

Coastal Vulnerability and the City's Response

Frequently Asked Questions

1. What are coastal hazard areas?

The areas in which coastal processes may occur or impact are called coastal hazard areas. Coastal processes include erosion during severe storms, inundation and future potential sea level rise. A coastal hazard area identified for a 100 year planning timeframe means that in 100 years, coastal processes (i.e. erosion) may occur in that area in the event of a severe storm and given a certain amount of sea level rise. It does not mean that water levels or the shoreline will be permanently located at this line.

Coastal vulnerability refers to the risk of damage to the coastline (including infrastructure located along the coastline) arising from coastal processes. Infrastructure located within coastal hazard areas is considered potentially vulnerable.

2. How have the City's coastal hazard areas been identified?

Consultants MP Rogers and Associates have undertaken a coastal hazard assessment that covers the length of the City's coastline. This assessment identified areas potentially subject to coastal processes within a 100 year planning timeframe. These coastal hazard areas were calculated using the methodology prescribed in Schedule One of *State Planning Policy 2.6 (SPP 2.6)* and takes into account the

width needed to allow for coastal processes including severe storm erosion, future long-term changes to the shoreline position, climate change induced sea level rise and storm surge inundation. Schedule One in *SPP 2.6* dictates the size and duration of severe storm erosion to be modelled and the amount of predicted sea level rise to be included.

3. How will it affect me?

Coastal vulnerability will affect different people in different ways depending on where they live and how they access, use and enjoy the coastline, as per **Table 1** below.

4. What is vulnerable on the City's coastline?

The coastal hazard assessment found that the majority of infrastructure potentially vulnerable in the short term is minor infrastructure such as fencing, beach access ways and dual use paths. Some dunal vegetation may also be vulnerable. In the longer term additional minor and major infrastructure may potentially be at risk including City-owned buildings, roads, public open space and foreshore areas as well as some private property.

Vulnerable areas will be able to be viewed using the City's [Mapping Online](#) tool and [Coastal Hazard Risk Maps](#) can be downloaded from the City's website.

I am a...	Table 1
Private property owner	<p>If you own a property identified within a coastal hazard area then <i>SPP 2.6</i> and the City's <i>Coastal Local Planning Policy</i> may apply to you. See the Coastal Vulnerability and Affected Private Property – Frequently Asked Questions for more information.</p> <p><i>SPP 2.6</i> dictates that if a planning or development application is submitted for a lot located in a coastal hazard area then a notification on the certificate of title will be required as a condition of approval. In addition Coastal Hazard Alerts will be included on any Land Purchase Inquiry made in relation to a lot located within a coastal hazard area.</p>
User of the City's coastline (including beaches, dual use path, public open space etc)	<p>Some areas of the City's coastline may become vulnerable over the next 100 years. This includes beaches and associated infrastructure (access ways, car parks, toilets etc), the coastal dual use path, parks and public open space areas. The City is taking a number of steps to ensure it is able to respond and adapt to future coastal vulnerability. See Q8 for more information.</p> <p>The City will continue to inform the public about coastal vulnerability and the City's adaptation responses. Community consultation will be undertaken as part of developing a Coastal Hazard Risk Management Adaptation Plan for the City. See Q13 for more information.</p>
A lessee or user of one of the City's coastal buildings	<p>If you lease or use a City building that is located in a coastal hazard area then that building may be impacted within the 100 year planning timeframe.</p> <p>Lessees and users will be consulted when the City develops a Coastal Hazard Risk Management Adaptation Plan for the City. See Q13 for more information.</p>

5. How likely is it that the modelled erosion will occur?

SPP 2.6 recommends a precautionary approach to assessing coastal vulnerability. This means using the best available science, an understanding of the consequences of decisions and making decisions that minimise adverse impacts on current and future generations and the environment. The methodology in *SPP 2.6* is more likely to overestimate potential impact than underestimate it.

The risk of the modelled erosion occurring is considered relatively low and the majority of potential impacts are long term. The establishment of a coastal monitoring program will allow the City to make an ongoing assessment of how actual erosion is tracking with the predicted models. See Q10 for more information on the coastal monitoring program.

6. When will we start seeing an impact on our coastline?

Coastal processes have always impacted the coastline; impacts will increase over time as sea levels rise. It is mostly minor infrastructure that will potentially be impacted within the next 50 years, more major impacts could potentially occur in the 50 to 100 year timeframe.

7. How will coastal vulnerability impact on the proposed Ocean Reef Marina development?

The concept plan for the Ocean Reef Marina has been developed to include allowances for coastal vulnerability based on the most up-to-date international, national and regional research. The recommended minimum building levels allow for a potential rise in sea level. The breakwaters have been designed to protect the internal development from erosion and includes an initial allowance for sea level rise and the provision to increase the crest height in the future.

In addition, the proposed Ocean Reef Marina development will need to meet the requirements of *SPP 2.6* including coastal hazard risk management and adaptation planning. A Coastal Hazard Risk Management Adaptation Plan is

being developed which will identify adaptation measures to ensure risk to the development is reduced and the development can withstand the impact of coastal processes within the planning timeframe.

The City is currently seeking environmental approval for the marine components of the Ocean Reef Marina project through a Public Environmental Review which is being assessed by the Environmental Protection Authority.

8. What is the City doing to address coastal vulnerability?

While the risk of the modelled erosion is relatively low and the majority of potential impacts are long term, the City is taking action to prepare for this future risk and ensure that potential impacts are minimised and managed appropriately, including;

- Implementing a coastal monitoring program to monitor shoreline movements.
- Engaging and informing the community about coastal vulnerability and coastal hazard areas.
- Implementing an overarching Coastal Infrastructure Adaptation Plan to guide the City's adaptation activities along the coastline.
- Developing a Coastal Hazard Risk Management Adaptation Plan including the use of a Coastal Survey to determine how the community values and uses the City's coastline.
- Implementing a Coastal Local Planning Policy to guide the City's application of *SPP 2.6*.

9. What is the timeframe for the City's response to coastal vulnerability?

Coastal vulnerability is a long-term issue for the City with major impacts unlikely to happen within the next 50 years. Taking steps now to plan for these future vulnerabilities will ensure the City is prepared to adapt and respond when required. A timeframe for the City's coastal vulnerability response both past and future is outlined in **Table 2** below.

Table 2	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Community Engagement		Information campaign and information sessions	Coastal Survey (part of developing CHRMAP)	Workshops on Adaptation Options (part of developing CHRMAP)	
		Ongoing communications on the City's website and other formats including release of monitoring reports etc			
Coastal Monitoring Program	Establish program	Ongoing monitoring			
	Baseline Report		Report		Report
Coastal Local Planning Policy		Draft policy advertised for comment. Policy adopted by Council April 2017	Ongoing implementation		
Coastal Infrastructure Adaptation Plan		Development of Plan	Endorsement by Council	Implementation	
Coastal Hazard Risk Management Adaptation Plan			Coastal Values Survey	Development of Plan	Implementation

10. What is the coastal monitoring program?

The Coastal Monitoring Program uses photo monitoring, time lapse monitoring, annual mapping of the shoreline and beach profile surveys to monitor movement of the shoreline over time. The Coastal Monitoring Program will allow the City to:

- Provide early warning of any increased vulnerability of assets.
- Inform planning decisions in the coastal zone.
- Inform maintenance and asset replacement schedules of coastal infrastructure.
- Guide the timing and need for coastal adaptation works.
- Identify the requirement for updates to adaptation plans and vulnerability assessments.
- Improve the City's understanding of coastal processes.

11. What is the Coastal Local Planning Policy?

The Coastal Local Planning Policy was developed to ensure the City complies with Part 5 of *SPP 2.6 – State Coastal Planning Policy* by advising current and future landowners of applicable coastal hazard risk and requiring coastal hazard risk management and adaptation planning to be undertaken where required. For more information on the planning implications of *SPP 2.6* see the *Coastal Vulnerability and Affected Property Owners – Frequently Asked Questions*.

12. What is the Coastal Infrastructure Adaptation Plan?

The purpose of the Coastal Infrastructure Adaptation Plan is to ensure the City is adequately prepared to adapt to current and future coastal hazards and risk to City infrastructure and assets is minimised. The objectives of the Plan are to:

- Improve understanding of the potential impacts of current and future coastal hazards
- Identify risk to the City's infrastructure and assets as a result of current and future coastal hazards
- Identify and implement projects to minimise risk to the City's infrastructure and assets from current and future coastal hazards
- Identify a long-term approach that will guide the City's future adaptation responses in the coastal zone.

13. What is the Coastal Hazard Risk Management Adaptation Plan?

A key recommendation of the Coastal Infrastructure Adaptation Plan is the development of an overall Coastal Hazard Risk Management Adaptation Plan (CHRMAP) for the City's coastline that will identify adaptation options that can be taken now and into the future to adapt vulnerable areas. The objectives of developing the CHRMAP are to ensure:

- Risk to the City's existing and future infrastructure and assets are minimised and appropriate adaptation responses are identified
- The community and relevant stakeholders are engaged in the City's coastal adaptation planning.

The first stage in the development of the CHRMAP is the implementation of a Coastal Survey to determine how the community values and uses the City's coastline. The outcomes of the Survey will be used to help identify potential adaptation options.

14. How can I keep up to date with the City's coastal vulnerability work?

Register on the Coastal Vulnerability Stakeholder Notification List to be informed by email whenever new coastal vulnerability studies or investigations are released, and about opportunities to become involved in future planning of the City's coastline.

To be added to the notification list, please email coastal@joondalup.wa.gov.au