.4 Visual landscape**

The *Visual Landscape Planning in Western Australia - a manual for evaluation, assessment sitting and design* was released by the Western Australian Planning Commission in November 2007. The manual provides a suite of visual assessment techniques for incorporating landscape factors into the planning system and in Part 3, specifically addresses coastal landscapes in detail (pages 73-80). Landscape, seascape and visual landscape elements of coastal planning are to reflect consideration of the manual.

## **4. Coastal hazard risk management and adaptation planning**

Coastal hazard risk management and adaptation planning is intended to ensure an appropriate risk assessment and management planning framework for incorporating coastal hazard considerations into decision-making processes. It promotes the development of long-term adaptive capacity for managing coastal hazard risk through adoption of adaptive management. The primary focus of a coastal hazard risk management and adaptation plan are steps v and vi below, which are also intended to be reviewed periodically to enable the plan to adapt over time.

Coastal hazard risk management and adaptation planning should be undertaken by an appropriately qualified professional person and/or organisation with appropriate indemnity insurance.

### **4.1 Coastal hazard risk management and adaptation planning**

Coastal hazard risk management and adaptation planning should include the following elements:

- (i) Establishment of the context – determine the coastal hazard risk management context (objectives) and establish the structure of the analysis (including responsibilities and stakeholders) and criteria (relevant coastal hazards) against which risk will be assessed.
- (ii) Coastal hazard risk identification – identify coastal hazards and the when, where, why and how of their aspects and impacts. Vulnerability assessment – identify the exposure, sensitivity and adaptive capacity of a system.
- (iii) Coastal hazard risk analysis – in terms of consequence and likelihood, analyse controls (existing management strategies) and the range of consequences in the context of the controls. Consequence and likelihood can be combined to produce an estimated level of risk (the likelihood of each coastal hazard risk; the consequence should this likelihood be realised; and the level of resulting coastal hazard risk for each of the potential impacts).
- (iv) Coastal hazard risk evaluation – compare established levels of coastal hazard risk with the pre-established criteria (ranking coastal hazard risks by severity). Coastal hazard risks can then be ranked to identify priorities for their management (identifying those that require additional options). Coastal hazard risks identified as low priority can possibly be accepted, subject to ongoing monitoring and review.

- (v) Coastal hazard risk adaptation planning – develop and implement a management plan (through the identification and selection of the relevant risk management and/or adaptation options) that includes consideration of unintended side effects, funding arrangements (initial and ongoing), maintenance, ability to accommodate future uncertainties, other resources and timeframes.
- (vi) Monitor and review – the performance of the risk management (adaptation) and any changes that may affect it.

Further guidance with regard to coastal hazard risk management and adaptation planning should be based on the latest Australian Standard Environmental risk management – Principles and Processes (HB 203:2006) (currently the Third edition, 2006).

Figure 1 illustrates the coastal hazard risk management and adaptation planning process.

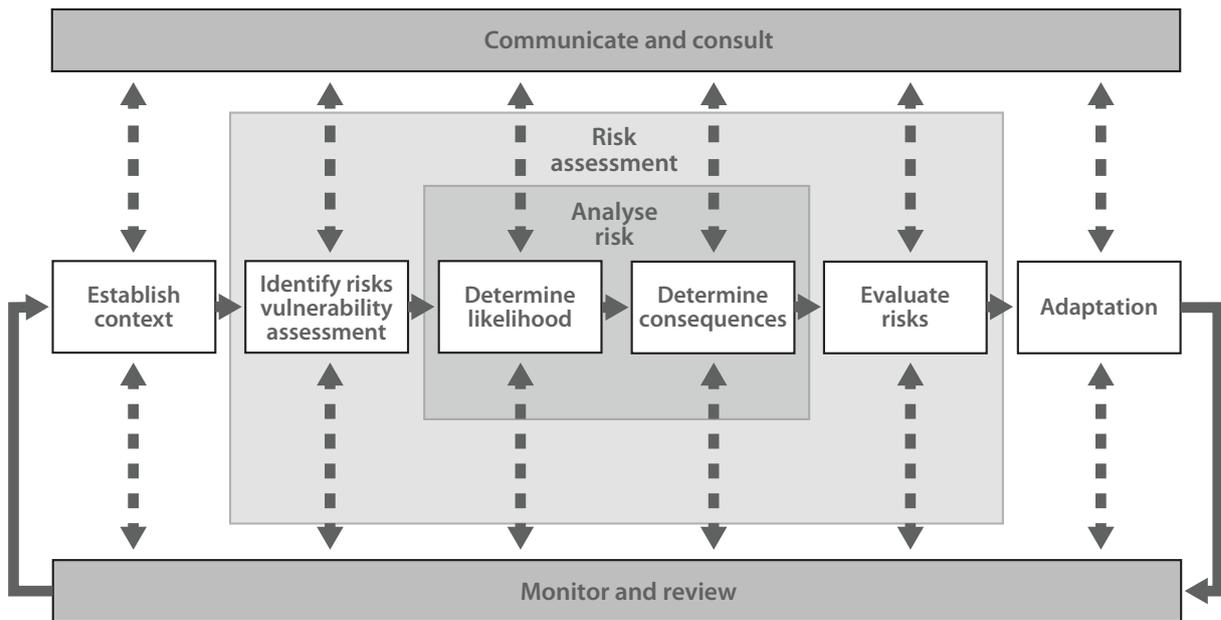


Figure 1. Coastal hazard risk management and adaptation planning process

## 4.2 Vulnerability assessment

Vulnerability assessment is an important component of the coastal hazard risk management and adaptation planning process. It adds value by providing an understanding of how a system (where a system can be an organisation, ecosystem, physical structure and so on) such as a coastal settlement is likely to respond to external influence such as climate change, taking into account the socio-economic and ecological functions of that system. A vulnerability assessment can enable a broader view of risk issues to be identified early in the risk assessment process.

The vulnerability of a system is a function of three overlapping elements: exposure, sensitivity (potential impacts) and adaptive capacity of a system. Potential impacts are a function of exposure and adaptive capacity, while vulnerability is a function of potential impacts and adaptive capacity. Understanding the functions of the elements describes how the different elements of vulnerability are related to each other. Also understanding these elements assists with identifying threats, opportunities and potential adaptation measures arising from climate change, and provides important context and data sources for the coastal hazard risk management and adaptation planning process.

### Exposure

This relates to the influences or stimuli that impact on a system. This element captures the weather events and patterns that affect the system, also capturing broader influences such as changes in related systems brought about by climate effects. Exposure represents the background climate conditions against which a system operates, and any changes in those conditions.

### Sensitivity

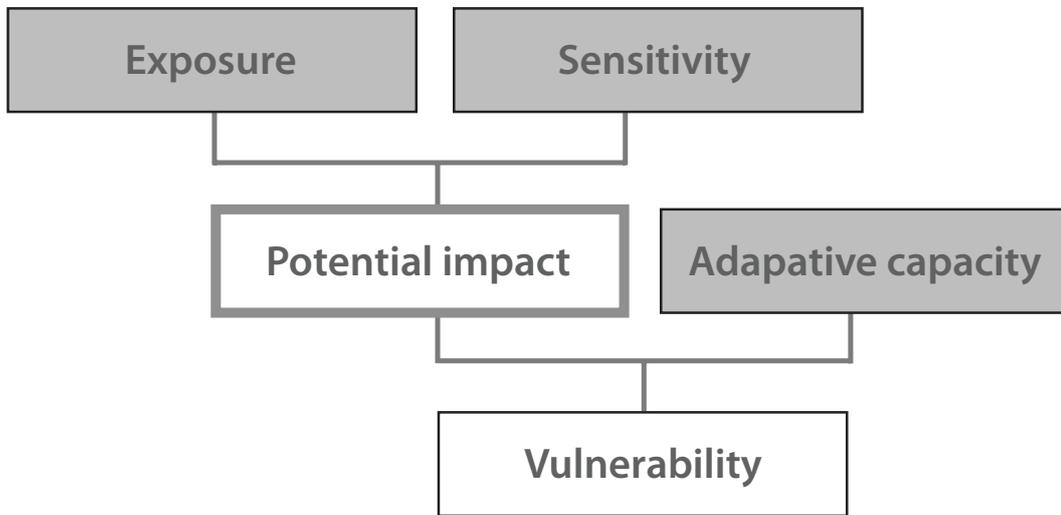
This reflects the responsiveness of a system to climatic influences, and the degree to which changes in climate might affect it in its current form. Sensitive systems are highly responsive to climate and changes to it. Understanding a system's sensitivity also requires an understanding of the thresholds at which it begins to exhibit changes in response to climate influences, whether these system adjustments are likely to be sudden 'step changes' or gradual, and the degree to which these changes are reversible.

### Potential impacts

This reflects all the potential impacts that may occur to a system given the projects environmental change, but does not include consideration of any planned adaptation.

### Adaptive capacity

This reflects the ability of a system to change in a way that makes it better equipped to deal with external influences. This can be either planned or autonomous. Planned adaptation is a change made in anticipation of a variation in climate. This is an inherently strategic and conscious effort to increase the capacity of a system to cope with, benefit from or avoid the consequences of climate change. Autonomous adaptation relates to a systems inherent capacity to cope over time by reacting directly to climatic pressures. Adaptive capacity may be increased by factors such as information about effective adaptation options, resources to carry out adaptation measures and the willingness or ability of a system to implement adaptation measures. Figure 2 illustrates the components of a vulnerability assessment.



Source: Allen Consulting Group (2005) *Climate change risk and vulnerability promoting an efficient adaptation response in Australia*; Australian Report to the Australian Greenhouse Office, Government Department of the Environment and Heritage

**Figure 2. Components of vulnerability assessment**

### 4.3 Assessing risk adaptation options

One of the key tasks of section 4.1 step (v) above is to select the most appropriate risk management measure or adaptation option. Adaptation options need to be assessed in terms of their:

- potential benefits;
- effectiveness in reducing losses;
- cost of implementation and ongoing maintenance; and
- impact of the treatment option on other objectives, including the introduction of new risks or issues.

Challenges of managing risks arising from coastal hazards include long timeframes associated with changing coastal environments and uncertainties that arise from complex climatic and coastal systems. A key step in assessing potential risk adaptation options is to consider the implications of a given risk adaptation measure, on the ability of future decision makers to select risk adaptation options from the same range of risk adaptation options available in the present. This involves assessing the potential of a risk adaptation option to restrict future risk adaptation opportunities.

Risk adaptation options that maintain a wide range of potential future risk management options should always be considered more favourably than those that (either directly or indirectly) act to limit future risk management options. By allowing a greater range of risk adaptation measures to be considered by future decision makers, risk management processes can more effectively address

the challenges of uncertainty and long timeframes associated with coastal hazards. Effectively, this concept of maintaining future flexibility for risk management options is about creating coastal communities that are resilient to the uncertainties of planning in coastal environments.

It is on this rationale that the 'Avoid – Planned or Managed Retreat – Accommodate – Protect' adaptation hierarchy has been established, where 'Avoid', 'Planned or Managed Retreat', 'Accommodate' and 'Protect' refer to four broad categories of potential adaptation options available for the management of risks from coastal hazards. These four categories are described below with examples. Generally, as risk adaptation options are selected further down this hierarchy (from avoiding areas at risk to protecting development from those risks), future risk management options will diminish. As such, avoiding the placement of sensitive development within areas that are at risk from coastal hazards provides the most resilience to future (uncertain) coastal hazards. Conversely, using protection structures to allow sensitive development within areas that would otherwise be at risk from coastal hazards provides the least resilience to future (uncertain) coastal hazards.

## **4.4 Adaptation**

### **4.4.1 Avoid**

May consider elements such as:

- rejecting the site and finding another;
- transferring development rights to another parcel better able to accommodate development; and
- avoiding development within primary and fore dunes and low-lying coastal areas.

### **4.4.2 Planned or managed retreat**

May consider elements such as:

- requirement for disclosure of hazards/vulnerability, eg. notification on title;
- prevention of further development;
- leaving land and resources unprotected;
- demolition and removal of infrastructure as they become at risk by coastal hazards;
- applying easements or planning zones to allow for rolling change of land-use as it becomes affected by coastal hazards;
- prohibiting high value developments and infrastructure in at risk areas in favour of low cost activities (such as recreation, grazing etc.);
- locating major roads and key community infrastructure away from the coast with sacrificial connecting roads to vulnerable areas; and
- retaining public coastal land in public ownership.

### 4.4.3 Accommodate

May consider elements such as:

- requirement for disclosure of hazards/vulnerability e.g. notification on title;
- preparation of emergency evacuation plans to reduce the human consequences of coastal hazards;
- applying easements or planning zones to allow for rolling change of land-use as it becomes affected by coastal hazards;
- raised buildings and infrastructure in areas prone to inundation and flooding, for which:
  - building foundations should remain intact and functional
  - the lowest floor elevation should be sufficient to prevent floodwaters from entering the elevated building envelope during the design event
  - utility connections (eg. electricity, water, sewer, natural gas) should remain intact or be easily restored
  - buildings should be accessible and useable following a design-level event
  - damage to enclosures below the design flood level should not result in damage to the foundation, the utility connections, or the elevated portion of the building;
- locating development on the least hazardous portion of the site;
- combining lots or parcels;
- reducing the footprint of the proposed building, and shifting the footprint away from the hazard;
- shifting the location of the building on the site by modifying or eliminating ancillary structures and development;
- seeking variances to lot line setbacks along the landward and side property lines (in the case of development along a shoreline);
- modifying the building design and site development to facilitate future relocation of the building;
- altering the site to reduce its risk to coastal hazards;
- only permit development of temporary or low value assets;
- do not permit increases in development density (rezoning/subdivisions);
- do not permit development of high value assets (community centres, schools, hospitals);
- reduce risk to defined acceptable levels for an estimated time period;
- be designed to be durable and effective for the estimated time period and/or have reasonably well known maintenance and operating costs for the design period;
- indicate the anticipated response at the end of the estimated extended period when risks again approach intolerable levels;
- lower portions of structures are constructed of flood resistant materials and are designed to withstand water forces;

- for roads, alternative routes or other emergency contingency plans exist;
- apply appropriate risk management strategies to vulnerable areas; and
- the design of temporary or relocatable structures, or structures that could be readily repaired or reinstated following the impacts of the likely coastal hazards.

#### **4.4.4 Protect**

May consider elements such as:

- requirement for disclosure of hazards/vulnerability, eg. notification on title;
- implementation of a protection scheme;
- beach nourishment or replenishment;
- dune management;
- flood and sea walls;
- groynes;
- off-shore breakwaters or reefs;
- there is likely to be long-term commitment to a high level of development in the area to justify the long-term costs;
- other options are not viable or cost effective;
- the area will remain ultimately defensible;
- there are compelling reasons why this area rather than a less vulnerable, higher elevation areas nearby should attract continued development and occupation;
- development is located and designed so that it can be appropriately protected from risks and impacts such as inundation and coastal erosion;
- construction of coastal protective structures, or allowing space for their future construction; and
- emergency management; and construction methods or materials that reduce the consequences of inundation and/or reduce the costs of relocation.

Further to the above adaptation options, particular consideration should be given to the location outside of coastal hazard risk areas, of development such as hospitals, schools, child-care or aged-care facilities; and development of a hazardous or potentially hazardous nature, such as manufacture or storage of hazardous or dangerous materials, or waste disposal.

### **4.5 Ongoing risk management and adaptation planning**

Step vi of the risk management process described above concerns the ongoing monitoring and review of the performance of a chosen risk management strategy or strategies. This step is important for effective risk management and is crucial to risks arising from coastal hazards, given that our understanding of coastal processes is always improving and given the long timeframes associated with some types of coastal processes and some types of coastal development. It is therefore important that monitoring and review arrangements are agreed during the original

risk management process and not left until that risk management process is completed. The monitoring and review process effectively converts the risk management process from a one-off linear process to a continual cyclical process.

As a minimum, monitoring and review arrangements need to address:

- what is being monitored and why;
- who is undertaking the monitoring work; and
- what resources are required to undertake the monitoring and who is providing those resources.

What triggers are there for a review of the risk management process to be repeated/reviewed (such as a change to the identified coastal hazards; change in community values; changes in land use; or simply a time period review).

#### **4.6 Management authority**

The effects of coastal hazards will have direct and indirect implications for a responsible management authority. Making adjustments to existing activities and practices so that vulnerability to potential impacts associated with coastal hazards will be of significant importance. To ensure a responsible management authority is adequately prepared for this, the formulation and implementation of coastal hazard risk management and adaptation planning should be given due consideration to ensure a responsible management authority has a continual focus on managing coastal hazard risks and adapting to them.

#### **4.7 Coastal protection policy for Western Australia**

A responsible management authority is eligible to apply for 50 per cent funding from the Department of Transport under the coastal protection grant scheme, for the following purposes.

- Monitoring – development of monitoring programs including beach and hydrographic surveys, wave and water level recordings, aerial photography and photogrammetry.
- Planning – coastal vulnerability assessments to determine the likely impacts of climate change, risk assessments and the development of adaptation/management solutions.
- Investigations – studies to analyse data, causes of coastal problems and to develop coastal management solutions/options.
- Condition inspections – of existing coastal protection infrastructure (eg. groynes, seawalls) and development of asset management/maintenance programs.
- Design – of new coastal protection structures (eg. groynes, seawalls) or beach nourishment.
- Construction – of new coastal protection structures (eg. groynes, seawalls) or ongoing beach nourishment. Can include preparation of tender documents and construction supervision.
- Maintenance – of existing coastal protection structures.

## 5. Infill development

A coastal proposal may be considered infill development if the subject site is between existing lots and adjacent to approved development. Figure 3 provides an example of an infill development site. It does not apply to coastal land adjacent to existing development on only one side (such as at the edge of a town site or zone) or where there is a reasonable distance between the lots to negate the benefit of a shared coastal hazard risk management and adaptation planning. Figure 4 and 5 show an example of coastal development that would not be considered as infill.

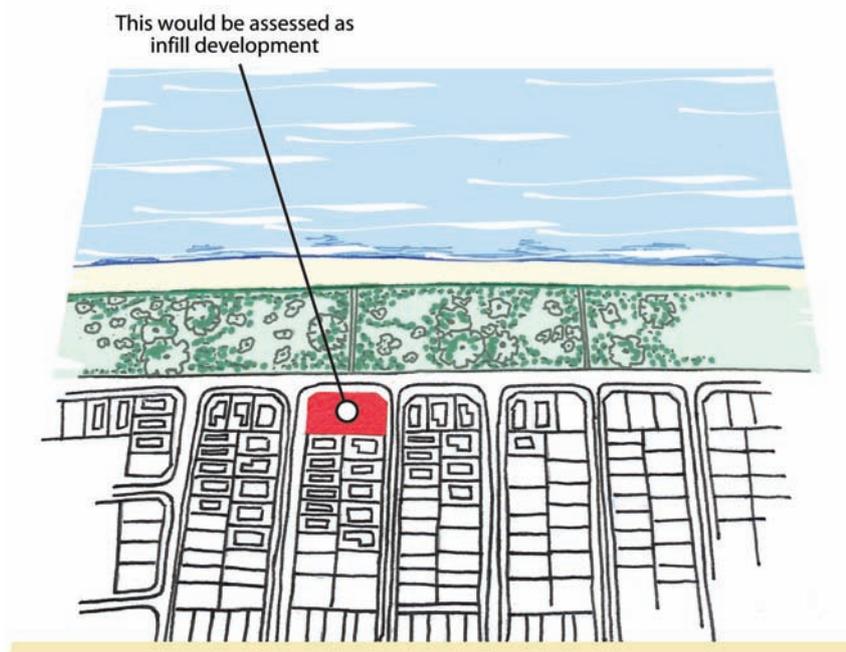


Figure 3. Assessed as coastal infill development site

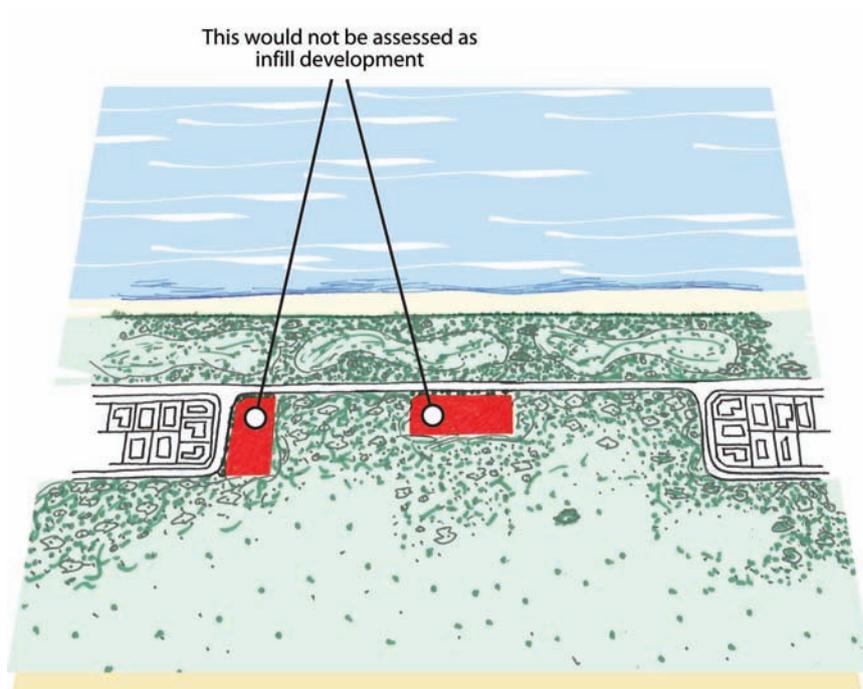


Figure 4. Not be assessed as coastal infill development site

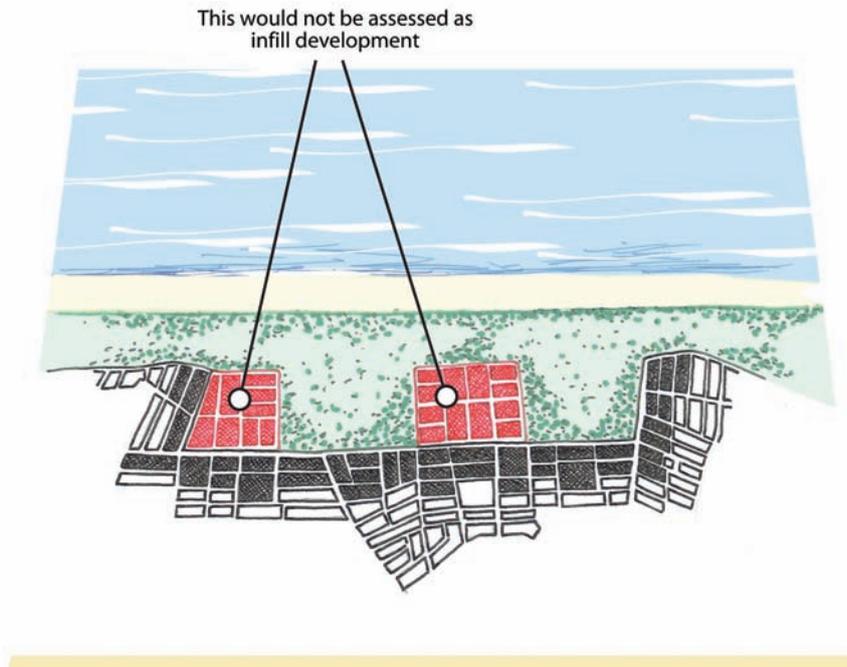


Figure 5. Not be assessed as coastal infill development site

## 6. Coastal protection works

As per SPP2.6 General Policy measures section 5.7 for protection works, and the Coastal Protection Policy for Western Australia.

## 7. Public interest

### 7.1 Community engagement

The risk management approach requires community understanding and engagement to be effective. Risk management measures within this policy require consideration of both coastal hazards and the consequences of those hazards. Assessing those consequences requires a full understanding of the value of all assets (natural and artificial) within potentially affected areas.

While determining likely coastal hazards may be able to be done by technical experts in isolation from affected local communities, assessing consequences is best done as an open process with input from an informed community. The following is a list of some of the benefits of engaging communities in this way.

- The true consequences of a given set of coastal hazards are best determined by those who will be directly affected by those consequences. Therefore, affected local communities and not coastal management experts are best placed to determine the acceptability or otherwise of the consequences of various coastal hazards.
- More innovative risk management measures (adaptations or treatments) are more likely to come from a wider pool of contributors to a risk management process. Potential solutions or responses to identified intolerable risks from coastal hazards should be sought from as many sources as possible, to encourage the most innovative and locally tailored solutions to be considered.
- Outcomes of a risk management process are more likely to be accepted and to be successful if the affected communities have been integrally involved in their development and take 'ownership' of risk management.

A key component of designing a community engagement strategy for the coastal hazard risk management process is to determine what type of community participation is appropriate for each key decision or stage of the process. This could range from seeking to inform or educate the community; collaborating with or empowering the community; or somewhere in the middle of this spectrum.

Determining the most appropriate type of community participation should then guide the design of the community engagement strategy including the selection of an appropriate mechanism for engaging the community. There are many different mechanisms for enabling public participation in the risk management process. These include community reference groups; steering committees; general and specific stakeholder workshops; surveys and questionnaires; public information/education and consultation programs; the release of a draft document for public feedback; or, combinations of these.

Community engagement should also be treated as an ongoing process that continues to inform and be informed by the risk management process, rather than as a one-off event. On this basis there may be more than one stage in the process where community engagement is sought.

It is also important for consultation and community participation measures to be demonstrated and documented through any relevant planning process.

Additional guidance is provided in section 3.7 Community Consultation of the *Coastal Planning and Management Manual – A community guide for protecting and conserving the Western Australian coast* released by the Western Australian Planning Commission in August 2003. The manual provides a practical guide to coastal planning and management in Western Australia and an overview of important considerations for planning and management to protect and conserve to coast. Ideally, coastal strategies and management are to reflect consideration of the manual. Additional guidance should be sourced from this document during the formulation of a coastal planning strategy and/or foreshore management plan.

## 7.2 Public access

Include consideration of recreational attributes that attract people to the coast such as safe swimming beaches, surfing spots, and interesting landscape or seascape features.

Ensure connectivity with adjacent uses such as public open space, public transport access, cafes, shops, entertainment, established car parking facilities, higher density development etc.

Provide obvious and logical public access to the coast especially in the design of new subdivisions and developments to encourage the local community to walk, rather than drive to the beach.

Provide a level of public access consistent with appropriate use of the coastal location (eg. a remote coastal foreshore will not require the same level of access as an urban area).

Include consideration of safety to users. Where a known danger exists, either natural (eg. undermined cliff, slippery rock platform or strong ocean rip) or manmade (port facilities, industry including inlets or outfalls), consideration should be given to discouraging or managing access to the coast to promote safety of coastal users (ie. safety to lives). For example, major access to a location adjacent to a known dangerous rip may encourage people to swim there. Where such access is supported, additional management will be required to address safety.

Minimise public access (in particular off road vehicles) over eroding or steep dunes, rocky areas or other difficult terrain unless there is a demonstrated public benefit. This type of access may be susceptible to erosion or require frequent or costly maintenance.

Ensure protection of significant conservation or heritage areas through controlled access.

## 7.3 Coastal roads

Generally, coastal roads should not be developed within the coastal foreshore reserve. Ideally, they should be provided within adjacent land. Construction and design of coastal road networks should generally:

- cater for continued or improved public access to the coast;
- avoid unstable or potentially unstable land;
- consider emergency access needs to and from the coast;
- provide appropriate drainage for stormwater run-off;
- unobtrusively complement existing and proposed recreational amenities;

- be consistent with the level of access and type of recreational experience planned for an area (eg. easy access to intensive use sites, minor access to remote areas);
- provide clear demarcation between public and private land, preferably in the form of a gazetted road;
- include provision for coastal dual use or pedestrian paths;
- incorporate appropriate structures to prevent uncontrolled pedestrian and vehicular access (simple fencing or barriers) to the foreshore; and
- consider the need for on-street car parking to cater for coastal recreation.

## 7.4 Coastal car parks

Coastal car parks (for public recreation purposes) should be located:

- landwards of the likely impacts of coastal processes;
- for major car parks, landwards of the coastal foreshore reserve boundary. Where an existing or proposed coastal road separates the landward boundary of a coastal foreshore reserve, the car park may be located on the seaward side of such a road to allow for unimpeded pedestrian access;
- unobtrusively, such as behind dunes;
- to avoid prominent locations, such as the crest of a dune or coastal headland to minimise any potential impact on visual amenity, landscape or seascape features. An exception to this may be considered where a demonstrated net public benefit will result through a designated look out or viewing area; and
- to minimise environmental impacts such as sand drift, erosion and habitat loss.

## 7.5 Coastal pedestrian access

Fenced pedestrian paths should provide access to and between coastal car parks, roads, adjacent residential or other developments; and the coast. In urban areas, paths should be spaced approximately 150 metres apart, unless public access needs or local topography demonstrates a need for greater or lesser pedestrian access.

Pedestrian paths should be located to either, direct people away from environmentally sensitive or unsafe areas or toward recreational opportunities such as safe swimming beaches.

Pedestrian access paths should be sustainably designed to minimise erosion, wind tunnelling and maintenance.

Pedestrian access paths should be justified in terms of a coastal public access purpose (usually through a foreshore management plan). Their design should incorporate maximum retention of natural topography and vegetation; access to sheltered or popular locations; respect historical patterns of access such as existing tracks (if sustainable); be located on stable landforms; and if possible, be located to encourage regeneration and/or rehabilitation of degraded areas.

Pedestrian access should provide for a range of coastal access options including special needs access (eg. wheelchair, pram or visually impaired access) at strategic locations.

## 7.6 Coastal dual use paths

In most urban areas dual use paths (shared bicycle, wheelchair and pedestrian paths) are required to provide access along the coast. Sufficient space should be allocated for their positioning, design, construction and maintenance. Dual use paths should be:

- generally positioned landward of the coastal foreshore reserve area width required to allow for coastal processes;
- designed to promote safety to cyclists and pedestrians through clear visibility and passive surveillance from adjacent developable areas;
- located so as not to fragment remnant vegetation; and
- designed to avoid vegetation removal, alterations to natural topography, battering or other earthworks.

Additional guidance for section 8.3–8.6 above is provided in the *Visual Landscape Planning in Western Australia – a manual for evaluation, assessment sitting and design* as described at 3.4 above.

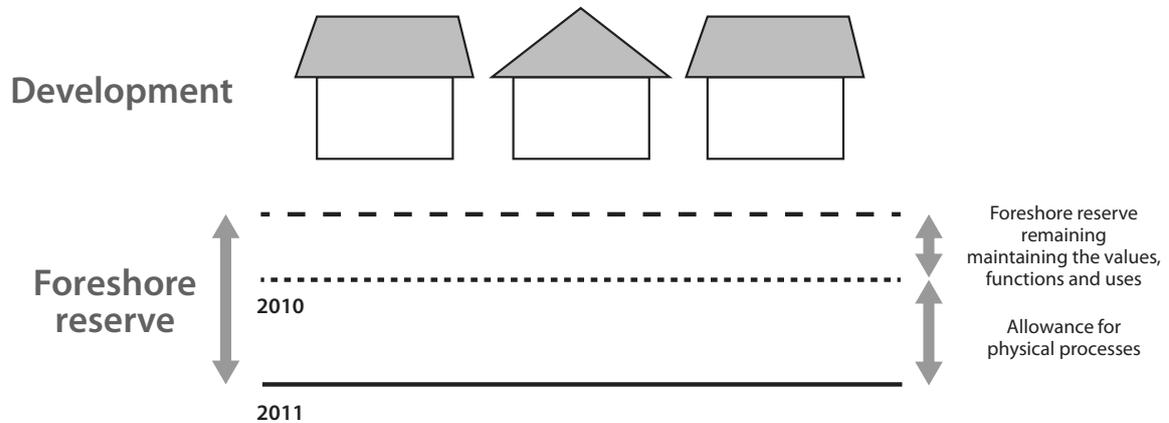
## 8. Coastal foreshore reserve

The varied and unique nature of the coastal environment in Western Australia requires that flexible approaches are used in foreshore reserve planning and management. This policy advocates the use of the biological and physical features associated with coastal environments and its values, functions, uses and pressures to determine foreshore reserve areas. This approach allows flexibility and 'outcome-based' decision-making by considering a range of criteria rather than using a nominal 'setback' requirement. It is a sustainable approach to foreshore reserve management and does not restrict the social and economic opportunities of the coastal environment while adequately protecting the values, functions, and uses of foreshore reserves.

An appropriate coastal foreshore reserve will include the allowance for physical processes (as per Schedule One) and appropriate width to ensure a coastal foreshore reserve is maintained should the physical processes impacts be realised over the planning timeframe. In determining an appropriate foreshore reserve width, the intent is that all the values, functions and uses prescribed for current foreshore reserves today will be available at the end of the planning timeframe. Figure 6 shows a diagrammatic example of this.

This policy requirement also supports the coastal hazard risk management and adaptation planning requirement with particular regard to maintaining flexibility in long-term decision-making by not diminishing future risk management options today that may not be appropriate in the future.

Reasonable information to support and inform the delineation of a coastal foreshore reserve should be provided (eg. foreshore management plan, flora and fauna survey, utilisation survey). This information must be to the satisfaction of the relevant responsible authority and provided at the earliest appropriate planning stage.



**Figure 6. Coastal foreshore reserve**

Figure 6 illustrates a typical foreshore reserve.

Additional guidance is provided in the *Coastal Planning and Management Manual – A community guide for protecting and conserving the Western Australian coast* released by the Western Australian Planning Commission in August 2003.

## 8.1 Ecological values

The coastal foreshore reserve should seek to include remnant flora and fauna.

Current (ie. less than five years old) spring flora surveys and fauna studies should provide accurate information on, but not limited to, existing flora and fauna, threatened ecological communities, endangered, priority listed and/or declared rare fauna and flora for the entire proposal area including the foreshore.

The boundary of the foreshore reserve should provide sufficient connectedness between habitats and ecological communities and, if appropriate, buffers.

The foreshore boundary should be located to retain and complement the existing topography and geography of the locality.

Development and subdivision proposals should seek to avoid battering or terracing in the foreshore reserve and the interface with adjoining land. If battering is required to facilitate a proposed development or subdivision, it should generally be located outside of the foreshore reserve, on zoned land at the expense of the developer. A way to avoid unnecessary battering is to locate the foreshore reserve boundary within a swale behind dune systems thus reducing the need for earthworks in the foreshore.

Where necessary, the foreshore boundary should be positioned to minimise light spill from development (including car parks) disturbing breeding grounds or other critical habitats of species that are adversely impacted by artificial light, such as turtle breeding and nesting areas.

Where other state or Commonwealth agencies are responsible for the administration of a relevant policy or legislation (such as the *Environmental Protection and Biodiversity Conservation Act 1999*), advice should be sought from the agency during the planning process.

In the event a significant alteration to existing or natural topography is supported as part of a proposal, the treatment of the development interface with the coastal foreshore reserve must be resolved prior to the commencement of any works. It is the developer's responsibility to remediate any impacts in a foreshore reserve, construct earthworks, battering or treatment resulting from the development to the satisfaction of the responsible authority. All such works should be located on the development site, be undertaken at the developer's cost, and be in accordance with an approved foreshore management plan.

## **8.2 Landscape, seascape and visual landscape**

As per Part 3 above.

## **8.3 Indigenous heritage**

Indigenous heritage may relate to a place that is significant to a particular group or groups of indigenous people for a variety of reasons including practice, observance, custom, tradition, beliefs or history.

The *Aboriginal Heritage Act 1972* prescribes requirements and obligations regarding Aboriginal heritage. The *Native Title Act 1993* governs processes for land that may be the subject of native title.

## **8.4 Cultural heritage**

Cultural heritage includes knowledge, places and things, including those made or changed by humans, that have aesthetic, historic, scientific, social or spiritual significance or other special value for past, present and future generations. This generally relates to European heritage as indigenous heritage is separately legislated. All levels of government are accountable for cultural heritage in Australia.

Any identified culturally significant coastal heritage sites should be incorporated into the coastal foreshore reserve with practical buffers and management to ensure protection of their values.

## **8.5 Public access**

As per Part 8.2 above.

## **8.6 Coastal processes**

As per SPP2.6 section 5.9 and Schedule One.

## **9. Coastal strategies and management plans**

### **9.1 Coastal plan requirements**

A coastal planning strategy and/or foreshore management plan should be prepared to support proposals on the coast. The coastal planning strategy or foreshore management plan should:

- (i) take into account –
  - coastal processes
  - coastal hazards
  - landform and stability
  - natural vulnerability
  - climate change
  - ecological values
  - water quality
  - recreation and public access
  - marine resource use and access
  - landscape, seascape and visual landscape
  - indigenous heritage
  - cultural heritage
  - land capability.
  
- (ii) set out requirements for –
  - coastal foreshore reserves
  - location and extent of public use, access and facilities
  - integration of coastal/marine planning and land use planning
  - protection of significant views and vistas
  - protection of significant natural landscapes
  - protection of significant indigenous heritage
  - protection of significant cultural heritage
  - protection of ecological systems
  - protection of threatened species and ecological communities.
  
- (iii) provide guidelines and criteria for development addressing –
  - form and scale of development
  - foreshore tenure and management
  - location, form and land use within development nodes

- wastewater
- stormwater and water sensitive urban design
- coastal hazard risk management and adaptation
- financial responsibilities for ongoing maintenance and management of foreshore areas including any foreshore protection structures.

The currency of plans relates to their need for review and is based on factors such as continued relevance, the extent and nature of change and pressures operating in the area covered by the plan.

The proponent should be responsible for the implementation of the foreshore management plan as well as the funding, maintenance, monitoring and management of foreshore works for a period not less than five years commencing from completion of all foreshore works.

Additional guidance is provided in the *Coastal Planning and Management Manual – A community guide for protecting and conserving the Western Australian coast*, as outlined above in 8.1.

## 10. Precautionary principle

The precautionary principle in coastal decision-making requires decision makers to act in response to the best available science, knowledge and understanding of the consequences of decisions and in the context of increasing uncertainty, to make decisions that minimise adverse impacts on current and future generations and the environment. In the application of the precautionary principle, private and public decisions should be guided by:

- (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and
- (ii) an assessment of the risk weighted consequence of various options.

## 11. Information support

Proper and orderly planning requires a basis in comprehensive, accurate and up-to-date information on the current status and trends of natural resources, including use, tenure and degradation. The Western Australian Planning Commission and the Department of Planning support coastal planning and management activities through a number of sources including the:

- Coastal Planning Program; and
- Coastal Planning and Management Manual.

Specialist coastal engineering advice, including advice regarding the Coastal Protection Policy for Western Australia and the collection and analysis of data measuring the physical characteristics of the coastal zone can be obtained from the Department of Transport.

It is recognised that comprehensive, accurate and up-to-date information on the current status and trends of natural resources including use, tenure and degradation may not be immediately available to decision-maker or the community. Proponents should be requested to supply

necessary information where decision-makers believe it is necessary to enable decisions to support the policies. Any information provided should ensure all methodologies and data used in an analysis is appropriate, transparent and verifiable and may be used as part of a consultation concerning a proposal.





## City of Joondalup Submission- Draft State Planning Policy 2.6- State Coastal Planning Policy

### Section 4- Policy Objectives:

The City of Joondalup supports greater incorporation of coastal climate change risks within the *Draft State Coastal Planning Policy* and welcomes the increased policy measures relating to sea level rise.

### Section 5.2- Development and settlement

The City supports the proposed enhanced policy measures that aim to protect the natural coastal environment habitat and water quality and provisions for development to be designed in consideration of environmental assets.

### Section 5.3- Water resources and management

The City is supportive of the inclusion of policy measures relating to the management of water resources within coastal areas in order to achieve the principles of water sensitive urban design and integrated water cycle management.

Reference to the *Better Urban Water Management Framework* at Clause 5.3 (i) would provide greater guidance for the implementation of water sensitive urban design and total water cycle management, through land use planning decisions.

The policy measures for the management of stormwater are consistent with the City's current approach in this area including utilising the Department of Water's *Stormwater Management Manual*.

### Section 5.4- Building height limits

The current *State Coastal Planning Policy* specifies height limits within 300 metres of the coast. The *Draft State Coastal Planning Policy* proposes to remove and replace this provision with a statement to the effect that maximum height limits may be specified in planning schemes in order to achieve outcomes which respond to the desires, character, built form or amenity of the locality.

In terms of building height assessment criteria, clause 5.4 (e) states 'there is visual permeability of the foreshore and ocean from nearby residential areas, roads and public spaces'. The City is concerned that this may be interpreted by residents that the visual permeability from individual residential properties won't be affected (ie their view won't be blocked), as opposed to an 'overall' visual permeability of the coast.

While the removal of maximum building heights from the *State Coastal Planning Policy* is assumed to provide flexibility, there is now a lack of guidance in this areas and no guarantee that local government will be able to specify desired height limits into District Planning Schemes. For example, the City of Joondalup has previously attempted to insert coastal height controls in District Planning Scheme No 2; however the proposals were not accepted by the Minister for Planning.

The ability to respond to local conditions through scheme provisions relies on the scheme amendment process. The *Draft State Coastal Planning Policy* does not assist in providing a certain outcome to the issue of appropriate building heights on the coast. Further guidance within the Policy is recommended.

### **Section 5.5- Coastal hazard risk management and adaptation planning**

The Draft Policy specifies the need for technical coastal assessments to establish risk and vulnerability. Whilst the City of Joondalup has been successful in grant funding applications to carry out this work, further grant funding should be made available to local government to reduce the costs involved with undertaking coastal vulnerability and risk assessments.

### **Section 5.7- Coastal protection works**

Section 5.7 (ii) states that significant upgrades or maintenance of existing structures should be considered as new protection works. The City does not support the inclusion of this condition within the *Draft State Coastal Planning Policy*, due to the requirements for re-approval of existing coastal works. The impact of this requirement may entail significant administrative and technical resources to be allocated by local government in order to undertake routine or basic maintenance to coastal infrastructure. This clause may also reduce local governments' ability to apply for grant funding for coastal protection works on existing structures.

In general application of this section of the new Policy may lead to local government undertaking a significant amount of study and consultation (resources and funds) for no certain outcome to protect existing works or undertake new works.

### **Section 5.8- Public interest**

The City supports the policy measures relating to enhanced community consultation. The proposed approach is consistent with the City's *Community Consultation and Engagement Policy*.

### **Section 5.9- Coastal foreshore reserve**

The City supports the removal of the general guide for the foreshore reserves. Greater flexibility in determining coastal foreshore reserves will lead to improved planning outcomes associated with environmental and social values of the coast. However variable setbacks as determined on a case by case basis determined by the type of coastline may require increased geotechnical or geomorphologic investigation to identify the classification of the coastal area.

### **Section 5.10- Coastal strategies and management plans**

Clause 5.10 refers to the requirement for a Coastal Planning Strategy or Coastal Foreshore Management Plan at rezoning, structure planning, subdivision, strata subdivision or development stages – 'whichever arises first and is *appropriate in scale*'.

No guidance is provided as to the meaning of *appropriate in scale*. In addition, it is unclear if this clause only applies to greenfield areas, or to infill areas adjoining the coastal reserve where there may not be an existing coastal foreshore management plan. For example, would a two lot subdivision within an existing area, adjoining a coastal reserve without a foreshore management plan trigger the need for such a plan?

Further guidance on the implementation of Clause 5.10 is recommended.

### **Section 5.11- Precautionary principle**

Acknowledgement of climate change impacts on coastal areas when making planning decisions and the principle of taking responsibility for potential threats or damage caused by a development is acceptable and the City is supportive of the inclusion of these principles.