

Adelaide Beach Management Review

Review Factsheet



Adelaide's coast is a much loved and visited part of our city and holds significant community, environmental and economic values. However, these values are at risk from coastal erosion and without active management we will see the build-up of sand in some areas, and the loss of sandy beaches in other areas.

The coast is subject to erosion because there is not enough sand naturally entering the system to replace that which is washed to the north by wind and waves. Without active management we will see the build-up of sand in some areas, and the loss of beaches in other areas placing physical infrastructure at risk.

The Adelaide Beach Management Review (the review) is a 12-month project, facilitated by the Department for Environment and Water (DEW) and overseen by the Attorney-General. The review involves an independent scientific review of coastal (sand) management approaches to determine the best long-term approach for managing Adelaide's metropolitan beaches.

The review has been initiated in accordance with the State government's commitment to undertake a review of coastal sand management approaches for Adelaide's managed metropolitan beaches. The review will explore all approaches for sand management which will include community input and transparency of process, and consideration of climate change impact.

In accordance with the State government's commitment, the review:

- Aims to assess approaches and identify how to manage sand on Adelaide's beaches in a way that minimises disruption for communities, avoids environmental harm, and maximises sand staying on beaches. These are the goals of the review.
- Includes community engagement to ensure a clear understanding of the Adelaide community's views on sand management approaches, and on the impact of the current sand management approaches including trucking and pipelines.
- Will consider lessons from international examples of sand management of metropolitan beaches, and what can be learned from the most up to date analysis of climate science about future management of Adelaide's beaches.

Why is the review needed?

The sand on Adelaide's beaches naturally moves from south to north, driven by wind and waves. This causes erosion at the southern and central sections of the coastline, such as at Seacliff, West Beach and Henley Beach South, and a build-up of sand on other parts of the coastline, such as at Glenelg, Semaphore and Largs Bay.

Maintaining Adelaide's sandy beaches currently involves active management to move sand and bring in sand from external sources. However, more storm events in recent years have increased erosion of beaches. At West Beach, access and amenity has been significantly impacted. Without intervention, these impacts will only increase with climate change.

Construction of a pipeline to move sand from Semaphore South to West Beach was previously proposed as a long term response for sand management. This initiative was halted in line with the State government's commitment to undertake a review to explore all approaches for sand management. Externally sourced sand will continue to be brought into West Beach while the review is completed.

How is sand on beaches managed now?

The State government has been actively managing Adelaide's coastline for the last 50 years to protect property, the foreshore and infrastructure from storms while also providing sandy beaches for community enjoyment. Sand has been moved from where it builds up to where it is needed. As necessary, additional sand has also been brought into the system from external sources such as quarries and offshore deposits. Generally, works are planned in the cooler months when beaches are less busy or to avoid Plover nesting seasons.

Community volunteer groups play a significant role in managing Adelaide's coastline. These groups, with support from Councils and State government, work to restore native vegetation, provide habitat and stabilise dunes.

Sand pumping

- In the southern section of the coastline sand is moved using an underground sand pipeline from Glenelg to southern beaches to maintain dunes and keep those beaches sandy. The sand transfer infrastructure includes 7km of pipeline from Glenelg to Kingston Park.
- Sand is scraped from the beach surface at Glenelg using a land plane and brought to the sand collection unit where it is screened to remove stones, seagrass wrack and rubbish, then mixed with seawater to form a sand slurry (comprised of 70% water and 30% sand). Where seagrass has built-up on the donor beach it is removed or set aside to ensure that mainly sand is collected and brought to the sand collection unit.
- The sand slurry is pumped southwards through the pipeline to discharge stations at southern beaches where it is discharged at the back of the beach, at the toe of the dune or the base of seawalls. The sand settles out from the slurry forming a low, wide stable mound and the excess water returns to the sea.
- When sand has built up at one discharge location, the sand slurry discharge can be redirected to another discharge location. At the end of each pumping session the pipeline is flushed with plain seawater to remove remaining sand. The discharged sand is gradually spread out by waves and moves northwards along the beach (known as littoral or longshore drift) to provide protection to the foreshore.
- Sand pumping operates mainly between autumn and spring. Pumping may occur any time between 7:00am and 7:00pm from Monday to Saturday. Pumping is scheduled to avoid work in summer and school holidays when beach usage is high.

- The duration of each sand pumping campaign depends on the amount of sand required to be pumped. This is determined by surveys of beach heights and calculations of beach volumes in relation to the minimum beach and dune buffer requirements. The total volume of sand backpassed in recent years is provided below (note: year-to-date for 2022/2023):

Sand backpassing via underground pipeline from Glenelg to Southern Beaches

Years	Total cubic metres
2022/2023	80,700m ³
2021/2022	101,400m ³
2020/2021	102,000m ³
2019/2020	101,000m ³
2018/2019	97,600m ³
2017/2018	98,000m ³
2016/2017	80,000m ³

- Prior to the sand backpassing pipeline being commissioned in 2013, this section of coastline was managed using trucks on beaches to backpass sand from where it accumulated to where it was needed. Sand had also been brought in to Brighton from external sources in the 1990s, including the delivery of 1,144,000m³ of sand that had been dredged from an offshore deposit near Port Stanvac. The dredging operation also delivered 100,000m³ of sand to Glenelg North.

Years	Cubic metres	Source	Start	Start-End	Method
1990	100,603	North Haven dredging	North Glenelg	16/01/90 - 16/03/90	Dredged
1991	187,169	Port Stanvac (offshore)	Brighton	31/01/91 - 30/04/91	Dredged
1994	172,839	Port Stanvac (offshore)	Brighton	17/01/94 - 13/04/94	Dredged
1995-1996	181,522	Port Stanvac (offshore)	Brighton	17/11/95 - 07/02/96	Dredged
1997-1998	602,712	Port Stanvac (offshore)	Brighton	29/10/97 - 07/02/98	Dredged

Sand replenishment 2022/2023

- Between May and June 2023 (weather dependent) approximately 50,000 cubic metres of quarry sand will be delivered to West Beach via the Adelaide Sailing Club. If erosion is significant and urgent works are required, sand may also be moved to replenish dunes near Rockingham Street (to the north of the West Beach Surf Life Savings Club).
- In March 2023, 15,000m³ of quarry sand was delivered via the Henley Beach Sailing Club and trucked along the beach from south of the Torrens Outlet to areas at Henley Beach South.
- In March 2023, accumulated sand was collected from the Semaphore Breakwater using a land plane and moved along the beach using trucks to replenish eroded dunes at Semaphore Park. Dead seagrass (wrack) that had accumulated on the beach at the breakwater was also moved to Semaphore Park at the back of the beach to further bolster erosion protection.

Dune restoration

DEW works in collaboration with Councils and communities on dune restoration and stabilisation works across the Adelaide coastline.

Stabilisation works at Semaphore South dunes followed well-established methods using drift net fencing and revegetation.

At West Beach a new foredune was created and planted with local native plants to protect the main dune from waves. In some areas drift fencing has been installed to prevent dune blow out and drift.

A trial is also underway to see how beach wrack (washed up seagrass) can be placed on the beach to protect and stabilise dunes at West Beach.

Dune restoration and stabilisation works have also previously been undertaken elsewhere on the Adelaide coastline.

Dunes between Brighton and Seacliff have been revegetated contributing to improving biodiversity along this section of the coastline.

Dunes play an important role in providing habitat to foster a healthy ecosystem that supports many species, as well as providing protection for infrastructure adjacent to the coast.

How is the review being undertaken?

The review involves an independent scientific review supported by community and stakeholder engagement. These processes will be iterative, informing each other to support the identification of sand management approaches that are feasible and best meet environmental needs while acknowledging community expectations.

The engagement is being led by URPS (www.urps.com.au). The scientific review is being led by Bluecoast Consulting Engineers (www.bluecoastconsulting.com.au).

What is the Independent Advisory Panel?

The review is being overseen by an Independent Advisory Panel (IAP), which will inform the review approach and examine the outcomes of each stage of the review. The IAP will attend a stakeholder workshop to observe input from stakeholders early in the review. Community and stakeholders will also have the opportunity attend a meeting of the IAP to speak to submissions made to the Review during the consultation on shortlisted approaches.

Advisory Panel members are:

- Mark Searle, former Chief Executive Officer for the City of Marion
- Kaurana representatives Les Wanganeen and Sarah Smith
- Professor Beverley Clarke, social science expert from Flinders University
- Professor Emeritus Nick Harvey, coastal science expert from the University of Adelaide
- Professor Emeritus Mike Young, environmental science expert from the University of Adelaide.

How can you have your say?

It is very important to the success of the review that it is informed by an understanding of what matters most to the community and the community's views on the different sand management approaches.

There are two key steps in the review process at which community and stakeholders can provide input (see Review Process Diagram):

- Seeking input about what outcomes and values are important to the community for how sand is managed on beaches, and to add any new approaches to the long list that will be assessed. The feedback received will be used to inform the shortlisting of the long list of sand management approaches.
- Seeking community and stakeholder feedback on the shortlisted sand management approaches – what is liked or not liked about them.

URPS will lead the engagement and prepare a report of the results of each step of engagement. Reports will be made public on the review webpage and provided to the IAP for review.

How will approaches be assessed?

Sand management approaches will be independently assessed by Bluecoast. Bluecoast will consider how well the approaches meet the goals of the review using the consultation reports prepared by URPS as well as technical data.

There are two key steps in the review process at which the approaches will be independently assessed:

- Undertaking a high-level technical assessment to identify a shortlist of feasible sand management approaches from the longlist. The assessment will follow an evidence-based approach using information and data from previous coastal monitoring, studies and research on Adelaide's beaches, as well as results of the community engagement about what values matter most to community. The assessment will evaluate the effectiveness and practicality of the approaches on the longlist to filter out least feasible approaches.
- Undertaking a detailed assessment of shortlisted sand management approaches to determine how well each approach (or combination of) can meet the goals of the review. This assessment will use the Shortlist Consultation Report and technical information to evaluate how each approach would be expected to perform in delivering the project objectives and desired social and environmental outcomes.
- Bluecoast will undertake the technical assessments and prepare a report of the results of each assessment step. Reports will be made public on the review webpage and provided to the IAP for review.

How is Kaurna cultural heritage being considered?

The review will meet with Kaurna representatives so that Kaurna cultural values and important sites inform the assessment of sand management approaches.

Who makes the decisions?

The ultimate decision for the sand management approach(es) that will be adopted resides with the State government (Cabinet).

The role of the IAP is to oversee the review process which will inform the review approach and examine the outcomes of each stage of the review.

Bluecoast are assessing sand management approaches to determine how well each approach (or combination of) can meet the goals of the review. They are not making a recommendation.

Review process

Step 1 - May to June 2023

Community and Stakeholder Values Engagement (URPS).

Step 2 - June 2023

IAP review Community Values Engagement Report and confirm approach for next stage of the review.

Step 3 - July to August 2023

Shortlist sand management approaches (Bluecoast).

Step 4 - August 2023

IAP review Shortlisting Report and confirm next stage of review.

Step 5 - August to October 2023

Community and stakeholder consultation on short listed sand management approaches (URPS).

Step 6 - October 2023

IAP review Shortlist Consultation Report and confirm next stage of review.
Opportunity for people to speak to their submissions at a meeting of the IAP.

Step 7 - October to December 2023

Assessment of shortlisted sand management approaches (Bluecoast)

Step 8 - December 2023

IAP review Assessment Report and confirm next stage of review

Step 9 - Early 2024

Community and stakeholders informed of the outcomes of the review and next steps

For more information

www.yoursay.sa.gov.au/abmr

