

# Southend Coastal Adaptation Strategy

## The project

Without action, assets, public land and infrastructure in the vicinity of the coastline at Southend will experience increased risk from erosion and inundation. Recognising the value of the Southend coastline to the community, the Wattle Range Council with support of Coast Protection Board and Local Government Association has completed a project to develop a robust plan to adapt to these risks, including specific priority pathways for action.

The project followed the steps outlined by the Local Government Association of South Australia's Coastal Adaptation Decision Framework. The project included:

- Developing inundation and erosion maps based on estimates of extreme coastal water levels and projected sea level rise;
- Identifying the public and private assets at risk;
- Assessing the most appropriate courses of action in light of environmental, social and economic pressures.

## Background

The coastline of Southend and Rivoli Bay is important to the local community because of its recreation, tourism and nature values.

The main coastal threat to the settlement of Southend is erosion, which is already having a significant impact. Beach access stairs have been undermined, the Southend Caravan Park has needed to relocate its shorefront cabins, and erosion of the dunes is evident along the eastern beaches. Existing erosion processes have likely been exacerbated by the construction of the Lake Frome Outlet and loss of seagrass in Rivoli Bay. In the longer term, climate change driven sea level rise is expected to cause further erosion and related impacts.

Attempts at reducing the existing erosion impacts have been made in the past, including ad-hoc sand nourishment and the construction of three rock groynes between Eyre St and Leake St. These measures have been largely unsuccessful.

## What is at risk?

If a Do Nothing approach was adopted the following assets and infrastructure would be at risk for the relevant planning horizons:

2018	2050	2100
<ul style="list-style-type: none"><li>• Beach access stairs at Eyre St;</li><li>• Three private allotments north of Leake St;</li><li>• Low lying allotments in Subdivision between Lake Frome Drain and Southend Access Rd</li></ul>	<ul style="list-style-type: none"><li>• The foreshore reserve at Eyre St including toilet and shower blocks;</li><li>• The Southend Caravan Park;</li><li>• The Southend Sailing Club;</li><li>• The bush camping sites north of Leake St;</li><li>• The coastal reserve at West Beach including the BBQ, shelter and boardwalk</li></ul>	<ul style="list-style-type: none"><li>• A number of private properties between Eyre St and Leake St.</li><li>• A number of sealed roads including the Southend Bridge and subsequent storm water and sewerage infrastructure;</li><li>• The complete extent of the Caravan Park and Eyre St reserve;</li><li>• The complete extent of the reserve behind West beach including the toilet block and caravan effluent disposal facility;</li><li>• Almost the complete extents of the three privately owned allotments and the bush camping sites north of Leake St.</li></ul>

## What can be done now?

There are a number of actionable items (adaptation options) that require immediate attention, including:

- Ongoing monitoring - as a minimum the cross-shore profiles captured by DEWNR should be collated and reviewed annually and the coastal hazard maps updated every five years.
- Upgrade and repair works recommended for the boat ramp and car park rock revetment by DPTI and the Eyre St beach access stairs (western side).
- Commission an engineering study to investigate the optimal design of the Lake Frome Outlet and groynes with the intent to allow sediment to move east – west across Outlet; and prevent sediment entering the Outlet.
- Dune rehabilitation and control access to the dunes north of Leake St.
- Improvements to land use planning and development controls.
- A number of data gaps have been identified that would increase the robustness of the Adaptation Strategy, these are listed in the study report.

## What should be done to safeguard the settlement for the future?

A number of adaptation options were assessed against key criteria, including long-term effectiveness and social, environmental and economic outcomes. The project included the assessment of a number of protection strategies (including offshore breakwaters, onshore seawalls and beach nourishment) against other adaptation options, including managed retreat, deferral of action and 'do nothing'.

The analysis has identified managed retreat as the optimal approach for the settlement as a whole, for the long-term planning horizon (end of the century). In the longer term, protection strategies are not preferred at Southend, due to capital and ongoing costs and various environmental and coastal management issues.

Managed retreat is the highly controlled process of moving development inland in the face of sea level rise and coastal recession. This process is ideally conducted over a long period to ensure that impacts are managed, and the implementation is as effective and smooth as possible for all impacted stakeholders. The retreat pathway aims to allow natural coastal processes to unfold as much as possible and with as little inhibition from development as possible in the future.

The managed retreat of the Southend Caravan Park, Southend Sailing Club and the bush camping sites located north of Leake Street is recommended with the necessary planning works to begin as soon as practicable.

A key recommendation of this study is to commission an investigation into the managed retreat of private property and council assets. This would include:

- Develop a strategy outlining the potential options and recommended method for managing the retreat of private properties and associated infrastructure (roads, lighting, stormwater).
- Financial modelling to further confirm the viability of a managed retreat.
- Community and stakeholder engagement to communicate findings and work towards stakeholder buy-in for the proposed adaptation pathway.

## Further information?

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