



The Cockburn Sound Coastal Vulnerability & Flexible Adaptation Pathways Project

INFORMATION SHEET

What is the Cockburn Sound Coastal Vulnerability & Flexible Adaptation Pathways Project?

The Cockburn Sound coast is under increasing pressure from urban development and activities associated with population growth. Sections of the coast are particularly exposed and vulnerable to the impacts of sea level rise, storm surges and changes in sediment regimes. The *Coastal Vulnerability & Flexible Adaptation Pathways Project* (the Project) was initiated in 2011 by the Cockburn Sound Coastal Alliance (CSCA) to identify the vulnerability of the coast to erosion and coastal inundation (flooding). The Project will also develop, in consultation with key stakeholders and the community, adaptation measures to address those identified vulnerabilities. The Project provides the best available information to coastal managers on coastal processes, hazards, community values and adaptation measures to allow for the achievement of long-term preservation and management goals of the coast.

Who is the Cockburn Sound Coastal Alliance (CSCA)?

The CSCA was formed in 2011 and is a collaboration between four Local Governments (Cities of Cockburn, Fremantle, Kwinana and Rockingham) and Perth Region NRM. The City of Cockburn manages the project on behalf of the Alliance. The Department of Transport, Department of Planning, Department of Environment and Regulation, Cockburn Sound Management Council and Department of Defense are key stakeholders.



INFORMATION SHEET

What area does the CSCA Project cover?

The Cockburn Sound coast extends for approximately 45Km from the South Groyne of Fremantle Harbour in the north to the Garden Island Causeway in the south and includes the eastern side of Garden Island (Figure 1).

What are the objectives of the CSCA Project?

The CSCA Project aims to:

- Improve the understanding of the coastal features, processes and hazards of the Cockburn Sound coast.
- Determine the vulnerability of the coast within each coastal compartment based on an understanding of current and potential physical changes to coastal processes.
- Identify what assets are situated along the Cockburn Sound coast including the services and functions they provide.
- Identify the 'value at risk' of assets potentially affected by coastal processes and climate change under different timeframes and scenarios.
- Consult with key stakeholder groups and the community to undertake a detailed analysis of the most effective and feasible adaptation options which could include coastal protections, retreat and planning controls.
- Facilitate an understanding of coastal hazards and risk management of those hazards amongst key stakeholders and the community.
- Incorporate the results of the project (scientific information and outcomes of community / stakeholder consultation) into existing decision making frameworks and physical works being undertaken in the coast.



Figure 1: OACS Coast (CSCA Study Area).

INFORMATION SHEET

What does the CSCA Project do?

The Project consists of 4 stages:

Stage 1 – Coastal Vulnerability Study (completed in 2013): involved the analysis of coastal processes (metocean and sediment movement) to improve the understanding of existing coastal dynamics. Potential changes arising from climate change (from present day [2013] to 2110) were assessed to determine the vulnerability of sections of the coastline to erosion and flooding taking into account local geomorphologic and engineered structures.

Stage 2 – Coastal Values & Risk Assessment Study (completed in 2014): identifies the coastal assets affected by coastal processes including from climate change and estimate the 'value at risk' of these assets. It will also undertake a risk assessment of likelihood and consequence of the identified hazards and undertake a first pass assessment of potential adaptation options for the coastal assets at risk. Stage 2 was.

Stage 3 – Adaptation Plan Development and Review Report (started in 2015): refines the adaptation options developed in Stage 2 by consulting with interested stakeholder groups and the broader community. This includes identifying ongoing monitoring program needs and recommending improvements to local coastal management strategies and plans. This stage will also include an independent evaluation of the methodologies and outcomes of Stages 1, 2 and 3.

Stage 4 – Implementation and Monitoring (anticipated to start in 2015): will implement the first scheduled adaptation actions identified from Stage 3 including management plan reviews and initial on-ground works such as dune vegetation planting in identified areas to increase system's resilience to coastal processes

How is the CSCA Project funded?

Grant funding has been critical to advance the various stages of the Project. Funding has been provided by the Department of Transport Coastal Adaptation and Protection Program, Department of Planning Coastwest Program and from the local governments in the Alliance.

Does the CSCA Project consider social and environmental values?

Yes. The consideration of functions performed and services provided by natural areas is seen as an important component of Stage 2 and overall for the achievement of long-term preservation and management goals. The value at risk of natural coastal assets is calculated using a 'fit for purpose' methodology developed to ensure that assets of high intrinsic value or services that can be difficult to quantify in respect to monetary value are taken into consideration. Similarly social values are taken into consideration in the calculation of the value at risk in Stage 2.



INFORMATION SHEET

What are the next steps & how can I get involved?

Stage 3 (Adaptation Plan Development) commenced in 2015. Community representatives will be engaged in the process to help prioritise areas for adaptive response and assist to develop associated adaptation strategies to mitigate identified risks via workshops, and one to one interviews.

Contacts

Further information and details can be obtained from the CSCA website at www.cockburnsoundcoastalalliance.info and by contacting the CSCA Coastal Project Coordinator on Ph (08) 9411 3426.

You can also contact the CSCA local governments'.

City of Cockburn
Address: 9 Coleville Crescent, Spearwood
Web: www.cockburn.wa.gov.au
Tel: (08) 9411 3444

City of Fremantle
Address: Town Hall Centre, 8 William Street, Fremantle
Web: www.fremantle.wa.gov.au
Tel: (08) 9733 7800

City of Rockingham
Address: Civic Boulevard, Rockingham
Web: www.rockingham.wa.gov.au
Tel: (08) 9528 0333

City of Kwinana
Address: Corner of Gilmore Avenue and Sulphur Road, Kwinana
Web: www.kwinana.wa.gov.au
Tel: (08) 9439 0200

Glossary

Adaptation to Climate Change: Undertaking actions to minimise threats or to maximize opportunities resulting from climate change and its effects.

Coastal Assets: Tangible features of the built, natural and cultural environment that delivers a set of goods and services.

Coastal Erosion: refers to shoreline movement where the shoreline shifts landward, reducing the width of a coastal foreshore reserve.

Coastal Inundation (flooding): means the flow of water onto previously dry land. It may be either permanent (for example, due to sea level rise) or a temporary occurrence during a storm event.

Coastal Hazards: means the consequence of coastal processes that affect the environment and safety of people. Potential coastal hazards include erosion, accretion and flooding.

Geomorphologic: characteristics, origin, and development of landforms.

Vulnerability: predisposition to be adversely affected or unable to cope with events.

Metoccean: meteorological and ocean drivers of coastal processes.



COCKBURN SOUND
COASTAL ALLIANCE