

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.



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*.

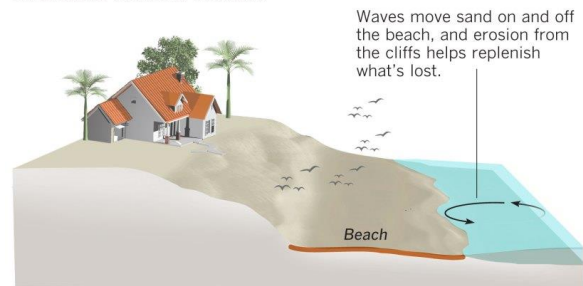
Through 2021, Council discussed the two pathways with the Kingston community in a series of information sessions and feedback was sought via surveys. This project is summarised on the Council's 'Major Projects' page: <https://www.kingstondc.sa.gov.au/our-services/major-projects/wyomi-beach-seawall-stage2-project>

Seawall Adaptation Pathway

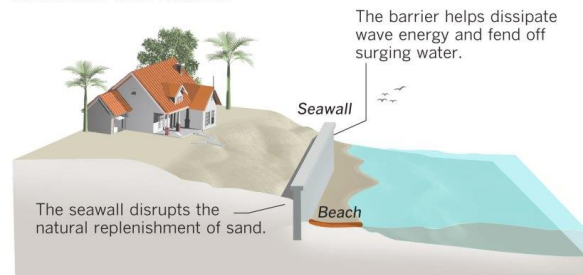
Following feedback received during community engagement, Council adopted the seawall (*Defend*) pathway in January 2022. The concept seawall was located parallel to Marine Parade, set back from the coastal processes, with the aim of maintaining a beach for as long as possible.

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.

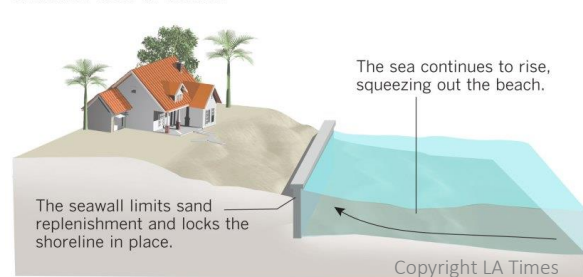
Shoreline without seawall



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.

Grant Application

In March 2022, the Federal Government invited grant applications for the Coastal and Estuarine Risk Mitigation Program (CERMP) for financial year 2022/23. The proposed Stage 2 Wyomi Seawall met the eligibility criteria for grant funding, which offered up to \$10 million for coastal projects within South Australia.

Council lodged a grant application in May 2022 seeking grant funding of \$1.953M to build the Wyomi Seawall Stage 2 at a forecast total cost of \$2.605M. Council was advised in early November 2022 that the grant application was successful and Council will receive the requested \$1.953M.

Where to Next?

Council has commenced the process of seeking various approvals for the construction of the seawall and to prepare the detailed design for a tender. At this stage it is planned for construction to commence in late 2023.

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

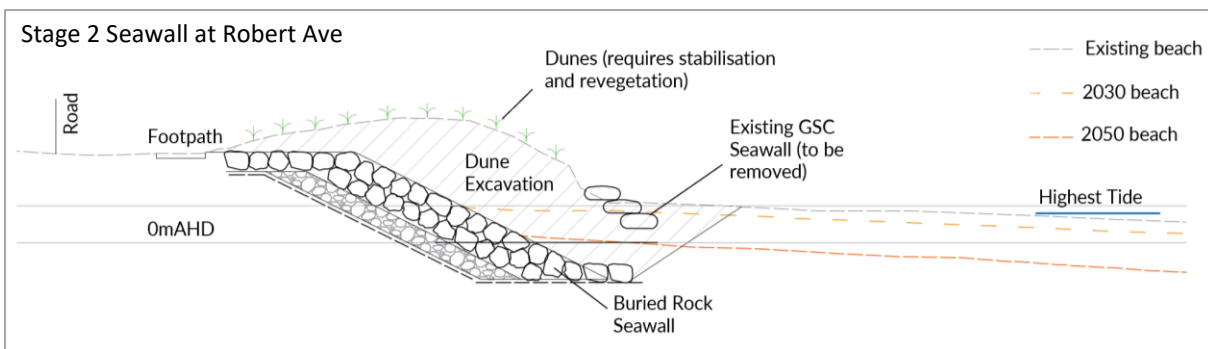
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Figure 2 – Road alignment option



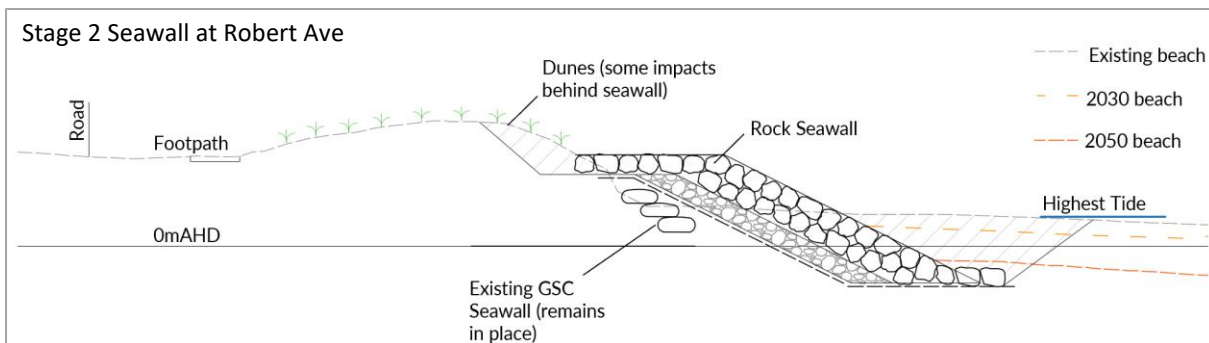
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Figure 3 – Protect all dunes option



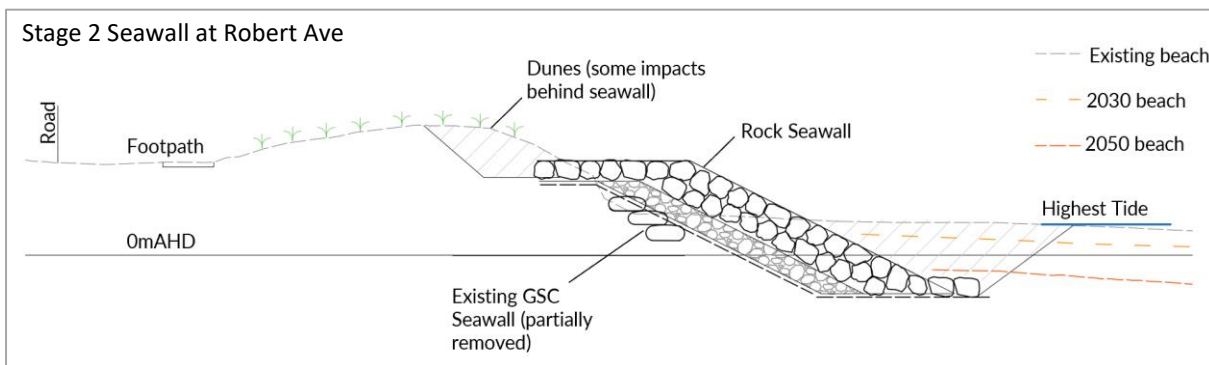
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Figure 4 – Balanced option (20m dune buffer)

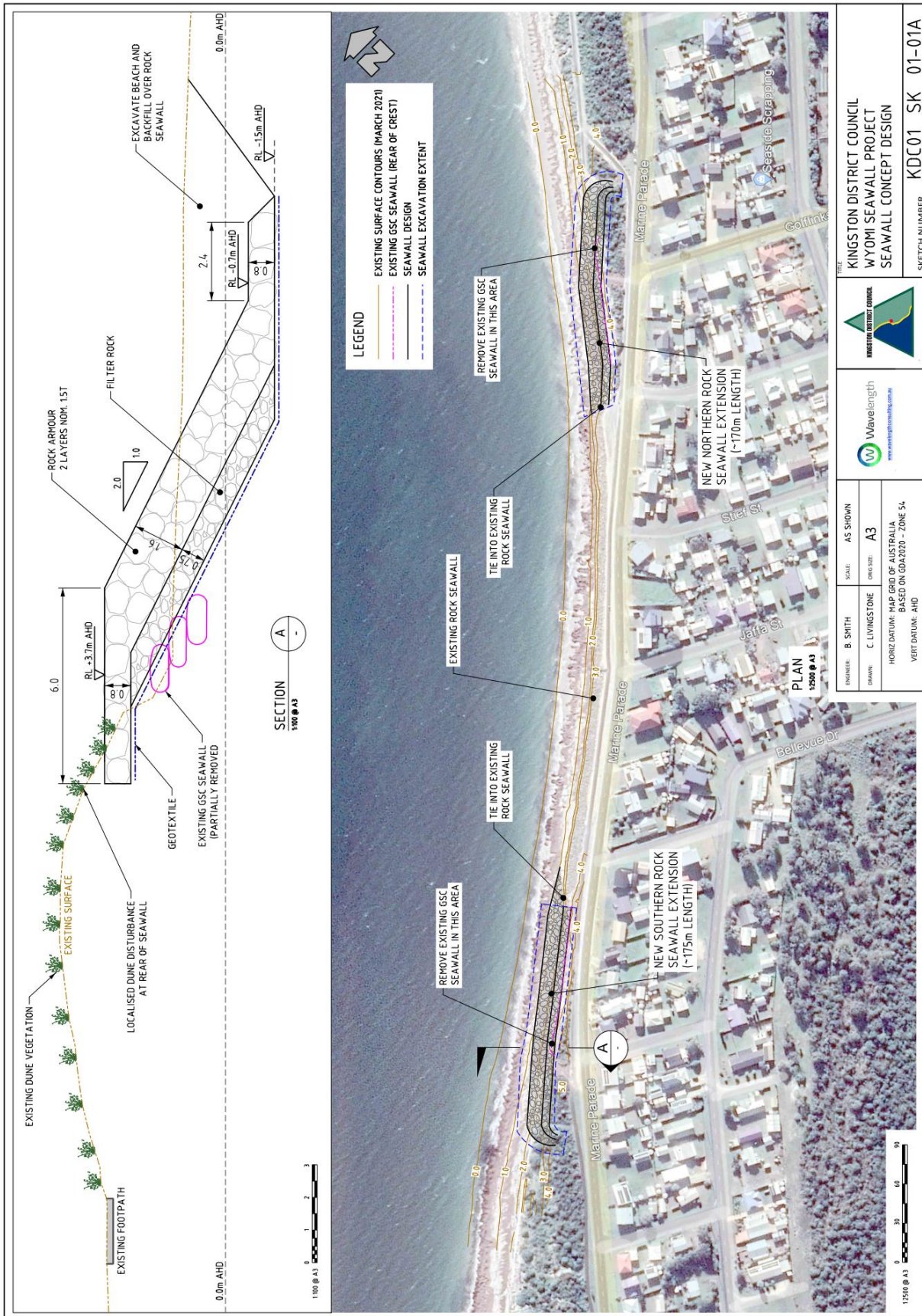


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Figure 5 – Selected Stage 2 Seawall Alignment



KINGSTON DISTRICT COUNCIL WYOMI SEAWALL PROJECT SEAWALL CONCEPT DESIGN	
SKETCH NUMBER KDC01_SK_01-01A	V:\ADMIN\01_SK_01-01A.dwg
ENGINEER: B. SMITH SCALE: AS SHOWN	DATE: AS SHOWN
DRAWN: C. LIVINGSTONE ENGINE: C. LIVINGSTONE	DATE: 15/02/2022
HORIZONTAL DATUM: MAP GRID OF AUSTRALIA VERT DATUM: AHD	