

## **FREQUENTLY ASKED QUESTIONS - COASTAL HAZARD RISK MANAGEMENT & ADAPTION PLANNING: COASTAL VULNERABILITY STUDY & HAZARD MAPPING**

### **Is sea level rising?**

Strong scientific evidence indicates that since the early 1990s the global sea level has risen significantly higher than the previous half century. Current projections for sea level rise are based on a vertical sea level rise of 0.9 metres over a 100 year period to the year 2110 (SPP 2.6). The sea level rise is linked to global climate change, which has been most apparent from the mid to late 20th century onwards.

Climate change impacts on sea level in two ways. First, as the global temperature increases the seawater expands, taking up more space in the ocean basin and causing a rise in water level. The second mechanism is the melting of ice over land which then adds water to the ocean.

### **What is coastal vulnerability?**

Coastal vulnerability is the extent that an area of coastline is susceptible to the effects of erosion, storms and sea level rise. Coastal areas that are exposed, sensitive and less able to adapt are vulnerable. Part 1 of the CHRMAP process has identified areas of the City of Wanneroo that are vulnerable over the next 100 years.

### **What is a Coastal Hazard Risk Management & Adaption Plan?**

In July 2013, the amended State Coastal Planning Policy No 2.6 (SPP 2.6) was gazetted. A new provision was included within this Policy requiring a Coastal Hazard Risk Management & Adaption Plan (CHRMAP) to be prepared by 'responsible management authorities' (e.g. the City of Wanneroo), where existing or proposed developments are in an area at risk of being affected by coastal hazards over the planning timeframe. The main purpose of a CHRMAP is to define areas of the coastline that are vulnerable to coastal hazards and to develop an adaption plan to monitor and manage these hazards where required.

The City of Wanneroo has chosen to complete the CHRMAP in two main components. The first component is complete a coastal vulnerability study and hazard map (Part 1). The results of this study are now being communicated to the community.

The second component of the CHRMAP involves a risk assessment and adaption plan. This component will involve a strategy to involve community feedback into the CHRMAP process and assist in the development of managing the potential risks in the future.

### **Why has the City of Wanneroo commenced this study?**

The City of Wanneroo is responsible for managing 32 km of coast line along the rapidly expanding northern corridor of the Perth Metropolitan area. In addition to the existing infrastructure and assets along this coast line, there is significant development planned in this area. It is therefore of extreme importance to understand what the potential impacts of sea level rise are and to identify where this may occur. This enables all stakeholders to effectively plan how the potential risks of sea-level rise can be managed for both existing and planned infrastructure and assets.

## What were the results of the study?

The City of Wanneroo engaged specialist coastal engineers M P Rogers & Associates Pty Ltd (MRA) to complete the CHRMAP Part 1 study. The study identified cultural, environmental and built assets that may be exposed to coastal erosion, storm surges and sea level rise over specified time frames, in accordance with SPP 2.6.

The study reviewed historical studies and used scientific methodology to identify coastal areas and associated assets that may be vulnerable to coastal processes. How vulnerable an asset is depends upon how exposed the asset is to the sea inundation and erosion; the sensitivity of the asset; and the ability for that asset to adapt to these changes.

Hazard maps were developed as a component of the CHRMAP Part 1 study to illustrate the areas of coastline that may be impacted over the next 100 years. The vulnerability of the coastline is defined by the following timeframes:

- Present day – brown line;
- 2030 – green line;
- 2050 – blue line;
- 2070 – purple line;
- 2090 – pink line; and
- 2120 – red line.

Copies of the hazard maps are available within the CHRMAP Part 1 study, available at [http://www.wanneroo.wa.gov.au/info/20041/environment/236/coastal\\_management](http://www.wanneroo.wa.gov.au/info/20041/environment/236/coastal_management).

Key areas that may be impacted over the next 35 years are included in Table 1:

Description	Suburb	Estimated Vulnerability Timeframe
Priority Ecological Community	Two Rocks	2030
Sovereign Drive & residential lots	Two Rocks	From 2050
Beach access road to 'The Spot'	Two Rocks	2050
Capricorn Groyne Car Park	Yanchep	2050
Brazier Road Car Park adjacent to Yanchep lagoon	Yanchep	2030
Residential lots west of Brazier Drive	Yanchep	From 2030
Car Park (Jindalee)	Jindalee	
Heritage site Karli Springs	Alkimos/Jindalee	2050
Residential lots west of Clarecastle Retreat	Mindarie	2050
Priority Ecological Community	Mindarie	Present Day

**Table 1** The nine key areas of vulnerability along the City of Wanneroo's coastline, as determined by Part 1 of the CHRMAP study.

### **How will the CHRMAP risk projections affect my insurance?**

The City has no control or influence in the calculation of property insurance as this is a matter for private insurers. However, based on similar coastal studies being undertaken in Western Australia, the City does not envisage that property insurance will increase based on the findings of the CHRMAP Part 1.

### **Will this impact the value of my property?**

The residential property market is subject to a number of external factors that can influence property values. Therefore the City is unable to comment as to whether the CHRMAP findings will negatively impact the value of properties that have been identified as at risk over the next 100 years. However, in scenarios across Australia where State or Local Government have produced similar coastal studies the findings have been inconclusive.

### **Will the City consider placing a notification on the certificate of title for residential properties that may be impacted by sea level rise?**

The City will consider all viable options that may assist in mitigating the risk of sea level rise on our coastline inclusive of placing a notification on the certificate of title for affected properties. The City has a duty of care to consider sea level rise in planning and development decisions now that the risks identified in the CHRMAP Part 1 are known.

### **Why is Quinn's Beach not included in the CHRMAP process?**

Quinn's Beach is not included in the CHRMAP process as the Quinn's Beach Long Term Coastal Management Study provides a detailed coastal assessment for the long term coastal management of the area. However, Administration will engage a consultant to complete hazard mapping for Quinn's Rocks upon completion of the current coastal protection works being undertaken in the area which is likely to be finalised in the next 2-3 years.

### **What is the next step in the CHRMAP study?**

The next stage in the process is to identify what potential adaption strategies are available to eliminate, prevent or reduce the impact of coastal processes on current and future assets. This will be completed through the CHRMAP Part 2 study which will commence in April 2016.

CHRMAP Part 2 will include a community engagement component to ensure that community feedback is included in adaption plans for key vulnerable assets. Any stakeholders who wish to be involved in this process are encouraged to register their interest with the City Growth team by calling 9405 5523 or emailing [Tenaha.Wilson@wanneroo.wa.gov.au](mailto:Tenaha.Wilson@wanneroo.wa.gov.au).

This study is planned to be repeated every five to ten years to ensure the vulnerability of assets are reassessed. This will assist in reviewing any potential changes in the impact of coastal processes and to review the effectiveness of implemented adaption plans.

### **How can I find out more information?**

A copy of the CHRMAP Part 1 report is available on the City's website at: [http://www.wanneroo.wa.gov.au/info/20041/environment/236/coastal\\_management](http://www.wanneroo.wa.gov.au/info/20041/environment/236/coastal_management).