

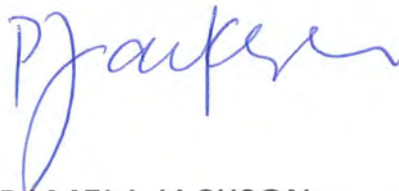


NOTICE OF MEETING

Notice is hereby given that an ordinary meeting of Council will be held in the

**Council Chamber – Glenelg Town Hall
Moseley Square, Glenelg**

Tuesday 27 September 2022 at 7.00pm



**PAMELA JACKSON
ACTING CHIEF EXECUTIVE OFFICER**

Ordinary Council Meeting Agenda

1. OPENING

The Deputy Mayor will declare the meeting open at 7:00pm.

2. KAURNA ACKNOWLEDGEMENT

We acknowledge Kurna people as the traditional owners and custodians of this land.

We respect their spiritual relationship with country that has developed over thousands of years, and the cultural heritage and beliefs that remain important to Kurna People today.

3. SERVICE TO COUNTRY ACKNOWLEDGEMENT

The City of Holdfast Bay would like to acknowledge all personnel who have served in the Australian forces and services, including volunteers, for our country.

4. PRAYER

Heavenly Father, we pray for your presence and guidance at our Council Meeting. Grant us your wisdom and protect our integrity as we carry out the powers and responsibilities entrusted to us on behalf of the community that we serve.

5. APOLOGIES

5.1 Apologies Received – Mayor Wilson

5.2 Absent

6. ITEMS PRESENTED TO COUNCIL

7. DECLARATION OF INTEREST

If a Council Member has an interest (within the terms of the Local Government Act 1999) in a matter before the Council they are asked to disclose the interest to the Council and provide full and accurate details of the relevant interest. Members are reminded to declare their interest before each item.

8. CONFIRMATION OF MINUTES

That the minutes of the Ordinary Meeting of Council held on 13 September 2022 be taken as read and confirmed.

9. PUBLIC PRESENTATIONS

9.1 Petitions - Nil

9.2 Presentations - Nil

9.3 Deputations – Nil

10. QUESTIONS BY MEMBERS10.1 **Without Notice**10.2 **On Notice**10.2.1 Environment, Resources and Development (ERD) Court Costs –
Councillor Clancy (Report No: 399/22)**11. MEMBER'S ACTIVITY REPORTS - Nil****12. MOTIONS ON NOTICE –Nil****13. ADJOURNED MATTERS - Nil****14. REPORTS OF MANAGEMENT COMMITTEES AND SUBSIDIARIES**14.1 Minutes – Jetty Road Mainstreet Committee – 7 September 2022
(Report No: 397/22)**15. REPORTS BY OFFICERS**

15.1 Items in Brief (Report No: 398/22)

15.2 Monthly Financial Report – 31 August 2022 (Report No: 400/22)

15.3 Local Government Finance Authority (LGFA) Board of Trustees Election
(Report No: 384/22)15.4 Election of West Regional Grouping Representatives to Greater Adelaide
Regional Organisation of Councils (Report No: 385/22)

15.5 Election of Local Government Association President (Report No: 386/22)

15.6 Coastal Adaptation Plan Stage 1 (Report No: 387/22)

15.7 Pathway at Seacliff City-Bound Railway Platform (Report No: 388/22)

15.8 Sand in the Glenelg to Kingston Park Beach System (Report No: 389/22)

15.9 2022 New Year's Eve Glenelg Temporary Dry Zone Extension
(Report No: 390/22)**16. RESOLUTIONS SUBJECT TO FORMAL MOTIONS**

Presented for the information of Members is a listing of resolutions subject to formal resolutions, for Council and all Standing Committees, to adjourn or lay on the table items of Council business, for the current term of Council.

17. URGENT BUSINESS – Subject to the Leave of the Meeting**18. ITEMS IN CONFIDENCE - Nil****19. CLOSURE**

PAMELA JACKSON
ACTING CHIEF EXECUTIVE OFFICER

Item No: 10.2.1

Subject: **QUESTION ON NOTICE – ENVIRONMENT, RESOURCES AND DEVELOPMENT (ERD) COURT COSTS – COUNCILLOR CLANCY**

Date: 27 September 2022

QUESTION

Councillor Clancy asked the following question:

“What are the estimated costs to Council for the appeal to the Environment, Resources and Development Court for the Seacliff Plaza Stage 1 Project?”

ANSWER – MANAGER, DEVELOPMENT SERVICES

From the respondent’s perspective, there are no initial costs in answering the appeal, as the Preliminary Conference stage before the Environment, Resources and Development (ERD) Court will be managed and attended by planning staff under delegation without the need for legal representation. From the appellant’s perspective, professional fees will be incurred for the preparation of a compromise proposal to resolve the appeal, in the form of a re-designed concept for consideration by the Council Assessment Panel (CAP) at its meeting scheduled for 28 September 2022.

No legal representation will be required by the appellant for this stage of the appeal process, with no costs incurred accordingly. Should the re-designed concept not appease the CAP’s concerns, then either further amendments to the concept may be required or the matter could progress to a hearing before the ERD Court for adjudication. Whilst direction will be sought from Council prior to taking the matter to a hearing, where cost disclosures providing a breakdown of expenses will be provided to both contest and defend the appeal, past experience suggests that each party can be expected to incur costs of between \$15k-\$20k for an appeal of this type, which is required to retain separate legal representation and expert witnesses.

Item No: 14.1

Subject: **MINUTES – JETTY ROAD MAINSTREET COMMITTEE – 7 SEPTEMBER 2022**

Date: 27 September 2022

Written By: General Manager, Community and Business

General Manager: Community and Business, Ms M Lock

SUMMARY

The minutes of the Jetty Road Mainstreet Committee meeting held on 7 September 2022 are attached and presented for Council's information.

Jetty Road Mainstreet Committee Agenda, Reports and Minutes are all available on Council's website and the meetings are open to the public.

RECOMMENDATION

That Council notes the minutes of the Jetty Road Mainstreet Committee of 7 September 2022.

STRATEGIC PLAN

Building an economy and community that is inclusive, diverse, sustainable and resilient.

COUNCIL POLICY

Not applicable

STATUTORY PROVISIONS

Not applicable

BACKGROUND

The Jetty Road Mainstreet Committee (JRMC) has been established to undertake work to benefit the traders on Jetty Road, Glenelg, using the separate rate raised for this purpose. Council has endorsed the Committee's Terms of Reference and given the Committee delegated authority to manage the business of the Committee.

Jetty Road Mainstreet Committee Agendas, Reports, and Minutes are all available on Council's website and the meetings are open to the public.

REPORT

Minutes of the meetings of JRMC held on 7 September 2022 are attached for member's information.

Refer Attachment 1

BUDGET

Not applicable

LIFE CYCLE COSTS

Not applicable

Attachment 1



CITY OF HOLDFAST BAY

Minutes of the meeting of the Jetty Road Mainstreet Committee of the City of Holdfast Bay held in the Mayor's Parlour Glenelg Town Hall on Wednesday 7 September 2022 at 6:00pm

PRESENT

Elected Members:

Mayor A Wilson
Councillor R Abley
Councillor W Miller

Community Representatives:

Attitudes Boutique, Ms G Martin
Daisy and Hen, Ms G Britton
Cibo Espresso, Mr T Beatrice
Beach Burrito, Mr A Warren
Terra & Sol, Mr B Meuris
Smart Hearing Solutions, Mr J Rayment
Glenelg Finance, Mr D Murphy

Staff:

Chief Executive Officer, Mr R Bria
General Manager, Community & Business, Ms M Lock
Manager, City Activation, Ms R Forrest
Jetty Road Development Coordinator, Ms A Klingberg
Jetty Road Digital Marketing & Administration Officer, Ms S Fitridge
Events Coordinator, Ms F Edwards

1. OPENING

The Chair, Ms G Martin, declared the meeting open at 6.00pm.

2. KAURNA ACKNOWLEDGEMENT

We acknowledge Kaurna people as the traditional owners and custodians of this land.

We respect their spiritual relationship with country that has developed over thousands of years, and the cultural heritage and beliefs that remain important to Kaurna People today.

3. APOLOGIES

3.1 Apologies Received: Mr C Morley, Mr A Fotopoulos

3.2 Absent:

4. DECLARATION OF INTEREST

Members were reminded to declare any interest before each item.

5. CONFIRMATION OF MINUTES**Motion**

That the minutes of the Jetty Road Mainstreet Committee held on 3 August 2022 to be taken as read and confirmed.

Moved T Beatrice, Seconded Councillor Abley

Carried

6. QUESTIONS BY MEMBERS**6.1 Without Notice:**

Ms G Britton asked the following question, could a presentation be brought back to JRMC by Administration on the social media strategy including Jetty Road Facebook, Instagram outlining aims, objectives measures and considerations? Administration has taken on notice and will bring back to the next meeting.

6.2 With Notice: Nil**7. MOTIONS ON NOTICE: Nil****8. PRESENTATION: Nil****9. REPORTS/ITEMS OF BUSINESS****9.1 Monthly Finance Report**

(Report No: 374/22)

This report provides an update on the Jetty Road Mainstreet income and expenditure for July 2022.

Motion

That the Jetty Road Mainstreet Committee note this report.

Moved A Warren, Seconded J Rayment

Carried

9.2 Marketing Update (Report No: 375/22)

This report provides an update on the marketing initiatives undertaken by the Jetty Road Mainstreet Committee aligned to the 2022/23 Marketing Plan and initiatives associated to the delivery of the Jetty Road Glenelg Retail Strategy 2018-2022.

Motion

That the Jetty Road Mainstreet Committee note this report.

Moved G Britton, Seconded T Beatrice

Carried

Mayor Wilson joined the meeting at 6.09pm

9.3 Jetty Road Events Update (Report No: 376/22)

Jetty Road Mainstreet Committee (JRMC) in partnership with the City of Holdfast Bay are responsible for implementing and managing a variety of major events to support economic stimulus in the precinct in accordance with the annual marketing and business plan. This report provides an overview of upcoming events.

Motion

That the Jetty Road Mainstreet Committee note this report.

Moved Councillor Miller, Seconded D Murphy

Carried

Motion - Exclusion of the Public – Section 90(3)(d) Order

1. That pursuant to Section 90(3) of the *Local Government Act 1999* Council hereby orders that the public be excluded from attendance at this meeting with the exception of the Chief Executive Officer and Staff in attendance at the meeting in order to discuss specific events update in confidence.
2. That in accordance with Section 90(3) of the *Local Government Act 1999* the JRMC is satisfied that it is necessary that the public be excluded to consider the information discussed of a specific event update on the following ground:
 - d. pursuant to section 90(3)(d) of the Act, the information to be received, discussed or considered in relation to this Agenda Item is commercial information of a confidential nature (not being a trade secret) the disclosure of which could reasonably be expected to prejudice the commercial position of the person who supplied the information, or

In addition, the disclosure of this information would, on balance, be contrary to the public interest. The public interest in public access to the meeting has been balanced against the public interest in the continued non-disclosure of the information. The benefit to the public

at large resulting from withholding the information outweighs the benefit to it of disclosure of the information.

- 3. The Committee is satisfied, the principle that the meeting be conducted in a place open to the public, has been outweighed by the need to keep the information or discussion confidential.**

Moved Councillor Miller, Seconded A Warren

Carried

The meeting came out of confidence at 6.20pm and the meeting was re-open to the public.

10. URGENT BUSINESS – Subject to the Leave of the Meeting

REPORTS/ITEMS OF BUSINESS:

- Mr A Warren asked a question around the social media plan for the next four (4) weeks, the duration before the next meeting. Administration provided a response.

11. DATE AND TIME OF NEXT MEETING

The next meeting of the Jetty Road Mainstreet Committee will be held on Wednesday 5 October 2022 at the Glenelg Town Hall.

12. CLOSURE

The meeting closed at 6.43pm

CONFIRMED: Wednesday 5 October 2022

CHAIR PERSON

Item No: 15.1
Subject: **ITEMS IN BRIEF**
Date: 27 September 2022
Written By: Executive Support Officer
Chief Executive Officer: Mr R Bria

SUMMARY

These items are presented for the information of Members.

After noting the report any items of interest can be discussed and, if required, further motions proposed.

RECOMMENDATION

That the following items be noted and items of interest discussed:

- 1. 2022 National General Assembly of Australian Local Government Association**
 - 2. Condolence letter to His Majesty The King**
-

REPORT

- 1. 2022 National General Assembly of Australian Local Government Association (ALGA)**

On 14 September 2022, Council received an update from Councillor Linda Scott, ALGA President in relation to the motion Council submitted to the 2022 National General Assembly of Local Government, held in Canberra from 19-22 June 2022.

Refer Attachment 1

- 2. Condolence letter to His Majesty The King**

A copy of the condolence letter sent to His Majesty The King is attached for members' information.

Refer Attachment 2

Attachment 1



14 September 2022

Mayor Amanda Wilson
City of Holdfast Bay
PO Box 19
Brighton SA 5048
By email: awilson@holdfast.sa.gov.au

Dear Mayor Wilson,

Thank you for the motion your council submitted to our 2022 National General Assembly (NGA) of Local Government, held in Canberra from 19-22 June.

I am writing to provide an update on this motion, and let you know how ALGA will advocate for the issues you have raised.

Motion 96

This National General Assembly calls on the Australian, state, and local government associations to investigate and, where feasible, work with willing councils to trial innovative public governance models (including liquid democracy) to strengthen the connectivity and relevance of the local government sector into the future.

Motion 96 was part of a group of motions that were not debated by the Assembly itself but referred by delegates to the ALGA Board for consideration.

Unfortunately, despite allocating almost three hours to debate on motions at this year's NGA, we were unable to consider and debate all motions submitted by councils within the time allocated.

We have learned from this experience, and the ALGA Board has directed the secretariat to review the debating rules and processes ahead of next year's event, and to allocate more time to the debate on motions in 2023.

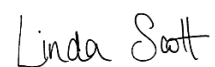
The Board considered your council's motion at its 28 July meeting and resolved to include it in correspondence that will be sent to the Hon Kristy McBain MP, Minister for Regional Development, Local Government and Territories.

Thank you again for submitting this motion and I will write again to provide a further update once we receive a response from Minister McBain.

We will announce the dates and call for motions for the 2023 NGA later this year.

I hope you will consider submitting motions for next year's event and that I will see you in Canberra again next June.

Yours sincerely,

A handwritten signature in black ink that reads "Linda Scott". The signature is written in a cursive, flowing style.

Cr Linda Scott
ALGA President

cc: Mayor Angela Evans, President Local Government Association of South Australia

Attachment 2





OFFICE OF THE MAYOR

holdfast.sa.gov.au

Brighton Civic Centre 24 Jetty Road, Brighton SA 5048

PO Box 19 Brighton SA 5048

P 08 8229 9999 F 08 298 4561

Glenelg Customer Service Centre and Library

2 Colley Terrace, Glenelg SA 5045

19 September 2022

His Majesty The King
Buckingham Palace
London SW1A 1AA

Your Majesty

The City of Holdfast Bay and the Elected Members were deeply saddened to hear of the passing of Her Majesty The Queen and extends its sympathies to the Royal Family and all who share in their grief.

For more than 70 years, Her Majesty The Queen served the Commonwealth with tireless dedication and strength and we join with the rest of the nation in mourning the loss of our Head of State, who served us all with such dignity, warmth and kindness.

Yours faithfully

Amanda Wilson
Mayor



Item No: 15.2
Subject: **MONTHLY FINANCIAL REPORT – 31 AUGUST 2022**
Date: 27 September 2022
Written By: Management Accountant
General Manager: Strategy and Corporate, Ms P Jackson

SUMMARY

Financial reports are presented to Council as at 31 August 2022. They comprise of a Funds Statement and a Capital Expenditure Report for Council's municipal activities and Alwyndor Aged Care. The adjusted forecast budget includes the carried forward amount as approved by Council 23 August 2022.

No changes to Municipal budgets are recommended at this time, but the report highlights items that show a material variance from the year to date budget. The report also details decisions made by Council that will affect the budget and will be included in the first quarterly budget review due in October.

RECOMMENDATION

That Council receives the financial reports and budget update for the 2 months to 31 August 2022 and notes:

- **no change to the Municipal activities 2022/23 revised budget forecast; and**
 - **no change to the Alwyndor Aged Care 2022/23 revised budget forecast.**
-

STRATEGIC PLAN

Not applicable

COUNCIL POLICY

Not applicable

STATUTORY PROVISIONS

Not applicable

BACKGROUND

Council receives financial reports each month comprising a Funds Statement and Capital Expenditure Report for each of Council's Municipal activities and Alwyndor Aged Care.

The Funds Statements include an income statement and provide a link between the Operating Surplus/Deficit with the overall source and application of funds including the impact on cash and borrowings.

REPORT

The majority of the variances to date are due to budget and actuals timing differences over the first two months of the financial year. Details of the major variances, along with amounts and notes, for both Council Municipal and Alwyndor operations have been prepared and are attached to this report.

Refer Attachment 1

A comprehensive budget update will be conducted for the first quarter ending 30 September 2022. The update will be reviewing forecast income and expenditure and will include the following 2022/23 variances previously approved by Council:

- \$10,000 – funding for additional pigeon control strategies (C260422/2580).
- \$360,000 – additional budget amount required for construction of the Kingston Park Kiosk (C230822/7226).

As with the Municipal budget, a comprehensive budget update for Alwyndor will be conducted for the month ending 30 September 2022.

BUDGET

The content and recommendation of this report indicates the effect on the budget.

LIFE CYCLE COSTS

The nature and content of this report is such that life cycle costs are not applicable.

Attachment 1



City of Holdfast Bay
Municipal Funds Statement as at August 2022

| 2022 - 2023 Original Budget \$'000 | Year to Date | | | | 2022 - 2023 Adopted Forecast \$'000 | Note |
|---|-------------------------------|------------------|--------------------|--|--|------|
| | Adopted Forecast \$'000 | Actual \$'000 | Variance \$'000 | | | |
| 131 | 15 | 38 | (23) | Cemeteries | 131 | |
| 495 | 98 | 113 | (15) | Commercial & Club Leases | 495 | |
| (1,458) | (190) | (193) | 3 | Council Administration | (1,458) | |
| (917) | (136) | (122) | (14) | Development Services | (935) | |
| 1,730 | 250 | 705 | (454) | FAG/R2R Grants | 1,730 | 1 |
| (1,825) | (611) | (625) | 15 | Financial Services | (1,825) | |
| (10,468) | - | - | - | Financial Services-Depreciation | (10,468) | |
| (267) | - | - | - | Financial Services-Employee Leave Provisions | (267) | |
| (830) | 60 | 58 | 3 | Financial Services-Interest on Borrowings | (830) | |
| 101 | - | - | - | Financial Services-SRWRA | 101 | |
| 38,455 | 39,750 | 39,852 | (102) | General Rates | 38,455 | 2 |
| (2,867) | (1,247) | (1,205) | (43) | Innovation & Technology | (2,867) | |
| (614) | (78) | (102) | 24 | People & Culture | (614) | |
| (612) | (82) | (81) | (1) | Public Realm and Urban Design | (637) | |
| (819) | (111) | (122) | 10 | Strategy & Governance | (819) | |
| (1,204) | (176) | (153) | (23) | City Activation | (1,272) | |
| 1,266 | 40 | 84 | (44) | Commercial - Brighton Caravan Park | 1,266 | |
| 44 | 1 | 13 | (12) | Commercial - Partridge House | 44 | |
| (563) | (82) | (89) | 8 | Communications and Engagement | (563) | |
| (351) | (53) | (54) | 1 | Community and Business Administration | (351) | |
| (887) | (87) | (67) | (20) | Community Events | (937) | |
| 892 | 133 | 242 | (109) | Community Safety | 892 | 3 |
| (574) | (89) | (83) | (6) | Community Wellbeing | (578) | |
| (533) | (84) | (91) | 6 | Customer Service | (533) | |
| - | 558 | 575 | (17) | Jetty Road Mainstreet | (93) | |
| (1,518) | (326) | (320) | (6) | Library Services | (1,518) | |
| (302) | (46) | (37) | (10) | Assets & Delivery Administration | (302) | |
| (1,413) | (169) | (160) | (10) | Engineering & Traffic | (1,518) | |
| (966) | 88 | 75 | 12 | Environmental Services | (966) | |
| (8,137) | (1,246) | (1,253) | 7 | Field Services & Depot | (8,137) | |
| (2,036) | (247) | (215) | (32) | Property Management | (2,036) | |
| (439) | (71) | (36) | (35) | Street Lighting | (439) | |
| (4,072) | (192) | (188) | (5) | Waste Management | (4,072) | |
| 945 | - | - | - | Less full cost attribution - % admin costs capitalised | 945 | |
| 390 | 35,670 | 36,562 | (893) | =Operating Surplus/(Deficit) | 26 | |
| 10,468 | - | - | - | Depreciation | 10,468 | |
| 166 | - | - | - | Other Non Cash Items | 166 | |
| 10,634 | - | - | - | Plus Non Cash Items in Operating Surplus/(Deficit) | 10,634 | |
| 11,024 | 35,670 | 36,562 | (893) | =Funds Generated from Operating Activities | 10,660 | |
| 1,484 | 1,225 | 3,555 | (2,330) | Amounts Received for New/Upgraded Assets | 2,152 | 4 |
| 474 | 148 | 148 | - | Proceeds from Disposal of Assets | 1,936 | |
| 1,958 | 1,373 | 3,704 | (2,330) | Plus Funds Sourced from Capital Activities | 4,087 | |
| (9,094) | (1,307) | (961) | (346) | Capital Expenditure on Renewal and Replacement | (12,747) | |
| (5,721) | (345) | (423) | 78 | Capital Expenditure on New and Upgraded Assets | (14,352) | |
| (14,815) | (1,652) | (1,383) | (269) | Less Total Capital Expenditure | (27,099) | |
| 253 | 3 | 3 | - | Plus:Repayments of loan principal by sporting groups | 253 | |
| 253 | 3 | 3 | - | Plus/(less) funds provided (used) by Investing Activities | 253 | |
| (1,580) | 35,394 | 38,886 | (3,492) | = FUNDING SURPLUS/(REQUIREMENT) | (12,099) | |
| | | | | Funded by | | |
| - | 3,533 | 3,533 | - | Increase/(Decrease) in Cash & Cash Equivalents | - | |
| - | 31,861 | 35,353 | (3,492) | Non Cash Changes in Net Current Assets | - | |
| (2,959) | - | - | - | Less: Proceeds from new borrowings | (13,478) | |
| - | - | - | - | Less: Net Movements from Cash Advance Debentures | - | |
| 1,379 | - | - | - | Plus: Principal repayments of borrowings | 1,379 | |
| (1,580) | 35,394 | 38,886 | (3,492) | =Funding Application/(Source) | (12,099) | |

Note 1 – FAG/R2R Grants - \$454,000 favourable

Grant funding received for the Local Roads and Community Infrastructure Program (Phase Three). To be accounted for in the September budget update.

Note 2 – General Rates - \$102,000 favourable

Eligible council rates rebates amount lower than estimated. Adjustment to be made as part of the September budget update.

Note 3 – Community Safety - \$109,000 favourable

Car parking related revenue higher than forecast.

Note 4 – Amounts Received for New/Upgraded Assets - \$2,330,000 favourable

The following grant funding has been received and will be accounted for in the September budget update:

- \$2,100,000 – Federal Preparing Australian Communities – Local Stream Program grant for construction of stormwater infrastructure in the Tarlton Street catchment.
- \$19,000 – Department for Infrastructure and Transport contribution towards pedestrian safety improvements at Paringa Park Primary School.
- \$11,000 – Helmsdale Tennis Club contribution for the restoration and upgrade of tennis court surface.
- \$200,000 – Office for Recreation, Sport and Racing grant for tennis courts at Kingston House Reserve.

City of Holdfast Bay
Capital Expenditure Summary by Budget Item to August 2022

| 2022-23 Original Budget \$'000 | Year to Date | | | | 2022-23 Adopted Forecast \$'000 |
|---|-------------------------------|------------------|--------------------|---|--|
| | Adopted Forecast \$'000 | Actual \$'000 | Variance \$'000 | | |
| (944) | - | - | | - Full Cost Attribution | (944) |
| (806) | (67) | (77) | | 9 Information Technology | (892) |
| (989) | - | (2) | | 2 Commercial and Economic Enterprises | (2,804) |
| (85) | - | (16) | | 16 Brighton Library | (85) |
| - | - | - | | - Sport and Recreation | (562) |
| (13) | - | (2) | | 2 Depot and Stores | (13) |
| (1,306) | (572) | (572) | | - Machinery Operating | (2,670) |
| (2,322) | (120) | (112) | | (8) Road Construction and Re-seal Program | (2,788) |
| - | - | - | | - Car Park Construction | (100) |
| (453) | - | - | | - Footpath Program | (453) |
| (1,200) | - | (3) | | 3 Stormwater Drainage Program | (1,607) |
| - | (142) | (66) | | (75) Traffic Control Construction Program | (142) |
| (1,122) | (239) | (53) | | (186) Kerb and Water Table Construction Program | (1,360) |
| (30) | - | 5 | | (5) Other Transport - Bus Shelters etc. | (30) |
| (3,487) | (226) | (250) | | 24 Reserve Improvements Program | (7,451) |
| (1,302) | (286) | (203) | | (83) Land, Buildings and Infrastructure Program | (2,983) |
| (450) | - | (6) | | 6 Streetscape Program | (1,266) |
| (306) | - | (8) | | 8 Foreshore Improvements Program | (949) |
| - | - | (19) | | 19 Caravan Park - General | - |
| (14,815) | (1,652) | (1,383) | (269) | Total | (27,099) |



**Alwyndor Aged Care
Funds Statement as at 31 August 2022**

| 2022-23 Original Budget \$'000 | Year to Date | | | | 2022-23 Adopted Forecast \$'000 | Note |
|---|------------------------------------|-------------------------|--------------------|---|--|----------|
| | Adopted Budget YTD \$'000 | Actual YTD \$'000 | Variance \$'000 | | | |
| 5,576 | 923 | 919 | 4 | User Charges | 5,576 | |
| 13,653 | 2,267 | 2,253 | 14 | Operating Grants and Subsidies | 13,653 | |
| 445 | 71 | 100 | (29) | Investment Income | 445 | |
| 5,361 | 856 | 780 | 76 | Reimbursements | 5,361 | |
| 3,993 | 638 | 838 | (200) | Other Income | 3,993 | |
| 29,027 | 4,754 | 4,890 | (136) | Operating Revenue | 29,027 | 1 |
| (20,916) | (3,423) | (3,417) | (6) | Employee Costs - Salaries & Wages | (20,916) | 2 |
| (6,966) | (1,160) | (1,521) | 361 | Materials, Contracts and Other Expenses | (6,966) | 3 |
| (68) | (11) | (22) | 11 | Finance Charges | (68) | |
| (1,358) | (231) | (223) | (8) | Depreciation | (1,358) | |
| (29,308) | (4,824) | (5,183) | 359 | Less Operating Expenditure | (29,308) | |
| (281) | (70) | (293) | 223 | =Operating Surplus/(Deficit) | (281) | 4 |
| 1,358 | 231 | 223 | 8 | Depreciation | 1,358 | |
| 193 | 32 | (19) | 51 | Provisions | 193 | |
| 1,551 | 263 | 204 | 59 | Plus Non Cash Items in Operating Surplus/(Deficit) | 1,551 | |
| 1,269 | 193 | (89) | 282 | =Funds Generated from Operating Activities | 1,269 | |
| (524) | (321) | (236) | 149 | Capital Expenditure on New and Upgraded Assets | (874) | |
| (524) | (321) | (236) | (85) | Less Total Capital Expenditure | (874) | |
| 745 | (128) | (325) | 197 | = Funding SURPLUS/(REQUIREMENT) | 395 | |
| | | | | Funded by | | |
| 745 | (128) | (325) | 197 | Increase/(Decrease) in Cash & Cash Equivalents | 395 | |
| 745 | (128) | (325) | 197 | =Funding Application/(Source) | 395 | 4 |

Alwyndor - Notes August 2022

1 Operating Revenue

Operating Revenue is favourable by \$136K mainly due to recording COVID Grant Income of \$90k which offsets higher operating expenses.

Residential has experienced lower occupancy levels from the COVID outbreaks in July and August, impacting our ability to secure new residents. Higher government funding (ACFI) received for permanent residents has helped offset the lower occupancy levels.

Support at Home client growth remains strong and monthly targets are being exceeded.

2 Employee Costs – Salaries & Wages

The variance in employee costs is comprised of:

- Savings in Alwyndor staff running the inhouse kitchen due to a need to utilise contract labour (refer below). This is due to Enterprise Agreement negotiations delaying the employment of Alwyndor staff. This will be resolved during the second quarter of this financial year,
- Residential – additional carers in response to higher acuity residents (offset by higher government funding (ACFI) as part of Operating Revenue) and staff COVID payments (offset by COVID Grant Income as part of Operating Revenue)
- Staff wage increases in the range of 3% to 5% being higher than the 2% increase assumed in the budget noting the national wage increase and associated workforce market forces at 4.6%, this was highlighted as an anticipated cost pressure when the budget was prepared however the quantum was not known at that time

3 Materials, Contracts and Other Expenses

The YTD increase can be attributed to:

- Contract labour costs to run the inhouse kitchen (offsets the saving in Employee Costs – Salaries & Wages)
- The increase of expenditure from budget is mainly due to additional brokered services in Support at Home which are recovered as part of Operating Revenue.

4 Operating Deficit

August 2022 YTD

The \$293K Operating Deficit, after allowing for depreciation and capital expenditure, has led to a funding requirement of \$325K as at August YTD. This will be funded by Alwyndor's existing cash reserves.

Item No: 15.3

Subject: **LOCAL GOVERNMENT FINANCE AUTHORITY (LGFA) BOARD OF TRUSTEES ELECTIONS**

Date: 27 September 2022

Written By: Executive Officer and Personal Assistant to the Mayor

Chief Executive Officer: Mr R Bria

SUMMARY

On 1 September 2022 the Chief Executive Officer received correspondence from the Local Government Finance Authority (LGFA) in regards to the elections for the purpose of representative members of the LGFA Board of Trustees. Six nominations were received for the two positions and an election will be conducted by postal ballot.

On 6 September 2022, Council were advised by the LGFA Administration that Mr Nathan Cunningham had withdrawn his nomination from the LGFA Board and this has been taken into account in the preparation of this report.

The Council is requested to indicate which two candidates it wishes to be elected to the Board and the appropriate ballot paper be marked and forwarded to the LGFA Returning Officer by 5.00pm Friday 14 October 2022.

RECOMMENDATION

That Council:

1. **Nominates the following two candidates as their preferred Local Government Finance Authority representative members on the LGFA Board of Trustees.**

2. **The Deputy Mayor mark the appropriate ballot paper with the two preferred candidates.**

STRATEGIC PLAN

Statutory compliance

COUNCIL POLICY

Not applicable

STATUTORY PROVISIONS

Section 7(1)(a) of the *Local Government Finance Authority Act 1983*

REPORT

On 1 September 2022 the Chief Executive Officer received correspondence from the Local Government Finance Authority (LGFA) in regards to the elections for the purpose of representative members of the LGFA Board of Trustees.

Refer Attachment 1

Two member positions on the LGFA Board of Trustees are currently held by Ms Annette Martin (City of Charles Sturt) and by Mr Michael Sedgman (The Rural City of Murray Bridge) and under section 7(1)(a) of the *Local Government Finance Authority Act 1983*, the LGFA are required to hold an election to select representatives for the next sitting term.

At the close of nominations, six nominations were received for the two positions, however Council was advised on 6 September 2022 that one candidate, Mr Nathan Cunningham, had withdrawn his nomination for the LGFA Board.

Following is the list of candidates who have nominated for the two positions on the Local Government Finance Authority Board of Trustees:

1. Dr Nigel Graves, Manager Finance Light Regional Council
2. Mr Mark Gray, Manager Finance City of Port Adelaide Enfield
3. Ms Annette Martin, Manager Financial Services City of Charles Sturt
4. Mr Michael Sedgman, Chief Executive Officer Rural City of Murray Bridge
5. Mr John Smedley, Deputy Mayor/Councillor City of Holdfast Bay

Ballot papers have been received, along with the profiles on the five candidates.

Refer Attachment 2

Council is requested to indicate the two candidates it wishes to be elected to the Board and the appropriate ballot paper be marked and forwarded to the Local Government Finance Authority Returning Officer by 5.00pm Friday 14 October 2022.

BUDGET

Not applicable

LIFE CYCLE COSTS

Not applicable

Attachment 1





Local Government
Finance Authority

TO: Chief Executive Officer

RE: Elections for the positions of Representative Members of the Board of Trustees

Our circular of 1 July 2022 called for nominations to fill the two representative board member positions (provided by Section 7(1)(a) of the *Local Government Finance Authority Act 1983*) currently held by Ms Annette Martin (City of Charles Sturt) and by Mr Michael Sedgman (The Rural City of Murray Bridge).

Six nominations have been received for the two positions, and as previously indicated in the abovementioned circular, the election will be conducted by postal ballot.

Enclosed please find details supplied by each candidate to assist councils in determining the candidates for whom they wish to vote. If councils wish to ascertain further details, they may contact the individual candidates direct.

In order to comply with the Rules of the Authority, the casting of the vote by your council must be conducted as follows:-

1. The voting must be on the enclosed ballot paper which has all the candidates listed in alphabetical order together with the closing date for the election.
2. The council must by Resolution determine which candidates (being not more than two) they wish to elect.
3. The council's representative to the AGM of the Local Government Finance Authority of South Australia (or in his absence the councillor chairing the council meeting) shall at the council meeting in his own handwriting mark the ballot paper with an "x" next to the two candidates whom the council wishes elected. Please do not type in the "x" after the meeting or mark the ballot paper in any other way.
4. (a) The ballot paper should then be inserted in the attached small white 11B envelope addressed to the Returning Officer which is marked "Confidential Ballot Paper".
4. (b) The "Confidential Ballot Paper" envelope should then be placed in the middle sized DL envelope addressed to the Returning Officer and the council's name is to be recorded only on this particular envelope. It will be noted that the signature of the appointed AGM delegate should be added (if the delegate is absent the signature of the Chair of the council meeting).
4. (c) Finally, the middle sized envelope is to be returned to the Chief Executive Officer, Local Government Finance Authority of South Australia, Suite 1205, 147 Pirie Street, Adelaide, 5000, in the self addressed large A4 envelope which is included for that purpose. Please allow for adequate postage times.

5. All votes must be received by the Returning Officer by 5.00 pm on **Friday 14 October 2022**.
6. Only use the ballot paper enclosed with the signature of G Hollitt on the reverse, and if an error is made, return the spoilt ballot paper to this office and another will be returned to you.

If you have any further queries on the matter, please contact the undersigned, or Geoff Hollitt at this office.

Kindly arrange for this circular to be included on the council's next agenda for the information of the elected members.



Davin Lambert
Chief Executive Officer



Geoff Hollitt
Returning Officer

1 September 2022

Ballot Paper to go into small 11B envelope -

A)

CONFIDENTIAL BALLOT PAPER

The Returning Officer
Local Government Finance Authority of South Australia
Suite 1205, 147 Pirie Street
ADELAIDE SA 5000

then small envelope into middle size DL envelope

B)

The Returning Officer
Local Government Finance Authority of South Australia
Suite 1205, 147 Pirie Street
ADELAIDE SA 5000

COUNCIL NAME SIGNATURE AGM REPRESENTATIVE

then POST to LGFA in large A4 envelope provided (Please allow adequate postage times)

C)

Chief Executive Officer
Local Government Finance Authority of South Australia
Suite 1205, 147 Pirie Street
ADELAIDE SA 5000

Attachment 2



NAME: DR NIGEL GRAVES

OCCUPATION: Manager, Finance

QUALIFICATIONS & AWARDS: Fellow of GPA Australia
Graduate Member of the Australian institute of Company Directors
PhD (thesis - local government financial performance)
Graduate Certificate in Business Research
Master of Business Administration (Adelaide)
Bachelor of Business (Accountancy)
Diploma in Local Government Administration (SA)

CURRENT POSITION IN LOCAL GOVERNMENT: Manager, Finance
Light Regional Council

PERIOD IN LOCAL GOVERNMENT 25 years

OTHER COMMITTEES/ BODIES OF LOCAL GOVERNMENT INVOLVEMENT:

Past:

Local Government Financial Management Group

CPA Public Sector Committee (NT)

Present:

UNE Centre for Local Government

NAME: MR MARK GRAY

OCCUPATION: Manager Finance

QUALIFICATIONS & AWARDS: Master of Business Administration (Adelaide)
Fellow Certified Practising Accountant
Bachelor of Business (Accounting)
Executive Leaders Program (LG Professionals)
PRINCE2 'Practitioner' (Project Management)

CURRENT POSITION IN LOCAL GOVERNMENT: Manager Finance
City of Port Adelaide Enfield

PERIOD IN LOCAL GOVERNMENT

OTHER COMMITTEES/ BODIES OF LOCAL GOVERNMENT INVOLVEMENT:

30+ years post-graduate finance and leadership experience across Commercial, Not-for-Profit and Local Government sectors.

Extensive experience managing Treasury functions of multi-national corporations, including \$1 Billion foreign currency hedge book, \$600 million debt facility and related interest rate exposures.

NAME: ANNETTE MARTIN

OCCUPATION: Manager Financial Services

QUALIFICATIONS & AWARDS: B.A. Accountancy
Certified Practising Accountant (CPA)
Graduate Australian Institute of Company Directors (GAICD)

CURRENT POSITION IN LOCAL GOVERNMENT: Manager Financial Services
City of Charles Sturt

PERIOD IN LOCAL GOVERNMENT 22 years

OTHER COMMITTEES/ BODIES OF LOCAL GOVERNMENT INVOLVEMENT:

Past:

SALGFMG

- President SALGFMG 2010-14
- Chair and/or active member of SALGFMG work groups for projects such as development of internal financial controls framework, asset management and financial management addressing updates of information papers, development of model financial statements and harmonisation of reporting, development of long term financial plans, and industry ratios for financial sustainability
- SALGFMG nominee on working parties for Grants Commission 2012-13 and CPA Guide Valuation and Depreciation for public and not for profit sectors under AASB accounting standards 2015-16

Local Government Inquiry Reference Group

- Member for the South Australian Productivity Commission

Present:

Local Government Finance Authority of South Australia

- Board member
- Audit and Risk Committee member

South Australian Local Government Financial Management Group (SALGFMG)

- Executive member
- Representative on a number of working parties
- Life member for services to industry

City of Unley

- Independent member of Audit and Risk Committee

Municipal Council of Roxby Downs

- Independent member of Audit and Risk Committee

NAME: MICHAEL SEDGMAN

OCCUPATION: Chief Executive Officer

QUALIFICATIONS & AWARDS: Master of Commercial Law (Deakin) 2007
Master of Business Administration (Deakin) 2005
Bachelor of Commerce (Deakin) 1987
Fellow of CPA Australia - FCPA
Fellow of Governance Institute of Australia - FGIA
Fellow of Chartered Institute of Secretaries - FCIS

CURRENT POSITION IN LOCAL GOVERNMENT: Chief Executive Officer
Rural City of Murray Bridge

PERIOD IN LOCAL GOVERNMENT 24 years

OTHER COMMITTEES/ BODIES OF LOCAL GOVERNMENT INVOLVEMENT:

Past:

- Local Government Association Workers Compensation Scheme 2011-15
- Local Government Association Mutual Liability Scheme 2009-2015
- Waste Care SA 2010-13
- South Australian Local Government Consulting 2006-09
- Yarra-Melbourne Regional Library Corporation 1999-2004 and 2006
- Inner Northern Group Training Limited 2000-04

Present:

Local Government Finance Authority of South Australia

- Board Trustee since January 2019
- Audit and Risk Committee member 2019-20
- Chair/Presiding Member since February 2021

Overview Committees of

- LGFA Asset Mutual Fund
- Income Protection Fund
2017 - Present
- Murray River Lakes & Coorong Tourism Alliance 2016 – Present

NAME: JOHN SMEDLEY

OCCUPATION: Finance Consultant
Previously 40+ years in Senior Business/Corporate Banking and Finance roles with various Bank and Non-Bank institutions, including NAB, Westpac, Citibank and Bendigo Adelaide Bank.

QUALIFICATIONS & AWARDS: Master of Business Administration (University of Adelaide)
Fellow of Financial Services Institute of Australasia
Diploma in Banking & Finance
Diploma in Mortgage & Finance Banking

CURRENT POSITION IN LOCAL GOVERNMENT: Deputy Mayor / Councillor
City of Holdfast Bay

PERIOD IN LOCAL GOVERNMENT 8 years

OTHER COMMITTEES/ BODIES OF LOCAL GOVERNMENT INVOLVEMENT:

Present:

City of Holdfast Bay

- Audit Committee Chair
- Executive Committee member
- Glenelg Oval Consultative Committee
- Adelaide Airport Consultative Committee

Southern Regional Waste Resource Authority (SRWRA)

- Board member



LOCAL GOVERNMENT FINANCE AUTHORITY OF SOUTH AUSTRALIA

BALLOT PAPER

REPRESENTATIVE BOARD MEMBER

Two (2) Required:-

Place "X" next to two names you wish to vote for.

CUNNINGHAM, N.

GRAVES, N.

GRAY, M.

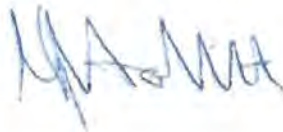
MARTIN, A.

SEDGMAN, M.

SMEDLEY, J.

CLOSING DATE: 5.00 PM at the office of the LGFA, Friday 14 October 2022

THE RETURNING OFFICER
LOCAL GOVERNMENT FINANCE AUTHORITY OF SOUTH AUSTRALIA
SUITE 1205, 147 PIRIE STREET
ADELAIDE SA 5000

A handwritten signature in blue ink, appearing to be 'M. A. M.', is centered on the page.

14 OCTOBER 2022

Item No: 15.4

Subject: **ELECTION OF WEST REGIONAL GROUPING REPRESENTATIVES TO
GREATER ADELAIDE REGIONAL ORGANISATION OF COUNCILS**

Date: 27 September 2022

Written By: Executive Officer and Personal Assistant to the Mayor

Chief Executive Officer: Mr R Bria

SUMMARY

At the Council meeting on 12 July 2022, a report was presented to Council in relation to nominations sought for representatives to the Greater Adelaide Regional Organisation of Councils (GAROC). Representatives on the GAROC committee are filled by two candidates from each regional grouping of members. The City of Holdfast Bay nominated Mayor Amanda Wilson by way of Council resolution.

At the close of nominations, the Local Government Association received four nominations for the GAROC West Regional Grouping. In accordance with Clause 4.4.4 of the GAROC Terms of Reference, the Local Government Association must now conduct an election for GAROC representatives and are requesting councils to cast their vote for their preferred candidates.

RECOMMENDATION

That Council nominates the following candidates as their preferred candidates:

1. _____

2. _____

STRATEGIC PLAN

Statutory compliance

COUNCIL POLICY

Not applicable

STATUTORY PROVISIONS

Clause 19 of the Local Government Association of South Australia Constitution and Rules

BACKGROUND

In accordance with Clause 19 of the Local Government Association (LGA) of South Australia Constitution and Rules, the LGA established regional organisations of members including GAROC. Greater Adelaide Regional Organisation of Councils is responsible for regional advocacy, policy initiation and review, leadership, engagement and capacity building in the GAROC Region.

At the 2019 LGA Annual General Meeting, members endorsed the establishment of four GAROC Regional Groupings which took effect from the 2020 GAROC elections. Membership of GAROC comprises of two eligible members elected by a majority vote of the councils within each Regional Grouping.

REPORT

On 2 September 2022, the Chief Executive Officer received formal correspondence from Clinton Jury, Chief Executive Officer and LGA Returning Officer advising the next steps to fill the two positions allocated to each Regional Grouping of Members of GAROC.

Refer Attachment 1

The following nominations were received by the LGA and each council shall determine by resolution two (2) candidates they wish to elect:

- Mayor Angela Evans (City of Charles Sturt)
- Mayor Claire Boan (City of Port Adelaide Enfield)
- Mayor Michael Coxon (City of West Torrens)
- Mayor Amanda Wilson (City of Holdfast Bay)

Ballot papers have been received, along with information on the four candidates.

Refer Attachment 2

Council's delegate to the LGA Annual General Meeting (Mayor Amanda Wilson) is required to complete the ballot paper in accordance with Council's resolution and submit Council's vote to the LGA Returning Officer by 5.00pm Monday 17 October 2022.

The two candidates with the most votes shall be deemed elected in respect to GAROC Regional Grouping West with the Returning Officer declaring the candidates elected at the Annual General Meeting (AGM) on 28 October 2022. The successful candidates will take office from the conclusion of the LGA's 2022 AGM for a term ending at the conclusion of the 2024 LGA AGM.

BUDGET

Not applicable

LIFE CYCLE COSTS

Not applicable

Attachment 1



In reply please quote our reference: ECM 780943 TN/AL

2 September 2022

Mr Roberto Bria
Chief Executive Officer
City of Holdfast Bay
PO Box 19
Brighton SA 5048

Dear Mr Bria

Election of West Regional Grouping Representatives to GAROC

On 4 July 2022, I wrote to Member Councils of the Greater Adelaide Regional Organisation of Councils (GAROC) calling for nominations to fill two (2) positions allocated to each Regional Grouping of Members on GAROC.

I wish to advise that at the close of nominations (5.00pm on 19 August 2022) I received nominations for the following four (4) eligible candidates (listed in the order of the ballot draw):

- Mayor Angela EVANS (City of Charles Sturt)
- Mayor Claire BOAN (City of Port Adelaide Enfield)
- Mayor Michael COXON (City of West Torrens)
- Mayor Amanda WILSON (City of Holdfast Bay)

As a result of receiving more nominations than available positions, I hereby advise that in accordance with clause 4.4.4 of the GAROC Terms of Reference an election for the two (2) positions on the West Regional Grouping of Members of GAROC will take place.

I have attached a copy of each candidate's information together with a Ballot paper and voting envelopes for your council's completion in accordance with the instructions below. **I require the ballot paper to be received by me in hard-copy no later than 5.00pm Monday 17 October 2022.**

Voting Instructions

Pursuant to clause 4.4.5 of the GAROC Terms of Reference, the election process must be conducted as follows:

- each Member council shall determine by resolution the two (2) candidates it wishes to elect;
- the chair of the meeting for that Member shall mark the ballot paper with an "X" next to the two (2) candidates that the Member council wishes elected and seal the ballot paper in the envelope marked "Ballot Paper" and then place this envelope inside the envelope marked "Returning Officer". Before sealing the second envelope marked "Returning Officer" the chair must indicate the Member council's name on the inside flap of the envelope. The second envelope may then be sealed and delivered to the Returning Officer;
- on receipt of the envelopes the Returning Officer must:

- open the outer envelope addressed to the "Returning Officer" and record the name of the Member council which appears on the inside flap of the envelope on the roll of Member council's eligible to vote; and
- place the envelope marked "Ballot Paper" unopened into the ballot box.
- the Returning Officer shall nominate the date, time and place for the counting of votes and shall invite each candidate and a person nominated as the candidate's scrutineer to be present;
- at the counting of the votes the Returning Officer shall produce the unopened envelopes marked "Ballot Paper" and if satisfied that all votes are valid, count the number of votes received by each candidate;
- the two (2) candidates with the most votes shall be deemed elected in respect of your Regional Grouping of Members and the Returning Officer shall declare the candidates elected at the Annual General Meeting; and
- in the case of candidates receiving the same number of votes, the Returning Officer shall draw lots at the counting of the votes and the lot drawn will be the candidate elected.

I am the Returning Officer for this election and I may appoint a Deputy Returning Officer to perform any of the powers, functions or duties described above.

The counting of votes will take place via Zoom on Tuesday 18 October 2022 commencing at 9.30am.

The successful candidate will take office from the conclusion of the LGA's 2022 Annual General Meeting for a term ending at the conclusion of the 2024 LGA Annual General Meeting.

If you have any queries please contact me or Program Leader Governance Tami Norman on 8224 2037 or tami.norman@lga.sa.gov.au.

Yours sincerely



Clinton Jury
Chief Executive Officer

Telephone: (08) 8224 2039

Email: cjury@lga.sa.gov.au

Attach: ECM 780940 – LGA Election 2022 – GAROC West - Combined Candidate Information
GAROC West Ballot Paper
Ballot Paper envelope
Reply envelope addressed to Returning Officer

Attachment 2



Candidate Information Sheet – GAROC West

| | |
|--|---|
| Name | Mayor Angela Evans |
| Council | City of Charles Sturt |
| Local Government Experience & Knowledge | <ul style="list-style-type: none"> • 2020-2021 – Climate Emergency Australia Strategic Advisory Group – Member • 2020-current – Central Adelaide Waste and Recycling Authority (CAWRA) Board – Member • 2019-current – Greater Adelaide Regional Organisation of Councils (GAROC) – Member • 2018-current – Mayor, City of Charles Sturt • 2014-2018 – Mayor, City of Charles Sturt • 2010/11, 2013/4 – Deputy Mayor, City of Charles Sturt • 2010-2014 – Councillor, West Woodville Ward, City of Charles Sturt • 2006-2010 – Councillor, West Woodville Ward, City of Charles Sturt <p>Other experience includes:</p> <ul style="list-style-type: none"> • Local Government Association SA – President – October 2020-October 2022 • Australian Local Government Women’s Association of SA – Branch Committee Member – 2009-2011 • Local Government Association Board – Chair – 2020-current, Member – May 2015-August 2018 • Metropolitan Local Government Group – Member – January 2015-September 2018 • Metropolitan Local Government Group Executive Committee – Member – February 2017-June 2018 • CCS Gender Matters Panel – Member – 2007-2014 • City of Charles Sturt Working Group for Domestic Violence – Member – 2018 • Western Business Leaders Executive Committee – Member – November |
| Local Government Policy Views & Interests | <p>I believe the following represents my key areas of interest, commitment, and achievements in local Government.</p> <p>In my term as Mayor, I have:</p> <ul style="list-style-type: none"> • Built strong relationships between Councillors • Developed an effective Governance framework for Council • Implemented long term financial sustainability for Council • Actively contributed to policy discourse across our sector and advocated for both Charles Sturt and the Sectors views on key issues • Facilitated Local Economic Development |



| | |
|---|---|
| Name | Mayor Angela Evans |
| Council | City of Charles Sturt |
| Local Government Policy Views & Interests cont | <ul style="list-style-type: none"> • Ensured that Council focused more directly on Infrastructure Planning and Asset Management • Contributed to Planning Reform so that Council continues to play a primary role in developing planning policy and decision making • Given greater recognition to Community Engagement as an effective tool to assist good decision making • Created partnerships with other levels of Government, the community, and the private sector to better serve the local area <p>In the current economic and political climate, Councils need to work together and, where possible, provide a common voice on things that affect our sector.</p> <p>After 16 years on Council, 2 years as the LGA SA President, 6 years as an LGA Board Member and 3 years as a Greater Adelaide Regional Organisation of Councils (GAROC) member, I believe I have the experience to contribute to broadly advance the Local Government agenda. The chance to continue to represent my peers on GAROC will allow me to bring continuity to the committee as the sector moves through an election.</p> <p>I am passionate about identifying new opportunities for the sector to respond to persistent problems such as homelessness and climate adaptation and focusing on how the sector can provide leadership, organisation, delivery, and the promotion of South Australia's economic development through the current and future challenges of a post COVID world.</p> |
| Other Information | <p>I have been the City of Charles Sturt Mayor since being elected in the November 2014 Local Government Elections.</p> <p>Throughout my term as Mayor, I have led a cohesive, collaborative, and collegiate Council and have overseen the redevelopment of major Charles Sturt precincts, successful improvements within communities and strategically positioned the City's financial approach for future generations. I work collaboratively with Mayors across the Western suburbs with a recent example being the joint Material Recovery Facility developed with the City of Port Adelaide Enfield to process Councils' recyclables. I am a passionate driver behind Charles Sturt's important Community connections work, and place making initiatives aimed at supporting grassroots communities to be innovative and collaborative.</p> <p>In 2015 and 2016, I was involved in leading economic missions to China where I guided a delegate of aged care providers from the Charles Sturt area and forged official trade partnerships between the Shandong Province in Yantai and the City of Charles Sturt.</p> <p>I was previously the Deputy Mayor of Charles Sturt in 2010/11 and 2013/14, as well as Ward Councillor for the Woodville West Ward from 2006 to 2014.</p> |

Candidate Information Sheet – GAROC North

| | |
|--|---|
| Name | Mayor Claire Boan |
| Council | City of Port Adelaide Enfield |
| Local Government Experience & Knowledge | <ul style="list-style-type: none"> • Elected as Councillor for 8 years • Elected as Mayor of PAE since 2018 • Effective Chair of meetings • Liaison between Organisations and Council • Providing Leadership to Elected Members and the Community • CAP Experience • Grants and Sponsorship Committee • Audit Committee Chair • Develop strategic partnerships |
| Local Government Policy Views & Interests | <ul style="list-style-type: none"> • Councils working collaboratively • Community connectedness • Increasing better messaging and marketing |
| Other Information | <ul style="list-style-type: none"> • Primary school teacher including leadership roles • Patron of local clubs • Board Member on Green Adelaide • Board Member – CAWRA (Central Adelaide Waste and Recycling Authority) • Member on GAROC • LGA Board of Directors |



Candidate Information Sheet – GAROC North

| | |
|--|--|
| Name | Mayor Michael Coxon |
| Council | City of West Torrens |
| Local Government Experience & Knowledge | <ul style="list-style-type: none"> • 4 years - Mayor of the City of West Torrens • 4 years - Member of Road Safety Group for the City of West Torrens • 4 years - Member of ALGWA • 8 years - Councillor for the City of West Torrens • 2 years – Chairperson of the Urban Services Committee • 2 years - Chairperson of the Corporate & Regulatory Committee |
| Local Government Policy Views & Interests | <ul style="list-style-type: none"> • Supports LGA as our peak representative body • Supports Local Government action to support our communities with a strong focus on 'Mental Health and Resilience' • Supports GAROC in continuing to address PDI (Planning, Development and Infrastructure Act 2016) impacts on our community • Supports GAROC in developing a strong Western Alliance of City Councils to collaboratively address local issues • Supports developing initiatives to address future waste resource recovery services to create a cleaner and greener community • Supports developing a joint Metropolitan Economic Development Strategy to target opportunities for our communities • Supports better local traffic management to improve safety and connectivity in our communities • Supports the raising the awareness and recognition of our 'First Nations People' in our local communities • Supports the AdaptWest initiatives in the Western Region as our regional response to 'Climate Change' |
| Other Information | <ul style="list-style-type: none"> • Bachelor of Arts Degree (Adelaide University) • Graduate Diploma of Business (University of South Australia) • 28 years – Corporate Executive Leadership Roles • 10 years - Board Member West Beach Trust (SA Government) • 7 years – Board Member Camden Community Centre • 7 years – School Council Member – Plympton International College • 7 years – Board Member Inner West Business Enterprise Centre • 3 years – Member of Governing Body – Thebarton Senior College • 3 years - Member of Lions Club of Adelaide Hellenic • 3 years - Member of Airport Over 50's Community Group • 2 years - Patron of West Adelaide Football Club |

Candidate Information Sheet – GAROC North

| | |
|--|---|
| Name | Mayor Amanda Wilson |
| Council | City of Holdfast Bay |
| Local Government Experience & Knowledge | <ul style="list-style-type: none"> • Mayor of Holdfast Bay – November 2018 to current • Acting Mayor of Holdfast Bay 2018 • Deputy Mayor Holdfast Bay 2017 • Councillor 2014 – 2017 • Member of the Coast Protection Board August 2019 to current <p>I have developed environmental programs for the City of Holdfast Bay and campaigned to achieve grant funding for the Food Organics and Green Organics (FOGO) trial program, which we are now implementing across entire City of Holdfast Bay.</p> <p>I believe my skills and knowledge, in particular my strategic, governance, financial management, marketing and board knowledge would be a great asset to GAROC in delivering on its strategic plan.</p> <p>I would like to sit on the Board of GAROC to assist other councils across the State in implementing similar changes within their Local Government environments.</p> |
| Local Government Policy Views & Interests | <ul style="list-style-type: none"> • Being responsible with rates, caring for our environment, protecting our coastline from climate change. I want to focus on using recyclable products for council infrastructure, including roads. • I am interested in ways that we can reduce waste and our carbon footprint and improve water design. |
| Other Information | I am independent and not a member of any political party. |

Ballot Paper

Election for GAROC Regional Grouping Metro West 2022-2024

2 Persons Required

Ballot closes 5:00pm Monday 17 October 2022

Important Note: In accordance with Clause 4.4.5(d) of the GAROC Terms of Reference, the chair of the meeting for that Member Council shall mark the ballot paper with an “X” next to the two (2) candidates that the Member Council wishes elected, then seal the ballot paper in the envelope marked “Ballot Paper” and place it inside the envelope marked “Returning Officer”. The name of the Member Council must be indicated on the inside flap of the envelope marked “Returning Officer” and the envelope then sealed and delivered to the Returning Officer.

| | | | |
|--------------------------|-----------------------|-------|-------------------------------|
| <input type="checkbox"/> | EVANS, Angela | Mayor | City of Charles Sturt |
| <input type="checkbox"/> | BOAN, Claire | Mayor | City of Port Adelaide Enfield |
| <input type="checkbox"/> | COXON, Michael | Mayor | City of West Torrens |
| <input type="checkbox"/> | WILSON, Amanda | Mayor | City of Holdfast Bay |



Issuing Officer
Initial

Item No: 15.5

Subject: **ELECTION OF LOCAL GOVERNMENT ASSOCIATION PRESIDENT**

Date: 27 September 2022

Written By: Executive Support Officer

Chief Executive Officer: Mr R Bria

SUMMARY

The Local Government Association of South Australia (LGA) wrote to councils on 4 July 2022 calling for nominations for the position of LGA President. Five nominations were received by the LGA, and in accordance with clause 29.4 of the LGA Constitution an election for the position will now take place.

Following a resolution of Council, Administration is required to return the marked ballot papers to the LGA before the closing date of 5.00pm Monday 17 October 2022.

RECOMMENDATION

That Council:

- 1. Nominates Mayor _____ as their vote for the Local Government Association President; and**
- 2. Delegates Administration to mark the ballot paper with the vote, and return the ballot paper to the Returning Officer.**

STRATEGIC PLAN

Statutory compliance

COUNCIL POLICY

Not applicable

STATUTORY PROVISIONS

Clause 29.4 of the Local Government Association Constitution

BACKGROUND

On 4 July 2022 the Local Government Association (LGA) wrote to councils calling for nominations for the position of LGA President. To be eligible for nomination, candidates had to be a council member and a current member of the SAROC Committee and been in that role for at least one year.

REPORT

The LGA received nominations for the following five eligible candidates (in order of the ballot draw):

- Mayor Keith Parkes, Alexandrina Council
- Mayor Caroline Phillips, District Council of Karoonda East Murray
- Mayor Brett Benbow, Port August City Council
- Mayor Bill O'Brien, Light Regional Council
- Mayor Erika Vickery OAM, Naracoorte Lucindale Council

A copy of each candidate's information and the Ballot paper are attached for members' consideration.

Refer Attachment 1

Letters seeking support for LGA President Nominations have been received from the candidates listed below:

- Mayor Erika Vickery OAM (Naracoorte Lucindale Council)
- Mayor Bill O'Brien JP (Light Regional Council)

Refer Attachment 2

The Returning Officer, Clinton Jury, Chief Executive Officer of the LGA will count the votes on Tuesday 18 October 2022 commencing at 9.30am via Zoom. The successful candidate will take office from the conclusion of the LGA's 2022 Annual General Meeting for a term ending at the conclusion of the 2024 LGA Annual General Meeting.

BUDGET

Not applicable

LIFE CYCLE COSTS

Not applicable

Attachment 1



Holdfast Bay

7 SEP 2022

HOLDFAST BAY

In reply please quote our reference: ECM 781919 TN/AL

5 September 2022

Mr Roberto Bria
Chief Executive Officer
City of Holdfast Bay
PO Box 19
Brighton SA 5048

Dear Mr Bria

RE-ISSUE – Election of LGA President (corrected Ballot Paper)

Please find enclosed a corrected ballot paper for completion by your council in relation to the election of the LGA President. The correction relates to nominee Mayor Bill O'Brien, with the previous ballot paper incorrectly listing Adelaide Plains Council against his name. The new ballot paper correctly shows Light Regional Council. The enclosed ballot paper (orange) must replace the previous version (purple). Please retain and use the combined candidate information, ballot paper envelope and returning officer envelope provided originally.

For ease of reference, I have replicated the instructions for the voting process below. I apologise for any inconvenience or confusion caused.

I wish to advise that at the close of nominations (5.00pm on 19 August 2022) I received nominations for the following five (5) eligible candidates (listed in the order of the ballot draw):

- Mayor Keith PARKES (Alexandrina Council)
- Mayor Caroline PHILLIPS (District Council of Karoonda East Murray)
- Mayor Brett BENBOW (Port Augusta City Council)
- Mayor Bill O'BRIEN (Light Regional Council)
- Mayor Erika VICKERY OAM (Naracoorte Lucindale Council)

I hereby advise that in accordance with clause 29.4 of the LGA Constitution an election for the position of LGA President will take place.

I have attached a copy of each candidate's information together with a Ballot paper and voting envelopes for your council's completion in accordance with the instructions below. **I require the ballot paper to be received by me in hard-copy no later than 5.00pm Monday 17 October 2022.**

Voting Instructions

Pursuant to clause 29 of the LGA Constitution, the casting of the vote by your council must be conducted as follows:

- each Member council shall determine by resolution the candidate it wishes to elect;
- the Delegate of a Member council or in the Delegate's absence, the chair of the meeting for that Member shall mark the ballot paper with an "X" next to the candidate that the Member council wishes elected and seal the ballot paper in the envelope marked "Ballot Paper" and then place this envelope inside the envelope marked "Returning Officer". Before sealing the second

envelope marked "Returning Officer" the Delegate must indicate the member council's name on the inside flap of the envelope. The second envelope may then be sealed and delivered to the Returning Officer;

- on receipt of the envelopes the Returning Officer must:
 - open the outer envelope addressed to the "Returning Officer" and record the name of the Member council which appears on the inside flap of the envelope on the roll of Member council's eligible to vote; and
 - place the envelope marked "Ballot Paper" unopened into the ballot box;
- the Returning Officer shall nominate the date, time and place for the counting of votes and shall invite each candidate and a person nominated as the candidate's scrutineer to be present;
- at the counting of the votes the Returning Officer shall produce the unopened envelopes marked "Ballot Paper" and if satisfied that all votes are valid, count the number of votes received by each candidate;
- the candidate with the most votes shall be deemed elected and the Returning Officer shall declare the candidate elected at the Annual General Meeting; and
- in the case of candidates receiving the same number of votes, the Returning Officer shall draw lots at the counting of the votes and the lot drawn will be the candidate elected.

I am the Returning Officer for this election, and I may appoint a Deputy Returning Officer to perform any of the powers, functions or duties described above.

The counting of votes will take place via Zoom on Tuesday 18 October 2022 commencing at 9.30am.

The successful candidate will take office from the conclusion of the LGA's 2022 Annual General Meeting for a term ending at the conclusion of the 2024 LGA Annual General Meeting.

If you have any queries, please contact me or Program Leader Governance Tami Norman on 8224 2037 or tami.norman@lga.sa.gov.au.

Yours sincerely



Clinton Jury
Chief Executive Officer

Telephone: (08) 8224 2039

Email: cjury@lga.sa.gov.au

LGA President Candidate Information Sheet

| | |
|--|--|
| Name | Mayor Keith Parkes |
| Council | Alexandrina Council |
| Local Government Experience & Knowledge | <ul style="list-style-type: none"> • Current Mayor Alexandrina Council since 2014 • Elected member Alexandrina Council 2010-2014 • LGA of SA Board director 2016 - current. Deputy Board Member 2014-2016 • SAROC Committee member 2016 - current. Deputy Committee member 2014-2016 • Southern & Hills LGA President 2016 - current. Member since 2014 • Chair Local Government Transport Advisory Panel (Special Local roads) • Board Director LGA of SA Audit & Risk Committee • Member LGA of SA Nominations Committee • Chair South Australian Coastal Council's Alliance |
| Local Government Policy Views & Interests | <p>Strong and effective local government has never been more important to the communities of South Australia. I bring to the role of President of the LGA of SA the skill and experience to help drive the LGA's current Strategic Plan and its emphasis on providing evidence-based advocacy for our members and their respective communities in what has become challenging socioeconomic times.</p> <p>South Australian communities face a broad range of new and emerging challenges that require sound local government leadership. These include water and energy management issues, the undeniable impact of climate change, the rising cost of living, homelessness, our ageing population and much more. Climate change is of particular concern to me and I would relish the opportunity to help drive the urgent and sustained action required to reduce emissions and manage the impacts of climate change as identified in the LGA Climate Commitment Action Plan 2021- 23.</p> <p>I am a firm believer in harnessing the collective energy of all levels of government including advocacy on the reinstatement of financial assistance grants to the appropriate share of GDP. Now is the time to build a strong, collaborative relationship with our new State Government. I have good existing relationships but also have the capacity and means to build new relationships to strengthen the bond between the LGA and the new regime to address the challenges we face and fully explore, inter alia, innovative approaches such as the diversification of revenue options for local government or the procurement of support for councils around the impacts of climate change.</p> |

| | |
|--|--|
| Name | Mayor Keith Parkes |
| Council | Alexandrina Council |
| Local Government Policy Views & Interests cont. | <p>Our relationship with the State Government needs to be dedicated and proactive to contribute meaningfully to policy and legislative development through the State-Local Government Relations Agreement and I am well disposed to deliver on the President's role in this. My extensive experience in local government and my comprehensive knowledge of the challenges faced by both metro and regional councils will allow me to drive initiatives to improve council sustainability, enhance the quality of life of South Australians through shaping better neighbourhood development and by improving infrastructure and access to infrastructure and public services. I am also passionate about enabling economic development through the implementation of programs that produce positive local outcomes and will advocate enthusiastically for this. I have a strong understanding of the issues facing SA councils and am particularly au fait with the impacts of seasonal and mobile populations and their connection with financial assistance and other grant opportunities. I will also continue to firmly oppose rate capping now more than ever.</p> <p>I am also a firm believer in looking inward as an organisation and am committed to fostering effective local government innovation as a collaboration between elected bodies and administrations.</p> <p>I believe I have the leadership experience in local government, as well as strong business acumen through my many years as a business owner, to inform such a role and have demonstrated such in my commitment and work ethic to the role of Mayor of Alexandrina Council and the LGA of SA as a board director.</p> |
| Other Information | <ul style="list-style-type: none"> • Extensive commercial business experience as an Owner /Director of my own business until 2014 • Member Australian Institute of Company Directors (course completed 2018) • Chair Goolwa to Wellington Local Action Planning Association • SA representative Australian Coastal Councils Association |

LGA President Candidate Information Sheet

| | |
|--|--|
| Name | Mayor Caroline Phillips |
| Council | District Council of Karoonda East Murray |
| Local Government Experience & Knowledge | <p>Caroline Phillips is a Murraylands resident and is the currently the Mayor of the District Council of Karoonda East Murray (DCKEM)</p> <ul style="list-style-type: none"> • DCKEM Elected Member Appointed 2010 • DCKEM – Deputy Mayor 2014-2018 • DCKEM Mayor 2019-2022 • MRLGA Vice President – Appointed 2021 • SAROC Committee Member – Appointed 2021 <p>Current Board Director Experience</p> <ul style="list-style-type: none"> • Netball South Australia - Appointed 2018 • Tourism industry Council of South Australia – Appointed 2019 • Landscapes SA Murraylands Riverland – Appointed 2021 |
| Local Government Policy Views & Interests | <p>Caroline is an active leader in her community and the broader district with a focus on building capacity, capability and resilience. In one of the smallest councils in the State, Caroline's leadership has delivered short, medium and long term strategies that are equally applicable across the entire sector – something which she is keen to share. In each case these have delivered positive outcomes to her community in times of extreme challenge.</p> <p>An energetic, positive leader who thrives on collaboration and considered change management, Caroline has fostered and developed strategic connections across State and Federal Governments and private enterprise and is well respected within each of these environments.</p> <p>Caroline is a strong advocate for youth opportunities, early childhood and intervention programs and childcare accessibility.</p> <p>Caroline interests in local government policy focusses on what is reasonable, achievable and sustainable within the sector. She is a hands on leader and learner who actively shares knowledge across the sector.</p> |



| | |
|--------------------------|---|
| Name | Mayor Caroline Phillips |
| Council | District Council of Karoonda East Murray |
| Other Information | <p>Caroline has worked in marketing and communications in the public and private sectors for more than twenty years. She holds professional qualifications in Marketing and a Bachelor of International Business.</p> <p>She is passionate about building and develop local communities, and has extensive experience working with the South Australian Tourism Commission, including holding the position of Regional Tourism Manager in the Murraylands and Riverland regions of SA.</p> <p>Caroline is currently a board member of the Tourism Industry Council of South Australia, Netball South Australia and Murraylands Riverland Local Government Association.</p> <p>Mayor Phillips also works as an independent marketing consultant servicing small business clients across regional South Australia and is a partner in a dryland farming venture with her husband.</p> <p>She lives at Wynarka on her family property with husband Troy and daughters Ruby (12) and Lucy (10)</p> <p>Personal mission statement:</p> <p><i>To inspire and develop the next generation of change makers so that communities can thrive.</i></p> |

LGA President Candidate Information Sheet

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| Name | Mayor Brett Benbow |
| Council | Port Augusta City Council |
| Local Government Experience & Knowledge | <ul style="list-style-type: none"> • 2018 (Nov) — current — Mayor — Port Augusta City Council • 2014 — 2018 (Nov) — Deputy Mayor - Port Augusta City Council • 2010 — 2018 — Councillor — Port Augusta City Council <p>Mayor Benbow is now in his third term representing the Port Augusta Community and has gained significant local government experience during this time as Council has undertaken major projects whilst delivering a wide range of services to the community</p> |
| Local Government Policy Views & Interests | <p>Mayor Benbow is a long-term resident of Port Augusta, having lived in the town his entire life 60 years, raised a family of 3 and happily married to his wife Kristen who is a long-term resident and is the Manager of a prominent local Hotel. Mayor Benbow is dedicated to serve for the betterment of the City and giving back to the Community and eager to support growth of the youth of the City and to ensure renewable sector continues to flourish within the City and region.</p> <p>Mayor Benbow is passionate about the local government policy framework providing a consistent structure for matters to be resolved. Local Government provides an opportunity for local decision making and change to occur in a structured and informed manner. The Elected body can shape and develop policy to create positive outcomes and provide clarity and strategic direction for the Community.</p> <p>Mayor Benbow has seen the City evolve in the past, and can see the potential the City has as it continues to reinvent itself as a regional hub. There are many great opportunities for Port Augusta and the Upper Spencer Gulf region in the near future, and Mayor Benbow is eager to see these evolve into great things for our Community and City. It is an amazing and fulfilling experience to be able to promote these opportunities and develop the relationships to occur.</p> |
| Other Information | <p>Mayor Benbow's working career excess of 39 years within the Railway Industry in various senior roles. Mayor Benbow has been active within Community Sporting Groups throughout his life, taking on a variety of roles for sports including Basketball, Football, Golf, Soccer, Cricket, Darts and the Port Augusta Racing Club</p> |



LGA President Candidate Information Sheet

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|--|---|
| Name | Mayor Bill O'Brien |
| Council | Light Regional Council |
| Local Government Experience & Knowledge | <ul style="list-style-type: none"> • Mayor, Light Regional Council, 2010 to 2022 • General Manager (CEO), Central Darling Shire, NSW, 2001 to 2008 • Various Tourism and Economic Development roles at DC Kapunda 1992 to 1996 (SA) and DC Kapunda & Light 1996 to 1999 SA; and Central Darling Shire in 2000 (NSW) |
| Local Government Policy Views & Interests | <ul style="list-style-type: none"> • Community representation, and Youth representation. • Strong and inclusive leadership. • Supports regional representation through Legatus Group, SAROC and LGA. • Ensuring that local government has sound financial management, economic, tourism and community development. • First Nations Reconciliation engagement and programs. |
| Other Information | <ul style="list-style-type: none"> • Current Committee member of Kapunda Meals on Wheels. • Current Board Member Kapunda and Eudunda Health Advisory Council. • Current Committee Member the Pines Recreational Park Committee. • Current President U3A Kapunda and District. • Past President Kapunda Rotary Club. • Past Board Member Barossa Tourism Incorporated. • While at Central Darling Shire (NSW) the Council was winner of the AR Bluett Award for excellence in Local Government (regional councils), in addition to being awarded the Premier's Gold Award for contribution to Regional NSW (Western Division). • Early career included 6 years serving as a member of the RAAF at various postings across Australia. |

LGA President Candidate Information Sheet

| | |
|--|---|
| Name | Mayor Erika Vickery OAM |
| Council | Naracoorte Lucindale Council |
| Local Government Experience & Knowledge | <ul style="list-style-type: none"> • Elected Member of Naracoorte Lucindale Council since 2000 and Mayor since 2010 • President of the Limestone Coast Local Government Association since 2014 • Chairperson of the South Australia Regional Organisation of Council since 2015 • Board Member of the Local Government Association SA • Board Member of the Australian Local Government Association |
| Local Government Policy Views & Interests | <p>Clear and open communication with member councils, strong and positive advocacy for local government across all levels of government, assist member councils to implement local government reforms, development of capacity building to ensure future sustainability for local government, ongoing accountability and transparency through pursuit of best practice and continuous improvement.</p> <p>Interests include: economic development and regional growth, community wellbeing, community engagement and communication, and the arts and culture.</p> |
| Other Information | <ul style="list-style-type: none"> • Board Member of Regional Development Australia Limestone Coast • Board Member Country Arts SA (and member of Governance & Finance Committee) • Board Member of Australian Migrant Resource Centre • Board Member of the SA Local Government Grants Commission and Boundaries Commission • Awarded OAM in 2017 for services to Local Government and the community • Partner in family farming enterprise |



Re-issued Ballot Paper

Election for LGA President 2022-2024

1 Person Required

Ballot closes 5:00pm Monday 17 October 2022

Important Note: In accordance with Clause 29.5.4 of the LGA Constitution, the Delegate of a Member Council (or in the Delegate's absence, the chair of the meeting for that Member Council) shall mark the ballot paper with an "X" next to the candidate that the Member Council wishes elected, then seal the ballot paper in the envelope marked "Ballot Paper" and place it inside the envelope marked "Returning Officer". The name of the Member council must be indicated on the inside flap of the envelope marked "Returning Officer" and the envelope must then be sealed and delivered to the Returning Officer.

| | | |
|--------------------------|--|-------|
| <input type="checkbox"/> | PARKES, Keith <i>Alexandrina Council</i> | Mayor |
| <input type="checkbox"/> | PHILLIPS, Caroline <i>District Council of Karoonda East Murray</i> | Mayor |
| <input type="checkbox"/> | BENBOW, Brett <i>Port Augusta City Council</i> | Mayor |
| <input type="checkbox"/> | O'BRIEN, Bill <i>Light Regional Council</i> | Mayor |
| <input type="checkbox"/> | VICKERY, Erika <i>Naracoorte Lucindale Council</i> | Mayor |



Issuing Officer
Initial

Attachment 2





Naracoorte Lucindale Council
Better by Nature

6 September 2022

Dear Mayor and Elected Members,

I am writing to ask for your support for my nomination for the position of LGA President.

I am the Mayor of the Naracoorte Lucindale Council and the President of the Limestone Coast Local Government Association. Through these roles I am a board member of the LGA and ALGA, and Chairman of SAROC and the LGA Research and Development Advisory Committee. I also hold the positions as LGA nominee for the Country Arts SA Board and the SA Grants and Boundaries Commissions. I have held an elected position on Council for 22 years and been involved directly in the LGA for 7 years.

I recognise that the LGA needs strong, consultative, and accountable leadership, and I believe that I am the best candidate to help deliver that outcome as I have the skills and experience gained through Council and in my roles at the LGA, SAROC and ALGA. I have the knowledge, strength and determination to ensure projects that assist councils (such as housing, workforce, planning, coastal management, climate adaption) are undertaken for the benefit of the local government sector.

I am abreast of the depth of the reform process and legislative changes that are currently in front of local government and will make sure that Councils are fully informed and able to implement the myriad of changes progressively being introduced.

The LGA needs to continually be focused on representing the needs of its member Councils and it must keep its performance in this regard under constant review. I recognise and acknowledge that the LGA is a member organisation, and those members need to be the drivers of the future direction for the organisation. This always means constructive communication. Through my roles I know the importance of sound communication and have demonstrated the ability to deliver.

As President of the LGA, I will provide strong, accountable and energetic leadership, driving the opportunities for change while balancing the strengths which we already have as an organisation. I would appreciate your support in my bid to do so.

I welcome anyone who would like to talk to me further to please contact me on 0427622133 or erika.vickery@nlc.sa.gov.au, should you wish to discuss any aspect of the information I have provided.

Yours Sincerely,

Mayor Erika Vickery OAM

DeGaris Place (PO Box 555) Naracoorte SA 5271
Telephone (08) 8760 1100
Email council@nlc.sa.gov.au
www.naracoortelucindale.sa.gov.au





Dear Mayor & Councillors,

I feel both honoured and humbled to be nominated for the position as South Australian Local Government Association - President to be decided at the forthcoming election in October 2022 and write seeking your Council's support for my nomination.

My involvement and career in Local Government spans over a 25-year period and includes being CEO (General Manager) of Central Darling Shire Council, in Western NSW and being the largest Shire in the State, living in Wilcannia for 8 years. In that time the Council came from being almost dysfunctional to winning the A.R Bluett Award for Excellence in Local Government. I was also a recipient of a NSW Premiers Award for my contribution to Regional NSW. My working life has included 6 years in the RAAF and owning a number of small businesses.

My wife and I returned to our home town Kapunda in 2008 and I was privileged to be elected Mayor of Light Regional Council in 2010. It has been a remarkable journey leading this Council to become one of the most progressive in the state. I am most grateful for the support and encouragement I have received from Council members and staff, and our State and Federal MPs.

Local Government will continue to need a strong presence as part of a 'collective' government into the future including Local Government Reforms and Planning legislation. Should I be elected, I would endeavour to lead the organisation in an inclusive and straight forward manner, always ensuring the members are listened to and action taken when required. I would also continue to build on the excellent working relationship with staff that currently exists.

My values include respect, honesty, integrity, building strong relationships and taking an inclusive approach and empowering those around me. Most importantly I care and would demonstrate a firm commitment to addressing the many challenges faced by both the business sector and our communities.

I know in my heart I have always acted with honesty and integrity and a sense of fairness, I enjoy communicating and engaging with members of the community at all levels and others who I meet with an open mind and friendly manner in order to make things happen. In doing so I have enjoyed incredible support throughout my time in Local Government and beyond.

Thank you for taking time to read this letter and I do hope you will consider my application as worthy of your support and please feel free to contact me should you have any questions on Mobile 0488 025 862.

Kind regards

Bill O'Brien JP
Mayor
12 September 2022

Email light@light.sa.gov.au
Post PO Box 72, Kapunda SA 5373
Phone 08 8525 3200
Web light.sa.gov.au

Principal Office
93 Main Street
Kapunda SA 5373

**Kapunda Public Library
and Visitor Information Centre**
51-53 Main Street
Kapunda SA 5373

**Freeling Public Library
and Customer Service Centre**
7 Hanson Street
Freeling SA 5372

**Planning and
Development Services**
12 Hanson Street
Freeling SA 5372

Operations Centre
11 Stephenson Street
Freeling SA 5372

Item No: 15.6

Subject: **COASTAL ADAPTATION PLAN STAGE 1**

Date: 27 September 2022

Written By: Team Leader, Environment and Coast

General Manager: Assets and Delivery, Michael de Heus

SUMMARY

Sea level rise is a consequence of climate change. In order to understand the risks from coastal hazards associated with sea level rise, and to develop adaptation pathways to manage this risk over time, Council has embarked on the development of a Coastal Adaptation Plan. This was identified as a high priority action in the Environment Strategy 2020 – 2025. This report is providing the final version of the first stage of the planning process.

RECOMMENDATION

That Council note the Coastal Adaptation Plan Stage 1 report.

STRATEGIC PLAN

Protecting our heritage and beautiful coast, while creating a welcoming and healthy place for all

COUNCIL POLICY

Risk Management Policy

STATUTORY PROVISIONS

Not applicable

BACKGROUND

The Environment Strategy 2020 – 2025 ranked the development of a Coastal Adaptation Plan (CAP) as one of the highest priority actions. In 2020/21 Council had a budget to develop the first stage of the coastal adaptation planning process.

Coastal adaptation planning is a long, complex process that will take years of work, including extensive community consultation at a future stage.

The *Coastal Adaptation Plan Stage 1: Stocktake and Engagement Strategy* is the first stage of a six stage process (South Australian Local Government Association (LGASA) Coastal Adaptation Guideline) and was developed in consultation with the Coast Protection Board and

Administration. The first stage included a 'stocktake' of what is known about our coast, a review of best practice coastal adaptation planning, a preliminary coastal hazard and risk assessment, and the development of an engagement strategy for use in the future. It also delivered a document register and a data register recording all known documents and data sources regarding our coast, along with a large amount of that data.

Refer Attachment 1, appendices provided electronically

REPORT

The following is a summary of the key findings of the Stage 1 study.

Holdfast Bay is a high profile and highly valued coast, with significant cultural, environmental, social and economic values. A number of coastal assets and values were identified for input to the preliminary risk assessment. Further identification of important coastal assets and values has been identified as a key engagement activity to be undertaken at a future stage.

Coasts are dynamic and constantly changing places and the Holdfast Bay coastline is no exception, being exposed to a range of coastal processes, which shape the movement of sand, with the potential to create coastal hazards. These critical coastal processes have been identified.

Holdfast Bay also has a highly developed coastline, which is actively managed in collaboration with the Department of Environment and Water to reduce coastal hazards. These management measures play an important role in reducing risks from erosion and inundation (flooding from the sea). Key management activities include the Adelaide Living Beaches annual sand pumping program, the seawalls of varying type and condition, sand bag groynes and the Patawalonga storm barrier.

A review of best practice coastal adaptation planning processes was undertaken using both Australian and international guidelines and case studies. Key lessons include:

- The LGASA guidelines are relatively non-prescriptive compared to many other state and country policies and guidelines (e.g. WA, QLD, NSW and NZ).
- A key hurdle for many councils is identifying and implementing the best funding approach to coastal adaptation. This process can be streamlined by undertaking detailed economic analysis of adaptation options through a cost-benefit analysis.
- An iterative approach is often required to develop CAPs, with multiple revisions required over time. Even the most high-profile cities, such as the Gold Coast, are not able to answer all questions within the first CAP revision.

The preliminary risk assessment has identified that erosion is a more critical risk than inundation, with Glenelg North the most at-risk coastal area. Rock seawalls in Glenelg North and from Glenelg South to Brighton are the most at-risk locations. These seawalls may continue to deteriorate due to missing rock armour, small rock armour size and poor placement, with more significant damage from overtopping and undercutting in major storm events possible. To understand the immediate risks in these locations, the two highest risk locations were further investigated and remediation plans were developed.

The Adelaide Living Beaches sand pumping program plays a significant role in coastal protection, countering northwards transport of sand, and maintaining beach widths in front of seawalls and dunes. Even with the Adelaide Living Beaches program, the shoreline will continue to recede due to sea level rise.

In terms of future community engagement, this needs to:

- Be early and ongoing and should reach out to those impacted by hazards, as well as those with an interest.
- Leverage off the City's existing engagement methods and channels.
- Provide regular updates, opportunities for input/feedback, as well as engagement reports.

Community leaders can provide input and facilitate buy-in from the community. Identified engagement challenges include:

- Getting buy-in to the long-term risks and technical concepts.
- Few may contribute to the planning process, however awareness is just as important.
- Appetite to share coastal hazard mapping varies between councils.

A number of high priority data and knowledge gaps were identified that require addressing in the next stage of the planning process. However, since the plan was delivered in mid-2021, the State Government has submitted a grant application to the Commonwealth Government, worth approximately \$6 M, that will fill many of these data and knowledge gaps for all coastal councils across South Australia. The outcome of the grant has not yet been announced. If it is successful Council will not need to fund data collection, instead use the data collected via the State Government project and fund analysis and modelling of the data in the next stage of work.

Should the grant funding not be successful, Council administration would seek funds via the annual budget process to undertake this data collection and analysis stage with costs expected to be in the range of \$150,000 to \$250,000 based on an agreed scope.

BUDGET

No budget allocation at present, while waiting on the outcome of the State Government grant application.

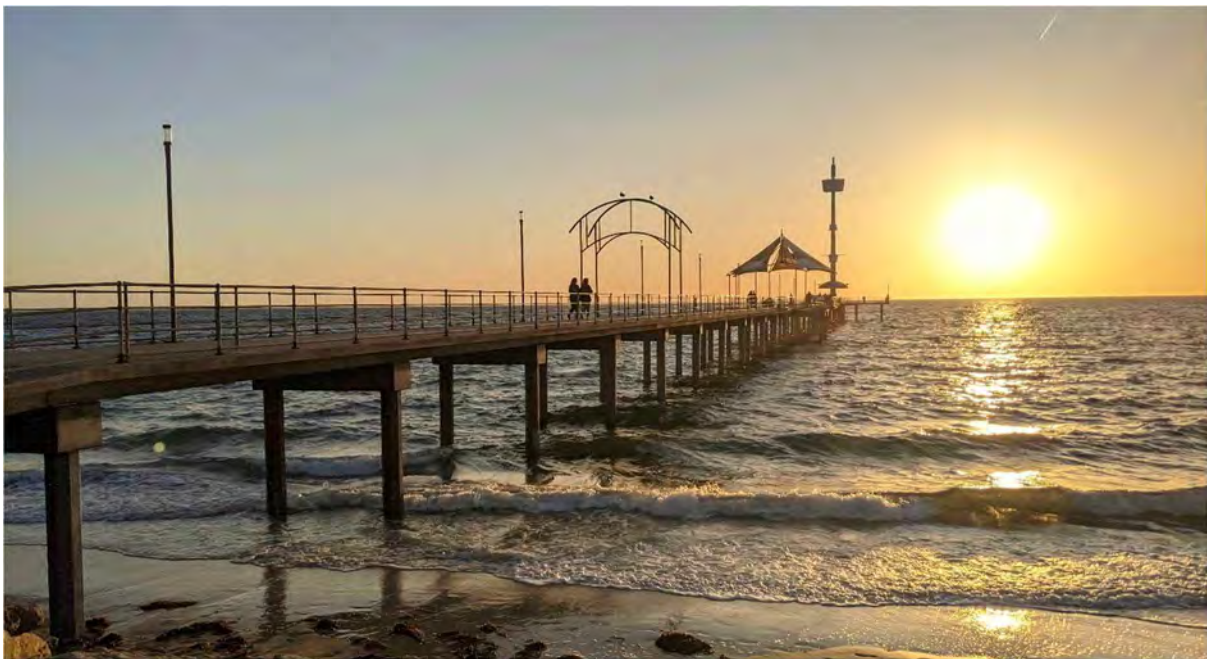
LIFE CYCLE COSTS

Not applicable

Attachment 1



Holdfast Bay Coastal Adaptation Plan: Stage 1 Stocktake and Engagement Strategy Summary



Prepared for



August 2021

Executive Summary

Study Purpose

Coastal Adaptation Planning allows asset owners and the community to understand the risk from coastal hazards, such as sea level rise, and to develop adaptation pathways to manage this risk over time. Development of a Coastal Adaptation Plan (CAP) was identified as a Priority Coastal Action as part of the City's *Environment Strategy 2020-2025*.

Wavelength, in collaboration with engagement specialists URPS, have been engaged to undertake Stages 1 and 2 of the CAP, in line with the *SA LGA Guidelines for Coastal Adaptation*. These first two stages involve:

- Stocktake to establish the starting point for the project and determine appropriate next steps.
- Develop an Engagement Strategy to raise awareness and build shared understanding of the risks and hazards, and seek input to the appropriate responses.

Structure

This report is organised as follows:

- Establish the coastal context (Section 2)
- Best practice review of coastal adaptation planning approaches and case studies (Section 3)
- Preliminary coastal hazard and risk assessment (Section 4)
- Engagement Strategy (Section 5)
- Gap analysis and Project Plan (Section 6)

Study findings and recommendations

The following summarises the key findings of the study:

Coastal Context:

- Holdfast Bay is a high profile and highly valued coast, with significant social, cultural and economic value. A number of coastal assets and values were identified for input to the preliminary risk assessment.
- Further identification of important coastal assets and values has been identified as a key engagement activity to be undertaken in Stage 3 for input to the detailed assessment.
- The Holdfast Bay coastline is exposed to a range of coastal processes, which shape the movement of sand, with the potential to create coastal hazards. Critical processes include:
 - Typical sea and swell waves arrive from the south-west driving longshore transport to the north.
 - Limited sand moves into the southern beaches, leading to erosion if left unmanaged.
 - Sand is also moved offshore from storm erosion, which is gradually returned to the shore through swell waves.
 - Sea Level Rise (SLR) will increase ocean water levels over time, reducing beach widths and potentially impacting longshore transport rates.
- Holdfast Bay is a highly developed coastline, which is actively managed in collaboration with the DEW to reduce coastal hazards. These management measures play an important role in reducing erosion and inundation risk. Key management activities include:
 - The Adelaide's Living Beaches (ALB) program pumps ~100,000 m³ of sand within Cell 1 from Glenelg to the beaches between the Broadway and Kingston Park each year. Within Cell 2 of the ALB, sand is also backpassed from West Beach Harbour to Glenelg North with trucks each year. This backpassing of sand counters longshore transport and maintains beach widths in these areas.

- Seawalls of varying type and condition protect the majority of the coastline.
- The Patawalonga storm barrier prevents ocean storm tides from entering the low-lying Patawalonga Lake and River area.

Best Practice Review:

- A best practice review has been undertaken of Australian and International CAP Guidelines and case studies.
- Key takeaways include:
 - The South Australian guidelines are relatively non-prescriptive compared to many other state and country policies and guidelines (e.g. WA, QLD, NSW and NZ).
 - A key hurdle for many councils is identifying and implementing the best funding approach to coastal adaptation. This process can be streamlined by undertaking detailed economic analysis of adaptation options through a Cost-Benefit Analysis (CBA).
 - An iterative approach is often required to develop CAPs, with multiple revisions required over time. Even the most high-profile cities, such as the Gold Coast, are not able to answer all questions within the first CAP revision.
- The findings from the review has helped shape the gap analysis and Project Plan.

Preliminary Risk Assessment:

- Erosion is a more critical risk than inundation, with Glenelg North (Segment 1) the most at-risk coastal area.
- Rock seawalls in Glenelg North (Segment 1) and from Glenelg South to Brighton (Segment 3) are the most at-risk locations. These seawalls fail due to small rock armour size and poor placement, with some damage from overtopping and undercutting.
- The ALB program plays a significant role in coastal protection, countering longshore transport and maintaining beach widths in front of seawalls.
- Regardless of the ALB scenario, the shoreline will continue to recede due to SLR and will likely require management.
- Inundation risk is primarily in the Glenelg area around the Patawalonga Lake and River and is unlikely to be critical until the latter part of the century.

Engagement Strategy:

Engagement needs to:

- be early and ongoing and should reach out to those impacted by hazards, as well as those with an interest.
- leverage off the City’s existing engagement methods and channels.
- provide regular updates, opportunities for input/feedback, as well as engagement reports.
- Community leaders can provide input and facilitate buy-in from the community.
- Identified challenges with engagement:
 - Getting buy-in to long term risks and technical concepts can be a challenge.
 - Few may contribute to the planning process, however awareness is just as important.
 - Appetite to share coastal hazard mapping varies between councils.

Gap Analysis:

High priority data and knowledge gaps to inform the Project Plan include:

- Coastal datasets for input to detailed modelling and assessment, including nearshore bathymetry to be collected on site and wave measurements to be collated from existing sources.
- Future ALB scenarios and timeframes.
- Detailed coastal processes modelling, including assessment of storm erosion and seawall failure, longshore transport and sea level rise (SLR) impacts.

Project Plan:

- A detailed Project Plan has been developed for Stage 3 of the CAP, which provides a clear roadmap, including methodology, scoped activities, timing and costs for the next stage of the planning process.
- Stage 3 of the CAP is anticipated to take approximately 1 year.
- The remaining adaptation planning process, including Stages 3 to 6, is expected to take just over three years.



| Rev | Date | Description | Prepared | Reviewed |
|------------|-------------|---------------------------|-----------------|-----------------|
| A | 17/6/21 | Draft for discussion | B Smith | A Sandery |
| B | 25/6/21 | Draft for client review | B Smith | A Sandery |
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Glossary

| | |
|--------|--|
| ALB | Adelaide's Living Beaches |
| AEP | Annual Exceedance Probability |
| ARI | Average Recurrence Interval |
| AHD | Australian Height Datum |
| AGS | Australian Geomechanics Society |
| BoM | Bureau of Meteorology |
| CAP | Coastal Adaptation Plan |
| CES | Coastal Engineering Solutions |
| CBA | Cost-Benefit Analysis |
| CD | Chart Datum |
| CPB | Coast Protection Board |
| DEH | Department of Environment and Heritage (now DEW) |
| DEW | Department of Environment and Water |
| DIT | Department of Infrastructure and Transport |
| DPTI | Department of Planning, Transport and Infrastructure (now DIT) |
| DEM | Digital Elevation Model |
| EPA SA | Environmental Protection Authority SA |
| HSD | Horizontal Setback Datum |
| IPCC | Intergovernmental Panel for Climate Change |
| LGA | Local Government Association of South Australia |
| MCA | Multi-Criteria Assessment |
| PSD | Particle Size Distribution |
| QERMF | Queensland Emergency Risk Management Framework |
| SLR | Sea Level Rise |
| SARDI | South Australian Research and Development Institute |

1 Introduction

1.1. Background

The City of Holdfast Bay (City) coastline stretches 9km along the southern portion of the Adelaide Metropolitan area (Figure 1). Before coastal development in the 19th and 20th centuries, the dunes were an important source of food and shelter for the traditional owners, the Kaurna Nation.

Given the highly valued coastline in Holdfast Bay, a Coastal Adaptation Plan (CAP) was identified as a Priority Coastal Action as part of the City's *Environment Strategy 2020-2025* (City of Holdfast Bay, 2020a). A CAP allows asset owners, such as the City, and the broader community to understand:

- The existing and future pressures on the coast from hazards such as erosion and inundation
- What natural and built assets are likely to be at risk from these hazards
- What viable approaches and options can be implemented now and in the future to manage this risk
- The preferred adaptation pathway considering social, economic and environmental factors
- triggers (timing) for when adaptation options should be implemented

1.2. Study scope

The Local Government Association of SA (LGA) *Guidelines for Coastal Adaptation*, released in 2020, were developed to provide comprehensive and contemporary advice specific to local government for coastal climate adaptation planning (LGA, 2020). The Guidelines set out six key stages required in the coastal adaptation planning process, as shown in Figure 2.

Wavelength Consulting Pty Ltd (Wavelength) in collaboration with engagement specialists URPS, have been engaged to undertake Stages 1 and 2 of the CAP. This study has the following objectives:

- **Stage 1 Stocktake** – establish the starting point for the project and determine appropriate next steps
- **Stage 2 Engagement Strategy** - raise awareness and build shared understanding of the risks and hazards, and seek input to the appropriate responses

Stages 1 and 2 presented in this report consist of the following key activities:

- Establish the coastal context – data collation and review (Section 2)
- Best practice review of coastal adaptation planning approaches and case studies (Section 3)
- Preliminary coastal hazard and risk assessment (Section 4)
- Engagement Strategy - develop an Engagement Strategy for future CAP Stages (Section 5)
- Gap analysis and project plan (Section 6)



Figure 1: Study area (red) with locality plan (inset)

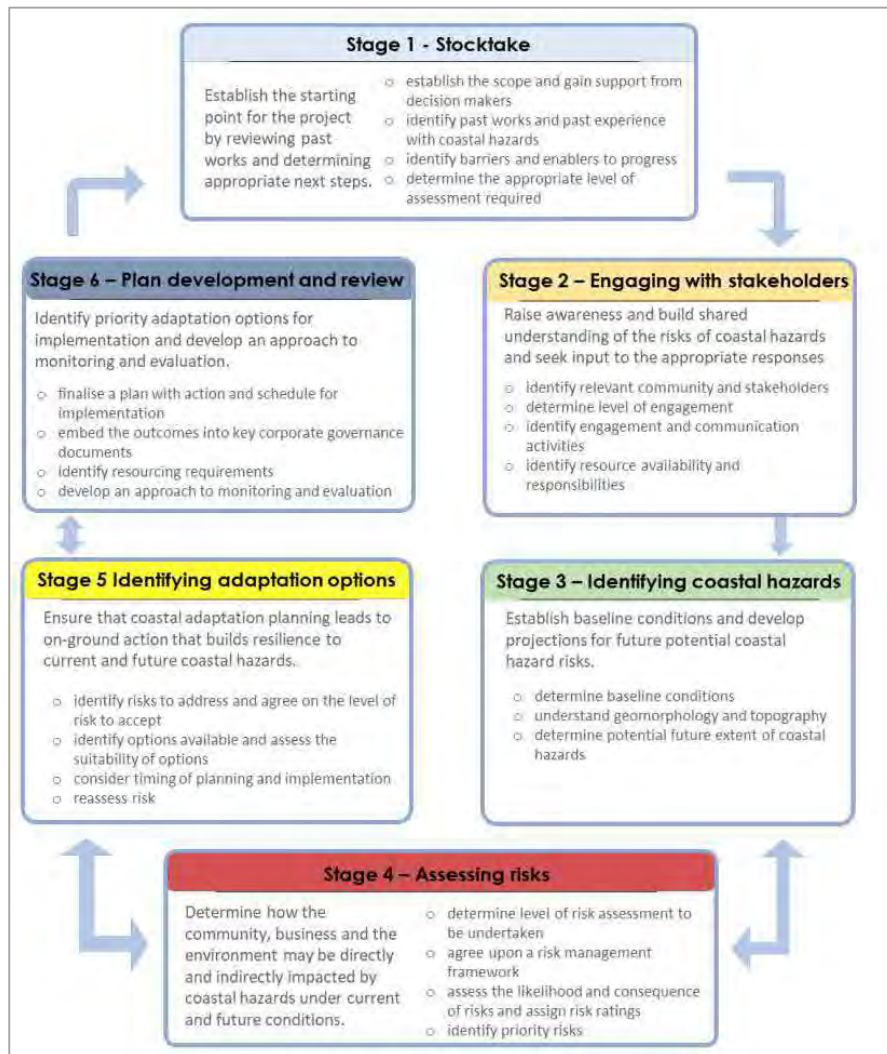


Figure 2: SA LGA approach (LGA, 2020)

2 Coastal Context

2.1. Objective

Establish the coastal context for the study area, identifying:

- Key coastal assets and values
- Primary physical drivers and coastal processes
- Existing and historical coastal management

2.2. Approach

In establishing the existing coastal context at Holdfast Bay, a review of available information was undertaken, including:

- Reaching out to key stakeholders regarding the project and obtaining any relevant data and documents (summarised in Appendix A). Key stakeholders include:
 - City of Holdfast Bay (City)
 - Department of Environment and Water (DEW)
 - Department of Infrastructure and Transport (DIT)
 - Flinders University
 - South Australian Research and Development Institute (SARDI)
 - Flinders Ports
 - SA Water
 - Environmental Protection Authority SA (EPA SA)
- Collation and review of key coastal data and documents relevant for futures stages of the planning process
- Review of DEW Coastal Management Branch archives

The data and literature review has been summarised in two registers:

1. **Document Register** (Appendix B – also in Excel)- holds details of relevant technical studies, policy and strategy documents and outlines their relevance.
2. **Data register** (Appendix C – also in Excel and QGIS) - contains historical photos, asset information and spatial datasets.

The document and data registers were used to identify the coastal context or state of play throughout the study and have been key to informing the gap analysis (Section 6.2). The intent is for Council to own and build on these registers and to streamline the data and knowledge transfer to the technical consultant responsible for the next stage of the planning process.

2.3. State of Play

Key findings of the coastal context review are presented in Figure 3 and summarised below:

- Historical development of the dunes has left a limited buffer between the coast and built assets.
- Predominant south-west swells push sand along the coast to the north.
- Limited sand moves into the southern beaches, leading to erosion if left unmanaged.
- Beach and dunes are subject to significant erosion during storms with high waves and water levels.
- Seawalls in varying type and condition protect most of the coastline except a short 400m section of remnant coastal dunes at Minda Dunes.

- Each year, the Adelaide's Living Beaches (ALB) program pumps ~100,000 m³ of beach sand to the south from Glenelg to beaches between the Broadway and Kingston Park.
- ALB has been effective in maintaining beach widths at the discharge locations, reducing storm erosion impacts.
- Groyne structures in key locations have been effective in holding sand and maintaining recreational beach width.
- Nature-based solutions have also been implemented, including restoring dunes to improve coastal protection.

Further detail is provided in the following sections:

- Coastal assets and values (Section 2.4)
- Coastal processes (Section 2.5)
- Existing coastal management (Section 2.6)



Figure 3: Holdfast Bay Coastal Context Summary

2.4. Coastal assets and values

Holdfast Bay is a high profile and highly valued coast, with significant social, cultural and economic value. Almost 80% of visitors to Adelaide spend time in Holdfast Bay, and the coastline is a major tourist drawcard (City of Holdfast Bay, 2020). The coastline also holds significant cultural value to the Kurna Nation, including Tjilbruke Springs in Kingston Park.

A first-pass identification of key assets and values has been undertaken to inform the preliminary hazard mapping and is summarised below. Further identification of important coastal assets and values has been identified as a key engagement activity to be undertaken in Stage 3 (refer Section 6.3) for input to the detailed risk assessment. Where possible, spatial data has been collated and included in the data register (Appendix C) and was used in the preliminary hazard mapping (Section 4). Missing data has been identified and summarised in the gap analysis (Section 6.2).

- **Physical assets:**
 - Footpaths
 - Foreshore assets, including benches, signage, BBQs, lookouts, showers and shelters
 - Roads
 - Residential and commercial properties
 - Stormwater drainage pipes and outlets
 - Jetties, including Glenelg Jetty and Brighton Jetty (Figure 3)
- **Environmental values:**
 - Dunes, including Minda Dunes and the re-established dunes in Seacliff and South Brighton (Figure 3)
 - Important remnant cliff vegetation at the Kingston Park cliff face (Figure 3)
 - Sandy beaches, which are also considered a highly valued social or community asset
 - Seagrass meadows (Figure 3), reefs and rocky intertidal areas
 - Beach habitat for shorebirds including the Nationally Vulnerable hooded plover
- **Cultural and Heritage:**
 - Kurna heritage sites, including Tjilbruke Springs in Kingston Park (Figure 3)
 - State heritage listed buildings
 - European historical value given the first settlement established in 1836

2.5. Coastal processes

The Holdfast Bay coastline is exposed to a range of coastal processes, which shape the movement of sand, with the potential to create coastal hazards.

Key studies related to the coastal processes have been reviewed and summarised within the reports register (Appendix B). Of note is the *Adelaide's Living Beaches (ALB) Strategy - Technical Report* (Department of Environment and Heritage (DEH), 2005) and background coastal processes report by Coastal Engineering Solutions (CES) (2004). These reports provide a detailed review of key coastal processes and historical coastal management along the managed section of the Adelaide Metropolitan coastline.

The following provides a high-level summary of the key coastal processes influencing Holdfast Bay:

2.5.1. Bathymetry, Geology and Geomorphology

Holdfast Bay is located on the eastern side of the Gulf St Vincent (Gulf), as shown in Figure 1. Seabed depths up to 40m exist in the center of the Gulf, which gradually shallows towards the Holdfast Bay shoreline.

DEW have surveyed the Adelaide Metropolitan beaches and nearshore area approximately every year since 1975, there are 25 cross shore profile locations within Holdfast Bay. These are summarised in Appendix C.

Much of the Holdfast Bay shoreline is classified as a *fine-medium sand beach* by the DEW, with two exceptions:

- a short section of *bedrock platform* (rocky coast) in the southern 300m of the study area at Kingston Park (DEW, 2021), and
- low-profile reef close to and underneath the beach in Glenelg North (DEW, 2021).

The sand along most of the Adelaide coast is known geologically as 'Semaphore sand' and is derived from sediments deposited by rivers and streams into the gulf during low sea level periods (DEH, 2005).

Beach sand is typically more coarsely grained than windblown sand in the dunes (DEH, 2005). Several studies, including as part of the ALB program, have collected and analysed beach sand for Particle Size Distribution (PSD) (DEH, 2005 and Deans et al, 2010). Beach sand typically ranges in diameter (D_{50}) from 0.2 to 0.4 mm but coarser sand up to 0.7mm has been recorded on the southern beaches at Kingston Park and Seacliff (Deans et al, 2010).

2.5.2. Winds

The winds at Holdfast Bay show marked seasonal variation, with large differences between summer and winter wind patterns.

The Adelaide Airport station is the nearest Bureau of Meteorology (BoM) site with long term wind data, located on the northern edge of the study area. Adelaide Airport wind roses are presented in Figure 4 and Figure 5 for summer and winter, respectively.

In summer, winds are more variable in the morning but are dominated by strong south-westerly 'sea-breezes' on most afternoons.

In winter, winds show a strong north and north-east bias in the morning, generally with lighter winds (up to 13% of the observations were calm). Winter afternoons are more varied, frequently experiencing south-westerly through to northerly winds.

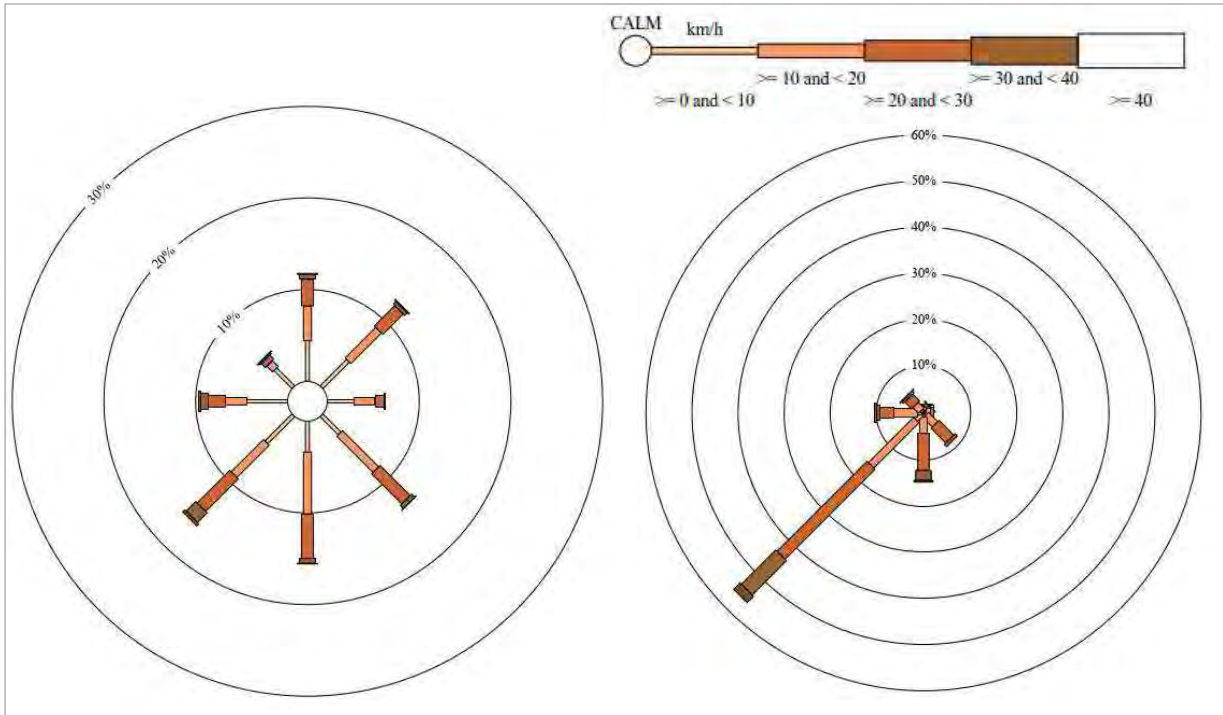


Figure 4: Summer wind roses 9am (left) & 3pm (right) (BoM, 2021)

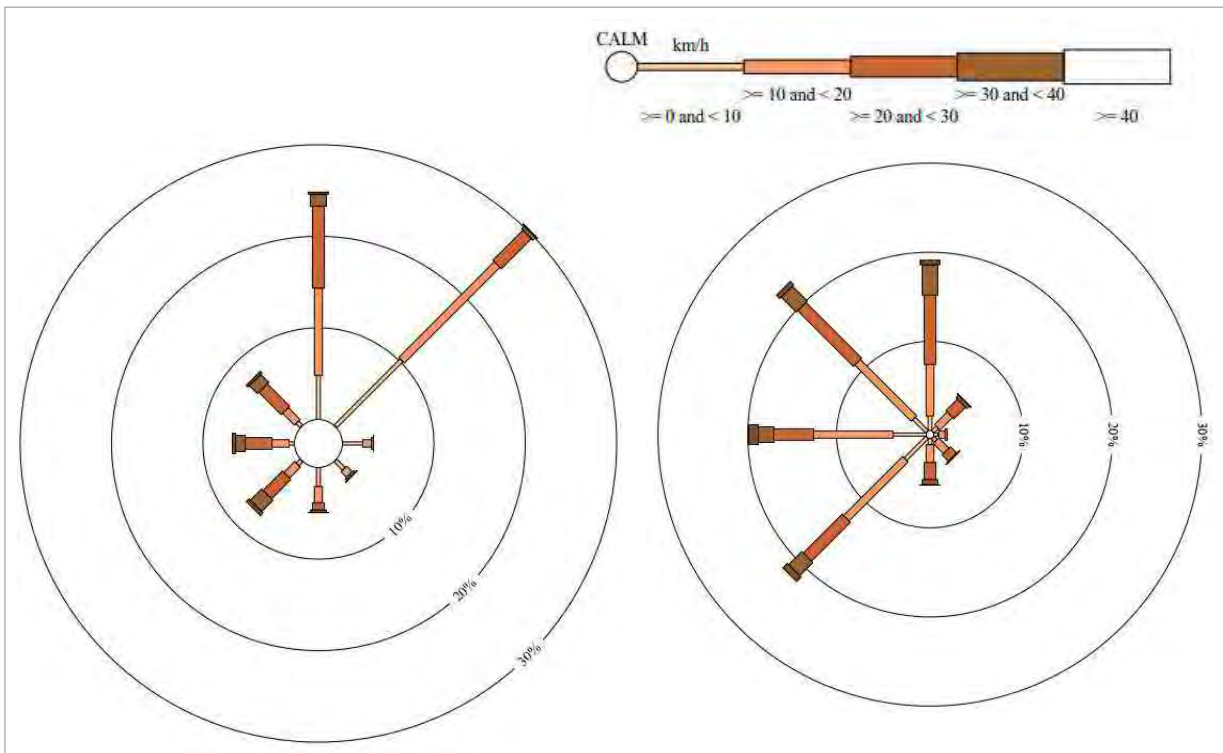


Figure 5: Winter wind roses 9am (left) & 3pm (right) (BoM, 2021)

2.5.3. Waves

Winds blowing over an open stretch of water (called a fetch) create waves. The resultant wave heights are dependent on the wind speed, the fetch length and the duration that the winds are blowing. In deep water, the faster the winds and the longer the fetch, the larger the waves produced.

Swell waves are long period waves that are generated by winds in the open ocean. Swell waves pass through Investigator Strait and typically arrive at Holdfast Bay from the south-west at an angle to the coast, as shown by wave modeling presented in Figure 6.

Sea waves, which have shorter periods, are also generated across the wind fetches within the Gulf and arrive at the Holdfast Bay shoreline from multiple directions. The longest wind fetch, and thus the largest waves, are from the west south-west direction through Investigator Strait.

The 1% annual exceedance probability (AEP) wave height at Holdfast Bay is in the order of 4m at the -3m Australian height datum (AHD) contour (Connell Wagner, 1996).

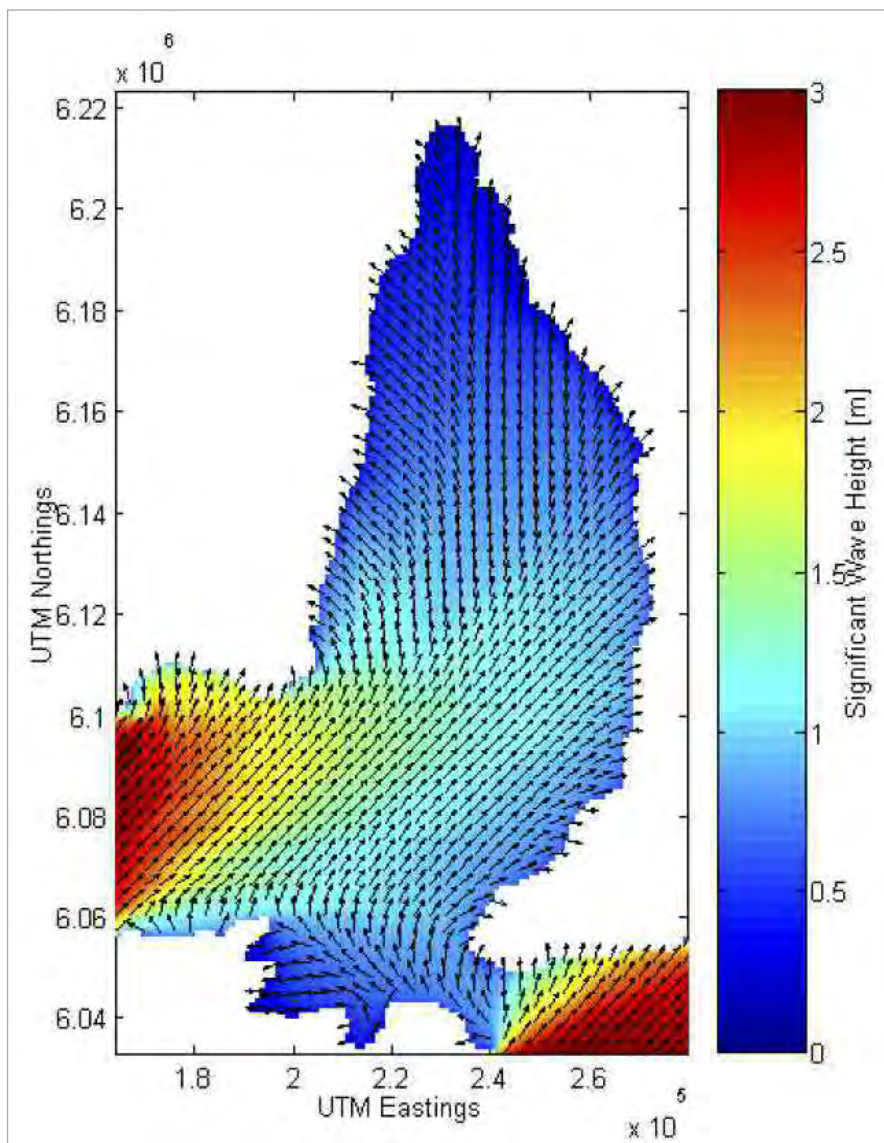


Figure 6: Annual mean swell conditions in Gulf St Vincent (Pattiaratchi and Jones (2005))

2.5.4. Water levels

Water levels are made up of several factors, as shown in Figure 7.

The Adelaide metropolitan coastline experiences a microtidal, mixed semidiurnal tidal regime, typically containing two unequal high tides and two unequal low tides each day. Key tidal levels at the Adelaide Outer Harbour long-term measurement site are shown in Table 1.

Strong winds and low pressures create a storm surge or storm tide above the tidal water level during storm events (Figure 7). The CPB have calculated a 1% AEP water level of approximately +2.7 mAHD, including wave setup, at Glenelg in Holdfast Bay.

Sea level rise (SLR) from climate change increases the mean sea level over time. This leads to increased ambient (tidal) levels and increased extreme (storm surge) water levels. SLR can be measured by analysing the long-term water level records, extracting out mean water level trends over time.

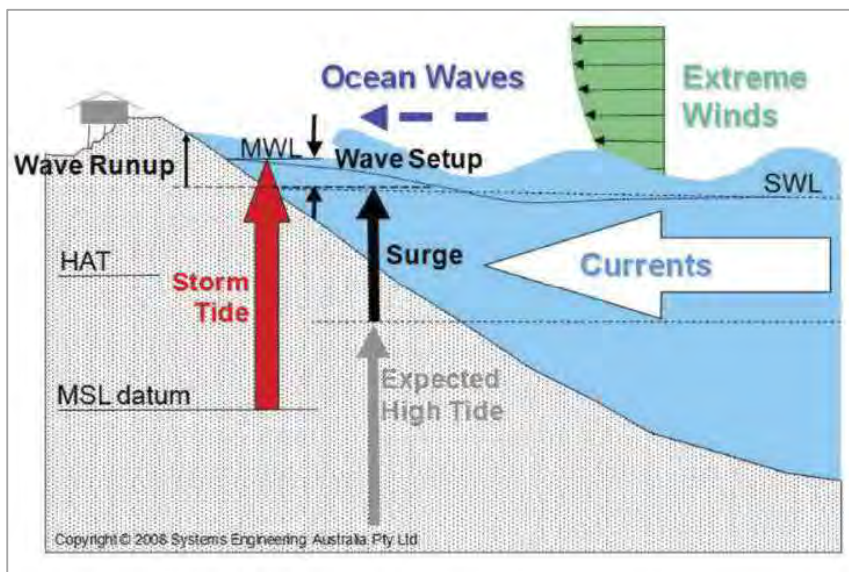


Figure 7: Water level components contributing to a storm tide (Harper, 2012)

Table 1: Adelaide Outer Harbour key tidal levels (DPTI, 2020)

| | Heights above Chart Datum (CD) m |
|---------------------------|-------------------------------------|
| Lowest astronomical tide | 0.08 |
| Mean sea level | 1.39 |
| Australian height datum | 1.45 |
| Mean high water neaps | 1.39 |
| Mean high water springs | 2.41 |
| Highest Astronomical Tide | 2.91 |

2.5.5. Currents

Ocean currents are generated by a combination of factors, including tides and winds, as well as temperature and salinity gradients.

Tidal currents in coastal Adelaide waters are essentially north–south alongshore, with speeds up to 0.2–0.3 m/s (DEH, 2005).

2.5.6. Sediment transport

The above physical processes, including waves, currents and winds cause sand to move within the nearshore area.

Sand can be moved parallel to the coast, called longshore transport, or moved perpendicular to the coast called offshore (and onshore) transport.

Longshore transport:

- Approximately 100,000 m³ of sand moves to the north along the Holdfast Bay coastline each year due to longshore transport. This net northerly movement is primarily due to the predominance of south-westerly swell and sea-breeze waves arriving at an angle to the shoreline.
- The rate of longshore transport varies along the study area due to the influence of local bathymetry and shoreline alignment, as shown by the red box in Figure 8. Longshore transport rates are highest at Kingston Park and between the Broadway and Brighton Jetty and are lowest at Glenelg and Seacliff (CES, 2005).

Cross-shore transport:

- During storms, sand is often eroded from the dunes and beaches and transported offshore. CES (2004) noted the following historically significant storm events on the Adelaide coastline:
 - April 1948
 - May 1953
 - April 1956
 - May 1960
 - April 1985
 - November 1994
 - September 1996
 - June 1999
- Significant storms were also experienced in May, July and September 2016.
- Following a storm, sand will typically move back onshore over a longer duration due to the actions of swell and ambient waves.

2.5.7. Sea wrack accumulations

Sea wrack is the term used to describe detached marine macroalgae, seagrass and other marine detritus. Wrack production and accumulation is a natural process and can be beneficial for the ecosystem and for coastal protection (Oldham et al 2010).

Along the southern coastlines of Australia, macroalgae wrack is typically generated during winter storms when large waves detach macroalgae from reefs (DoT, 2014). Seagrass species also shed their leaves in late-autumn and early-winter (Oldham et al 2010). Therefore, wrack accumulations are often seen in winter when wrack ‘generation’ is highest.

Most accumulations of wrack are short-lived, often being removed from the beach by natural processes within a relatively short period of time and transported back into the coastal ecosystem. However, sometimes wrack can become trapped by man-made structures, such as harbours or by headland structures, such as at Glenelg.

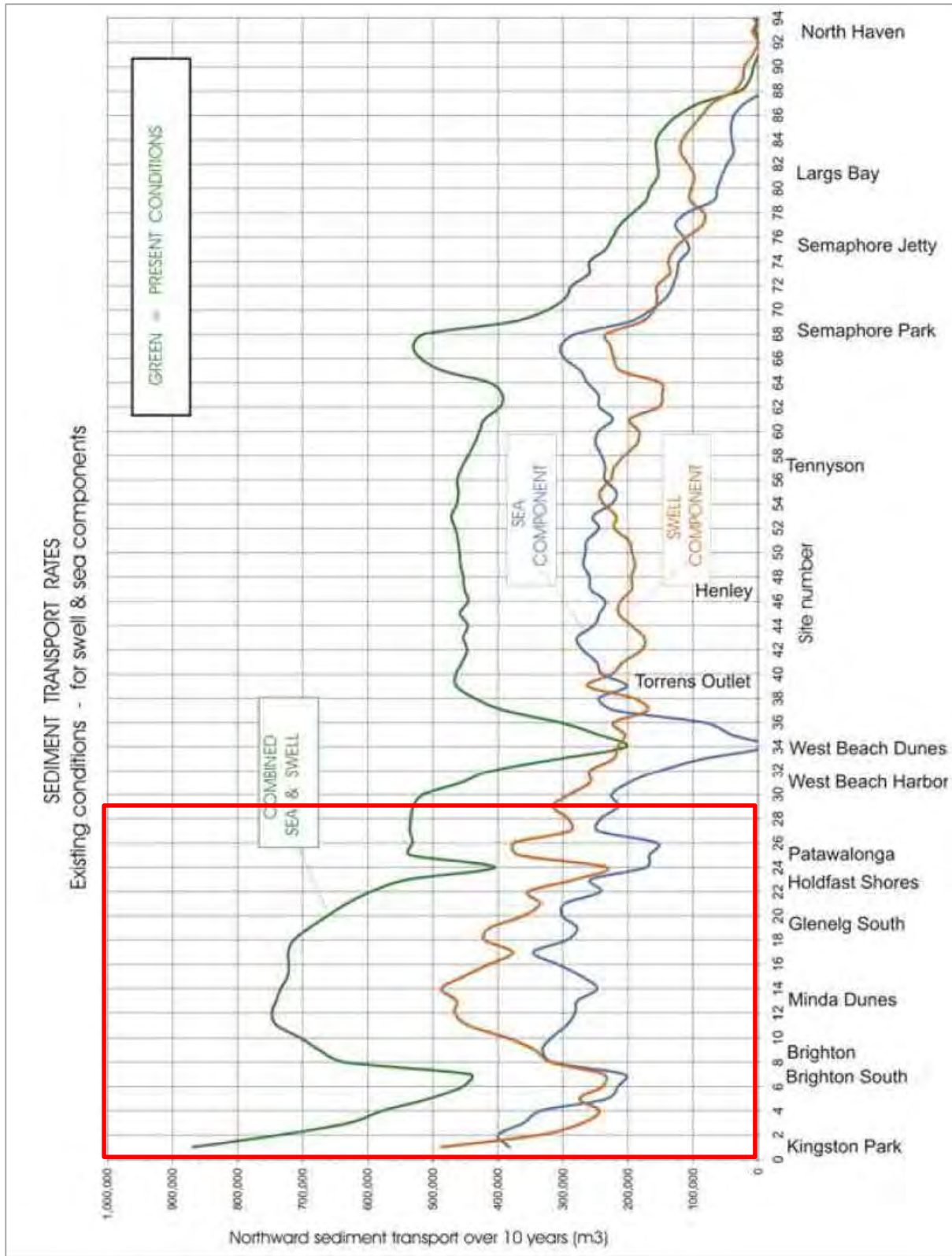


Figure 8: Longshore sediment transport potential (CES, 2004)

2.6. Existing coastal management

Holdfast Bay is a highly developed coastline, which is actively managed in collaboration with the DEW to reduce coastal hazards. These management measures play an important role in reducing erosion and inundation risk and have been considered throughout the Stage 1 Stocktake.

The coastline has been separated into segments based on coastal structures and features, which are referred to throughout this report (Figure 9).

Key elements of the historical and existing coastal management are summarised below:

2.6.1. Historical Sand Nourishment

The DEW has placed approximately 3,000,000 m³ of sand nourishment at different locations along the City's coastline between 1973 and 2004 (DEH, 2005). This sand has been sourced from a range of sources, including sand recycling, onshore and offshore locations. The ALB Strategy Technical Report Section 4.1 includes details of significant nourishment placement locations and volumes (DEH, 2005).

2.6.2. 2005 ALB program

ALB is a State Government program that aims to maintain beach widths along the managed section of Adelaide's Metropolitan coastline (North Haven to Kingston Park) for coastal protection and amenity purposes (DEH, 2005). Whilst the ALB strategy is in place until 2025, we understand the ALB will continue beyond this, however the details are yet to be released by the State Government.

Segments 2 to 5 of the City's shoreline are within Cell 1 of the ALB, involving the collection of approximately 100,000 m³ of sand from Segment 1 (Glenelg) and pumping via a pipe to 16 sand discharge points in Segments 3 to 5 (Figure 9).

Segment 1 Glenelg North is in Cell 2 of the ALB. Whilst this segment is not managed through sand pumping via a pipe, it is understood that sand is whilst it is not managed through sand pumping via a pipe, it is understood sand is collected to the south of West Beach Harbour each year in spring and backpassed with trucks to Glenelg North beaches. It is also understood approximately 10,000 m³ sand and seagrass wrack is dredged from the Glenelg Harbour entrance and pumped to the nearshore area each year.

2.6.3. Glenelg Harbour breakwaters

The Glenelg Harbour entrance channel was upgraded in the late 1990's in conjunction with the Holdfast Shores development.

Two rock breakwaters have been constructed on either side of the harbour entrance to help maintain navigability. An offshore rock breakwater was also constructed as part of the development. This offshore breakwater traps sand within Segment 2 (Glenelg).

The harbour breakwaters trap sand on the southern side of the harbour, reducing sand movement into Glenelg North. This may have contributed to the shoreline erosion observed here since their construction.

2.6.4. Groynes

Several groynes (shore-perpendicular structures) have been constructed along the City's coastline. These groynes reduce longshore transport rates along the coast and act to hold sand in place. The groynes include:

- A rock groyne constructed at The Broadway in 1974 (DEH, 2005)
- A series of low-crested Geotextile Sand Container (GSC) groynes constructed between Brighton Jetty and the Broadway

2.6.5. Seawalls

Most of the Holdfast Bay coastline is backed by seawalls, which were constructed to reduce erosion impacts since the early 1930's. Minda Dunes (Segment 3a) is the only section of coast not protected by a seawall or breakwater structure.

Rock armoured seawalls occur through Segments 1, 3, 4 and 5. Water Technology completed a condition inspection of the visible rock seawalls in 2020, which found the condition varies significantly across the study area (Water Technology, 2020). Some of the seawalls, such as in Segment 4 (Seacliff) are buried by dunes and their condition is unknown. The typical Coast Protection Board (CPB) rock revetment seawall cross-section is shown in Figure 11.

Vertical concrete seawalls are located through most of Segment 2 (Glenelg) and a short section in Segment 4 (Seacliff) at Wheatland St. Details of the vertical seawall condition and toe levels are limited.

2.6.6. Sea grass wrack management

DEW's standard policy is to leave wrack on the beach where possible, as it assists with coastal protection and has ecosystem benefits.

Very infrequently, when wrack volumes become significant, DEW may remove wrack from the beach, such as at Glenelg, and place it in other locations. For example, wrack accumulations in 2021 have been the highest observed for 11 years, preventing sand collection for the winter 2021 sand pumping process. To enable sand collection, removal of approximately 10,000 m³ of wrack from Glenelg to West Beach by DEW was required from Glenelg to West Beach by DEW (Pers. Comm. Jason Quinn, DEW, 16/6/21).

2.6.7. Patawalonga storm barrage

A storm barrage or barrier was constructed across the Patawalonga River entrance in 1959 to prevent tides and storm surges from flooding Glenelg North and Adelaide Airport (Figure 12), and diverting stormwater from flooding properties along the Patawalonga Lake system (DEW, 2020).

The storm barrage is to be replaced this year. The design for the upgraded barrage is currently out for tender and the design level is currently unknown. Future sea level rise (SLR) will be incorporated into the upgraded structure however details are unknown at this stage (Pers. comm. Craig Reardon, DEW 27/04/2021).



Figure 9: Coastal Segments

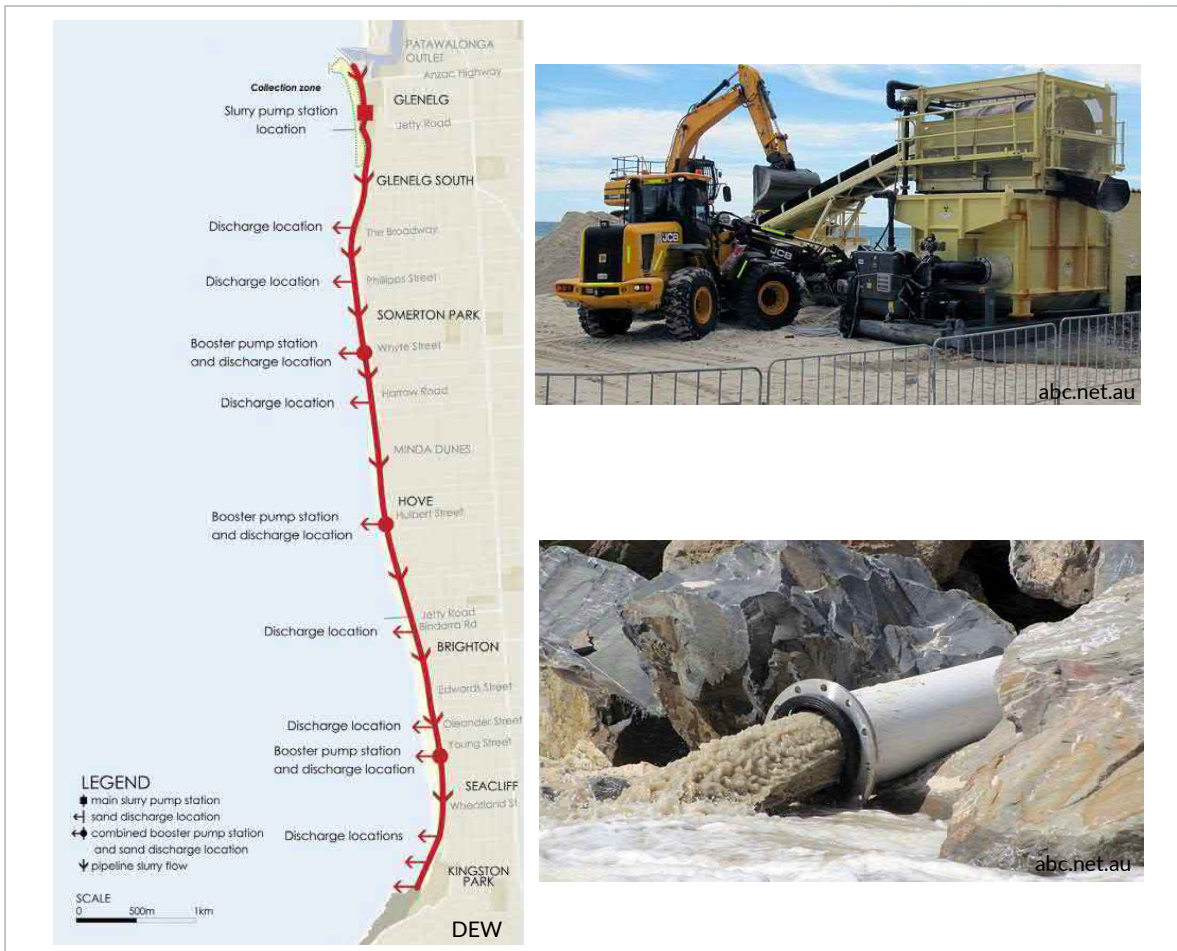


Figure 10: ALB Cell 1 collection, pipe and discharge location and photographs

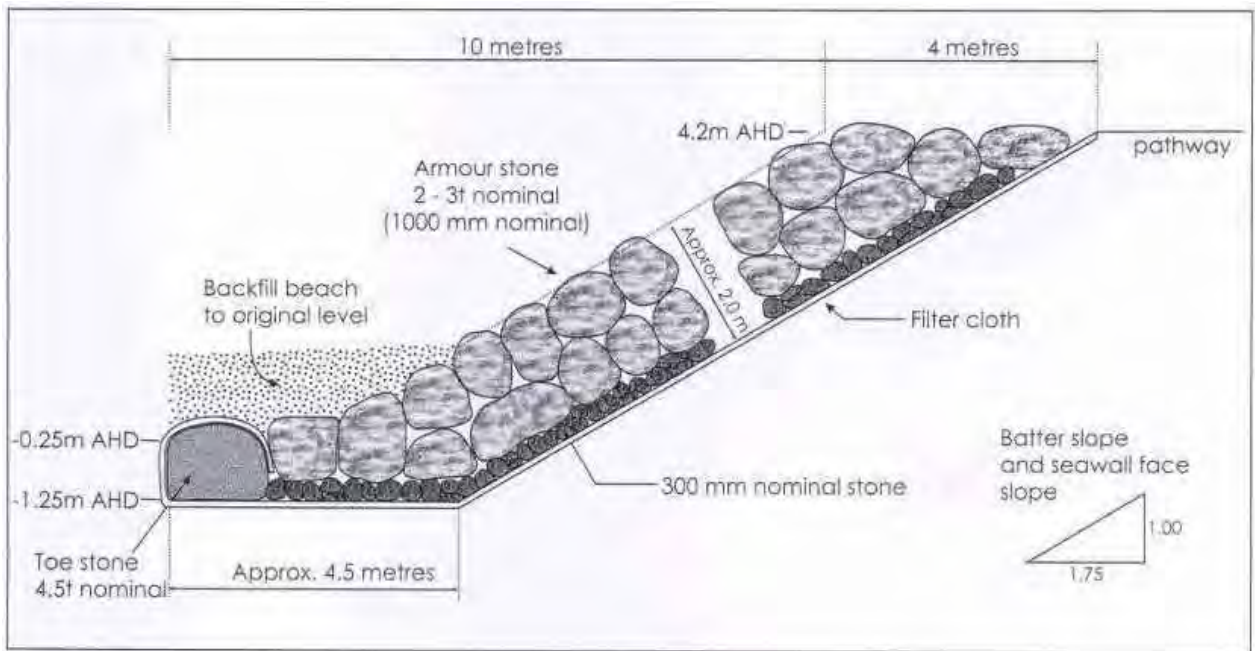


Figure 11: Standard Design for rock revetment seawall on the Metropolitan Adelaide Coast (CPB, 2011)



Figure 12: Patawalonga Storm Barrier (Wavelength 18 March 2021)

3 Best Practice Review

3.1. Objective

To identify best practice approaches to coastal adaptation planning to guide future stages of the Holdfast Bay CAP.

3.2. Approach

The following steps were undertaken as part of the best practice review:

1. **CAP Guideline review:** a review was undertaken of CAP guidelines from across Australia and Internationally for comparison against the SA LGA's Adaptation Guidelines.
2. **Case study review**, consisting of:
 - Identifying and screening of locations comparable to Holdfast Bay (i.e. high profile and/or highly managed).
 - Detailed review of 14 shortlisted CAP studies across Australia and Internationally (refer Section 3.4.1).
 - Consultation with coastal Councils with relevant CAP experience.
3. **Develop a recommended CAP approach** appropriate for Holdfast Bay based on the review of case studies and appreciation for the relevant guidelines.

3.3. Adaptation Guidelines

Key findings from the review of adaptation guidelines are as follows:

- The intent is not to deviate from the approach outlined in the SA LGA guidelines (Figure 2), with the opportunity to refine the method within each stage.
- The South Australian guidance is relatively non-prescriptive compared to many other state and country policies and guidelines summarized below:
 - **Western Australia:** WA has a highly prescriptive set of *Coastal Hazard Risk Management and Adaptation Planning (CHRMAP)* guidelines, which follow a cyclical 6 stage approach. WA take a more conservative approach to coastal adaptation planning with an established hierarchy for selection of adaptation options and a set of triggers and guidelines for implementation of the retreat adaptation pathway.
 - **New South Wales:** NSW councils are required to prepare in line with the *Guidelines for Preparing Coastal Zone Management Plans (CZMP)*. The NSW guidelines are less prescriptive than WA and QLD approaches, with limited detail on specific adaptation methodologies. The guidelines also have a broader focus than other states with consideration of cliff stability and estuary health due to the prevalence of these landforms in NSW.
 - **Queensland:** The QLD state government allocated \$12M to fund coastal adaptation through the QCoast 2100 program. Through 8 phases of Coastal Hazards Adaptation Strategy (CHAS) development, the *QCoast100 Minimum Standards and Guidelines* provides minimum and leading practice approaches to adaptation planning. Defining a range of approaches acknowledges that not all Councils can afford or have the time to undertake leading practice adaptation planning.
 - **California, USA:** The California Coastal Commission developed the *Draft Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs*, which provides an in-depth discussion of sea level rise adaptation strategies specifically related to residential development.
 - **New Zealand:** NZ has developed the *Coastal Hazards and Climate Change: Guidance for Local Governments*, which recommends a 10-step decision cycle. The use of 5 prompting questions within the framework diagram (Figure 13) is a novel approach to presenting the planning approach, particularly for the layperson, and generally aligns

with the steps recommended within the SA LGA Guidelines. The NZ guidelines also provide several useful case studies outlining best practice for coastal adaptation planning.

- The non-prescriptive nature of the SA guidelines provides opportunities for Council to develop a fit-for-purpose approach, however, this needs to reflect the policy and planning requirements applicable to SA.

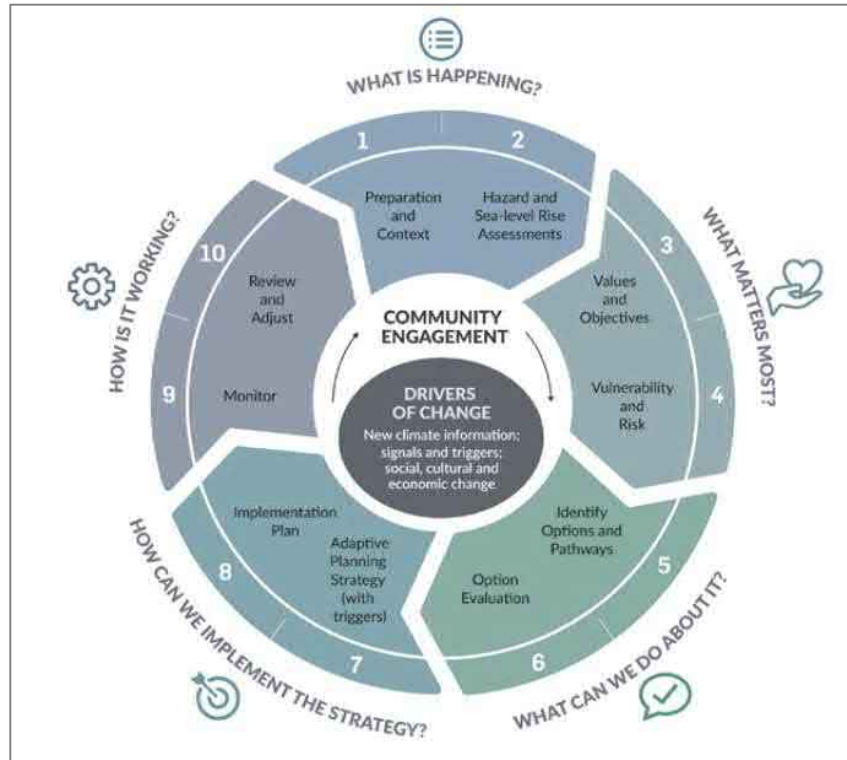


Figure 13: NZ Adaptation Decision Cycle (NZ Ministry for the Environment, 2017)

3.4. Case Studies

3.4.1. Shortlist Case Studies

Initial screening of case studies was undertaken using the following criteria:

1. **Coastal Values:** Highly developed and visited coastline and beaches, with significant assets close to the shoreline.
2. **Physical Setting:** Significant erosion hazard due to long term erosion trend or storm erosion risk.
3. **Coastal Management:** Highly managed coast and beaches, with seawalls protecting assets from storm erosion and/or nourishment.

The following case studies were shortlisted for detailed review based on the above criteria:

- Bundaberg, QLD
- Gold Coast, QLD
- Noosa, QLD
- Rockingham, WA
- Middleton Beach, Albany, WA
- Busselton, WA
- Eastern Sydney Beachs, NSW
- Collaroy – Narabeen, NSW
- Manly, NSW
- Auckland, NZ
- Northland, NZ
- Venice Beach, L.A., USA

3.4.2. Detailed review

For the shortlisted case studies, the following question were used to focus the detailed review:

- What is the overarching approach?
- What risk framework was used?
- How are existing risk controls and management included in the risk assessment process?
- What level of assessment was carried out to select preferred adaptation pathways (e.g. MCA or CBA)?
- How is future adaptation funded and how was this determined?

The City of Gold Coast and the City of Rockingham were also contacted to gain insight into lessons learnt, road blocks, and perception of success of the CAPs by both the community and the Council where possible. The questions above were used to prompt the discussion, with the findings incorporated into the recommendations below.

3.5. Recommended CAP Approach

As noted previously, the intent is not to deviate from the approach outlined in the SA LGA guidelines (Figure 2). Key recommendations for future CAP stages are provided in the following section, with relevant case study examples provided in boxed texts.

3.5.1. Stage 2 Engagement Strategy

The best practice review for engagement activities is summarised in Section 5.2, with full details in Appendix D.

3.5.2. Stage 3 Identifying coastal hazards

Stage 3 involves establishing the baseline conditions and developing projections for future potential coastal hazard risks. The best practice approach to Stage 3 involves the following steps:

1. Selection of planning horizons:

The CAP should include a number of planning horizons to allow the City more flexibility when determining adaptation options and implementation timeframes.

The following planning horizons are recommended for review at the start of Stage 3:

- **2021** – Present day
- **2030** - near the current state of play, identifying immediate risks. This is particularly important given the significant number of structures likely to be at the end of their design life by 2030 and the time frames and scenarios of the ALB beyond 2025 are currently unknown.
- **2050** - provides a short to medium-term outlook of risks and aligns with CPB Policy (CPB, 2016).

- **2070** - provides a medium to long-term outlook of risks, allowing adequate time for adaptation strategies to be implemented, while allowing time to monitor and verify projected coastal hazard scenarios.
- **2100** - allows for transparency of the potential risks predicted to occur by the end of the century, informing the decision-making process and aligns with CPB (2016).

Key take away: Best practice is to use the term annual exceedance probability (AEP) rather than Average Recurrence Interval (ARI). Use of the term ARI can lead to misperceptions, such as the viewpoint that having just experienced a 100-year ARI event, there will not be another one like it for 100 years. This is not correct. It is therefore preferable to express the occurrence of a storm event in terms of AEP. For reference, a 100-year ARI has an AEP of 1%.

2. Selection of SLR scenarios:

Several state guidelines, including QLD and WA, specify the recommended SLR values for use in coastal adaptation planning. NZ takes a more flexible approach, recommending Councils undertake a SLR assessment at the start of the CAP to identify appropriate SLR values.

At Holdfast Bay, it is recommended that a SLR assessment is completed, which will identify a range of SLR scenarios for input to the probabilistic coastal hazard mapping. This involves a review of broader scale sea level rise scenarios from the Intergovernmental Panel for Climate Change (IPCC) (set to be reissued in early 2022) combined with long-term, local scale measurements of sea levels at thePort Adelaide Outer Harbour tide gauge.

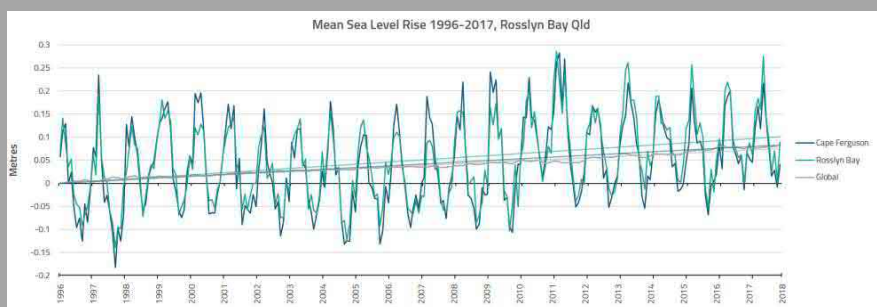
The SLR assessment should include the recommended *Coast Protection Board – Policy Document* (CPB, 2016) SLR values below:

- **0.3m** at 2050
- **1.0m** at 2100

Case Study – Bundaberg Shire Council CHAS

Bundaberg Shire found using long term water level measurements was a useful engagement tool to show potential ‘climate sceptics’ within the community the extent of measured SLR over the last five decades.

Outcome: The Adelaide Outer Harbour historical sea levels should be analysed as a tool for community engagement to show local sea level rise since the 1940’s. Local and regional measurements can also be used to set triggers for implementation of future adaptation options.



Bundaberg Regional Council, 2019

3. Erosion assessment and mapping:

A range of probabilistic approaches exist for the erosion hazard mapping. Common practice is to develop erosion hazard lines, which account for the following processes:

- **Short term erosion** modelled for various AEP storm events for the range of SLR scenarios identified in the SLR assessment. Best practice is to develop and calibrate a process-based model, such as XBEACH, which accounts for both cross-shore and longshore transport processes, however these models are expensive to establish and require significant amounts of data to establish and calibrate. Common practice is to use the SBEACH model to model storm bite for a range of AEP events. This results in a probability curve of storm erosion (or storm bite), which can be applied within the detailed mapping.
- **Long term erosion** caused by underlying coastal processes, such as longshore transport and sand deficits. Best practice is to develop a sediment budget for the area, which includes estimates of typical sand movement volumes and long term shoreline movement rates. Due to the on-going sand management through backpassing at Holdfast Bay, development of a sediment budget is likely to require detailed analysis of sand pumping volumes and profiles combined with shoreline evolution modelling to predict future shoreline erosion rates (or nourishment volumes) with increasing sea levels.
- **Sea level rise** for the range of scenarios presented above. Alternatives to the long-standing Bruun Rule approach include:
 - Shoreface Translation Model (ShoreTrans)
 - Probabilistic Coastal Response Model (PCR)
 - Factors for **geotechnics**, including reduced foundation capacity for buildings and dune slumping areas.

It was found that not all Councils, such as the Gold Coast, are choosing to provide all of the maps or technical detail to the public.

4. Inundation assessment and mapping:

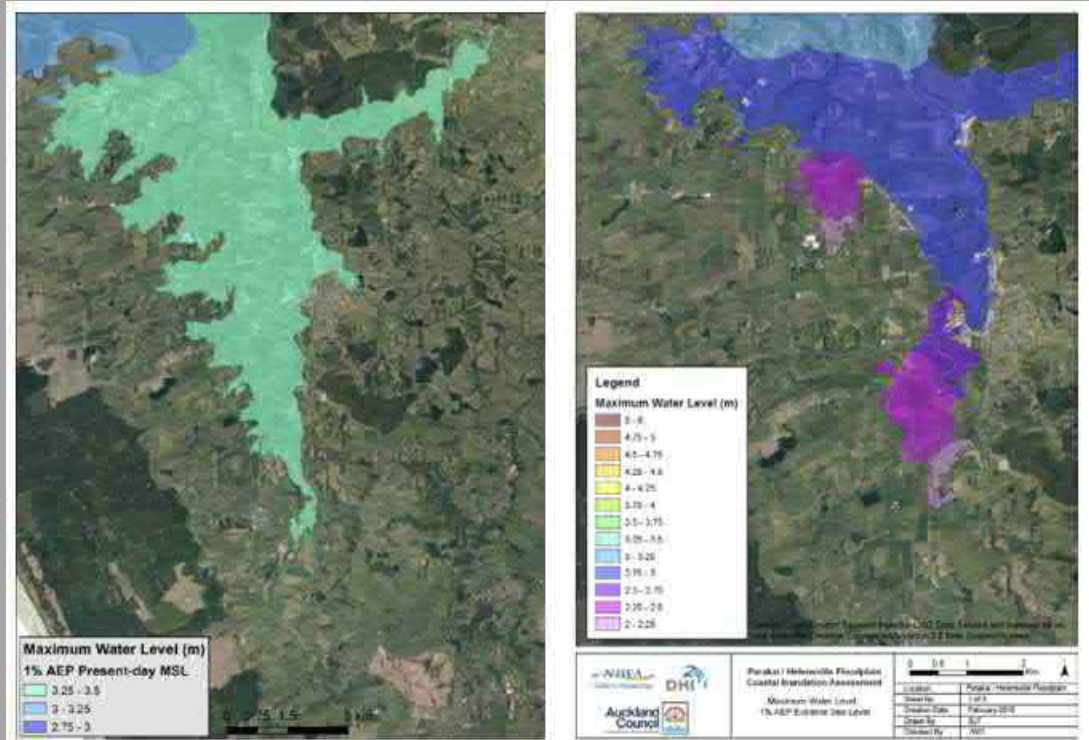
The two most common methods of inundation mapping are outlined below:

- **Bathtub mapping** – applies a storm tide level across a Digital Elevation Model (DEM), assuming the ocean water fills all low-lying areas below the design inundation level. This was used in the preliminary risk assessment (Section 4). It is generally understood to overestimate the area of inundation for a storm surge and is broadly used as a guide within the industry.
- **Dynamic modelling** – a more detailed and accurate method that requires modelling joint ocean storm surge, overland flow and stormwater drainage flows in a hydrodynamic model. This typically includes consideration of the potential for ocean water to flow up the stormwater drainage system, leading to flooding. Dynamic modeling requires significant data inputs and is typically much more expensive to undertake than bathtub mapping.
- The most common events for inclusion in inundation mapping are 1%, 2% ,5% and 10% AEPs.

Given the significant cost, dynamic inundation modelling is typically only recommended if inundation risks are anticipated to be high in the early parts of the century. Further detail of this is included in the Gap Analysis (Section 6.2).

Case Study – Dynamic Inundation Modelling:

Auckland Council undertook a comparison study between static mapping (i.e. bathtub modelling shown on left below) and dynamic mapping (i.e. hydrodynamic modelling shown on right below) of coastal inundation extents. This found that the dynamic mapping method is best used for site-specific hazard assessments where high accuracy is required at the property scale and where smaller SLR scenarios are being modelled.



5. Other coastal hazards

Most other State and National CAP guidelines focus on erosion and inundation hazards. However, there are other hazards that can impact assets and the community, as outlined below:

- **Stormwater outflows** over beach leading to loss of beach sand offshore and potential for adjacent seawalls to be exposed to increased wave heights and storm damage
- **Groundwater shoaling** in low lying areas due to SLR
- **Sea wrack** accumulations potentially impacting on beach amenity and navigation
- Uncontrolled **pedestrian beach access** damaging dunes and leading to dune blowouts
- **Wind-blown sand** impacting amenity or beach use at nourishment locations or in locations with no natural dune system

These other coastal hazards should be considered during detailed coastal hazard assessment and when assessing adaptation options.

3.5.3. Stage 4 Assessing risk

Stage 4 involves identifying how the community, business and the environment may be directly or indirectly impacted by coastal hazards under current and future conditions. The key output from Stage 4 is a priority list of assets and values at intolerable risk from coastal hazards.

The best practice approach to Stage 4 involves the following steps:

1. Vulnerability assessment:

Given the existing seawall structures at most Holdfast Bay coastal locations, and likely impacts on the adaptive capacity of the beaches, a vulnerability assessment approach is recommended to be completed at Holdfast Bay (refer Albany case study below). This approach is a slight deviation from the SA LGA Guidelines, which suggests solely a risk-based approach as best practice. The *WA CHRMAP Guidelines* (refer Figure 14) provide a thorough identification of key steps within the vulnerability assessment.

The vulnerability assessment identifies how the effects of coastal hazards are likely to impact on assets within the coastal zone.

It defines the degree to which an asset or value is susceptible to, and unable to cope with, the adverse effects of coastal hazards.

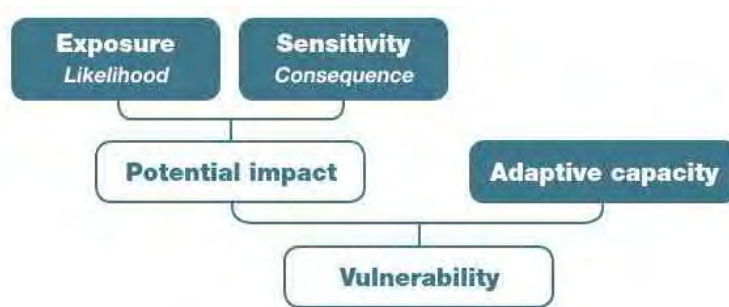


Figure 14: Vulnerability Assessment Approach (DPLH WA, 2019)

2. Risk assessment framework:

A risk assessment framework is used within the vulnerability assessment, which includes the consequence and likelihood scales and the risk matrix.

Typically, state guidelines do not specify a set risk framework that has to be used. Rather they typically recommend LGAs develop their own framework depending on their circumstances. This includes consideration of the following commonly referred to risk frameworks:

1. *ISO31000 – Risk Management*
2. *Australian Standards (AS) 5334 Climate change adaptation for settlements and infrastructure*
3. *Australian Geomechanics Society (AGS) procedures for landslide risk management*
4. *Queensland Emergency Risk Management Framework (QERMF)*
5. *DPTI SA - Climate Change Adaptation Guideline for Asset Management*

With regards to a risk assessment framework, the following general approach to development is recommended in line with SA LGA Guidelines (2020):

1. Initial review of risk assessment frameworks by Council's risk management personnel, considering local, state and national level frameworks (listed above).
2. Development of a preliminary risk framework for workshopping below.

3. Undertake a risk workshop with key stakeholders and community members to consider the consequence and likelihood scales and risk matrix. This could include scenario planning of options to test if the proposed framework is fit-for-purpose.

Case Study – Bundaberg Shire Council Risk Assessment Framework

Feedback from Bundaberg Shire was that the Council’s risk assessment framework was not well suited for use in coastal adaptation planning. Using the Council’s framework resulted in many assets at Catastrophic Consequence, particularly for the longer timeframes. The reason was due to the relatively low financial figures used in the Council’s Consequence Scales.

For the assessment, Bundaberg used a modified version of the Queensland Emergency Risk Management Framework (QERMF) with consequence scale figures adapted from the Federal Department of Industry, Innovation and Science – Risk Management Handbook.

Catastrophic financial consequence was set above \$100 million resulting in a more balanced risk assessment.

Outcome: An iterative approach to development of the risk frameworks is recommended so that scenarios can be tested and a suitable framework selected.

3. Existing Coastal Management:

Existing coastal management should be incorporated into the risk assessment process, as below:

- **Seawalls:** Consideration of a range of AEP storm events in conjunction with the condition inspection report results (Water Technology, 2020) to test the sensitivity of the seawall to different failure mechanisms (i.e. overtopping, undercutting or rock movement).
- **Nourishment:** Risk assessment should consider future sand nourishment as part of the ALB. It’s recommended the potential future scenarios and timeframes for the ALB program are discussed with DEW early in the Stage 3 (refer Section 6.3 for more details).

Case Study – Incorporation of Seawall Structures Middleton Beach, Albany, WA

At Albany, the existing condition and thus design life of seawall structures were considered in the vulnerability assessment. During the designated design life period, the structure was assumed to mitigate the risk of erosion landward. After the design life, the erosion could extend past the seawall.

Seawalls with a future funded maintenance scheme were assumed to continue to mitigate the risk of erosion until upgrades would be required to manage failure from sea level rise.

The impact of the seawall or control was also considered at Albany. For a beach in front of a buried seawall, the beaches adaptive capacity was reduced to ‘very-low’ in the risk and vulnerability assessment, resulting in an immediate and ongoing ‘extreme vulnerability’. This is because the beach can not retreat as sea levels rises.

Outcome: Existing coastal management should be incorporated within Stage 3. Impacts of

3.5.4. Stage 5 Identifying adaptation options

Stage 5 aims to identify and assess adaptation options that build resilience to current and future coastal hazards. It should be undertaken in the context of a council’s broader strategy regarding risk reduction.

The following outlines the recommended approach to Stage 5 based on the best practice review:

1. Identify adaptation options:

For each asset on the priority list developed in Stage 4, identify all adaptation options. This should consider novel adaptation options, such as nature-based solutions, including dune stabilisation, nourishment and seagrass restoration (to reduce nearshore wave energy).

Case Study – Adaptation Terminology Use in Gold Coast CHAS

Recent work at Gold Coast and Bundaberg in collaboration with the CSIRO, identified that using more understandable terminology is more easily accepted to describe risk and resilience processes and the CSIRO is moving to language in line with the following:

- Maintain
- Modify
- Transform

Outcome: The above wording should be used for adaptation planning at Holdfast Bay.

| | | |
|---|--|---|
| e.g. Civil design Building design | e.g. Sea Walls Levees, Dunal systems | e.g. Relocation of communities |
| Accommodate | Defend | Retreat |
| Avoid | | |
| Maintain | Modify | Transform |
| e.g. Dune restoration Coastal stewardship Awareness Continued planning/building approaches | e.g. Civil design Building design Some structural works | e.g. Long term settlement evolution Retreat from areas of highest risk Different economic base |

Bundaberg Regional Council, 2019

2. First pass screening:

A first pass assessment is typically undertaken to identify any options that may have fatal flaws. This process should be undertaken with collaboration with key stakeholders and community after consideration of feasibility from a first principles coastal engineering perspective.

The first pass assessment will result in a long list of potential adaptation options to be taken to detailed assessment.

3. Detailed options assessment:

LGA Adaptation Guidelines identifies Multi-Criteria Analysis (MCA) has emerged as a preferred technique. MCA provides a systematic approach for supporting complex decisions according to pre-determined criteria and objectives.

MCA criteria and their weightings should be developed in conjunction with key stakeholders and community members through workshops and community surveys. Example criteria include:

- Cost (Capital and ongoing)
- Impact on access to coastal areas for recreation (e.g. fishing, swimming)
- Impact on natural/cultural/landscape value
- Flexibility to respond to unexpected climate outcomes
- Effectiveness - Reduction of the risk to property (i.e. reduction in damages) and people (i.e. reduction of the population at risk)
- Approvals - Complexity of obtaining the approval to initiate implementation.
- Technical viability

The key outcome for an MCA should be a shortlist of 2 or 3 adaptation options for detailed financial assessment or Cost Benefit Analysis (CBA).

CBA is a financial approach that involves adding up the benefits of a course of action, and then comparing these with the costs associated with the action. CBA can be costly, so is recommended to be carried out on relatively few adaptation options and scenarios to help select a preferred adaptation pathway.

Undertaking a CBA on preferred adaption options is recommended so that funding mechanisms (refer Section 3.5.5) can be investigated and assessed with confidence.

Case Study – Non-market valuation methods for measuring community values

The WA CHRMAP Guidelines presents a useful approach for estimating the value of ‘non-market’ or intangible assets such as the beach or the environment. This non-market value can then be used as input to an MCA or CBA.

The discrete choice experiments outlined in the guidelines are useful for measuring non-market values in the context of coastal hazard management because they can:

- Capture the total economic value of the coastal assets for which values are being measured, including the use-related and non-use values of the assets.
- Capture the non-market value of multiple coastal assets in the one survey instrument.
- Measure incremental, or marginal, changes in quantity or quality of the assets affected by coastal hazards. This is particularly important because hazard impacts may not be absolute, e.g. a beach is usually not lost overnight, but there is a gradual (incremental) decline in the quality of the beach, which is what can be captured through this approach.
- The guidelines also include details on establishing community survey questions and analysing data from the surveys.

Outcome: The non-market value of beaches is likely to be critical to selection of preferred adaptation options and should be calculated in Stage 3 investigations for input to Stages 4 to 6.

4. Identify triggers:

Triggers are used to identify when planning and implementation of adaptation options should commence. A triggered approach allows for actions to be implemented before the threat arises, while

also allowing time to improve coastal hazard data and obtain necessary funding, resources and capacity, including additional time for stakeholder consultation where required.

Further to this, the approach limits community burden, costs and inappropriate adaptation measures should coastal hazard impacts not eventuate as projected.

Triggers should be easy to understand and based on a measurable value, directly related to the risk assessment process. For example, measured local or regional water level measurements should be used to set triggers for future inundation scenarios for different SLR values. This will require development of a defined approach to calculating future mean sea levels.

5. Sequencing via pathway maps:

The pathway maps approach enables the ability over time to continue to select adaptation options from the shortlisted adaptation options when/if information changes.

This results in a visual pathways map or table advocated for the monitoring and evaluation of indicators that describe triggers and thresholds.

3.5.5. Stage 6 Plan development and review

The primary objective of Stage 6 is the development of an Implementation Plan that outlines tangible actions and a schedule for implementation of adaptation options. The plan should summarise the outcomes of the assessment process and present the future direction of the Council to internal and external stakeholders. The focus on implementation should consider funding mechanisms, resourcing requirements and a commitment to monitoring, evaluation and review.

Based on feedback from the City of Rockingham and review of case studies, a common hurdle to implementation of adaptation options is the lack of clarity around future funding of future adaptation options. The following funding mechanisms and approaches were identified in the case study review:

- Collaroy-Narabeen used a benefits distribution analysis to assess who benefits from seawall construction and nourishment, which showed residents had 95% of benefit and should pay for their own seawalls.
- Bundaberg have continued the role of the Steering Committee until at least 2023 to assist with sourcing funding opportunities through either permanent funding arrangements or targeted funding rounds.
- In Albany, where the proposed management options have the potential to protect private business or private leasehold interests, it was recommended that the City investigate the establishment of a Specified Area Rate to support the ongoing maintenance and future replacement of protection structures. This rate could be applied to those properties who will directly benefit from the proposed or existing management option and thus an equitable method of funding for the protection option. There are limited available details about how this approach was selected.

Case Study – Funding hurdle for City of Rockingham

The City of Rockingham, WA has recently completed a CHRMAP for their 33km coastline.

The preferred funding approach based on community surveys and consultation is a rates increase for all residents. However, a lack of information on the potential long-term costs of preferred adaptation options has made it difficult to progress this funding approach.

Outcome: The City of Holdfast Bay should undertake detailed CBA of preferred adaptation options to ensure the financial implications of options are well understood and funding mechanisms can be put in place.

4 Preliminary Risk Assessment

4.1. Objective

Undertake a preliminary coastal hazard and risk assessment to identify assets and values at risk and develop a list of recommended actions for inclusion in Phase 5 Project Plan.

The preliminary risk assessment is presented as a Technical Note in Appendix C, with a summary of the approach and key findings outlined below.

4.2. Approach

The preliminary hazard and risk assessment involved three key steps:

1. development of preliminary coastal erosion and inundation maps,
2. preliminary risk assessment to identify areas and assets at risk, and
3. identify key knowledge and data gaps for input to the gap analysis and project plan.

4.2.1. Coastal hazards mapping

The preliminary hazard mapping focussed on the two primary coastal hazards relevant to Holdfast Bay:

- **Coastal erosion** – Erosion hazard lines were developed by combining the following erosion allowances:
 - Storm erosion and seawall failure (S1)
 - Long term recession (S2)
 - Sea Level Rise (S3)
- **Coastal inundation** from ocean storm surge using bathtub mapping approach.

4.2.2. Risk assessment

A preliminary risk assessment has been carried out to identify key assets and values that may be at risk from coastal flooding or erosion.

The *City of Holdfast Bay Risk Management Framework* was considered for use in the preliminary risk assessment but was not used as the consequence scales, particularly for financial costs, have relatively low and narrow thresholds, which were likely to result in a catastrophic consequence for most asset groups and hazards.

The following qualitative risk-based approach was developed:

- **Consequence scale:** The assessment of consequences for both erosion and flooding used the *Local Government Framework for Coastal Risk Assessments in Australia* developed for damage to infrastructure, services and the environment (Wainwright, D. et.al, 2016).
- **Likelihood:** The hazard likelihood descriptors have been based on the cumulative probability of events occurring over the planning horizon, as developed by the Australian Geomechanics Society (AGS) in 2007.
- **Risk matrix:** The risk matrix was also taken from AGS (2007).

4.2.3. Key assumptions

Key assumptions for the preliminary hazard mapping and risk assessment are outlined below:

- The ALB Strategy continues beyond 2025 to 2100 in its current form. It's acknowledged that there is no government strategy or commitment to continue the current ALB strategy to 2100, which will be reviewed at the expiration of existing contracts in the 2030s.

- Existing seawalls back the majority of the coast (different seawall types in various condition) and were assessed for failure as part of the S1 allowance. Seawalls have not been included as an asset in the risk assessment results, as they are part of the risk mitigation and adaptation response and are considered in Stage 6 of the CAP process.
- Planning horizons and SLR, based on CPB policy (CPB, 2016), as below:
 - 2021 (present day) = 0m SLR
 - 2050 (medium term) = 0.3m SLR
 - 2100 (long term) = 1m SLR

4.3. Key findings

Key findings of the preliminary risk assessment are summarised below:

- Erosion is a more critical risk than inundation
- Glenelg North (Segment 1) is the most at-risk coastal area. Beach widths fluctuate in the order of 10m between annual ALB nourishment campaigns, placing this area at increased risk from storm erosion. Further analysis of the beach width fluctuations should be carried out in the next stage of the assessment.
- Rock seawalls in Glenelg North (Segment 1) and from Glenelg South to Brighton (Segment 3) are the most at risk locations. In the design storm, these seawalls are anticipated to fail due to rock armour movement from large waves.
- The ALB program plays a significant role in coastal protection, countering longshore transport and maintaining beach widths in front of seawalls
- Regardless of the ALB scenario, the shoreline will continue to recede due to SLR and will likely require management
- Inundation risk is primarily in the Glenelg area around the Patawalonga Lake and River and is unlikely to be critical until the later part of the century

4.4. Recommendations

The Stage 3 detailed risk assessment should consider:

- Erosion:
 - A workshop with DEW to identify future ALB scenarios and timeframes
 - Shoreline evolution modelling to identify erosion hotspots and changes in longshore transport from SLR
 - Detailed wave and water level modelling, assessment of seawall failure and development of seawall staging of repairs and upgrades as required for SLR
- Inundation – The upgraded Patawalonga barrier details and operations
- Other coastal hazards, including:
 - Stormwater drainage flows over beach
 - Groundwater shoaling, particularly adjacent to the Patawalonga Lake and River

These recommendations have been incorporated into the Project Plan (Section 6.3).

5 Engagement Best Practice Review and Strategy

5.1. Objective

1. Best practice review of coastal adaptation planning engagement methods to inform the proposed approach for the City of Holdfast Bay.
2. Develop an Engagement Strategy for future stages of the CAP.

Full details of the Best Practice Review and Engagement Strategy are presented in Appendix D, with a summary outlined below.

5.2. Best practice review

5.2.1. Approach

The best practice review involved the following:

- Meeting with Holdfast Bay engagement staff to discuss what engagement approaches are successful for Council
- Review of 4 local government and organisation case studies at:
 - Sunshine Coast, QLD
 - Gold Coast, QLD
 - Lake Macquarie, NSW
 - Joondalup, WA
- A review of two engagement frameworks for coastal adaptation planning (Australia and New Zealand)

5.2.2. Key findings

Key findings from the best practice review are outlined below:

- **What is important?**
 - Engagement needs to be early and ongoing
 - Reach out to those impacted by hazards, as well as those with an interest
 - Provide a clear scope of plan and what the community can influence
 - Be genuine in how you engage – be willing to take feedback on board, and adjust approach or content based on that feedback
 - Provide quality information (e.g. project process, simple technical explanations)
 - Leverage off the City's existing engagement methods and channels
 - Provide regular updates, opportunities for input/feedback, engagement reports
 - Utilise community leaders to provide input and buy-in from the community
 - Align engagement stages to the planning stages
- **Challenges**
 - Getting buy-in to long term risks and technical concepts can be a challenge
 - Few may contribute to the planning process but awareness is just as important
 - Appetite to share coastal hazard mapping varies between councils
- **Common engagement methods**
 - Project websites
 - Fact sheets (at each stage)

- Online and pop-up community engagement on coastal values, adaptation options, draft plans
- Community and stakeholder reference groups (input into all products prior to community)
- 1x1 stakeholder meetings
- Promotion: signage, videos, facebook, newsletters, engagement databases, sign-up for updates

5.3. Engagement Strategy

The recommended Engagement Strategy is presented in Appendix F, with key activities incorporated into the Project Plan (Section 6.3). The following sections provide an overview of the key Engagement Strategy objectives and features relevant to Holdfast Bay.

5.3.1. Objectives

Engagement objectives for Holdfast Bay are outlined below:

- To engage the community, key stakeholders, council staff and elected members to inform development of the CAP
- To engage those anticipated to be affected or have an interest in coastal hazards, and to engage with the broader community to raise awareness
- To provide clear information on the scope of the project, the planning process and what the community can influence
- To provide appropriate information at each stage of the project to build trust in the process and provide context and content to inform input and decision making
- To engage early and throughout the development of the plan
- To leverage existing community groups, networks and leaders
- To manage risk and build council's reputation as a responsible and engaged leader

5.4. Key features

Proposed staging for the Engagement Strategy is summarised in Figure 15.

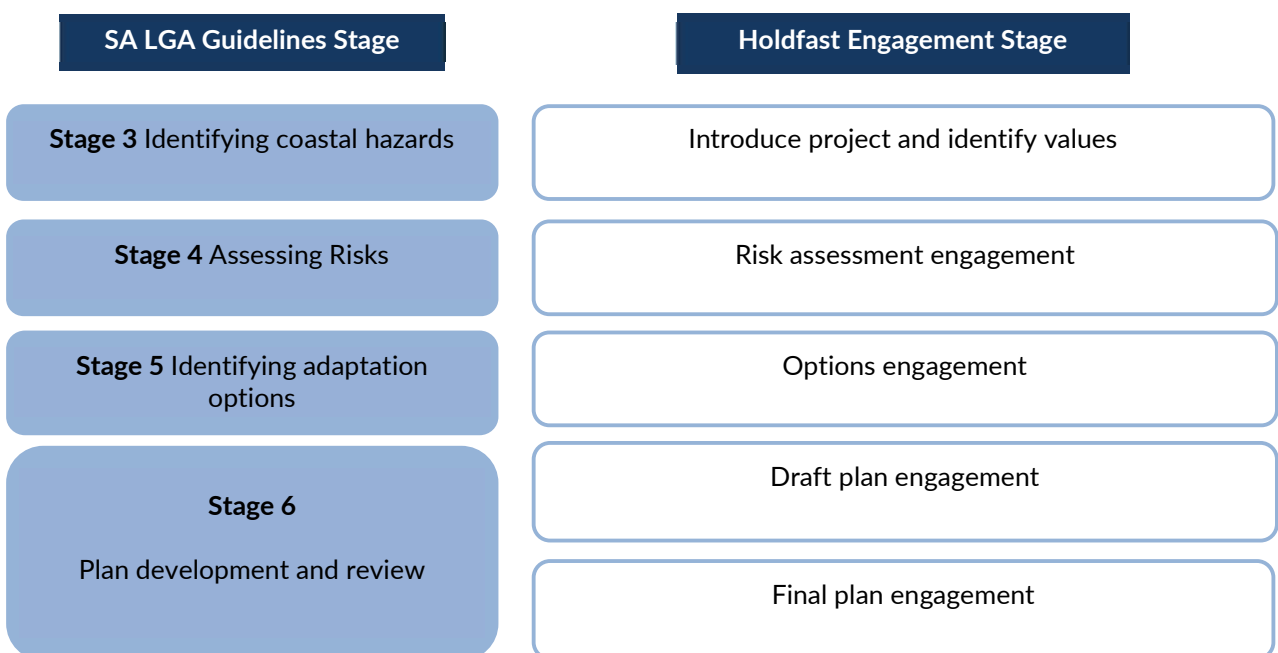


Figure 15: Engagement Strategy Staging

Key features of the Holdfast Bay CAP Engagement Strategy are outlined below:

- Alignment of engagement stages to the LGA planning stages
- Input from Elected Members at key stages
- A CAP page on Council's engagement portal
- Early and ongoing 1x1 meetings with Kaurana and key stakeholders
- A Community and Stakeholder Reference Group established and consulted throughout the course of the project
- Informative factsheets developed across the project
- At key stages, community online surveys and pop-ups established to gain community feedback and input to the CAP
- Providing regular updates, opportunities for input/feedback and engagement reports will be key to success

6 Gap Analysis & Project Plan

6.1. Objective

1. **Gap Analysis** - Based on previous Stocktake activities (developing coastal context, best practice review, preliminary risk assessment), undertake a gap analysis to identify key data and knowledge gaps.
2. **Project Plan** - Prepare a Project Plan to fill these knowledge gaps and provide a clear roadmap, which outlines methodology, scoped activities, timing and costs for the next stage of the planning process.

6.2. Gap Analysis

6.2.1. Approach

Based on the review of available data, reports and case studies (Sections 2 and 3) and findings of the preliminary risk assessment (Section 4), a gap analysis to inform the early stages of the Project Plan has been undertaken, focussing on the three technical knowledge areas below:

- Coastal inundation (Stage 3)
- Coastal erosion (Stage 3)
- Assets and values (Stage 4)

The gap analysis includes an assessment of risk to the CAP if gaps are not filled by ranking the significance of the data or knowledge gap. This approach was used in the scoping stages of the Bundaberg CHAS (Bundaberg Regional Council, 2019) and recognises that the absence or incompleteness of different types and sources of information may have varying impacts. For example, a significant gap could limit the ability to proceed with a detailed assessment or completion of the CAP stage.

A description of the qualitative scale adopted to rate the relative importance and consequence of identified gaps on the ability to proceed and/or objectives of the detailed assessment has been presented in Table 2 on the following page.

6.2.1. Key findings

High priority data and knowledge gaps to inform the early stages of the Project Plan include:

- Coastal datasets for input to detailed modelling and assessment:
 - Nearshore bathymetry to be collected on site, and
 - Wave measurements to be collated from existing sources.
- Future ALB scenarios and timeframes.
- Detailed coastal processes modelling, including assessment of:
 - Storm erosion and seawall failure (S1)
 - Sediment budget, longshore transport and erosion hotspot locations (S2)
 - Sea level rise impacts (S3)

The full gap analysis results are presented in Appendix E.

Table 2: Gap Analysis Framework

| Knowledge Gap Rating | Description of Relative Importance | Consequence |
|----------------------|---|--|
| Low | While a knowledge gap has been identified, it is of limited consequence to the overall study objectives and/or the gap can be overcome by routine analysis or minimal additional collection efforts. | The detailed assessment can proceed, but additional data/information may need to be developed during the assessment. |
| Medium | A significant gap has been identified that is likely to have some bearing on the robustness of the analysis that can be undertaken and the ability to achieve the study objectives and/or the knowledge gap can be overcome but only with substantive additional analysis or data collection efforts. | An assessment of the ability to fill the knowledge gap and the value of the knowledge to the detailed assessment would need to be considered before proceeding with a detailed assessment. |
| High | A major gap has been identified that will significantly limit the robustness of the analysis that can be undertaken and significantly compromise the ability to achieve the study objectives and/or the knowledge gap can be overcome only by extensive additional analysis or data collection efforts. | The detailed assessment cannot proceed until this knowledge gap has been completed |

6.3. Project Plan

6.3.1. Approach

A Project Plan has been developed to guide the future stages of the CAP in line with the LGA Guidelines (Figure 2). This has been split into two key components:

1. A detailed **Stage 3 Project Plan** has been developed for the next stage of the CAP, which presents:
 - Scoped tasks
 - Objectives
 - Associated engagement activities
 - Breakdown of costs and timing per task
2. A high-level Project Plan has been developed for **Stages 4 to 6**, outlining key tasks and indicative timing per task

A monitor and review step is recommended before execution of each Stage to ensure that Council can leverage off any new data or modelling that has been undertaken since this Stocktake assessment. This would involve contacting the stakeholders listed in Section 2.2 to confirm if any new information or data has become available and/or if any steps set out in the Project Plan are currently being considered by these stakeholders (e.g. additional survey data from DEW, academic studies by the universities).

6.3.2. Stage 3 Project Plan

Stage 3 of the CAP will involve:

- Engagement:
 - Initial engagement with Kaurua, elected members and key stakeholders
 - Establishing a community and stakeholder reference group
 - Engagement with broader community to inform values
 - Engagement on findings from the modelling (below)
- Technical studies and modelling:
 - Data collection (fill data gaps)
 - Coastal modelling studies
 - Detailed hazard mapping
- Reporting.

The full Stage 3 Project Plan is presented in Appendix H and is summarised in Figure 16 on the following page. Stage 3 is anticipated to take approximately 11 months, with a breakdown of cost provided in Appendix F. Low and medium priority data and knowledge gaps have been included as provisional items within the Project Plan.

6.3.3. Stages 4 to 6

The Stage 4 to 6 Project Plan is presented in Appendix G Broad timing for these future CAP stages are presented below:

- Stage 4 Assessing Risk ~6 months
- Stage 5 Identifying Adaptation Options ~8 months
- Stage 6 Plan Development and Review ~9 months

Whilst the Project Plan provides a general roadmap to CAP implementation, it's recommended that between each stage the Project Plan tasks are reviewed and updated as necessary based on the findings of the previous stage and requirements for future stages.

The remaining adaptation planning process, including Stages 3 to 6, is expected to take just over three years to complete.

| Stage 3 – Identifying coastal hazards | | | | | | | |
|--|---|--|--|------------------|-------------------|-----------------|---------------|
| Establish baseline conditions and develop projections for future coastal hazard risks. | | | | | | | |
| Step | Task ID | Task Name | Task Description | Fee Estimate | Provisional Items | Timing (months) | Project Month |
| Step 1 - Data Collation | 3.1 | Collate and review existing background data | Objective: Collate and review existing background data from Stage 1 database and identified in Stage 1 Gap Analysis. | \$9,000 | - | 2 | 1-2 |
| | 3.2 | Bathymetric Data Collection (GapID18) | Objective: Engage specialist sub-consultant to collect bathymetry for input to Coastal Processes Study (Step 3). | \$21,000 | - | | |
| | 3.3 | Seawall Construction Details & Reef Levels (GapID14 & GapID15) | Provisional Item Trigger: Required if insufficient data collected as part of proposed 2021 seawall repairs. Objective: Site works to fill knowledge gaps related to seawall construction details and reef levels in Glenelg North. | - | \$11,000 | | |
| | Sub-total | | | \$30,000 | \$11,000 | | |
| Engagement Task E3.4 | HOLD POINT - Workshop with DEW on ALB program (GapID21) for input into scenarios planning (Task 3.4) | | | | | 1 | 3 |
| Step 2 – SLR & Joint Probability Assessment | 3.4 | Planning Horizons & SLR Review | Objective: Determine suitable planning horizons, Sea Level Rise (SLR) values for input to future stages of CAP | \$5,000 | - | 1 | 4 |
| | 3.5 | High-level Joint Probability Review | Objective: Determine suitable Annual Exceedance Probability (AEP) events for input to future stages of CAP | \$3,000 | - | | |
| | 3.6 | Joint Probability Assessment | Provisional Item Trigger: Required if uncertainty still remains following the review of Tonkin model inputs (Task 3.5) Objective: Determine suitable AEP water level inputs to future dynamic inundation modelling (to be undertaken in future revisions of the CAP). | - | \$21,000 | | |
| | Sub-total | | | \$8,000 | \$21,000 | | |
| Step 3 - Wave, Water Level & Coastal Processes Study | 3.7 | Extreme Wave and Water Level Modelling (GapID20 Part 1) | Objective: Establish and calibrate a coupled wave and water level model to investigate the extreme storm conditions and resultant erosion and seawall damage across the study area. | \$42,000 | - | 4 | 5-8 |
| | 3.8 | Sediment Budget | Objective: Develop a sediment budget for calibration of the Shoreline Evolution Model (Task 3.9) | \$7,000 | - | | |
| | 3.9 | Long-term Wave and Shoreline Evolution Modelling (GapID21) | Objective: Establish and calibrate a shoreline evolution model to fill the key knowledge gaps related to long-term shoreline movements. | \$52,000 | - | | |
| | 3.10 | Storm Erosion and Seawall Failure Assessment (GapID20 Part 2) | Objective: Assess storm erosion and existing seawall failure risk across the study area | \$10,000 | - | | |
| | 3.11 | Sea Level Rise Impacts (GapID23) | Objective: Assess impact of future SLR on longshore and cross-shore transport | \$14,000 | - | | |
| | 3.12 | Additional Scenarios | Provisional Item Trigger: Required if additional scenarios identified throughout consultation or model establishment. Objective: Assess impact of different scenarios on longshore transport | - | \$5,000 | | |
| Sub-total | | | \$125,000 | \$5,000 | | | |
| Step 4 - Hazard Maps | 3.13 | Inundation Hazard Maps (GapID5) | Objective: Develop inundation hazard maps for input to risk assessment (Stage 4) | \$4,000 | - | 1 | 9 |
| | 3.14 | Groundwater Shoaling Hazard Maps | Objective: Identify the potential groundwater shoaling hazard extent | \$7,000 | - | | |
| | 3.15 | Stormwater Outflow Hazard Assessment and Maps (GapID16) | Objective: Identify the erosion hazard presented by stormwater outflow over beach | \$9,000 | - | | |
| | 3.16 | Erosion Hazard Maps | Objective: Develop erosion hazard maps for input to risk assessment (Stage 4) | \$9,000 | - | | |
| Sub-total | | | \$29,000 | - | | | |
| Step 5 - Reporting & Project Management | 3.17 | Draft Summary Report | Objective: Prepare draft Stage 3 summary report | \$6,000 | - | 2 | 10-11 |
| | 3.18 | Presentation | Objective: Present key findings to Council | \$3,000 | - | | |
| | 3.19 | Finalise Summary Report | Objective: Incorporate feedback into summary report | \$4,000 | - | | |
| | 3.20 | Fortnightly updates | Fortnightly updates on project (assume 10 month timeframe) | \$2,000 | - | | |
| Sub-total | | | \$15,000 | - | | | |
| Total Stage 3 - Identifying Coastal Hazards | | | | \$207,000 | \$37,000 | 11 | 11 |

| Stage 3 Engagement – Awareness raising and values engagement | | | | |
|--|--|---|-----------------|---------------|
| Stage 3 Engagement Activity ID | Engagement activity | Target stakeholder groups | Fee Estimate | Project Month |
| E3.1 | Kaurna meeting | Kaurna Nation Cultural Heritage Association | \$2,000 | 2 |
| E3.2 | Presentation to Elected Members | Elected Members | \$1,500 | |
| E3.3 | Community and Stakeholder Reference | <ul style="list-style-type: none"> Community Groups/ Orgs. Key asset owners (eg. Surf Life Saving Clubs) Business groups Development groups | \$4,000 | |
| E3.4 | Stage 3 Key stakeholder meetings - Refer HOLD POINT for E3.4 | <ul style="list-style-type: none"> DEW Coast Branch State government agencies and utilities Adjacent Councils | \$3,000 | 3 |
| E3.5 | Project factsheet(s) | All | \$2,000 | 3-4 |
| E3.6 | Stage 3 Promotional materials | All | \$5,000 | |
| E3.7 | Project webpage | All | \$1,500 | |
| E3.8 | Stage 3 Community and stakeholder reference group meeting | Community and Stakeholder Reference Group | \$2,500 | 4-5 |
| E3.9 | Online values survey | Community including groups, residents, businesses, property and asset owners | \$2,500 | |
| E3.10 | Community conversation pop-up(s) - assume 2 pop up locations | All | \$6,000 | |
| E3.11 | Stage 3 Engagement Summary Report | All | \$4,000 | 6 |
| E3.12 | Stage 3 'what we heard' fact sheet | All | \$1,500 | |
| E3.13 | Stage 3 Project webpage update | All | \$750 | |
| Total Stage 3 Engagement | | | \$36,250 | 6 |

Figure 16: Stage 3 Project Plan Summary

7 Recommendations

Key findings and recommendations from the Stocktake and Engagement Strategy development are summarised below:

Coastal Context:

- Holdfast Bay is a high profile and highly valued coast, with significant social, cultural and economic value. The coastline is exposed to a range of coastal processes and is actively managed in collaboration with DEW.
- Document and data registers have been developed, bringing together relevant information collated in the Stocktake. The intent is for Council to own and build on these registers and to streamline the data and knowledge transfer to the Technical Consultant responsible for the next stage of the CAP.
- Important coastal assets and values should be identified with stakeholders and community through the engagement process.

CAP Framework:

- The intent is not to deviate from the approach outlined in the SA LGA guidelines (Figure 2), with the opportunity to refine the method within each stage.
- A number of case studies around Australia and internationally have been reviewed, with key recommendations for future CAP stages summarised in Section 3.5.

Preliminary Risk Assessment:

- Erosion is a more critical risk than inundation and should be the priority for more detailed analysis in Stage 3.
- Glenelg North is the most at-risk section of coastline given relatively narrow beach widths fronting seawalls. Further analysis of beach width is recommended as part of the detailed mapping in the next stage.

Engagement Strategy:

- Engagement should be early and on-going throughout the CAP process.
- A Community and Stakeholder Reference Group should be established and consulted throughout the course of the project.
- At key stages, community online surveys and pop-ups should be implemented to gain community feedback and input to the CAP.
- Providing regular updates, opportunities for input/feedback and engagement reports will be key to success.

Gap Analysis:

Key data and knowledge gaps to be filled in Stage 3 include:

- A workshop with DEW is recommended early in Stage 3 to identify future ALB scenarios and timeframes.
- Nearshore bathymetry to be collected on site.
- Wave measurements to be collated from existing sources, and
- Detailed coastal processes modelling, including assessment of:
 - Storm erosion and seawall failure (S1).
 - Sediment budget, longshore transport and erosion hotspot locations (S2).
 - Sea level rise impacts (S3).

Project Plan:

- A Project Plan has been developed, bringing together key data and knowledge gaps, as well as recommended activities identified in the CAP guideline and best practice review.
- The detailed Project Plan provides the recommended approach, costs and timeframes for the next stage of the CAP.
- It is recommended that between each stage the Project Plan tasks are reviewed and updated as necessary based on the findings of the previous stage and requirements for future stages.

8 References

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Appendix A - Initial Stakeholder Consultation Notes

Holdfast Bay Coastal Adaptation Plan – Stage 1 Stakeholder Consultation Notes

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|-----------------------|---|
| Contact Person | <p>Alex Gaut Team Leader Environment and Coast</p> <p>0499 558 803</p> <p>agaut@holdfast.sa.gov.au</p> |
| Organisation | <p>City of Holdfast Bay</p> <p>Inception Meeting: 17 February 2021</p> |
| Notes | <p>TOPIC: Councils Anecdotal experience with the coast</p> <p><i>Infrastructure and beach widths</i></p> <ul style="list-style-type: none"> • Patawalonga weir. Asset owned by DEW but controlled by the City: <ul style="list-style-type: none"> ○ Infrastructure is fragile. ○ Localised flooding around the Patawalonga River ○ To be replaced in coming years: https://www.environment.sa.gov.au/news-hub/news/articles/2020/11/Patawalonga-gates • Councils primary area of concern is Glenelg North: <ul style="list-style-type: none"> ○ Major concern is the loss of beach 1m of usable beach (Cygnet Ave to West Beach). ○ Overtopping at Glenelg North also a high risk. • Somerton, narrowing sections of coastline. • Stormwater outfalls are 50-60 years old, present erosion problem as scours out. • Rock revetments not maintained, no budget to manage this long term and many in poor condition. • Beach access an issue in terms of compliance and design, some undercutting steps (aging): <ul style="list-style-type: none"> ○ Potentially not appropriate and safe? ○ Cover up with sand (wind blown) ○ Boardwalks are being utilised (AS to take photos on site visit) ○ Keeping Access off dunes isn't too bad. <p>Storms</p> <ul style="list-style-type: none"> • Storms of interest: <ul style="list-style-type: none"> ○ 2018, impact to Mosely Square ○ 2016 Impact to Minda Dune |

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| | <ul style="list-style-type: none"> • Pooling of water behind dunes after storms an issue. <p>Cultural / Heritage:</p> <ul style="list-style-type: none"> • Tjilbruke site in Kingston Park of cultural significance to Kurna people, trees west of Burnham Rd of cultural significance. • Kurna position is that the whole coastline is of significance. <p>Environment</p> <ul style="list-style-type: none"> • Kingston Cliff is of enviro significance (90 species of plants) • Hooded Plovers don't have repeat nesting locations (different every year), however the chicks are drawn to the Outlet drains between Edwards St, Young St and Shoreham Rd • Concrete block off Glenelg can be seen at low tide. Remnant of offshore breakwater attempted construction in 1914 • Drift net fencing fronting seawall at Seacliff has been effective |
| | <p>TOPIC: Stakeholders</p> <ul style="list-style-type: none"> • Stakeholders identified for data gathering and initial contact: <ul style="list-style-type: none"> ○ SA Tourism ○ EPA ○ ACS ○ SA Water • Other stakeholders identified for consultation in future stages <ul style="list-style-type: none"> ○ Adjoining Councils ○ Resilient South - asset working group ○ Kurna Nation Cultural Heritage Association ○ SLSC SA • SA Water, DEW and EPA undertaking Oyster Reef trial 1km off the Glenelg north |
| | <p>TOPIC: Of interest re DA developments</p> <ul style="list-style-type: none"> • Minda Dunes apartments • Pat Marina / Holdfast Shores apartments |

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| Contact Person | Anthony Virag Survey Manager 0411 109 990 anthony.virag@sa.gov.au |
| Organisation | Department of Environment and Water (DEW) – Coast and Marine Branch Phone call 17 February 2021 |
| Notes | <p>Study background</p> <ul style="list-style-type: none"> • Wavelength noted the purpose of Phase 1 of the Coastal Adaptation Plan. <p>Data Availability</p> <ul style="list-style-type: none"> • DEW have collected significant amounts of elevation data along the Adelaide Metropolitan coastline. • Beach and nearshore profiles: <ul style="list-style-type: none"> ○ Collected approximately once per year since the late 1970's. ○ Profiles are at roughly 200m to 500m intervals and extend from behind the dune to the nearshore zone (approx.-10 mAHD). ○ Shapefiles and raw data is available and will be provided for use in the study. • Glenelg to Broadway beach levels: <ul style="list-style-type: none"> ○ DEW also record detailed beach levels using quad bikes at Glenelg, as part of the Cell 1 Adelaide Living Beaches management. ○ Measured approximately 2-3 times per year since the sand shifter was established in 2013/14. ○ Significant amount of data used for internal volume calculations and creation of difference plots. ○ Data is tidal limited (depth of approx.. -1mAHD), as it is carried out by quad bikes. ○ Anthony will provide pdfs of some difference plots to show the data extent. • Wavelength will not request full raw data, as it is unlikely to be required for this Phase of the works. • Anthony also noted the storm damage that occurred to Mosley Bar in recent years. |

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| Contact Person | <p>Jason Quinn Team Leader – Coastal Programs</p> <p>0411 111 268</p> <p>Jason.Quinn@sa.gov.au</p> |
| Organisation | <p>DEW – Coast and Marine Branch</p> <p>CPB inception discussion 23 February 2021, also with Moji Karbasi</p> |
| Notes | <p>TOPIC: DEW's experience with the coast and concerns</p> <ul style="list-style-type: none"> • Well managed through the Adelaide Living Beaches (ALB). <ul style="list-style-type: none"> ○ 100,000m³ back passed annually for the past 4 years. ○ Dune is building at Glenelg. ○ No emergency work in 2016 or 2018 after storm events, except the cancellation of the surf carnival (which DEW were not consulted on). ○ ALB \$3 per m³ plus \$123,000 monthly fee (~\$1.5 – 2.0M for that cell) to maintain a year. ○ Dredging of the harbour 250 days a year to keep open. ○ Confirm Councils sentiment that Glenelg North of concern. • DEW primary concern is the availability of sand. • Additional sand bag groynes will be placed in the coming months, have been effective in widening the beach at Brighton. • Recovery of seagrass has been confirmed by remote sensing and seagrass mapping (SA Water, EPA) • Benthic habitat mapping to be undertaken in partnership with SA Water and EPA soon. For the intended purpose to look at the impact of plume from ALB in the nearshore environment on Water Quality and flora/fauna. • Stormwater outfall seen as a huge issue as outfall results in scour and erosion on the beach. DEW would like to see infiltration basin behind the dunes • Asbestos found on the beach from old shacks <p>TOPIC: Of interest re DA developments:</p> <ul style="list-style-type: none"> • Minda Dunes development: JQ outline there was sufficient sand buffer only concern was the visual amenity issue. • Jubilee Pt Development (Holdfast Shores apartments) was Major Project so went above CPB. JQ to provide thesis. • Managing privatization of the beach, Mosely Beach Bar (licensed or leased) results in pollution of beach, degradation of the foredune. |

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| Contact Person | <p>Greg Pearce Hydrographic Surveyor / Tides Officer</p> <p>0408 842 254</p> <p>pearce.greg@hydrosurvey.com.au</p> |
| Organisation | <p>Flinders Ports</p> <p>https://www.flindersports.com.au/</p> <p>Phone call 23 February 2021 and 25 June 2021</p> |
| Notes | <p>Study background</p> <ul style="list-style-type: none"> • Wavelength noted the purpose of Phase 1 of the Coastal Adaptation Plan. <p>Data availability</p> <ul style="list-style-type: none"> • Outer Harbour Water level (tidal) data: <ul style="list-style-type: none"> ○ OH water level data is used by Flinders Ports to guide vessels into port. ○ OH water level observations are recorded every minute and are anticipated to continue to be recorded as long as the Adelaide Port continues to operate. ○ OH water level data is publicly available through the National Tide Center. ○ Greg will forward request to NTC for data to be provided to the City for use in the study. • Glenelg water levels: <ul style="list-style-type: none"> ○ Water levels are also recorded in the Glenelg Harbour (at the Patawalonga outlet). ○ These measurements are recorded in Australian Height Datum (AHD) and can be converted to chart datum using an offset of 1.45m. ○ Greg will forward contact details of responsible party. • Wave and current measurements: <ul style="list-style-type: none"> ○ Flinders Ports record wave and current data at an Outer Channel navigation marker. ○ Greg will follow up internally to identify what data is available for use in the study. • Flinders Ports (Hydro Survey Australia) undertake Glenelg and West Beach hydrographic surveys for DIT. Brad noted that Peter Hanson from Flinders Ports and DIT had been contacted for this data. |

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| Contact Person | <p>Graziela Miot da Silva Senior Lecturer</p> <p>08 8201 2146</p> <p>graziela.miotdasilva@flinders.edu.au</p> |
| Organisation | <p>Flinders University</p> <p>https://www.flinders.edu.au/</p> <p>Phone call 24 February 2021</p> |
| Notes | <p><i>Study background</i></p> <ul style="list-style-type: none"> • Wavelength noted the purpose of Phase 1 of the Coastal Adaptation Plan. <p><i>Data availability</i></p> <ul style="list-style-type: none"> • Flinders University have just purchased 4 wave rider buoys, which will be deployed within Gulf of St Vincent. <ul style="list-style-type: none"> ○ 2 buoys are likely to be deployed in Investigator Strait and 2 buoys offshore from Adelaide, with one most likely offshore from Brighton. The locations are to be confirmed with stakeholders in the coming weeks. ○ The buoys should be deployed in the coming months and will be in place indefinitely. ○ The intention is for the data to be made publicly available online, similar to the https://vicwaves.com.au/ system. This should be available for access in the middle of the year. • Graziela has also recently recorded waves and currents offshore from Brighton using an ADCP in two locations. This data is being analysed, with the aim of publishing papers by the end of the year. • Flinders University are also applying for a grant to purchase a drone capable of collecting bathymetric LiDAR data for use in South Australia. |

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| Contact Person | <p>Mark Doubell Sub-Program Leader (Oceanography) - Marine Ecosystems</p> <p>(08) 8429 0982</p> <p>Mark.Doubell@sa.gov.au</p> |
| Organisation | <p>PIRSA</p> <p>https://www.pir.sa.gov.au/research/esa_marine</p> <p>Phone call 25 February 2021</p> |
| Notes | <p>Study background</p> <ul style="list-style-type: none"> • Wavelength noted the purpose of Phase 1 of the Coastal Adaptation Plan. <p>Data availability</p> <ul style="list-style-type: none"> • eSA-Marine model: <ul style="list-style-type: none"> ○ PIRSA have developed a sophisticated hydrodynamic model of the South Australian coastline. ○ Uses BoM wind data to forecast water level and currents, as well as temperature, salinity and mixing. ○ Th model is low resolution in open water (2.5km to 10km grid size) but high resolution (~500m) within Gulf St Vincent. ○ The model will incorporate high resolution (~500m grid size) wave forecasting by Q3 2021. This is likely to incorporate Flinders University wave measurements for validation. ○ Once established, the model could be run for the last 3 to 5 years of waves and data extracted at areas of interest. ○ The model output is not publicly available and the ‘fee for service’ approach for accessing data is yet to be determined. However, running the model is likely to be relatively inexpensive. • Instrumentation: <ul style="list-style-type: none"> ○ PIRSA have undertaken water quality sampling at Brighton, at a similar location to the Flinders University ADCP data. ○ Earlier measurements of currents for the desalination plant were also undertaken. • PIRSA also have a number of other models focussed on ecosystem services, including: <ul style="list-style-type: none"> ○ Nutrient, Phytoplankton and Zooplankton model, ○ Nitrogen cycling model for seagrass growth in Gulf St Vincent. |

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| | <ul style="list-style-type: none"> PIRSA will be holding a workshop with BoM and other stakeholder, including potential end users of model data to identify how the data could be used in the future. |
| Contact Person | <p>Alex Czura Innovation Specialist – Liveability & Environment</p> <p>0433 122 655</p> <p>Alex.Czura@sawater.com.au</p> |
| Organisation | <p>SA Water</p> <p>Phone call 26 February 2021</p> |
| Notes | <p>Study background</p> <ul style="list-style-type: none"> Wavelength noted the purpose of Phase 1 of the Coastal Adaptation Plan. <p>Data availability</p> <ul style="list-style-type: none"> Asset shapefiles: <ul style="list-style-type: none"> SA Water have assets within 250m of coastline at Holdfast Bay. Alex will forward request for data to spatial team. Adelaide Desalination Plant at Lonsdale: <ul style="list-style-type: none"> SA Water may have collected some metocean data as part of the Adelaide Desalination Plant. Alex will forward request for data to relevant personnel within SA Water. |

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| Contact Person | <p>Jackie Agnew</p> <p>0447 426 623</p> <p>jackie.agnew@sa.gov.au</p> |
| Organisation | <p>EPA SA</p> <p>Emailed 3/3/21</p> |
| Notes | <ul style="list-style-type: none"> • Email noted Wavelength engaged by City to undertake Phase 1 of the Holdfast Bay CAP. This will involve the following activities: <ul style="list-style-type: none"> ○ Identification of available coastal data/reports and completion of a gap analysis. ○ Initial stakeholder consultation, to identify relevant data/reports and to let stakeholders know the City have commenced the study. ○ Preliminary coastal hazard assessment. • Wavelength requested any relevant data, particularly related to seagrass and oyster reef restoration. • Jackie forwarded email to Matt Nelson who suggested we look at the following: <ul style="list-style-type: none"> ○ Review EPA ambient monitoring data and State of Environment reports https://www.epa.sa.gov.au/environmental_info/water_quality/water_quality_monitoring ○ Contact DEW regarding seagrass and reef restoration. |

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| Contact Person | <p>Nick Harvey</p> <p>nick.harvey@adelaide.edu.au</p> |
| Organisation | <p>Australian Coastal Society</p> <p>Emailed 3/3/21</p> |
| Notes | <ul style="list-style-type: none"> • Email noted Wavelength engaged by City to undertake Phase 1 of the Holdfast Bay CAP. This will involve the following activities: <ul style="list-style-type: none"> ○ Identification of available coastal data/reports and completion of a gap analysis. ○ Initial stakeholder consultation, to identify relevant data/reports and to let stakeholders know the City have commenced the study. ○ Preliminary coastal hazard assessment. • Wavelength requested any relevant data or reports that Nick may know. • No response from Nick to date. |



Appendix B - Documents Register

| Ref | Description | Date | Doc Ref | Rev | Author | Custodian | Source | Pages | CONFIDENTIAL (Internal Use Only - Request from CoHB) | Scope | Document Type | Category | Sub-Category | Summary |
|-----|--|--------|-----------------|-----|------------------|--|---|-------|--|----------|--------------------|--------------------|------------------------------------|---|
| P1 | Holdfast Bay Council - Development Plan | Jun-16 | | | | City of Holdfast Bay | https://www.holdfast.sa.gov.au/council/yourholdfast/projects/development-plan-policy | 394 | N | Local | Policy & Guideline | Miscellaneous | Planning | <p>Objective: The Development Plan contains the rules that set out what can be done on any piece of land across Holdfast Bay, and the detailed criteria against which development applications will be assessed.</p> <p>Relevance: The Development Plan includes details on development within coastal areas, including allowances for coastal erosion and sea level flood mitigation, in line with the Coast Protection Board Policy.</p> |
| P2 | Coastal Adaptation Guidelines | Nov-20 | ECM 706495 | | | Local Government Association of South Australia | https://www.lga.sa.gov.au/news-and-events/news/latest-news/2020/november/lga-coastal-adaptation-guidelines | 66 | N | State | Policy & Guideline | Coastal Management | Coastal Hazards & Adaptation Plans | <p>Objective: The Local Government Coastal Adaptation Guidelines seek to provide comprehensive and contemporary advice specific to local government for coastal climate adaptation planning.</p> <p>Relevance:</p> <ul style="list-style-type: none"> The Phase 1 Stocktake scope of works for the City of Holdfast Bay Coastal Adaptation Plan is based on the methodology presented in the LGA Coastal Adaptation Guidelines. These guidelines provides a useful framework for undertaking coastal adaptation planning and will be relevant to this project throughout all phases of the CAP development. The Guidelines also provide useful background on potential sea level rise and the policy and legal context for coastal planning in South Australia. |
| P3 | Coast Protection Board - Policy Document | Jul-16 | | | | South Australian Coast Protection Board | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 77 | N | State | Policy & Guideline | Miscellaneous | Planning | <p>Objective: Presents the Coast Protection Board's policy for coastal management within South Australia.</p> <p>Relevance:</p> <ul style="list-style-type: none"> Highly relevant document, outlining key coastal hazards and how the Board will assess any coastal development or coastal adaptation/protection options put forward in a DA. The policy document also outlines the Board's duties related to coastal protection, noting: <ul style="list-style-type: none"> One of the Board's duties, as set out in the Coast Protection Act, is to protect the coast from erosion, damage, deterioration, pollution and misuse. If read out of context, this suggests a greater responsibility and funding role than in fact applies. These duties, and especially the coast protection one, are mostly carried out jointly with and through Local Councils, and the Act provides for the Board to make grants to assist Councils in this. It also provides for the Board to carry out works and recover a portion of the cost from a Council. The Policy sets out recommended guidelines for coastal setback to accommodate erosion, as below: <p>Development should be safe against coastal recession and storm erosion and the effect that a 0.3m rise in sea level would have on these. Also, development should not be approved unless it can be protected by practical measures against additional erosion that would be caused by a further 0.7m sea level rise.</p> As a general guide, design and/or setbacks should take into account 100 years of erosion at a site (taking into account local coastal processes and assuming a sea level rise of 0.3m by the year 2050), and also taking account of storm erosion from a major storm or series of severe storms. The Policy also sets out required site and building levels above the 100 yr ARI flood event combined with future sea level rise and land subsidence. |
| P4 | Coastal Planning Information Package - A guide to coastal development assessment and planning policy | Nov-13 | | | | Department of Environment, Water and Natural Resources | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 40 | N | State | Policy & Guideline | Miscellaneous | Planning | <p>Objective: The package aims to assist planners, and planning authorities and their officers, with the assessment of development applications on coastal land and the preparation of coastal and marine related planning policy. The package can also assist applicants in preparing a development application for a proposal on coastal land.</p> <p>Relevance:</p> <ul style="list-style-type: none"> This package builds on the CPB policy document (Report No. P3), providing more detail on what constitutes the coastal zone, what coastal works constitute development and useful explanation of the key coastal hazards and examples of development under threat. A series of useful diagrams are also provided, highlighting the recommended guidelines for coastal setback and building levels noted in Report No. P3 |
| P5 | Coastal erosion, flooding and sea level rise standards and protection policy | Jan-92 | Coastline No 26 | | | South Australian Coast Protection Board | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 7 | N | State | Policy & Guideline | Coastal Management | Coastal Hazards & Adaptation Plans | <p>Objective: The purpose of the article is to illustrate and explain the Coast Protection policies developed by CPB in May 1991 that set technical and environmental standards.</p> <p>Relevance: Further diagrams on the application of the CPB policies related to flooding and erosion (similar to Report No. P4).</p> |
| P6 | Information Manual 3 - Data and Datasets for Coastal Adaptation | Jul-05 | | | | National Climate Change Adaptation Research Facility | https://coastadapt.com.au/information-manuals | 76 | N | National | Policy & Guideline | Coastal Management | Coastal Hazards & Adaptation Plans | <p>Objective: The Information Manual aims to provide a list of State to National level datasets and references that can be used to develop coastal adaptation plans.</p> <p>Relevance: Highly relevant to this Phase 1 portion of the Coastal Adaptation Plan, providing links and reference to a broad range of coastal datasets, including coastal geomorphology, winds, waves, water levels, elevation data and coastal assets.</p> |
| S1 | The City of Holdfast Bay - Our Place 2030 Strategic Plan | 2016 | | | | City of Holdfast Bay | https://www.holdfast.sa.gov.au/council/council-documents/council-publications | 18 | N | Local | Strategy | Miscellaneous | Planning | <p>Objective: Our Place 2030 refreshes the City of Holdfast Bay vision and sets the medium-term priorities and specific goals and targets. This includes outlining key commitments for services, activities and strategic initiatives.</p> <p>Relevance: A key aspect of the Our Place 2030 vision is to lead in coastal management, which highlights the importance of the coast and on-going focus on coastal management to the City. Specific objectives of the strategic plan related to coastal planning are:</p> <p>Objective 2 of the Environment category notes: <i>Maintain our dune systems and increase recreational beach widths: target increase – 10%</i></p> <p>Objective 4 of the Economy category notes: <i>Increase the number of visitors to Holdfast Bay: target increase – 15% by 2022</i></p> |
| S2 | The City of Holdfast Bay - Environment Strategy 2020-2025 | Oct-20 | | | Healthy Environs | City of Holdfast Bay | https://www.holdfast.sa.gov.au/council/council-documents/council-publications | 40 | N | Local | Strategy | Coastal Values | Environmental | <p>Objective: The City's Environment Strategy is part of the Council's Strategic Planning Framework and sets out the environmental strategic vision, goals and initiatives over the coming 5 years.</p> <p>Relevance:</p> <ul style="list-style-type: none"> The Environment Strategy identified the need for a Coastal Adaptation Plan. Two of the key environmental challenges identified for action within the strategy are directly related to this Coastal Adaptation Plan, including: <ul style="list-style-type: none"> -Our Climate (Climate Change) -Our coast |

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| S3 | Coastal Protection Infrastructure - Assessment & Management Strategy | Jun-20 | 20040055_R01 | V03 | Water Technology | City of Holdfast Bay | City | 32 | N | Local | Strategy | Coastal Management | Coastal Management Activities | <p>Objective: Presents the objectives, methodology and findings of a comprehensive asset identification and condition inspection for all coastal protection, drainage outlet and beach access assets within the City of Holdfast Bay.</p> <p>Relevance:</p> <ul style="list-style-type: none"> Particularly relevant to the Coastal Adaptation Plan, as it provides a consistent and up to date review of coastal protection asset conditions, allowing at risk assets to be identified and potential adaptation pathways to be developed. Typical rock size measurements are also useful for calculation of potential increases in wave damage from sea level rise. Also includes a useful summary of the historical seawall construction timing and typical seawall design rock size between 1972 and 1981 and the CPB design cross-section from 2011, as well as recent design storm seawall conditions at West Beach. <p>Data: Spatial data has been included within the City's Asset Management System and within the CAP GIS database developed for the CAP.</p> |
| S4 | The City of Holdfast Bay - Coastal Asset Management Plan | 2014 | | | | City of Holdfast Bay | https://www.holdfast.sa.gov.au/council/council-documents/council-publications | 48 | N | Local | Strategy | Coastal Management | Coastal Management Activities | <p>Objective: The Coastal Asset Management plan aims to provide responsive management of assets (and services provided from assets), compliance with regulatory requirements, and to communicate funding needed to provide the required levels of service over a 20 year planning period.</p> <p>Relevance: The plan covers foreshore facilities, foreshore protection assets, access, jetties, and the Patawalonga boat lock and surrounds. The plan also considers beaches as part of the service delivery, including community satisfaction related to maintaining beach widths.</p> <p>Data: The plan estimates cost for operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period is \$5,063,000 or \$506,000 average per year. This work was undertaken prior to the Coastal Protection Infrastructure - Assessment & Management Strategy (Report no. 1).</p> |
| S5 | Holdfast Bay Tourism Plan 2020 | 2020 | | | | City of Holdfast Bay | https://www.holdfast.sa.gov.au/council/council-documents/council-publications | 24 | N | Local | Strategy | Coastal Values | Amenity & Tourism | <p>Objective: The Holdfast Bay Tourism Plan presents a strategic approach to increasing tourism within the City.</p> <p>Relevance: Whilst coastal visitors or tourism numbers are not presented, the plan does include useful background information on total visitor numbers and expenditure within the City, which may be useful in future phases of the Coastal Adaptation Plan.</p> |
| S6 | The City of Holdfast Bay - Open Space and Public Realm Strategy 2018-2030 | 2018 | | | | City of Holdfast Bay | https://www.holdfast.sa.gov.au/council/council-documents/council-publications | 84 | N | Local | Strategy | Miscellaneous | Planning | <p>Objective: The City's Open Space and Public Realm Strategy is part of the Council's Strategic Planning Framework and sets out the open space strategic vision, goals and initiatives over the coming 5 years.</p> <p>Relevance:</p> <ul style="list-style-type: none"> The strategy includes consideration of the beach and foreshore areas within the wider context of the City's public open space and identifies some of the challenges facing coastal areas from sea level rise impacts. A number of strategies include improving coastal access and environments. <p>Data: The strategy also includes useful survey results, such as: 46% of the community rate the coast (beach and foreshore areas) as the most frequently used open space.</p> |
| S7 | Project Definition Statement - Kingston Park Precinct Strategy & Urban Design Framework | Mar-03 | | | | City of Holdfast Bay | Scanned from DEW Archives | 28 | N | Local | Strategy | Miscellaneous | Planning | <p>Objective: Presents a strategic plan (urban design framework) for the Kingston Park precinct to contribute to the City's strategic vision.</p> <p>Relevance: The report provides a summary of the key environmental, social and cultural assets and stakeholders within the Kingston Park area, including:</p> <ul style="list-style-type: none"> Kingston House Carter House Kaurna Tjilbruke Springs site and Tjilbruke Monument |
| S8 | Community Land Management Plan - Regional Open Space | ?? | | | | City of Holdfast Bay | https://cdn.holdfast.sa.gov.au/general-downloads/Council/Community-Land-Management-Plans-and-Registers-Part2.pdf | 83 | N | Local | Strategy | Miscellaneous | Planning | <p>Objective: Presents the City of Holdfast Bay's Community Land Management Plan for Regional Open Space as required under the Local Government Act 1999.</p> <p>Relevance: The City is responsible for multiple foreshore reserves, including beach areas and Kingston Park. These reserves have different lease/license details and management issues, which are identified throughout the Management Plan.</p> |
| S9 | Holdfast Bay Dunes Biodiversity Action Plan | Aug-19 | | 1.3 | T & M Ecologists | City of Holdfast Bay | https://www.holdfast.sa.gov.au/development-and-infrastructure/environment/our-coast | 68 | N | Local | Strategy | Coastal Values | Environmental | <p>Objective: The report focusses on activities to improve the limited biodiversity in the Holdfast Bay dunes (excluding Minda dunes are covered in a separate document S10) in line with the objectives of the Metropolitan Adelaide and Northern Coastal Action Plan (MANCAP) Document S18.</p> <p>Relevance:</p> <ul style="list-style-type: none"> Holdfast Bay contains important dune habitat within the Adelaide metropolitan area, with particularly well-formed dune systems from Brighton to Seacliff. The report notes that dune systems are under threat from coastal erosion and climate change. The report lists the significant flora and fauna species within the dunes, including the Hooded Plover. The Coastal Adaptation Plan should include these dune systems as an environmental asset to ensure they are considered as part of any long term coastal adaptation planning. The report also sets out future strategies to revegetate, stabilise and improve biodiversity within the dune systems, which is important as dune rehabilitation and formation can be implemented as a potential coastal adaptation pathway. |
| S10 | Kingston Park Cliff Face Biodiversity Action Plan | Sep-20 | | | T & M Ecologists | City of Holdfast Bay | City | 58 | Y | Local | Strategy | Coastal Values | Environmental | <p>Objective: The intention of the Kingston Park Cliff Face Biodiversity Action Plan is to provide information necessary to address the local management actions identified in the MANCAP (Document S18).</p> <p>Relevance:</p> <ul style="list-style-type: none"> Outlines the Aboriginal and European history of the area. Identifies important flora and fauna species, with photographs, that can be found in Kingston Park and their general extent. The Plan also outlines specific and prioritised "on-ground" works over the next 5 years, with the aim being to maximise the protection of the biodiversity values of Kingston Park. |
| S11 | Minda Dunes Biodiversity Action Plan | Aug-18 | | | T & M Ecologists | City of Holdfast Bay | City | 110 | Y | Local | Strategy | Coastal Values | Environmental | <p>Objective: The intention of the Minda Dunes Biodiversity Action Plan is to provide the information needed to address the local management actions identified in the MANCAP (Document S18).</p> <p>Relevance: Similar relevance for project as the Holdfast Bay Dunes Biodiversity Action Plan (Document S9)</p> |

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| S12 | Sand Drift Fencing - Action Plan Report | Aug-04 | | | | City of Holdfast Bay | City | 11 | N | Local | Strategy | Coastal Values | Environmental | <p>Objective: The aim of the Action Plan is to recreate, protect and rejuvenate the local sand dune system for coastal protection, amenity and biodiversity.</p> <p>Relevance: Relatively dated information regarding implementation of actions but the report does outline lessons learnt and a series of guiding principles for installation of the sand drift fencing.</p> |
| S13 | Adelaide's Living Beaches Strategy 2005-2025 - Technical Report | Jun-05 | | | Natural and Cultural Heritage | Department for Environment and Heritage | http://www.environment.sa.gov.au/files/f7d58bb8-b3e9-4f2b-a453-9e3900ec41e7/alb_technical_report.pdf | 220 | N | Regional | Strategy | Coastal Management | Coastal Management Activities | <p>Objective: The Adelaide Living Beaches Strategy outlines the State Government's strategy to maintaining beach widths and coastal assets along the Adelaide metropolitan coastline from 2005 to 2025.</p> <p>Relevance:</p> <ul style="list-style-type: none"> The strategy is highly relevant to the Holdfast Bay Coastal Adaptation Plan, as the City's beach widths are currently maintained through this strategy. Sand is currently collected at Glenelg, where it is pumped as a slurry to a number of beach discharge locations between The Broadway to Kingston Park. The report also has a detailed summary of coastal processes, historical sand nourishment, coastal development, coastal protection works, stormwater management and seagrass loss. The report also outlines indicative costs for various coastal management works. <p>Data: The Department of Environment and Water's Coastal Management Branch have provided a range of data related to the Adelaide Living Beach Strategy, including sediment sample results, beach profiles, sand trap boundaries, aerial photographs and site photographs.</p> |
| S14 | Adelaide's Living Beaches Strategy 2005-2025 - Summary | Jun-05 | Coastline No 35 | | Natural and Cultural Heritage | Department for Environment and Heritage | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 220 | N | Regional | Strategy | Coastal Management | Coastal Management Activities | <p>Objective: High level summary document for the Adelaide Living Beaches Strategy (Report No. S13).</p> <p>Relevance: More concise, layman terms summary of technical data report.</p> |
| S15 | Maintaining the Adelaide Coastline | Sep-93 | Coastline No 28 | | | South Australian Coast Protection Board | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 11 | N | Regional | Strategy | Coastal Management | Coastal Management Activities | <p>Objective: The Coastline Issue presents background information on the management of Adelaide's beaches in the 1990's</p> <p>Relevance:</p> <ul style="list-style-type: none"> Whilst dated, the report provides useful background information on coastal processes and historical storm events. The report also provides insights into historical decisions related to management of Adelaide's beaches, including the adaptation options investigated and the reasons behind the selection of a sand replenishment approach. |
| S16 | Developing a management strategy for coastal cliff erosion hazards in South Australia | May-14 | Coastline No 37 | | | South Australian Coast Protection Board | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 16 | N | State | Strategy | Coastal Management | Coastal Hazards & Adaptation Plans | <p>Objective: Presents a management strategy for coastal cliff erosion hazards in South Australia.</p> <p>Relevance: A portion of Holdfast Bay, south of Kingston Park, is fronted by cliffs. Erosion hazards in these areas should be assessed using the management strategy proposed.</p> |
| S17 | Adelaide Coast Protection Strategy Review 1984 | Mar-84 | | | The Coastal Management Branch, Department of Environment and Planning | South Australian Coast Protection Board | | 286 | N | Regional | Strategy | Coastal Management | Coastal Management Activities | <p>Objective: At the time of writing, the review aimed to assess and compare all possible alternatives for protecting the Adelaide coast, including the present strategy, which relies mainly on annual beach replenishment. This has since been superseded by the Adelaide Living Beaches Strategy (Report No. S13).</p> <p>Relevance:</p> <ul style="list-style-type: none"> Whilst dated, the report provides useful background information on geology and geotechnical conditions, including varying beach sediment sizes, as well as storm surge and rainfall joint probability. In relation to the onshore movement of sand (based on sediment analysis), the study notes: <i>The Marino Rocks to Semaphore Beach sector seems to receive small quantities of sediments from offshore, most of which are moved northward in the nearshore zone and deposited south of Outer Harbor.</i> The report also presents wave measurements recorded in 10m of water offshore from Sealiff in 1981, including a 2.4m recorded storm wave in August 1981. |
| S18 | Metropolitan Adelaide and Northern Coastal Action Plan 2009 | 2009 | | | Caton B., Fotheringham D., Krahnert E., Pearson J., Royal M. and Sandercock R. 2009. Metropolitan Adelaide and Northern Coastal Action Plan. Prepared for the Adelaide and Mount Lofty Ranges NRM Board and Department for Environment and Heritage | Adelaide and Mount Lofty Ranges NRM Board and Department for Environment and Heritage | | 660 | N | Regional | Strategy | Coastal Values | Environmental | <p>Objective: Presents a collection of stories and photographs illustrating how the elements have shaped Holdfast Bay.</p> <p>Relevance:</p> <ul style="list-style-type: none"> Low priority -> conservation. Kingston Park has highest conservation rating. <p>Medium threat - threatening processes. Threat values over the whole cell are contributed by zoning (except heritage zones), land use, land ownership, sea views, landscape amenity, and distribution of dangerous weeds has the fourth highest total in the study area. Stormwater flow over the beach also poses a threat.</p> <p>Useful map of key environmental areas</p> <p>Summarises potential impacts of sea level rise and an increase in storm activity on the beach widths, which are maintained by beach replenishment</p> <p>Action list, believe many have been implemented, particularly related to dune biodiversity</p> |
| C1 | Historic Glenelg - A Self-Guided Walk | 2017 | | | Molten | City of Holdfast Bay | https://www.walkingsa.org.au/walk/find-a-place-to-walk/historic-glenelg-walk/ | 28 | N | Local | Community Information | Coastal Values | Culture & Heritage | <p>Objective: Presents a self-guided walking map and information brochure of historic sites around Glenelg.</p> <p>Relevance: Provides some useful background information on historical sites, including Glenelg Jetty, within the Glenelg foreshore area.</p> |
| C2 | Keeping our beaches sandy | 2020 | | | | Department for Environment and Water | https://www.environment.sa.gov.au/topics/coasts/managing-adelaides-beaches/sand-pumping/sand-transfer-locations/glenelg-to-kingston-park | 1 | N | Regional | Community Information | Coastal Management | Coastal Management Activities | <p>Objective: Community information flyer outlining sand management works using the new sand shifter system from Glenelg to Kingston Park.</p> <p>Relevance: High level summary of the sand pumping volumes and discharge locations.</p> |
| C3 | Slurry Pump - Technical Information | 2020 | | | | Department for Environment and Water | https://www.environment.sa.gov.au/topics/coasts-new/managing-adelaides-beaches/sand-pumping/technical-information | 5 | N | Local | Community Information | Coastal Management | Coastal Management Activities | <p>Objective: Technical information available online, summarising the slurry pump system installed between Glenelg and Kingston Park.</p> <p>Relevance: The slurry pump system maintains the beaches along the Holdfast Bay foreshore south of Glenelg and is an integral part of the coastal management approach.</p> |
| C4 | Storm Front Elements that shape us | 2019 | | | | City of Holdfast Bay | https://cdn.holdfast.sa.gov.au/general-downloads/Discover/Storm-Front-Elements-that-Shape-Us.pdf | 8 | N | Local | Community Information | Physical Setting | Coastal Processes | <p>Objective: Presents a collection of stories and photographs illustrating how the elements have shaped Holdfast Bay.</p> <p>Relevance:</p> <ul style="list-style-type: none"> Presents the Kaurna calendar for weather. Presents a useful infographic summarising the key coastal management practices across Holdfast Bay, including the evolution in the design of the seawalls and their timing. Includes historical photographs and information on the April 1948 storm, which damaged the Glenelg jetty and beached the HMAS Barcoo survey frigate. |

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| T1 | Quality of Life Community Survey Report 2020/21 | Jan-21 | | | Intuito Market Research | City of Holdfast Bay | City | 61 | N | Local | Technical | Coastal Values | Amenity & Tourism | <p>Objective: The objective of the community market research study was to gauge resident perceptions of their neighbourhood and Council area as a community and place to live, as well as gauge awareness of Council's services and levels of satisfaction of these services. Tabulation results are also available in a separate appendix report.</p> <p>Relevance:</p> <ul style="list-style-type: none"> In general, the survey results highlight community members have a strong affinity with the coast and is a key reason people live in Holdfast Bay. 92.5% of survey respondents noted <i>The Beach</i> was the most valued aspect living in Holdfast Bay. This number is up from 2019 value (87%). Respondents most likely to respond with <i>The beach</i> are under 40 years of age. Respondents also scored the City of Holdfast Bay highly (8.12 out of 10) for <i>Maintaining our beaches and coastal areas</i>. |
| T2 | City of Holdfast Bay - State of the Environment Report | Dec-04 | | | Earth Tech Engineering | City of Holdfast Bay | City | 233 | N | Local | Technical | Coastal Values | Environmental | <p>Objective: The State of the Environment report provides information on the condition and trends of the environment within the City of Holdfast Bay.</p> <p>Relevance: Whilst the report is quite dated, it does have some relevancy in identifying key coastal management issues that may impact coastal processes and adaptation planning, including:</p> <ul style="list-style-type: none"> Loss of seagrass meadows, and sand management. |
| T3 | City of Holdfast Bay - Understanding the Tourism Market Quantitative Report | Dec-19 | | 2 | McGregor Tan | City of Holdfast Bay | City | 148 | Y | Local | Technical | Coastal Values | Amenity & Tourism | <p>Objective: To uncover and understand the drivers to visitation to the City of Holdfast Bay.</p> <p>Relevance: Survey results highlight the importance of beaches and coastal activities at Glenelg and Brighton to SA, interstate and international visitors, as summarised below:</p> <ul style="list-style-type: none"> Walking along the beach was the main activity (62% to 83%) of visitors to Glenelg, highlighting the importance of maintaining beach widths to tourism in Holdfast Bay. South Australian visitors were most interested in beach facilities at Glenelg (48% surveyed). International and interstate visitors perceived Brighton and Glenelg as having a 'good beach' (45% and 50% surveyed respectively). |
| T4 | Stormwater Management Plan - Notes to Floodplain Maps | 2014 | | | Tonkin | City of Holdfast Bay | https://www.marion.sa.gov.au/services-we-offer/environment/water-management/stormwater-management | 2 | N | Local | Technical | Coastal Management | Coastal Hazards & Adaptation Plans | <p>Objective: Standalone notes on floodplain maps (detailed report contained in Report no. T18).</p> <p>Relevance: Summarises key short and long term flood scenario inputs for catchment flood modelling and maps.</p> |
| T5 | Port Stanvac Multibeam and Sub-Bottom Profiler Survey | Jun-20 | PHS-20-033-DEW | 0 | Precision Hydrographic Services | Department for Environment and Water | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 90 | N | Local | Technical | Physical Setting | Geomorphology & Geology | <p>Objective: Phase 1 site investigations of Port Stanvac offshore sand deposits.</p> <p>Relevance: Technical information for potential sand source locations and volumes for adaptation option assessment in future phases of the CAP.</p> |
| T6 | Sand Suitability Investigation – Semaphore and Largs Bay | 2019 | | | | Department for Environment and Water | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 6 | N | Local | Technical | Physical Setting | Geomorphology & Geology | <p>Objective: Phase 1 site investigations of Semaphore and Largs Bay beach sand deposits.</p> <p>Relevance: Technical information for potential sand characteristics for adaptation option assessment in future phases of the CAP.</p> |
| T7 | Glenelg Safe Harbour - Breakwater Design Report | Aug-96 | | Draft | Connel Wagner | Boulderstone Hornibrook | DPTI - email | 201 | N | Local | Technical | Physical Setting | Metocean | <p>Objective: The design report summarises the information obtained and used as part of the design of the coastal works associated with the Glenelg Safe Harbour and Holdfast Shores Project.</p> <p>Relevance: Provides a summary of various return period wave and water level scenarios for the design of the breakwaters, which may be useful in assessing design storm erosion events.</p> |
| T8 | Holdfast Shores Wave Climate Study | 1997 | | | Lawson and Treloar | Connel Wagner | Scanned from DEW Archives | 43 | N | Local | Technical | Physical Setting | Metocean | <p>Objective: The study summarises wave modelling completed as input to the design of the coastal works associated with the Glenelg Safe Harbour and Holdfast Shores Project. Input for Report No. T9</p> <p>Relevance:</p> <ul style="list-style-type: none"> Tables at rear of report present a range of useful extreme wave and water level values for use in the CAP. The report also summarises the significant storm events that have caused severe storm damage or foreshore erosion between the 1950's and 1990's. |
| T9 | Glenelg Safe Harbour Model Study | 1997 | | | EngTech | Connel Wagner | Scanned from DEW Archives | 25 | N | Local | Technical | Physical Setting | Metocean | <p>Objective: The study presents 2D and 3D physical modelling completed for design of the coastal works associated with the Glenelg Safe Harbour and Holdfast Shores Project.</p> <p>Relevance: Useful design information for the Glenelg Safe Harbour breakwaters.</p> |
| T10 | Glenelg Ferry Wharf and Associated Coastal Works | Oct-95 | | | Boulderstone Hornibrook | Urban Projects Authority | DPTI - email | 197 | N | Local | Technical | Physical Setting | Metocean | <p>Objective: Preliminary design and costings report for the Glenelg Safe Harbour.</p> <p>Relevance: Borehole and geotechnical data contained in the appendices may be useful for future stages when considering geotechnical conditions in the area. Results came back as top layers of sand overlaying mixed silts/sands/clays.</p> |
| T11 | Holdfast Quays Proposal - Third amendment to the Assessment Report for the environmental impact statement (as amended) on the development proposal for the for the Glenelg Foreshore and Environs | 1997 | | | Minister for Housing, Urban Development and Local Government Relations | | Scanned from DEW Archives | 31 | N | Local | Technical | Coastal Values | Environmental | <p>Objective: State government response to the then proposed Holdfast Quays (Glenelg Safe Harbour / Holdfast Shores) development.</p> <p>Relevance: Mostly contextual information on the key concerns raised by the state government, including coastal processes impacts (Section 4.3.1).</p> |
| T12 | Geotechnical Investigation - Proposed Brighton Jetty Reconstruction | May-95 | | | Golder Associates | Yorke Civil | DPTI - email | 35 | N | Local | Technical | Physical Setting | Geomorphology & Geology | <p>Objective: Presents findings of the geotechnical investigations for the Brighton Jetty reconstruction in 1995.</p> <p>Relevance: Borehole results may be useful in future phases of the CAP when considering adaptation option foundations, such as seawalls. Results are similar to Report No. T10 at Glenelg, with top layers of sand overlaying mixed silts/sands/clays</p> |
| T13 | Past and Anticipated Future Sand Characteristics for Metropolitan Adelaide Beaches Seaciff to Torrens Outlet | Dec-10 | Technical Report 2010/2 | | | Department of Environment and Natural Resources | DEW - email | 28 | N | Local | Technical | Physical Setting | Geomorphology & Geology | <p>Objective: The aim of the report is to assemble knowledge and data describing the past and present beach sand characteristics on the southern Adelaide metropolitan beaches to inform an assessment of the likely sand characteristics over the next 20 years.</p> <p>Relevance:</p> <ul style="list-style-type: none"> The report provides a useful summary of several coastal processes studies and sand collection programs along the Adelaide coast. The report also notes: <i>Grain size in the offshore portion of the active beach (ie seaward of low water) is generally finer than that on the upper part of the beach. This is consistent with wave driven sediment transport theory.</i> |
| T14 | Technical Report - Proposed Groynes at Pier St South Glenelg | 1ug-81 | Technical Report 81/5 | | | Coast Protection Board | Scanned from DEW Archives | 13 | N | Local | Technical | Coastal Management | Coastal Management Activities | <p>Objective: Outlines the proposed construction of a groyne at Pier St, Glenelg (the groyne was not built).</p> <p>Relevance: Historical information on sand movements in the Glenelg area and the potential impacts of a groyne construction at Pier St, should this be an adaptation option considered in future phases of the CAP.</p> |

| Ref | Description | Date | Doc Ref | Rev | Author | Custodian | Source | Pages | CONFIDENTIAL (Internal Use Only - Request from CoHB) | Scope | Document Type | Category | Sub-Category | Summary |
|-----|---|--------|-----------------|-------------|---|---|---|-------|--|----------|---------------|--------------------|------------------------------------|--|
| T15 | Brighton Beach Groynes - Case Study | Feb-17 | | | | Geofabrics Australia | https://www.geofabrics.co/news/brighton-beach-groynes-update | 2 | N | Local | Technical | Coastal Management | Coastal Management Activities | Objective: Marketing material from Geofabrics presenting the installation of the Brighton Beach Geotextile Sand Container (GSC) groynes. Relevance: High level summary of the groynes, including type of GSC bags used and lengths, which are a part of the existing coastal management. |
| T16 | Desktop Ecological Impact Assessment of Minda Dunes | Jun-14 | | | EBS Ecology | City of Holdfast Bay | https://www.sa.gov.au/_data/assets/pdf_file/0020/132176/Desktop_Ecological_Impact_Assessment_of_Minda_Dunes.PDF | 18 | N | Local | Technical | Coastal Values | Environmental | Objective: Report presents a desktop assessment of the ecological impacts potentially arising from the Minda Master Plan on the coastal conservation zone. Relevance: Highlights the importance of the Minda Dunes system from an ecological perspective, as well as from a community involvement and coastal management point of view. |
| T17 | Resilient South Climate Adaptation Plan 2014 | Jul-14 | | | URPS and Seed Consulting | City of Holdfast Bay, City of Marion, City of Onkaparinga and City of Mitcham | https://www.resilientsouth.com/our-resources | 156 | N | Regional | Technical | Coastal Management | Coastal Hazards & Adaptation Plans | Objective: Resilient South is a partner project between the Cities of Holdfast Bay, Marion, Mitcham, and Onkaparinga. The goal of Resilient South Climate Adaptation Plan is to ensure the southern region is resilient to natural hazards associated with climate change, focused on preparedness and crisis avoidance and has captured opportunities in innovation in adapting to climate change. Relevance: Coastal Management was identified as a key decision area requiring adaptation planning. Preferred options for coastal management adaptation in Holdfast Bay are outlined below: • Coordinated planning and monitoring • Inform and educate the community and encourage behaviour change • Review and amend Development Plan policy • Develop soft structural options • Construct hard structural options like storm tide barriers or sea walls (within 20 to 30 years) • Beyond 50 years, the proposed pathway recommends a <i>Retreat and Transform</i> strategy |
| T18 | Marion and Holdfast Bay Floodplain Mapping and Drainage Capacity Assessment Report | Jul-14 | 20100878RA7F | F | Tonkin Consulting | Cities of Holdfast Bay and Marion | https://www.sma.sa.gov.au/wp-content/uploads/Gleneil-MarinoSMP2014_WEB.pdf | 113 | N | Regional | Technical | Coastal Management | Coastal Hazards & Adaptation Plans | Objective: The plan is a collaboration between the City of Holdfast Bay and Marion with the aim of setting out strategies, actions and programs that can be implemented to progress towards the overarching objective of both Councils becoming "Water Sensitive Cities" and to minimise flooding and increase water reuse. Relevance: • The report sets out existing and future catchment flooding for the 100year ARI flood event at present and in approximately 50 years time, assuming 0.5m of sea level rise. • The report found limited correlation between extreme rainfall level events and extreme ocean storm surge levels. For the flood study, it was assumed that the tide could be at any level during a severe rainfall event. • At present, a Mean High Water Springs (MHWS) tidal level of +0.9 mAHD was assumed as a flood model boundary condition in the Gulf St Vincent. • In approximately 50 years, a Mean High Water Springs (MHWS) tidal level of +1.4 mAHD was assumed as a flood model boundary condition in the Gulf St Vincent (inc 0.5m SLR). • The report also summarises existing and potential future flood levels within Patawalonga Lake, assuming the same flood model boundary conditions as Gulf St Vincent (MHWS). Data: 100year ARI flood mapping |
| T19 | Adelaide Coastal Waters Study - Technical Report No. 8 | Jul-05 | | Draft Final | University of Western Australia | South Australian Environment Protection Authority | | 101 | N | Regional | Technical | Physical Setting | Metocean | Objective: Physical oceanographic studies of Adelaide coastal waters using high resolution modeling, in-situ observations and satellite techniques. Relevance: The report summarises SWAN wave modelling undertaken within Gulf of St Vincent, including useful spatial plots of modelled mean swell wave conditions and a time history plot of measured wave heights at Brighton in September/October 2004. |
| T20 | The Adelaide Metropolitan Coastline | Apr-93 | Coastline No 27 | | | South Australian Coast Protection Board | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 7 | N | Regional | Technical | Coastal Management | Coastal Management Activities | Objective: The article summarises the coastal processes and management actions on the Adelaide Metropolitan coastline undertaken by the Coast Protection Board. Relevance: Useful summary of coastal processes, development extents and historical photographs of Brighton Beach in the 1900's and 1990's. |
| T21 | The Value of the Adelaide Beaches | Nov-93 | Coastline No 29 | | | South Australian Coast Protection Board | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 8 | N | Regional | Technical | Coastal Values | Amenity & Tourism | Objective: The article examines why the metropolitan coast is valued by the community, how a value can be determined for the metropolitan beaches, and finally provides some estimates from research of various components of the total beach value. Relevance: • Whilst quite dated, the article provides a useful summary of the range of social, environmental and economic benefits gained from beaches. • The article also presents a range of approaches to calculating the value of beaches and summarises the findings of the results. For example, in the 1990's the benefits to cost ratio for maintaining beaches on the metropolitan coast is in excess of 10. |
| T22 | Monitoring sand movements along the Adelaide coastline | Jun-00 | Coastline No 32 | | | South Australian Coast Protection Board | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 8 | N | Regional | Technical | Physical Setting | Coastal Processes | Objective: The article discusses the different methods used by the Coast Protection Board in monitoring sand movements along the Adelaide Metropolitan coastline. Relevance: Provides useful background on the beach profile monitoring program, which will form the basis for much of the coastal processes analysis undertaken in the preliminary hazard assessment (Phase 1) and future phases of the Holdfast Bay CAP. Data: DEW's coastal monitoring profiles |
| T23 | Recreational Beach Widths along the Adelaide Coastline | May-06 | Coastline No 36 | | | South Australian Coast Protection Board | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 12 | N | Regional | Technical | Coastal Values | Amenity & Tourism | Objective: The article summarises the DEW program of recording beach widths using the profiles noted in Report No. T22 Relevance: Useful information on the historical changes in beach width across the Adelaide Metropolitan coastline, including Holdfast Bay. |
| T24 | Review of Coastline Changes 1936 - 1981 | 1982 | | | | DENR | Scanned from DEW Archives | 25 | N | Regional | Technical | Physical Setting | Coastal Processes | Objective: The report is an interpretation of the earliest available aerial photographs (1935) to the early 1980's. Relevance: Whilst the information hasn't been updated with recent data, the report provides a thorough review of significant changes in the following for the Holdfast Bay shoreline: • Beach width, dune width and shoreline change. • Major coastal development, including beach assets such as shelters. • Construction of coastal protection structures, particularly useful given the lack of historical records in some areas. Data: Historical aerial photographs are available from DEW and the City for use in future Phases of the CAP and included in the database. |
| T25 | Developing better predictions for extreme water levels - Holdfast Bay Model Outputs | 2018 | | | The University of Western Australia / Bushfire and Natural Hazard CRC | | https://sealevelx.ems.uwa.edu.au/index.php | 35 | N | Regional | Technical | Physical Setting | Metocean | Objective: Extreme value statistics derived from a 59 year (1958-2016) SCHISM numerical model hindcast. Relevance: Provides an indicative ocean water level (storm surge) return period graph and submergence curve for Holdfast Bay. |
| T26 | Developing better predictions for extreme water levels - Final Data R | 2018 | | 1 | The University of Western Australia / Bushfire and Natural Hazard CRC | | https://sealevelx.ems.uwa.edu.au/index.php | 5 | N | Regional | Technical | Physical Setting | Metocean | Objective: Report summarises methods used to develop extreme sea level predictions around Australia, including at Holdfast Bay. Relevance: Background methods for Report No. T25. |

| Ref | Description | Date | Doc Ref | Rev | Author | Custodian | Source | Pages | CONFIDENTIAL (Internal Use Only - Request from CoHB) | Scope | Document Type | Category | Sub-Category | Summary |
|-----|--|-----------|---------|-----|--|--|---|-------|--|----------|---------------|--------------------|------------------------------------|--|
| T27 | Coastal Landscapes of South Australia | 2016 | | | Bourman et al. 2016, Coastal Landscapes of South Australia, University of Adelaide Publishing, Adelaide, SA. | University of Adelaide | https://www.adelaide.edu.au/press/system/files/media/documents/2019-04/uap-coast-sa-ebook.pdf | 423 | N | Regional | Technical | Physical Setting | Geomorphology & Geology | <p>Objective: Report summarises methods used to develop extreme sea level predictions around Australia, including at Holdfast Bay.</p> <p>Relevance:</p> <ul style="list-style-type: none"> Section 2.5 summarises the coastal geomorphology from Seaciff to Outer Harbour, including geological factors and human development impacts and coastal management works. Historical photographs of dunes at Brighton and unknown location, showing extent of dune areas. |
| T28 | Beaches of the South Australian Coast and Kangaroo Island: a guide to their nature, characteristics, surf and safety | 2001 | | | Short, Andrew. (2001). Beaches of the South Australian Coast and Kangaroo Island. | | Book available for purchase Not included in database | | N | Regional | Technical | Physical Setting | Geomorphology & Geology | <p>Objective: Book aims to develop a better understanding of the location, type, characteristics, nature, hazards and public risks along all South Australian beaches, including Kangaroo Island and a few major islands.</p> <p>Relevance: Provides background to the physical nature and evolution of the South Australian coast and its beach systems; then describes every beach and rates them in terms of hazards.</p> |
| T29 | A Storm Tide Beach Erosion Model for the Adelaide Coast, Australia | 1999 | | | Rana et al (1999). A Storm Tide Beach Erosion Model for the Adelaide Coast, Australia, Rural and Environmental Engineering No.36 (1999.2) pp.10-19 | | https://www.jstage.jst.go.jp/article/ierp1996/1999/36/1999_36_10/pdf | 10 | N | Regional | Technical | Physical Setting | Coastal Processes | <p>Objective: Journal article summarises study into 1981 storm erosion experienced across the Adelaide Metropolitan coastline.</p> <p>Relevance:</p> <ul style="list-style-type: none"> Identifies two major storms, one on 1 June 1981, and the other on 3 July 1981 that caused significant erosion on the Adelaide coastline. Extreme analysis of water levels at Outer Harbour suggest the July storm had an approximate 25-year return period water level. Approximately 5 to 10m of dune erosion was surveyed at West Beach, just north of the study area. |
| T30 | Coastal Processes Study of Adelaide Beaches | Jun-04 | | B | Coastal Engineering Solutions | Department for Environment and Heritage | DEW - email | 121 | N | Regional | Technical | Physical Setting | Coastal Processes | <p>Objective: Journal article summarises study into 1981 storm erosion experienced across the Adelaide Metropolitan coastline.</p> <p>Relevance:</p> <ul style="list-style-type: none"> Identifies two major storms, one on 1 June 1981, and the other on 3 July 1981 that caused significant erosion on the Adelaide coastline. Extreme analysis of water levels at Outer Harbour suggest the July storm had an approximate 25-year return period water level. Approximately 5 to 10m of dune erosion was surveyed at West Beach, just north of the study area. |
| T31 | Coastal Viewscapes of South Australia | 2005 | | | Scenic Solutions | South Australian Department of Environment and Heritage | https://www.environment.sa.gov.au/topics/coasts/research-reports-policies#Coastlinehistoricalpublications | 183 | N | State | Technical | Coastal Values | Amenity & Tourism | <p>Objective: The study aimed to systematically rate the coastal viewscapes of South Australia to assist in the development of planning policy and the assessment of development applications through consideration of aesthetic impacts.</p> <p>Relevance:</p> <ul style="list-style-type: none"> The Holdfast Bay coastline, like most of the Adelaide coast, was rated a score of between 6 and 7, which is above average (with 1 being the lowest and 10 being the highest). The study highlights that visual impact is an important consideration for coastal development. <p>Objective: Presents the tidal datums and key tidal planes for South Australia.</p> |
| T32 | 2020 Tide Tables for South Australian Ports | 2020 | | | | Department of Planning, Transport and Infrastructure | https://www.sa.gov.au/data/assets/pdf_file/0004/577930/DPTI-Tide-Tables-2020.pdf | 180 | N | State | Technical | Physical Setting | Metoccean | <p>Relevance: The most relevant information is contained on pages 131 to 133, which present the heights of the key tidal planes above chart datum and relative to Australian Height Datum (AHD).</p> <p>Data: Outer Harbour tidal data from NTC and Flinders Ports available in database.</p> |
| T33 | The swell climate of the South Australia sea | Jun-05 | | | Hemer, M. and Bye, J., 1999, 'The swell climate of the South Australia sea', Transactions of the Royal Society of South Australia, 123(3), 107-113 | | Not available | | N | State | Technical | Physical Setting | Metoccean | <p>Objective: Technical study, investigating modelled Southern Ocean swell wave conditions propagating into the Gulf of St Vincent.</p> <p>Relevance: Whilst relatively dated, the work presents a relationship between offshore swell waves and wave conditions within Gulf Saint Vincent based on wave modelling. This is a useful starting point for assessing swell waves from different directions at the Adelaide Metropolitan coastline.</p> |
| T34 | Generic Design Coastal Erosion Volumes and Setbacks for Australia | 2012 | 247 | | The University of New South Wales | Antarctic Climate & Ecosystems Cooperative Research Centre | http://acecrc.org.au/wp-content/uploads/2015/03/TR-Generic-design-coastal-erosion-volumes-and-setbacks-for-Australia.pdf | 152 | N | National | Technical | Coastal Management | Coastal Hazards & Adaptation Plans | <p>Objective: Investigations into design coastal erosion volumes and setbacks for locations around Australia, including the Gulf of St Vincent, South Australia.</p> <p>Relevance:</p> <ul style="list-style-type: none"> Extensive summary of the various coastal planning policies and setback (erosion hazard) calculation methods adopted for different states across Australia (for use in Stage 2 of Phase 1 study). Report also presents a regional assessment of potential erosion setback allowances for the Gulf of St Vincent shoreline, using a combination of XBEACH and SBEACH modelling and Bruun Rule analysis. |
| T35 | Heritage Research & Procedures Report, City of Holdfast Bay Council, Adelaide, South Australia - Desktop Report | 2018 | | | Integrated Heritage Services | City of Holdfast Bay | | 118 | Y | Local | Technical | Coastal Values | Culture & Heritage | <p>Objective: Desktop research to inform the drafting of recommended heritage procedures for managing Aboriginal and European cultural heritage sites within the Project Area.</p> <p>Relevance: The report collates the desktop investigations into a written report and accompanying mapping and associated database resources delineating previously recorded Aboriginal and European heritage sites as well as areas of potential heritage sensitivity.</p> |
| T36 | City of Holdfast Bay Risk Framework, Policy and Analysis Tool | 2018/2019 | | | City of Holdfast Bay | City of Holdfast Bay | | - | N | Local | Technical | Miscellaneous | Planning | <p>Objective: Sets out the City's risk framework and includes likelihood, consequence and risk tables and matrices</p> <p>Relevance: Useful for consideration of risk assessment framework in CAP</p> |



Appendix C- Data Register



Data Register



| Dataset | Category | Sub-Category | Date | Custodian | Extent | Format | Horizontal Datum | Vertical Datum | Available from |
|--|--------------------|----------------|-----------|--------------------------------------|--|------------------|-------------------|----------------|---|
| Smartline | Physical Setting | Geomorphology | 2017 | Geoscience Australia | Australia | Shapefile | | | https://ecat.ga.gov.au/geonetwork/srv/eng/catalog.search#/metadata/104160 |
| Sediment compartments | Physical Setting | Geomorphology | 2017 | Geoscience Australia | Australia | Shapefile | | | |
| National Exposure Information System (NEXIS) Building Exposure - Local Government Area (LGA) | Coastal Management | Coastal hazard | 2020 | Geoscience Australia | Australia | Excel | | | https://data.gov.au/dataset/ds-ga-0324223a-95aa-48d3e054-00144fdd4fa6/details?q= |
| Coastal Hazard Areas | Coastal Management | Coastal hazard | 2007 | DEWNR | South Australia | ESRI geodatabase | | | http://location.sa.gov.au/lms/Reports/ReportMetadata.aspx?p_no=1145&pu=y&pa=dewn |
| Inundation mapping Medium SLR scenario Topographic | Coastal Management | Coastal hazard | 2017 | NCCARF | Holdfast Bay | PDF | | | https://coastadapt.com.au/sea-level-rise-information-all-australian-coastal-councils#SA_HOLDFAST_BAY |
| Inundation mapping Medium SLR scenario 2100 Satellite | Coastal Management | Coastal hazard | 2017 | NCCARF | Holdfast Bay | PDF | | | https://coastadapt.com.au/sea-level-rise-information-all-australian-coastal-councils#SA_HOLDFAST_BAY |
| Inundation mapping High SLR 2100 scenario Topographic | Coastal Management | Coastal hazard | 2017 | NCCARF | Holdfast Bay | PDF | | | https://coastadapt.com.au/sea-level-rise-information-all-australian-coastal-councils#SA_HOLDFAST_BAY |
| Inundation mapping High SLR scenario 2100 Satellite | Coastal Management | Coastal hazard | 2017 | NCCARF | Holdfast Bay | PDF | | | https://coastadapt.com.au/sea-level-rise-information-all-australian-coastal-councils#SA_HOLDFAST_BAY |
| Inundation mapping High SLR scenario 2050 Satellite | Coastal Management | Coastal hazard | 2017 | NCCARF | Holdfast Bay | PDF | | | https://coastadapt.com.au/sea-level-rise-information-all-australian-coastal-councils#SA_HOLDFAST_BAY |
| Inundation mapping High SLR scenario 2050 Topographic | Coastal Management | Coastal hazard | 2017 | NCCARF | Holdfast Bay | PDF | | | https://coastadapt.com.au/sea-level-rise-information-all-australian-coastal-councils#SA_HOLDFAST_BAY |
| ABS statistics Holdfast Bay | Miscellaneous | Planning | 2011-2019 | Australian Bureau of Statistics | Holdfast Bay | Excel | | | https://itt.abs.gov.au/itt/r.jsp?RegionSummary&region=42600&dataset=ABS_REGIONAL_LGA2019&geoconcept=LGA_2019&maplayerid=LGA2018&measure=MEASURE&datasetASGS=ABS_REGIONAL_ASGS2016&datasetLGA=ABS_REGIONAL_LGA2019&regionLGA=LGA_2019&regionASGS=ASGS_2016 |
| Port Stanvac observed water levels | Physical Setting | MetOcean | 1992-2010 | Bureau of Meteorology | Port Stanvac | CSV | | | NA |
| Port Stanvac predicted water levels | Physical Setting | MetOcean | 2001-2013 | Bureau of Meteorology | Port Stanvac | CSV | | | NA |
| Soil Adelaide Metropolitan Region | Physical Setting | Geology | 1989 | Geological Survey of South Australia | Adelaide Metropolitan Region | Shapefile | GDA94 (EPSG:4283) | | https://catalog.sarig.sa.gov.au/geonetwork/srv/eng/catalog.search#/metadata/63c213f3-d5d9-4aa8-8a89-a68c12e28dd5 |
| South Australia State Marine Benthic Habitats | Coastal Values | Environment | 2016 | DEWNR | Adelaide Mount Lofty Ranges (AMLR), Yorke Peninsula, Eyre Peninsula, Upper Spencer Gulf, Upper Gulf St Vincent, South East and Kangaroo Island | Shapefile | WGS 84 | | https://geoserver.imas.utas.edu.au/geoserver/seamap/wfs?version=1.0.0&request=GetFeature&typeName=SeamapAus_SA_state_benthic_habitats&outputFormat=SHAPE-ZIP |
| CAWCR Wave Hindcast 1979-2010 | Physical Setting | MetOcean | 1979-2010 | Bureau of Meteorology and CSIRO | Global | NetCDF4 | NA | | https://data.csiro.au/dap/landingpage?pid=csiro:6616 |
| CAWCR Wave Hindcast 1979-2010 | Physical Setting | MetOcean | 2011-2013 | Bureau of Meteorology and CSIRO | Global | NetCDF4 | NA | | https://data.csiro.au/collections/collection/CiCSiro:7309v007 |



Data Register



| Dataset | Category | Sub-Category | Date | Custodian | Extent | Format | Horizontal Datum | Vertical Datum | Available from |
|---|------------------|--------------|-----------|---------------------------------|-----------------------|-----------|--------------------|----------------|---|
| WCR Wave Hindcast extension June 2013 - July 2014 | Physical Setting | MetOcean | 2013-2014 | Bureau of Meteorology and CSIRO | Global | NetCDF4 | NA | | https://data.csiro.au/collections/collection/CiCSIRO:14249 |
| Coastal Survey Glenelg to West Beach | Physical Setting | Bathymetry | 2005 | Flinders Ports | Glenelg to West Beach | PDF | AMG84 Zone 54 | AHD | NA |
| Gulf St Vincent Survey | Physical Setting | Bathymetry | 2020 | Commonwealth of Australia | Gulf St Vincent | PDF | ? | ? | Mark Sinclair, Hydrographic Services Line Director APAC, Fugro, D +61 8 8161 4178, M +61 418 891 075, E m.sinclair@fugro.com |
| State Heritage Areas | Coastal Values | Environment | 2020 | DPTI and DEW | South Australia | Shapefile | GDA94 (EPSG:4283) | | https://data.sa.gov.au/data/dataset/state-heritage-areas/resource/90814988-e8a0-4b5b-b90b-0ad0a49830b6 |
| State Heritage Places | Coastal Values | Environment | 2015 | DPTI and DEW | South Australia | Shapefile | GDA94 (EPSG:4283) | | https://data.sa.gov.au/data/dataset/sa-heritage-places/resource/6b8e5b7d-0138-454b-805b-5afc7e3f6508?inner_span=True |
| Waverider buoy Observations - delayed | Physical Setting | MetOcean | 2000-2017 | Bureau of Meteorology | Cape du Couedic | CSV | NA | | https://portal.aodn.org.au/search |
| Waverider buoy Observations | Physical Setting | MetOcean | 2018-2021 | Bureau of Meteorology | Cape du Couedic | CSV | NA | | https://portal.aodn.org.au/search |
| Climate Statistics Adelaide Airport | Physical Setting | MetOcean | 1955-2020 | Bureau of Meteorology | Adelaide Airport | TXT | | | http://www.bom.gov.au/climate/averages/tables/cw_023034.shtml |
| Holdfast Harbour Dredging Survey | Physical Setting | Bathymetry | 2021 | DEW | Holdfast Harbour | PDF | MGA 94 Zone 54 | ? | NA |
| West Beach Harbour Dredging Survey | Physical Setting | Bathymetry | 2021 | DEW | West Beach Harbour | PDF | MGA 94 Zone 54 | ? | NA |
| Glenelg Harbour General Arrangement Set out | Coastal Values | Built assets | 1996 | DIT | Glenelg Harbour | PDF | NA | NA | NA |
| Brighton Jetty Launching Details | Coastal Values | Built assets | 1994 | DIT | Brighton Jetty | PDF | NA | NA | NA |
| Brighton Jetty Sections and Details | Coastal Values | Built assets | 1994 | DIT | Brighton Jetty | PDF | NA | NA | NA |
| AusSeabed Bathymetry - 50 m multibeam | Physical Setting | Bathymetry | 2018 | Geoscience Australia | Australia | Shapefile | WGS 84 (EPSG:4326) | ? | https://portal.ga.gov.au/persona/marine |



Data Register



| Dataset | Category | Sub-Category | Date | Custodian | Extent | Format | Horizontal Datum | Vertical Datum | Available from |
|---|--------------------|----------------------|-----------|--------------------------------|-------------------------------------|-----------|------------------|----------------|---|
| Australian Regional Bathymetry 250 m Grid | Physical Setting | Bathymetry | 2009 | Geoscience Australia | Australia | Shapefile | ? | ? | https://portal.ga.gov.au/persona/marine |
| Holdfast Council Profile Locations | Physical Setting | Elevation | 1975-2021 | DEW | Holdfast Bay | Shapefile | MGA 94 Zone 54 | NA | NA |
| Holdfast Council Profiles Data | Physical Setting | Elevation | 1975-2021 | DEW | Holdfast Bay | CSV | MGA 94 Zone 54 | AHD | NA |
| Holdfast Bay aerial photographs 1931 | Miscellaneous | Photographs | 1931 | DEW | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay aerial photographs 1936 | Miscellaneous | Photographs | 1936 | DEW | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay aerial photographs and mosaic 1949 | Miscellaneous | Photographs | 1949 | DEW | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay aerial photographs 1959 | Miscellaneous | Photographs | 1959 | DEW | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay aerial photographs and mosaic 1972 | Miscellaneous | Photographs | 1972 | DEW | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay mosaic 1993 | Miscellaneous | Photographs | 1993 | DEW | Holdfast Bay | JPG | NA | NA | NA |
| Coastal Hazard Areas | Coastal Management | Coastal hazard | 2007 | DEW | South Australia | Shapefile | ?? | ? | http://spatialwebapps.environment.sa.gov.au/naturemaps/?locale=en-us&viewer=naturemaps |
| SA Coastal Shoreline Classification | Physical Setting | Geomorphology | 2007 | DEW | South Australia | Shapefile | ?? | ? | http://spatialwebapps.environment.sa.gov.au/naturemaps/?locale=en-us&viewer=naturemaps |
| Aboriginal Heritage Sites | Coastal Values | Culture and Heritage | 2021 | DPC | Holdfast Bay | PDF | NA | ? | NA |
| Shipwrecks | Coastal Values | Culture and Heritage | 2021 | DEW | South Australia | Shapefile | GDA94 | NA | https://data.sa.gov.au/data/dataset/shipwrecks |
| Local Government Areas | Miscellaneous | Planning | 2021 | DPTI | South Australia | Shapefile | GDA94 | NA | https://data.sa.gov.au/data/dataset/local-government-areas |
| Suburbs | Miscellaneous | Planning | 2021 | DPTI | South Australia | Shapefile | GDA94 | NA | https://data.sa.gov.au/data/dataset/suburb-boundaries |
| Marine Park Network Boundaries | Coastal Values | Environment | 2012 | DEW | South Australia | Shapefile | GDA94 | NA | https://data.sa.gov.au/data/dataset/marine-park-network-boundaries |
| Outer Harbour observed water levels - hourly | Physical Setting | MetOcean | 1940-2019 | Bureau of Meteorology | Fliders Port Outer Harbour | CSV | | | NA |
| Outer Harbour predicted water levels - hourly | Physical Setting | MetOcean | 1940-2019 | Bureau of Meteorology | Fliders Port Outer Harbour | CSV | | | NA |
| Outer Harbour observed water levels - 5 min | Physical Setting | MetOcean | 1996-2015 | Bureau of Meteorology | Fliders Port Outer Harbour | CSV | | | NA |
| Outer Harbour predicted water levels - 5 min | Physical Setting | MetOcean | 1996-2015 | Bureau of Meteorology | Fliders Port Outer Harbour | CSV | | | NA |
| Outer Harbour observed water levels - 1 min | Physical Setting | MetOcean | 2014-2020 | Bureau of Meteorology | Fliders Port Outer Harbour | CSV | | | NA |
| Outer Harbour predicted water levels - 1 min | Physical Setting | MetOcean | 2014-2020 | Bureau of Meteorology | Fliders Port Outer Harbour | CSV | | | NA |
| JS 485 Spencer Gulf and Gulf of St Vincent 1:5000 | Physical Setting | Bathymetry | 2012 | Australian Hydrographic Office | Spencer Gulf and Gulf of St Vincent | PDF | ? | ? | https://www.hydro.gov.au/webapps/jsp/charts/chart.jsp?chart=Aus485&subchart=0 |

| Dataset | Category | Sub-Category | Date | Custodian | Extent | Format | Horizontal Datum | Vertical Datum | Available from |
|--|------------------|--------------|-----------|--------------------------------|--|----------|------------------|----------------|---|
| 5780 Althorpe Islands to Backstairs Passage 1:150 | Physical Setting | Bathymetry | 2010 | Australian Hydrographic Office | Althorpe Islands to Backstairs Passage | PDF | ? | ? | https://www.hydro.gov.au/webapps/jsp/charts/charts.jsp?chart=Aus780&subchart=0 |
| South Australia - South Coast - South Australia - Gulf St Vinc | Physical Setting | Bathymetry | 2010 | Australian Hydrographic Office | Gulf St Vincent | PDF | ? | ? | https://www.hydro.gov.au/webapps/jsp/charts/charts.jsp?chart=Aus781&subchart=0 |
| Holdfast Bay site photographs 1981 | Miscellaneous | Photographs | 1981 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 1982 | Miscellaneous | Photographs | 1982 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 1987 | Miscellaneous | Photographs | 1987 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2000 | Miscellaneous | Photographs | 2000 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2001 | Miscellaneous | Photographs | 2001 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2002 | Miscellaneous | Photographs | 2002 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2004 | Miscellaneous | Photographs | 2004 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2005 | Miscellaneous | Photographs | 2005 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2007 | Miscellaneous | Photographs | 2007 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2008 | Miscellaneous | Photographs | 2008 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2009 | Miscellaneous | Photographs | 2009 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2010 | Miscellaneous | Photographs | 2010 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2011 | Miscellaneous | Photographs | 2011 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2012 | Miscellaneous | Photographs | 2012 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2013 | Miscellaneous | Photographs | 2013 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2015 | Miscellaneous | Photographs | 2015 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2016 | Miscellaneous | Photographs | 2016 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2017 | Miscellaneous | Photographs | 2017 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2018 | Miscellaneous | Photographs | 2018 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Holdfast Bay site photographs 2019 | Miscellaneous | Photographs | 2019 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| South Australia oblique photographs | Miscellaneous | Photographs | 1995-2016 | DEW | South Australia | JPG, BMP | NA | NA | NA |
| Kingston Park site photographs | Miscellaneous | Photographs | 1900-2016 | DEW | Kingston Park | JPG | NA | NA | NA |
| Seacliff site photographs | Miscellaneous | Photographs | 1880-2010 | DEW | Seacliff | JPG | NA | NA | NA |
| South Brighton site photographs | Miscellaneous | Photographs | 1880-2010 | DEW | South Brighton | JPG | NA | NA | NA |
| Brighton Jetty site photographs | Miscellaneous | Photographs | 1880-2016 | DEW | Brighton Jetty | JPG | NA | NA | NA |
| North Brighton site photographs | Miscellaneous | Photographs | 1937-2016 | DEW | North Brighton | JPG | NA | NA | NA |
| Minda Dunes site photographs | Miscellaneous | Photographs | 1967-2007 | DEW | Minda Dunes | JPG | NA | NA | NA |
| Somerton site photographs | Miscellaneous | Photographs | 1953-2016 | DEW | Somerton | JPG | NA | NA | NA |
| Glenelg South site photographs | Miscellaneous | Photographs | 1960-2016 | DEW | Glenelg South | JPG | NA | NA | NA |
| The Broadway site photographs | Miscellaneous | Photographs | 1890-2010 | DEW | The Broadway | JPG | NA | NA | NA |
| Glenelg site photographs | Miscellaneous | Photographs | 1892-2016 | DEW | Glenelg | JPG | NA | NA | NA |
| Anzac Hwy site photographs | Miscellaneous | Photographs | 1953-2015 | DEW | Anzac Hwy | JPG | NA | NA | NA |
| Patawalonga site photographs | Miscellaneous | Photographs | 1891-2017 | DEW | Patawalonga | JPG | NA | NA | NA |
| Glenelg North site photographs | Miscellaneous | Photographs | 1953-2016 | DEW | Glenelg North | JPG | NA | NA | NA |
| Holdfast Bay mosaic 1949 | Miscellaneous | Photographs | 1949 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2004 | Miscellaneous | Photographs | Feb-04 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2006 | Miscellaneous | Photographs | Feb-06 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2010 | Miscellaneous | Photographs | Feb-10 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2014 | Miscellaneous | Photographs | Feb-14 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2015 | Miscellaneous | Photographs | Feb-15 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2016 | Miscellaneous | Photographs | Feb-16 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2017 | Miscellaneous | Photographs | Jan-17 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2012 | Miscellaneous | Photographs | Jan-12 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2018 | Miscellaneous | Photographs | Jan-18 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2019 | Miscellaneous | Photographs | Jan-19 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2008 | Miscellaneous | Photographs | Feb-08 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Holdfast Bay mosaic 2020 | Miscellaneous | Photographs | Mar-20 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |



Data Register



| Dataset | Category | Sub-Category | Date | Custodian | Extent | Format | Horizontal Datum | Vertical Datum | Available from |
|---|--------------------|-------------------------------|---------------|----------------------|-----------------|--------|------------------|----------------|---|
| Holdfast Bay mosaic 2007 | Miscellaneous | Photographs | May-07 | City of Holdfast Bay | Holdfast Bay | ECW | MGA 94 Zone 54 | NA | NA |
| Digital Elevation Model 2018 | Physical Setting | Elevation | 2018 | City of Holdfast Bay | Holdfast Bay | TIF | MGA 94 Zone 54 | m ASL | NA |
| Digital Elevation Model 2013 | Physical Setting | Elevation | 2008 and 2011 | Geoscience Australia | Holdfast Bay | TIF | MGA 94 Zone 54 | m ASL | https://elevation.fsdf.org.au/ |
| Adelaide Living Beaches Cell 1 Strategy | Coastal Management | Coastal management activities | 2015-2020 | DEW | Holdfast Bay | DOCX | NA | NA | NA |
| Adelaide Living Beaches Glenelg sand grain analysis | Physical Setting | Geomorphology and geology | 2013-2020 | DEW | Glenelg Beaches | XLSX | NA | NA | NA |
| Adelaide Living Beaches Cell 1 Pipeline Route | Coastal Management | Coastal management activities | NA | DEW | Holdfast Bay | CAD | NA | NA | NA |
| Holdfast Bay site photographs | Miscellaneous | Photographs | 2021 | City of Holdfast Bay | Holdfast Bay | JPG | NA | NA | NA |
| Water Tech seawall condition inspection | Coastal Values | Built assets | 2020 | City of Holdfast Bay | Holdfast Bay | GDB | MGA 94 Zone 54 | NA | NA |
| City foreshore and drainage assets | Coastal Values | Built assets | NA | City of Holdfast Bay | Holdfast Bay | GDB | MGA 94 Zone 54 | NA | NA |



Appendix D - Engagement Best Practice Review



Appendix E - Preliminary Risk Assessment Technical Note

Technical Note

Date: 11/08/2021

Client: City of Holdfast Bay

Subject: Holdfast Bay CAP Phase 1 Stocktake - Preliminary coastal hazard mapping and risk assessment

1 Introduction

City of Holdfast Bay (City) commissioned Wavelength Consulting Pty Ltd (Wavelength) to undertake Phase 1 of the Coastal Adaptation Plan (CAP) in accordance with the South Australian LGA Coastal Adaptation Guidelines (hereafter referred to as “the Guidelines”). This stage of the work involves:

- development of preliminary coastal erosion and inundation maps, and
- preliminary risk assessment to identify areas and assets at risk for the agreed planning horizons (2021, 2050, 2100)

This Technical Note outlines the calculations undertaken to support the preliminary erosion and inundation mapping and the preliminary risk assessment.

For ease of assessment, the study area has been split into five segments (as shown in Figure 1) based on the underlying geomorphology and specific features such as coastal structures and dune systems:

- **Segment 1:** Glenelg North
- **Segment 2:** Glenelg
- **Segment 3:** Glenelg South to Brighton, including Minda Dunes (Segment 3a)
- **Segment 4:** Seacliff
- **Segment 5:** Kingston Park



Figure 1: Definition of assessment segments

2 Existing coastal management

Holdfast Bay is a highly developed coastline, with a number of existing coastal management measures. These management measures play an important role in reducing erosion and inundation risk and have been considered as part of the preliminary hazard and risk assessment.

The following provides a summary of the existing coastal management measures, with further detail provided in the CAP Phase 1 Stocktake report (Wavelength, 2021):

Adelaide Living Beaches (ALB) program:

- ALB is a State Government program which aims to maintain beach widths along the Adelaide Metropolitan coastline for coastal protection and amenity purposes (DEH, 2005). Whilst the ALB strategy is in place until 2025, we understand the ALB will continue beyond this however the details are yet to be released by the State Government.
- Segments 2 to 5 of the City's shoreline are within Cell 1 of the ALB, involving the collection of approximately 100,000 m³ of sand from Segment 1 (Glenelg) and pumping via a pipe to a number of sand discharge points in Segments 3 to 5.
- Segment 1 (Glenelg North) is at the southern end of Cell 2 of the ALB program. Each year in Spring, sand is collected to the south of West Beach Harbour and backpassed with trucks and placed on the Glenelg North beaches. Additionally, approximately 10,000 m³ sand and seagrass wrack is dredged from the Glenelg Harbour entrance and pumped into the nearshore area each year.

Glenelg Harbour Breakwaters:

- The Glenelg Harbour entrance channel was upgraded in the late 1990's in conjunction with the Holdfast Shores development.
- Two rock breakwaters have been constructed on either side of the harbour entrance to help maintain navigability. An offshore rock breakwater was also constructed as part of the development. This offshore breakwater traps sand within Segment 2 (Glenelg).
- The harbour breakwaters trap sand on the southern side of the harbour, reducing sand feed into Glenelg North. This may have contributed to the shoreline erosion observed here since their construction.

Seawalls:

- Most of the Holdfast Bay coastline is backed by seawalls, which have been constructed to reduce erosion impacts since the early 1930's. Minda Dunes (Segment 3) is the only section of coast not protected by a seawall or breakwater structure.
- Rock armoured seawalls occur through Segments 1, 3, 4 and 5. Water Technology completed a condition inspection of the visible rock seawalls in 2020, which found the condition varies significantly across the study area (Water Technology, 2020). Some of the seawalls, such as in Segment 4 (Seacliff) are buried by dunes and their condition is unknown.
- Vertical concrete seawalls are located through most of Segment 1 (Glenelg) and a short section in Segment 4 (Seacliff) at Wheatland St. Details of the vertical seawall condition and toe levels are limited.

Patawalonga storm barrage:

- A storm barrage or barrier was constructed across the Patawalonga River entrance in 1959 to Gulf St Vincent tides from flooding Glenelg North and Adelaide Airport, diverting stormwater from flooding properties along the Patawalonga Lake system (DEW, 2020).
- The storm barrage is to be replaced this year. The design for the upgraded barrage is currently out for tender and the design level is currently unknown. Future sea level rise (SLR) will be incorporated into the upgraded structure however details are unknown at this stage (Pers. comm. Craig Reardon, Department of Environment and Water (DEW) 27/04/2021).

3 Erosion mapping

3.1. Approach

The South Australian Coast Protection Board's Policy for coastal erosion, flooding and sea level rise states that for consideration of erosion setbacks, estimates need to be made of the potential coastal retreat during the next 100 years.

The policy recommends that local long-term erosion or accretion trends be considered, as well as potential storm erosion, and likely recession due to SLR (CPB, 1992). These three factors have been considered in establishing the erosion mapping for the relevant planning horizons (2050 and 2100) and are discussed in more detail below, they are referred to throughout this technical note as follows:

- **S1** - Storm erosion;
- **S2** - Long-term erosion or accretion;
- **S3** - Recession due to SLR

The calculated setback distances provide a first pass assessment of the areas at risk to inform future phases of the CAP, and are to be used as approximations only. Recognising these limitations, a conservative approach has generally been adopted throughout the calculations.

3.2. ALB Program

As noted, beach widths are currently maintained in Segments 1 to 5 via the ALB program, in which the details beyond its current program to 2025 are currently unknown. This will have an impact on the S2 calculation (long-term erosion or accretion). The erosion maps have been prepared assuming the ALB continues in its current form until the end of the century.

4 Storm erosion modelling (S1)

4.1. Software

SBEACH (Storm-induced BEACH Change) software was used to predict and analyse short-term, storm-induced erosion at the site. The SBEACH model is the most commonly used model within industry for evaluating beach response to storms, and has been successfully calibrated and verified for a number of Australian beaches (Carley, 2001).

SBEACH simulates cross-shore beach, berm, and dune erosion produced by storm waves and water levels. The software has the following inputs:

- varying input water levels (from combined storm surge and tide),
- varying wave heights and periods,
- nearshore bathymetry, beach and dune profiles, and
- sediment grain size.

4.2. Model inputs

4.2.1. Bathymetry profiles

A review was undertaken of the 25 cross-shore profiles obtained from DEW which cover the length of Holdfast Bay. Of the 25 profiles, 6 profiles were selected to represent conditions in Segments 1 to 5 of the coastline as detailed in Table 1. Beach and seawall profiles in Segment 3, from Glenelg South to Brighton, are similar except for the approximate 400m stretch of dune backed beach at Minda Dunes. Therefore, two profiles were used in Segment 3, one for seawall backed portions (Segment 3) and one for Minda Dunes (hereafter referred to as Segment 3A).

The Glenelg North profile experiences significant fluctuations in beach width from year to year. The beach width in the 2020 profile is close to the narrowest width (within 5m) since ALB was implemented and is considered a conservative profile for use in SBEACH modelling of storm erosion. Further analysis of beach widths in this area is recommended as part of the next stage detailed mapping.

The cross-shore profiles used in the SBEACH modelling were interpolated to a grid resolution of 1m.

Table 1: Summary of shoreline profiles used for SBEACH modelling

| Segment | DEW Profile No. | Location | Date |
|---------|-----------------|---|------------|
| 1 | 200025 | Glenelg North – King St | 18/01/2020 |
| 2 | 200027 | Glenelg Jetty | 22/01/2020 |
| 3a | 200032 | Minda Dunes | 11/02/2020 |
| 3 | 200035 | Brighton Jetty | 11/02/2020 |
| 4 | 200038 | Seacliff – Wheatland St | 11/02/2020 |
| 5 | 200039 | Kingston Park – Seacliff Surf Life Saving Club (SLSC) | 11/02/2020 |

4.2.1. Horizontal Setback Datum

The Horizontal Setback Datum (HSD) or baseline, which is typically defined as the base of the erosion scarp on an eroding shoreline, or the vegetation line on an accreting coastline. The HSD was estimated

through the use of aerial photographs, cross-shore profiles, and LiDAR data. Where present, the vegetation line is approximately +2.4 m Australian Height Datum (AHD). This level was applied across the full length of the study area as a baseline, including segments with seawall structures.

4.2.2. Sediment grain size

Sand characteristics were obtained from sediment samples collected as part of the Adelaide Living Beaches (ALB) program in 2010 (Deans et al, 2010) and recent PSDs collected by DEW in the Glenelg ALB sand collection area. These characteristics were applied to each coastal segment. The mean (D_{50}) sediment diameter varied along the coastline, from fine to medium sand.

Table 2: Sediment Data

| Segment | Location | D50 (mm) |
|---------|------------------------|----------|
| 1 | King St Glenelg | 0.25 |
| 2 | Glenelg Jetty | 0.29 |
| 3a | Minda Dunes | 0.30 |
| 3 | Dunluce Ave, Brighton | 0.30 |
| 4 | Wheatland St, Seacliff | 0.25 |
| 5 | | |

4.2.3. Design storm inputs

Site specific wave data was not available for this study, which is noted as a significant limitation. The wave parameters applied to the storm beach modelling are summarised in Table 3 below.

Table 3: Design storm parameters

| Model Parameter | Value | Justification |
|---------------------------|--|---|
| Design storm event | 1% Annual Exceedance Probability (AEP) | The policy establishes the 100yr Average Recurrence Interval (ARI), equivalent to the 1% AEP, as the standard for assessing coastal development in South Australia (CPB, 1992). |
| Storm duration | 96hrs | <p>Based on the results of the analysis of the Cape de Couedic wave buoys (approx.. 200km from Holdfast Bay) the median storm duration was found to be 43hrs (Shand et al., 2011).</p> <p>As part of the 2005 ALB strategy development, Coastal Engineering Solutions (CES) completed a review of significant storms since 1946 causing beach and dune erosion on the Adelaide coastline (CES, 2004). The CES review found that a significant storm event in early November 1994 resulted in the second highest storm bite volume, following the April 1956 storm event.</p> <p>The November 1994 storm event consisted of two significant storm fronts, resulting in elevated waves and water levels for around 4 days (96 hours). The extended duration of elevated water levels for this event is thought to be significant factor in the modelled erosion and given the large amount of wave and water level model output available in CES (2004) for this event, was used within the SBEACH modelling.</p> |
| 1% AEP water level | 1% AEP water level = +2.7m AHD | A 1% AEP water level estimate of +2.7m AHD at Holdfast Bay was calculated by the Coast Protection Board. The 1994 storm event was disaggregated into tide and tidal anomaly, with the tidal anomaly then factored and added back to the tidal signal so that the peak water levels corresponded with a 100yr ARI water level. This is considered a conservative but not unreasonable estimate of conditions given low pressure systems are responsible for large waves, strong winds and storm surges (WRL, 2013). |
| 5% AEP wave height | 3.6m at -3 mAHD contour | <p>CES (2004) modelled a peak wave height of 3.6m during the November 1994 storm. This corresponds to an approximate 20yr ARI (5% AEP) wave height based on modelling for the Holdfast Shores Wave Climate Studies (Lawson and Treloar, 1996). Based on wave model output depths in CES (2004), this wave height has been applied at the -3 mAHD within SBEACH across the study area.</p> <p>SBEACH modelling suggests these waves are depth limited in the nearshore region during the 1% AEP water level conditions.</p> |
| 1% AEP wave period | 9s | Modelling by CES (2004) found a mean wave period of 9s within Gulf St Vincent for the November 1994 storm event, which was applied within this study. |
| Wave angle | Shore normal | Conservative approach for modelling storm erosion in SBEACH. |

4.3. Results

4.3.1. Seawall failure

As noted, seawalls of varying condition and type exist along most of the study area. A first pass assessment of potential seawall failure was completed for the 1% AEP storm event presented in Table 3. The following seawall failure mechanisms were investigated:

Armour damage:

- Large waves can cause armour rocks to move and with sufficient storm duration expose the underlying filter layers, leading to seawall failure.
- The Van der Meer formula, described in the Coastal Engineering Manual (USACE, 2006) for rock armour design was used to calculate the damage coefficient (Sd) for the modelled wave conditions. An **Sd value greater than 8** suggests failure of the seawall from armour movement (USACE, 2006).
- Rock armour weight at each location was taken from the Water Technology (2020) seawall condition inspection report. Water Technology (2020) assumed a rock density of 2.3 tonnes/m³, which is at the lower limit of densities anticipated for dolomite rocks (Pers. Comm. Steven Stefanidis, DEW 21/04/2021).
- Details of the vertical seawall condition and cross-section are limited. Given the vertical seawalls are mostly buried by beach and dunes, an assumption is the concrete seawalls are sufficient strength to withstand the 1% AEP wave forces for this stage of the assessment.

Undercutting:

- Seawalls can fail due to undercutting, as the beach in front of the seawall is eroded, causing the seawall to slump and armour/concrete to fail.
- The seawall profile was entered into SBEACH, allowing the erosion depth to be calculated for the 1% AEP storm event. A **toe depth of -1.25 mAHD** was assumed for all seawall types, based on the Coast Protection Board's standard seawall design (Water Technology, 2020).
- Undercutting failure was assumed to occur if the erosion depth exceeded the toe depth.

Overtopping:

- Wave overtopping occurs when high water levels allow waves to break over a seawall, scouring and dislodging the crest rocks and filter layers.
- 1% AEP waves and water levels were output from SBEACH at the seawall locations.
- Seawall crest levels were calculated using the 2018 LiDAR data.
- Overtopping rates were calculated using the formulas available on CRESS.nl (CRESS, 2018).
- The following rates were used to assess seawall damage based on Coastal Engineering Manual values (USACE, 2006):
 - Damage to **unpaved crests: 50 to 200 litres per second**
 - Damage to **paved crests: >200 litres per second**

Results of the preliminary seawall failure review are presented in Table 4 for the 2021 1% AEP storm event. Values have been colour coded as below:

- **Green** – values are well below established limits, with a low risk of failure.
- **Orange** – values are close to established limits, with a moderate risk of failure.
- **Red** – values are well over established limits, with a high risk of failure.

Table 4: Seawall failure mechanisms for 2021 1% AEP event

| Segment | Location | Seawall type | Armour damage | | Undercutting | Overtopping | | Result |
|---------|---|----------------------------------|-----------------|-------------------------|--------------------|--------------------|------------------------|---|
| | | | Armour size (t) | Damage Coefficient (Sd) | Scour Depth (mAHD) | Crest Level (mAHD) | Overtopping rate (l/s) | |
| 1 | Glenelg North - King St | Rock Armoured | 2 | 36 | -2 | +4.2 | 160 | <ul style="list-style-type: none"> Narrow beach width results in large waves at seawall Seawall failure due to armour movement and undercutting Overtopping damage in unpaved areas |
| 2 | Glenelg Jetty | Buried vertical concrete seawall | - | | +2 | +3.3 | 1 | <ul style="list-style-type: none"> Wide beach means small waves reach seawall in 2021 1% AEP event |
| 3 | Brighton Jetty | Rock Armoured | 1.2 | 17 | -1.3 | +3.9 | 110 | <ul style="list-style-type: none"> Seawall failure due to armour movement Some damage from overtopping and scour |
| 4 | Seacliff - Wheatland St | Buried vertical concrete seawall | | | - | | | <ul style="list-style-type: none"> Seawall covered in dune and not exposed to waves in 2021 1% AEP storm event |
| 5 | Kingston Park - Seacliff Surf Life Saving Club (SLSC) | Semi-buried Rock Armoured | 0.8 | 1 | +1.4 | +3.8 | 1 | <ul style="list-style-type: none"> Wide beach means seawall not anticipated to fail in 2021 1% AEP event |

4.3.2. S1 Erosion

Following review of seawall failure, the potential storm erosion was modelled using SBEACH. The S1 erosion is measured from the HSD or baseline. The results of the SBEACH modelling are summarized in Table 5 below. An example of the SBEACH modelling results is provided in Figure 2 below.

Table 5: Setback allowances

| Segment | DEW Profile | Location | Storm erosion allowance (m) ¹ |
|---------|-------------|---------------------------|--|
| 1 | 200025 | Glenelg North | 27 |
| 2 | 200027 | Glenelg | 0 |
| 3a | 200032 | Minda Dunes | 17 |
| 3 | 200035 | Glenelg South to Brighton | 20 |
| 4 | 200038 | Seacliff | 8 ² |
| 5 | 200039 | Kingston Park | 0 ³ |

Notes: 1. Includes geotechnical stability factor of 30° applied from toe of erosion to account for dune slumping after storm.
 2. Erosion of dune in front of seawalls in Segment 4.
 3. An 8m S1 erosion allowance applied for sections of dune in front of seawall in Segment 5.

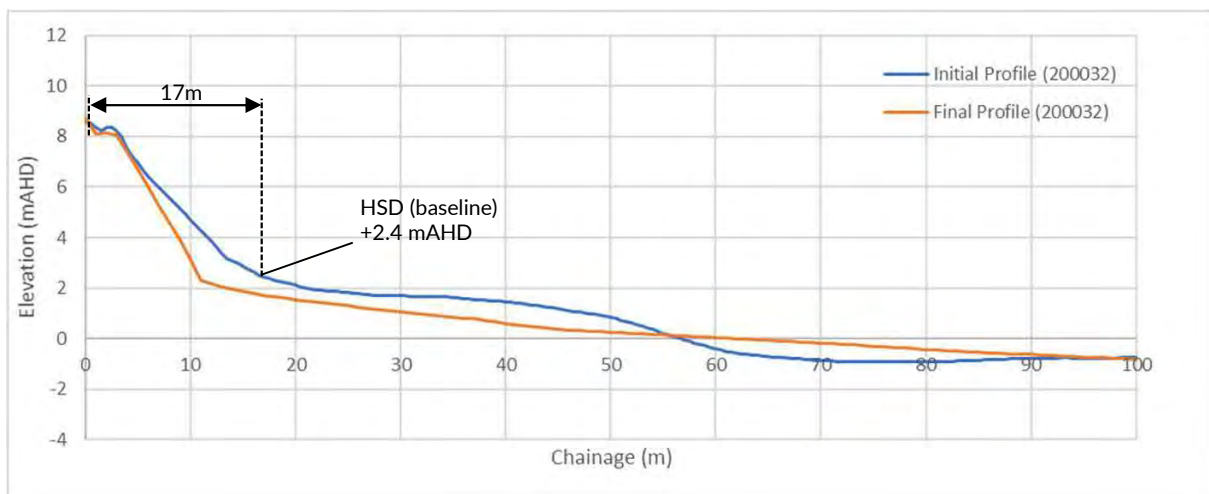


Figure 2: Example of SBEACH Results for Segment 3a Minda Dunes (Profile 200032)

5 Long term shoreline recession (S2)

5.1. Summary of trends in shoreline movement

The following presents a summary of the key assumptions and shoreline movement trends adopted for the preliminary erosion hazard mapping. Key coastal processes have been detailed in Section 2 of the CAP Phase 1 report (Wavelength, 2021).

Segment 1 – Glenelg North:

- Since construction of Holdfast Shores (late 1990's), the Segment 1 shoreline has retreated at approximately 0.8 m/yr based on DEW Profile 200025 recession rate.
- Since the introduction of the ALB program in 2005, beach widths in Segment 1 have been managed by DEW through backpassing from West Beach Harbour to Glenelg North (Cell 2). The beach width at DEW Profile 200025 has generally been maintained over the longer term by the ALB program. However, beach widths can vary in the order of 10 m between annual sand placement campaigns, which has an impact on potential storm erosion and seawall damage (refer Section 4.2.1).
- The recommended S2 allowance for Segment 1 is **0 m/yr**, assuming on-going backpassing under the ALB program.

Segment 2 - Glenelg:

- Since construction of Holdfast Shores and the offshore breakwater, Glenelg Beach acts as a sand trap and generally accretes. Sand is collected here and pumped to the southern beaches (Segments 3 to 5) under the ALB program.
- It is assumed the offshore breakwater and Glenelg Harbour breakwaters will continue to function and trap sand over the coming 80 years. These structures may structurally fail without maintenance but are likely to continue to trap sediment (i.e remain semi-functional).
- The recommended S2 allowance is **0 m/yr**.

Segments 3 to 5– Glenelg South to Kingston Park:

- Segments 3 to 5 have an underlying erosion trend due to significant northerly longshore transport, with limited sand feed from the south. However, since 2005 this area has been managed by DEW under the ALB program.
- The underlying shoreline erosion rate was calculated by analysing historical aerial photographs in the Minda Dunes area (the only section not backed by seawalls) between 1931 and 1972. This is prior to implementation of backpassing and nourishment campaigns. The analysis identified a historical erosion rate of approximately 0.6 m/yr over the 40-year period.
- The recommended S2 allowance is **0 m/yr**. This assumes the ALB counters longshore transport erosion but does not counter the increased erosion from SLR.
- The southern 300m of Segment 5 is classified as a rocky coastline (DEW, 2021) and is therefore assumed to not erode.

The assumed S2 erosion allowance for all segments is **0 m/yr**, resulting in an **S2 allowance of 0m** to 2050 and 2100. These values assume that the ALB program continues to 2100. Should the ALB program cease, the S2 erosion allowances would be significant.

6 Recession due to SLR (S3)

The most widely used method for estimates of recession as a result of SLR is the Bruun Rule (Bruun 1962, 1988). The limitations of this method are well recognised (Ranasinghe et al., 2007) however no robust and scientifically recognised alternative currently exists (WRL, 2013) and the application of the Bruun Rule remains a part of standard practice, and is supported by a number of state planning policies (WA, NSW and QLD) (Mariani et al, 2012).

A key assumption for application of the Bruun Rule is that the profile is modified by cross shore sand transport only and that longshore sand transport does not contribute. In areas where there is high longshore sand transport and / or areas with groynes or breakwaters that intercept the longshore transport, the contribution to profile evolution by longshore transport is a consideration. These high longshore transport conditions apply to the majority of the study area shoreline.

In instances where the Bruun Rule cannot be applied, and in the absence of long-term monitoring data, a Bruun factor “rule of thumb” is typically applied to provide a first pass assessment for setbacks due to sea level rise, based on the active slope of the shore profile. Analysis of the beach profiles and active slopes available in each segment are outlined in Table 6, along with the resultant Bruun Factor.

Table 6: Summary of Bruun factor estimates

| Segment | Location | Active Slope V:H | Estimated Bruun Factor | Upper Limiting Bruun Factor |
|---------|----------------|------------------|------------------------|-----------------------------|
| 1 | Glenelg North | 1:25 | 25 | 50 |
| 2 | Glenelg Jetty | 1:36 | 36 | 50 |
| 3a | Minda Dunes | 1:17 | 17 | 50 |
| 3 | Brighton Jetty | 1:25 | 25 | 50 |
| 4 | Seacliff | 1:33 | 33 | 50 |
| 5 | Kingston Park | 1:32 | 32 | 50 |

An **upper limit factor of 50** is proposed to account for factors not considered by the Bruun Rule, including changes in longshore transport, tidal currents, seagrass vegetation and wave penetration into Gulf St Vincent. By adopting this “rule of thumb” approach it provides a conservative approach to identifying areas potentially at risk.

The state planning policy recommends an allowance of 0.3 m for SLR to the year 2050, and 1 m by 2100, when considering coastal inundation and long-term recession effects and planning for coastal development. Table 7 below presents the estimates of mean SLR for the planning horizons 2050 and 2100 and the subsequent erosion setback distances using the upper limiting Bruun Factor.

Table 7: Sea level rise and erosion setback scenarios

| Segment | Planning Horizon | Sea Level Rise (m) | Shoreline Setback (Upper limiting Bruun Factor, BR50) |
|---------|------------------|--------------------|---|
| 1 to 5 | 2050 | 0.3 | 15 |
| | 2100 | 1.0 | 50 |

7 Summary of erosion set back

A summary of setback allowances from the proceeding information is presented in Table 8. The preliminary erosion hazard maps are presented in Appendix 1.

Key assumptions related to the combined effects of S1, S2 and S3 factors to develop the erosion hazard maps presented in Appendix 1 are outlined below:

- **Segment 1 (Glenelg North)** - it's assumed that the rock seawalls fail in the 1% AEP event in 2020.
- **Segment 2 (Glenelg)** - it's assumed that the vertical concrete seawall becomes exposed due to SLR and fails in the design 1% AEP from approximately 2050 onwards.
- **Segment 3 (Glenelg South to Brighton)** - it's assumed that the rock seawalls fail in the 1% AEP event in 2020 and that the geotextile sand container groynes do little to trap sand as sea levels rise.
- **Segment 4 (Seacliff)** - the buried rock seawalls do not fail until exposed from combined erosion (S2) and SLR (S3) between 2050 and 2100.
- **Segment 5 (Kingston Park)** - The buried rock seawall is exposed and fails in 2050 from SLR (S3).

Table 8: Summary of setback allowances for present day, 2050 and 2100

| Segment | Location | Present Erosion setback (m) S1 | Future erosion setback (m) S1 + S2 + S3 | |
|---------|----------------|-----------------------------------|--|------|
| | | | 2050 | 2100 |
| 1 | Glenelg North | 27 | 42 | 77 |
| 2 | Glenelg | 0 | 15 | 50 |
| 3a | Minda Dunes | 17 | 32 | 67 |
| 3 | Brighton Jetty | 20 | 35 | 70 |
| 4 | Seacliff | 8 | 23 | 58 |
| 5 | Kingston Park | 0 | 15 | 50 |

A preliminary erosion risk assessment using these setback values is presented in Section 9.

8 Coastal inundation mapping

8.1. Approach

Bathtub modelling is a simplistic approach to identify areas of risk to coastal inundation. Bathtub models are elevation based, applying a deterministic line across a digital elevation model (DEM), identifying the areas below the given inundation scenario.

There are a number of limitations to the bathtub model approach, studies that have assessed bathtub models against dynamic models suggest that a dynamic mapping method is best used for site-specific hazard assessments where high accuracy is required at the property scale (New Zealand Government, 2017). Further to this, the quality of the DEM, which is a function of the spatial resolution and the vertical accuracy of the data source, has a great influence on the accuracy of the inundation mapping.

For the purposes of providing a first pass to identify areas at risk of coastal inundation, the bathtub model approach is considered sufficient for use in this study.

Coastal inundation is only mapped in low lying inland areas where an overland flow was evident in the DEM. Inland flood connectivity through the stormwater drainage network has not been completed as part of this preliminary assessment nor has rainfall or catchment flooding impacts (refer Section 8.4 for further details).

8.2. Inundation parameters

The SA Coast Protection Board has utilised the parameters presented in Table 9 for the 1% AEP ocean water level event for Glenelg and the surrounds since 1993. These values match recent analysis undertaken by University of Western Australia, which found a 1% AEP ocean water level of +2.4 mAHD at Glenelg (Pattiaratchi et al., 2016).

Table 9 presents the coastal inundation parameters for the relevant horizons, which were applied in the applied for the coastal inundation mapping.

Table 9: Coastal Inundation Parameters for Holdfast Bay (mAHD)

| Parameter | 2021 | 2050 | 2100 |
|--------------------------|-------------|-------------|-------------|
| 1% AEP Ocean water level | +2.4 | +2.4 | +2.4 |
| Wave set up | 0.3 | 0.3 | 0.3 |
| Sea level rise | - | 0.3 | 1.0 |
| TOTAL | +2.7 | +3.0 | +3.7 |

8.3. Results

The inundation mapping results are presented in Appendix 2, a review of the mapping is summarised below:

8.3.1. Segment 1 – Glenelg North:

- For the 2021 and 2050 scenarios, there is limited inundation along the shoreline due to the high levels of the seawall in the area. Additionally, the Patawalonga barrage, with a level of approximately +3.2 mAHD, restricts ocean inundation of low lying areas along the Patawalonga Lake and River.
- By the 2100 scenario, storm tide inundation is anticipated to overtop the existing Patawalonga barrier. This results in flood depths of more than 1m in some locations along the Patawalonga Lake.

8.3.2. Segment 2 - Glenelg:

- For the 2021 and 2050 scenario, there is limited inundation along the shoreline due to the high levels of the seawall in the area. The inundation maps show that the Holdfast Shores development is inundated however this is believed to represent a DEM error and is not representative of the building floor levels. This is a data gap that needs to be filled through confirmation of the Holdfast Shores as-constructed floor levels and below ground carpark levels.
- Under the 2100 scenario, the 1% AEP coastal inundation levels exceed the foreshore seawall level in a number of locations, allowing ocean water to flow into low lying areas of Glenelg.

8.3.3. Segment 3 - Glenelg South to Brighton:

- For the 2021 and 2050 scenario, there is limited inundation along the shoreline due to the high seawall levels in the area.
- Under the 2100 scenario, the 1% AEP coastal inundation levels exceed the foreshore seawall level in two locations, allowing ocean water to flow into low lying areas of Glenelg South. This results in flood depths up to approximately 0.5m in places.

8.3.4. Segments 4 and 5 - Seacliff and Kingston Park:

- For the 2021, 2050 and 2100 scenarios, there is limited inundation along the shoreline due to the high seawall and dune levels in the area.

8.4. Comparison to stormwater and catchment flooding

In 2014, Tonkin undertook a stormwater and catchment flood study for the Cities of Holdfast Bay and Marion (Tonkin, 2014). Flood maps for the following scenarios are available online:

- **Existing Scenario** using present day SLR and rainfall intensities:
<https://cityofmarionaus.maps.arcgis.com/apps/webappviewer/index.html?id=c774a6678f3645df9f95b097f0b28358>
- **Long Term Scenario** using a 0.5m SLR and 3% rainfall intensity increase, as well as changes to catchment imperviousness:
<https://cityofmarionaus.maps.arcgis.com/apps/webappviewer/index.html?id=fd0b3bc882d24d00b618c2b8b4e8c55b>

Comparison of the Tonkin modelling results with the coastal inundation mapping (Appendix 2) suggests:

- The two types of flooding are inter-related with increases in mean sea levels due to SLR directly affecting catchment and stormwater flood levels.
- 2021 and 2050 scenarios:
 - Flooding in the early part of the century (2021 and 2050 scenarios) is likely to be driven by catchment and stormwater flows rather than coastal inundation.
 - The high seawall and dune levels, as well as the Patawalonga storm barrier, reduce inland connectivity with the ocean.
- 2100 scenario:
 - An equivalent 2100 scenario, with a SLR of 1m, was not modelled by Tonkin. This should be modelled to determine the potential catchment and stormwater flooding in the later part of the century.
 - This modelling should include the upgraded Patawalonga storm barrier when details are confirmed.

9 Preliminary risk assessment

A preliminary risk assessment has been carried out to identify key assets and values that may be at risk from coastal flooding or erosion. The preliminary risk profiles have subsequently been used to identify priority areas at risk to inform future stages of the CAP.

9.1. Approach

A qualitative risk-based approach was developed to assess the magnitude of the risks associated with both erosion and flooding, as described below:

- **Consequence scale:** The assessment of consequences for both erosion and flooding was based on a “Do Nothing” scenario and adopting the local government framework for coastal risk assessments in Australia developed for damage to infrastructure and services and the environment (Wainwright, D. et.al, 2016), presented in Table 10.
- **Likelihood:** The hazard likelihood descriptors have been based on the cumulative probability of event occurring over the planning horizon, as developed by the Australian Geomechanics Society (AGS) in 2007, presented in Table 11.
- **Risk matrix:** The risk matrix was also taken from AGS (2007), as presented in Table 12.

The City of Holdfast Bay Risk Management Framework was considered for use in the preliminary risk assessment. However, the City’s framework was not used in this preliminary assessment because the Consequence scales, particularly for financial costs, have relatively low and narrow thresholds, which were likely to result in a catastrophic consequence for most asset groups and hazards. The chosen framework allows the extent (%) of damage prescribed in Table 10 from the consequence descriptor to determine the risk, which is more appropriate to consider broad scale consequences to asset groups.

9.1.1. Key assets and values

Key coastal assets and values along the Holdfast Bay coastline have been identified in Section 2 of the main report (Wavelength, 2021). These assets and values have been separated into coastal segments and where possible, assets showing similar levels of risk, such as residential properties, have been grouped for ease of display.

Whilst seawalls and breakwaters are assets, they have not been included as an asset in the risk assessment results, as they make up part of the risk mitigation and adaptation response. These protective assets are considered in Stage 6 of the CAP process.

9.1.2. Erosion

The SA LGA CAS Guidelines do not prescribe a method for evaluating the level of risk with regard to erosion, where loss of land may occur separately from loss of buildings, with varying financial implications. However, in most erosion cases total loss of land and assets will be the eventual outcome. The approach adopted was to use the extent (%) of damage prescribed in Table 10 from the consequence descriptor to determine the risk.

The following likelihood descriptors (Table 11) have been assigned for the erosion risk profiles:

- **Immediate zone of wave impact (ZWI) (S1)** - under the present-day scenario there is a 1% probability of the 1% AEP event occurring within the year, therefore an **Unlikely** likelihood descriptor was assigned.
- **Zone of Recession (ZR) (S1+S2+S3)** - For assessing coastal erosion to 2050 and 2100, the coastal hazard line descriptor **Possible** was adopted from the likelihood descriptors presented in Table 11.

9.1.3. Coastal inundation

For developing inundation risk profiles for each of the planning scenarios, inundation maps (Appendix 2) are used to identify the greatest depth of flood for each of the assets at risk. It was assumed that buildings were constructed on a 0.25 m high foundation, based on the recommendations in the CPB policy (1992). This is a broad assumption that should be confirmed or otherwise in the next phase.

For buildings, the damage curve presented in Figure 3 was used to determine the extent (%) of damage, which was then compared to the consequence descriptor in Table 10 to determine the risk.

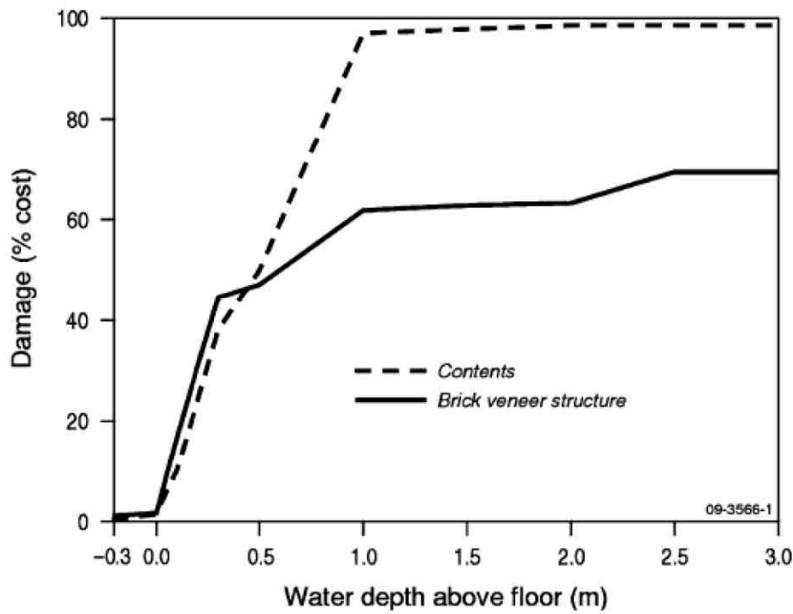


Figure 3: Flood Damage Curve (Balston et al, 2012)

For flooding of roads, a minor consequence was applied if the flood depth was greater than 0.4 m due to the short-term service disruption to the road.

In determining the likelihood descriptors assigned for the flood risk profiles, they were determined based on the probability of the 1% AEP event occurring for the relevant planning horizon, and assigning the relevant descriptor outlined in Table 11 for the three planning horizons:

- **Present day scenario:** there is a 1% probability of 1% AEP event occurring within the year therefore an **Unlikely** likelihood descriptor was assigned;
- **2050 scenario:** there is a 26% probability of a 1% AEP event occurring in the next 30 years, therefore a **Likely** likelihood descriptor was assigned;
- **2100 scenario:** there is an 55% probability of a 1% AEP event occurring in the next 80 years, therefore an **Almost Certain** likelihood descriptor was assigned

The preliminary risk assessment has focussed on coastal inundation only and does not consider flood risk from catchment or stormwater flooding.

9.2. Asset risk profiling results

The likelihood and consequence descriptors assigned for each asset and planning scenario are presented in Appendix 3. A High or Very High risk is generally considered unacceptable, requiring adaptation responses to be implemented prior to this risk level occurring.

A summary of priority risk segments and assets is provided in Section 9.3.

Table 10: Consequence descriptors (Wainwright, D. et.al, 2016)

| Descriptor | Approximate quantum of damage (cost) | Asset and Infrastructure - Description | Environment - Description |
|----------------------|---|--|---|
| Catastrophic | >100% | Significant permanent damage and/or complete loss of the infrastructure and the infrastructure service. Loss of infrastructure support and translocation of services to other sites. | Very significant loss to the environment. May include localised loss of species, habitats or ecosystems. Extensive remedial action essential to prevent further degradation. Restoration likely to be required. |
| Major | 40 to 100% | Extensive infrastructure damage requiring major repair Major loss of infrastructure service | Significant effect on the environment and local ecosystems. Remedial action likely to be required. |
| Medium | 10% to 40% | Limited infrastructure damage and loss of service Damage recoverable by maintenance and minor repair | Some damage to the environment, including local ecosystems. Some remedial action may be required |
| Minor | 1% to 10% | Localised infrastructure service disruption No permanent damage Some minor restoration work required | Minimal effects on the natural environment |
| Insignificant | <1% | No infrastructure damage, little change to service | No adverse effects on natural environment |

Table 11: Likelihood descriptors (AGS, 2007)

| Descriptor | Designated Annual Exceedance Probability | Designated cumulative probability of event occurring over design life of 60 years |
|------------------------|---|--|
| Almost Certain | 5% | 95.4% |
| Likely | 0.5% | 26% |
| Possible | 0.05% | 3% |
| Unlikely | 0.005% | 0.3% |
| Rare | 0.0005% | 0.03% |
| Barely Credible | <0.0005% | <0.03% |

Table 12: Risk Matrix (AGS, 2007)

| Likelihood | Consequence | | | | |
|-----------------|--------------|-----------|-----------|----------|---------------|
| | Catastrophic | Major | Medium | Minor | Insignificant |
| Almost Certain | Very High | Very High | Very High | High | Medium |
| Likely | Very High | Very High | High | Medium | Low |
| Possible | Very High | High | Medium | Medium | Very Low |
| Unlikely | High | Medium | Low | Low | Very Low |
| Rare | Medium | Low | Low | Very Low | Very Low |
| Barely Credible | Low | Very Low | Very Low | Very Low | Very Low |

9.3. Risk assessment summary

Key erosion risks are outlined below, focussing on assets at risk to 2050:

- **Glenelg North (Segment 1):**
 - **2021:** Existing rock seawalls are anticipated to fail in the 1% AEP storm event, resulting in a High erosion risk for foreshore assets, including the foreshore path.
 - **2050:** The beach and North Esplanade are at Very High risk of erosion.
- **Glenelg (Segment 2):**
 - **2050:** The beach in front of the exposed vertical seawall is at High risk of erosion in some locations.
- **Glenelg South to Brighton (Segment 3):**
 - **2021:** Existing rock seawalls are anticipated to fail in the 1% AEP storm event, resulting in a High erosion risk for foreshore assets, including the foreshore path and the Brighton Jetty abutment.
 - **2050:** The beach, Esplanade, Somerton SLSC, Minda Dunes and residential properties are at High to Very High risk of erosion.
- **Seacliff (Segment 4):**
 - **2050:** the beach is at High risk of erosion.
- **Kingston Park (Segment 5):**
 - **2050:** The beach is at Very High risk by 2050. The risk to foreshore assets does not become intolerable until 2100.

Key inundation risks are summarised below:

- **2021 and 2050:**
 - Coastal inundation risk is considered tolerable to 2050.
 - Flooding in the early part of the century (2021 and 2050 scenarios) is likely to be driven by catchment and stormwater flows rather than coastal inundation.
- **2100:**
 - Coastal inundation is anticipated to overtop the existing Patawalonga barrier and two breach points in Glenelg South. This results in flood depths of more than 0.5 m at a number of locations in the north of the study area (Segments 1 to 3). Key assets at intolerable risk in these segments include Glenelg and Patawalonga Lake foreshore assets, roads and residential and commercial properties

10 Summary of findings

Key findings from the preliminary coastal hazard mapping and risk assessment are outlined below:

- **Coastal risk:**
 - In general, assets and values in Holdfast Bay are at a higher risk to coastal erosion than coastal inundation.
 - **Coastal erosion - Glenelg North (Segment 1)** is the most at-risk segment:
 - The existing rock seawall is at risk of failing in a 1% AEP storm at present. This places the foreshore path and other foreshore assets at High risk of erosion in 2021.
 - Since construction of the Glenelg breakwater structures, Glenelg North has experienced significant narrowing of beach widths, which are maintained through intermittent backpassing under the ALB program. Storm erosion and on-going recession due to SLR places the North Esplanade at Very High risk of erosion by 2050.
 - **Coastal inundation:**
 - Flooding in the early part of the century (2021 and 2050 scenarios) is likely to be driven by catchment and stormwater flows rather than coastal inundation.
 - By 2100 with 1m SLR, coastal inundation is anticipated to be at intolerable risk levels in low lying portions of Glenelg South to Glenelg North (Segments 1 to 3), as the Patawalonga barrier and seawalls are inundated during the 1% AEP event.
- **Rock Seawall Failure:**
 - The rock seawalls in Glenelg North (Segment 1) and Glenelg South to Brighton (Segment 3) are currently at risk of failing in a 1% AEP storm.
 - The key seawall failure mechanisms are outlined below:
 - **Rock armour failure** – large waves can cause armour rocks to move and with sufficient storm duration expose the underlying filter layers, leading to seawall failure. Preliminary armour damage calculations suggest that the existing armour is too small for the existing 1% AEP wave conditions in Segments 1 and 3.
 - **Undercutting** – erosion of the beach below the seawall toe can lead to seawall slumping and failure. Seawall undercutting was assessed to be a high risk in Segment 1, given the relatively narrow beach widths fronting the seawall.
 - **Overtopping** – large waves combined with high water levels can lead to waves overtopping the seawall crest, causing scour of crest rocks and filter layers. In Segments 1 and 3, calculated overtopping rates were sufficient to damage seawalls with unpaved crests.
 - Preliminary calculations suggest that increased beach widths play a significant role in protecting the seawall structures from these failure mechanisms by limiting wave heights at the seawall. Maintaining beach widths through nourishment or backpassing should be a high priority as both a protective measure and for beach amenity.

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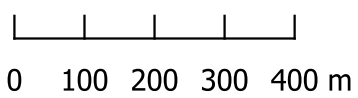
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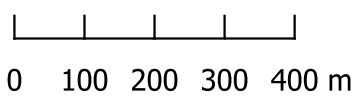


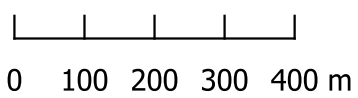
Appendix 1 – Coastal Erosion Mapping

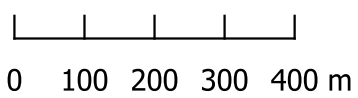




— 2021 Erosion
 - - 2050 Erosion
 - - 2100 Erosion
 — Baseline
 - - Segment Boundary
 - - LGA Boundary
 Imagery: CoHB 8 March 2020

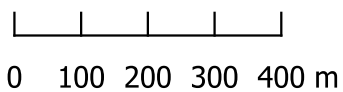
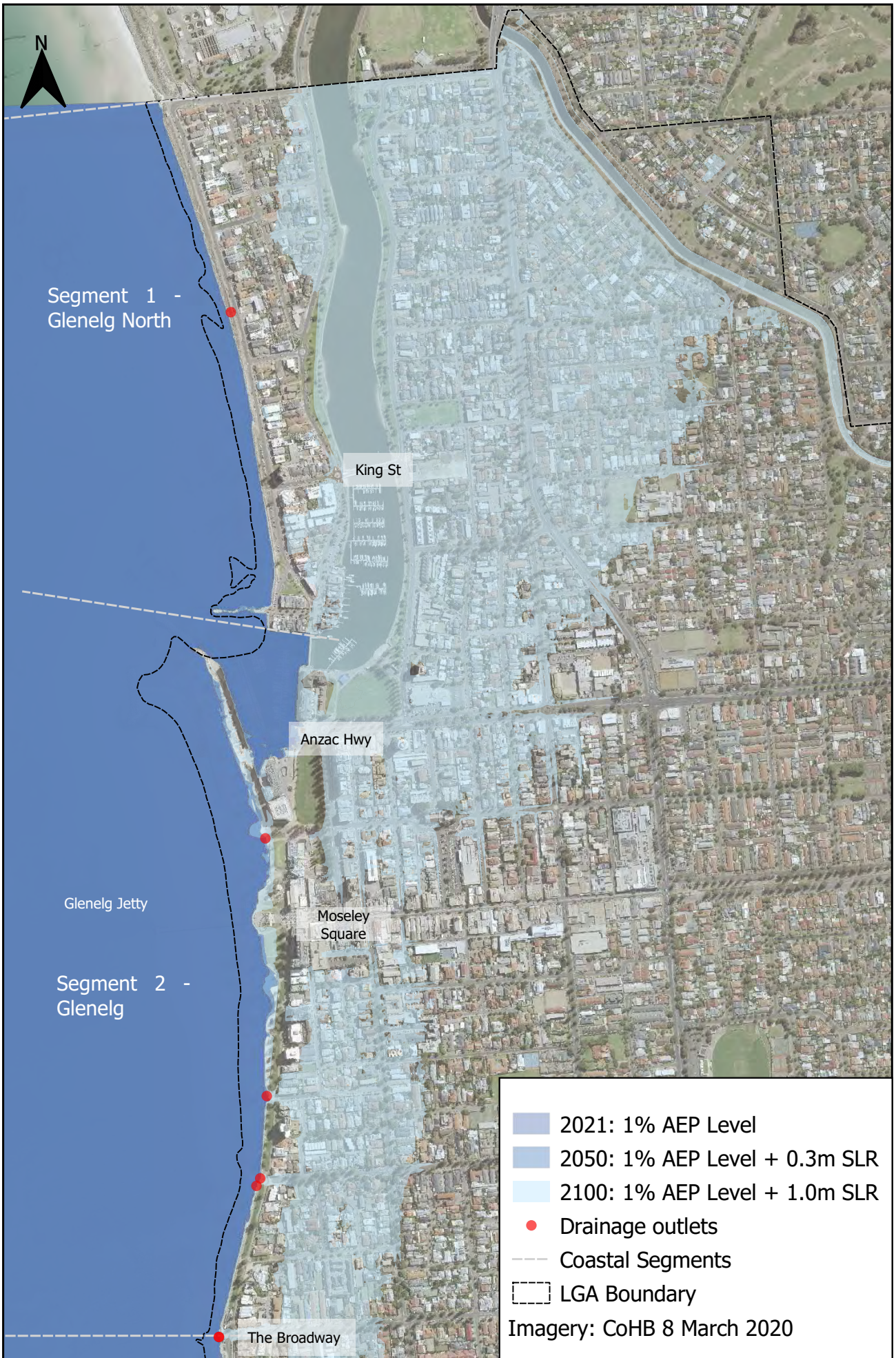


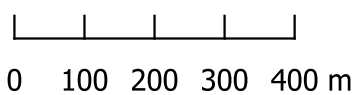


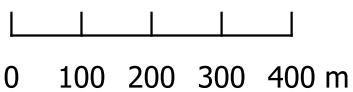


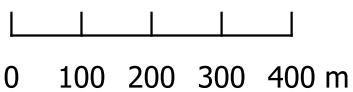


Appendix 2- Coastal Inundation Mapping











Appendix 3- Preliminary Risk Assessment Results

| | | Inundation | | | |
|--|--|--------------------------|---------------------|------------------------|--|
| Coastal Segment | Asset / Value | 2021 Unlikely | 2050 Likely | 2100 Almost Certain | Key assets at risk of inundation |
| Segment 1 - Glenelg North | Beach | Insignificant (Very Low) | Insignificant (Low) | Insignificant (Medium) | 2100: Roads, Reserves and Properties adjacent to the Patawalonga |
| | Footpath, foreshore reserve & facilities | no risk | no risk | no risk | |
| | Patawalonga footpath, river reserve & facilities | Minor (Low) | Minor (Medium) | Minor (High) | |
| | Roads (North Esplanade) | no risk | no risk | Minor (High) | |
| | Properties (commercial & residential) | no risk | no risk | Major (Very High) | |
| Segment 2 - Glenelg | Beach | Insignificant (Very Low) | Insignificant (Low) | Insignificant (Medium) | 2100: Roads, Reserves and Properties between ANZAC Hwy and Jetty Rd and within Glenelg South |
| | Glenelg Jetty Abutment | Insignificant (Very Low) | Insignificant (Low) | Insignificant (Medium) | |
| | Footpath, foreshore reserve & facilities | Minor (Low) | Minor (Medium) | Minor (High) | |
| | Roads | no risk | no risk | Minor (High) | |
| | Properties (commercial & residential) | no risk | no risk | Medium (Very High) | |
| Segment 3 - The Broadway to Brighton Jetty | Beach | Insignificant (Very Low) | Insignificant (Low) | Insignificant (Medium) | 2100: Roads, Reserves and Properties in Glenelg South |
| | Minda Dunes | Insignificant (Very Low) | Insignificant (Low) | Insignificant (Medium) | |
| | Somerton SLSC | no risk | no risk | no risk | |
| | Brighton Jetty Abutment | no risk | no risk | no risk | |
| | Footpath, foreshore reserve & facilities | Minor (Low) | Minor (Medium) | Minor (High) | |
| | Roads (Esplanade) | no risk | no risk | Minor (High) | |
| | Properties (commercial & residential) | no risk | no risk | Medium (Very High) | |
| Segment 4 - Seacliff | Beach | Insignificant (Very Low) | Insignificant (Low) | Insignificant (Medium) | |
| | Dunes | Insignificant (Very Low) | Insignificant (Low) | Insignificant (Medium) | |
| | Footpath, foreshore reserve & facilities | no risk | no risk | no risk | |
| | Roads (Esplanade) | no risk | no risk | no risk | |
| | Properties (commercial & residential) | no risk | no risk | no risk | |
| Segment 5 - Kingston Park | Beach | Insignificant (Very Low) | Insignificant (Low) | Insignificant (Medium) | |
| | Dunes | Insignificant (Very Low) | Insignificant (Low) | Insignificant (Medium) | |
| | Tjilbruke Springs | no risk | no risk | no risk | |
| | Footpath, foreshore reserve & facilities | no risk | no risk | no risk | |
| | Seacliff SLSC | no risk | no risk | no risk | |
| | Brighton Beachfront Holiday Park | no risk | no risk | no risk | |
| | Roads (Esplanade) & carpark | no risk | no risk | no risk | |
| | Properties (commercial & residential) | no risk | no risk | no risk | |

| | | Erosion (ALB Continues to 2100) | | | |
|--|--|--|--------------------------|--------------------------|--|
| Coastal Segment | Asset / Value | Present Day - Zone of Wave Impact Unlikely | 2050 Possible | 2100 Possible | Key assets at risk of erosion |
| Segment 1 - Glenelg North | Beach | Major (Medium) | Catastrophic (Very High) | Catastrophic (Very High) | 2021: Foreshore path 2050: Beach and North Esplanade 2100: Residential and Commercial Properties |
| | Footpath, foreshore reserve & facilities | Catastrophic (High) | Catastrophic (Very High) | Catastrophic (Very High) | |
| | Patawalonga footpath, river reserve & facilities | no risk | no risk | no risk | |
| | Roads (North Esplanade) | Major (Medium) | Catastrophic (Very High) | Catastrophic (Very High) | |
| | Properties (commercial & residential) | no risk | Medium (Medium) | Catastrophic (Very High) | |
| Segment 2 - Glenelg | Beach | Insignificant (Very Low) | Major (High) | Catastrophic (Very High) | 2050: Beach 2100: Glenelg Jetty Abutment, Holdfast Shores and Glenelg Foreshore |
| | Glenelg Jetty Abutment | no risk | no risk | Catastrophic (Very High) | |
| | Footpath, foreshore reserve & facilities | no risk | no risk | Major (High) | |
| | Roads | no risk | no risk | no risk | |
| | Properties (commercial & residential) | no risk | no risk | Catastrophic (Very High) | |
| Segment 3 - The Broadway to Brighton Jetty | Beach | Medium (Low) | Catastrophic (Very High) | Catastrophic (Very High) | 2021: Foreshore path and Brighton Jetty Abutment 2050: Beach, Esplanade, John Miller Reserve, Minda Dunes, Somerton SLSC 2100: Residential and Commercial Properties |
| | Minda Dunes | Minor (Low) | Major (High) | Catastrophic (Very High) | |
| | Somerton SLSC | Minor (Low) | Catastrophic (Very High) | Catastrophic (Very High) | |
| | Brighton Jetty Abutment | Catastrophic (High) | Catastrophic (Very High) | Catastrophic (Very High) | |
| | Footpath, foreshore reserve & facilities | Catastrophic (High) | Catastrophic (Very High) | Catastrophic (Very High) | |
| | Roads (Esplanade) | Major (Medium) | Catastrophic (Very High) | Catastrophic (Very High) | |
| | Properties (commercial & residential) | no risk | Medium (Medium) | Catastrophic (Very High) | |
| Segment 4 - Seacliff | Beach | Insignificant (Very Low) | Medium (Medium) | Major (High) | 2100: Beach, Dunes and Esplanade |
| | Dunes | Insignificant (Very Low) | Medium (Medium) | Major (High) | |
| | Footpath, foreshore reserve & facilities | no risk | no risk | Catastrophic (Very High) | |
| | Roads (Esplanade) | no risk | no risk | Major (High) | |
| | Properties (commercial & residential) | no risk | no risk | Minor (Medium) | |
| Segment 5 - Kingston Park | Beach | Medium (Low) | Catastrophic (Very High) | Catastrophic (Very High) | 2050: Beach and Dunes 2100: Foreshore Path and Seacliff SLSC |
| | Dunes | Major (Medium) | Catastrophic (Very High) | Catastrophic (Very High) | |
| | Tjilbruke Springs | no risk | no risk | Medium (Medium) | |
| | Footpath, foreshore reserve & facilities | no risk | no risk | Catastrophic (Very High) | |
| | Seacliff SLSC | no risk | no risk | Major (High) | |
| | Brighton Beachfront Holiday Park | no risk | no risk | Medium (Medium) | |
| | Roads (Esplanade) & carpark | no risk | no risk | Major (High) | |
| | Properties (commercial & residential) | no risk | no risk | no risk | |



Appendix F - Engagement Strategy

City of Holdfast Bay
ADL21-0009
17 August 2021

Engagement Strategy

Holdfast Bay Coastal Adaptation Plan

Holdfast Bay Coastal Adaptation Plan Engagement Strategy

17 August 2021

| | |
|----------------------------|--|
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1. Introduction

The City of Holdfast Bay is undertaking a scoping study as part of the first phase of a Coastal Adaptation Planning project. The scoping study will deliver a preliminary assessment of coastal hazard risks impacting assets, infrastructure and the community of Holdfast Bay and develop the planning and engagement processes to establish the starting point for long-term coastal adaptation planning.

The City of Holdfast Bay coast is treasured by residents and visitors for its amenity, recreation opportunities and environmental and cultural values. Engaging stakeholders and the community in the management of coastal environments is critical to success. The coast is changing and building awareness of how these changes may impact what is valued is important to allow stakeholders and the community to understand how and why adaptation action is required.

To inform the scoping study a review was undertaken of engagement approaches that have been successful for the City of Holdfast Bay and also those of other coastal adaptation projects around Australia. Engagement frameworks for coastal adaptation planning were also reviewed.

The findings of the review have been used to develop the engagement City of Holdfast Bay will adopt to engage the community and stakeholders in the development of its Coastal Adaptation Plan.

The development of the Coastal Adaptation Plan is following the South Australian Local Government Association Coastal Adaptation Guidelines (Figure 1). As such the engagement approach has been aligned to the stages of the guidelines.

This engagement strategy includes:

- The objectives and stages of the engagement
- Key messages
- Engagement risks and management
- Stakeholder analysis
- Engagement activities
- Engagement reporting and feedback to the community.

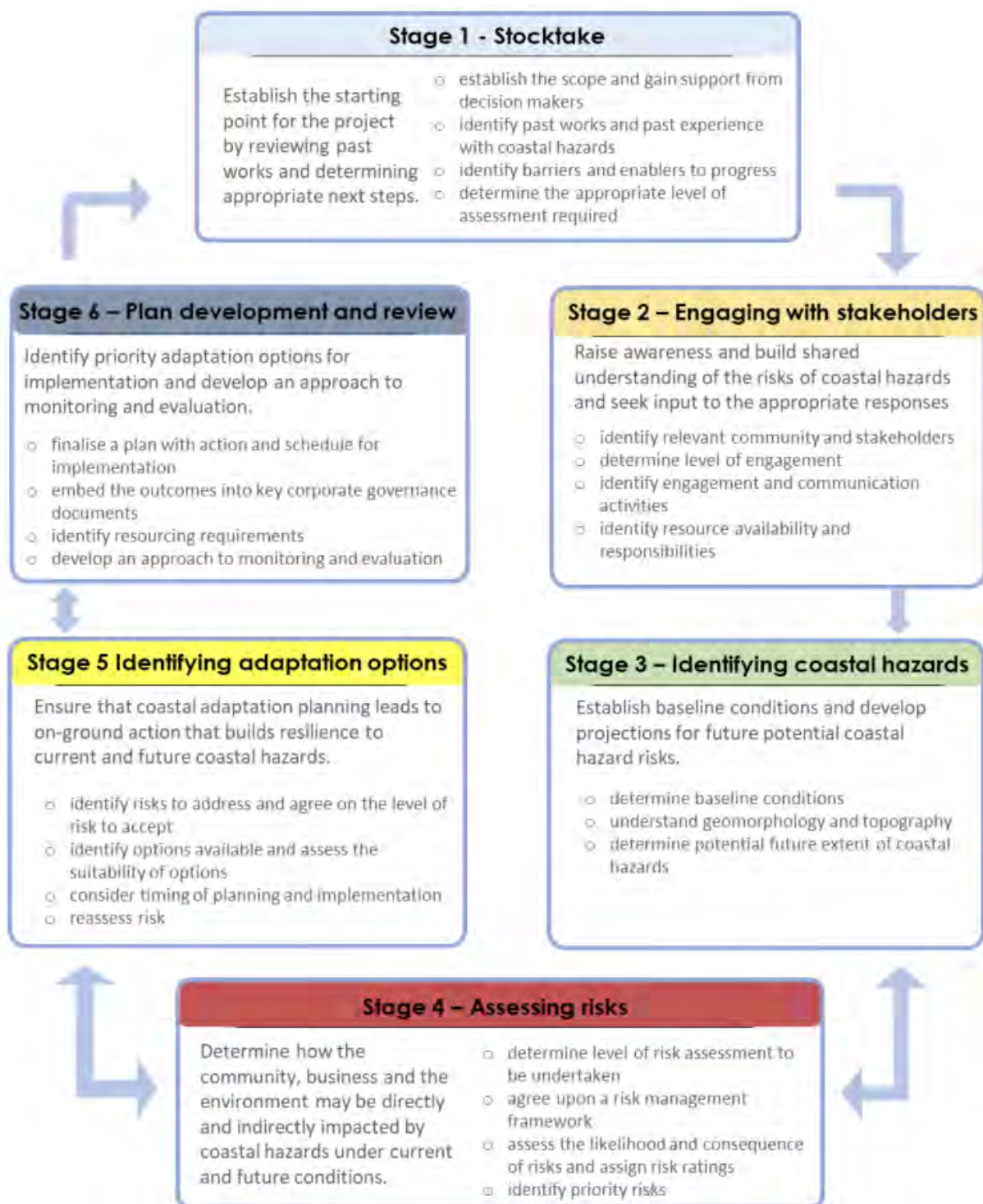


Figure 1 South Australian Local Government Association Coastal Adaptation Guideline Stages

2. Engagement approach

2.1 Engagement objectives

The objectives of the engagement for the project are to:

- Engage the community, key stakeholders, council staff and elected members to inform development of the Coastal Adaptation Plan.
- To engage with those anticipated to be affected by or have an interest in coastal hazards and adaptation options, and to engage with the broader community to raise awareness.
- To provide clear information on the scope of the project, the planning process and what the community can influence.
- To provide appropriate information at each stage of the project to build trust in the process, and provide context and content to inform input and decision making. This information should be:
 - Easy to understand
 - Provide relevant local context
 - Make long term risks more tangible
 - Open and transparent about current and future hazards and options.
- To engage early and throughout the development of the plan to build relationships and buy-in with the project, and an ongoing level of participation and trust.
- To leverage existing community groups, networks and leaders to encourage participation in the project.
- To deliver an engagement approach that manages risk and builds council's reputation as a responsible and engaged leader.

2.2 Key features of the approach

Key features of the engagement approach (explained further in sections 4 and 5) include:

- Engaging early and throughout with Kaurua and key stakeholders
- Establishing a page on Council's engagement portal to be a one stop shop for information on the project, fact sheets, reports and how to get involved
- Establishing a Community and Stakeholder Reference Group that includes community leaders, to provide input to project processes and use community leaders to share information with their communities to build community support throughout the project
- Providing informative factsheets to convey the importance of the project and the technical results in simple ways
- Providing regular updates and opportunities for feedback across the project to ensure ongoing participation and trust in the process.

2.3 Decisions for Council

As the project starts, a key decision for the City of Holdfast Bay will be to determine the level of hazard data they wish to share with their community. The engagement review documents the experiences of councils that did and did not share detailed data. The liability implications of not sharing available information should be taken into account. It is recommended that all project information is shared however, it is the role of the Elected Members to make a decision on this matter.

Another decision for Council will be to decide if it is desired to undertake additional engagement with private landholders of properties identified as hazard prone. These people may be the most affected by both the risks and the adaptation options and it is recommended that they be targeted for engagement.

2.4 Engagement stages

The development of the City of Holdfast Coastal Adaptation Plan follows the stages of South Australian Local Government Association Coastal Adaptation Guidelines (Figure 1). As such the engagement approach (Figure 2) has been aligned to the stages of the guidelines.

| GUIDELINES STAGE | ENGAGEMENT OBJECTIVES | ENGAGEMENT OUTCOMES |
|---|--|--|
| Stage 1 – Stocktake | Engagement Review <ul style="list-style-type: none"> Identify best practice coastal adaptation engagement What works for Holdfast Bay? | Engagement Review Report |
| Stage 2 – Engaging with stakeholders | Engagement Strategy <ul style="list-style-type: none"> Identify stakeholders Identify engagement approach and activities | Engagement Strategy |
| Stage 3 – Identifying coastal hazards | Values engagement <ul style="list-style-type: none"> Introduce project and set context (why important, project approach) Identify community's coastal values Identify council staff, Elected Member and key stakeholder issues and opportunities | <ul style="list-style-type: none"> Communication materials Early Engagement Summary Report <ul style="list-style-type: none"> Coastal values Issues and opportunities |
| Stage 4 – Assessing Risks | Risk assessment engagement <ul style="list-style-type: none"> Engagement with council staff to identify criteria for risk assessment framework Present information to community and stakeholders on assets most at risk | <ul style="list-style-type: none"> Risk assessment criteria and framework Communication materials |
| Stage 5 – Identifying adaptation options | Options engagement <ul style="list-style-type: none"> Test and refine long list of options and determine criteria for MCA and test with key stakeholders. Shortlist options (MCA) with staff Engage elected members on outcomes of cost benefit analysis Present information to community and stakeholders on adaptation options chosen and why | <ul style="list-style-type: none"> Long list adaptation options MCA criteria Shortlisted adaptation options Risks and options communication materials |
| Stage 6 – Plan development and review | 6a - Draft plan engagement <ul style="list-style-type: none"> Engage staff and key stakeholders on implementation approaches (triggers, pathways, funding, governance) Engage with elected members on the draft plan Engage with key stakeholders and community on the draft plan | Engagement Summary Report <ul style="list-style-type: none"> Considerations for draft refinement and finalisation |
| | 6b – Plan finalisation <ul style="list-style-type: none"> Engage staff and key stakeholders on adjustments Engage with elected members to approve the final plan To communicate final plan to community | Final plan communicated to community and stakeholders |

Figure 2 Engagement approach at each stage of the SA LGA Coastal Adaptation Guidelines

2.5 Key messages

The following are key messages for the wider community engagement at each stage.

Stage 3 - Awareness raising and values engagement

- The City of Holdfast Bay is preparing a Coastal Adaptation Plan to manage the risks that sea-level rise and storm events pose to our beautiful coastline.
- The development of the plan will include a risk assessment and identify adaptation approaches that will aim to protect valued coastal assets and features into the future.
- Council is working with the community, businesses, key stakeholders, asset owners and Kurna to inform the development of the plan.
- Learn more about the project and tell us what you value most about the Holdfast Bay coastline by:
 - Completing an online survey at (website to be confirmed)
 - Attending a community conversation pop-up at (location to be confirmed)
- The feedback you provide will help us develop the plan and inform how potential adaptation options are assessed.

Stage 4 – Risk assessment engagement

- A risk assessment has been undertaken to identify the assets and features most at risk by sea-level rise and storm events in the City of Holdfast Bay now and towards the end of the century.
- The assets most at risk include:
 - X
 - Y
 - Z
- Council is now working to identify adaptation options to protect coast assets and values.
- Council will engage with the community to seek feedback on these adaption options.

Stage 5 – Options engagement

- Options for action have been identified to protect key coastal assets and features from sea-level rise and storm events.
- These options have been identified through extensive assessment processes that have considered factors such as how well they protect things the community value and their cost and feasibility.
- The options proposed are:
 - X
 - Y
 - Z

- Do you support these options? View details about how and why each option was selected and provide your feedback at (website to be confirmed).
- The feedback received will be used to prepare the draft Coastal Adaptation Plan, which will be released for public consultation later this year.

Stage 6a – Engagement on the draft plan

- Provide your feedback on the draft City of Holdfast Bay Coastal Adaptation Plan.
- The draft plan has been prepared using the input of community, business, stakeholders, and the Kaurna over three stages since March 2021.
- The draft plan outlines the risks to our coast from sea-level rise and storm events and proposes a series of actions to protect valued coastal assets and features into the future.
- Provide your feedback on the draft plan by:
 - Completing an online survey at (website to be confirmed)
 - Attending a community conversation pop-up at (location to be confirmed)
- The feedback received will be used to finalise the plan for adoption by Council.

Stage 6b – Final plan engagement

- The City of Holdfast Bay Coastal Adaptation Plan has been adopted by Council.
- The plan describes the risks to our coast from sea-level rise and storm events and proposes a series of actions designed to protect valued coastal assets and features into the future.
- The plan has been prepared using the input of community, business, stakeholders, and the Kaurna over four stages since March 2021.
- You can view the final plan at (website to be confirmed).
- Council will now implement the plan in partnership with community and stakeholders.
- Coastal impacts will be monitored regularly and the plan adapted as required to ensure appropriate management approaches are followed.

3. Stakeholder mapping

Table 1 provides a summary of the main stakeholder groups that have an interest or could be impacted by the outcomes of the project, as well as other groups that should be included as part of broader engagement.

3.1 Stakeholder identification

Table 1 Stakeholder groups for engagement in the Holdfast Bay coastal adaptation planning process

| Stakeholder group | Interest/impact/risk | How to engage |
|--|--|---|
| Holdfast Bay Elected Members | <ul style="list-style-type: none"> • Approve and fund the plan • Protection of Council and community assets and natural values • Input to cost-benefit of options • Perception of council (impacts on property values, development potential, loss of community assets) • Connected with vocal community voices | <ul style="list-style-type: none"> • Bring on board from start of project (prior to other external engagement) • Provide ongoing information and involvement at key decision points (e.g. identification of values, issues and opportunities, and selection of options) • Involve in community engagement promotion and events |
| Holdfast Bay staff and Senior Leadership Team | <ul style="list-style-type: none"> • Manage assets and planning policy and regulation • Protection of Council and community assets and natural values • Input to cost-benefit of options • Desire a robust planning and engagement process • Own and deliver the plan | <ul style="list-style-type: none"> • Involvement in project planning • Ongoing involvement in plan development • Involvement in identification of risks in long list and shortlisting of options • Review of all project deliverables |
| Department of Environment and Water – Coastal Branch | <ul style="list-style-type: none"> • Current manager of Adelaide Living Beaches Strategy, current coastal management approach for Holdfast Bay coastline • Role in implementation of plan (e.g. continuing ALB, funding, governance?) | <ul style="list-style-type: none"> • Engage early and ongoing involvement in plan development. • One-on-one meetings to discuss future governance and funding of the Adelaide Living Beaches Strategy |

| Stakeholder group | Interest/impact/risk | How to engage |
|---|---|---|
| State Government agencies e.g. SA Water, Coast Protection Board, Department Infrastructure and Transport, SARDI | <ul style="list-style-type: none"> • Alignment to State plans • Management of State assets (e.g. roads, trams) • Funding of delivery • Referral body for coastal development (set conditions for development e.g. floor level) | <ul style="list-style-type: none"> • Engage early and ongoing involvement in plan development • Tailored one-on-one meetings with relevant agencies |
| Kaurna Nation Cultural Heritage Association (KNCHA) | <ul style="list-style-type: none"> • Traditional custodians of the land • Significant Tjilbruke dreaming cultural values associated with the coast • Protection of heritage • Employment opportunities associated with on-ground works | <ul style="list-style-type: none"> • Engage early to identify how would like to be involved in the project • Work with the Kaurna and City of Holdfast Bay Reference Group initially |
| Community groups and organisations (TBD) | <ul style="list-style-type: none"> • Protection of community values and assets (inc. natural, recreational, spaces) • Environmental responsibility and heritage conservation • Desire for transparent community engagement • Opportunity to build support for actions through community leaders | <ul style="list-style-type: none"> • Engage early and ongoing involvement in plan development • Provide opportunities for face-to-face meetings • Enable information sharing |
| Business and tourism groups e.g. traders associations | <ul style="list-style-type: none"> • Maintain Holdfast Bay as a tourism destination • Economic vitality of mainstreets | <ul style="list-style-type: none"> • Engage early and ongoing involvement in plan development • Provide opportunities for face-to-face meetings • Enable information sharing |
| Development groups e.g. Property Council, UDIA | <ul style="list-style-type: none"> • Development potential of coastal areas | <ul style="list-style-type: none"> • Engage early and ongoing involvement in plan development |
| Utilities e.g. SA Power Networks | <ul style="list-style-type: none"> • Sustainability and effective function of utility assets | <ul style="list-style-type: none"> • Engage early and ongoing involvement in plan development |

| Stakeholder group | Interest/impact/risk | How to engage |
|--|--|---|
| | | <ul style="list-style-type: none"> • Provide opportunities for face-to-face meetings |
| Property owners in hazard areas e.g. residents, businesses | <ul style="list-style-type: none"> • Potential risk to properties and property values | <ul style="list-style-type: none"> • Provide information direct to the property about the project and how to get involved • Engage early and ongoing |
| Key private asset owners and operators e.g. Surf Life Saving Clubs, Sailing Clubs, Minda Inc., Oaks Plaza Pier, Stamford Grand, The Beachouse, Holdfast Shores | <ul style="list-style-type: none"> • Condition and maintenance of asset • Access to coast and beach amenity | <ul style="list-style-type: none"> • Engage early and ongoing involvement in plan development • Provide opportunities for face-to-face meetings |
| Adjacent councils (i.e. City of West Torrens, City of Marion) | <ul style="list-style-type: none"> • Impact or alignment of adaptation options • Application of process for their council areas in future | <ul style="list-style-type: none"> • Provide ongoing information about the project and outcomes • Invite input into issues and opportunities and feedback on adaptation options |
| Local Members of Parliament | <ul style="list-style-type: none"> • Preserving local values • Local community sentiment • Party politics • Funding of actions | <ul style="list-style-type: none"> • Provide ongoing information about the project and outcomes • Provide information about community engagement opportunities |

4. Engagement activities

This section summarises the engagement activities to be undertaken at each stage of engagement as outlined in Figure 2. Activities are provided from Stage 3 onwards. This is because the engagement for Stage 1 (i.e. engagement review) and Stage 2 (i.e. this engagement strategy) are complete.

Indicative timing of activities is provided. These, along with activities, can be reviewed and updated as the project progresses to adapt to project needs.

Indicative costs have been included for Stage 3. These estimates are for consultant time and do not include any printing, graphic design or distribution of materials, video production, equipment hire or event costs.

4.1 Stage 3 – Awareness raising and values engagement

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) | Cost estimate |
|---|---|--|---|------------------------|---------------|
| Stage 3 Kaurna meeting | Hold meeting with Kaurna and City of Holdfast Bay Reference Group to determine how they would like to be engaged in the project. Meeting outcomes may affect how engagement with Kaurna is reflected in other stages of this engagement strategy. | <ul style="list-style-type: none"> Kaurna Nation Cultural Heritage Association | <ul style="list-style-type: none"> Kaurna and City of Holdfast Bay Reference Group regular meeting | 2 | \$3000 |
| Stage 3 Presentation to Elected Members | Present approach for project and associated engagement activities to Elected Members for endorsement. | <ul style="list-style-type: none"> Elected Members | <ul style="list-style-type: none"> As part of regular Council meetings | 2 | \$1500 |
| Stage 3 Establish Community and Stakeholder Reference Group | Establish a group of key community representatives to provide input across the project. Establishing the group requires development of: <ul style="list-style-type: none"> Expression of interest for members Terms of reference for the group | <ul style="list-style-type: none"> Community Groups/ Orgs. Key asset owners (e.g. Surf Life Saving Clubs) Business groups Development groups | <ul style="list-style-type: none"> Email Phone calls | 2-3 | \$4000 |
| Stage 3 Project factsheet(s) | Prepare a fact sheet or series of factsheets that presents: <ul style="list-style-type: none"> Why the plan needs to be prepared Key stages of developing the plan Explains the risks (types of hazards) Explains what the plan will do | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Project webpage Email (community and stakeholder groups, engagement database, Kaurna) Limited hard copy for use in meetings | 3 | \$2000 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) | Cost estimate |
|-------------------------------|---|---|--|------------------------|---------------|
| Stage 3 Promotional materials | <p>Prepare promotional materials to promote the project webpage, survey and pop-ups, including</p> <ul style="list-style-type: none"> • Video of Reference Group members • Poster for council centres • Postcard for centres and to be hand delivered to properties within hazard area (if desired) • Social media advertisements • Article in Council newsletters • Email header for all emails sent from the project • Email to engagement database • Coastal signage (e.g. bin corflutes) • Media release | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • As explained in description column | 3 | \$5000 |
| Stage 3 Project webpage | <p>Establish a project webpage on Council's engagement portal. Information to include for stage 3:</p> <ul style="list-style-type: none"> • Project description • Fact sheets • Link to survey • Sign up for updates | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • On Council's engagement portal | 3 | \$1500 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) | Cost estimate |
|--|---|--|--|------------------------|---------------|
| Stage 3 Community and stakeholder reference group meeting | Send invitation and hold first meeting to present the project and discuss key coastal values that need protecting | <ul style="list-style-type: none"> Community and Stakeholder Reference Group | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 3 | \$2500 |
| Stage 3 Key stakeholder meetings | <p>Have 1x1 or small group meetings as appropriate with key stakeholders with a policy/governance role in the plan. Identify key objectives of the groups for the plan:</p> <ul style="list-style-type: none"> Values Policy directions Role in implementation <p>Outcomes of each meeting to be documented.</p> | <ul style="list-style-type: none"> DEW Coast Branch State government agencies and utilities Adjacent Councils | <ul style="list-style-type: none"> Email invitations Face-to-face meetings | 3 | \$3000 |
| Stage 3 Online values survey | <p>Establish an online survey that seeks to understand what the community values about the coast</p> <p>Include questions in survey related to 'Travel Cost Method' to determine the value of Environmental (Beach and Recreational), Heritage and Cultural assets. (Refer to Rogers A et al 2019 in attachment to WA CHRMAP Guidelines)</p> | <ul style="list-style-type: none"> Community including groups, residents, businesses, property and asset owners | <ul style="list-style-type: none"> Project webpage | 4 | \$2500 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) | Cost estimate |
|---|---|---|--|------------------------|----------------|
| Stage 3 Community conversation pop-up(s) | <p>Hold one or a series of pop-ups along the coast, to:</p> <ul style="list-style-type: none"> • Present background information • Provide opportunities to provide input on coastal values. <p>Include questions at pop-up related to 'Travel Cost Method' to determine the value of Environmental (Beach and Recreational), Heritage and Cultural assets. (Refer to Rogers A et al 2019 in attachment to WA CHRMAP Guidelines)</p> | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Promoted through promotional materials | 4 | \$6000 for two |
| Stage 3 Engagement Summary Report | <p>Prepare a report that summarises the process of the engagement (all activities and promotion) and the outcomes of the community reference group and online survey. Findings of key stakeholder meetings and Kaurna and City of Holdfast Bay Reference Group Meetings to be kept confidential</p> <p>Outcomes of report to inform plan objectives and options assessment criteria.</p> | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage | 6 | \$4000 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) | Cost estimate |
|------------------------------------|---|---|--|------------------------|---------------|
| Stage 3 'What we heard' fact sheet | <p>Prepare a summary fact sheet that outlines:</p> <ul style="list-style-type: none"> • How we engaged in Stage 3 • What were the key things learnt • Next steps – i.e. what are we doing in stage 4. • Link to view full report from project webpage | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage • Email to participants • Social media post • Email to those registered for updates • Email to Elected Members and Staff | 6 | \$1500 |
| Stage 3 Project webpage update | <p>Update webpage with Stage 3 results:</p> <ul style="list-style-type: none"> • Stage 3 engagement summary report • Stage 3 'what we heard' summary fact sheet • Next steps - identifying assets and values most at risk. | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage | 6 | \$750 |

4.3 Stage 4 – Risk assessment engagement

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|---|---|--|--|------------------------|
| Stage 4 Staff risk framework workshop | Hold a workshop with key staff from across Council (e.g. risk management, asset managers, environment staff) to determine: <ul style="list-style-type: none"> Risk management framework Criteria for assessment | <ul style="list-style-type: none"> Council staff | <ul style="list-style-type: none"> Email invitation Face-to-face workshop | 11 |
| Stage 4 Community and Stakeholder Reference Group | Hold a meeting to present and discuss: <ul style="list-style-type: none"> Key findings from Stage 3 Risk assessment framework and criteria Adaptive capacity of assets at risk Document summary of discussion points and outcomes. | <ul style="list-style-type: none"> Community and Stakeholder Reference Group | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 12 |
| Stage 4 Key stakeholder meetings | Have 1x1 or small group meetings as appropriate with key stakeholders including those identified with assets most at risk. Present and seek feedback: on the results of the risk assessment and discuss process to identify options | <ul style="list-style-type: none"> State government agencies and utilities Adjacent Councils | <ul style="list-style-type: none"> Email invitations Face-to-face meetings | 12 |
| Stage 4 Kaurua Meeting | Meeting with Kaurua and City of Holdfast Bay Reference Group to present findings of assets most at risk with a special focus on any of significance to Kaurua. Outcomes of meeting to be documented. | <ul style="list-style-type: none"> Kaurua Nation Cultural Heritage Association | <ul style="list-style-type: none"> Align with Kaurua and City of Holdfast Bay Reference Group meeting if possible | 12 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|--------------------------------|---|---|--|------------------------|
| Stage 4 Risk fact sheet | Prepare a fact sheet outlining: <ul style="list-style-type: none"> • The key findings of the risk assessment • Next steps (i.e. identifying options) | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage • Email to participants • Social media post • Email to those registered for updates • Email to Elected Members and Staff | 20 |
| Stage 4 Project webpage update | Update webpage with information from stage 4: <ul style="list-style-type: none"> • Assets most at risk factsheet • Next steps - identifying adaptation options. | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage | 20 |

4.4 Stage 5 – Options engagement

4.4.1 Stage 5a – Engagement on MCA criteria and shortlisted options

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|---|--|---|--|------------------------|
| Stage 5a Staff first pass screening workshop | <p>Hold a workshop with Council staff to:</p> <ul style="list-style-type: none"> short list options from a long list (first pass screening – taking into consideration community and stakeholder feedback from previous stages) determine criteria for multi-criteria analysis (MCA) considering the values of community and stakeholders identified in Stage 3. | <ul style="list-style-type: none"> Council staff | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 21 |
| Stage 5a Community and Stakeholder Reference Group | <p>Workshop to:</p> <ul style="list-style-type: none"> present the shortlist of options for feedback. Are they the right options to go into the MCA process? obtain feedback on the proposed MCA criteria that have been developed considering the values of community and stakeholders identified in Stage 3. Are there any missing? | <ul style="list-style-type: none"> Community and Stakeholder Reference Group | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 21 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|--|--|--|--|------------------------|
| Stage 5a Key stakeholder meetings (if required) | Workshop to: <ul style="list-style-type: none"> present the shortlist of options for feedback. Are they the right options to go into the MCA process? obtain feedback on the proposed MCA criteria that have been developed considering the values of community and stakeholders identified in Stage 3. Are there any missing? | <ul style="list-style-type: none"> State government agencies and utilities | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 21 |
| Stage 5a Kurna Meeting (if required) | Workshop to: <ul style="list-style-type: none"> present the shortlist of options for feedback. Are they the right options to go into the MCA process? obtain input about what criteria should be used in the MCA that have been developed considering the values of community and stakeholders identified in Stage 3. Are there any missing? | <ul style="list-style-type: none"> Kurna Nation Cultural Heritage Association | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 21 |

4.4.2 Stage 5b – Engagement on the MCA and CBA results (proposed options)

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|---|--|--|---|------------------------|
| Stage 5b Staff MCA workshop | Undertake MCA of options with Council staff using MCA criteria influenced by stakeholders and reference group as well as community values identified in Stage 3. | <ul style="list-style-type: none"> Council staff | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 22 |
| Stage 5b Key stakeholder meetings (if required) | Have 1x1 or small group meetings as appropriate with key stakeholders with a policy/governance role in the plan to: Present and discuss outcomes of the MCA, and Cost Benefit Analysis (CBA). Outcomes of each meeting to be documented. | <ul style="list-style-type: none"> State government agencies and utilities | <ul style="list-style-type: none"> Email invitations Face-to-face meetings | 23 |
| Stage 5b Kurna Meeting (if required) | Meeting with Kurna and City of Holdfast Bay Reference Group to present and discuss outcomes of the MCA and CBA. Outcomes of meeting to be documented. | <ul style="list-style-type: none"> Kurna Nation Cultural Heritage Association | <ul style="list-style-type: none"> Align with Kurna and City of Holdfast Bay Reference Group meeting if possible | 23 |
| Stage 5b Community and Stakeholder Reference Group | Meeting to present and discuss: <ul style="list-style-type: none"> Results of MCA Results of CBA Document summary of discussion points and outcomes. | <ul style="list-style-type: none"> Community and Stakeholder Reference Group | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 23 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|---|--|---|--|------------------------|
| Stage 5b Elected Member workshop/briefing | Workshop to present and discuss: <ul style="list-style-type: none"> Results of MCA and CBA Proposed options. | <ul style="list-style-type: none"> Elected Members | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 24 |
| Stage 5b Project fact sheet – options assessment | Prepare a fact sheet that: <ul style="list-style-type: none"> Explains how the proposed options were identified (i.e. the MCA and CBA process including use of community values identified in stage 3) Presents each of the proposed options and why chosen (e.g. key points from CBA) Directs people to an online survey to provide feedback on the proposed options. | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Project webpage Email to participants Social media post Email to those registered for updates Email to Elected Members and Staff | 24 |
| Stage 5b Promotional materials | Prepare promotional materials to promote the stage 5 survey. <ul style="list-style-type: none"> Poster for Council centres Postcards for centres and to be hand delivered to properties within hazard area (if desired) Social media advertisements Article in Council newsletters Email to those signed up for updates Coastal signage (e.g. bin corflutes) Media release. | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> As explained in description column | 24 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|--|---|---|--|------------------------|
| Stage 5b Online survey - options | Prepare an online survey that seeks community feedback on the proposed options (i.e. level of support.) | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Project webpage | 25-26 |
| Stage 5b Project webpage update | Update webpage with information for stage 5: <ul style="list-style-type: none"> Current status – confirming options Options fact sheet Link to options survey Next steps – prepare draft plan. | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Project webpage | 25 |
| Stage 5b Engagement Summary Report | Prepare a report that summarises the process of the engagement (all activities and promotion) and the outcomes of the community reference group and online survey. Findings of key stakeholder meetings and Kaurua and City of Holdfast Bay Reference Group may need to be kept confidential Outcomes of report to inform draft plan development. | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Project webpage | 27 |
| Stage 5b 'What we heard' fact sheet | Prepare a summary fact sheet that outlines: <ul style="list-style-type: none"> How we engaged in Stage 5 What were the key things learnt Next steps – i.e preparing draft plan. Link to view full report from project webpage. | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Project webpage Email to participants Social media post Email to those registered for updates Email to Elected Members and Staff | 27 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|--------------------------------------|---|---|---|------------------------|
| Stage 5b Project webpage update 2 | Update webpage with information for stage 5: <ul style="list-style-type: none"> • What we heard fact sheet • Next steps – prepare draft plan. | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage | 27 |

4.5 Stage 6 – Engagement on the plan

4.5.1 Stage 6a – Engagement for the draft plan

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|---|---|---|--|------------------------|
| Stage 6a Combined staff and Community and Stakeholder Reference Group workshop | Present and get feedback on the proposed adaptation pathways and triggers that have been determined based on the results of community and stakeholder feedback in Stage 5. | <ul style="list-style-type: none"> Community and Stakeholder Reference Group Staff | <ul style="list-style-type: none"> Face-to-face meeting | 28 |
| Stage 6a Key stakeholder meetings | Hold meetings with any key stakeholders with a policy/governance role in the plan as required to confirm necessary plan content. | <ul style="list-style-type: none"> State government agencies and utilities Kaurna Nation Cultural Heritage Association Adjacent Councils | <ul style="list-style-type: none"> Email invitations Face-to-face meetings | 28 |
| Stage 6a Council staff workshop | Workshop with Council staff to determine: <ul style="list-style-type: none"> Funding mechanisms Monitoring and evaluation Governance Actions for first 12 months. | <ul style="list-style-type: none"> Council staff | <ul style="list-style-type: none"> Face-to-face meeting | 28 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|---|---|---|--|------------------------|
| Stage 6a Community and Stakeholder Reference Group | Hold a meeting to present and discuss: <ul style="list-style-type: none"> Preliminary draft plan Document summary of discussion points and outcomes. | <ul style="list-style-type: none"> Community and Stakeholder Reference Group | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 29 |
| Stage 6a Elected Member workshop | Present draft plan to Elected Members for feedback prior to seeking endorsement for broader public consultation. | <ul style="list-style-type: none"> Elected Members | <ul style="list-style-type: none"> Email invitation Face-to-face meeting | 29 |
| Stage 6a Council report | Adoption of draft plan by Elected Members for purposes of public consultation. | <ul style="list-style-type: none"> Elected Members | <ul style="list-style-type: none"> Council meeting | 30 |
| Stage 6a Online survey draft plan | Prepare a draft online survey that seeks feedback on the draft plan (ie. level of support). | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Project webpage | 30 |
| Stage 6a Community conversation pop-up(s) | Hold one or a series of pop-ups along the coast, to: <ul style="list-style-type: none"> Present the draft plan Provide opportunities to provide feedback. | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Promoted through promotional materials | 30 |
| Stage 6a Draft plan summary fact sheet | Prepare a fact sheet that summarises the key content and directions of the draft plan. | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Project webpage | 30 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|--------------------------------------|--|---|--|------------------------|
| Stage 6a Project webpage update 1 | Update project webpage with: <ul style="list-style-type: none"> • Current status – seeking feedback on draft plan • Draft plan summary fact sheet • Link to draft plan survey • Next steps – finalise draft plan. | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage | 30 |
| Stage 6a Promotional materials | Prepare promotional materials to promote the stage 6 survey. <ul style="list-style-type: none"> • Video of Reference Group members • Poster for council centres • Postcard for centres and to be hand delivered to properties within hazard area • Social media ad • Article in Council newsletters • Email to those signed up for updates • Coastal signage (e.g. bin corflutes) • Media release. | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • As explained in description column | 30 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|---|--|---|--|------------------------|
| Stage 6a Engagement Summary Report | <p>Prepare a report that summarises the process of the engagement (all activities and promotion) and the outcomes of the community reference group and online survey. Findings of key stakeholder meetings and Kaurua and City of Holdfast Bay Reference Group may need to be kept confidential</p> <ul style="list-style-type: none"> • Outcomes of report to inform plan finalisation | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage • | 31 |
| Stage 6a 'What we heard' fact sheet | <p>Prepare a summary fact sheet that outlines:</p> <ul style="list-style-type: none"> • How we engaged in Stage 6 • What were the key things learnt • Next steps – i.e finalising the plan. • Link to view full report from project webpage. | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage • Email to participants • Social media post • Email to those registered for updates • Email to Elected Members and Staff | 31 |
| Stage 6a Project webpage update 2 | <p>Update project webpage with:</p> <ul style="list-style-type: none"> • What we heard fact sheet • Next step – finalise plan. | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage | 31 |

4.5.2 Stage 6b – Final plan engagement

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|---|--|---|--|------------------------|
| Stage 6b Key stakeholder meetings (if required) | Hold meetings with any key stakeholders with a policy/governance role in the plan as required to confirm necessary final plan content. | <ul style="list-style-type: none"> State government agencies and utilities Kaurna Nation Adjacent Councils | <ul style="list-style-type: none"> Email invitations Face-to-face meetings | 32 |
| Stage 6b Community and Stakeholder Reference Group | Hold a meeting to present and discuss: <ul style="list-style-type: none"> Results of engagement on draft Final draft plan And to also celebrate final plan and thank for their input. Document summary of discussion points and outcomes. | <ul style="list-style-type: none"> Community and Stakeholder Reference Group | <ul style="list-style-type: none"> Email invitation Face to fgce meeting | 32 |
| Stage 6b Council report | Present final plan to Elected Members for adoption. | <ul style="list-style-type: none"> Elected Members | <ul style="list-style-type: none"> Council meeting | 32 |
| Stage 6b Final plan summary fact sheet | Prepare a fact sheet that summarises the key content and directions of the final plan. | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Project webpage | 33 |

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|-----------------------------------|--|---|--|------------------------|
| Stage 6b Promotional materials | <p>Prepare promotional materials to promote the final plan.</p> <ul style="list-style-type: none"> • Poster for Council centres • Postcards for centres and to be hand delivered to properties within hazard area • Social media ad • Article in Council newsletters • Email to those signed up for updates • Coastal signage (e.g. bin corflutes) • Media release. | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • As explained in description column | 33 |
| Stage 6b Project webpage update 1 | <p>Update project webpage with:</p> <ul style="list-style-type: none"> • Final plan • Next steps – ongoing implementation and reporting back to community. | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage | 33 |
| Stage 6 Project webpage update 2 | <p>Update project webpage with:</p> <ul style="list-style-type: none"> • What we heard fact sheet • Next step – finalise plan. | <ul style="list-style-type: none"> • All | <ul style="list-style-type: none"> • Project webpage | 33 |

4.6 Ongoing engagement

| Engagement activity | Description | Target stakeholder groups | Location/ distribution | Timing (project month) |
|---------------------|--|---|---|---|
| Project updates | <p>Across the life of the project provide updates (other than those listed above) to maintain a project presence and keep the community and stakeholders informed of progress.</p> <p>Some sections of the project include lengthy periods of consultant work during which it is not appropriate to be engaging with the community or stakeholders for input.</p> <p>Preparing updates during these periods (in the form of fat sheets) will keep community or stakeholders updated with the work happening behind the scenes and any out puts that the council is willing to share.</p> | <ul style="list-style-type: none"> All | <ul style="list-style-type: none"> Project webpage Email to project distribution list | As required to maintain project presence. |

5. Engagement reporting and closing the loop

Across all stages of engagement, regular communication will be undertaken with the community and stakeholders to keep them informed of the outcomes of the engagement and how the project is progressing.

Regular communication will include:

- Engagement summary reports at the end of each stage of public engagement i.e. stages 3, 5 and 6a.
- Project fact sheets across the project including:
 - About the project (including types of hazards and potential impacts)
 - Key risks identified
 - Options selected
 - Summary of draft plan
 - Summary of final plan
 - What we heard fact sheets for values, options and draft engagement
- This information will be shared:
 - On the project webpage
 - Via emails to those who register to be kept informed, key stakeholders, Community and Stakeholder Reference Group.

SHAPING
GREAT
COMMUNITIES





Appendix G - Gap Analysis

City of Holdfast Bay - Coastal Adaptation Plan Stage 1 Stocktake
Phase 5 Gap Analysis

| Knowledge Gap Rating | Description of Relative Importance | Consequence |
|----------------------|---|--|
| Low | While a knowledge gap has been identified, it is considered to be of limited consequence to the overall study objectives and/or the gap can be overcome by routine analysis or minimal additional collection efforts. | The detailed assessment can proceed, but additional data/information may need to be developed during the assessment. |
| Medium | A significant gap has been identified that is likely to have some bearing on the robustness of the analysis that can be undertaken and the ability to achieve the study objectives and/or the knowledge gap can be overcome but only with substantive additional analysis or data collection efforts. | An assessment of the ability to fill the knowledge gap and the value of the knowledge to the detailed assessment would need to be considered before proceeding with a detailed assessment. |
| High | A major gap has been identified that will significantly limit the robustness of the analysis that can be undertaken and significantly compromise the ability to achieve the study objectives and/or the knowledge gap can be overcome only by extensive additional analysis or data collection efforts. | The detailed assessment cannot proceed until this knowledge gap has been completed |

| Knowledge Area | GapID | Gap Identified | Scope Required to Fill Gap | Overall Knowledge Gap Rating |
|--------------------|-------|--|--|------------------------------|
| Coastal Inundation | 1 | Property foundation type The typical property foundation type and resultant height above site level in flood prone areas is unknown. This level influences the flooding Consequence within the risk assessment | Assume general foundation type based on the age of development and typical foundation heights at the time. | Low |
| | 2 | Holdfast Shores Levels The 2021 bath-tub mapping showed the Holdfast Shores underground car-park and Finished Floor level below the 1% AEP flood level. This is likely due to an error in the LiDAR DEM. | The Finished floor level for the Holdfast Shores underground car-park and ground floors should be confirmed through survey or building plans. The LiDAR DEM should be updated to reflect the changes. | Low |
| | 3 | Glenselg Harbour Water Levels Flinders Ports (Greg Pearce) noted that water levels are being recorded in the Harbour but the responsible party details were not provided. | Request contact details for responsible party from Greg Pearce and request data. | Low |
| | 4 | Groundwater levels Groundwater levels close to the Patawalonga River and Lake are unknown | Request groundwater levels from DEW. | Low |
| | 5 | Groundwater shoaling The risk of groundwater shoaling due to SLR impacting assets and values in low-lying areas adjacent to the Patawalonga River and Lake is uncertain, particularly in the latter parts of the century. | A high-level assessment of the potential groundwater shoaling should be undertaken by a groundwater expert and incorporated into the coastal inundation hazard assessment (Stage 3) | Low |
| | 6 | 2030, 2070 and 2100 coastal inundation and flood mapping The 2014 Tonkin study includes mapping for the present day scenario and approximate 2050 scenario (0.5m sea level rise). The study did not include a short term (2030) or longer term (2070 to 2100) scenarios, which are likely to be included in the detailed hazard and risk assessment. | To fill the knowledge gap, the Tonkin flood model would be run for the 2030, 2070 and 2100 scenarios, including consideration of the new Patawalonga Barrier and joint probabilities identified below. This would include hydrodynamic modelling of overland connection from the ocean to the coast, as well as catchment and stormwater flooding. However, given the High priority of erosion risks, the relatively low inundation risk until the latter part of the century and the availability of present day and 2050 flood map data, this dynamic modelling could be undertaken in future revisions of the CAP with limited impact on the overall study objectives. | Low |
| | 7 | Patawalonga Lake levels DEW record water levels in the Patawalonga Lake and Sturt River weir. https://www.waterconnect.sa.gov.au/Systems/PatawalongaLakeSystem/SitePages/Current%20Water%20Levels.aspx | Request data from DEW | Medium |
| | 8 | Patawalonga Barrier Replacement The proposed Patawalonga Barrier is an important part of the flood mitigation within Patawalonga Lake and River. Replacement of this barrier is planned for 2021 and the construction works are currently out for tender. As such, DEW were unable to confirm details of the proposed barrage replacement, including new weir levels, SLR allowances or operational aspects of the new barrage. | Obtain design drawings and operations from DEW following selection of preferred Contractor. If significant changes in the operation are identified that will increase flood risks, then the Tonkin (2014) flood model should be updated with the new weir and the flood scenarios re-run within the model. The new barrage should also be input to the longer term dynamic inundation modelling below. | Medium |
| | 9 | Joint Probability of Rainfall, Catchment Flooding and Coastal Inundation The 2014 Tonkin Stormwater Management Plan Coastal Catchments Between Glenselg and Marino (2014) includes consideration of ocean water levels as a boundary condition. The report notes that there is not a strong correlation between rainfall and tidal anomalies (storm surges) in Adelaide, and it is generally accepted they are independent events. However no reference or supporting analysis is provided. The report also notes that no detailed probability analysis was carried out to understand the likelihood of flooding in Sturt River coincident with significant ocean storm surges. | The Tonkin (2014) study joint probability methodology and references should be sought and reviewed. If uncertainty still remains following the review, a joint probability analysis of rainfall, catchment flooding and storm surges should be undertaken to confirm the findings of the Tonkin (2014) study and to identify the potential correlation and recommended AEP events for input to dynamic inundation modelling. | Medium |
| | 10 | GIS flood map data The 2014 Tonkin flood map data (present day and 2050 scenario) is available to view online but the raw data and depths have not been provided and as such have not been added to the Stage 1 Database | Request datasets from Tonkin for the full range of modelled scenarios. | High |

City of Holdfast Bay - Coastal Adaptation Plan Stage 1 Stocktake
Phase 5 Gap Analysis

| Knowledge Gap Rating | Description of Relative Importance | Consequence |
|----------------------|---|--|
| Low | While a knowledge gap has been identified, it is considered to be of limited consequence to the overall study objectives and/or the gap can be overcome by routine analysis or minimal additional collection efforts. | The detailed assessment can proceed, but additional data/information may need to be developed during the assessment. |
| Medium | A significant gap has been identified that is likely to have some bearing on the robustness of the analysis that can be undertaken and the ability to achieve the study objectives and/or the knowledge gap can be overcome but only with substantive additional analysis or data collection efforts. | An assessment of the ability to fill the knowledge gap and the value of the knowledge to the detailed assessment would need to be considered before proceeding with a detailed assessment. |
| High | A major gap has been identified that will significantly limit the robustness of the analysis that can be undertaken and significantly compromise the ability to achieve the study objectives and/or the knowledge gap can be overcome only by extensive additional analysis or data collection efforts. | The detailed assessment cannot proceed until this knowledge gap has been completed |

| Knowledge Area | GapID | Gap Identified | Scope Required to Fill Gap | Overall Knowledge Gap Rating |
|-----------------|-------|--|---|------------------------------|
| Coastal Erosion | 11 | Sediment samples Beach and dune sediment size is important when considering storm erosion and longshore transport. The most recent beach sediment Particle Size Distribution (PSD) analysis was undertaken by DEW in 2010. This covered most locations and was used for input to the preliminary erosion modelling. Additionally, DEW analyse PSDs within Segment 2 (Glenelg harbour to The Broadway) as part of the ALB sand collection campaign. | Beach and dune sediment samples should be collected and analysed for PSD for input to the Coastal Processes study (below). | Low |
| | 12 | GSC Groynes - The Broadway to Minda Dunes Approximately 11 GSC groynes are located between The Broadway and the northern edge of Minda Dunes. These groynes appear to be buried for the majority of the time but are exposed when sand and tide levels are low. | Construction records should be sought to identify when these groynes were constructed and how many groynes and their location. Historical site photographs and rectified historical aerial photographs should be reviewed in detail to identify the locations with more confidence and included in the City's GIS asset system and in the shoreline evolution modelling. | Low |
| | 13 | Kingston Park bedrock levels An approximate 300m portion of the Kingston Park (Segment 5) shoreline is backed by cliffs and is classified as Rocky Shoreline in the DEW Coastal Shoreline Classification layer. The extent and depth of the bedrock in the area is unknown. | Historical site photographs and rectified historical aerial photographs should be reviewed to identify the extent of any bedrock in the area. For example, historical aerial photographs could be reviewed to identify whether land has been reclaimed in the area and the extent of the reclamation. | Low |
| | 14 | Seawall construction details The construction timing and details of the various seawalls along the coastline are sporadic. The following important details are currently estimated within existing reports and the preliminary risk assessment: <ul style="list-style-type: none"> Rock revetment armour density. A density of 2.3 tonnes/m³ was assumed within the <i>Coastal Protection Infrastructure Assessment & Management Strategy</i> (Water Technology, 2020), which is at the lower limit of density available for dolomite armour rock. Rock revetment and vertical concrete seawall toe levels. A toe depth of -1.25 mAHD was assumed within the preliminary risk assessment but no design drawings were available for review. | <ul style="list-style-type: none"> Rock revetment armour density: A mining pick or jack hammer should be used to collect rock armour samples at a number of rock revetment locations across the study area. These samples should be tested for rock density within a laboratory to identify the range of existing densities. Rock revetment and vertical concrete seawall toe levels: An excavator should be used to excavate to the toe of a number of rock revetment and vertical seawall locations. <p>The above site data collection has been discussed with the City and may be completed as part of the proposed seawall maintenance works.</p> | Medium |
| | 15 | Glenelg North reef levels Benthic mapping shows low profile reef exists in the nearshore area of Glenelg North (Segment 1). The depth and strength of this reef underneath the existing rock seawall is unknown. | When the Glenelg North seawall toe levels are excavated (above) the reef level should be surveyed to identify the depth of rock under the beach and seawall. This should be input to any erosion modelling of the area. | Medium |
| | 16 | Stormwater outlet flows The flow rate coming out of stormwater outlets during significant rainfall events and the resultant volume of sand moving offshore is currently unknown. | Output the potential stormwater flows across the beach (from the Tonkin model) in the 1% AEP storm event | Medium |
| | 17 | Stormwater outlet erosion hazard The erosion hazard and risk of stormwater drainage flows on beach erosion is also uncertain. | A high-level assessment of the stormwater outlet erosion hazards should be undertaken. This would involve the following general steps: <ul style="list-style-type: none"> Using stormwater outflows above, calculate the subsequent volume of sand moved offshore during 1%AEP event. Assess the impact of offshore sand movement on the ALB program, including beach widths and heights adjacent to the outlets (through review of DEW beach profiles and aerial photographs) Calculate increased risk of seawall failure and S1 allowance due to reduced beach widths and heights Incorporate results into the coastal erosion hazard and risk assessment (Stages 3 and 4) and if required develop adaptation options (Stage 5) | Medium |

City of Holdfast Bay - Coastal Adaptation Plan Stage 1 Stocktake
Phase 5 Gap Analysis

| Knowledge Gap Rating | Description of Relative Importance | Consequence |
|----------------------|---|--|
| Low | While a knowledge gap has been identified, it is considered to be of limited consequence to the overall study objectives and/or the gap can be overcome by routine analysis or minimal additional collection efforts. | The detailed assessment can proceed, but additional data/information may need to be developed during the assessment. |
| Medium | A significant gap has been identified that is likely to have some bearing on the robustness of the analysis that can be undertaken and the ability to achieve the study objectives and/or the knowledge gap can be overcome but only with substantive additional analysis or data collection efforts. | An assessment of the ability to fill the knowledge gap and the value of the knowledge to the detailed assessment would need to be considered before proceeding with a detailed assessment. |
| High | A major gap has been identified that will significantly limit the robustness of the analysis that can be undertaken and significantly compromise the ability to achieve the study objectives and/or the knowledge gap can be overcome only by extensive additional analysis or data collection efforts. | The detailed assessment cannot proceed until this knowledge gap has been completed |

| Knowledge Area | GapID | Gap Identified | Scope Required to Fill Gap | Overall Knowledge Gap Rating |
|-----------------------------|-------|---|--|------------------------------|
| Coastal Erosion (continued) | 18 | Bathymetry (input to wave model below) Limited nearshore bathymetry is available along the Holdfast Bay shoreline. The DEW profiles provide recent bathymetric data but are limited to relatively narrow bands directly perpendicular to shoreline. The most recent nearshore survey was from 2005, with seabed conditions likely to have changed significantly over the last 16 years. | Cheaper satellite derived bathymetry is not expected to work at Holdfast Bay due to the presence of darker seagrass beds. These darker areas will make image analysis and therefore extracted depths inaccurate. Single beam survey should be undertaken parallel to the coastline, at 50 m spacings, filling in the gaps between the cross-shore DEW profiles. DEW hydrographic survey team should be contacted to see if they can complete additional soundings between the cross-shore profiles in their next survey campaign | High |
| | 19 | Wave measurements (wave model validation) A number of existing and potential future wave measurements were identified in Stage 1. However, these measurements were unable to be added to the database due to time limitations. | The following sources should be contacted to obtain wave measurements: <ul style="list-style-type: none"> • Flinders Ports - Adelaide Outer Harbour navigation channel ADCP measurements • Bureau of Meteorology - Port Stanvac bottom mounted pressure transducer measurements • Flinders University - 4x wave rider buoys are to be deployed in Investigator Strait and Gulf St Vincent in July 2021 and data should be available free of charge | High |
| | 20 | Extreme Wave and Water Level Modelling and Storm Erosion and Seawall Failure Assessment (S1 allowance) The extreme waves, water levels and resultant storm erosion (i.e. storm bite) and seawall damage across the study area and for different AEP events is not well understood. The 2005 Coastal Engineering Solutions (CES) coastal processes study modelled a range of extreme storm erosion events from 1948 to 2002 but resultant AEP or likelihood was not assigned for each storm. | A coupled wave and water level model should be established to investigate the extreme storm conditions and resultant erosion and seawall damage across the study area. This would involve the following general steps: Part 1 - Extreme Wave and Water Level Modelling: <ul style="list-style-type: none"> • Establish a wave and water level model, including model grids (refer bathymetry outlined in knowledge gap below) and input boundary conditions • Validate model using measured wave (refer knowledge gap below) and water level data • Identify significant storm events (i.e. top 20 events since reliable records began) for input to the model • Run the coupled wave and water level conditions for significant storm events and output waves and water levels across study area. • Develop probability curves for waves and water levels Part 2 - Storm Erosion and Seawall Failure Assessment: <ul style="list-style-type: none"> • Calculate seawall damage and storm erosion for various AEP events for input to the erosion hazard mapping (requires consideration of beach width and erosion hotspots, as well as seawall construction details, noted in knowledge gaps above). | High |
| | 21 | Adelaide Living Beaches (ALB) timeframes and scenarios The ALB program is likely to be extended beyond 2025. However, it is currently unknown how long the ALB program will be extended and what the ALB program will look like in the future. | A Workshop should be held with DEW in the next CAP Stage to identify the following: <ul style="list-style-type: none"> • The likely ALB extension timeframes • Key assumptions around future pumping volumes, sea level rise impacts and external nourishment sources and investigations • Potential for joint funding of the detailed coastal processes study (below) | High |
| | 22 | Long-term shoreline movement (S2 allowance) The following items related to long-term shoreline movements are not well understood: <ul style="list-style-type: none"> • Longshore transport rates: The 2005 Coastal Engineering Solutions (CES) coastal processes study estimated a northerly longshore transport rate of approximately 75,000 m³/yr at a number of locations along the Holdfast Bay shoreline. In recent years, in the order of 100,000 m³/yr sand has been pumped south as part of the ALB program to counter longshore transport. This suggests a significant increase in sediment transport since the initial estimates were developed. • Shoreline evolution: Given the presence of long term coastal management and seawall construction, the underlying shoreline recession rate at different locations along the coastline is not well understood. As such, how the shoreline would evolve if the ALB program was terminated in the future is unknown. • Erosion hotspots: Preliminary risk assessment identified a number of coastal segments with narrow beach widths that have an increased risk of seawall failure and long-term erosion risk. How the beach widths in these hotspots may vary seasonally and from year to year with and without the ALB program is not well understood. | A coastal processes study should be undertaken to fill the key knowledge gaps related to long-term shoreline movements. This would involve the following general steps: <ul style="list-style-type: none"> • Ortho-rectify available historical aerial photographs (1931 to 1972) and calculate historical shoreline movement rates across the study area. • Develop a recent sediment budget for the area (2016 to 2021) using the DEW profiles, recent aerial photographs, ALB pumping rates and discharge locations and Glenelg harbour dredging volumes. • Model long-term wave and water level conditions, using model grid established for extreme wave modelling (refer knowledge gap above). • Establish a shoreline evolution model using long-term wave and water level conditions, bathymetry, DEW profiles and sediment PSDs. • Calibrate shoreline evolution model outputs against the sediment budget to ensure the general transport volumes and erosion hotspots are being simulated correctly. • Model following scenarios to fill knowledge gaps: -Calculate typical longshore transport rates and variability across the site. -shoreline evolution should the ALB program be terminated. -change in seasonal and inter-annual beach widths at erosion hotspots. | High |
| | 23 | Sea Level Rise (SLR) Impacts (S3 allowance) The impacts of SLR on the following coastal processes is not well understood: <ul style="list-style-type: none"> • Long-term shoreline movement: Changes in wave direction and wave height due to SLR are likely to modify longshore transport rates in the future. This could lead to reduced beach widths in existing hotspots or erosion hotspots in different locations over time. • Beach widths: The standard Bruun rule is unlikely to adequately predict the beach recession due to SLR in front of the seawalls. | The following should be undertaken to fill knowledge gaps related to SLR: <ul style="list-style-type: none"> • Model future SLR scenarios within the shoreline evolution model (above) to identify changes in shoreline movement and erosion hotspots. • Undertake assessment of reduced beach width from SLR, including from general increases in mean sea level and offshore movement of sediment using a program such as ShoreTrans, which accounts for seawalls and hard structures. | High |

City of Holdfast Bay - Coastal Adaptation Plan Stage 1 Stocktake
Phase 5 Gap Analysis

| Knowledge Gap Rating | Description of Relative Importance | Consequence |
|----------------------|---|--|
| Low | While a knowledge gap has been identified, it is considered to be of limited consequence to the overall study objectives and/or the gap can be overcome by routine analysis or minimal additional collection efforts. | The detailed assessment can proceed, but additional data/information may need to be developed during the assessment. |
| Medium | A significant gap has been identified that is likely to have some bearing on the robustness of the analysis that can be undertaken and the ability to achieve the study objectives and/or the knowledge gap can be overcome but only with substantive additional analysis or data collection efforts. | An assessment of the ability to fill the knowledge gap and the value of the knowledge to the detailed assessment would need to be considered before proceeding with a detailed assessment. |
| High | A major gap has been identified that will significantly limit the robustness of the analysis that can be undertaken and significantly compromise the ability to achieve the study objectives and/or the knowledge gap can be overcome only by extensive additional analysis or data collection efforts. | The detailed assessment cannot proceed until this knowledge gap has been completed |

| Knowledge Area | GapID | Gap Identified | Scope Required to Fill Gap | Overall Knowledge Gap Rating |
|----------------|-------|----------------|----------------------------|------------------------------|
|----------------|-------|----------------|----------------------------|------------------------------|

| | | | | |
|-------------------|----|---|---|--------|
| Assets and values | 24 | <p>State and private assets</p> <p>A number of potential state and private assets were identified in Stage 1. However, the locations (GIS data) and costs of these assets are yet to be sought and included in the Database.</p> | <p>Following development of detailed hazard maps, request GIS data and cost from the State and private agencies within hazard areas. Examples include:</p> <ul style="list-style-type: none"> SA Water Police, health and fire Adelaide Metro SA Power Networks NBN Gas networks Telstra | Medium |
| | 25 | <p>City asset costs</p> <p>City asset locations were collated in Stage 1 but costs were not included in the preliminary data collation.</p> | <p>Following development of detailed hazard maps, collate City assets costs within hazard areas. Examples include:</p> <ul style="list-style-type: none"> Road demolition and replacement Footpath demolition and replacement BBQ, shade shelter, signage removal and replacement | High |
| | 26 | <p>Improved (purchase price) of properties</p> <p>Unimproved property values were collated in Stage 1, however, the improved or purchase price of the properties was unavailable within the Stage 1 timeframes.</p> | <p>Following development of detailed hazard maps, collate improved (purchase price) of properties in hazard areas.</p> | High |
| | 27 | <p>Non-market value of environmental, social and cultural assets</p> <p>The estimated value of the beach, beach access, foreshore reserve, dunes, cultural sites and environmental areas is currently unknown.</p> | <p>The non-market value of these environmental, social and cultural assets should be calculated through a series of survey questions and community engagement followed by statistical analysis of the survey results. The analysis could be undertaken using two methods:</p> <ul style="list-style-type: none"> Travel Cost Method: this approach uses information about the costs associated with making a trip to visit a site to infer how much people are willing to pay for each visit. These costs include monetary expenses like fuel costs, food expenditures, entry fees, and other on-site purchases, and non-monetary expenses, such as the implicit time cost for travel. Discrete Choice Experiment: this approach is a stated preference approach that estimates how individuals make trade-offs between changes in different characteristics, or attributes, of a non-market good, including a tradeoff with the cost of providing these changes. For example, this method could estimate how much people are willing to pay for protecting different lengths of foreshore infrastructure relative to having different lengths of sandy beaches left available for recreation. <p>The Travel Cost Method is a simpler approach and provides a lower-bound estimate of the value (e.g. beach). The Discrete Choice Experiment provides the total economic value of the coastal assets for which values are being measured but requires a more detailed set of questions and statistical analyses.</p> <p>Undertaking at least the Travel Cost Method is recommended as a High Knowledge Gap Rating, whilst the Discrete Choice Experiment would be considered a Medium Knowledge Gap Rating.</p> <p>Full details on the methodology and survey questions for the two methods are outlined in Rogers A et</p> | High |



Appendix H - Stage 3 Project Plan

Stage 3 – Identifying coastal hazards

Establish baseline conditions and develop projections for future coastal hazard risks.

| Step | Task ID | Task Name | Task Description | Fee Estimate | Provisional Items | Timing (months) | Project Month |
|---|---|--|--|-----------------|-------------------|-----------------|---------------|
| Step 1 - Data Collation | 3.1 | Collate and review existing background data | <p>Objective: Collate and review existing background data from Stage 1 database and identified in Stage 1 Gap Analysis.</p> <p>Review background data and reports. Results contained in database and literature review folders</p> <p>Existing data to be collated includes:</p> <ul style="list-style-type: none"> • Holdfast Shores floor levels from City/landowner (GapID2) • Glenelg water level measurements contact from Greg Pearce at Flinders Ports (GapID3) • Groundwater levels from DEW (GapID4) • Patawalonga Lake Level Measurements from DEW (GapID7) • Upgraded Patawalonga barrier details from DEW (GapID8) • Output flood map GIS data from Tonkin (2014) study, including present and long-term 1% AEP catchment flooding and 1% AEP ocean flooding scenarios (GapID10) • GSC groyne locations between The Broadway and Minda Dunes (GapID12) • Stormwater outlet flows from Tonkin (GapID16) • Adelaide Outer Harbour navigation channel ADCP wave measurements from Flinders Ports (GapID19) • Port Stanvac bottom mounted pressure transducer measurements from Bureau of Meteorology (GapID19) • 4x wave rider buoys are to be deployed in Investigator Strait and Gulf St Vincent in July from Flinders University (GapID19) <p>Deliverable: Updated project database</p> | \$9,000 | - | | |
| | 3.2 | Bathymetric Data Collection (GapID18) | <p>Objective: Engage specialist sub-consultant to collect bathymetry for input to Coastal Processes Study (Step 3).</p> <p>Specific requirements include:</p> <ul style="list-style-type: none"> • A bathymetric survey of the nearshore area (landward from the -7 mAHN contour) across the approximate 10km coastline. • 100m spacings between runs parallel to the shore, giving around 10 runs between the -1 mAHN and -7 mAHN contour offshore. <p>Deliverable: PDF plan of survey and x,y,z data for input to model grid development.</p> | \$21,000 | - | 2 | 1-2 |
| | 3.3 | Seawall Construction Details & Reef Levels (GapID14 & GapID15) | <p>Provisional Item</p> <p>Trigger: Required if insufficient data collected as part of proposed 2021 seawall repairs.</p> <p>Objective: Site works to fill knowledge gaps related to seawall construction details and reef levels in Glenelg North.</p> <p>Coastal Engineer to supervise collection of following seawall construction details:</p> <ul style="list-style-type: none"> • Rock revetment armour density: A mining pick or jack hammer should be used to collect rock armour samples at 5 rock revetment locations across the study area. These samples should be tested for rock density within a laboratory to identify the range of existing densities. • Rock revetment and vertical concrete seawall toe levels: An excavator should be used to excavate to the toe at 5 rock revetment and vertical seawall locations. • Glenelg North reef levels: Use excavator above to excavate and survey the reef level at the seawall toe and under the beach. <p>Deliverable: Rock density test results, seawall toe levels and Glenelg North reef levels for input to Seawall failure assessment (Task 3.10).</p> | - | \$11,000 | | |
| Sub-total | | | | \$30,000 | \$11,000 | | |
| Engagement Task E3.4 | HOLD POINT - Workshop with DEW on ALB program (GapID21) for input into scenarios planning (Task 3.4) | | | | | 1 | 3 |
| Step 2 – SLR & Joint Probability Assessment | 3.4 | Planning Horizons & SLR Review | <p>Objective: Determine suitable planning horizons, Sea Level Rise (SLR) values for input to future stages of CAP</p> <p>Indicative planning horizons of 2030, 2050, 2070 and 2100 were identified in the best-practice review but are subject to change based on discussions with DEW (refer below).</p> <p>Specific activities include:</p> <ul style="list-style-type: none"> • Consider outcomes of Adelaide Living Beaches (ALB) Workshop (GapID21) to establish proposed planning horizons • Review latest IPCC SLR scenarios and latest regional SLR data • Analyse OH water levels and extract long term trend • Liaise with CPB and City regarding proposed planning horizons and SLR values <p>Deliverable: Summarise findings in SLR and Joint Probability (Step 2) Technical Note.</p> | \$5,000 | - | | |
| | 3.5 | High-level Joint Probability Review | <p>Objective: Determine suitable Annual Exceedance Probability (AEP) events for input to future stages of CAP</p> <p>Specific activities include:</p> <ul style="list-style-type: none"> • Identify significant storm events (say top 20 events since reliable records began) and assess range of AEP events for input to risk assessment. • Develop wave and water level storm scenarios for input to Step 3 modelling. • Liaise with Tonkin regarding methods/references used to assess rainfall and storm surge joint probability input into the flood mapping (GapID9). Refer provisional item if uncertainty remains. <p>Deliverable: Summarise findings in SLR and Joint Probability (Step 2) Technical Note.</p> | \$3,000 | - | 1 | 4 |
| | 3.6 | Joint Probability Assessment | <p>Provisional Item</p> <p>Trigger: Required if uncertainty still remains following the review of Tonkin model inputs (Task 3.5)</p> <p>Objective: Determine suitable AEP water level inputs to future dynamic inundation modelling (to be undertaken in future revisions of the CAP).</p> <p>This would involve a joint probability analysis of rainfall, catchment flooding and storm surges to confirm the findings of the Tonkin (2014) study and to identify the potential correlation and recommended AEP events for input to future dynamic inundation modelling.</p> <p>Deliverable: Summarise findings in SLR and Joint Probability (Step 2) Technical Note.</p> | - | \$21,000 | | |
| Sub-total | | | | \$8,000 | \$21,000 | | |

Stage 3 Engagement – Awareness raising and values engagement

| Stage 3 Engagement Activity ID | Engagement activity | Target stakeholder groups | Fee Estimate | Project Month |
|--------------------------------|--|---|--------------|---------------|
| E3.1 | Kaurna meeting | Kaurna Nation Cultural Heritage Association | \$2,000 | |
| E3.2 | Presentation to Elected Members | Elected Members | \$1,500 | 2 |
| E3.3 | Community and Stakeholder Reference Group | <ul style="list-style-type: none"> • Community Groups/ Orgs. • Key asset owners (eg. Surf Life Saving Clubs) • Business groups • Development groups | \$4,000 | |
| E3.4 | Stage 3 Key stakeholder meetings - Refer HOLD POINT for E3.4 | <ul style="list-style-type: none"> • DEW Coast Branch • State government agencies and utilities • Adjacent Councils | \$3,000 | 3 |
| E3.5 | Project factsheet(s) | All | \$2,000 | |
| E3.6 | Stage 3 Promotional materials | All | \$5,000 | 3-4 |
| E3.7 | Project webpage | All | \$1,500 | |
| E3.8 | Stage 3 Community and stakeholder reference group meeting | Community and Stakeholder Reference Group | \$2,500 | |

Stage 3 – Identifying coastal hazards

Establish baseline conditions and develop projections for future coastal hazard risks.

| Step | Task ID | Task Name | Task Description | Fee Estimate | Provisional Items | Timing (months) | Project Month |
|--|---------|---|---|------------------|-------------------|-----------------|---------------|
| Step 3 – Wave, Water Level & Coastal Processes Study | 3.7 | Extreme Wave and Water Level Modelling (GapID20 Part 1) | <p>Objective: Establish and calibrate a coupled wave and water level model to investigate the extreme storm conditions and resultant erosion and seawall damage across the study area.</p> <p>This task would involve the following activities:</p> <ul style="list-style-type: none"> Establish a wave and water level model, including model grids and input boundary conditions. This should have a variable bottom friction grid developed using benthic habitat maps to allow testing of seagrass meadow and artificial reef impacts. Validate model using measured wave, water level and wind data (to be provided by others). Assume 2 water level locations and 3 wave locations for validation. Run the coupled wave and water level conditions for significant storm events and output waves and water levels across study area (say 10 locations for input to SBEACH model). Develop probability curves for waves (say 10 locations). Develop probability curves for water levels (say 10 locations). Develop probability curves for storm bite using top 20 storm events at 10 locations (erosion modelling and seawall damage to be completed by others). Simulate 4 design storm events, such as 1%, 2%, 5% and 10% AEP (selected in conjunction with others) and output waves and water levels across site. <p>Deliverable: Summarise in standalone Coastal Processes (Step 3) report.</p> <p>Objective: Develop a sediment budget for calibration of the Shoreline Evolution Model (Task 3.9)</p> | \$42,000 | | | |
| | 3.8 | Sediment Budget | <p>Specific activities would include:</p> <ul style="list-style-type: none"> Ortho-rectify images and analyse for shoreline movement Identify rocky coastline extent from images in Kingston Park (GapID13) Review DEW beach and nearshore profiles to identify typical shoreline movement rates Review ALB collection and discharge volumes and locations to determine typical volume placement Review Glenelg dredge volumes and timing for inclusion in Segment 1 sediment budget <p>Deliverable: Use information above to develop an annual sediment budget from 2016 to 2021, accounting for ALB program</p> | \$7,000 | - | | |
| | 3.9 | Long-term Wave and Shoreline Evolution Modelling (GapID21) | <p>Objective: Establish and calibrate a shoreline evolution model to fill the key knowledge gaps related to long-term shoreline movements.</p> <p>This task would involve the following activities:</p> <ul style="list-style-type: none"> Model long-term wave and water level conditions (inc. storm surge but not full coupled model as above), using model grid established for extreme wave modelling. Establish a shoreline evolution model with following minimum inputs: <ul style="list-style-type: none"> long-term wave and water level conditions, bathymetry, DEW beach profiles, and sediment size. Include ALB pumping program within the model (refer attached plan for discharge points). Validate shoreline evolution model outputs against the sediment budget (Step 3 Task 2) to ensure the general transport volumes and shoreline movements are being simulated correctly. Model existing long-term wave and shoreline evolution from 2016 to 2021 (including ALB pumping rates and discharge locations) to output: <ol style="list-style-type: none"> Typical longshore transport rates and variability across the site. Identify existing erosion hotspots based on shoreline evolution (i.e. identify where ALB pumping may not sufficiently maintain beach widths). Estimate change in seasonal and inter-annual beach widths at erosion hotspots. <p>Refer to Step 3 Task 5 for future scenarios.</p> <p>Deliverable: Summarise in standalone Coastal Processes (Step 3) report.</p> | \$52,000 | - | 4 | 5-8 |
| | 3.10 | Storm Erosion and Seawall Failure Assessment (GapID20 Part 2) | <p>Objective: Assess storm erosion and existing seawall failure risk across the study area</p> <p>This task would involve the following activities:</p> <ul style="list-style-type: none"> Review extreme wave and water level model outputs (Task 3.7) and beach width variation (Task 3.9) for input to SBEACH model SBEACH modelling to determine beach and dune (Minda Dunes) erosion and to output waves and water levels at seawalls across study site for a range of AEP events Assess potential seawall failure at 200m chainages across the study area, using Condition Inspection and seawall construction details collected in Task 3.3 (if required) Determine potential erosion behind failed seawall sections <p>Objective: Standalone Technical Note identifying priority seawall failure locations</p> <p>Objective: Assess impact of future SLR on longshore and cross-shore transport</p> | \$10,000 | - | | |
| | 3.11 | Sea Level Rise Impacts (GapID23) | <p>This task would involve two key activities:</p> <p>Longshore transport: Simulate the impact of SLR scenarios on longshore transport and changes in erosion hotspot locations:</p> <ul style="list-style-type: none"> Assume 10 year model run for each SLR scenario, including consideration of ALB program: <ol style="list-style-type: none"> 2030 2050 2070 2100 Cross-shore transport: Assess impact of SLR on cross-shore transport using ShoreTrans or similar program, which can account for seawall structures <p>Deliverable: Summarise in standalone Coastal Processes (Step 3) report.</p> | \$14,000 | - | | |
| | 3.12 | Additional Scenarios | <p>Provisional Item</p> <p>Trigger: Required if additional scenarios identified throughout consultation or model establishment.</p> <p>Objective: Assess impact of different scenarios on longshore transport</p> <p>Specific scenarios could include:</p> <ul style="list-style-type: none"> Changes in seagrass coverage Changes in storminess or swell directions Different ALB timing or volumes Adaptation options, such as mass nourishment <p>Provisional costs noted are per scenario.</p> <p>Deliverable: Summarise in standalone Coastal Processes (Step 3) report.</p> | - | \$5,000 | | |
| Sub-total | | | | \$125,000 | \$5,000 | | |

Stage 3 Engagement – Awareness raising and values engagement

| Stage 3 Engagement Activity ID | Engagement activity | Target stakeholder groups | Fee Estimate | Project Month |
|--------------------------------|--|--|--------------|---------------|
| E3.9 | Online values survey | Community including groups, residents, businesses, property and asset owners | \$2,500 | 4-5 |
| E3.10 | Community conversation pop-up(s) - assume 2 pop up locations | All | \$6,000 | |
| E3.11 | Stage 3 Engagement Summary Report | All | \$4,000 | 6 |
| E3.12 | Stage 3 'what we heard' fact sheet | All | \$1,500 | |
| E3.13 | Stage 3 Project webpage update | All | \$750 | |

Stage 3 – Identifying coastal hazards

Establish baseline conditions and develop projections for future coastal hazard risks.

| Step | Task ID | Task Name | Task Description | Fee Estimate | Provisional Items | Timing (months) | Project Month |
|--|------------------|---|---|------------------|-------------------|-----------------|---------------|
| Step 4 - Hazard Maps | 3.13 | Inundation Hazard Maps (Gap/D5) | <p>Objective: Develop inundation hazard maps for input to risk assessment (Stage 4)</p> <p>Based on the gap analysis, it's proposed only present day, 2050 and 2100 maps are developed in this CAP revision, using existing inundation (bath-tub) and flood maps (Tonkin, 2014). As noted in the gap analysis, priority should be given to detailed investigation of erosion risks (Step 3), given the much higher erosion risk profile identified in the Preliminary Hazard Mapping. Dynamic inundation and flood modelling of present day and future SLR scenarios could be undertaken in future revisions of the CAP with limited impact on the overall study objectives.</p> <p>This task would involve the following activities:</p> <ul style="list-style-type: none"> • Present Day and 2050 maps: Review Tonkin flood map GIS data, including 1% AEP catchment flooding and 1% AEP ocean flooding scenarios, to identify critical cases for hazard map development • 2100 maps: Develop bath-tub maps using coastal inundation levels, including updates to DEM at Holdfast Shores and upgraded Patawalonga barrage <p>Deliverable: Summarise in standalone Technical Note for Hazard Map Development (Step 4)</p> | \$4,000 | - | | |
| | 3.14 | Groundwater Shoaling Hazard Maps | <p>Objective: Identify the potential groundwater shoaling hazard extent</p> <p>This task would involve the following activities:</p> <ul style="list-style-type: none"> • Review existing groundwater level data and reports • Analyse DEM to calculate potential groundwater shoaling locations for future SLR scenarios <p>Deliverable: Summarise in standalone Technical Note for Hazard Map Development (Step 4)</p> | \$7,000 | - | | |
| | 3.15 | Stormwater Outflow Hazard Assessment and Maps (Gap/D16) | <p>Objective: Identify the erosion hazard presented by stormwater outflow over beach</p> <p>This task would involve the following activities:</p> <ul style="list-style-type: none"> • Using stormwater outflows output from Tonkin model, calculate the subsequent volume of sand moved offshore during 1% AEP event. • Assess the impact of offshore sand movement on the ALB program, including beach widths and heights adjacent to the outlets (through review of DEW beach profiles and aerial photographs) • Calculate increased risk of seawall failure and S1 allowance due to reduced beach widths and heights • Incorporate results into the coastal erosion hazard and risk assessment (Stages 3 and 4) and if required develop adaptation options (Stage 5) <p>Deliverable: Summarise in standalone Technical Note for Hazard Map Development (Step 4)</p> | \$9,000 | - | 1 | 9 |
| | 3.16 | Erosion Hazard Maps | <p>Objective: Develop erosion hazard maps for input to risk assessment (Stage 4)</p> <p>This task would involve the following activities:</p> <ul style="list-style-type: none"> • S1 erosion assessment - use outputs from Storm Erosion and Seawall Failure Assessment (Task 3.10) to establish S1 allowances for different AEP storm events • S2 erosion assessment - use ALB scenarios and erosion hotspots identified in shoreline evolution model (Task 3.9) to define future shoreline movements and S2 erosion allowance • S3 erosion assessment - use outputs from SLR Impacts review (Task 3.11) to define S3 erosion allowance • Combine factors to determine erosion hazard maps for a range of AEP events and future SLR scenarios <p>Deliverable: Summarise in standalone Technical Note for Hazard Map Development (Step 4)</p> | \$9,000 | - | | |
| | Sub-total | | | | \$29,000 | - | |
| Step 5 - Reporting & Project Management | 3.17 | Draft Summary Report | <p>Objective: Prepare draft Stage 3 summary report</p> <p>Summarise key findings of Stage 3 analysis in standalone report, with all other reports and technical notes attached.</p> <p>Deliverable: Draft Summary Report</p> | \$6,000 | - | | |
| | 3.18 | Presentation | <p>Objective: Present key findings to Council</p> <p>Prepare powerpoint presentation and present key findings to Council for feedback.</p> <p>Deliverable: Summary slide pack</p> | \$3,000 | - | 2 | 10-11 |
| | 3.19 | Finalise Summary Report | <p>Objective: Incorporate feedback into summary report</p> <p>Based on Council and key stakeholder feedback (allow one iteration) finalise summary report</p> <p>Deliverable: Final Stage 3 Summary Report</p> | \$4,000 | - | | |
| | 3.20 | Fortnightly updates | Fortnightly updates on project (assume 10 month timeframe) | \$2,000 | - | | |
| | Sub-total | | | | \$15,000 | - | |
| Total Stage 3 - Identifying Coastal Hazards | | | | \$207,000 | \$37,000 | 11 | 11 |

Stage 3 Engagement – Awareness raising and values engagement

| Stage 3 Engagement Activity ID | Engagement activity | Target stakeholder groups | Fee Estimate | Project Month |
|---------------------------------|---------------------|---------------------------|-----------------|---------------|
| | | | | |
| Total Stage 3 Engagement | | | \$36,250 | 6 |



Appendix I- Stages 4 to 6 Project Plan

Stage 4 – Assessing risks and vulnerability

- Determine level of risk assessment to be undertaken
- Agree upon a risk management framework
- Assess the likelihood and consequence of risks and assign risk ratings
- Identify priority risks

| Step | Task ID | Task Name | Task Description | Timing (months) | Project Month |
|--|---------|--|--|-----------------|---------------|
| Engagement Tasks E3.9 & E3.10 | | | | - | 5 |
| Step 1 – Asset and Values Identification | 4.1 | Review online value survey results | Collate and review asset and values data from values survey and Community conversation pop-up results (above) Deliverable: Additional assets included in asset database | 2 | 12-13 |
| | 4.2 | Travel Cost Method | Analyse online survey and popup question results (above) for Travel Cost Method to determine minimum value of beach, recreational and cultural values. Deliverable: Include travel costs within asset database | | |
| | 4.3 | Collate State asset data (Gap/D24) | Request GIS data and cost from the State and private agencies within hazard areas. Examples include: • SA Water • Police, health and fire • Adelaide Metro • SA Power Networks • NBN • Gas networks • Telstra Deliverable: State assets, including their replacement cost and adaptive capacity, included in asset database | | |
| | 4.4 | Collate City asset costs (Gap/D25) | Collate replacement costs of City foreshore assets within hazard zones. Examples include: • Road demolition and replacement • Footpath demolition and replacement • BBQ, shade shelter, signage removal and replacement Deliverable: City assets, including their replacement cost and adaptive capacity, included in database | | |
| | 4.5 | Collate improved value of properties (Gap/D26) | Following development of detailed hazard maps, collate improved (purchase price) of properties in hazard areas. Deliverable: Improved value of properties included in asset database | | |
| Engagement Task E4.1 | | | | - | 13 |
| Step 2 – Risk Assessment | 4.6 | Consequence scales | Using risk framework identified in staff risk framework workshop (above) and hazard maps, determine consequence scale for different assets (and asset groups) for the range of planning horizons and AEP events. Undertake assessment for key hazards, including: • Erosion, including stormwater outlet hazards • Inundation, including groundwater shoaling Deliverable: Updated asset database with consequence scales | 2 | 14-15 |
| | 4.7 | Likelihood descriptor | Assign likelihood scales to different AEP events over range of planning horizons Deliverable: Updated asset database with likelihood descriptor | | |
| | 4.8 | Risk profiles | Using assigned likelihood and consequence scales, as well as the risk matrix, calculate the risk profiles for asset types for the range of planning horizons. Deliverable: Updated asset database with risk profiles | | |
| Step 3 – Vulnerability Assessment | 4.9 | Adaptive capacity | Determine adaptive capacity of different assets and values to erosion and inundation hazards Deliverable: Updated asset database with adaptive capacity | 2 | 16-17 |
| | 4.10 | Vulnerability profiles | Using assigned risk profiles and adaptive capacity, calculate the vulnerability profiles for asset types for the range of planning horizons. Deliverable: Updated asset database with vulnerability profiles | | |
| | 4.11 | Priority assets and values | Identify priority assets and values vulnerable to hazards that require new treatments or actions to reduce or eliminate vulnerability Deliverable: Priority list of assets and values | | |
| Step 4 – Reporting | 4.12 | Draft Summary Report | Summarise key findings of Stage 4 analysis in standalone report, with all other reports and technical notes attached. Deliverable: Draft Summary Report | 1 | 18 |
| | 4.13 | Presentation | Prepare powerpoint presentation and present key findings to Council for feedback. Deliverable: Summary slide pack | | |
| | 4.14 | Finalise Summary Report | Based on Council and key stakeholder feedback (allow one iteration) finalise summary report Deliverable: Final Stage 4 Summary Report | | |
| | 4.15 | Fortnightly updates | Fortnightly updates on project (assume 10 month timeframe) | | |
| Total Stage 4 - Assessing Risks and Vulnerability | | | | 7 | 18 |

Stage 4 Engagement – Risk assessment engagement

| Stage 4 Engagement Task ID | Engagement activity | Target stakeholder groups | Project Month |
|---------------------------------|---|--|---------------|
| E4.1 | Staff risk framework workshop - Refer HOLD POINT for E4.1 | Council staff | 13 |
| E4.2 | Stage 4 Community and Stakeholder Reference Group | Community and Stakeholder Reference Group | 14 |
| E4.3 | Stage 4 Key stakeholder meetings | • State government agencies and utilities • Adjacent Councils | |
| E4.4 | Stage 4 Kurna Meeting | Kurna Nation Cultural Heritage Association | |
| E4.5 | Risk fact sheet | All | 18 |
| E4.6 | Stage 4 Project webpage update | All | |
| Total Stage 4 Engagement | | | 18 |

Stage 5 – Identifying adaptation options

Ensure that coastal adaptation planning leads to on-ground action that builds resilience to current and future coastal hazards.

| Step | Task ID | Task Name | Task Description | Timing (months) | Project Month |
|--|---------|--|---|-----------------|---------------|
| Step 1 - Identify Adaptation Options | 5.1 | Identify adaption options | Identify all adaptation options for managing priority list of vulnerable assets identified in Stage 4 Step 3 Deliverable: List of adaptation options for input to first pass screening workshops | 1 | 19 |
| | 5.2 | Costing | Develop high level costs of all adaptation options | | |
| Engagement Task E5.1 HOLD POINT - First Pass Screening Workshop and MCA Criteria Development | | | | 1 | 20 |
| Step 2 - First Pass Screening & MCA | 5.3 | First Pass Screening | Based on results of first pass screening workshop, develop a long list of adaptation options (say 3-10 options) Deliverable: Long list of potential adaptation options for MCA assessment | 1 | 21 |
| | 5.4 | MCA | Undertake initial MCA of long list using criteria developed in first pass screening workshop Deliverable: Initial MCA results for discussion and workshoping (below) | | |
| Engagement Task E5.5 HOLD POINT - MCA Workshop | | | | 1 | 22 |
| Step 3 - Cost Benefit Analysis & Adaptation Pathways | 5.5 | Develop Shortlist | Based on results of MCA workshop, develop a short list of feasible adaptation options (say 1-3 options) Deliverable: Short list of potential adaptation options for Cost Benefit Analysis (CBA) | 3 | 23-25 |
| | 5.6 | CBA | Undertake CBA for each short listed option, calculating the net cost and net benefit through economic analysis. This requires input of the non-market value of a beach identified in Stage 4 Step 1. Deliverable: CBA results, which should identify most economically viable adaptation option | | |
| | 5.7 | Identify preferred pathways and triggers | Identify preferred adaptation pathways and create pathway diagrams. Adaptation triggers would also be developed at this stage, using physical triggers and local measurements where possible. Deliverable: Adaptation pathway and trigger diagrams | | |
| Engagement Tasks E5.6 to E5.12 HOLD POINT - Feedback on adaptation options, including community survey, for input to summary report | | | | 1 | 26 |
| Step 4 - Reporting | 5.8 | Draft Summary Report | Incorporate findings of feedback into adaptation pathways . Summarise key findings of Stage 5 in standalone report, with all other reports and technical notes attached. Deliverable: Draft Summary Report | 1 | 27 |
| | 5.9 | Presentation | Prepare powerpoint presentation and present key findings to Council for feedback. Deliverable: Summary slide pack | | |
| | 5.10 | Finalise Summary Report | Based on Council and key stakeholder feedback (allow one iteration) finalise summary report Deliverable: Final Stage 5 Summary Report | | |
| | 5.11 | Fortnightly updates | Fortnightly updates on project (assume 10 month timeframe) | | |
| Total Stage 5 - Identifying Adaptation Options | | | | 9 | 27 |

Stage 5 Engagement – Options Engagement

| Stage 5 Engagement Task ID | Engagement activity | Target stakeholder groups | Project Month |
|---------------------------------|---|--|---------------|
| E5.1 | Staff first pass screening workshop - Refer HOLD POINT for E5.1 | Council staff | 20 |
| E5.2 | Stage 5 Community and Stakeholder Reference Group | Community and Stakeholder Reference Group | 21 |
| E5.3 | Stage 5 Key stakeholder meetings (if required) | State government agencies and utilities | |
| E5.4 | Stage 5 Kurna Meeting (if required) | Kurna Nation Cultural Heritage Association | 22 |
| E5.5 | Staff MCA workshop - Refer HOLD POINT for E5.5 | Council staff | |
| E5.6 | Stage 5 Key stakeholder meetings (if required) | State government agencies and utilities | 23 |
| E5.7 | Stage 5 Kurna Meeting (if required) | Kurna Nation Cultural Heritage Association | |
| E5.8 | Stage 5 Community and Stakeholder Reference Group | Community and Stakeholder Reference Group | 24 |
| E5.9 | Stage 5 Elected Member workshop/briefing | Elected Members | |
| E5.10 | Project fact sheet – options assessment | All | 26 |
| E5.11 | Stage 5 Promotional materials | All | |
| E5.12 | Online survey of adaptation options - Refer HOLD POINT for E5.12 | All | 27 |
| E5.13 | Stage 5 Project webpage update | All | |
| E5.14 | Stage 5 Engagement Summary Report | All | 27 |
| E5.15 | Stage 5 'what we heard' fact sheet | All | |
| E5.16 | Stage 5 Project webpage update 2 | All | |
| Total Stage 5 Engagement | | | 27 |

Stage 6 – Plan development and review

Identify priority adaptation options for implementation and develop an approach to monitor and evaluate.

| Step | Task ID | Task Name | Task Description | Timing (months) | Project Month |
|--|---------|--------------------------------|--|-----------------|---------------|
| Engagement Task E6.1 | | | | 1 | 28 |
| HOLD POINT - Workshop with City staff and Community and Stakeholder Reference Group to determine Implementation Plan inputs | | | | | |
| Step 1 - Develop Implementation Plan | 6.1 | Planning Incorporation | Incorporate preferred governance/planning adaptation options into planning processes. Key outcomes should be embedded in council corporate governance documents, including: • Council risk register • Asset management plan • Long-term financial management plan, including findings of the funding mechanisms review (below) | 2 | 29-30 |
| | 6.2 | Funding Mechanisms | Using results of Cost Benefit Analysis (CBA), identify funding mechanisms to ensure streamlined implementation of preferred adaptation options. A range of mechanisms are available to local government, including: • rates, including differential rates increases • loans • grants or infrastructure funds • special purpose levies • proportioning a percentage of annual operating budgets to coastal management • 'beneficiary pays', i.e. Funding from beneficiaries of adaptation options. • public private partnerships | | |
| | 6.3 | Monitoring and Evaluation | Identify monitoring, evaluation and review timeframes. The Implementation Plan should clearly outline the monitoring and review process for the CAP, including frequency of review. Key elements to review over time include: • Monitor triggers and thresholds, including SLR or erosion triggers. • Implementation of adaptation options identified in earlier CAPs. • Improvement in the understanding of physical processes or changes in coastal processes due to climate change, including • Storminess due to climate change • Wind and swell direction due to climate change • Seagrass growth and death patterns due to changes in sea temperatures or acidification. • Changes in the Coastal Management Approach • Changing risk profile and tolerance. For example, over time with sea level rise, a community may come to tolerate a higher frequency of inundation of a coastal foreshore area during extreme events. | | |
| | 6.4 | Resources and Responsibilities | Identify resourcing & responsibilities for the above actions to be undertaken under the Implementation Plan. | | |
| | 6.5 | Implementation Plan Reporting | Bring implementation tasks together into an Implementation Plan Deliverable: Prepare standalone Implementation Plan to be attached to final summary report | | |
| Engagement Tasks E6.2 & E6.3 | | | | - | 30 |
| HOLD POINT - Opportunity for stakeholder input to Draft CAP Plan | | | | | |
| Step 2 - Draft CAP Report | 6.6 | Draft CAP Report | Prepare draft CAP report, which incorporates the findings of the Implementation Plan and Stages 1 to 5 summary reports Deliverable: Draft CAP summary report | 1 | 31 |
| Engagement Tasks E6.4 to E6.6 | | | | 2 | 32-33 |
| HOLD POINT - Review Draft CAP Plan by stakeholders and Elected Members and adoption for public comment | | | | | |
| Engagement Tasks E6.7 & E6.8 | | | | 1 | 34 |
| HOLD POINT - Feedback from community members via online survey and community pop-ups | | | | | |
| Step 3 - Final Draft CAP Report | 6.7 | Final Draft CAP Report | Prepare Final Draft CAP report, which incorporates feedback from above engagement Deliverable: Final Draft CAP summary report for review by key stakeholders and Community Reference Group | 1 | 35 |
| Engagement Tasks E6.15 to E6.17 | | | | 1 | 36 |
| HOLD POINT - Review Final Draft Plan by key stakeholders and Community Reference Group | | | | | |
| Step 4 - Final Report | 6.8 | Final CAP Report | Prepare final CAP report, which incorporates feedback from above engagement and presented to Council for adoption Deliverable: Final draft CAP summary report | 1 | 37 |
| Total Stage 6 - Plan Development and Review | | | | 10 | 37 |

Stage 6 Engagement – Engagement on the plan

| Engagement Sub-stage | Stage 6 Engagement Task ID | Engagement activity | Target stakeholder groups | Project Month |
|----------------------------------|----------------------------------|--|---|---|
| Stage 6a - Draft Plan Engagement | E6.1 | Stage 6a Combined staff and Community and Stakeholder Reference Group workshop - Refer HOLD POINT for E5.1 | • Community and Stakeholder Reference Group • Staff | 28 |
| | E6.2 | Stage 6a Key stakeholder meetings | • State government agencies and utilities • Kaurua Nation Cultural Heritage Association • Adjacent Councils | 30 |
| | E6.3 | Stage 6a Council staff workshop | Council staff | 30 |
| | E6.4 | Stage 6a Community and Stakeholder Reference Group | Community and Stakeholder Reference Group | 32 |
| | E6.5 | Stage 6a Elected Member workshop | Elected Members | 32 |
| | E6.6 | Stage 6a Council report | Elected Members | 33 |
| | E6.7 | Online survey draft plan | All | 34 |
| | E6.8 | Community conversation pop-up(s) | All | 34 |
| | E6.9 | Draft plan summary fact sheet | All | 35 |
| | E6.10 | Stage 6a project webpage update 1 | All | 35 |
| | E6.11 | Stage 6a Promotional materials | All | 35 |
| | E6.12 | Stage 6a Engagement Summary Report | All | 35 |
| | E6.13 | Stage 6a 'what we heard' fact sheet | All | 35 |
| | E6.14 | Stage 6a project webpage update 2 | All | 35 |
| | Stage 6b - Final Plan Engagement | E6.15 | Stage 6b Key stakeholder meetings (if required) | • State government agencies and utilities • Kaurua Nation • Adjacent Councils |
| E6.16 | | Stage 6b Community and Stakeholder Reference Group | Community and Stakeholder Reference Group | 36 |
| E6.17 | | Stage 6b Council report | Elected Members | 36 |
| E6.18 | | Final plan summary fact sheet | All | 37 |
| E6.19 | | Stage 6b Promotional materials | All | 37 |
| E6.20 | | Stage 6b project webpage update | All | 37 |
| E6.21 | | Stage 6 project webpage update 2 | All | 37 |
| Total Stage 6 Engagement | | | | 37 |

Item No: 15.7

Subject: **PATHWAY AT SEACLIFF CITY-BOUND RAILWAY PLATFORM**

Date: 27 September 2022

Written By: Team Leader, Environment and Coast

General Manager: Assets and Delivery, Michael de Heus

SUMMARY

On 28 June 2022, Council directed Administration to investigate, including consultation with the Department for Infrastructure and Transport (DIT) and the Seacliff Rail Care Group, options for creating a pathway through the trees and bushes along the eastern verge of Kauri Parade, between Bus Stop 40A and the steps to the Seacliff city-bound platform. The area, a distance of approximately 95 metres, is on land under the ownership and care and control of DIT.

Administration consulted with both DIT and the Seacliff Rail Care group. DIT has agreed to assist the Rail Care group to remove weeds, and Council will support through provision of traffic management an installation of a path and provide plants for revegetation and the Seacliff Rail Care group will undertake planting and maintenance.

RECOMMENDATION

That Council note the report.

STRATEGIC PLAN

Contributes to active transport, walkability, reclaiming streets for nature, improving the public realm and collaborating with transport providers.

COUNCIL POLICY

Not applicable

STATUTORY PROVISIONS

Not applicable

BACKGROUND

On 28 June 2022 Council passed the following motion (C280622/2644):

That Council Administration investigate, including consultation with Department of Infrastructure and Seacliff Rail Care Group and bring a report back to Council which explores options for creating a pathway through the trees and bushes along the verge on Kauri Parade from the Bus Stop to link up with the green open space/reserve by the Seacliff City bound platform.

REPORT

Administration has consulted with both the Department for Infrastructure and Transport (DIT), and the Seacliff Rail Care group. The project has great support from both stakeholders and DIT who also stated that they have additional support for the project from nearby residents who are not members of the Seacliff Rail Care group. The location in question is shown in yellow in the image below. The site is owned by DIT and Council does not lease it, therefore responsibility for maintenance of the site lies with DIT.



DIT are willing to contribute labour to the control and removal of weeds, including declared weeds such as olives, Aleppo pines, and buckthorn, and a Weed of National Significance (boneseed). Removal will also include a number of large tea trees (*Melaleuca* sp.) that are at the end of their lives, some oleanders and some very small palm seedlings, amongst others. This weed control and removal work will happen between October and December 2022. The Seacliff Rail Care group have been made aware that the large palm in this section of verge should stay and therefore will not be removed.

Council will support the project with work zone traffic management, provision of a chipper, installation of a path and mulch, and the selection and provision of native plants to be planted by

the Seacliff Rail Care group in winter 2023. Funds have been included within current budget for works supporting rail care groups.

The path and mulch will be installed sometime between January and April 2023. The path will look natural, similar to the path in the Cedar Avenue reserve, shown in the image below, although the site will be narrower than the Cedar Avenue reserve. The path will be designed to meander amongst vegetation within the confines of the site and around a large palm and existing above ground services. The path is predominately for access to maintain the site but can and will be used by those wishing to access the rail platform.

The path will be surrounded by new native vegetation including trees, shrubs, ground covers, native grasses (there are already some on site that we will keep) and wildflowers. The route of the path has no powerlines overhead so there is the potential to plant trees such as She-oaks and blue gums for canopy subject to an underground services search. The suite of native plants to be used in revegetating the site will be similar to those in the Cedar Avenue reserve.



BUDGET

An allocation of \$5,000 was allowed for within the current operational budget.

LIFE CYCLE COSTS

The site will be cared for and maintained by the Seacliff Rail Care group.

Item No: 15.8

Subject: **SAND IN THE GLENELG TO KINGSTON PARK BEACH SYSTEM**

Date: 27 September 2022

Written By: Team Leader, Environment and Coast

General Manager: Assets and Delivery, Michael de Heus

SUMMARY

Administration were directed by Council to work with the Coast Protection Board to report on the amount of sand in the Glenelg to Kingston Park system, and whether any additional sand is required. The Coast Protection Board have advised that no additional sand is required in the system.

RECOMMENDATION

That Council note the report.

STRATEGIC PLAN

Protecting our heritage and beautiful coast

COUNCIL POLICY

Not applicable

STATUTORY PROVISIONS

Coastal Protection Act 1972

BACKGROUND

On 26 July 2022, Council passed the following motion (C260722/2675):

That Administration be directed to work with the Coastal Protection Board and provide Council with a report on the amount of sand lost in the Glenelg to Kingston Park beach system and advise how much additional sand is required for the purposes of maintaining a reasonable beach level along the Holdfast Bay Coast.

REPORT

Department of Environment and Water (DEW) pumps sand within a cell from Glenelg to Kingston Park. Glenelg North beaches are outside the sand pumping cell and the sand at Glenelg North is managed through trucking sand from West Beach. This report refers to the cell between Glenelg and Kingston Park.

DEW undertook an analysis of its survey profiles and topographic models between Glenelg and Kingston Park. They also resurveyed the sand pumping collection area at Glenelg Beach on 18 August 2022.

Using 2015 as a baseline, when topographic model surveys commenced at Glenelg, the data indicates that the sand budget in 2022 is positive. That is, there is now more sand within the littoral beach zone and dunes between Kingston Park and Glenelg than in 2015.

The survey of the Glenelg Beach sand pumping collection area on 18 August 2022 also confirms that a revised collection target of up to 100,000 cubic metres is possible in 2022, an increase of 35,000 cubic metres from the interim target of 65,000 cubic metres established after the 1 June 2022 Glenelg Beach survey. However, DEW have advised that it is unlikely that they will pump the full 100,000 cubic metres this year due to a pump breakdown and other delays such as having to do a second round of beach wrack collection. Their advice currently is that they will aim to pump between 65,000 cubic metres and 100,000 cubic meters of sand, without a definitive target set at this stage, as there is ample sand available on Glenelg Beach south of the Jetty. The beaches to the north of Whyte Street have capacity for sand replenishment.

The 1 June 2022 survey was conducted after a series of storms during May-June 2022, when the storm waves moved beach sand off the beach and into the sand bar system along the Adelaide coastline. Glenelg Beach has since recovered, with sand moved back on-shore in the calmer conditions.

The Coast and Marine Branch of the Department of Environment and Water have advised that in their opinion no additional sand is required in the Glenelg to Kingston Park system.

The Department will continue to work with Council staff and keep Council informed on the sand pumping program progress and the condition of the beaches.

The Department has also advised that there should be adequate sand for the beach volley ball season and Moseley Beach club and that they may be able to assist in moving sand if necessary.

Council has also been advised by DEW that they will be trucking sand from West Beach harbour south along the beach to Glenelg North beach in October / November this year, weather dependent. Sand will be deposited as far south as conditions permit.

BUDGET

Not applicable

LIFE CYCLE COSTS

Not applicable

Item No: 15.9

Subject: **2022 NEW YEAR'S EVE GLENELG TEMPORARY DRY ZONE EXTENSION**

Date: 27 September 2022

Written By: Team Leader, Development Administration

General Manager: Strategy and Corporate, Pamela Jackson

SUMMARY

Over the years, the extension of the Glenelg Dry Area on New Year's Eve has not only proven vital in assisting South Australian Police to regulate alcohol related anti-social behavior in the area, but it has also assisted Council in creating a 'family-friendly' atmosphere on the night.

As a result of this, Administration seeks to temporarily extend the boundaries of the Glenelg Long-Term Dry Area for 2022 New Year's Eve to ensure adequate crowd control and prevention of alcohol related anti-social behavior.

RECOMMENDATIONS:

1. **That in accordance with section 131 of the *Liquor Licensing Act 1997*, Council temporarily extends the boundaries of the Glenelg Dry Zone for 2022 New Year's Eve as outlined in Attachment 1 for the period 6:00pm Saturday 31 December 2022 to 6:00am Sunday 1 January 2023; and**
 2. **That the associated boundaries and conditions of the 2022 extension remain the same as in 2021.**
-

STRATEGIC PLAN

Wellbeing: as described in the Vision providing opportunities for inclusion and participation by all

COUNCIL POLICY

Liquor Licensing Policy

STATUTORY PROVISIONS

Liquor Licensing Act 1997 [s 131]

BACKGROUND

Each year Council temporarily extends the boundaries of the Glenelg Dry Area for New Year's Eve celebrations. This is done in conjunction with South Australian Police (SAPol) to assist in the regulation of any anti-social behavior. As such, Administration once again intends to temporarily extend the boundaries of the Glenelg Dry Area for 31 December 2022.

REPORT

Dry Zone Boundaries

As per previous years, the 2022 Glenelg Dry Area extension will include the area bounded by:

- the northern property alignment on Augusta Street between Colley Terrace and Brighton Road;
- the eastern property alignment on Brighton Road between Augusta Street and High Street (*including the Dunbar Terrace & Maxwell Terrace Transport Terminus*);
- the southern property alignment on High Street and College Street between Brighton Road and the western property alignment of St John's Row;
- the eastern boundary of the existing permanent dry area from the South Esplanade Lane on the southern side of the Stamford Grand Hotel to the northern property alignment of Anzac Highway.

Refer Attachment 1

Operational Times

The extended area will be operational between **6:00pm Saturday 31 December 2022** and **6:00am Sunday 1 January 2023**.

Operational Conditions

The area will be designated as one of **total prohibition for alcohol** in both sealed and unsealed containers on public land.

Advising the Community

Members of the public will be notified about the extension through Council's website as well as the Government Gazette in the lead up to New Year's Eve 2022.

BUDGET

At this present time the only costs associated with a short-term dry zone application relate to the Government Gazette publication costs. As per previous years, this cost is incurred by the Development Services business unit.

LIFE CYCLE COSTS

At this stage, there are no additional costs to Council other than those identified within this report.

Attachment 1



EXTENDED DRY AREA

NEW YEARS EVE 31 DECEMBER 2022



Glenelg Dry Area



New Year's Eve Extended Area

