

KINGSTON DISTRICT COUNCIL FACT SHEET

COASTAL ADAPTATION STRATEGY (CAS)

WYOMI BEACH SEAWALL STAGE 2



Background

Council has developed a Coastal Adaptation Strategy (CAS) to assist in future adaptation pathways and priority actions to reduce coastal erosion and inundation risk. This CAS has been summarised in a series of fact sheets on Council's website, with the full CAS also available online at:

<https://www.kingstondc.sa.gov.au/our-services/major-projects/coastal-adaptation-strategy>

The CAS identified that the beach area, to the north and south of the existing Wyomi seawall, experiences on-going erosion of approximately 1m/year and is highly vulnerable to storm erosion. Given the proximity of assets and properties to the shoreline, the Wyomi beach area was identified as requiring immediate adaptation to reduce risks.



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In the CAS, viable adaptation options to reduce the risk at Wyomi were considered in terms of their effectiveness and the environmental, social and economic impacts and benefits assessed. The CAS identified two viable adaptation pathways for Wyomi; *Defend*, using seawalls, and *Retreat*.

Through 2021, Council discussed the two pathways with the Kingston community in a series of information sessions and feedback was sought via surveys. This project is summarised on the Council's 'Major Projects' page: <https://www.kingstondc.sa.gov.au/our-services/major-projects/wyomi-beach-seawall-stage2-project>

Seawall Adaptation Pathway

Following feedback received during community engagement, Council adopted the seawall (*Defend*) pathway in January 2022. The concept seawall was located parallel to Marine Parade, set back from the coastal processes, with the aim of maintaining a beach for as long as possible.

During the community engagement sessions several residents raised concerns for the proposed seawall alignment. More specifically, for the potential loss of the established dune vegetation in the area. Noting if the seawall was positioned further seaward, more dune vegetation could be protected, however, the beach would be lost earlier. These processes are shown in the diagram below.

Shoreline without seawall



Shoreline with seawall



Gradual loss of beach



Given the community feedback, Council has supported further assessment of different seawall alignments and their various trade-offs. The preliminary seawall investigations, as well as the preferred seawall alignment, are summarised within this fact sheet.

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Why is the seawall alignment important?

Careful consideration of the seawall alignment is required for several reasons:

- To ensure the important built assets, such as roads and private properties are protected;
- To identify planning and construction triggers for future seawall stages, resulting in a proactive approach to coastal management;
- To identify impacts on coastal processes and to minimise adverse erosion risks to the beach and dunes; and
- To identify the construction, upgrade and maintenance costs for future planning.

What will the Stage 2 seawall protect?

The primary objective of the Stage 2 seawall is to protect assets at risk from storm erosion and shoreline recession within the 2030 erosion extent. This extent is shown as a yellow line in Figure 1 and highlights that by 2030, at risk assets include the footpath, Marine Parade and private properties.

In approximately 5 to 10 years, when the shoreline erodes close to the end of the Stage 2 seawalls, the Stage 3 seawall would be constructed. Future seawall stages would then be constructed approximately every 10 to 20 years based on erosion risk at the time.

How was the preferred alignment selected?

Three preliminary seawall alignment options have been developed, as described below:

1. **Road alignment:** seawall buried under the dune along Marine Parade, offset a similar distance to the existing Stage 1 seawall.
2. **Protect all dunes:** seawall constructed on the seaward side of the dunes, protecting all dune areas within the potential erosion extent.
3. **Balanced option:** seawall constructed approximately 20m from the road, providing a dune buffer between the road and seawall.

The approximate extent of the three seawall alignment options to 2050 are shown in Figure 2 – Figure 4 on the following page.

The three seawall alignments offer different trade-offs between the following key factors:

- Maintaining a beach for as long as possible;
- Short and long-term impacts on the dune vegetation;

- Flexibility of the alignment to future changes in coastal processes; and
- Construction and maintenance costs.

These trade-offs are shown for the three options in Table 1.

In April 2022, Council selected the **Balanced** option as the preferred seawall alignment to proceed for approvals and detailed design. This option strikes a balance between beach and dune impacts whilst having only a minor increase in project costs. The selected seawall alignment is shown in Figure 5.

How will the project be funded?

The project is anticipated to cost \$2.605m.

It will be funded as follows:

- Australian Government Coastal and Estuarine Risk Mitigation Program (CERMP), \$1.953m
- State Government - Coast Protection Board \$130k
- Local Government – Council will fund the balance of the project, anticipated to be \$522k through loan funds
- Council has awarded the tender for the project to Teagle Contracting and work will commence early November 2023.

Where to Next?

Construction of the seawall will commence 6 November 2023 and is anticipated to be completed by 30 April 2024, construction work will cease from 23 December 2023 for the Christmas holiday period and recommence on 29 January 2024.

Want further information?

If you require further information on the project, please refer to the Council website 'Major Projects' page or contact us at:

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Figure 1 – 2030 Possible Zone of Recession (ZR) Hazard Line



Table 1 – Seawall Alignment Trade-offs

|  Seawall Option |  Beach Impact |  Long Term Dune Loss |  Flexibility | \$\$ Cost Stage 2 (2023) |
|---|--|---|--|--------------------------|
| Road alignment | Low | High | High | \$2.3M |
| Protect all dunes | High | Low | Low | \$5.7M |
| Balanced (20m buffer) | Moderate | Moderate | Moderate | \$2.6M |

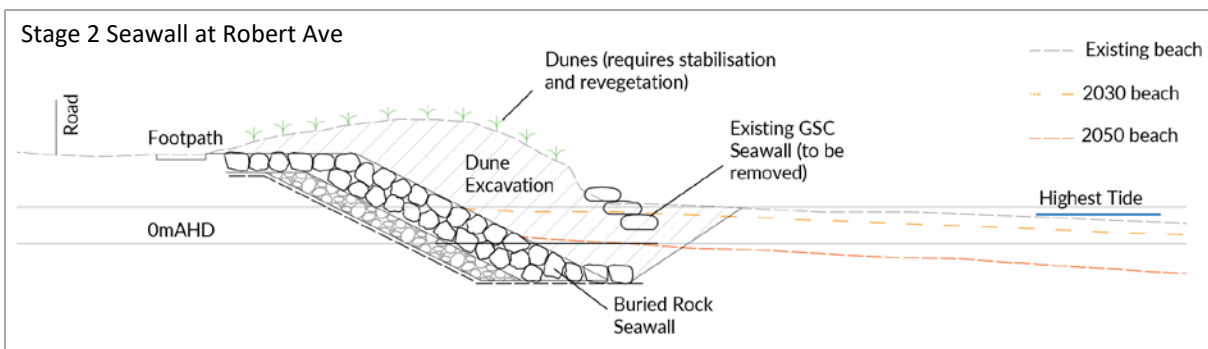
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Figure 2 – Road alignment option



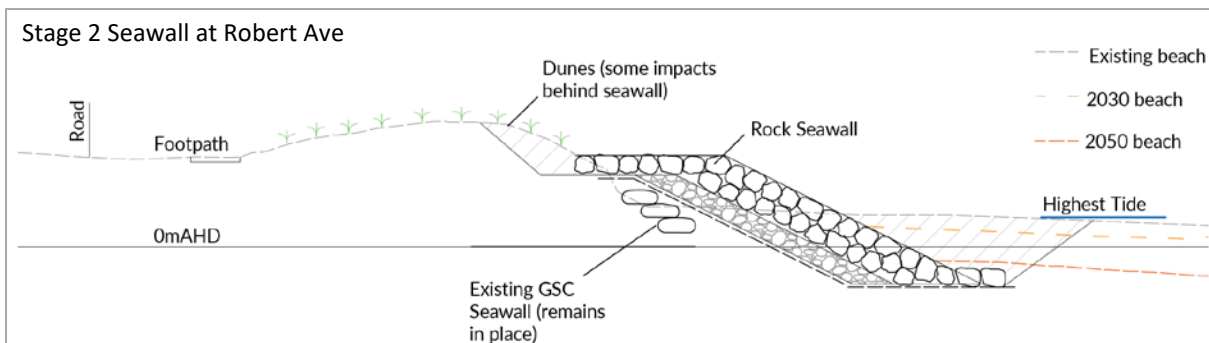
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Figure 3 – Protect all dunes option



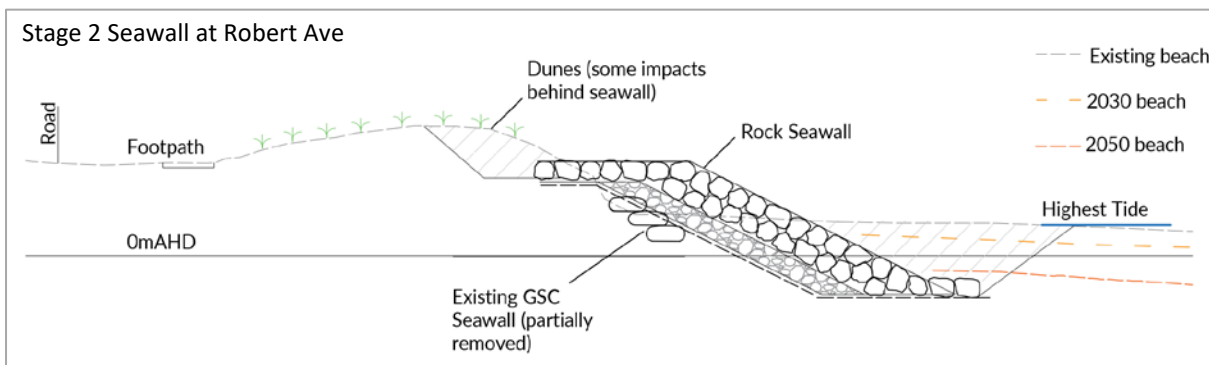
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Figure 4 – Balanced option (20m dune buffer)



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Figure 5 – Selected Stage 2 Seawall Alignment

