NOTICE OF MEETING

Pursuant to the provisions of section 88 (1) of the
Local Government Act 1999

Infrastructure and Environment Committee of the

Adelaide Plains Council

will be held in

Council Chamber
Redbanks Road, Mallala

on

Tuesday 15 June 2021 at 6.00pm

James Miller
CHIEF EXECUTIVE OFFICER

In light of the ongoing COVID-19 public health emergency, and pursuant to section 302B of the Local Government Act 1999 and the Electronic Participation in Council Meetings Notice (No 1) 2020, **public access to all Council and Committee meetings will be facilitated via live stream on Council's YouTube channel**.
On the day of the meeting, a direct link to the live stream will be displayed on the homepage of Council's website www.apc.sa.gov.au

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Adelaide Plains Council	**2. Confirmation of Minutes**
Tuesday 15 June 2021	

2.1 "that the minutes of the Infrastructure and Environment Committee meeting held on Monday 15 March 2021 (MB Folios 58 to 62, inclusive), be accepted as read and confirmed."

MINUTES

of the

Infrastructure and Environment Committee

of the

Adelaide Plains Council

Pursuant to the provisions of section 88 (1) of the
Local Government Act 1999

HELD

by electronic means

on

Monday 15 March 2021 at 6.00pm

The Chairperson formally declared the meeting open at 6.00pm.

1. ATTENDANCE

1.1 **Present:**

Mr Richard Dodson	Chairperson	*By audio-visual link*
Mr Howard Lacy	Independent Member	*By audio-visual link*
Mayor Mark Wasley	Mayor	*By audio-visual link*
Councillor John Lush	Mallala/Dublin Ward	*By audio-visual link*
Councillor Terry-Anne Keen	Mallala/Dublin Ward	*By audio-visual link*
Councillor Kay Boon	Two Wells Ward	*By audio-visual link*
Councillor Frank Maiolo	Two Wells Ward	*By audio-visual link*
Councillor Margherita Panella	Lewiston Ward	*By audio-visual link*

Also in Attendance by audio-visual link:

Chief Executive Officer	Mr James Miller
General Manager – Infrastructure and Environment	Mr Thomas Jones
Acting General Manager – Governance and Executive Office	Ms Alyssa Denicola
General Manager – Development and Community	Mr Darren Starr
General Manager – Finance and Business	Mr Rajith Udugampola
Administration and Executive Support Officer/Minute Taker	Ms Stacie Shrubsole
Information Technology Officer	Mr Thomas Harris-Howson

1.2 **Apologies**

Councillor Brian Parker	Lewiston Ward

The Chairperson formally welcomed incoming Independent Member of the Adelaide Plains Council Infrastructure and Environment Committee, Mr Howard Lacy. Mr Lacy introduced himself to the Committee.

2. CONFIRMATION OF MINUTES

2.1 Infrastructure and Environment Committee Meeting – 14 December 2020

Committee Resolution

Moved Mayor Wasley Seconded Councillor Boon **2021/ 001**

"that the minutes of the Infrastructure and Environment Committee meeting held on Monday 14 December 2020 (MB Folios 54 to 57, inclusive), be accepted as read and confirmed."

CARRIED

3. BUSINESS ARISING

Nil

6. REPORTS FOR INFORMATION

6.1 Committee Resolutions

Committee Resolution

Moved Councillor Keen Seconded Councillor Lush **2021/ 002**

"that the Infrastructure and Environment Committee, having considered Item 6.1 – *Committee Resolutions*, dated 15 March 2021, receives and notes the report."

CARRIED

4. DECLARATION OF MEMBERS' INTERESTS (material, actual, perceived)

Nil

5. ADJOURNED ITEMS

Nil

7. REPORTS FOR DECISON

7.1 Draft 2021-2025 – 4 Year Capital Program

Mr Dodson disconnected from the meeting 6.29pm.

Mr Dodson reconnected to the meeting 6.33pm.

Committee Resolution

Moved Councillor Lush Seconded Councillor Boon **2021/ 003**

"that the Committee, having considered Item 7.1 – *Draft 2021-2025 – 4 Year Capital Program*, dated 15 March 2021, receives and notes the report and in doing so recommends to Council that it adopt the draft 2021-2025, 4 Year Capital Renewal Program as presented at Attachment 1 to this Report."

CARRIED

8. QUESTIONS ON NOTICE

Nil

9. QUESTIONS WITHOUT NOTICE

Not recorded in Minutes in accordance with Regulation 9(5) of the *Local Government (Procedures at Meetings) Regulations 2013.*

10. MOTIONS ON NOTICE

Nil

11. MOTIONS WITHOUT NOTICE

Nil

12. URGENT BUSINESS

The Chief Executive Officer raised a matter of urgent business pertaining to the Wheller Road Land Division and recommended that the Committee go into confidence in order to receive a verbal briefing in relation to same.

13. CONFIDENTIAL ITEMS

13.1 Verbal Briefing – Wheller Road Land Division

Mr Darren Starr, General Manager – Development and Community, disconnected from the meeting at 6.38pm and did not return.

Committee Resolution

Moved Mayor Wasley Seconded Councillor Keen **2021/ 004**

"that:

1. **Pursuant to section 90(2) of the Local Government Act 1999, Council orders that all members of the public, except Chief Executive Officer, Acting General Manager – Governance and Executive Office, General Manager – Finance and Business, General Manager – Infrastructure and Environment, Administration and Executive Support Officer/Minute Taker and Information Technology Officer be excluded from attendance at the meeting of Council for the purpose of a verbal briefing in relation to the Wheller Road Land Division.**
2. **Council is satisfied that pursuant to section 90(3)(b) of the Local Government Act 1999, the verbal briefing in relation to the Wheller Road Land Division concerns commercial information the disclosure of which could reasonably be expected to confer a commercial advantage on a person with whom the council is conducting business, or to prejudice the commercial position of Council, being a summary of correspondence received from the developer's legal representatives; and**
3. **Council is satisfied that the principle that Council meetings should be conducted in a place open to the public has been outweighed by the need to keep the information, matter and discussion confidential."**

CARRIED

The Chief Executive Officer provided a verbal update in relation to the Wheller Road Land Division.

14. NEXT MEETING

To be confirmed.

15. CLOSURE

There being no further business, the Chairperson declared the meeting closed at 7.08pm.

Confirmed as a true record.

Chairperson:.....

Date: ____/____/____

Adelaide Plains Council	**6.1**	**Committee Resolutions**
	Department:	**Infrastructure and Environment**
	Report Author:	**General Manager – Infrastructure and Environment**
Date: 15 June 2021	**Document No:**	**D21/26210**

OVERVIEW

The purpose of this report is to provide an update in relation to the status of Committee resolutions currently being actioned, for Members' information and monitoring.

Attachment 1 provides a list of *ongoing* Committee Resolutions from February 2020, Resolutions that have been completed since the last Committee Meeting and *all* Committee Resolutions from the 15 March 2021 meeting.

RECOMMENDATION

"that the Infrastructure and Environment Committee, having considered Item 6.1 – *Committee Resolutions*, dated 15 June 2021, receives and notes the report."

Attachments

1. Resolution Register

References

Legislation

Local Government Act 1999

Other

N/A

Infrastructure & Environment Committee - Resolutions from 15 March 2021

Meeting Date	Item Number	Title	Resolution Description	Resolution Number	Status/ Comments ('Deferred, Ongoing, Agenda, Completed')
15-Jun-21	**2.1**	**CONFIRMATION OF MINUTES**	**"that the minutes of the Infrastructure and Environment Committee meeting held on Monday 14 December 2020 (MB Folios 54 to 57, inclusive), be accepted as read and confirmed."**	**2021/001**	complete
15-Jun-21	**6.1**	**Committee Resolutions**	**"that the Infrastructure and Environment Committee, having considered Item 6.1 – Committee Resolutions, dated 15 March 2021, receives and notes the report."**	**2021/002**	complete
15-Jun-21	**7.1**	**Committee Resolutions**	**"that the Committee, having considered Item 7.1 – Draft 2021-2025 – 4 Year Capital Program, dated 15 March 2021, receives and notes the report and in doing so recommends to Council that it adopt the draft 2021-2025, 4 Year Capital Renewal Program as presented at Attachment 1 to this Report."**	**2021/003**	complete

Infrastructure & Environment Committee - Ongoing Resolutions

Meeting Date	Item Number	Title	Resolution Description	Resolution Number	Status/Comments ('Deferred, Ongoing, Agenda, Completed')
10-Feb-20	8.4	Community Empowerment Model for Facility Management	**"that the Infrastructure and Environment Committee, having considered Item 8.4 – Community Empowerment Model for Facility Management, dated 10 February 2020, receives and notes this report and recommends that Management carry out further costings and consultation to better assess the likelihood of success in implementing a Community Empowerment model for facility management."**	**2020/011**	**Ongoing**
03-Sep-20	**7.5**	Guideline Introduction - Verge Landscaping and Maintenance	**"that the Infrastructure and Environment Committee, having considered Item 7.5 – Guideline Introduction – Verge Landscaping and Maintenance, dated 3 September 2020, receives and notes the report and in doing so recommends to Council that it adopts the proposed Verge Landscaping and Maintenance Guidelines as presented at Attachment 1 to this Report subject to minor amendments as discussed."**	**2020/026**	**Completed. Council adopted the procedure at its Ordinary Meeting on 28 Janaury 2021.**
03-Sep-20	**7.6**	Liberty Landscaping	**"that the Infrastructure and Environment Committee, having considered Item 7.6 – Liberty Landscaping, dated 3 September 2020, receives and notes the report, and in doing so, recommends to Council that it: 1. Adopts the Liberty Central Reserve landscape plans and the outcomes of the open space assessment as presented in Attachment 1 and Attachment 2 of this Report; and 2. Instructs the Chief Executive Officer to negotiate with The Hickinbotham Group on extended maintenance periods being greater than two financial years for the Liberty Central Reserve and greater than five financial years for the "Entry Statement" Water Body Reserve, to reduce the financial impact on Council."**	**2020/027**	**Completed. Council adopted the Liberty Central Reserve Landscape Plans and Outcomes of Open Space Assessment at its Ordinary Meeting on 28 September 2020. Management have negotiated the maintenace periods with the developer .**
03-Sep-20	**13.2**	Mallala CWMS Augmentation	**"that the Infrastructure and Environment Committee, having considered Item 13.2 – Mallala CWMS Augmentation, dated 3 September 2020, receives and notes the report and in doing so recommends to Council that it instruct the Chief Executive Officer to continue to negotiate with the developer with a view to having the Gracewood development connect into the existing Mallala CWMS, subject to the parties entering into a suitable legal instrument to ensure that Council's financial risks are mitigated."**	**2020/034**	**Negotiations Ongoing. Note: Council, at its Ordinary Meeting on 26 October 2020, revoked the confidentiality order (Council Resolution 2020/358) and, accordingly, staff report, Attachment 1, Attachment 2 and Attachment 3 pertaining to Item 13.2 - Mallala CWMS Augmentation are now publicly available**
14-Dec-20	**7.1**	Wheller Road Land Division	**"that the Committee having considered Item 7.1 – Wheller Road Land Division, dated 14 December 2020, receives and notes the report and in doing so recommends to Council that it instructs the Chief Executive Officer to continue to pursue an Infrastructure Agreement with the developer to detail the required infrastructure upgrades, being: - upgrade to the existing portion of Wheller Road - 10m wide pavement with a 7.5m 14/7 two-coat spray seal and drainage swales on both sides of the road with 100% of cost borne by developer."**	**2020/038**	**Completed (Rescinded)**

Adelaide Plains Council	**6.2**	**Middle Beach Boat Ramp Investigations**
	Department:	**Infrastructure and Environment**
	Report Author:	**General Manager Infrastructure and Environment**
Date: 15 June 2021	**Document Ref:**	**D21/26166**

OVERVIEW

Purpose

The purpose of this report is to provide the Infrastructure and Environment Committee (the Committee) information on the outcome of the Middle Beach Boat Ramp Investigations.

Background

Council, though the adoption of its 2020-2021 Annual Business Plan and Budget allocated $44,000 to undertake a Middle Beach Boat Ramp Investigations. The investigation have been completed using an external consultant (Water Technology) and internal resources.

Discussion

Following construction of a new boat ramp at Middle Beach in 2010, Council identified the need for hydrologic modelling of Salt Creek and the boat ramp environs at Middle Beach to inform potential solutions to an ongoing problem of dead seagrass and shell grit build-up in the creek, particularly around the ramp which is severely impacting the usability of the structure.

Management have recently received the final Middle Beach Boat Ramp Investigations report and is presented as **Attachment 1** to this Report.

The report investigates two initial approaches to remediation of the problem:

- To remediate approximately 300 metres of Salt Creek adjacent to the Middle Beach boat ramp (shown in Figure 1) to return that section of the creek to its former deeper-water amenity, allowing swimming and other water sports regardless of the height of the tide.
- To modify the boat ramp environs to limit or prevent the build-up of shell grit and floating dead seagrass on the western side of the floating pontoon, allowing both lanes of the ramp to be used at all tidal heights.

It also provides a high-level summary of potential mitigation options and recommendations for ongoing consideration. Main findings are:

- Seagrass accumulation may be slightly reduced with a quay wall, but it will still slowly accumulate and require removal;
- Infilling issues may be alleviated in the short to medium term with dredging;
- Both options will require some degree of ongoing monitoring and maintenance, and should incorporate upgrading the rock banks with larger armour;
- Other options may also achieve these goals and provide additional amenity;
- An overall asset management plan for the above will help to understand costs and achieve a minimum level of service going forward.

The report recommendations are that Council consider restoring the boat ramp facility to its fully-functional condition, and any options that redirect flow around the pontoon or remove the obstruction of the pontoon will reduce the rate of seagrass accumulation. Dredging a section of the creek will increase amenity and provide a relatively long-term buffer before further dredging is required. Both of these options will still require some degree of ongoing monitoring and maintenance planning. As a minimum, an asset management plan for the boat ramp facility should be developed.

Management are now investigated the options outlined within the report and developing the recommended asset management plan for the boat ramp facility. Noting that there is high potential that Salt Creek and the boat ramp environs will be activated once budgeted works are completed, and that further infrastructure will be required to cater for the potential growth in utilisation;

- Sealing of Middle Beach Road - Local Government Infrastructure Partnership Program, and
- New shelter, Barbeque, seating and site improvements at boat ramp environs - Local Roads and Community Infrastructure Program Round 2.

Conclusion

This report has presented for Committee Members information the outcome of the Middle Beach Boat Ramp Investigations. A further report will be presented to the Infrastructure and Environment Committee upon the asset management plan for the boat ramp facility being developed.

RECOMMENDATION

"that the Infrastructure and Environment Committee, having considered Item 6.2 – *Middle Beach Boat Ramp Investigations*, dated 15 June 2021, receives and notes the report."

Attachments

1. Middle Beach Boat Ramp Investigations Report.

References

Legislation

Local Government Act 1999

Council Policies/Plans

Infrastructure and Asset Management Plan

WATER TECHNOLOGY
WATER, COASTAL & ENVIRONMENTAL CONSULTANTS

Report

Middle Beach Boat Ramp – Hydrological Modelling of Salt Creek

Adelaide Plains Council

28 May 2021

Document Status

Version	Doc type	Reviewed by	Approved by	Date issued
1	Draft	ML	ML	28/05/2021

Project Details

Project Name	Middle Beach Boat Ramp – Hydrological Modelling of Salt Creek
Client	Adelaide Plains Council
Client Project Manager	Tom Jones
Water Technology Project Manager	Melinda Lutton
Water Technology Project Director	Gildas Colleter
Authors	Toby Devlin & Melinda Lutton
Document Number	21030167_R01v01.docx

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EXECUTIVE SUMMARY

Following construction of a new boat ramp in 2010, Adelaide Plains Council (APC) has identified the need for hydrologic modelling of Salt Creek and the boat ramp environs at Middle Beach. This is needed to inform potential solutions to an ongoing problem of dead seagrass and shell grit build-up in the creek, particularly around the ramp which is severely impacting the usability of the structure.

This report investigates two initial approaches to remediation of the problem:

- To remediate approximately 300 metres of Salt Creek adjacent to the Middle Beach boat ramp (shown in Figure 1) to return that section of the creek to its former deeper-water amenity, allowing swimming and other water sports regardless of the height of the tide.
- To modify the boat ramp environs to limit or prevent the build-up of shell grit and floating dead seagrass on the western side of the floating pontoon, allowing both lanes of the ramp to be used at all tidal heights.

It also provides a high-level summary of potential mitigation options and recommendations for ongoing consideration. Main findings are:

- Seagrass accumulation may be slightly reduced with a quay wall, but it will still slowly accumulate and require removal;
- Infilling issues may be alleviated in the short to medium term with dredging;
- Both options will require some degree of ongoing monitoring and maintenance, and should incorporate upgrading the rock banks with larger armour;
- Other options may also achieve these goals and provide additional amenity;
- An overall asset management plan for the above will help to understand costs and achieve a minimum level of service going forward.

Recommendations are that APC consider restoring the boat ramp facility to its fully-functional condition, and any options that redirect flow around the pontoon or remove the obstruction of the pontoon will reduce the rate of seagrass accumulation. Dredging a section of the creek will increase amenity and provide a relatively long-term buffer before further dredging is required. Both of these options will still require some degree of ongoing monitoring and maintenance planning. As a minimum, an asset management plan for the boat ramp facility should be developed.

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1 INTRODUCTION

1.1 Purpose of the Report

Following construction of a new boat ramp in 2010, Adelaide Plains Council (APC) has identified the need for hydrologic modelling of Salt Creek and the boat ramp environs at Middle Beach. This is needed to inform potential solutions to an ongoing problem of dead seagrass and shell grit build-up in the creek, particularly around the ramp which is severely impacting the usability of the structure.

1.2 Scope of the Report

This report outlines the approach taken to assess existing data and to outline the results of hydrologic modelling of Salt Creek to identify solutions to the ongoing problem of shell grit and dead seagrass accumulation at the boat ramp.

This report investigates two initial approaches to remediation of the problem:

- To remediate approximately 300 metres of Salt Creek adjacent to the Middle Beach boat ramp (shown in Figure 1) to return that section of the creek to its former deeper-water amenity, allowing swimming and other water sports regardless of the height of the tide.
- To modify the boat ramp environs to limit or prevent the build-up of shell grit and floating dead seagrass on the western side of the floating pontoon, allowing both lanes of the ramp to be used at all tidal heights.

It also provides a high-level summary of potential mitigation options and recommendations for ongoing consideration.

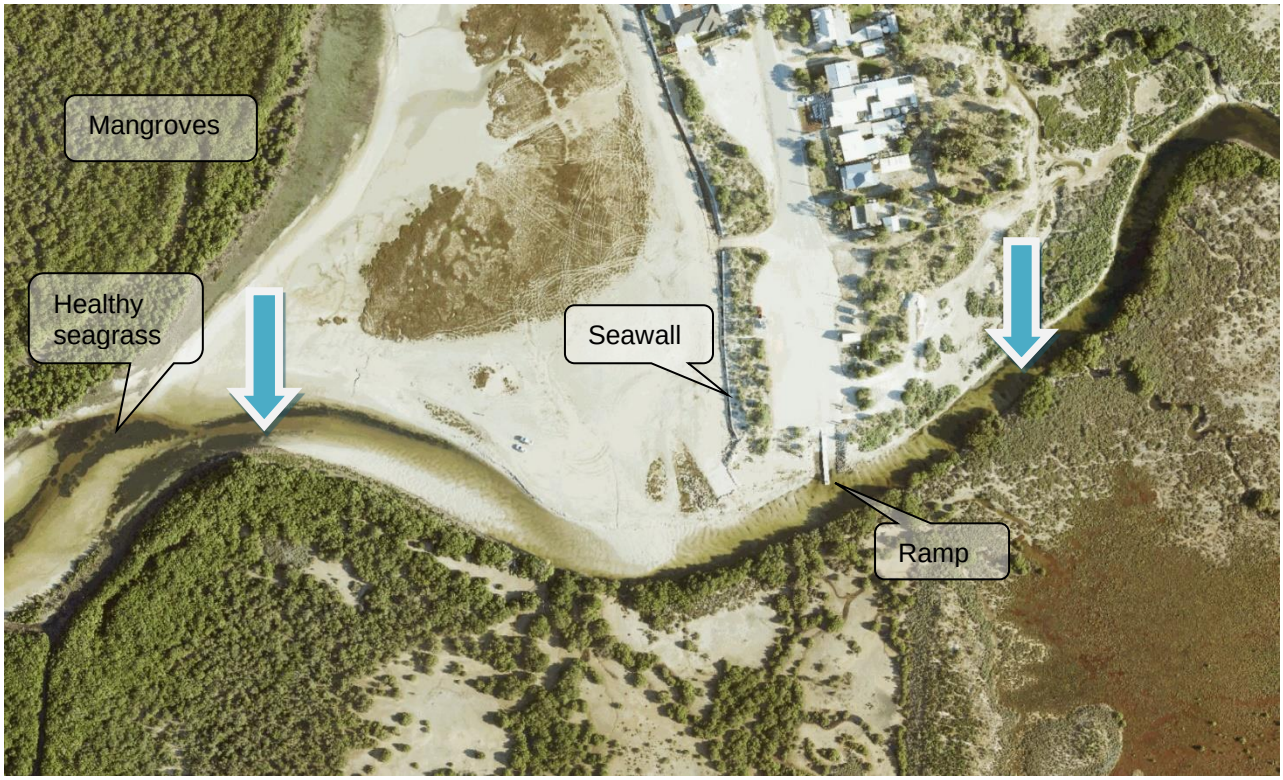


FIGURE 1 300 M SECTION OF SALT CREEK CHANNEL TO BE REMEDIATED

1.3 Location of the Boat Ramp

The boat ramp is shown in Figure 2, and is located on Salt Creek, at Middle Beach, approximately 9.5km west of Two Wells.

FIGURE 2 LOCATION OF BOAT RAMP

1.4 Definition of the Problem

Since construction of a new boat ramp in 2010, there has been an ongoing problem of dead seagrass and shell grit build-up in the creek, particularly around the ramp which is severely impacting the usability of the structure. Figure 3 shows a build-up of shell grit against the ramp's pontoon in March 2013.

Two years after the ramp was opened, members of the Mallala Foreshore Advisory Committee and Two Wells Regional Action Team Inc. approached APC with a proposal to form a joint council-community working party to examine methods of returning a short portion of Salt Creek to its former depth and amenity. A solution was also sought to reduce the amount of shell-grit and dead seagrass build-up at the ramp. The Salt Creek Remediation Working Party was formed in May 2013 and have since examined a number of options. It was recognised that a remediated creek would not provide all-tidal access to open waters of Gulf St Vincent, but would allow faster access at higher tides, and for trailers to be worked on after the boats are launched. Currently, neither of these activities is possible because the creek water is too shallow to launch even the smallest dinghy for most hours of the day.

It is anticipated that the sea grass deposition is a result of flows in the creek, but the shell-grit deposition is thought to have stabilised following placing of a number of concrete blocks against the dunes (see Figure 11).

FIGURE 3 BUILD-UP OF SHELL GRIT IN 2013

1.5 Other Issues

Other issues observed include the following:

- Rock armour from the embankment protection is being displaced, exposing geotextile fabric. This is caused by either tidal movement or people moving the rock and is shown in Figure 6.
- Occasional storm surges are observed during high tides. Figure 9 shows high water drowning the access to the boat ramp following a storm surge on 9 May 2016 .

2 BACKGROUND

2.1 Data Review

We have reviewed available data which includes topographical and bathymetric survey, reports, events, maintenance records etc. for the carpark, boat ramp and toilet block. We have examined and evaluated third party data, including:

- Copy of a spatial survey obtained from Friends of Middle Beach Inc. (FOMBI)
- Tide from Adelaide Outer Harbor (including storm tides)
- Publicly available LiDAR from Elvis
- Aerial imagery
- Previous reports/descriptions of geology and coastal processes for this part of the Gulf
- Limited information on current management of the former Dry Creek salt fields.

2.2 Locality and Environmental Surrounds

The study area sits in Salt Creek at Middle Beach. Middle Beach is a small township with a ~100 m wide beach area adjacent to Salt Creek. As recently as 1960, this area looked out into Gulf St Vincent (GSV) across shallow mudflats and sub-tidal seagrass beds. Since then, mangroves have extended in the nearby coast and now form a ~600 m wide 'barrier' between the beach and GSV. The inter-tidal flats on which mangroves are growing appear to be prograding and dominate much of the coastline north and south of Middle Beach. The main break in the mangroves is at the entrance of Salt Creek where an ebb-tide delta of sandy shell-grit material is overlying the mudflats.

Middle Beach itself stretches over a 1 km long section of a Holocene storm ridge. This ridge consists of sand and shell-grit sitting on top of a layer St Kilda Formation that makes up the front beach area. Behind the town is a large extent of inter- and supra-tidal samphire flats. This area also includes the northernmost extent of the former Dry Creek Salt ponds. Hindmarsh clays tend to underly the St Kilda Formation and are exposed on the creek banks in some sections.

The area of the creek adjacent to the boat ramp is shallow, an issue exacerbated by shell-grit infilling. Typical bed levels adjacent to the boat ramp area -0.75 mAHD. Detailed tidal analysis in the area is not available, but offshore low tide can fall as low as -1.5 mAHD. Given that the creek is constrained by shallow areas of ~-0.3 mAHD at the mouth, it is likely that the low tides do not fall far below this and that there is a period of still water as the mouth is effectively closed. This leads to minimum depths near the boat ramp of <0.5m, constraining any creek access for many typical trailable boats. High tides can exceed 1 mAHD, allowing navigability for all vessels.

There is a pumping station associated with the salt operations that historically extracted water from Salt Creek to feed the salt operations. The salt pans have been rehabilitated as wetlands and form part of the Adelaide International Bird Sanctuary. As part of the rehabilitation regular water pumping is required to maintain water levels and appropriate salinity levels within the wetlands. No data has been able to be recovered on the current or former pumping regime, such as rates or timing.

FIGURE 4 LOCALITY MAP

2.3 Boat Ramp

2.3.1 Description

The current boat ramp was commissioned 19th September 2010 and replaced another boat ramp approximately 40 m to the west of the “new” structure. The facility consists of two concrete lanes with a central floating pontoon and rock revetments on either side of the ramp area. The pontoon extends approximately 5 m beyond the bank (or the rock revetments) and into the main creek channel where it is supported by a single pile. Figure 5 shows the boat ramp area shortly after construction.

The rock revetments are currently in poor condition. The rock sizing is small for marine structures (approximately 300 mm diameter). They can potentially be moved by large storm events and by children who have reportedly been able to lift them and throw them in the creek. Figure 6 shows a current example of the displaced rock armour and exposed geotextile underlayer. Council placed some calcrete boulders on top of some of the revetment areas (as shown in Figure 7) but this has not alleviated the issues. Some of the rocks have actually fallen or slumped onto the ramp areas and restrict access.

The shell-grit delta at the entrance to Salt Creek can only be passed by most vessels at high tides. As such, typical use of the boat ramp area is by kayaks and small watercraft, and by boat users seeking access to the sea by Salt Creek when the tide is high. Therefore, the boat ramp is in highest demand when the tide is suitable for access into Gulf St. Vincent. The area is also very popular with people mooring boats and using it for swimming, etc. It is reported to be the only safe swimming hole/ beach between St Kilda and Port Wakefield.

FIGURE 5 NEW BOAT RAMP, SEP 2010 (COURTESY FOMBI)

FIGURE 6 EXPOSED GEOTEXTILE (COURTESY FOMBI)

FIGURE 7 DAMAGED ROCK BANK AND CALCRETE BOULDERS (JANUARY 7TH, 2021)

2.3.2 Construction of Boat Ramp

The boat ramp was constructed by placing a sheet-pile coffer dam around the area. A single pile was driven offshore to fix the end of the pontoon and concrete boat ramps were poured in place.

Initial plans included placing the boat ramp further upstream and orienting it upstream and out of the main channel. Prior to final construction it was decided that the boat ramp would be placed at the end of The Esplanade in the same alignment as the road.

The design of the existing boat ramp is attached in Appendix A.

FIGURE 8 CONSTRUCTION OF BOAT RAMP (COURTESY FOMBI)

2.4 Coastal Processes

The area consists of an extremely low-energy environment. This means that there are only small waves and limited sediment transport. Direct incoming waves are limited by the mangrove areas and shallow depths. As such, tidal currents are the dominant processes for most of the time. The tides are likely to have changed in the past and moved between a dominant outgoing tide (forming an ebb delta) or dominant incoming tide. Depending on the flow rates and timing of the pumping operations it is possible that the salt pan pumps could have a small impact on the tidal currents at different stages of the tide. As no information is available on the pumping rates this cannot be confirmed either way. Regardless, it is unlikely that pumping influences the currents sufficiently to affect the functionality of the boat ramp for the purposes of this study.

Storm surges can significantly increase water levels in the area. In May 2016 water levels from the Adelaide Outer Harbor gauge approached 2.4 mAHD, which is high enough to inundate the whole boat ramp and part of the Middle Beach carpark and road area. Figure 9 shows examples of such conditions with a photograph facing the inundated boat ramp from the carpark. Storm surge conditions allow for far greater penetration of wave energy through the creek paths and through the mangroves, increasing the energy in the Middle Beach area. Such storms have previously caused erosion of the shell-grit ridge at the back of the beach as shown in Figure 10. Concrete blocks (shown in Figure 11) have since been placed in this area to form a seawall to protect the shell-grit ridge in future events. Sediment sampling undertaken by FOMBI shows that much of the material infilling the creek near the boat ramp is made up of shell-grit, suggesting that the material eroded from the ridge has made its way into the creek.

It is likely therefore that the main driver of infilling in the creek area in recent years has been the erosion of the beach ridge. With further erosion restricted by the concrete blocks, it is unlikely that further large infilling events can occur. Localised erosion of the banks and adjacent beach area may impact the creek, which could be exacerbated by vehicle access on the beach. It is not anticipated that there is any significant sediment transport from offshore due to waves or from upstream due to creek flows and rain events.

2.4.1 Flow Data

An attempt was made to obtain details of the volume of water pumped from salt creek into the former salt fields 400 m to the east of the pontoon. This data is held by the Salt Field operator Buckland Dry Creek, as the water is used as an environmental flow to benefit fauna and flora in the Adelaide International Bird Sanctuary. This would have allowed calculation of the effect the pumps may have on the flow regime past the ramp, which is obviously dominantly tidal. This was not able to be obtained. There is some information available in compliance reports on DEM's website though these reports do not provide specific flow rates pumped from Salt Creek.

FIGURE 9 MAY 2016 STORM SURGE (COURTESY FOMBI)

FIGURE 10 STORM EROSION BEHIND BEACH (COURTESY FOMBI)

FIGURE 11 CONCRETE BLOCK SEAWALL (JANUARY 7TH, 2021)

2.5 Seagrass

The offshore area (outside the mouth of Salt Creek) consists of large seagrass beds. Less-mobile areas of the creek between the beach area and the creek mouth have also developed seagrass beds. These seagrass beds are important local habitats, particularly for pipefish (a protected species) which are known to occur in Salt Creek.

When seagrass dies, the leaves detach and drift with the currents. This can be part of the natural lifecycle of seagrass or induced by burial or damage during storms. Seagrass is mobilised along with the currents until it is caught on obstructions or in calm areas. When currents increase again, such as during storms, the seagrass 'wrack' (dead leaves) may be remobilised until it is caught in an area that it cannot be further mobilised and will begin to accumulate.

In Salt Creek, the boat ramp area has been a wrack accumulation area that causes safety problems and limits use of the ramp. Wrack accumulates on both sides of the ramp, but the greatest volume is on the downstream side where it is blocked by the pontoon on incoming tides. Figure 12 shows seagrass in the boat ramp lanes. Council works to remove seagrass wrack have typically occurred quarterly, often prior to major holiday periods.

FIGURE 12 SEAGRASS ACCUMULATION AT BOAT RAMP

3 PROBLEM DEFINITION AND APPROACH

3.1 Key Problems and Questions

Following a discussion at the site with APC and a representative from FOMBI, the following key problems have been identified:

- Deposition of shell grit into the boat ramp area limiting access.
- Accumulation of seagrass wrack creating safety hazards for ramp users.
- Degradation of the rock banks by storms and kids throwing rocks into the creek creates hazards for boats (rocks breaking propellors, etc.) and does not support the bank shape and alignment.

These are all largely related to maintenance concerns with the existing facility and prompt the following questions:

1. Can changes to the boat ramp be made to mitigate the need for any maintenance at all?, or if not,
2. Can changes be made to minimise/optimise the boat ramp maintenance requirements?
3. Can changes be made that extend the amenity of the facility and assist with maintenance requirements?

3.2 Existing Proposed or Ongoing Works

Discussions have been held with hydrological engineers to provide options to reduce the build-up of dead seagrass and sediment at the ramp. A 6-page report has been provided to APC indicating three alternatives to replace the rock abutments to deflect water flow around the toe of the floating pontoon, rather than the current situation where large amounts of dead seagrass are trapped against its western side during incoming tides. The engineers have established that survey and sediment thickness data provided are suitable for this purpose, but stress that further investigations (computer modelling of water flow) are required to verify that the options will work. The Salt Creek Remediation Working Party members facilitated many studies and discussions on the creek and environs to satisfy the legal and social requirements of undertaking a dredging project, including:

- Penetration (spear) testing to determine the thickness of loose creek sediments in the project area.
- Coring of sediments to assist in determining sediment thickness, and to provide samples for analysis.
- Chemical analysis of creek sediments by the CSIRO, which determined that no problematic heavy metals or other compounds are present.
- Detailed topographic surveying of Salt Creek and the abandoned shell grit pit to provide contour plans of the areas of interest, and calculation of volumes of material involved.
- Aboriginal heritage research found that there are no known Aboriginal sites in the project area.
- Creek fauna studies to alert the working party to sensitive areas, and how to protect them.
- Tidal flow rate studies to determine the maximum water velocity to be expected during incoming tides.
- Constructive consultation with the Environment Protection Authority and Coast Protection Board.

Results from some of the above studies were discussed at the project workshop and are included in the background summary (Section 2).

3.3 Stakeholder Consultation

3.3.1 Site Visit

A site visit was held on 7th January 2021 with Tom Jones (APC) and John Drexel to gain a better understanding of the uses of the area, and to qualitatively discuss various capital and maintenance works options.

3.3.2 Project Workshop

A workshop was held on the 24 March 2021 with representatives from APC and John Drexel (FOMBI). The purpose of the workshop was to discuss the processes and existing data collection efforts in the area as well as any existing ongoing works. Further to this, a set of mitigation options were considered to minimise the seagrass accumulation with one to be selected to assess with numerical modelling. The outcomes of the site background have been included in Section 2 and Section 3.2. The following sets of options were considered as potential solutions:

- Shortening the pontoon by one or two links to reduce the current deflection.
- Realigning the rock wall on the downstream edge to deflect the incoming tide to the centre or other side of the creek.
- Using sheet-pile (as per the boat ramp construction) to extend the downstream bank and deflect currents to the centre or other side of the creek.
- Realigning the boat ramp to face upstream and not intercept seagrass on the incoming tide.
- Dredging within the creek to deepen all areas and alter the local flow patterns.

At the conclusion of the workshop it was decided that the following scenarios would be taken forward for numerical modelling:

- Some development of the downstream bank (by sheet-pile, extended rock revetment, etc.) to deflect incoming tidal currents and seagrass.
- Dredging a ~300 m long section of Salt Creek from immediately upstream of the boat ramp down to the beginning of seagrass beds.

The intent of the modelling investigation is to assess whether these interventions can reduce the conditions that are likely to contribute to seagrass and shell grit infilling. Modelling methodology and results are further described in Section 4.

4 MODELLING

4.1 Model Setup

A Mike 21 FM model was created consisting of 9640 computational elements and 5363 nodes as shown in Figure 13. The spatial resolution ranged from ~10 m outside the creek entrance to <1 m immediately adjacent to the boat ramp. Bathymetry was applied from several sources in decreasing order of priority as follows:

- Provided survey within the creek area adjacent to the boat ramp (provided by FOMBI)
- 1 m LiDAR of the land and mangrove areas (sourced from Geoscience Australia based on a 2013 processing of the 2008 Adelaide LiDAR and 2011 North Adelaide LiDAR datasets)
- Manual extrapolation of the above and based on aerial imagery to define sand-bars, channels and small creek extents.

Furthermore, additional editing of the provided datasets was required based on expert judgement and aerial imagery. Examples of this are as follows:

- Removing areas of LiDAR that reflect the water's surface and not the creek bed.
- Areas where the LiDAR represents the mangrove canopy were lowered by 0.5m.
- Small channels were added within the sand-bars at the creek delta to allow for some flow at lower tidal levels.

The bathymetry is unlikely to perfectly represent the 'true' current state of the system due to changes since the available survey data and the above manipulations. A detailed study of the area would require specific comprehensive survey over the model extent to ensure that key features area accurately captured. However, given that this model seeks only to capture the general processes in a conceptual manner, this configuration is considered fit-for-purpose.

The model was forced by offshore water levels taken from the Port Adelaide Outer Harbor gauge. These tides are semi-diurnal with similar relative solar and lunar effects. The result is a tidal range of ~2.4 m during spring tides and micro-tidal conditions (including dodge tides) during neap-tide periods.

Several periods were developed and simulated to compare differing hydrodynamic conditions for their variability. These included:

- A 'typical' week based on tides from 01/01/2020 to 08/01/2020 (shown in Figure 14).
- The above with several different constant pumping rates from the salt-pans (0, 5, 10 and 20 m^3/s pumping).
- A storm event based on tides from during May 2016, with a peak storm-tide level of 2.4 mAHD offshore (shown in Figure 15).

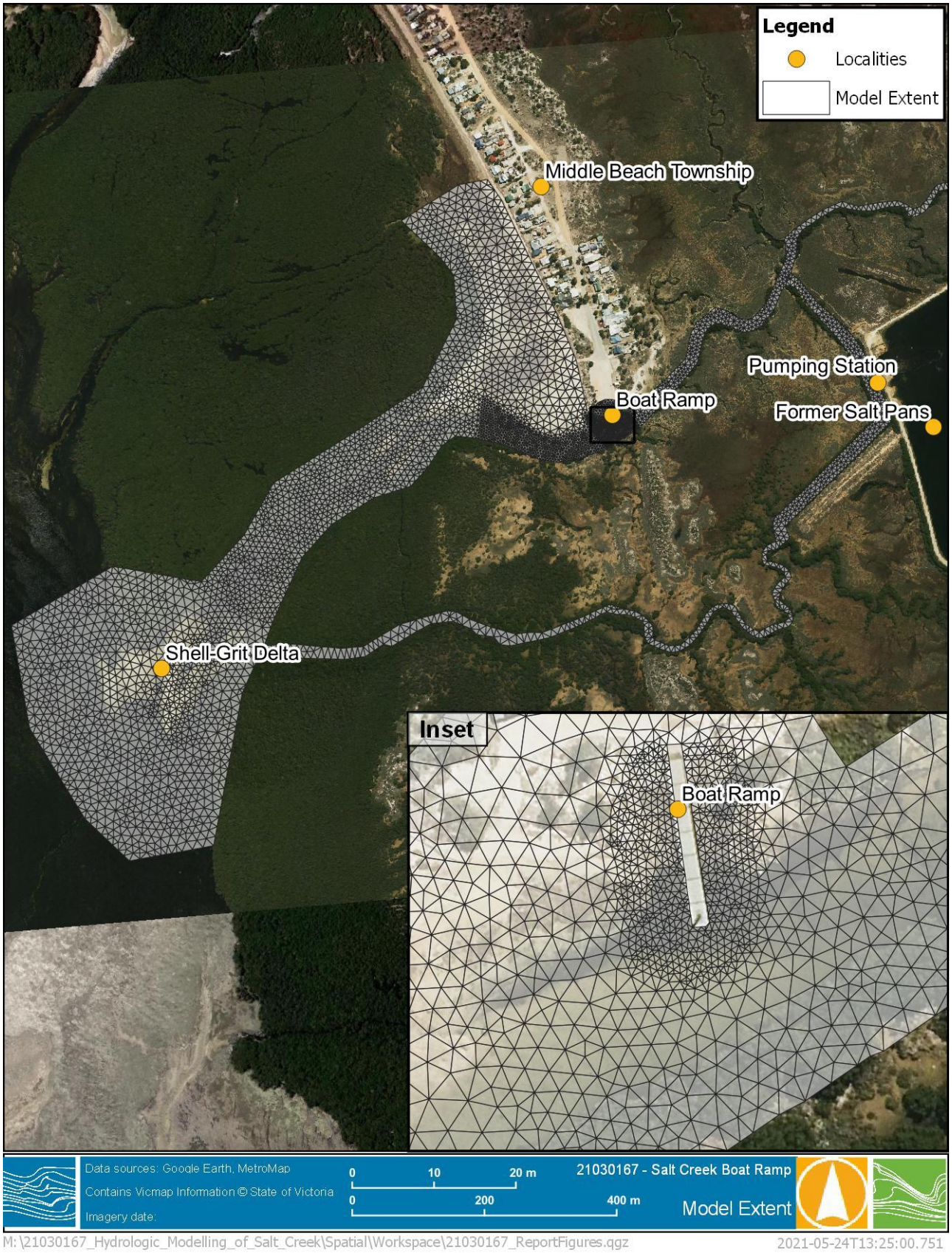


FIGURE 13 MODEL EXTENT

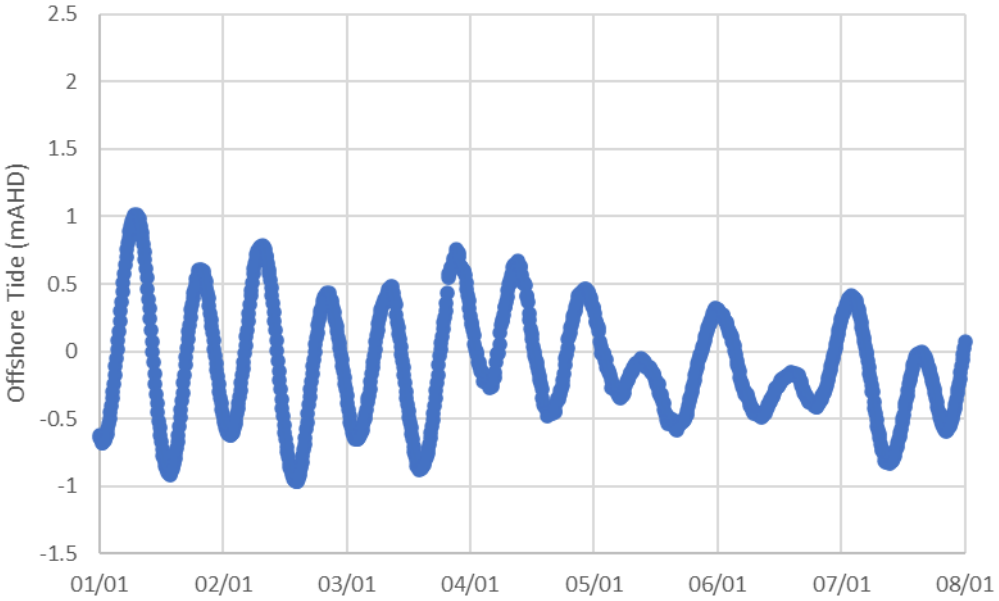


FIGURE 14 JANUARY 20121 TIDE

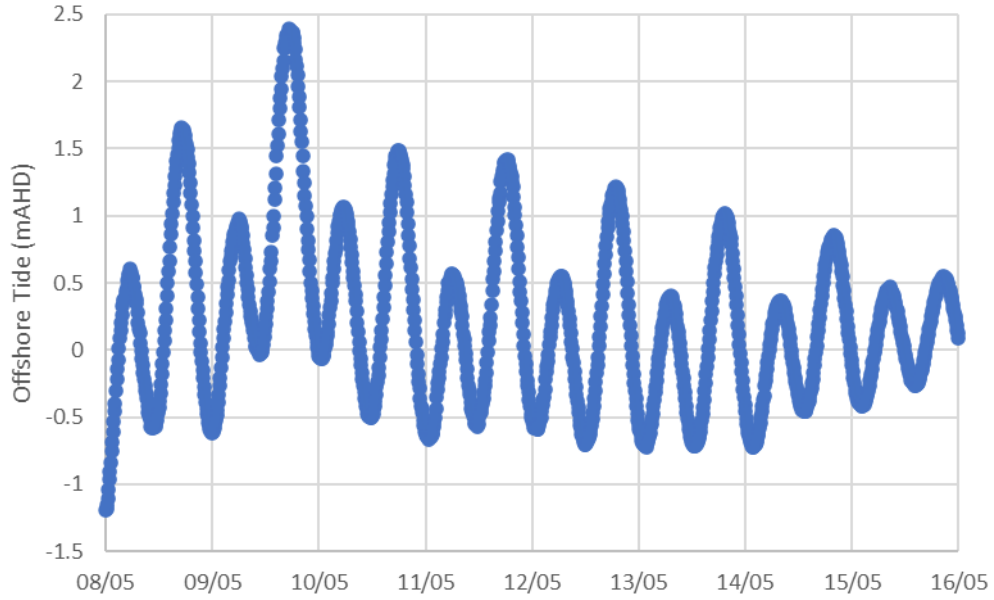


FIGURE 15 2016 STORM TIDE

4.2 Model Validation

No available hydrodynamic data (water levels or current measuring timeseries) within the boat ramp area for this study. As such, the model has not been formally calibrated to measured conditions under a known state of inputs. However, efforts have been taken to ensure the general ability of the model to reproduce known features within the system:

- Strong flooding tides when the water levels wash over the mouth delta, and
- Eddies forming in the vicinity of the boat ramp pontoon, mostly on the downstream side of the pontoon.

Qualitatively the model is able to reproduce these features. Figure 16 shows an example of eddies forming on both sides of the boat ramp pontoon during an incoming tide. While eddies have been known to form on the downstream side, the model shows strong eddies also on the upstream side as flow separates behind the pontoon. The available bathymetric survey applied to the model shows equal deep areas in each boat ramp lane, though it is likely that there are other obstructions (infilling, or displaced rock armour) that are in either side and influence the eddy formation. Furthermore, the pontoon is modelled as a complete obstruction (effectively a wall) whereas on higher tides water will be able to flow under the floating links. These effects may influence the formation or breakdown of eddies in these areas and cannot be captured by this 2D model.

Figure 17 shows the model currents in the channel adjacent to the end of the existing boat ramp pontoon for the storm-tide simulation in May 2016. The model shows incoming (flooding) tidal currents of over 0.4 m/s but outgoing (ebbing) currents of only ~0.05 m/s. During the storm event (9th May), the peak flood tide currents are similar to that of the 'normal' spring tides, but the ebb tides are stronger as the higher water levels drain out of the system. Simple current measurements taken by FOMBI are reported to show flooding tidal currents of 0.4-0.5 m/s, aligning with the modelled results. However, a detailed timeseries of currents across several tides is not available for calibration.

For further detailed assessments of the hydraulic performance of proposed works (such as scour or infilling assessments) the model requires calibration to current and water level data within the creek.

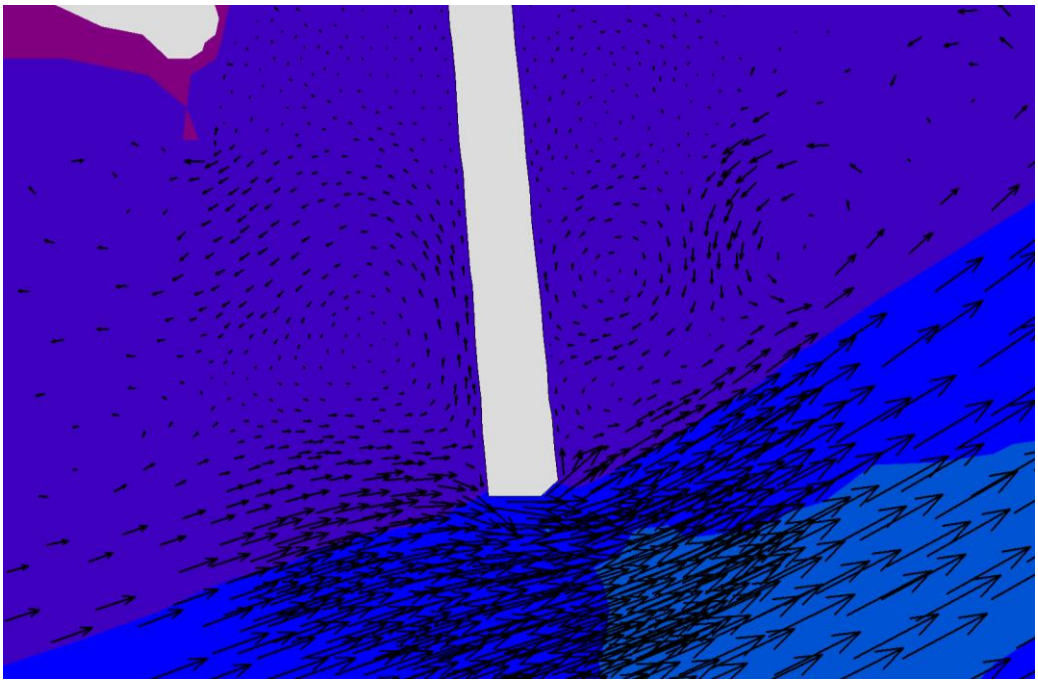


FIGURE 16 SNAPSHOT OF EDDY FORMATION NEAR BOAT RAMP

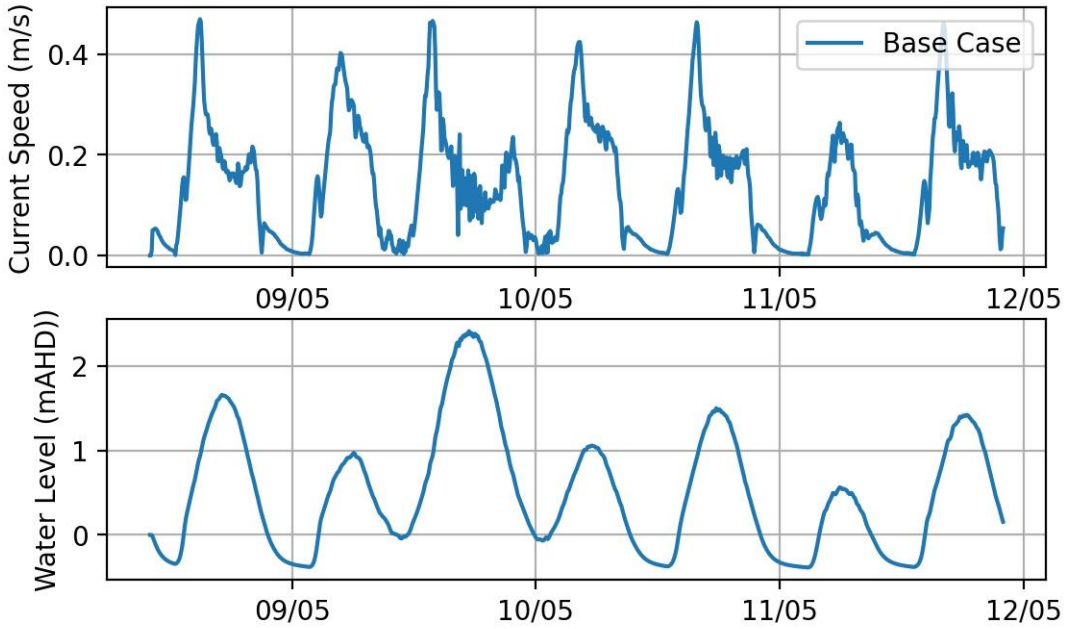


FIGURE 17 MODELLED CURRENTS ADJACENT TO BOAT RAMP PONTOON

4.3 Sensitivity of Pumping Operations

Accurate information of the pumping operations was not able to be sourced for this study. Sensitivity tests were run with a range of different flow rates to assess any potential impacts on the boat ramp area. A comparison of the currents adjacent to the boat ramp pontoon is shown in Figure 18. For most tides there is little difference in the current speeds. For higher tides there may be an increase in current speeds with higher pumping rates. This effect is small and occurs when natural flow is greater anyway.

It is possible that if significantly larger pumping rates were applied then currents could be impacted. Without further information on the pumping rates, any further impacts to the boat ramp area cannot be investigated.

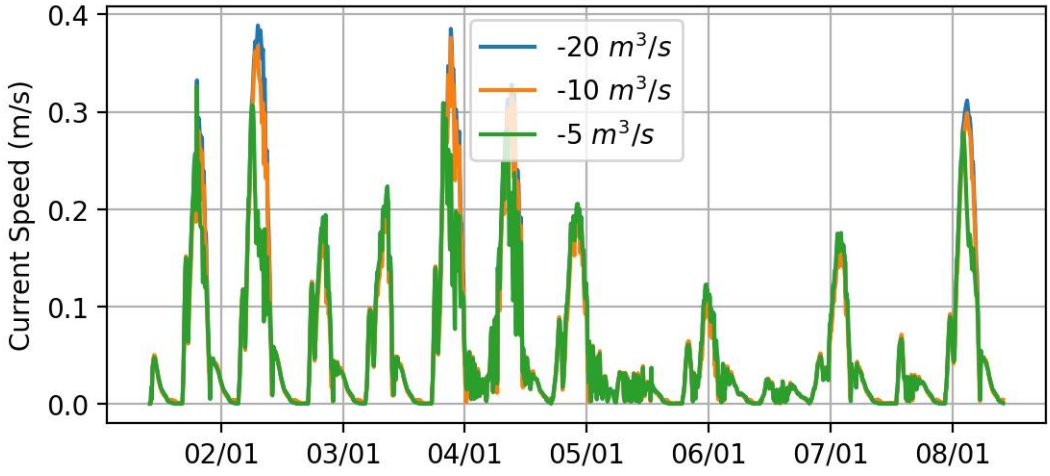


FIGURE 18 COMPARISON OF BOAT RAMP CURRENTS WITH DIFFERENT FLOW RATES

4.4 Model Scenarios

The model was configured to assess two key scenarios in addition to the 'base case' scenario. The first was a dredged case, which included a proposed dredged area ranging from 2 m of dredging immediately upstream of the boat ramp and tapering to no dredging at the start of seagrass beds downstream of the boat ramp. The second scenario was one as identified in the workshop with an extension of the downstream shoreline by either rock wall or back-filled sheet piling to divert incoming tidal currents away from the pontoon. Layouts of the two scenarios are shown in Figure 19.

It is noted that both of these scenarios could be configured in different refined designs. Potential options for this would be designing the dredged extent to direct the main flow away from the boat ramp or configuring the downstream bank at different angles. For the purpose of this modelling high-level proof-of-concept layouts have been adopted to demonstrate any potential impacts.

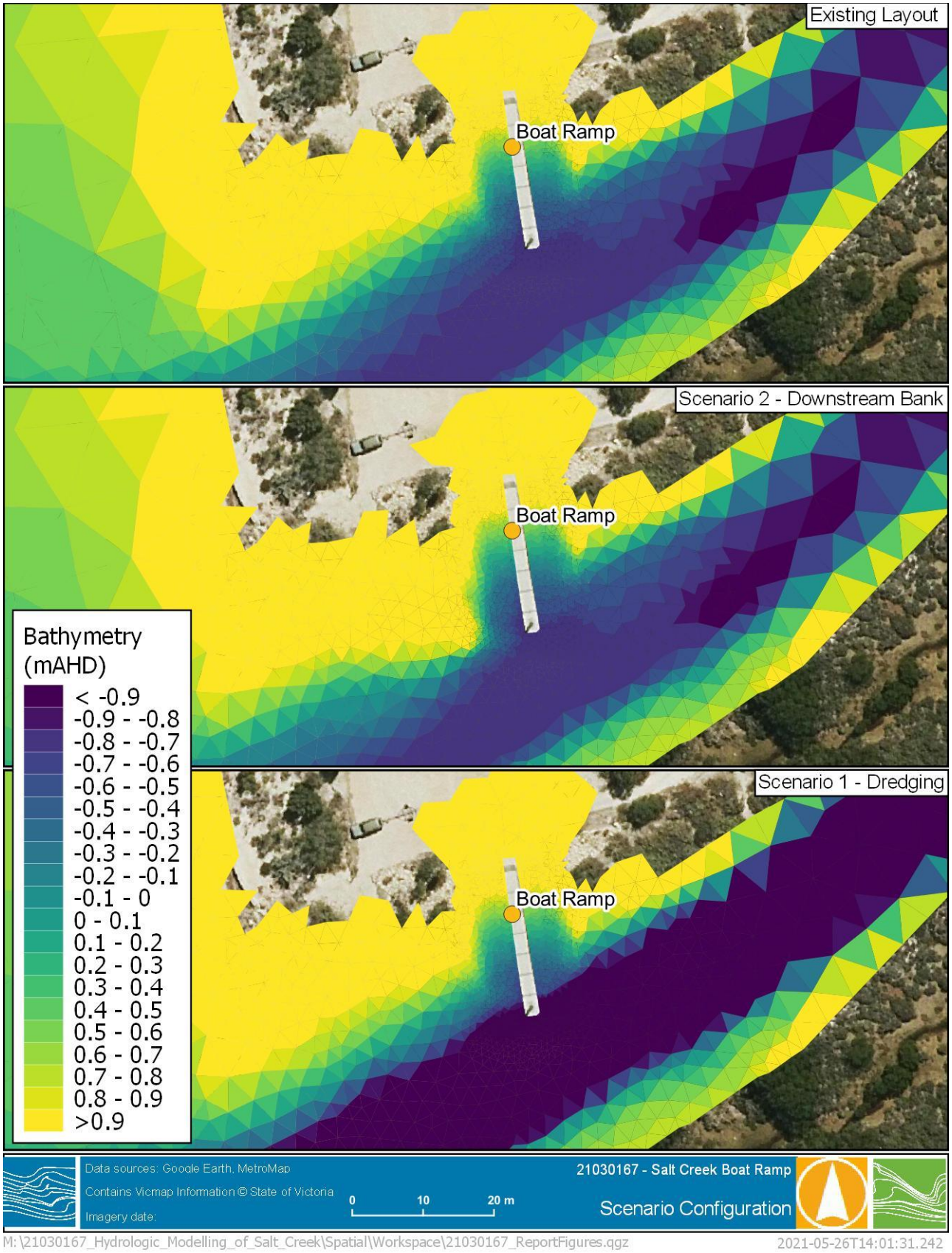


FIGURE 19 MODEL SCENARIO CONFIGURATIONS

4.5 Model Limitations and Recommendations

The model is based on bathymetric and LiDAR survey that is not current and has not been collected for the purpose of numerical modelling. A key limitation in these datasets is the missing data in the following areas that have been estimated based on aerial imagery:

- Mangrove creeks, that may increase the total volume of water in a tide cycle (tidal prism) and therefore influence currents.
- The shell-grit delta and other constrictions that strongly influence the shape of the flood-dominant tidal currents.

Furthermore, without accurate data to calibrate to, the exact performance of the model and the bias caused by the above cannot be quantified. All efforts have been made to validate the model to known qualitative features of the system. As such, the model is fit-for-purpose for providing qualitative comparisons and conclusions within the study area and for simulating the driving processes at a high-level.

It is recommended that if a model is required to provide exact quantitative estimates of current impacts or scour/infilling volumes of the boat ramp under proposed interventions that the following data be collected:

- Bathymetry data throughout most of the tidal areas of the creek and adjacent mangrove creeks.
- Water level monitoring at several locations along the creek.
- Current timeseries measurements at one or two key locations for spring and neap tides.
- Accurate data on the pumping extraction rates into the former salt pans.

4.6 Model Results

4.6.1 Scenario 1 – Dredging

The modelling shows that dredging reduces the current speeds by ~50% throughout the reach near the boat ramp under all flow conditions. However, the direction of flow is unchanged and there still exists periods where currents are directed towards the ramp area but no strong currents within the ramp areas themselves. An example of this is shown in Figure 21. Such conditions are prone to seagrass wrack accumulation over time.

Furthermore, it may reduce the development of eddies on the downstream side of the pontoon under flooding tide conditions. However, there is still the potential for significant eddy formation within the boat ramp area under ebb-tide and large storm-tide conditions.

The deeper areas of the creek and lower current speeds are likely to result in any potential infilling to fall into the dredged channel preferentially. This may delay any infilling of the boat ramp areas until the whole dredge area has largely infilled again. It is anticipated that further supplies of sediment that could cause infilling will be minimal. However, it is possible that erosion of banks by vegetation die-off, disturbance by vehicles or significant storm events could generate volumes of loose sediment that would be available for further mobilisation and infilling.

4.6.2 Scenario 2 – Realignment of Downstream Bank

Developing the downstream bank causes currents to be slightly diverted and concentrated in the centre of the existing channel. This increases the current speeds in this area by ~20% on average scenarios and by up to 50% on smaller tides (as shown in Figure 22 and Figure 23).

Current speeds in the boat ramp area itself are still low and minor eddies can still form (as shown in Figure 20). These eddies will still intercept passing seagrass wrack and require maintenance from time to time. It is likely that the rate of this wrack accumulation will be reduced as increased current speeds will push wrack further upstream and there is no direct flow into the boat ramp area.

The increased current speeds in the channel adjacent to the boat ramps may cause a localised scour of the bed in this area. This material could be pushed into adjacent calmer areas, which may include the boat ramp lanes and areas under the pontoon.

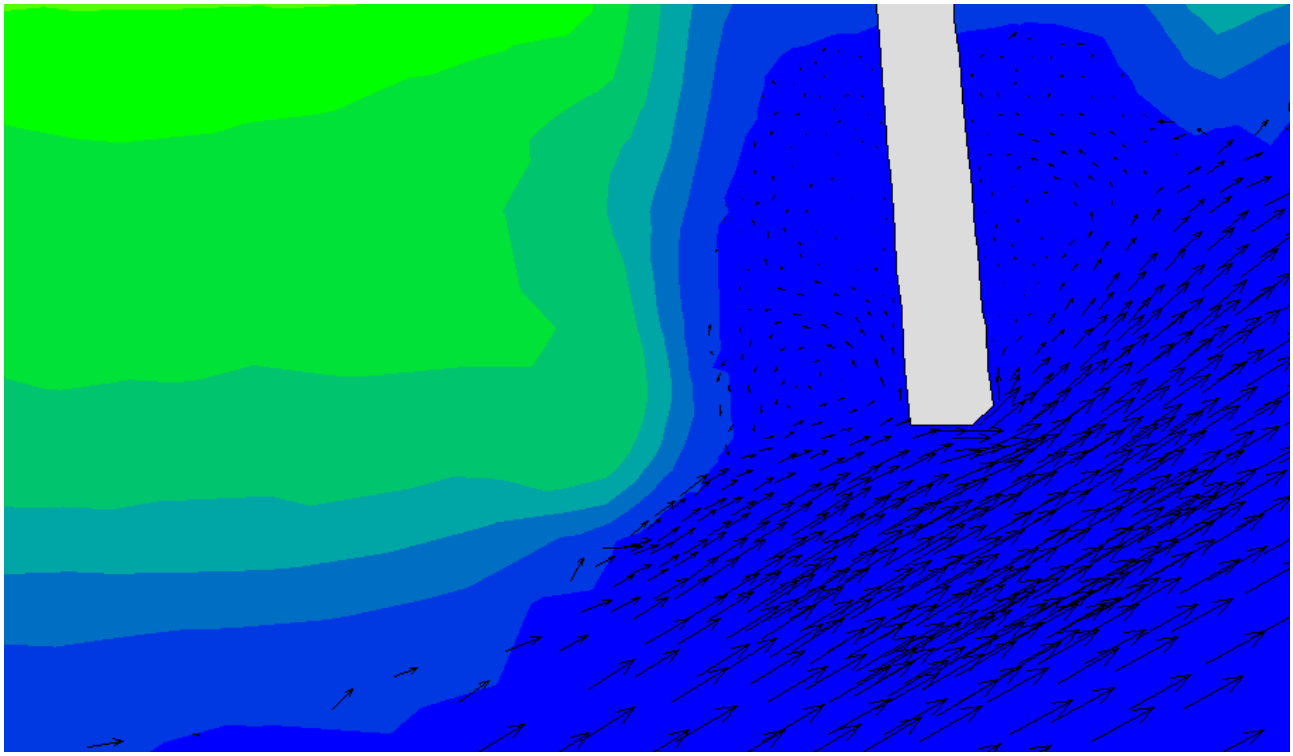


FIGURE 20 SMALL EDDY FORMING UNDER SCENARIO 2

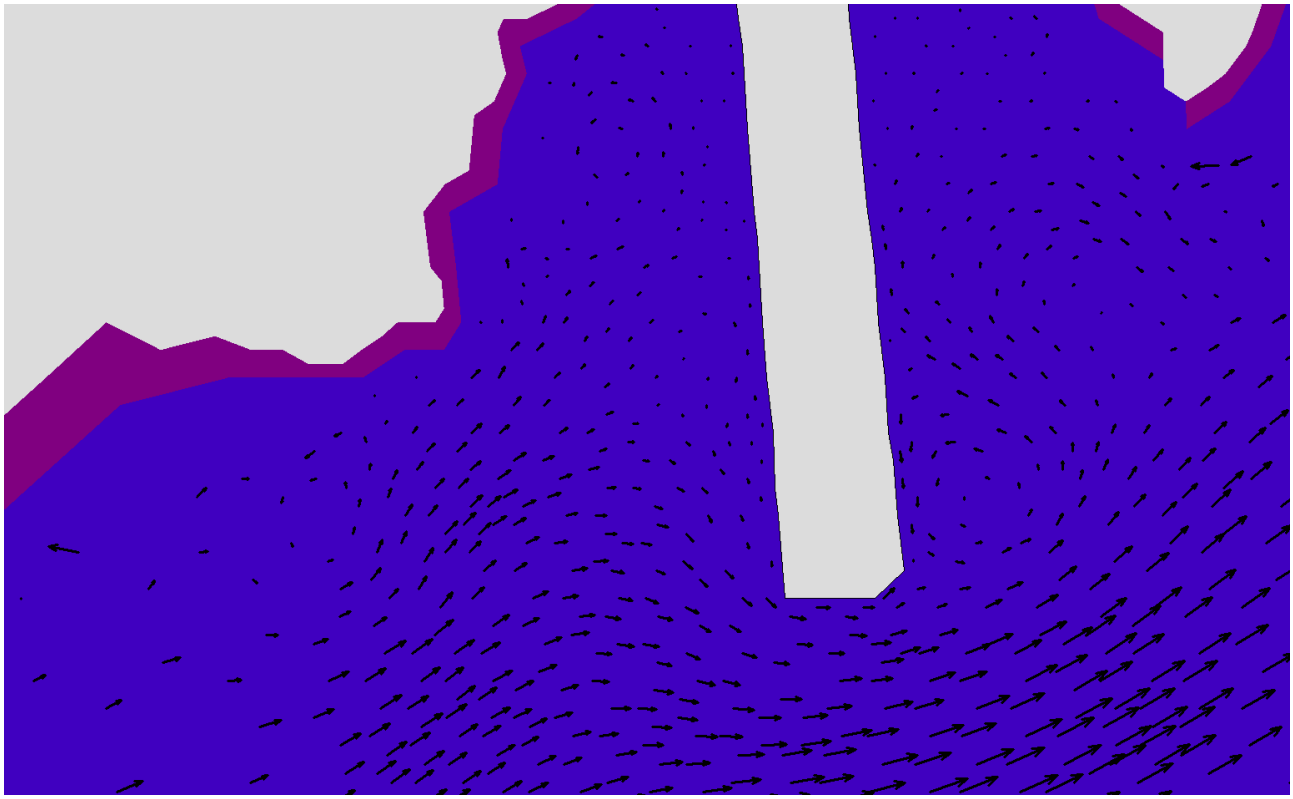


FIGURE 21 CURRENTS DIRECTED TOWARDS BOAT RAMP UNDER SCENARIO 1

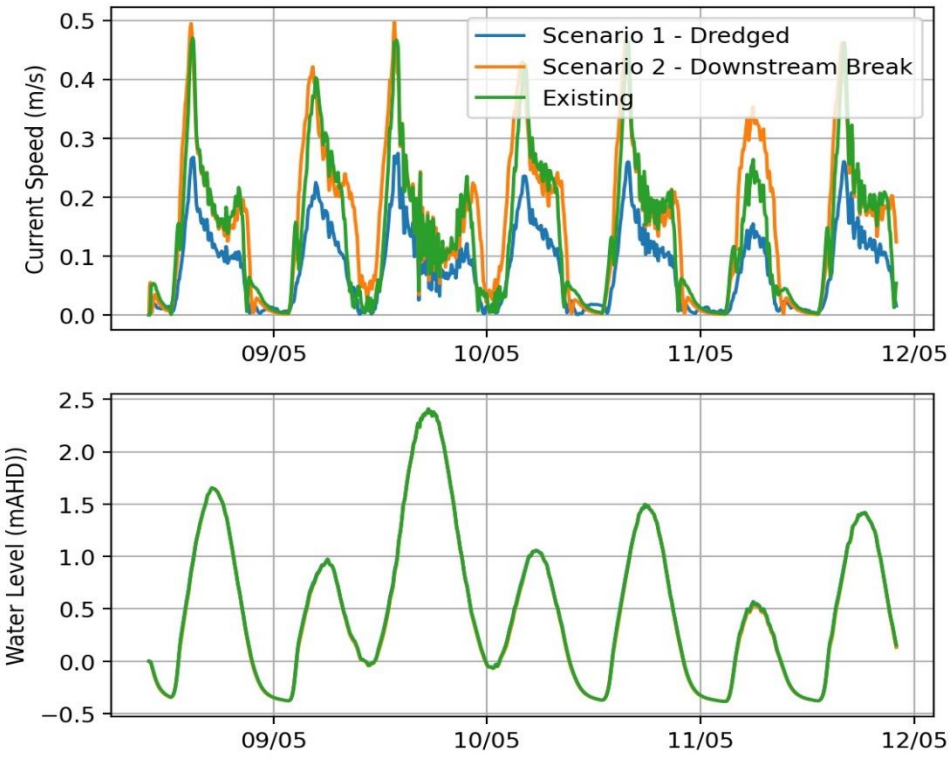


FIGURE 22 COMPARISON OF SCENARIOS ADJACENT TO BOAT RAMP PONTOON – MAY 2016

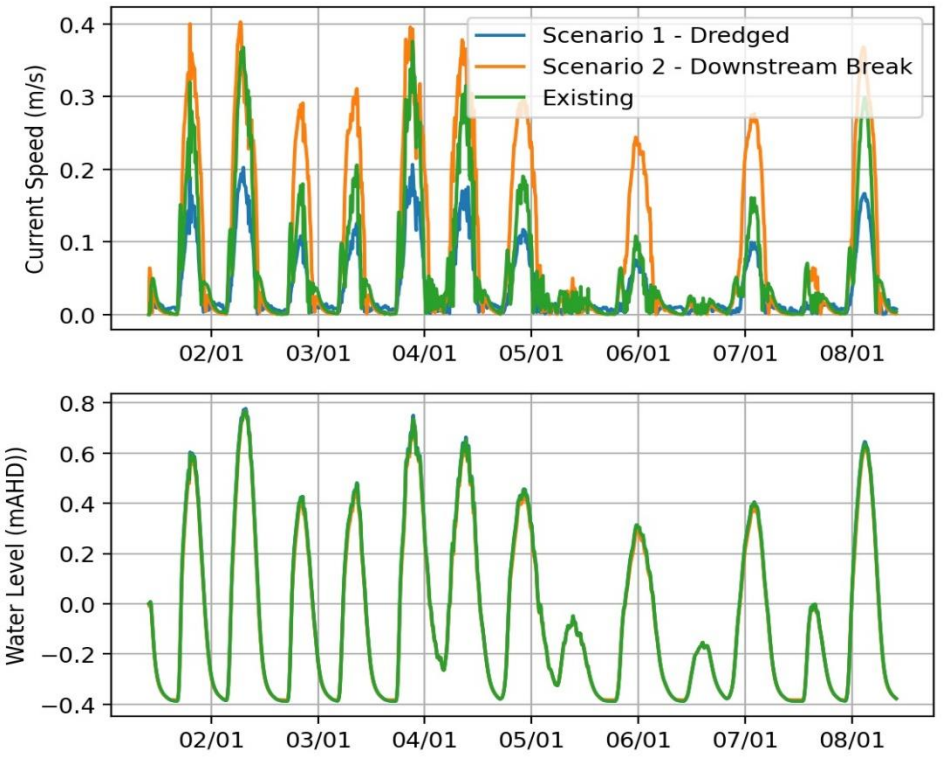


FIGURE 23 COMPARISON OF SCENARIOS ADJACENT TO BOAT RAMP PONTOON – JAN 2020

5 MANAGEMENT OPTIONS

5.1 Modelled Options Assessment

Modelling has shown that there may be several interventions that could assist in minimising the maintenance requirements of the boat ramp and potentially increase amenity.

Dredging of the creek near the boat ramp will not alleviate the potential for seagrass accumulation on the ramps on its own. However, it will reduce immediate sedimentation of the ramp areas by preferentially infilling the creek channel areas first. This can be mitigated by rehabilitating and revegetating the banks of the creek and ensuring that the concrete blocks preventing erosion of the shell-grit ridge are maintained. As this option does not change the tidal processes of the wider system it is still likely that any material that is mobilised will infill the creek over time. Monitoring may still be required, and it is possible that further dredging may be required over a longer time period (10-20 years). There are additional amenity benefits to dredging this area of the creek including the ability to launch vessels at all tide stages. This will also help to reduce demand on the boat ramp at peak times as vessels can launch prior to the high tide and wait in the creek until the delta is navigable to access GSV. Further enhancements of local amenity are as follows:

- Increase the window of opportunity to access the open gulf waters during peak launch times by considerably reducing the queue waiting times at the ramp. Boat owners will be able to launch at any time, moor on the creek bank, and wait for the appropriate time to head to sea.
- Provide boat owners with the ability to launch boats at low tide to allow repairs on trailers, etc.
- Allow re-growth of bank-stabilising vegetation in permanent (rather than tidal) water.
- Enhance the appeal of the area to a broader public, including the residential developments around Two Wells.
- Restore the diminished recreational amenity of the area by providing the community with permanent water in which to swim, fish, kayak etc at an increased range of tidal heights.

Redirecting the incoming tidal currents by extending the downstream bank is likely to reduce the rate of seagrass wrack accumulation, though wrack will still enter the ramp areas over time. There may also be local scour effects and sediment transport related to the increased currents. If this scour is directed on a realigned bank that is not stabilised, or at the toe of a vertical sheet-pile wall, then the ‘new’ bank may cause local scour effects that could actually exacerbate sedimentation of the boat ramp lanes. There are multiple options for this bank extension, including extending the rock revetment banks or by using sheet-pile backfilled with sediment to create a quay wall. It should be noted that any of these options will introduce their own maintenance burden and the following must be considered:

- Rock sizing and inspections of a realigned revetment.
- Scour potential around a vertical sheet-pile wall causing sedimentation elsewhere or undermining of the sheet-pile.
- Scour potential elsewhere in the channel and associated sediment transport.
- Appropriate coatings of marine-grade sheet-pile, inspections and maintenance of the quay wall.

As such, it should be recognised that none of the above options remove the need for maintenance at the ramps entirely, and in some cases create additional maintenance requirements elsewhere. A cost-benefit analysis needs to be undertaken to assess the relative overall cost of these.

5.2 Alternative Options Considered

A high-level summary of a range of potential management options and anticipated outcomes is presented in Table 1. Like the modelling conclusions, none of these intervention options entirely remove the potential for seagrass wrack accumulation or potential sedimentation. As such they will all require some degree of ongoing maintenance in order to continue to provide their intended level of service. However, some of these options do increase the amenity in the area while providing similar or potentially decreased maintenance costs.

The most expensive option is like to be complete removal and reconstruction of the boat ramp elsewhere. Angling the boat ramps upstream would minimise the seagrass and sediment ingress into these areas to a higher degree than any other option. This requires significant expenditure relative to alternatives without increasing amenity any further than the existing boat ramp did 'as new'.

Another option of interest is to replace the central pontoon with a single pontoon on the downstream bank that wraps around the bank. This provides two boat ramps next to each other without a central pontoon, but increases the boat waiting area, as well as the amenity and safety of access for kayak users. A rough outline of this potential layout is shown in Figure 24 (note that central pontoon would be removed). If combined with dredging and the re-establishment of the existing rock banks (with larger rock material), this option could enhance overall amenity. Seagrass wrack accumulation may be slowed slightly by the deflection of seagrass by the pontoon. It is also possible that the pontoon may direct larger storm surge currents towards the boat ramps that can help to remove seagrass wrack from this area. However it is likely that wrack could still accumulate and removal of the wrack from the boat ramps will be required from time to time.

TABLE 1 HIGH-LEVEL OPTIONS ASSESSMENT

	Pros	Cons
1. Construction of quay wall with sheet-pile	■ Could deflect flows so that seagrass accumulation is decreased ■ May increase public amenity with a bank by the creek.	■ Would need to be above highest tide ■ Safety issues falls, or people diving into shallow water ■ Additional construction costs ■ Ongoing monitoring/maintenance of quay wall required
2. Extend downstream bank with rock revetment	■ Could deflect flows so that deposition lessened	■ Needs to be appropriately designed ■ Additional construction costs ■ Ongoing monitoring/maintenance of extended rock revetment required

	Pros	Cons
3. Increase size of rock armour	■ Limits rock mobilisation and associated safety issues ■ May require less maintenance of rock revetment ■ Likely similar effort to re-establishing existing revetments	■ Does not change seagrass accumulation or sedimentation
4. Restore existing rock armour and attempt to stabilize it (e.g. with shotcrete or similar)	■ Cheap ■ Will stabilise rock banks in the short-term	■ Will degrade over time requiring maintenance ■ Does not address any seagrass or sedimentation concerns ■ Can be considered unsightly
5. Remove end section of pontoon	■ May decrease interception and capture of seagrass	■ Requires moving a pile which adds cost ■ Reduced area for launching vessels
6. Reconstruct boat ramp in a different location/ more favourable angle	■ Can be redesigned and planned to minimise sedimentation or seagrass accumulation	■ Expensive and disruptive
7. Replace central pontoon with a single pontoon that 'wraps' around the downstream bank	■ May decrease interception and capture of seagrass ■ Currents may remove seagrass from the ramp under certain conditions ■ May increase amenity for boat waiting area and for kayakers	■ Requires moving/adding piles which adds cost ■ Requires re-established banks/rock revetments and possible some dredging as well ■ Potentially additional maintenance burden with more piles/pontoon links

FIGURE 24 EXAMPLE LAYOUT FOR PONTOON AROUND DOWNSTREAM BANK

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The boat ramp facility at Salt Creek is in a low energy environment that has historically been prone to sedimentation when erosion of adjacent shell-grit areas has occurred. If potential areas of erosion are protected or stabilised, then dredging of the creek will be effective. Some degree of sedimentation in this area may still be anticipated and could be exacerbated by changes to the surrounding beach or mangrove areas. This would require a low-level of ongoing monitoring and potential sediment removal in the future.

The expanding seagrass beds also create a source of seagrass wrack will continue to mobilise before becoming trapped in enclosed areas and accumulating. Under many scenarios the boat ramps will function as accumulation areas, and ongoing removal of seagrass wrack will be required. Several of the scenarios will limit the direct inflow of seagrass (by redirecting currents), however seagrass will still likely accumulate over time.

The existing ramp embankments are in poor condition and will require maintenance to stabilise the bank or risk further sedimentation of the ramp during storm surge events. This provides an opportunity to replace the rock armour with larger rocks that will be less mobile and more likely to remain in place.

Historically maintenance of the facility appears to have been reactive, with many of the potential suggested management methods involving infrastructure ‘solutions’. These are attractive as they can be funded through various grants and provide short to medium term benefits. However, of key importance is a plan for ongoing maintenance of the infrastructure and the recognition that some degree of maintenance will always be required. The optioneering and modelling undertaken has considered maintenance costs, with a view to suggesting solutions that attempt to reduce maintenance costs In the case of the Salt Creek boat ramp, this will include infrequent seagrass wrack removal, restoration of the rock-armoured banks and potentially removal of shell-grit material from the boat ramp area following storms. All of these can potentially be minimised or optimised with changes or improvements to the infrastructure. However, it is difficult to assess these directly without first understanding what the maintenance burden of the current facility is.

6.2 Recommendations

In the first instance, APC should at least consider restoring the boat ramp facility to its fully-functional condition. This may include potential opportunities for enhanced amenity such as localised dredging or minor bank realignment.

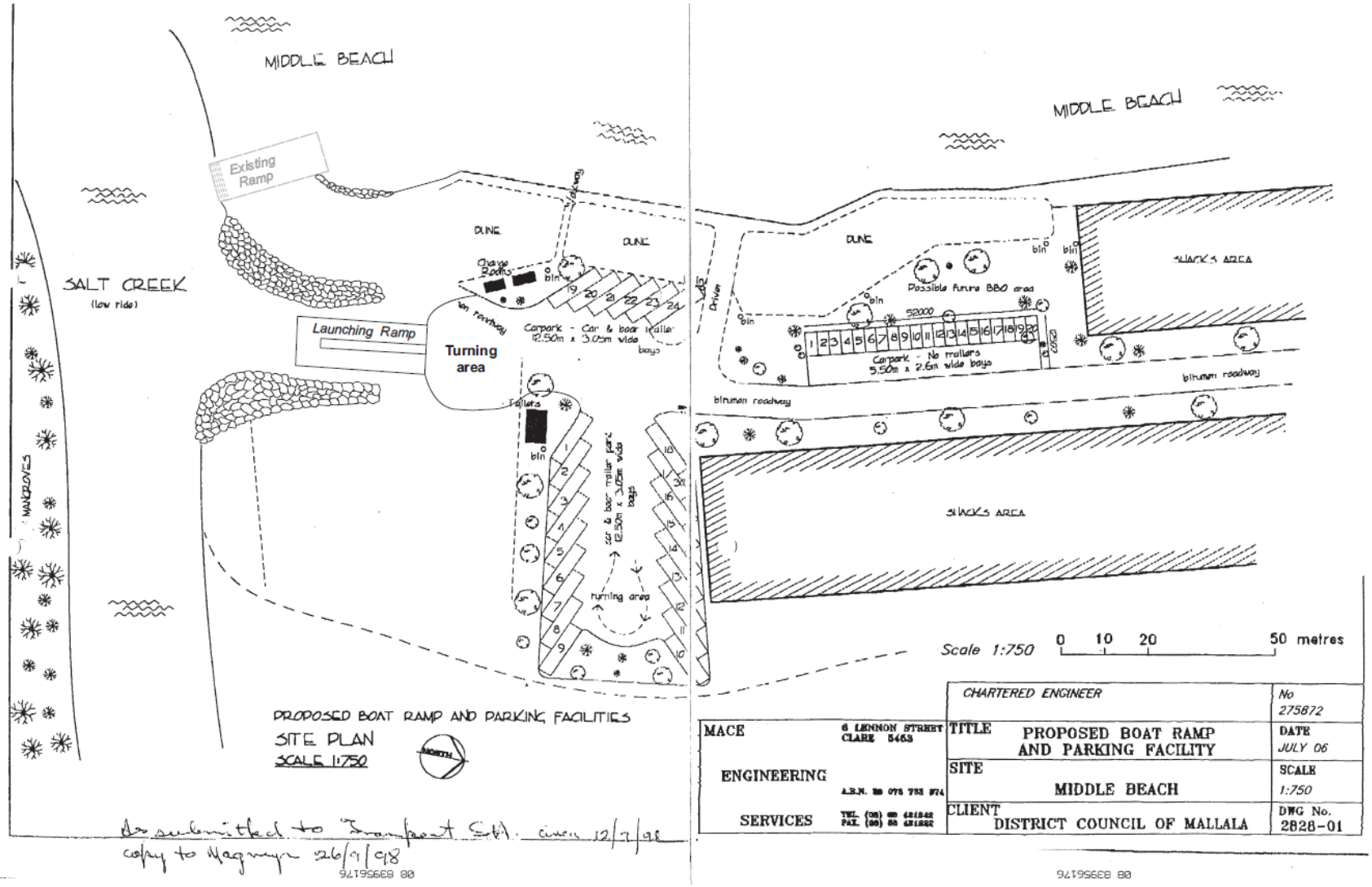
If funding is available, then any options that redirect flow around the pontoon or remove the obstruction of the pontoon will reduce the rate of accumulation of seagrass. This may include extending the downstream bank as modelled or moving the pontoon around the downstream bank as suggested in Section 5.2. Dredging a section of the creek will increase amenity and provide a relatively long-term buffer before further dredging is required. Both options will still require some degree of ongoing monitoring and maintenance planning.

Therefore, at a minimum, an asset management plan for the boat ramp facility should be developed. This should address the following:

- Required minimum level of service for the area.
- Ongoing plan to monitor:
  - Seagrass accumulation
  - Sedimentation and seagrass accumulation
  - Rock bank, boat ramp and pontoon/pile conditions
- Preferred maintenance methodologies with defined triggers.
- A budget for the above works and plan for continual improvement.

With the above management plan, a baseline understanding of the ongoing cost of the facility will develop over time. This can then be used to find optimisations and conduct cost-benefit analyses of alternatives.

APPENDIX A
ORIGINAL RAMP DESIGN



As submitted to Transport SA. circa 12/1/98
copy to Magnus 26/1/98

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Adelaide Plains Council	**6.3**	**Two Wells Township CWMS**
	Department:	**Infrastructure and Environment**
	Report Author:	**General Manager Infrastructure and Environment**
Date: 15 June 2021	**Document Ref:**	**D21/25998**

OVERVIEW

Purpose

The purpose of this report is to provide the Infrastructure and Environment Committee (the Committee) an update on the Two Wells Township CWMS feasibility study being undertaken by the Local Government Association (LGA).

Background

Council, at its Ordinary Meeting on 24 February 2020, resolved as follows:-

12.3 Infrastructure and Environment Committee Meeting

Moved Councillor Parker Seconded Councillor Boon ***2020/ 046***

"that Council endorsed resolution 2020/009 of the Infrastructure and Environment Committee and in doing so instructs the Chief Executive Officer to write to the LGA CWMS Program Manager requesting that the Two Wells CWMS feasibility study be updated."

CARRIED

Following the above resolution of Council in February 2020, Management sent a written response outlining resolutions 2020/046 to the LGA CWMS Program Manager. On 9 April 2021 a written response was received from the LGA CWMS Program Manager and is presented as **Attachment 1** to this Report. The correspondence outlining that the CWMS Management Committee Meeting held on the 16 March 2020 resolved to update the Two Wells Township CWMS feasibility study.

Discussion

Management have subsequently met to discuss the project, with Tonkin's being engaged by the LGA to undertake the feasibility study. Tonkin to date have undertaken detailed investigations into current systems in use and verification on ground, with this data being use to populate the final report.

With significant residential growth within the Two Wells Township it is timely that this feasibility study is undertaken and will ensure that Council provide a suitable system for the existing township. Furthermore with the current rapid residential growth, an increase demand for Main Street upgrades will be sought after, a CWMS service would support those upgrades occurring.

Conclusion

A further report will be presented to the Infrastructure and Environment Committee, upon more information being gathered.

RECOMMENDATION

"that the Infrastructure and Environment Committee, having considered Item 6.3 – *Two Wells CWMS Project*, dated 15 June 2021, receives and notes the report."

Attachments

1. Letter from LGA CWMS Program Manager.

References

Legislation

Local Government Act 1999

Council Policies/Plans

Council Strategic Plan

In reply please quote our reference: ECM 704284 : MW/VN
Your Reference: 020/7776

9 April 2020

Mr James Miller
Chief Executive Officer
Adelaide Plains Council
PO Box 18
Mallala SA 5502

Emailed: info@apc.sa.gov.au

Dear Mr Miller

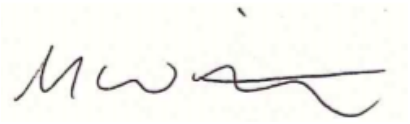
Two Wells CWMS Project

Thank you for your letter dated 25 February 2020 requesting that the Two Wells CWMS feasibility study be updated. The request was discussed at the last CWMS Management Committee Meeting held on the 16th of March 2020 and I am pleased to let you know that it was resolved to update the feasibility study.

Under the current CWMS Funding deed, feasibility studies include an assessment of the public and environmental health risks. If Council has any records relating to Environmental breeches or issues with failing on-site systems, poor soil, high water tables, compliance notices and expiations these will need to be provided to myself as part of the feasibility study. Once these have been received, work on updating the feasibility study will commence.

I look forward to working with your Council on this project. If you have any questions relating to this matter, please feel free to give me a call on 0401 582 675.

Yours sincerely



Michelle Wittholz
CWMS Program Manager
Telephone: 0401582675
Email: michelle.wittholz@lga.sa.gov.au

Cc: Tom Jones, tjones@apc.sa.gov.au

Adelaide Plains Council	6.4	**Lewiston Localised Stormwater Improvement Investigations**
	Department: **Report Author:**	**Infrastructure and Environment** **General Manager Infrastructure and Environment**
Date: 15 June 2021	**Document Ref:**	**D21/25822**

OVERVIEW

Purpose

The purpose of this report is to provide the Infrastructure and Environment Committee (the Committee) information on the outcome of the Feasibility Study for Lewiston Drainage.

Background

Council, though the adoption of its 2020-2021 Annual Business Plan and Budget allocated $40,000 to undertake a Feasibility Study for Lewiston Drainage. The Feasibility Study was completed using internal resources with the assistance of external consultant.

Discussion

Management have progressively invested operating budget and resources into addressing localised stormwater improvements within Lewiston over the past few years. The following table has been developed to highlight the location of the remaining localised stormwater improvement, priority and estimated costs. Further, examples of locations where localised stormwater improvement are required is presented as **Attachment 1** to this Report

Location	Issue	Estimated Cost	Priority
Germantown Road (Hayman Road to Dawkins Road)	Formalise drainage on Germantown Road (between Hayman Road to Dawkins Road), this stormwater ends up in a depression on Germantown road approximately 250 metres south of Hayman Road and has nowhere to go due to development in-fill. Design work is required.	$60,000	Low
Hayman Road - Harniman Road intersection.	Install spoon drain, reshape road and hot mix	$40,000	High
Hayman Road – Frost Road intersection.	Install spoon drain across northern apron, reshape road and hotmix (opportunity to stagger intersection). Design work is required.	$60,000	High
Clydesdale Road	Renewal/upgrade existing spoon drain, reshape and hotmix.	$20,000	Medium
Hayman Road	Install 300mm pipes and headwalls - Hayman Road drain entries (railway line end).	$10,000	Low
Hayman Road (Kathleen Road to Secomb Road)	Reshape open drain from Kathleen Road to Secomb Road.	$10,000	Medium
Kathleen Road	Reshape open drain from spoon drain to rail reserve.	$10,000	Low
Williams Road – Dawkins Road Intersection	Install spoon drain, reshape road and hotmix (opportunity to stagger intersection). Design work is required.	$60,000	Medium

Conclusion

This report has presented for Committee Members information the outcome of the Feasibility Study for Lewiston Drainage. Future operating budgets will allocated money based on priority to remaining localised stormwater improvement outlined in the above table.

RECOMMENDATION

"that the Infrastructure and Environment Committee, having considered Item 6.4 – *Lewiston Localised Stormwater Improvement Investigations*, dated 15 June 2021, receives and notes the report."

Attachments

1. Examples of locations where localised stormwater improvement are required.

References

Legislation

Local Government Act 1999

Council Policies/Plans

Infrastructure and Asset Management Plan

Lewiston Localised Stormwater Improvement Examples

Hayman Road – Harniman Road Intersection.

Hayman Road – Frost Road Intersection.

Kathleen Road

Adelaide Plains Council	6.5	**Undergrounding of Power – Two Wells Main Street**
	Department:	**Infrastructure and Environment**
	Report Author:	**Asset Engineer**
Date: **15 June 2021**	**Document Ref:**	**D21/25600**

OVERVIEW

Purpose

The purpose of this report is to provide the Infrastructure and Environment Committee (the Committee) information on the investigations and conceptual scoping currently being undertaken into the undergrounding of power in the Two Wells main street – Old Port Wakefield Road.

Background

The South Australian Power Networks (SAPN) infrastructure in Two Wells has not seen any major upgrade in for nearly 30 years and it would be fair to assume it would require upgrades for any new business being established in the future. There is currently very limited capacity to support future commercial developments, without individual customers / developers funding required upgrades.

Generally, Power Line Environment Committee (PLEC) funding is managed by SAPN, and if successful the grant involves a 1/3 Council contribution, a 1/3 SAPN contribution and 1/3 State Government contribution. This, however, is contingent on SAPN undertaking the management and the budget, of all civil works and all of the electrical works, being categorised as non-contestable.

PLEC design historically only replaces like for like infrastructure, with no spare capacity or conduits allowed within the design framework. A standard PLEC approach will look presentable, but any new business will be presented with large upfront establishment costs and the new street scape will require re- trenching on as required basis. To help Council attract new business development to Two Wells, cost effective access to essential services, is required.

As part of the Council's Two Wells Main Street Public Realm Upgrade, stobie poles will be removed between Gawler Rd and Drew Street. These stobie poles carry high voltage (HV) power and Low Voltage (LV) power along Old Port Wakefield Road. Apart from transmission of HV the stobie poles also supply local residents and business with NBN and low voltage (LV) power via pole mounted transformers. SAPN grant PLEC funding for projects of this nature, and there are various mechanisms for implementation which will impact how the grant funding is applied for by Council. An advanced approach to SAPN's PLEC department may also move our proposal in front of other submissions by managing SAPN's civil risk and design proposal.

Discussion

Management have decided to investigate an alternative approach, by engaging a consultant, Wallbridge Gilbert Aztec (WGA), to undertake a design of a HV underground "backbone" with strategically located pad mounted transformers. This will allow for additional capacity to support future commercial business opportunities.

Furthermore, a LV network can then reticulate power to fused service pits throughout the main street and the residents / commercial premises, will be connected to these pits.

Once the HV backbone and LV reticulation is conceptually approved by SAPN, Management will obtain quotes for both civil works and contestable electrical works. By undertaking this methodology Council will be able to achieve better value through known experienced contractors, by taking some of the cost risks away from SAPN. In other words SAPN will only undertake the non-contestable works (HV jointing and business service connections from the fused service pits).

The new pad-mounted transformers will be sized to cater for future customer demand, particularly on the western side of the main street, where there will be many future commercial / retail development opportunities.

Conclusion

By undertaking this approach (and generally known risk) it is possible for Council to reduce the size of its contribution considerably, whilst also increasing the opportunity for business growth, by undertaking and managing the civil and contestable electrical works and building capacity into the electrical infrastructure. Having recently undertaken a single stobie pole removal and the undergrounding of the consumer main adjacent the Two Wells Library, staff have a first-hand experience of the in-situ underground geotechnical conditions and the location and condition of existing services.

A further report will be presented to the Infrastructure and Environment Committee, after the conceptual design has been undertaken by WGA.

RECOMMENDATION

"that the Infrastructure and Environment Committee, having considered Item 6.5 –
***Undergrounding of Power - Two Wells*, dated 15 June 2021, receives and notes the report."**

Attachments

Nil

References

Legislation

Local Government Act 1999

Council Policies/Plans

Infrastructure and Asset Management Plans

Adelaide Plains Council	**6.6**	**Mallala Road Roundabout**
	Department:	**Infrastructure and Environment**
	Report Author:	**General Manager Infrastructure and Environment**
Date: 15 June 2021	**Document Ref:**	**D21/26313**

OVERVIEW

Purpose

The purpose of this report is to provide the Infrastructure and Environment Committee (the Committee) an update on the Mallala Road Roundabout in Two Wells.

Background

Council, at its Ordinary Meeting on 28 September 2020, resolved as follows:-

21.1 Infrastructure and Environment Committee Meeting

Moved Councillor Lush Seconded Councillor Keen ***2020/ 346***

"that Council endorses resolution 2020/030 of the Infrastructure and Environment Committee and in doing so:

1. ***Acknowledges that the roundabout at the intersection of Old Port Wakefield Road and Mallala Road is unlikely to be delivered prior to the school opening in January 2021 or the 150th home in Liberty being occupied; and***
2. ***Determines that there is a requirement for provisional infrastructure to provide safe pedestrian and vehicle access while the land acquisition and roundabout construction is delayed."***

CARRIED

And,

21.1 *Infrastructure and Environment Committee Meeting*

Moved Councillor Boon Seconded Councillor Keen ***2020/ 347***

"that Council endorses resolution 2020/031 of the Infrastructure and Environment Committee and in doing so:

1. **Adopts** ***the Deed of Variation as presented at Attachment 1 to this Report; and***
2. ***Instructs the Chief Executive Officer to write to the Department for Infrastructure and Transport (DIT):***
   a. ***identifying the requirement for provisional infrastructure to provide safe pedestrian and vehicle access while the land acquisition and roundabout construction is delayed;***

b. Determines that the provisional infrastructure design and construction costs be borne by DIT;
c. Request that DIT review the speed limit on Mallala Road with a view to reducing from 80kph to 50kph in the area where the roundabout is to be constructed until such time as it is constructed; and
d. That items identified in point b and c above be completed by Friday 22 January 2021."

CARRIED

Following the above resolution of Council in September 2020, Management sent a written response outlining resolutions 2020/347 to the Department of Infrastructure and Transport - Director, Network Planning Transport Network and Investment Strategy, Andrew Excell. On 23 December 2020 a written response was received from the Department of Infrastructure and Transport (DIT) and is presented as **Attachment 1** to this Report.

Discussion

Since receiving the attached correspondence, the proposed 60km/h part time speed limit on Mallala Road and associated signage has been implemented.

To date DIT are undertaking internal discussion within their governance department in relation the required land acquisition. The land acquisition for this project is a DIT responsibility and outlined within Deed of Variation endorsed by Council at its September 2020 meeting.

Management have met on a fortnightly basis to discuss the project to ensure that the project continues to move forward, mindful that funding that Adelaide Plains Council has secured through Heavy Vehicle Safety and Productivity Program Round 7 ($439,500) needs to be finalised before November 2022. Further to this, Hon John Dawkins MLC recently enquired about the status of the Mallala Road Roundabout and received a response from Hon Corey Wingard MP and is presented as **Attachment 2** to this Report.

Conclusion

A further report will be presented to the Infrastructure and Environment Committee, upon more information being gathered.

RECOMMENDATION

"that the Infrastructure and Environment Committee, having considered Item 6.6 – *Mallala Road Roundabout*, dated 15 June 2021, receives and notes the report."

Attachments

1. Correspondence from Department of Infrastructure and Transport.
2. Correspondence from Hon Corey Wingard MP.

References

Legislation

Local Government Act 1999

The Highways Act 1926

Council Policies/Plans

Annual Business Plan and Budget

Government of South Australia
Department for Infrastructure and Transport

In reply please quote *2012/10817/01*
Enquiries to Jim Psyridis
Telephone 0401997363

TRANSPORT PLANNING AND PROGRAM DEVELOPMENT

77 Grenfell Street
Adelaide SA 5000

GPO Box 1533
Adelaide SA 5001

ABN 92 366 288 135

Thomas Jones
General Manager, Infrastructure and Environment
PO Box 18
Mallala SA 5502

Dear Mr Jones,

MALLALA ROAD ROUNDABOUT

Thank you for your correspondence on 8th October 2020 regarding Council's resolutions related to the Mallala Road Roundabout.

I can advise that the Deed of Variation for this project is now executed and is now being forwarded to the relevant parties.

The department has considered your request to assist safe pedestrian and vehicle access for the period up to roundabout construction as well as consider a speed limit reduction to 50km/h in the vicinity of the roundabout and up to its construction.

Our meeting on 14 December 2020 with yourself, Mike Ravno, Melissa Mellen MFY and departmental officers was beneficial to collaboratively investigate the situation and explore feasible operational options to address safety in this interim period.

The following reflects the meeting outcomes which identified operational safety improvement through speed reduction and road user information solutions without interim infrastructure treatment:

- The department will consider a lower speed limit and other signing solution – noting a 'temporary' speed limit approach for the duration as most feasible; and
- Ensuring that construction traffic management plans for the roundabout accommodate the likely school and other road user movements.

The proposed departmental treatments and actions are proposed for your consideration and for implementation:

- A 60 km/h part time speed limit on Mallala Road in the vicinity of the intersection with Old Port Wakefield Road, proposed to operate at 8am-9am / 3pm-4pm on school days (subject to school advice of times). The signing will

be via speed limit signs with a supplementary plate displaying times of operations;
- The 80 km/h speed limit on Mallala Road will apply at other times, and until a permanent 60 km/h speed limit is introduced, following the roundabout construction;
- Pedestrian warning signs on Mallala Road;
- Temporary Advanced Street Name signs on Mallala Road for Meaney Road;
    - Installation of a white on blue fingerboard sign for the school under the street name fingerboard sign at the Meaney Road intersection - council consideration to funding this sign is sought
- Engage with the developer to ensure roundabout construction traffic management plans accommodating the likely school and other road user movements

The department expects to complete its actions prior to School opening in January 2021.

The above approach aligns with the proposed future speed limit; slows vehicles during times of school pedestrian presence; assists with greater road user compliance; and contributes to slower traffic movements for other vehicles accessing the adjacent local area.

I trust this provides a workable approach. Please ring me on 0401997363 if you have any further queries.

Yours sincerely,

Jim Psyridis
MANAGER, TRANSPORT ASSESSMENT

23 December 2020

Hon Corey Wingard MP

Government of South Australia

Minister for Infrastructure and Transport

Minister for Recreation, Sport and Racing

GPO Box 668
ADELAIDE SA 5001
DX 450

T: (08) 8490 6200

E: MinisterWingard@sa.gov.au

21INF0327

Hon John Dawkins MLC
President of the Legislative Council

By email: john.dawkins@parliament.sa.gov.au

Dear Mr President John

Thank you for your recent correspondence regarding the construction of a roundabout at the intersection of Mallala Road, Old Port Wakefield Road and Meaney Road, Two Wells.

After receiving your correspondence, I asked the Department for Infrastructure and Transport (DIT) for advice about this matter.

DIT has advised that the scope of the proposed roundabout has changed since its original inception within the Two Wells Road Infrastructure Design and Delivery Deed. The need to maintain appropriate heavy vehicle movements through Mallala Road at this location was identified by DIT and this necessitated amendments to the original Deed's roundabout design and scope.

As a result, the Minister, Commissioner of Highways, the developer, and the Adelaide Plains Council agreed to enter a Deed of Variation which was executed in October 2020. This variation requires the state government to fund the amended design, land acquisition costs, and an additional fixed contribution for construction of the roundabout. The remainder of the project will be funded by the developer and Council.

The detailed design for a roundabout at this intersection is currently being undertaken and DIT will continue to work with the developer and their representatives to finalise the design and move towards construction.

It is anticipated the developer will commence construction by the end of this year.

I trust this information is of assistance.

Yours sincerely

Hon Corey Wingard MP
Minister for Infrastructure and Transport

12 / 5 / 2021

Adelaide Plains Council	**7.1**	**Thompson Beach, Seasonal Closure of Beach to Vehicles**
	Department:	**Infrastructure and Environment**
	Report Author:	**Coastal Conservation Officer**
Date: 15 June 2021	**Document Ref:**	**D21/25841**

EXECUTIVE SUMMARY

- The purpose of this report is to provide the Infrastructure and Environment Committee (the Committee) information on the trial closure of Thompson Beach from motor vehicles between October 2020 and May 2021 with the view to extend the seasonal closure.
- On 11 November 2019 Management were approached by the Senior Ranger for the Adelaide International Bird Sanctuary, who requested a seasonal restriction on motor vehicles at Thompson Beach between September and May annually.
- Council, at its Ordinary Meeting on 26 October 2020, resolved to trial prohibiting vehicles on the beach at Thompson Beach and Prime Beach between 5 October 2020 and 30 May 2021.
- Migratory shorebirds utilise our coastal areas over the summer months to feed and fatten up in preparation for their annual migration to the northern hemisphere to breed. Disturbance by off road vehicles has been identified threat to migratory shorebirds.
- Migratory Shorebirds are protected under the Environmental Protection and Biodiversity Act 1999. Some of the species utilising Council's coastal areas are classified as critically endangered.
- Minimising human induced threats to migratory shorebirds in Australia is a key objective in Birdlife Australia's Migratory Shorebird Conservation Action Plan. This is supported by Council's Natural and Coastal Areas Management Plan which was developed to guide the management of the natural and coastal areas to ensure these lands remain a valuable natural resource for existing and future generations
- The closure has improved beach safety for migratory and residents birds, pedestrians, and recreational fishers. At the same time, reducing vehicle use and damage to vegetation and the sensitive mudflat from compaction and damage from vehicles getting bogged.
- It is recommended that vehicles be prohibited on the beach at Thompson Beach with the exception of emergency services, Council and Department of Environment and Water service vehicles or those launching and/or retrieving boats, and locally owned and registered jinkers to access the beach.
- The recommendation is support by Friends of the International Bird Sanctuary, Friends of Parks, Bird Life, Birds SA, National Parks and Wildlife and presented as **Attachment 1** to this report.
- Access management is important for recreational and environmental outcomes and the proposed recommendation seeks to balance visitor use whilst seeking to reduce the impact caused by off road vehicles.

RECOMMENDATION

"that the Infrastructure and Environment Committee, having considered Item 7.1 – *Thompson Beach, Seasonal Closure of Beach to Vehicles*, dated 15 June 2021, receives and notes the report and in doing so, recommends to Council that public consultations is undertaken in relation to vehicles being prohibited on the beach at Thompson Beach with the exception of emergency services, Council and Department of Environment and Water service vehicles or those launching and/or retrieving boats, and locally owned and registered jinkers to access the beach."

BUDGET IMPACT

Estimated Cost:	$1000 (signage installation at vehicle access points within Thompson Beach)
Future ongoing operating costs:	$500 (signage replacement)
Is this Budgeted?	Yes

RISK ASSESSMENT

The recommendation will improve beach safety for pedestrians, fishers and crabbers. Reduced vehicle use will also lessen risk of damage to vegetation and levees surrounding the township. The proposed resolution and long term adoption of the recommendation would benefit natural assets and provide an improved visitor attraction to the region for bird tourism.

Attachments

1. Support letters - Friends of the International Bird Sanctuary, Friends of Parks, Bird Life, Birds SA, National Parks and Wildlife.

DETAILED REPORT

Purpose

The purpose of this report is to provide the Infrastructure and Environment Committee (the Committee) information on the trial closure of Thompson Beach from motor vehicles between October 2020 and May 2021 with the view to extend the seasonal closure.

Background/History

Council, at its Ordinary Meeting on 28 September 2020, resolved as follows:-

12.2 *Infrastructure and Environment Committee Meeting – 3 September 2020*

Moved Councillor Keen Seconded Councillor Parker ***2020/ 300***

""that Council endorses resolution 2020/022 of the Infrastructure and Environment Committee and in doing so resolves to trial prohibiting vehicles on the beach at Thompson Beach and Prime Beach between 5 October 2020 and 30 May 2021, with the exception of emergency services, Council and Department of Environment and Water service vehicles or those launching and/or retrieving boats.

CARRIED

Additionally Council, at its Ordinary Meeting on 26 October 2020, resolved as follows:-

18.1 *Amend Resolution 2020/300 – Thompson Beach, Seasonal Closure of Beach to Vehicles*

Moved Councillor Keen Seconded Councillor Strudwicke ***2020/ 372***

"that Council resolves that resolution 2020/300, in relation to the trial prohibiting vehicles on the beach at Thompson Beach and Prime Beach between 5 October 2020 and 30 May 2021 with the exception of emergency services, Council and Department of Environment and Water service vehicles or those launching and/or retrieving boats, be amended to also permit locally owned and registered jinkers to access the beach at Thompson Beach during the trial prohibition period."

CARRIED

Discussion

As a land manager Council has a responsibility to manage its land in line with its relevant Community Land Management plan. Council's Natural and Coastal Management plan objectives have a focus on strengthening biodiversity and habitat value and allowing for the management of access to protect natural values.

Migratory shorebirds have seen dramatic population declines and face a number of threats along their flyway. Thompson Beach is a terminal feeding site for many species, some of which are considered critically endangered. Management actions which reduce disturbance whilst the birds are present will assist in maintaining habitat condition within our local area.

Thompson Beach is a popular destination for fishers and crabbers with seasonal visitation over the summer months increasing. Maintaining legitimate access whilst reducing impacts from disturbance and habitat decline would be a desired outcome.

Thompson Beach currently has 2 vehicle access points and 17 pedestrian access points within a 3km stretch of coastline. This level of access provides multiple options for people to access the beach without the need to drive onto the sand. There are a small number of residents and visitors who launch a boats from Thompson Beach. By limiting vehicle access to those who launch and retrieve a vessel, the proposed restriction will still maintain legitimate activity whilst discouraging the north and south movement of vehicles. It is the north and south traffic which results in vehicles regularly becoming bogged, leading to the wide spread disturbance and compaction of soils.

The Department of Environment have installed infrastructure at the northern end of Thompson Beach to restrict vehicles accessing the beach area north of the township and infrastructure at Pt Prime to limit access from the south. When on the beach there are limited natural features which provide clear guidance to know when you are on Council Managed Land or National Park.

The proposed recommendation would provide clarity for visitors and residents regarding vehicle use on the beach and maintain access that provides for the recreational activities of fishing, crabbing and bird watching.

Closure Results

The closure has improved beach safety for migratory and residents birds, pedestrians, and recreational fishers. At the same time, reducing vehicle use and damage to vegetation and the sensitive mudflat from compaction and damage from vehicles getting bogged.

- During the high peak period of Summer School holidays, 2020/2021 vehicles were observed in large numbers on the beach, 30 in one day. Once more prominent signs were installed and coastal officer education was implemented, including removing vehicles from the beach, a sharp decline was noted
- Positive impacts on shorebirds and resident birds cannot be fully proven at this stage. Longer observations of 1-2 years is needed to see if seasonal counts have increased as a result of less disturbance on the beach by vehicles.
- Personal Communication with residents with Coastal Conservation Officer:
    - “Once larger signs were installed (no car and motorbike signs) in September 2020, noticeable change in beach usage by vehicles was observed.”
    - “Rubbish on the beach has reduced dramatically, with noticeable decline and in many cases not finding toilet paper, baby wipes and nappies anymore.”
    - “Decline in vehicles getting bogged during the period only observed two cars bogged in the early stages of the trial while signage was limited.”

- "Regular Bird watchers noted an increase in bird observations since vehicle access to the beach was stopped."
- "Unruly Motorbikes behaviour on the beach noted reduction."

Next Steps

It is recommended to continue the closure with two methods of closure available, they are;

1. Permanent Closure (recommended) and supported by Friends of the International Bird Sanctuary, Friends of Parks, Bird Life, Birds SA, National Parks and Wildlife and presented as **Attachment 1** to this report.
    - Vehicles be prohibited on the beach at Thompson Beach with the exception of emergency services, Council and Department of Environment and Water service vehicles or those launching and/or retrieving boats, and locally owned and registered jinkers to access the beach.
    - Implementing of compliance (New signage)

2. Partial Closure during shorebird season February to October
    - Vehicles be prohibited on the beach at Thompson Beach with the exception of emergency services, Council and Department of Environment and Water service vehicles or those launching and/or retrieving boats, and locally owned and registered jinkers to access the beach.
    - Implementing of compliance and signage

Conclusion

As a responsible land manager, Council has a duty to manage its land for all user groups and to do so in accordance with relevant management plans. Access management is important for recreational and environmental outcomes and the proposed recommendation seeks to balance visitor use whilst seeking to reduce the impact caused by off road vehicles.

References

Legislation

Environmental Protection and Biodiversity Act 1999

Council Policies/Plans

Council's Natural and Coastal Areas Management Plan

President: Mr Duncan MacKenzie OAM
4 Edinburgh Avenue, Stonyfell SA 5066
Telephone: 8332 1204
http://www.friendsofparkssa.org.au/home
ABN 32 457 858 155

Patrons: Dr. Barbara Hardy, AO; Mrs. Jean McLaren;
Hon. David Wotton AM; Mr Dene Cordes, PSM

24th of May 2021

Mr James Miller
CEO, Adelaide Plains Council
Po Box 18, Mallala SA 5502

Dear James,

Re: Support for permanent closure of Thompson Beach for vehicles post- trial.

The Friends of Parks Inc. and Adelaide International Bird Sanctuary would like to express our support for the continuation or permanent closure of Thompson Beach post the trial completed on May 31st 2021.

A continued closure would provide the added protection and reduce vehicle damage to fragile mudflats and shorelines where the migratory birds and resident birds feed and roost. Vehicles assessing the beach provide disturbance and an increased risk to the safety and welfare of the birds and other coastal species. A continued closure would also protect the assets of the Adelaide International Bird Sanctuary.

The Adelaide International Bird Sanctuary is one of the key feeding and roosting sites for migratory birds using the East-Asian Australasian Flyway. Many, including Red-necked Stints, Sharp-tailed Sandpipers and Pacific Golden Plovers, fly from as far away as Siberia and Alaska, passing through 22 countries. The flyway is a vital migratory route used by more than 5 million birds a year. Every summer, up to 25,000 shorebirds gather across the Sanctuary, and particularly at Thompson Beach, which is one of the most important feeding sites in the Sanctuary. More than 50 different species of migratory birds have been recorded across the Sanctuary, with many of these listed as threatened under the Australian Government EPBC Act 1999.

In addition, the beaches of the Sanctuary provide prime roosting areas and breeding sites for a number of shorebird species, so it is vital that vehicles are kept off beaches – such as Thompson's Beach – during the feeding and breeding season. During April 2021, a motorist driving on a Kangaroo Island beach where cars are banned, ran over and killed 20 Red-necked Stints.

We very much appreciate your efforts in closing off Thompsons Beach to protect the shorebirds and their food sources, and more than welcome continued closure, preferably on a permanent basis.

Yours Sincerely

Duncan MacKenzie OAM
Chairman, Adelaide International Bird Sanctuary
President, Friends of Parks Inc. SA
Board member, BirdLife Australia

May 27th 2021

Dear Mr. Miller and Elected Members,

On behalf of BirdLife Australia I am writing to congratulate Council on it's positive decision to support the seasonal (Oct – May) closure of off-road vehicles on the foreshore and sabkha areas of Thompson Beach this past summer.

As you may be aware the tidal flats and backing clay-pans/sabkhas are critically important feeding and resting sites for our migratory shorebirds from early spring through summer and into April/May when the flocks depart for their northern hemisphere breeding grounds. This time on our shores and within the Adelaide International Bird Sanctuary and upper Gulf St Vincent is a crucial stage where they must rest and put on the weight needed to make their migrations to breed and thus continue to sustain their populations. Some of these birds are flying **non-stop for 7-10 days covering distances of 12,000 kms**.

Vehicles that drive on the beach cause great disturbance and can even in some instances cause death to shorebirds that are resting at the high tide. Vehicles on beaches can also have detrimental effects to the shorebirds food by crushing and compacting the mudflats where their prey inhabit.

The step Council has taken to close these areas off to motor vehicles has shown leadership and resolute action for the conservation of migratory shorebirds within your Council area. It is our hope that this has set a positive example and precedence for other Local Governments with a duty of care to manage important shorebird habitats in their areas.

We encourage Council to continue this leadership and positive momentum by establishing a **permanent closure** to all vehicles (Jinkers exempt) on the Thompson Beach foreshore.

BirdLife Australia's Sharing our Shores Project will continue to support and work alongside the Council and local community, including the Thompson Beach Progress Association, AIBS National Park, Friends of AIBS, and the

broader Community to deliver great outcomes for the Sanctuary, local residents, and the birds.

Kind regards,

Aleisa Lamanna
Sharing our Shores with Coastal Wildlife Project Coordinator
BirdLife Australia

Email: aleisa.lamanna@birdlife.org.au
Phone: 0435 544 939

The South Australian Ornithological Association Inc
Founded 1899

ABN: 76 339 976 789

Postal Address:
C/o South Australian Museum
North Terrace
ADELAIDE SA 5000
2 June 2021

To: James Miller – CEO Adelaide Plains Council

Re: Vehicle Restrictions – Thompson Beach

Dear James,

I am writing to you on behalf of the South Australian Ornithological Association (operating as Birds SA). Our membership is close to 1,000 strong. We are affiliated with the national birding organisation, BirdLife Australia.

Support for Vehicle Restrictions on Thompson Beach
Birds SA strongly supported the implementation of the trial ban for vehicles on Thompson Beach between 5 October 2020 and 30 May 2021. We also strongly support the continuation of a vehicle ban on Thompson Beach in future years.

Success of the Trial Ban
It is our view that the trial has been a success and we congratulate the Adelaide Plains Council for this initiative. Although we witnessed several transgressions throughout the trial period, anecdotal reports indicate that education and clear signage had a positive effect in reducing such incidents.

Positive Benefits of the Trial Ban
- There was far less disturbance to feeding birds. This is critically important for migratory birds that are fattening up for their return journey to the northern hemisphere.
- Sea grasses were not squashed by vehicles. This is particularly important for migratory birds such as the Ruddy Turnstone that seek food in the sea grass as well as using it for safe roosting.
- Pied Oystercatcher numbers recorded at Thompson Beach were higher than in any of the past six years with 31 recorded in January, 25 in March and 16 in April. This provides some confidence that there may be successful breeding of Oystercatchers on the beach in future years.
- Great Egrets and Little Egrets were seen in numbers greater than bird observers could ever remember at this site. These elegant birds can be easily disturbed by motor vehicles. On 6 May 2021, 65 Great Egret and 40 Little Egret were observed at Thompson Beach, a sight which would impress any tourist or expert birder alike.

Importance of Thompson Beach for Birdlife
Thompson Beach is an important terminal for migratory shorebirds utilising the East Asian - Australasian Flyway. It is a resource of international significance, hosting birds which are globally threatened including Eastern Curlew, Bar-tailed Godwit, Great Knot and Curlew Sandpiper. Thompson Beach also plays an important role in hosting local shorebirds such as the Pied Oystercatcher, Sooty Oystercatcher and Red-capped Plover. These birds breed on the beach between the months of August and February and their eggs and chicks can be destroyed by vehicle traffic on the beach.

Vehicles Destroy Important Bird Food Resources
The ban has not enabled us to fully evaluate the impact on molluscs and bi-valves, food resources upon which many of the shorebirds rely. We have plenty of evidence of the reverse occurring where highly abundant areas of molluscs have been decimated by vehicle traffic resulting in the birds being forced to leave those areas permanently.

Banning of Vehicles for the Whole Year
It is our hope that in the long-term, vehicles will be banned for the whole year, similar to what has been done in other Council areas and interstate, with exceptions for boat launching and emergency service vehicles.

Documentary Video on Off-road Vehicle Impact
Birds SA has produced a documentary on the impact of off-road vehicles in coastal areas. This will be released publicly within the next few months and we look forward to sharing it with you.

I sense that there is a genuine enthusiasm within your Council, within DEW, within Friends of the Adelaide International Bird Sanctuary and within birding organisations such as Birds SA to do everything within our power to give the birds at Thompson Beach the best chance of survival long-term. Birds SA looks forward to working with you to achieve this.

For reference I have attached Birds SA's bird list for Thompson Beach which demonstrates just what an impressive site this is for bird diversity.

Yours sincerely,

Jeff Groves
Vice-President, Birds SA
jeff.groves@birdssa.asn.au
Ph 0401 125 510

BirdsSA

Attached : Thompson Beach Bird List

www.birdssa.asn.au	Checklist for THOMPSON BEACH	
Black Swan	Lesser Sand Plover	White-winged Fairywren
Australian Shelduck	Greater Sand Plover	New Holland Honeyeater
Pacific Black Duck	Oriental Plover	White-fronted Chat
Grey Teal	Bar-tailed Godwit	Spiny-cheeked Honeyeater
Chestnut Teal	Black-tailed Godwit	Red Wattlebird
Stubble Quail	Whimbrel	Singing Honeyeater
Brown Quail	Far Eastern Curlew	White-browed Scrubwren
Hoary-headed Grebe	Marsh Sandpiper	Weebill
Australian White Ibis	Common Greenshank	White-browed Babbler
Royal Spoonbill	Terek Sandpiper	Black-faced Cuckooshrike
Nankeen Night Heron	Ruddy Turnstone	Gilbert's Whistler
Eastern Great Egret (Great Egret)	Great Knot	Grey Butcherbird
White-faced Heron	Red Knot	Australian Magpie
Little Egret	Red-necked Stint	Grey Shrikethrush
Australian Pelican	Sharp-tailed Sandpiper	Willie Wagtail
Australasian Gannet	Curlew Sandpiper	Grey Fantail
Little Pied Cormorant	Silver Gull	Magpielark
Black-faced Cormorant	Pacific Gull	Little Raven
Little Black Cormorant	Gull-billed Tern	Australian Raven
Pied Cormorant	Caspian Tern	*Eurasian Skylark
Osprey	Greater Crested Tern	Welcome Swallow
Black-shouldered Kite	Fairy Tern	Fairy Martin
Swamp Harrier	Whiskered Tern	Tree Martin
Spotted Harrier	*Feral Pigeon	Brown Songlark
Black Kite	*Spotted Dove	Silvereye
Whistling Kite	Brush Bronzewing	*Common Starling
White-bellied Sea Eagle	Crested Pigeon	*Common Blackbird
Australian Crake	Horsfield's Bronze Cuckoo	*House Sparrow
Black-tailed Nativehen	Pacific Swift	Australian Pipit
Painted Buttonquail	Sacred Kingfisher	
White-headed Stilt	Nankeen Kestrel	
Banded Stilt	Australian Hobby	
Red-necked Avocet	Brown Falcon	
Pied Oystercatcher	Black Falcon	
Sooty Oystercatcher	Peregrine Falcon	
Spur-winged Plover (Masked Lapwing)	Galah	
Red-kneed Dotterel	Eastern Bluebonnet	
Pacific Golden Plover	Elegant Parrot	
Grey Plover	Blue-winged Parrot	
Red-capped Plover	Rock Parrot	
Double-banded Plover	Purple-crowned Lorikeet	

Mr James Miller
Chief Executive Officer
Adelaide Plains Council
PO Box 18
MALLALA SA 5502

Dear Mr Miller and Elected Members

I write on behalf of the Department of Environment to thank the Adelaide Plains Council for its trial closure prohibiting vehicles onto Thompson Beach.

We commend the Adelaide Plains Council for the leadership you have displayed in helping to protect this internationally important area and we support the continuation of seasonal closures to vehicles in the future.

Facilitating a safe and seamless transition for people between the park and adjacent townships is a key objective within the Management Plan. The closure to vehicles to Thompson Beach, has helped improve public safety for pedestrians utilising the beach, reduced fire risk from bogged vehicles and is a key step in contributing to shorebird management goals and raising awareness of the areas significance.

As you are already aware Thompson Beach offers important habitat over the summer months for migratory shorebirds to feed and fatten up in preparation for their annual migration to the northern hemisphere to breed. Migratory shorebirds are protected under the Environmental Protection and Biodiversity Act 1999 and the Adelaide International Bird Sanctuary forms part of the East Asian-Australian Flyway.

Disturbance by vehicles driving on the beach has been identified as a threat to both migratory and resident shorebirds. Managing access to the areas of habitat that shorebirds depend on is an important step to reduce the impact caused by off road vehicles.

We look forward to continuing to work with you to help protect this area long into the future.

Yours sincerely

Craig Nixon

National Parks and Wildlife Manager

NPW - Regional Operations - Yorke and Mid North

25/5/2021

Adelaide Plains Council	**7.2**	**Heritage list 33ha of Council Owned Land North of Thompson Beach Settlement**
	Department:	**Infrastructure and Environment**
	Report Author:	**Coastal Conservation Officer**
Date: 15 June 2021	**Document Ref:**	**D21/25955**

EXECUTIVE SUMMARY

- The purpose of this report is for the Infrastructure and Environment Committee (the Committee) to consider, and make recommendation to Council in relation to, applying to Heritage list 33ha of Council owned land behind Thompson Beach (Assessment Number 29108/34348/34348 Title ID CT5372/262/CT5346/891/CT5346/890) under the Native vegetation Heritage Agreement Program.
- The land parcel contains 7ha of national endangered Fan Samphire Tecticornia flabelliformis (EPBC listed). Samphire within these parcels of land is part of the Subtropical and Temperate Saltmarsh ecological community also protected under the EPBC act.
- Council has currently one heritage-listed native vegetation property, the Dublin Bushland Block (Assessment No 30833, Title ID CT5392/9)
- Minimising human-induced threats to temperate saltmarsh habitat and migratory shorebirds in Australia is a critical objective in the Threat abatement plan for protecting samphire communities and within the Birdlife Australia's Migratory Shorebird Conservation Action Plan. This is supported by the Council's Natural and Coastal Areas Management Plan, which was developed to guide the management of the natural and coastal areas to ensure these lands remain a valuable natural resource for existing and future generations
- Aligning with State Government Blue Carbon Strategy, council will be protecting assets of blue carbon into the future.
- Off-Road vehicle use is the main risk to the Samphire vegetation, as part of Council's, Local Government Land By-law 2019, Council has the ability by way of Council resolution, prohibit a vehicle to be driven or propelled on any part of local government land.
- Migratory shorebirds will also be protected as they utilise our coastal areas over the summer months to feed and fatten up in preparation for their annual migration to the northern hemisphere to breed. Disturbance by off-road vehicles has been identified as a threat to migratory shorebirds.
- Migratory Shorebirds are protected under the Environmental Protection and Biodiversity Act 1999. Some of the species utilising the Council's coastal areas are classified as critically endangered.
- The request to heritage list the land parcels aligns with Councils 'Natural and Coastal Areas Management Plan' objectives.

RECOMMENDATION

"that the Infrastructure and Environment Committee, having considered Item 7.2 – *Heritage list 33ha of Council Owned Land North of Thompson Beach Settlement*, dated 15 June 2021, receives and notes the report and in doing so recommends to Council that it apply to Heritage list a portion of Assessment Number 29108/34348/34348 Title ID CT5372/262,CT5346/891, CT5346/890 identified in Attachment 1 under the Native vegetation Heritage Agreement Program."

Budget Impact

Estimated Cost:	$0 (Council has committed budget to fence the southern region back of the town to stop off road vehicles currently with $10,000 this is supported by $6,000 co-contribution from Coastal Conservation Officer Green Adelaide budget.)
Future ongoing operating costs:	$0 (No budget requested from Council. If heritage-listed would open the site up to attracting grant funding, however heritage agreement however would need to allow for exclusions in the agreement if infrastructure such as walking trails, levees are required as to no inhibit these types of works.)
Is this Budgeted?	Not Applicable

RISK ASSESSMENT

Reduced vehicle and access to the back of the town will lessen the risk of damage to vegetation and stop unwanted behaviour at the back of the township. The proposed resolution would benefit natural assets and provide an improved visitor attraction to the region for bird tourism into the future. Once listed as a heritage property, the Council would not be able to revoke the status of the heritage listing but can get reductions in taxes for that land.

Attachments

1. Proposed parcels of land to heritage list map.
2. South Australian Blue Carbon Strategy.
3. Native Vegetation Heritage FAQ.

DETAILED REPORT

Purpose

The purpose of this report is for the Infrastructure and Environment Committee (the Committee) to consider, and make recommendation to Council in relation to, applying to Heritage list 33ha of Council owned land behind Thompson Beach (Assessment Number 29108/34348/34348 Title ID CT5372/262/CT5346/891/CT5346/890) under the Native vegetation Heritage Agreement Program.

Background/History

What is a Native Vegetation Agreement

A Native Vegetation Heritage Agreement is a conservation area on private land, established between the landholder and the Minister for Environment and Water on the recommendation of the Native Vegetation Council (NVC), that contributes to protecting and/or restoring indigenous biodiversity.

Heritage Agreements are established in perpetuity to protect and enhance the natural character of flora and fauna. Many unique features are found within privately owned land, and can often form part of an important wildlife corridor, provide an extension to national or conservation parks, or help establish private sanctuaries.

Each Heritage Agreement, while bound by standard conditions, is unique and can include clauses specific to the management of the native vegetation within the conservation area.

For Heritage Agreements entered into voluntarily by a landholder, the NVC will meet the costs associated with the negotiation, assessment, drafting and registering of the Heritage Agreement.

Land protected by a Heritage Agreement provides an important accompaniment to the state's natural character. As such, land under the Heritage Agreement is valued differently as a recognition of its conservation status.

Properties identified in the agreement or registered plan as Heritage Agreement areas can receive a reduced valuation and subsequent reduction in particular rates and taxes. The reduction is based on property valuations made by the State Valuation Office and varies between properties across the state.

Background

For the past 20 years Council has worked with community and interested environmental groups to protect and improve the coastal environment within the district. The proclamation of a National Park has enabled further protections of samphire communities and migratory shorebirds but with some

areas still owned and under the care and control of the Council. In relation to the proposed area at Thompson Beach, the land is owned by Council and directly onto National Park and is presents as **Attachment 1** to this Report.

On the 9th of March 2021, Coastal Conservation Officer attended a meeting for the Revitalising Private Conservation Program https://naturefoundation.org.au/conservation/revitalising-conservation hosted by Nature Foundation via funding from the South Australian Government. At this meeting, the Coastal Conservation Officer suggested that potential might exist to heritage list land containing EPBC listed samphire. The meeting hosts were instantly interested and very supportive for Council to undertake this action; the process to heritage list land opens the door for funding via grants programs.

Threat to Council Land behind Thompson Beach

The main issue is protecting the Fan Samphire; it is currently being damaged and killed by off-road vehicles as depicted in **Figure 1** below. As part of Council's Local Government Land By-law 2019, Council has the ability by way of Council resolution to prohibit a vehicles from being driven or propelled on any part of local government land. Council also has the responsibility to protect EPBC listed species.

Figure 1: Fan Samphire impacted by damage by off road vehicles currently behind Thompson Beach on Council Land

Birds of the samphire

There are several bird species that occupy saltmarsh areas within the Adelaide Plains Council, including Thompson Beach. These areas are important rest sites for migratory wading bird species while also providing valuable resting and feeding habitat for bird species such as the Samphire Thornbill, Ellegant Parrot, Orange Bellied Parrot, Rock Parrot and Blue Winged Parrot.

Samphire Thorn bill

The Samphire Thornbill is a small bird 9-10cm in size that is thought to be in decline. The areas that it occupies include the northern shores of the Gulf St Vincent from St Kilda to Ardrossan. This species likes to occupy samphire shrublands on narrow coastal saline flats, often behind mangrove fringes. It is a selective feeder. Some of the threats that the Samphire Thornbill face include loss of habitat through reclamation of coastal flats for recreational or industrial purposes, rubbish dumping and habitat damage from off-road vehicles

Blue Carbon

Carbon captured by the ocean and coastal ecosystems such as seagrass meadows, mangroves and saltmarsh is known as blue carbon. The carbon is stored in the form of biomass and sediments; carbon Sequestration and storage capacity within Saltmarsh ecosystems are similar to and sometimes higher than carbon-rich terrestrial ecosystems such as tropical rainforests. The carbon storage capacity of these ecosystems is extremely high. They are prompting interest to manage them more efficiently for carbon storage.

Councils Natural and Coastal Areas Management Plan was developed to guide the management of the natural and coastal areas to ensure these lands remain a valuable natural resource for existing and future generations. Objectives include;

- To strengthen natural ecosystems, biodiversity and habitat value relating to the natural and coastal areas
- To manage the use of and access to natural and coastal areas as part of protecting natural environments
- To contribute to the broader objectives and achievements of environmental organisations that have an interest in the district, e.g. relating to the International Bird Sanctuary.

Discussion

As a land manager Council has a responsibility to manage its land in line with its relevant Community Land Management plan and obligations under the EPBC Act. Council's Natural and Coastal Management plan objectives focus on strengthening biodiversity and habitat value and allowing for the management of access to protect natural values.

Vegetation Health, specifically samphire communities and Migratory shorebirds, has seen dramatic declines and faces many threats. Thompson Beach is a terminal feeding site for many species, some of which are considered critically endangered. Thompson Beach is also recorded as a high-density location for Fan Samphire *Tecticornia flabelliformis,* and the broader Subtropical and Temperate Saltmarsh ecological community also protected under the EPBC act. Management actions that reduce

disturbance to samphire communities and the birds will help maintain habitat condition within our local area.

Thompson Beach is a popular destination for recreation activities such as fishing, crabbers and the unwanted activities of off-road vehicle use by 4WD's and Motor Bikes within the samphire communities and on the beaches, with seasonal visitation over the summer months increasing these actions. Reducing impacts from disturbance and habitat decline would be the desired outcome.

The access to the samphire community at Thompson Beach currently has 12 access points, all unofficial via vacant blocks and end of road reserves within a 3km stretch. By stopping vehicle access and protecting the vegetation, actions such as vehicle regularly becoming bogged, leading to the widespread disturbance and compaction of soils will be reduced. Additional unwanted behaviour at the back of the resident's properties via noise will also be stopped and supported by the Thompson Beach Progress Association.

The Department of Environment has installed infrastructure at the northern end of Thompson Beach and along Ruskin Road into Thompson Beach to restrict vehicles access to the beach area north of the township and infrastructure at Pt Prime to limit access from the south. Council land is the only points left to access this vegetation community.

The proposed recommendation would provide clear protection to his nationally listed vegetation community; while also providing the bonus in reducing the impacts and disturbance residents face regular via people access the back of the town. The heritage listing will also show the councils commitment to the protection of significant native vegetation and meet the requirements under the councils Natural and Coastal Areas Management Plan. The security of the samphire also aligns with the States Blue Carbon strategy, potentially securing council samphire for carbon offsetting.

Conclusion

As a responsible land manager, Council has a duty to manage and protect EPBC listed species. By heritage listing the land, this shows council is fully committed to the protection of threatened species. Access management is essential for recreational and environmental outcomes, and the proposed recommendation seeks to protect natural council assets and reduce the impact caused by off-road vehicles.

References

Legislation

Environmental Protection and Biodiversity Act 1999

Tecticornia flabelliformis (Bead or Fan Samphire): Survey from Thompson Beach to Port Gawler, Peri Coleman, 2009

Tecticornia flabelliformis Threatened Species Profile, Landscapes SA, Department of Environment and Water

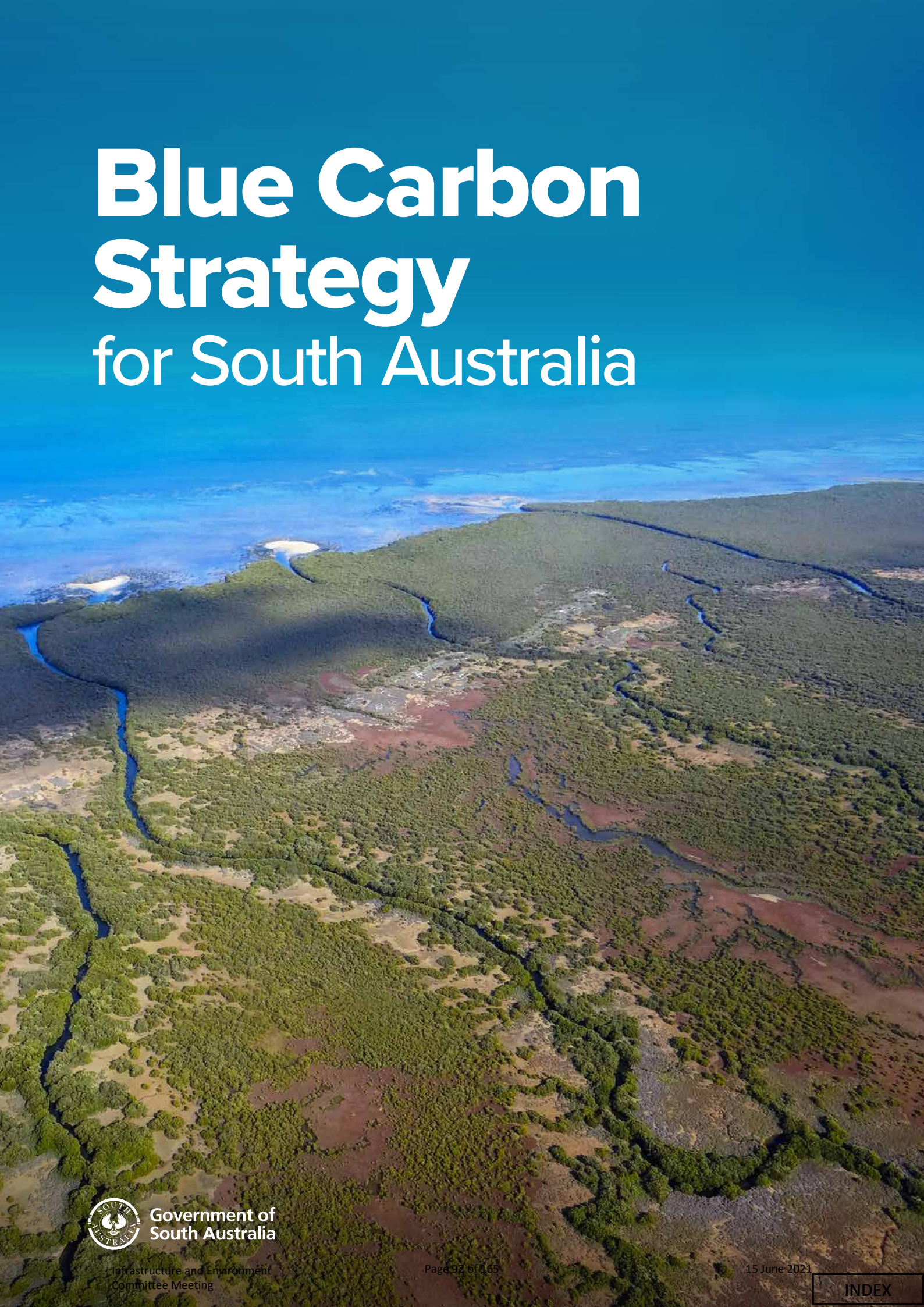
Department of Environment and Water Blue Carbon Strategy

Council Policies/Plans

Council's Natural and Coastal Areas Management Plan, District Council of Mallala now Adelaide Plains Council

Contact Details	Disclaimer
Adelaide Plains Council PO Box 18, Mallala, SA 5502 T: 08 8527 0200 F: 08 8527 2242 E: info@apc.sa.gov.au	This advice and/or information is given for your private use only. The accuracy of the advice and information is not guaranteed and no responsibility is accepted by Adelaide Plains Council for any loss or damage caused by reliance upon this advice and/or information, as a result of any errors, omission, incorrect description or statement therein whether caused by negligence or otherwise.

Blue Carbon Strategy
for South Australia



Government of South Australia

Blue carbon is brimming with potential and South Australia is poised to grab hold of the opportunities that it presents.

Developing blue carbon projects presents us with multiple benefits, from significant sequestration opportunities, to strengthened resilience of our precious coastline, to habitat restoration. It really is a win-win-win approach.

Because blue carbon is a relatively new concept, with methodologies still in their embryonic stages, South Australia is excellently placed to take a leadership role in policy development and research, so that projects can be supported by carbon financing.

Through our blue carbon strategy, the government will forge partnerships with industry, research and community stakeholders, increasing knowledge and understanding of this approach, and ensuring broad involvement.

I warmly acknowledge and thank the Premier's Climate Change Council for sharing my interest and commitment to pursuing the opportunities that blue carbon offers our state's precious environment.

David Speirs MP
Minister for Environment and Water

Acknowledgment of country

We acknowledge and respect the Traditional Custodians whose ancestral lands we live and work upon and we pay our respects to their Elders past and present. We acknowledge and respect their deep spiritual connection and the relationship that Aboriginal and Torres Strait Islanders people have to Country.

We also pay our respects to the cultural authority of Aboriginal and Torres Strait Islander people and their nations in South Australia, as well as those across Australia.

Cover image: Adelaide International Bird Sanctuary wetlands, St Kilda, South Australia

Blue Carbon Strategy for South Australia 2020–2025

The Blue Carbon Strategy 2020–2025 sets a path for the South Australian Government to establish a state-wide, evidence-based program of projects and research geared towards blue carbon ecosystem protection and restoration.

Coastal ecosystems provide a wide range of economic, environmental and livelihood benefits. Restoration and protection of coastal systems will enhance these benefits and improve resilience to climate change and help reduce greenhouse gas emissions. There is an opportunity to provide incentives through access to carbon markets and other financing mechanisms and to use blue carbon as a driver for improved policy and planning processes.

What is blue carbon?

Blue carbon is the carbon captured and stored in coastal ecosystems including seagrass meadows, saltmarshes and mangroves.

These ecosystems are carbon sinks, accumulating and retaining carbon in the plants themselves and, significantly, in the soils below. Over 95% of carbon in seagrass meadows is stored in the soils. The total amount of carbon stored within blue carbon ecosystems is called carbon stock.

Why is blue carbon important?

Protecting and restoring blue carbon ecosystems is important due to their carbon sequestration and storage potential, and because these ecosystems can become sources of greenhouse gas emissions if degraded or cleared.

Beyond the benefits of carbon storage, protecting and restoring coastal ecosystems offers additional positive benefits, or co-benefits[1], by:

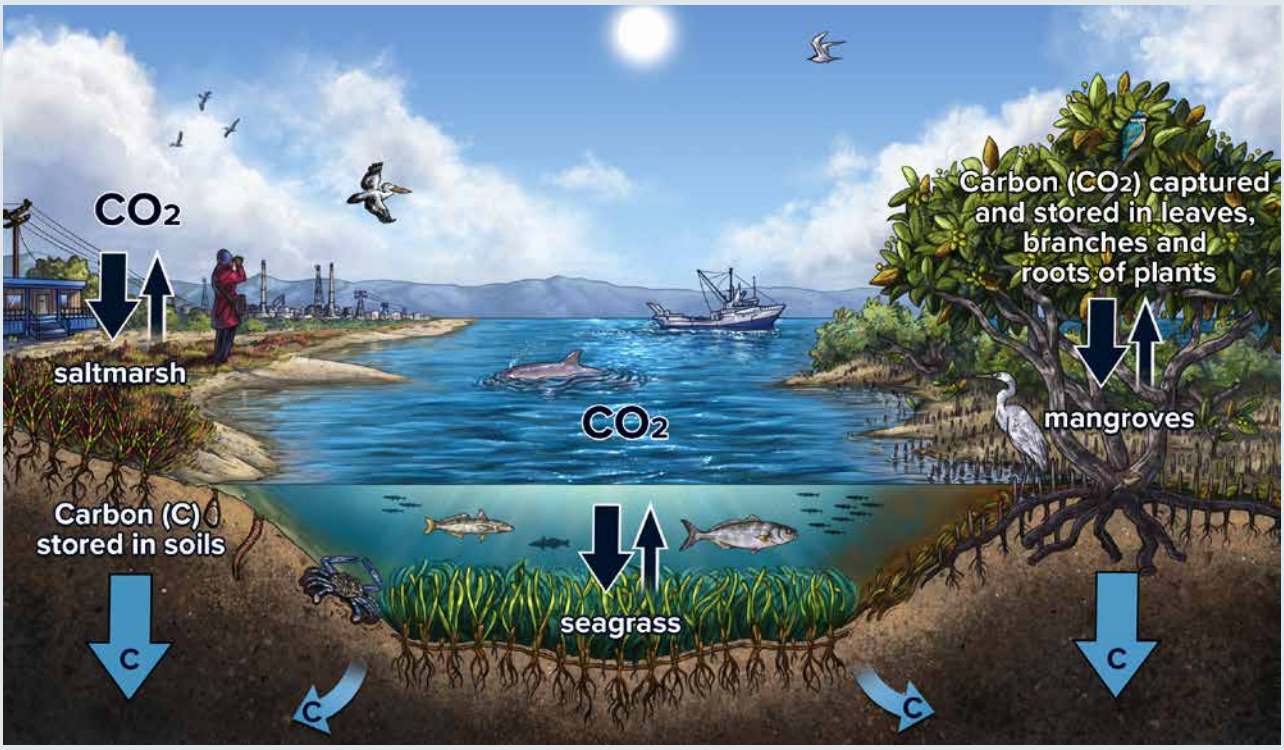
- supporting regional economies and coastal livelihoods from fisheries, aquaculture and tourism activities;
- conserving wetland habitats of international and national significance, including for threatened and endangered species and biodiversity;
- protecting shorelines and enhancing resilience to storm surges and rising sea levels;
- improving and maintaining water quality;
- caring for sea country of enduring and continuing cultural significance; and
- providing for coastal recreation and enabling communities to connect with nature.

The value of these co-benefits is considerable. Globally, the ecosystem services from mangroves alone are estimated to be worth at least US$1.6 billion each year[2]. The value of production of South Australia's marine industries, which depend on healthy blue carbon ecosystems, is estimated to be worth $1.3 billion[3].

Globally, blue carbon ecosystems play a key role in reducing greenhouse gas emissions, and are recognised as a nature-based solution for countries to help meet climate change commitments under the Paris Agreement. Australia is progressively measuring and reporting on blue carbon sinks and emissions sources in the National Greenhouse Gas Inventory which measures progress against our international targets.

Blue carbon ecosystems can store up to four times as much carbon per area as land-based forests[4] and, if undisturbed, can store carbon in soils over hundreds or thousands of years. The carbon stored within Australian blue carbon ecosystems constitutes around 11% of worldwide blue carbon stocks[5].

Blue carbon ecosystems are globally threatened with habitat loss and degradation from coastal development, pollution, and climate change impacts, including sea level rise. These threats can turn them from carbon sinks into sources of greenhouse gas emissions. An estimated one billion tonnes of carbon dioxide is being released annually from degraded blue carbon ecosystems, equivalent to 19% of emissions from tropical deforestation globally[6].



Blue carbon ecosystems sequester carbon and provide other co-benefits such as biodiversity, water quality, shoreline protection and support coastal economies and livelihoods

Infographic: Rene Campbell.

Blue carbon in South Australia

South Australia's unique coastal environments are extensive and among the most biologically diverse in the world.

South Australia's coastline extends for over 5,000 km with blue carbon ecosystems covering over a million hectares. The diversity and extent of these systems position the state to take a lead in developing blue carbon projects that protect and restore these important habitats and prevent their ongoing degradation.

Seagrass is by far the most widespread blue carbon ecosystem in South Australia, accounting for over 96% of the total, and there are also substantial areas of saltmarsh and mangroves. On average, mangrove and saltmarsh ecosystems in South Australia store and accumulate a greater amount of blue carbon in their soils per hectare than seagrass ecosystems. Seagrasses, however, have a higher total carbon stock due to their extensive coverage.

Along the metropolitan coast, seagrass is important in reducing erosion and helping protect Adelaide's beaches. The globally important tidal wetlands of the Adelaide International Bird Sanctuary National Park, Winaityinaiyti Pangkara, to the north of Adelaide, are important migratory shorebird sites, and contribute to the state's tourism industry. Similarly, the Coorong and Lakes Alexandrina and Albert Wetland, covering some 140,500 hectares, is a long-recognised Wetland of International Importance under the Ramsar Convention on Wetlands.

Aboriginal South Australians have relied on these ecosystems for thousands of years, with some coastal areas now known to be amongst the most densely populated regions of pre-colonial Australia. Consequently, these ecosystems have very strong cultural, economic and spiritual significance to coastal Aboriginal nations of South Australia.

Areas along South Australia's coastline that provide high environmental, economic and social value often coincide with areas that have high blue carbon stocks, such as the Upper Spencer Gulf and Gulf St. Vincent. Protecting and restoring these ecosystems improves productivity and ensures sustainability of South Australia's local livelihoods and regional economies that rely on high-value coastal industries.

Ways for South Australia to realise blue carbon opportunities

South Australia can realise blue carbon opportunities by developing and implementing evidence-based policy, projects and research through partnerships and engagement with the South Australian community, the coastal industries that rely on healthy blue carbon ecosystems, and national stakeholders.

Unlocking finance for blue carbon projects through carbon markets and other mechanisms

The Strategy's intent is that future blue carbon projects in South Australia be supported by carbon financing from blue carbon credits, developed under the Australian Government's Emissions Reduction Fund. Since 2014, the Emissions Reduction Fund has provided financial incentives for Australian businesses and natural resource managers to adopt new practices and technologies to reduce greenhouse gas emissions. Projects accredited under the Fund can receive carbon credits for each tonne of carbon reduction achieved. Carbon credits can then be sold to create a revenue stream.

This type of carbon financing could potentially incentivise blue carbon projects in South Australia. However, at the present time, the methodologies to enable inclusion of blue carbon projects in the Fund are still being explored. As part of the Blue Carbon Strategy, the South Australian Government will seek partnerships with the Australian, State and Territory Governments and stakeholders in the scientific and business communities, to build the evidence base, and realise the opportunities, for including blue carbon under the Emissions Reduction Fund.

Other innovative mechanisms to finance carbon sequestration projects are being developed and trialled throughout the world. Green bonds (and more recently, blue bonds), carbon insetting, payment for ecosystem services and private-public partnerships of various kinds, are increasingly used to finance carbon sequestration and climate-resilience activities. For example, the green bond market is only a decade old and is already well established with over US$500 billion labelled green bonds, issued by over 600 financiers[7]. The various financing models can be assessed and trialled for applicability to blue carbon demonstration projects in South Australia.

Blue carbon pilot demonstration projects

Blue carbon demonstration projects will provide a testing ground to advance scientific and technical knowledge, to gain an understanding of practical implementation challenges and, importantly, to grow the industry and community partnerships on which the success of blue carbon project implementation will depend.

In South Australia, there are opportunities to protect, restore and enhance blue carbon ecosystems by implementing coastal restoration projects that re-establish natural tidal flows to enable wetland restoration, or by modifying infrastructure to allow for landward movement of saltmarsh and mangroves as sea level rises. In addition, reducing discharges of pollutants to coastal waters can prevent further degradation of seagrass meadows. Preliminary assessments have shown the most feasible types of blue carbon projects for South Australia and their likely locations. Further detailed project assessments will be needed in partnership with key stakeholders.

Blue carbon research

Blue carbon research is an exciting and fast-developing area of scientific, economic and policy inquiry. The Goyder Institute has delivered blue carbon research focused on understanding carbon stocks and sequestration rates in South Australia's coastal ecosystems. This pioneering research was conducted in partnership between Flinders University, the University of Adelaide, Edith Cowan University, CSIRO, EPA and SA Water.

Further research is now needed to address key gaps, including additional measurement and mapping of the various blue carbon ecosystems across the state, along with ways to recognise and value co-benefits. This research is explicitly targeted at understanding the nature and extent of blue carbon opportunities in South Australia, and delivering the evidence that will enable our state to capture opportunities through the potential development of blue carbon Emissions Reduction Fund methods. Through this research, blue carbon solutions will be a centrepiece of South Australia's approach to greenhouse gas mitigation and climate change adaptation.

Blue carbon partnerships, engagement and communication

The Blue Carbon Strategy recognises that partnerships, community and industry engagement and communication are key for South Australia to realise the full potential of future blue carbon opportunities. Blue carbon policy, projects and research will depend on the knowledge, experience and skills brought together by engaging with the South Australian community, Aboriginal people and organisations on sea country, the coastal industries that rely on healthy blue carbon ecosystems, and national stakeholders.

Integration with coastal policy, planning and management strategies

An approach that integrates South Australia's Blue Carbon Strategy with coastal management policy and strategies at national, state, regional and local levels will help account for the myriad other uses and benefits of these natural assets in land-use planning and management and coastal conservation.

What will the Blue Carbon Strategy achieve?

Objective 1:
Connect blue carbon ecosystem restoration to carbon markets and other finance mechanisms

Key outcome:
Blue carbon financing drives blue carbon projects

Objective 2:
Deliver research to quantify blue carbon and co-benefits

Key outcome:
Improved blue carbon and co-benefit valuation for project development

Objective 3:
Identify and implement blue carbon demonstration projects

Key outcome:
Blue carbon project feasibility is demonstrated

Objective 4:
Integrate blue carbon into coastal policy, planning and management strategies

Key outcome:
Blue carbon is a key factor in coastal decision making

The South Australian Government will take the lead in driving the scientific investigations, implementing projects and creating the partnerships needed to realise blue carbon opportunities in South Australia. The Blue Carbon Strategy has identified four key objectives and related key outcomes:

Objective 1: Connect blue carbon ecosystem restoration to carbon markets and other finance mechanisms

Key incentives for blue carbon projects are the ability to generate carbon credits from coastal restoration activities to realise financial returns. Revenue streams from credits could provide financial incentives to undertake blue carbon projects that capture and store carbon and that have a diverse range of valuable co-benefits for local communities, coastal industries and the environment. A potential revenue stream opportunity arises from companies, or other organisations, seeking to reduce emissions or achieve carbon neutrality through purchasing blue carbon credits from South Australian blue carbon projects.

At the present time, land-based carbon sequestration projects, such as native vegetation regeneration on conservation reserves and farms, are eligible under the Emissions Reduction Fund and have project methods to estimate the carbon benefits. However, projects in coastal environments have a range of factors that make them more challenging to accurately measure and have confidence that they are able to permanently store carbon. The Australian Government is currently assessing the feasibility of blue carbon project methods in partnership with other state and territory governments, research providers and industry groups through a national Blue Carbon Roadmap. The Government of South Australia will lead and contribute expertise to support the development of blue carbon methods for use in South Australia, underpinned by method trials and data-driven models that accurately estimate stocks and sequestration rates.

Actions:

1.1 Support blue carbon Emissions Reduction Fund method development through the Australian Government's Blue Carbon Roadmap.

1.2 Explore and assess models for financing South Australian blue carbon demonstration projects.

In order to progress blue carbon projects, South Australia will investigate all mechanisms for financing blue carbon projects. There are several options that have been emerging in recent years, including green (or blue) bonds, insetting, payment for ecosystem services (PES) and innovative public-private partnerships.

Objective 2: Deliver research to quantify blue carbon and co-benefits

The extent and diversity of coastal ecosystems in South Australia, and the prospects for blue carbon projects, means that South Australia is well placed to lead in developing blue carbon opportunities. Further targeted research is needed to explore the technical feasibility of this potential, provide the evidence base to develop blue carbon Emissions Reduction Fund methods, and improve capacity to value co-benefits of blue carbon projects.

Values for carbon stocks and sequestration rates are variable and depend on coastal location, physical features of the landscape (geomorphology), habitat type and species of vegetation present. An understanding of the long term history of land use and carbon build up from soil accumulation in the area is also important for assessing carbon stocks and predicting carbon sequestration potential.

Blue carbon research undertaken to date in South Australia has focussed on coastal wetlands near Adelaide and along the samphire coast to the north, as well as further sites at the upper end of Gulf St Vincent and Spencer Gulf. Research activities have mainly focussed on assessing the standing stocks of carbon in soils, with less knowledge on carbon sequestration rates, carbon captured in vegetation and rate of greenhouse gas emissions.

Research through the Climate Action Research Impact Area of the Goyder Institute has contributed substantially to understanding the blue carbon potential in South Australia. A Blue Carbon Research Agenda report has been developed through the Goyder Institute-led partnership to identify critical knowledge gaps and propose further research. Targeted site investigations on the types of processes and factors driving carbon stocks and sequestration in different coastal ecosystems can fill data gaps for particular regions, reduce uncertainty, inform project development and, importantly, blue carbon methods. State-wide mapping and measurement are needed to fully assess the stocks and condition of blue carbon ecosystems in the state and identify priority areas for blue carbon restoration projects.

Exploring strategic research partnerships on blue carbon in South Australia through collaborative programs, such as Co-operative Research Centres, or partner projects with industry and not-for-profit organisations, can provide the funding needed to deliver blue carbon research.

Understanding the value of co-benefits in blue carbon project assessments, such as the value to fisheries, or water quality improvements, can help determine priority project locations that achieve multiple benefits. Valuing co-benefits can also attract investment partners who have an interest in supporting research projects that align with their organisation's strategies and activities.

Actions:

- **2.1 Identify funding pathways and partners to deliver research priorities identified.**
- **2.2 Progress the Blue Carbon Research Agenda recommendations.**
- **2.3 Develop a state-wide map of blue carbon stocks and sequestration rates.**
- **2.4 Improve valuation of co-benefits for inclusion in blue carbon project assessment.**

Objective 3: Identify and implement blue carbon demonstration projects

Demonstration projects provide information for addressing scientific, policy and operational knowledge gaps in progressing blue carbon methods under the Emissions Reduction Fund. Demonstration projects can also show the benefits and costs of blue carbon projects and provide case studies to illustrate the business case for investment.

A preliminary assessment of suitable blue carbon project types and their locations has been undertaken. The assessment found that the re-introduction of tidal flows to create or restore saline wetlands (mangroves and saltmarsh) is a highly feasible project activity in a range of locations. Carbon sequestration gains can be made by removing barriers, such as bunds or seawalls, to re-establish tidal flow in areas previously occupied by mangroves and saltmarshes, as demonstrated by the Goyder Institute Salt to C project at Dry Creek (see case study). Other feasible project types include land use planning activities that allow landward migration of mangroves and saltmarshes in the face of rising sea levels, and seagrass protection and restoration measures.

In addition, the benefits of co-locating aquaculture facilities and blue carbon projects, such as the benefit of siting oyster reefs next to recovering seagrass meadows, are options to be explored.

More work is required to determine optimal locations for blue carbon projects to target investment in areas where blue carbon benefit is high, opportunity costs are low, restoration or protection is most needed, activities are cost-effective, and projects have a high likelihood of success. Key stakeholders will be consulted in determining site selection criteria, including state and local governments, Aboriginal, regional and community groups. These stakeholders can play a key role in implementing projects and supporting ongoing monitoring. Project sites can also be included in existing or planned coastal restoration projects, where opportunities exist.

Partnerships for private sector investment in demonstration projects can be sought by those who have an interest in the research needed to develop potential blue carbon methods under the Emissions Reduction Fund and other opportunities. Greater certainty regarding technical, economic and operational feasibility and risks, costs and benefits, scalability and long term success rates will lower the risk for investors. In the future, as blue carbon credits become available on the carbon market, demonstration projects could be scaled up to realise commercial return, and credits could attract price premiums due to their high co-benefit value.

Actions:

3.1 Identify optimal sites for blue carbon projects in consultation with key stakeholders.

3.2 Implement pilot projects to demonstrate feasibility, including costs and benefits.

3.3 Partner with the private sector to progress and scale-up blue carbon demonstration projects.

Natural tidal flow was re-established at the Dry Creek Salt Field by construction of a new culvert

Case study:

Restoring the Dry Creek Salt Field: a blue carbon opportunity for South Australia

The Dry Creek Salt Field, located 30 minutes from the CBD adjacent the Adelaide International Bird Sanctuary, is an area of important coastal habitat that has been cut off from the sea for decades. Environmental and blue carbon benefits of tidal restoration are being explored in a small trial site in the salt field.

Following the salt field's closure, a small pond was isolated from the rest of the salt field and reconnected to the sea via a tidal creek. Through the construction of a culvert to allow movement of water under an existing access track, the natural flow of the creek was re-established.

The creek now delivers water flows to the degraded site and the process of restoration has begun.

So far, rapid restoration of the water and soil quality has been observed and, for the first time in decades, vegetation, fish and invertebrates are beginning to reinhabit the pond.

Blue carbon stocks and the build-up of carbon since reconnection have been measured and show that tidal reconnection can lead to carbon sequestration. The research provides an evidence-base for potential Emissions Reduction Fund method development and the business case for future blue carbon projects across the state.

Photos: Right top, before tidal flow was re-established to the project site. Right below, one year after tidal flow was re-established.

Objective 4: Integrate blue carbon into coastal policy, planning and management strategies

In addition to being carbon sinks, blue carbon ecosystems are significant contributors to local, regional and state economies through provision of ecosystem services and other co-benefits. The direct and indirect value of these ecosystems, and the services they provide, should be accounted for in coastal policy, planning and management strategies.

The State Planning Policies for South Australia set out a framework for land use that aims to improve the liveability, sustainability and prosperity of the state. The State Policy for coastal environments includes a policy to "Recognise and protect the high carbon storage values of areas such as mangroves and salt marshes" (Policy 13.9). The protection of blue carbon ecosystems and carbon stocks at the landscape level, and blue carbon sequestration potential of particular locations, can be incorporated into land-use planning processes and instruments, such as the State Planning and Design Codes.

Similarly, community outreach and capacity building tools, such as blue carbon project case studies and guidelines, can raise awareness and facilitate incorporation of blue carbon benefits into planning and investment strategies of local councils and regional planning organisations. This includes catchment management planning that aims to reduce discharge of damaging pollutants to blue carbon ecosystems.

To further bolster protection of carbon stocks, loss of blue carbon can be accounted for through vegetation clearance offsetting under the *Native Vegetation Act 1991* Significant Environmental Benefit scheme. The replacement of lost carbon under coastal and marine vegetation clearance approvals could be promoted as a voluntary blue carbon offset alongside the biodiversity offset requirement. Carbon sequestration by blue carbon projects can also be recognised in South Australia's greenhouse gas emissions reduction achievements.

South Australia can also play a role in incorporating the knowledge and experience gained through the actions in the Blue Carbon Strategy into supporting protected wetland management at the international level.

Actions:

4.1 Enable blue carbon ecosystem protection through state planning frameworks and develop planning tools and guidance for local and regional planning.

4.2 Promote and enable voluntary blue carbon offsetting for coastal and marine vegetation clearances.

4.3 Support protected wetland management under the Ramsar Convention on Wetlands blue carbon resolution.

A recent blue carbon resolution under the international Ramsar Convention on Wetlands encourages estimation of carbon stocks and protection and restoration of coastal blue carbon ecosystems, including by substantially increasing support to projects and research aimed at their conservation and protection. South Australia can lead by example against this resolution in both blue carbon measurement, research and coastal management.

Implementing the Blue Carbon Strategy

The actions identified in the Blue Carbon Strategy will be implemented over a 5 year period. A summary of key actions are provided below:

1 2 3 4 5

1.1 Support blue carbon Emissions Reduction Fund method development through the Australian Government's Blue Carbon Roadmap

1.2 Explore and assess models for financing South Australian blue carbon demonstration projects

2.1 Identify funding pathways and partners to deliver research priorities identified

2.2 Progress the Blue Carbon Research Agenda recommendations

2.3 Develop a state-wide map of blue carbon stocks and sequestration rates

2.4 Improve valuation of co-benefits for inclusion in blue carbon project assessment

3.1 Identify optimal sites for blue carbon projects in consultation with key stakeholders

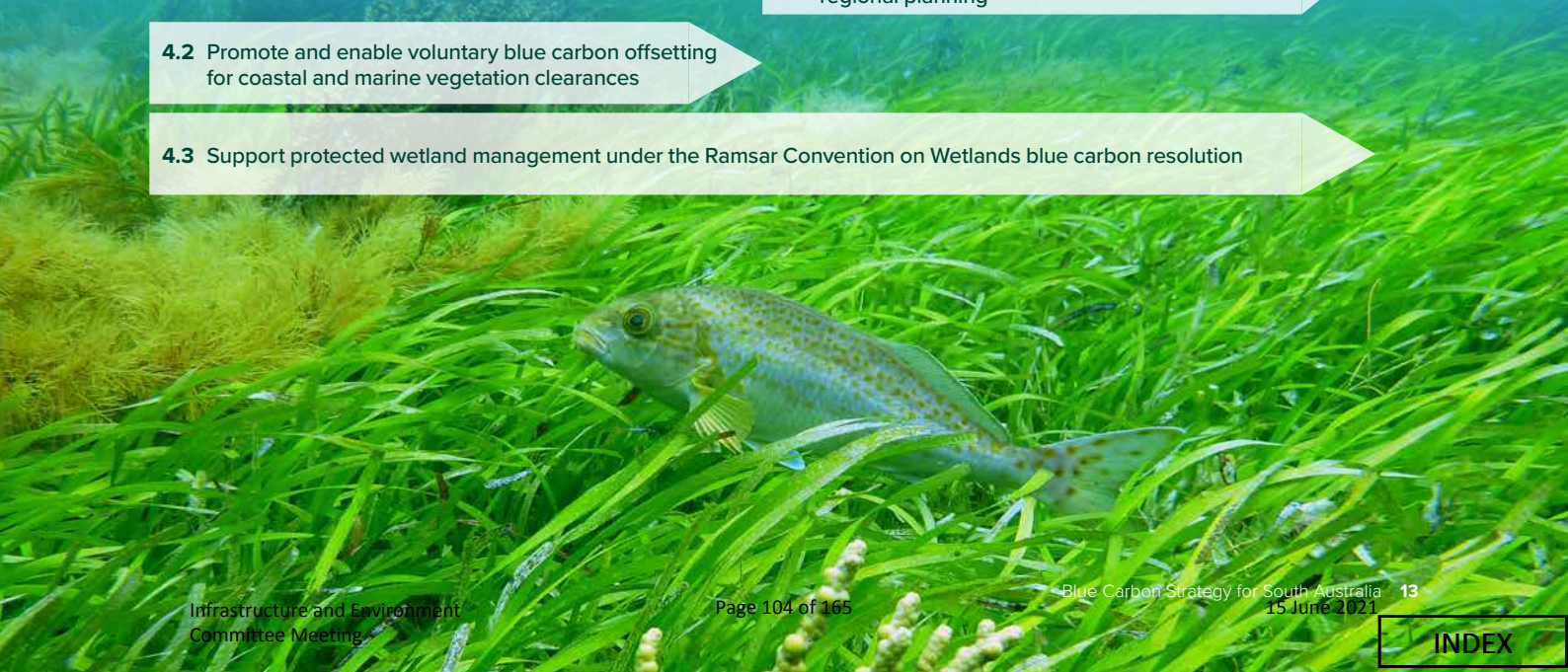
3.2 Implement pilot projects to demonstrate feasibility, including costs and benefits

3.3 Partner with the private sector to progress and scale-up blue carbon demonstration projects

4.1 Enable blue carbon ecosystem protection through state planning frameworks and develop planning tools and guidance for local and regional planning

4.2 Promote and enable voluntary blue carbon offsetting for coastal and marine vegetation clearances

4.3 Support protected wetland management under the Ramsar Convention on Wetlands blue carbon resolution



End notes

[1] Co-benefits of blue carbon projects are positive outcomes that are additional to the greenhouse gas emissions avoided or carbon captured and stored. Co-benefits are wide-ranging in their nature, yielding positive environmental, economic, social and cultural impacts. These are often referred to as ecosystem services.

[2] www.thebluecarboninitiative.org/

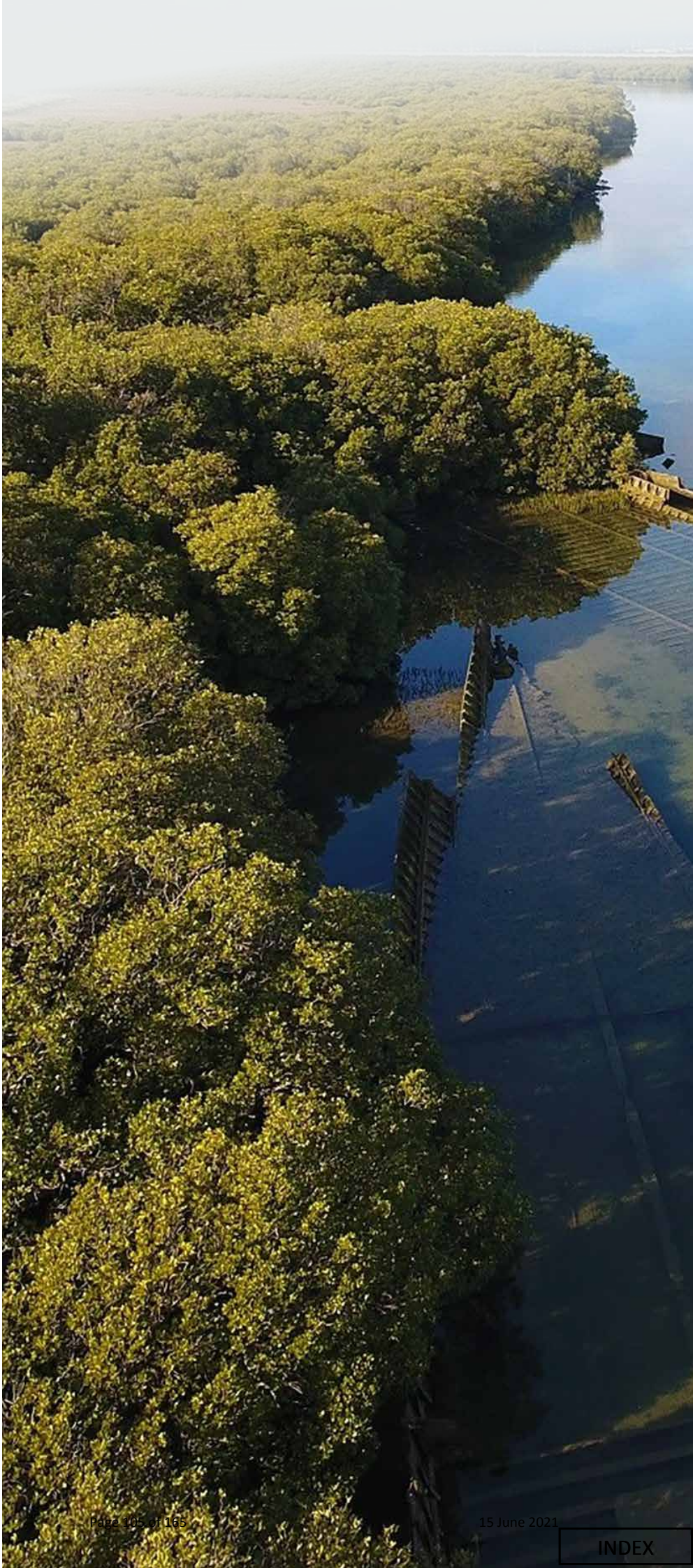
[3] Deloitte Access Economics (2017). The economic contribution of South Australia's marine industries

[4] International Blue Carbon Initiative – https://bluecarbonpartnership.org/wp-content/uploads/2016/11/ENV001_fact_sheet_V05.pdf

[5] Serrano et al (2019) Australian vegetated coastal ecosystems as global hotspots for climate change mitigation. https://www.nature.com/articles/s41467-019-12176-8#Sec7

[6] International Blue Carbon Initiative – https://bluecarbonpartnership.org/wp-content/uploads/2016/11/ENV001_fact_sheet_V05.pdf

[7] IUCN (2019) Blue Bonds: Financing Resilience of Coastal Ecosystems: Key Points for Enhancing Finance Action. https://www.4climate.com/dev/wp-content/uploads/2019/04/Blue-Bonds_final.pdf



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More information

www.environment.sa.gov.au

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Government of South Australia

NV Heritage Agreements
Frequently Asked Questions

INFORMATION SHEET **43**

Updated November 2013

What is a Heritage Agreement?

A Native Vegetation Heritage Agreement is a permanent, legally binding contract between a landholder and the Minister for Environment, Sustainability and Conservation placed on a property's title for the protection of an area of native vegetation, ensuring native plants and wildlife on the property are protected forever. It is legally recognised under the *Native Vegetation Act,* 1991.

Since the introduction of Heritage Agreements in 1980, the Native Vegetation Council has assisted over 1500 landholders to ensure the long-term protection of over 600,000ha of the state's original vegetation.

Background to Heritage Agreements

The Heritage Agreement Scheme began in 1980 as a result of over-clearance of native vegetation in the agricultural region of the State. Landholders were offered financial payment for loss of production in return for entering into a Heritage Agreement to conserve their bushland in perpetuity.

When the Scheme commenced in 1980, Heritage Agreements were constituted under the then *South Australian Heritage Act,* 1978 – 1980. The incentives offered then for entering into a Heritage Agreement were rate and taxes relief for the Heritage Agreement area and fencing (to stock proof) the area if needed.

In the first 2 years of the Scheme, over 450 landholders expressed an interest in Heritage Agreements involving approximately 15,000 hectares of land. Clearance remained unabated, and it was apparent that the Heritage Agreement Scheme as it existed then would not slow clearance to the extent needed to maintain biodiversity goals.

The next major change to the Heritage Agreement Scheme came about with the introduction of the *Native Vegetation Management Act,* 1985, which allowed for financial assistance to be paid to landholders (as well as the rates and taxes rebate, and the allowance for fencing). The financial assistance was based on the reduction in market value of a component of the land as a result of a refusal to clear native vegetation, if the land was placed under Heritage Agreement (some additional rules applied). This provision significantly increased the area under Heritage Agreement in the State; indeed some 750 Heritage Agreements were entered into during the operation of the *Native Vegetation Management Act,* 1985.

The Scheme changed again in 1991, with the replacement of the *Native Vegetation Management Act,* 1985 with the *Native Vegetation Act,* 1991. The form of financial incentive available under the previous Act was changed. The provision of financial assistance was no longer linked to a refusal to clear native vegetation.

The Act also allows for assistance to be given to the Heritage Agreement landholder for managing the land for the benefit of conservation. The Native Vegetation Council has established a Heritage Agreement Grant Scheme that applies to encourage and assist Heritage Agreement landholders with their conservation management works on Heritage Agreement land.

The existing incentives of relief from rates and taxes for the Heritage Agreement land and for the provision of stock-proof (and sometimes other) fencing still apply. The Scheme aims to encourage farmers and other private landholders through incentives to enter into a Heritage Agreement to retain and manage significant areas of native vegetation on their land.

The majority of new Heritage Agreement applications are received voluntarily from landholders who are conservation minded and interested in the natural value of their scrub. A small percentage of Heritage Agreements are a 'set aside' or offset resulting from an application to clear native vegetation, or from an application to subdivide a block of land with vegetation containing very high biodiversity value.

Administration of the Heritage Agreement Scheme

The Heritage Agreement Scheme is administered by the Native Vegetation Incentives Program (NVIP), Native Vegetation Council (NVC) and the Native Vegetation Management Unit, Department of Environment, Water and Natural Resources (DEWNR).

The NVC is an advisory body to the Minister for Environment, Sustainability and Conservation on all Heritage Agreement matters and according to Section 23(5) of the *Native Vegetation Act 1991*, the Minister must not enter into, vary or terminate a Heritage Agreement without first consulting and obtaining the approval of the NVC.

Establishing a Heritage Agreement

What land can be put under a Heritage Agreement?

The property may form part of an important wildlife corridor, or act as buffer to a neighbouring National Park. Assessment of a proposed Heritage Agreement takes into account factors such as the diversity of native flora and fauna, the presence of rare and endangered species, the size and shape of the area, weed infestation and management required to maintain the ecological integrity of the site.

Land is eligible for a Heritage Agreement if:

- The land is held under fee simple, or dedicated under the care and control of a Council
- The land is determined to be of high biological value
- The Native Vegetation Council has agreed that the land should be placed under Heritage Agreement

Land with the highest biological value is given preference for inclusion as a Heritage Agreement area.

What costs are involved with Heritage Agreements?

For Heritage Agreements voluntarily entered into by a landholder, the NVC currently meets all costs associated with the negotiation, assessment, drafting and registration of the Heritage Agreement.

How long does it take to enter into a Heritage Agreements?

Generally between 18 and 24 months, depending principally on region but partly also whether the landholder is entering into a full section Heritage Agreement or not.

Application forms are available from: http://www.environment.sa.gov.au/managing-natural-resources/Native_vegetation/Managing_native_vegetation/Heritage_Agreement_Scheme

Why does it take so long?

The process of establishing a Heritage Agreement involves several different agencies and crosses as many different disciplines. The area proposed for a Heritage Agreement must be assessed to see if it meets these very different criteria:

- It must have significant conservation value
- If over a portion of the land, a special “GRO” plan must be prepared that meets Surveyor-General criteria
- The document and plan must meet legal standards

Although it is a slow process, the Heritage Agreement is to last in perpetuity, and landholders need to be committed to the idea. None of the costs of putting the Heritage Agreement in place are passed on to the landholder, and incentives are available to Heritage Agreement owners that are not available through other means.

How long does a Heritage Agreement last?

Once established a Heritage Agreement lasts in perpetuity. Heritage Agreements are placed on a property’s title so remain regardless of any change in property ownership.

Do Heritage Agreements cover the whole property?

Every Heritage Agreement is unique. Some Heritage Agreements cover the whole property, some only part of the property.

Management of Heritage Agreement areas

Who is responsible for managing a Heritage Agreement area?

The landholder continues to own and manage their land once a Heritage Agreement is in place. Expert management advice is available from the Department of Environment, Water and Natural Resources Bush Management Advisors or Accredited and General Consultants. The Native Vegetation Incentives Program can also direct landholders to grants and incentives to help manage their Heritage Agreements.

What is a Native Vegetation Management plan?

The Native Vegetation Council (NVC) **recommends** that Native Vegetation Management Plans are prepared for Heritage Agreement areas.

A Native Vegetation Management Plan is a tool intended to provide sufficient information for landholders to protect and manage their land. It considers all the native vegetation in the Heritage Area and additionally can include native vegetation outside of the area (if applicable).

By considering all the native vegetation on the property, you will be able to consider a wider range of property management options. The Native Vegetation Management Plan can serve as one layer of a 'Whole of Property/Business Management Plan', or, as a stand-alone document.

It is in a landholder's interest to prepare a management plan to guide day-to-day management and assist in decision-making. A management plan can also be a valuable tool to support Local, State and Commonwealth approval processes.

A management plan in general should comprehensively describe the place, specify the objectives, policies and principles that will govern the management of the area's values and provide guidance on the preparation of management activities to ensure that there are no adverse impacts on any values. It may also identify areas and items that do not embody values or that are intrusive, and allow these to be removed or altered without affecting the values of the place,

Why is having a Native Vegetation Management Plan for my Heritage Agreement important?

The preparation of a Native Vegetation Management Plan for a Heritage Agreement plays an important role in establishing an easy to understand and implement management structure for the land protected under the Heritage Agreement.

Who prepares the Native Vegetation Management Plan?

The management plans are developed by the applicant (or a consultant engaged by the applicant who is accredited in BushRAT assessment methodology), and maybe with financial or other assistance from the Native Vegetation Management Unit.

A list of NVC Accredited and General Consultants can be found at:

http://www.environment.sa.gov.au/managing-natural-resources/Native_vegetation/Managing_native_vegetation/Clearance_guidelines

About the Native Vegetation Management Plan Template

Native Vegetation Management Plan templates are available from the Native Vegetation Management Unit.

Note that the data required to complete Section 2 of the plan has often been already collected as a part of the Heritage Agreement assessment. To assist with Sections 1 and 3 entitled '**Property Details' and 'Management and Monitoring'**, applicants can also seek the advice of their local NRM Officer, or Bush Management Advisor.

Removal/Changes to Heritage Agreements

Can a Heritage Agreement be changed?

The Native Vegetation Council will only consider variations to the terms of a Heritage Agreement if the variations improve the land's conservation values or pose no threat to them. Every proposal to amend a Heritage Agreement requires the approval of the NVC, the landholder and the Minister.

The Heritage Agreement document states that the landholder shall not, without the written consent of the Minister, undertake or permit within the Heritage Agreement area the clearance of native vegetation; the planting of vegetation, whether native or exotic; the construction of a building or other structure; the grazing of stock or any other activity that, in the opinion of the Minister, is likely to damage, injure or endanger the native vegetation or native fauna within the Heritage Agreement area.

On occasion where there is biodiversity gain, certain activities (such as revegetation of degraded areas or pulse grazing for weed control) may occur with the written consent of the Minister or with an approved management plan. In such cases, the Minister will be requested to sign and approve a 'Letter of Consent'. As with all Heritage Agreement business, the advice of the NVC is sought beforehand.

I am a new owner and I don't want the Heritage Agreement. Can it be removed from the land?

It is legally possible to terminate a Heritage Agreement, by agreement between the two parties to the Agreement, i.e. the landholder and the Minister. A new owner not wanting the Heritage Agreement is not grounds for termination. The Minister must receive direction from the Native Vegetation Council for a Heritage Agreement to be terminated. However, historically, no Minister has agreed to a termination, particularly not based on an owner's dislike of the Heritage Agreement. Termination has occurred in some few instances where one Heritage Agreement is terminated and contemporaneously replaced with another, or where Heritage Agreement land has become part of the National Parks system.

Can I exclude an area from the Heritage Agreement?

A Heritage Agreement exists in perpetuity and is not easily removed or changed. Agreement must first be reached with the Native Vegetation Council and then consent granted by the Minister. The Native Vegetation Council would usually only agree to removing an area from an existing Heritage Agreement if there is a significant environmental gain to be made e.g. another larger area, or an area with a significantly higher conservation status is placed additionally under the Heritage Agreement to offset against the smaller area to be removed from the Heritage Agreement. Native Vegetation Council policy states that: *Council may recommend for approval the exclusion of a house site or other exclusion zone from an area under a Heritage Agreement in the following circumstances:*

- *the Heritage Agreement is of a voluntary type and was established before 5 April 1993 over a FULL section or allotment; and*
- *the site can be established (in Council's opinion) without clearance of sensitive or important native vegetation; or*
- *where, in the case of any Heritage Agreement, the original boundary definition and rationalisation meant that a suitable area of cleared land was included in the Heritage area such that the site can be accommodated without any clearance of native vegetation.*

Should a landholder wish to exclude an area for a house site, the local Council, along with the Native Vegetation Council will assess potential sites, and in some cases may refuse the exclusion. If there is sufficient cleared land outside of the Heritage Agreement area, it is highly unlikely exclusion would be permitted within the Heritage Agreement. It is important to note that NVC approval to exclude a house site from an existing Heritage Agreement does not constitute building approval (this is determined by local Council.)

Any landholder wishing to exclude an area for a dwelling, should first seek approval from their local Council, and as part of the normal process, the NVC will be consulted for an appropriate site if necessary. Any change to the Heritage Agreement usually requires a new GRO plan. The landholder and the Minister must also sign a legal document to formally change the original Heritage Agreement. This document is registered against the owner's title.

Changing a Heritage Agreement can be time-consuming and generally takes between 12-18 months.

House sites or other exclusion zones should be created at the time (or before) the Heritage Agreement comes into effect.

Activities in a Heritage Agreement

What does a Heritage Agreement prohibit?

A standard Heritage Agreement generally prohibits native vegetation removal; introduction of non-indigenous vegetation; grazing by livestock; deterioration in the quality, flow or quantity of water; introduction of non-indigenous fauna i.e. pets; removal of wood or timber; removal or disturbance of rocks or soil, including cultivation; the application of fertilizer; pasture establishment, and recreational use of trail bikes and other vehicles. However, theses standard restrictions can be modified in certain circumstances where the NVC and The Minister are satisfied that the conservation of the land will not be adversely affected.

Can I drive through my Heritage Agreement?

You can drive through a Heritage Agreement on tracks that are marked on ground or are obvious on the General Registry Office (GRO) plan of the Heritage Agreement.

Can I make new walking or vehicle tracks?

Only with permission from the NVC and the Minister, and again both would look at the balance between the environmental loss and gain.

Can I re-clear existing tracks?

Yes, if these are marked as a track to remain open on the GRO plan. If these are not marked on the plan, permission must be sought from the NVC and the Minister.

What can I do within my Heritage agreement? Ride horses, take dogs, bring friends, camp, take eco tours, and bring in a caravan?

The Heritage Agreement requires that the native flora and fauna on the area are protected. Each of the above activities may be damaging to native flora and fauna, depending on their intensity, timing and location within the Heritage Agreement. Alternately there may also be an environmental gain for the Heritage Agreement area if the landholder undertakes these activities, in terms of learning about their Heritage Agreement. Most activities such as riding horses (on defined tracks), walking dogs, friends visiting the Heritage Agreement are not prohibited from HA s, unless their intensity and location are damaging native flora and fauna. These activities would be accepted at a low level within a Heritage Agreement, but would not be actively encouraged.

Any adverse effects, such as the spreading of weeds via horse dung would be expected to be controlled. Camping (other than low impact or bush camping), Eco tourism and bringing in a caravan require approval from the Native Vegetation Council (and the Minister) before they can be undertaken within a Heritage Agreement, because of the potential damage to flora and fauna. In these circumstances the NVC would look at the balance between environmental harm and good before making a decision.

Can I graze the Heritage Agreement in drought years?

No, not without permission from the NVC and the Minister, and this permission would not normally be granted. Once again both parties would balance the gains and losses. In some instances, the Minister may consent to grazing for weed reduction, but the landholder would need to submit an appropriate grazing management plan, approved by the Minister.

Monitoring and Maintenance of Heritage Agreement areas

What does having Heritage Agreement land mean – am I obliged to maintain it?

It means that the area protected by the Heritage Agreement should be preserved in as close to its natural state as possible. An landholder is not necessarily obliged to undertake weed control etc. and may choose not to manage it at all (although management is of course encouraged).

Am I obliged to monitor my Heritage Agreement?

Voluntary Heritage Agreement areas are not subject to an established monitoring program. Monitoring occurs on an informal basis through follow-up visits (i.e. via the Heritage Agreement Fencing program) and the contact and property visits undertaken by the Bush Management Advisers / NRM Officers in assisting Heritage Agreement landholders with management works in their Heritage Agreement areas.

Incentives and assistance available to Heritage Agreement Landholders

Release from Rates and Taxes

The landholder is released from rates and taxes on the Heritage Agreement land in the second rating year following registration of HA on title.

Fencing assistance

Landholders may be provided with stock fencing if this is necessary to protect the native vegetation.

Heritage Agreement Grant Scheme

Landholders are eligible to apply for assistance with management works aimed at protecting and improving the conservation value of the Heritage Agreement area.

Bushland Management advice

Advice on managing bushland is available from the Department of Environment, Water and Natural Resources (DEWNR).

Further information

The Native Vegetation Council provides funding for a variety of research and conservation projects that promote the responsible and ongoing management of native vegetation in South Australia, through the Native Vegetation Incentives Program. This includes the Heritage Agreement Grants and financial assistance for the fencing of Heritage Agreements. Further information is available from our website at http://www.eironment.sa.gov.au/get-iolved/grants-and-funding/native-vegetation-incentives-programs

Documentation can be lodged via post or electronically to:

Email: NVIP.DEWNR@sa.gov.au
Mail: 'Heritage Agreement'
Native Vegetation Incentives Program
DEWNR
GPO Box 1047
ADELAIDE SA 5001
Phone: 08 8303 9777

References

Principally: *Native Vegetation Act, 1991*

Native Vegetation Management Act, 1985 (now superseded by NV Act 91)

South Australian Heritage Act, 1978 – 1980

Definition of terms

"**the Council**" means the Native Vegetation Council established by the Native Vegetation Act, 1991.
"**land**" includes an interest in land
"**owner**" of land means-
(a) in relation to land alienated from the Crown by grant in fee simple- the holder of the fee simple[1];
(b) in relation to land held under Crown lease-the lessee;
(c) in relation to land held under an agreement to purchase from the Crown-the person entitled to the benefit of the agreement;
(d) in relation to any other land-the Minister who is responsible for the care, control and management of the land or, if no Minister is responsible for the land, the Minister of Lands"

Responsibilities and/or Authorities

The Native Vegetation Act, 1991, in Section 23, allows for the creation of and defines criteria for the nature of Heritage Agreements as follows:
Section 23 allows for the owner of land to enter into a Heritage Agreement with the Minister for Environment. Further, it specifies that:

- A Heritage Agreement attaches to the land and is binding on the current owner of the land whether or not that owner was the person with whom the agreement was made.
- The Minister may, by agreement with the owner of the land to which a Heritage Agreement applies, vary or terminate the agreement,
- A Heritage Agreement is, to the extent specified in the Agreement, binding on the occupier of the land, and
- The Minister must not enter into, vary or terminate a Heritage Agreement under this section without first consulting and obtaining approval of the Council."

Part IV of the Act further defines the nature, restrictions applying to and potential incentives for Heritage Agreement landholders.

[1] Fee simple - the most common freehold estate granted by the crown. An estate in fee simple is the greatest estate in land, and is for practical purposes the equivalent to absolute ownership. Note, however, that in Australia, no person other than the crown can 'own' land absolutely.

Adelaide Plains Council	**7.3**	**Policy Introduction - Light Fleet, Plant and Heavy Vehicles Replacement Policy**
	Department:	**Infrastructure and Environment**
	Report Author:	**General Manger Infrastructure and Environment**
Date: 15 June 2021	**Document Ref:**	**D21/24999**

EXECUTIVE SUMMARY

- The purpose of this report is for the Infrastructure and Environment Committee (the Committee) to consider, and provide recommendations to Council in relation to a proposed Light Fleet, Plant and Heavy Vehicle Replacement Policy (the Proposed Policy), presented as **Attachment 1** to this Report.
- It is recommended that the Committee considers the Proposed Policy and recommends to Council that it adopt the Proposed Policy subject to any amendments that the Committee considers necessary.

RECOMMENDATION

"that Council, having considered Item 7.3 – *Policy Introduction – Light Fleet, Plant and Heavy Vehicles Replacement Policy*, dated 15 June 2021, receives and notes the report and in doing so recommends to Council that it adopts the proposed *Light Fleet, Plant and Heavy Vehicles Replacement Policy* as presented at Attachment 1 to this Report subject to the following amendments:-

1. …"

BUDGET IMPACT

Estimated Cost:	Nil
Future ongoing operating costs:	Ongoing renewal budget
Is this Budgeted?	Not Applicable

RISK ASSESSMENT

Adelaide Plains Council does not currently have a Light Fleet, Plant and Heavy Vehicles Replacement Policy in place to support and guide the future renewal allocations in the 10 year Infrastructure and Asset Management Plans. This policy seeks to provide better governance and justifiable application of

such renewals and as such reduces Council's overall risk regarding the management of Councils Light Fleet, Plant and Heavy Vehicles.

Attachments

1. Proposed Light Fleet, Plant and Heavy Vehicles Replacement Policy
2. Forward Estimates Light Fleet, Plant and Heavy Vehicles Replacement Program – 10 Years

DETAILED REPORT

Purpose

The purpose of this report is for the Infrastructure and Environment Committee (the Committee) to consider, and provide recommendations to Council in relation to a proposed Light Fleet, Plant and Heavy Vehicle Replacement Policy (the Proposed Policy), presented as **Attachment 1** to this Report.

Background/History

To date, the Adelaide Plains Council has not had a policy in relation to managing Light Fleet, Plant and Heavy Vehicles replacements, and is critical to ensure operational requirements are met and best value is provided for the Adelaide Plains Council.

Discussion

The decision regarding when to change over the light fleet, plant and heavy vehicles should be based on optimum replacement timing. The optimum replacement point in the life of the vehicle is when the decreasing line of depreciation intersects with the increasing cost of repairs and maintenance. Optimum replacement timing for a vehicle or an item of plant is calculated to best estimate the optimum time, either in kilometers or engine hours, and time, to achieve the lowest average annual costs during the life of the vehicle/machine. This methodology has been documented within the Institute of Public Works Engineering Australasia (IPEWA) – Plant and Vehicle Management Manual and used to develop the policy.

Delaying replacement beyond optimum replacement without a risk analysis exposes Council to high maintenance and downtime cost. The age of the fleet also has a flow on effect on utilisation because of reduced plant availability. Downtime brings with it additional costs associated with hire of external plant, lost time on the job, inefficient redeployment of staff to other works.

The Proposed Policy seeks to ensure that Council's Light Fleet, Plant and Heavy Vehicles scheduled replacement program is conducted in a manner which represents best value for Council's procurement activities and in compliance to Council's Procurement Policy by:

- Managing Council's vehicle and plant to ensure the appropriate asset value is maintained.
- Optimising vehicle and plant replacement to ensure Council's services and infrastructure are provided in a sustainable manner, with the appropriate levels of service to residents.
- Managing vehicle and plant replacement in a manner that does not place an unreasonable burden on the Council Budget in any one financial year.

Conclusion

It is recommended that the Committee consider the proposed Light Fleet, Plant and Heavy Vehicle Replacement Policy and recommend to Council that it adopts the proposed Policy subject to any amendments that the Committee considers necessary. Management acknowledge that the policy is new to Council and that establishing a robust document that has been roundly considered and reviewed is critical before it is to be endorsed and recommended to Council.

References

Legislation

Work Health and Safety Act 2012

Council Policies/Plans

Strategic Plan 2020 – 2024

- Proactive Leadership

Procurement Policy

Disposal of Land and Other Assets Policy

Attachment 2 - Forward Estimates Light Fleet, Plant and Heavy Vehicles Replacement Program – 10 Years

Adelaide Plains Council	**Light Fleet, Plant and Heavy Vehicles Change Replacement Policy**	
	Adoption by Council: TBC **Resolution Number:** TBC **Current Version:** V1	
	Administered by: General Manager – Infrastructure and Environment	**Last Review Date:** 2021 **Next Review Date:** 2023
Document No: D21/25000	**Strategic Objective:** Strategic and sustainable financial management	

1. Introduction

The management of Light Fleet, Plant and Heavy Vehicles Replacement Policy for same is critical to ensure operational requirements are met and best value is provided for the Adelaide Plains Council.

The decision regarding when to change over the light fleet, plant and heavy vehicles should be based on optimum replacement timing. The optimum replacement point in the life of the vehicle is when the decreasing line of depreciation intersects with the increasing cost of repairs and maintenance. Optimum replacement timing for a vehicle or an item of plant is calculated to best estimate the optimum time, either in kilometres or engine hours, and time, to achieve the lowest average annual costs during the life of the vehicle/machine.

Delaying replacement beyond optimum replacement without a risk analysis exposes Council to high maintenance and downtime cost. The age of the fleet also has a flow on effect on utilisation because of reduced plant availability.

Downtime brings with it additional costs associated with hire of external plant, lost time on the job, inefficient redeployment of staff to other works.

Consideration will be given when there is a shortage of capital funds, a potential to save costs or to reduce very high risk levels, to investigate leasing options of heavy fleet items with known and consistent levels of utilisation through a fully maintained operating lease.

2. Objective

The purpose of this Policy is to:

- Manage Council's vehicle and plant to ensure the appropriate asset value is maintained.
- To optimise vehicle and plant replacement to ensure Council's services and infrastructure are provided in a sustainable manner, with the appropriate levels of service to residents.

- To manage vehicle and plant replacement in a manner that does not place an unreasonable burden on the Council Budget in any one financial year.

3. Scope

This Policy should be observed by all employees impacted by Council's Light Fleet, Plant and Heavy Vehicles scheduled replacement program.

4. Policy Statement (Summary)

The intent of this policy is to ensure that Council's Light Fleet, Plant and Heavy Vehicles scheduled replacement program is conducted in a manner which represents best value for Council's procurement activities and in compliance to Council's Procurement Policy.

5. Legislation and Compliance

Local Government Act 1999

- **Section 99** – Role of the Chief Executive Officer – to ensure that the assets and resources of the Council are properly managed and maintained.
- **Section 49** – A council must develop and maintain procurement policies, practices and procedures directed towards obtaining value in the expenditure of public money and ensuring probity, accountability and transparency in procurement operations.
- **Section 125** – A Council must ensure that appropriate policies, practices and procedures of internal control are implemented and maintained in order to safeguard the Council's assets.
    - Work Health and Safety Act 2012
    - Work Health and Safety Regulations 2012
    - Key Elements impacting on the maintenance and operation of plant, vehicles and equipment:
        - A primary duty of care requiring persons conducting a business or undertaking to, so far as is reasonably practicable, ensure the health and safety of workers and others who may be affected by the carrying out of work.
        - Duties of care for persons who influence the way work is carried out, as well as the integrity of products used for work.
        - A requirement that 'officers' exercise 'due diligence' to ensure compliance.
        - Reporting requirements for 'notifiable incidents' such as the serious illness, injury or death of persons and dangerous incidents arising out of the conduct of a business or undertaking.

- A framework to establish a general scheme for authorisations such as licenses, permits and registrations (e.g. users of certain plant).

6. Definitions

Council means Adelaide Plains Council.

Light Fleet/Vehicle definition - cars, utilities, four (4) wheel drives, vans and buses.

Plant & Heavy definition - truck, grader, backhoe, forklift, loader, skid steer, rollers, wood chipper, ride-on-mower, and truck trailers.

Changeover Cycle definition - timeline.

7. Policy

The importance of replacing plant before resale values dramatically decrease and repairs and maintenance costs increase. The policy provides optimum replacement times to reduce annual plant replacement costs in the long term, reduce maintenance costs and most importantly reduce downtime in the field operations.

Vehicle/Plant Replacement Cycle Guideline

The following guideline shall apply for all vehicle/plant replacement.

Light Fleet, Plant and Heavy Vehicles Items	Changeover Cycle
Sedans	5 years or 100,000 kms
Four (4) Wheel Drives	5 years or 100,000 kms
Utilities	5 years or 120,000 kms
Vans	5 years or 120,000 kms
Grades	10 years or 8,000 kms
Wood chippers	8 years or 5,000 hrs
Backhoe Loaders	7 years or 5,000 hrs
Low-loaders	20 years
Semi - Trailer Tippers (tandem)	8 years or 500,000 kms
Prime Movers	8 years or 500,000 kms
Forklifts	10 years or 5,000 hrs
Wheeled Loaders	8 years or 8,000 hrs
Excavators	8 years or 8,000 hrs
Mowers - Front / Rear Deck	5 years or 3,000 hrs
Slashers / Flail Mowers	8 years or 5,000 hrs
Skidsteer Loaders	5 years or 5,000 hrs
Combination Rollers	8 years or 5,000 hrs
Roller Vibrations	8 years or 5,000 hrs
Dog / Pig Trailers	15 years
Trucks Medium	8 years or 150,000 kms
8 Tonne Truck/Tippers	8 years or 500,000 kms
Medium Tippers	8 years or 200,000 kms
Large Tippers	10 years or 700,000 kms
Tractors	8 years or 8,000 hrs

3-3.5 Tonne Truck/Tippers	6 years or 150,000 kms
Jet Patchers (drawn)	15 years or 200,000 kms
(VMS) Variable Message Signage, Mobile	15 years
Trailers – General Use	20 years
Mobile Diesel Generator	20 years
Mobile Fuel Tanks	20 years
Mobile Chemical Toilets	20 years
Water Tank	20 years

8. Risk Management

The approach adopted in this policy is based on industry best practice for vehicle, plant and fleet management. Adhering to this Policy Council's light fleet, plant and heavy equipment will be replaced at their optimum replacement time and cause minimal impact on the ten (10) year replacement program.

9. Implementation/Delegations

The Chief Executive Officer and Council Officers who hold necessary delegation of authority to replace Light Fleet, Plant and Heavy vehicles in accordance with this Policy and Council's Procurement Policy, Tender and Evaluation Procedures.

10. Related Documents

This policy shall operate in conjunction with the Adelaide Plains Council Procurement Policy, Asset Management Policy and Disposal of Land and Other Assets Policy.

11. Record Management

All documents relating to this Policy will be registered in Council's Record Management System and remain confidential where identified.

12. Document Review

This Policy will be reviewed every two (2) years to ensure legislative compliance and that it continues to meet the requirements of Council and its activities and programs.

13. References

Local Government Act 1999 (SA)

Institute of Public Works Engineering Australasia (IPEWA) – Plant and Vehicle Management Manual.

Work Health and Safety Act 2012

14. Further Information

Members of the public may inspect this Policy free of charge on Council's website at www.apc.sa.gov.au or at Council's Principal Office at:

2a Wasleys Road, Mallala SA 5502

A copy of this Policy may be obtained on payment of a fee.

Any queries in relation to this Policy must be made in writing to info@apc.sa.gov.au to the attention of General Manager – Infrastructure and Environment.

Adelaide Plains Council	**7.4**	**Mallala Community Wastewater Management Scheme – Review of Charges**
	Department:	**Finance and Business**
	Report Author:	**General Manager - Finance and Business**
Date: 15 June 2021	**Document No:**	**D21/24231**

OVERVIEW

As part of 2021/2022 budget estimates, Council recently engaged the service of Mr John Comrie of JAC Comrie Pty Ltd to review Mallala CWMS Charges.

The review found that based on the Essential Services Commission of South Australia (ESCOSA) CWMS pricing criteria, the average operating cost per unit (including cost of capital and risk premium of 2.90% and based on budgeted costs for 2021/2022) is $1,182 per connection which is approximately 85% higher than current (2020/2021) Mallala CWMS charge of $640 per connection.

Therefore, the report concludes that "*Council faces significant financial and operating capacity risks in the longer-term if it doesn't ensure it generates sufficient long-run revenue from CWMS charges to offset long-run costs."*

The report also notes that "*Before settling an appropriate charge though it is important to be confident regarding long-run costs. APC needs to understand why reported costs have increased in recent years and whether the scheme is being operated as efficiently as possible and therefore whether costs are likely to remain at this level on average in future"*

With regard to increasing Mallala CWMS charge over time in order to comply with ESCOSA CWMS pricing criteria, the report concludes that "*On current available evidence it therefore appears that current charging levels are well below likely long-run annual costs. It therefore seems reasonable for charges to be increased materially now with a view to ensuring that charges fully offset costs say within 7 years. That period of time will allow Council to determine with more confidence it's likely long-run annual costs of the scheme'*

RECOMMENDATION

"that the Infrastructure and Environment Committee, having considered Item 7.4 – *Mallala Community Wastewater Management Scheme – Review of Charges*, dated 15 June 2021, receives and notes the report in doing so recommends to the Council that it incorporates findings of the review as contained in Attachment 1 into future budgetary and long term financial plan considerations."

Attachments

1. Mallala Community Wastewater Management Scheme - Review of Charges by Mr John Comrie of JAC Comrie Pty Ltd

References

Legislation

Section 155(1) of the Local Government 1999

Council Policies/Plans

Budget Management Policy

Other

CWMS Accounting Principles - The Costing and Pricing of CWMS by LGA

Mallala Community Wastewater Management Scheme - Review of Charges

3 May 2021

John Comrie

JAC Comrie Pty Ltd

1. Introduction

In April 2019, Mr John Comrie (JAC Comrie Pty Ltd) prepared a report for Adelaide Plains Council (APC) to assist it in determining community waste water management scheme (SWMS) service charges that may have been appropriate to levy Mallala CWMS service recipients to offset costs of the scheme.[1]

It is generally accepted that service recipients specifically rather than a council's ratepayers generally should meet the full costs of a CWMS scheme. Nevertheless, there is often conjecture in local government regarding exactly what to charge recipients for CWMS services. That has been true in the case of the Mallala CWMS since the scheme was initially planned. There are at least 3 key reasons for this:

a) The scheme is relatively new and there is still some uncertainty re expected average long-term costs;
b) From an intergenerational equity perspective, it is desirable to base annual charges on expected long-run costs. Depreciation is a large share of total costs. Annual depreciation depends on of how long assets can be expected to last before replacement (and their expected replacement cost). These estimates can vary over time.
c) There are requirements in place to determine cost of capital allowances to factor into such costs in determining charges (rather than recognising interest costs associated with any directly associated loans). This is a relatively new concept (at least in its application to CWMS charging) and hasn't been well understood widely across local government to date. Latest guidance suggests that this cost allowance should be less than what was previously recommended.

This report has also been prepared by JAC Comrie Pty Ltd. It considers both updated Council data and updated general guideline information to assist Council in its determination of 2021/22 and future charges for the Mallala CWMS service.

It has been kept relatively brief and doesn't delve into Mallala scheme background information or pricing theory/cost determination considerations to the same extent as the 2019 report. As such readers of this report may find it useful to also be familiar with the content of the 2019 one.

2. LGA Charging Guidelines

Local Government Association guidance (both general financial sustainability and specific CWMS charging guidance) exists to support councils in determining CWMS charging decisions.[2] It highlights the importance of focussing on the longer-term and the risks and consequences of inadequate charging (e.g. potential inadequate funds for long-run asset renewal and intergenerational charging inequity).

[1] Mr John Comrie operates a consultancy practice specialising in providing financial and governance advice to local governments. He is a former chairperson of APC's Audit Committee and he has prepared much of the guidance material produced by the LGA to assist councils to improve their financial sustainability and performance.

[2] See for example the Local Government Association's 'CWMS Accounting Principles - The Costing and Pricing of CWMS', Dec 2016 and the suite of 'Financial Sustainability Information Papers' it has produced.

In my 2019 report I highlighted that *'Total costs (of CWMS) can vary materially from year to year (and will certainly do so over time even net of the effects of general inflation)'*. That has been the experience of the Mallala CWMS to date and this is highlighted further below.

Councils apply CWMS charges under S.155(1) of the Local Government (LG) Act.[3] Effectively the Act does not allow councils to charge more than estimated long-run costs for such a service (S.155(5) & (5a)). If it becomes apparent over time that accumulated annual charging levels have been materially greater or less than accumulated costs then charges should be adjusted to bring charges and costs back into reasonable alignment (adjusted for the previous estimated surplus or deficit) over subsequent years.

The Essential Services Commission of South Australia (ESCOSA) has determined that council provided common effluent drainage schemes (i.e. CWMS) are a regulated service and as such charges applied by councils are effectively oversighted by ESCOSA. ESCOSA's job is to ensure that councils charge a fair price (that complies with sound economic and equity principles) on an ongoing basis.

ESCOSA can provide directions and seeks to be satisfied that prices determined by councils are reasonable and appropriate. ESCOSA requires that council pricing methodology is not in conflict with the National Water Initiative (NWI) principles/objectives.[4] To date ESCOSA has generally applied relatively light oversight of councils' CWMS charging arrangements but is expected to become more active in future.

The LGA's, 'CWMS Accounting Principles – The Costing and Pricing of CWMS' (referred to in a footnote above) was published in December 2016 following consultation with councils and ESCOSA in its development.[5]

3. Mallala CWMS Costs and Charges

Table 1 in my 2019 report set out the Estimate of APC Mallala CWMS revenue & expenses 2017/18 applying ESCOSA criteria. That table is reproduced below (also as Table 1). It shows operating revenue of $190,500 and operating expenses of $129,300 and therefore an operating surplus of $61,200 (ignoring cost of capital which is discussed further later).

[3] The Act (S.155(2)) allows councils to apply a charge (a specific dollar quantum) or a rate (amount payable varies with property value). SA Water for example applies a rate in recovering the cost of provision of sewerage services (with a minimum threshold amount). To the best of my knowledge no councils in SA apply a rate, all set a specific charge.

[4] The National Water Initiative includes a set of pricing principles agreed by the Federal and all state governments (COAG). It includes, 'give effect to the principle of user-pays and achieve pricing transparency … and cost recovery'. See p.2 of document at http://www.agriculture.gov.au/water/policy/nwi/pricing-principles

[5] (The author of this paper Mr John Comrie, contributed as a reviewer in the development of the LGA publication).

Table 1: Estimate of APC Mallala CWMS revenue & expenses 2017/18 applying ESCOSA criteria (as published in JAC Comrie 2019 report)

Operating Revenue	**$'000**
CWMS service charges (net of rebates)	**189.7**
Other income	**0.8**
Total Operating Revenue	**190.5**
Operating Expenses	
Contractors & salaries & o'heads	**14.0**
Plant, materials and maintenance (incl wages)	**24.8**
Insurance	**1.9**
Depreciation	**87**
Other expenditure	**1.6**
Total Operating Expenses[6]	**129.3**
Operating Surplus/(Deficit)	**61.2**
Cost of Capital	
Cost of capital - 4% real interest[7]	**45**
Cost of capital - 2% for risk[8]	**96**
Total Cost of Capital	**141**
No. of units serviced	**344 properties**
Ave operating cost per unit (excl cost of capital)	**$376**
Ave op cost per unit (incl cost of capital)	**$785**

Actual financial performance for the Mallala CWMS in 2017/18 was close to the forecast estimate shown in Table 1. Since then though costs have been significantly higher and financial performance consequentially less favourable. This is shown in Table 2 below (for simplicity no attempt has been made to estimate an annual cost of capital in this table).[9]

[6] The LGA Guidelines (see e.g. Sections 2.4 & 2.5) make clear that a council should include all relevant direct and indirect costs in determining CWMS annual operating expenses. This includes e.g. an appropriate share of a council's related general admin costs (such as for general management, associated accounting, reporting and service charge issuing and collection). No attempt has been made in this report to assess the veracity of Adelaide Plains Council's reported costs for the Mallala CWMS.

[7] 4% real interest X $1.124M = $44,960. (Total capital cost of the scheme was $6.402M (incl rectification works). Subsidy (incl rectification works) was $4.492M, i.e. net capital cost to council of $1.91M. Written down value of total assets is $4.798M. WDV of asset base net of subsidy is $4.798M less $4.492M, i.e. $306,000. But above figures include a grant of $0.217M received in 2018/19 for capital works not yet capitalised in above. Therefore, that grant needs to be deducted. Also above includes grant of $0.601 for works that have been written off above (associated with rectification works). Grant should therefore also be written off for this exercise. WDV of assets net of subsidy therefore = $0.306M + $0.217M + $0.601M = $1.124M.)

[8] 2% real interest X $4.798M. = $95,960. Includes unspecified and residual risk relating to written down value of all assets (including assets that were grant funded).

[9] All figures in Table 2 are as advised by APC.

Table 2: APC Mallala CWMS revenue & expenses 2015/16 to 2020/21 (excluding cost of capital)

	Actual	Actual	Actual	Actual	Actual	Budget
Income	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
CWMS Charge	170,526	190,450	195,416	207,776	213,968	220,160
Fines on Rates	346	491	526	771	1,119	
CWMS Connection Fee	-	-	8,182	-	8,182	
Interest on Investments	4,018	3,416	305	243	-	
TOTAL INCOME $	**174,890**	**194,357**	**204,430**	**208,790**	**223,269**	**220,160**
Expenses						
Employee Costs	37,840	34,251	4,068	5,600	6,039	15,650
Material Contract & Other	17,605	18,376	43,936	123,625	136,766	147,211
Depreciation	83,085	87,152	87,000	105,044	124,104	91,733[10]
TOTAL EXPENSES $	**138,530**	**139,779**	**135,004**	**234,268**	**266,909**	**254,594**
Net Mallala CWMS Results $	**36,360**	**54,578**	**69,425**	**(25,478)**	**(43,640)**	**(34,434)**

Staff have advised that the main reasons for the deterioration in the annual financial performance of the Mallala CWMS in recent years are that:

- Various costs have increased significantly, such as;
    - Depreciation is about $40,000pa higher than it was in the early years,
    - Higher annual service/maintenance agreement charges
    - Higher electricity charges, and that;
- CWMS charges applied have not kept up with these increases in costs.

In addition, assets have been revalued during 2020/21 in accord with requirements and this is likely to increase depreciation charges in 2020/21 and 2021/22 compared with data shown above.

Table 3 below sets out current APC staff estimates of Mallala CWMS revenue & expenses for 2021/22. It includes an allowance for cost of capital.

[10] Depreciation was underestimated in the 2020/21 budget. Staff suggest it should have been consistent with 2019/20 and a more accurate estimate would have been $125,000. Council has very recently had a consultant (Tonkin Apr '21) complete a revaluation of Mallala CWMS assets. The impact of this revaluation is that depreciation may rise to $138,007 in 2020/21.

Table 3: Budget Estimate of APC Mallala CWMS revenue & expenses 2021/22 applying ESCOSA criteria

Operating Revenue	**$'000**
CWMS service charges (net of rebates)	**227.4**[11]
Other income	**0**
Total Operating Revenue	**227.4**
Operating Expenses	
Employee costs	**15.9**
Materials, contracts & other	**161.0**
Depreciation	**125.5**[12]
Total Operating Expenses	**302.4**
Operating Surplus/(Deficit)	**(75.0)**
Cost of Capital	
Cost of capital – 1.3% real interest[13]	**15.2**
Cost of capital – 1.6% for risk[14]	**90.2**
Total Cost of Capital	**105.4**
No. of units serviced	**345 properties**
Ave operating cost per unit (excl cost of capital & risk)	**$876**
Ave op cost per unit (incl cost of capital & risk)	**$1,182**

[11] This assumes a charge of $659/connection.

[12] Depreciation may be higher in 2021/22 following the recent revaluation of CWMS assets. See also footnote to depreciation in Table 2. Tonkin in its Apr '21 revaluation report suggests $138,000. Applying this figure would increase calculated charges shown above by $36/connection.

[13] Cost of capital calculated as per DTF Guidelines (see section 4). That is, based on long-term bond rate of 1.75% as at 3 May '21, plus low risk factor (3%) giving a nominal discount rate of 4.75%, plus 0.7% for higher local government borrowing rates, i.e., 5.45%, or 2.9% real (= 1.0545/1.025, assuming average long-term inflation of 2.5%). Apportioning this 2.9% gives 1.3% for real interest and 1.6% for risk.
Cost of capital (real interest) is calculated based on the estimated written down value of assets not grant funded. (Unlike the basis of the calculation shown in Table 1, a pro-rata calculation arguably is more appropriate.) Total capital cost of the scheme net of rectification works was $5.162M. Subsidy (excl rectification works) was $4.091M, i.e., 20.7% was a capital cost to Council. Current (gross) replacement cost of scheme (following Tonkin Apr '21 revaluation) now $6.165M, written down value (carrying amount) now $5.637M. Reasonable to assume 20.7% of this latter amount is the outstanding amount Council has needed to finance. That is $1.166M ($5.637M X 20.7%) X 1.3% = $15,200.

[14]The risk factor of 1.3% (calculated as per footnote above) refers to unspecified and residual risk relating to written down value of all assets (including assets that were grant funded). WDV of assets is $5.637M (based on Tonkin's revaluation of 15 Apr '21). $5.637M X 1.6% = $90,200.

Table 3 estimates suggest that the actual 'break-even' service charge would need to be $876/connection based on current annual forecast cost estimates excluding cost of capital and $1,182/connection including cost of capital.

4. Cost of Capital

The original 2019 report (and the figures in Table 1 above) assumed a cost of capital of 4% (levied on the estimated value of capital (net of grants) that APC had currently committed in the works (ie asset value less grants and depreciation). It also assumed a further 2% levied to offset risk on the net capital value (ie asset value less depreciation but not grants). Both figures were consistent with then LGA guidance (which has not yet subsequently changed).

Recently (January 2021) the author of this report prepared a separate report for the LGA reviewing the basis of the calculation of the methodology that is applied in determining whether a council is eligible for a subsidy to construct a new CWMS scheme. The methodology essentially evaluates the likely capital and operating costs of a scheme and the revenue it could expect to generate if it charged fees comparable to the revenue SA Water would generate if an SA Water sewerage scheme existed instead. The methodology has for many years applied a real (net of inflation) discount rate of 4% in order to determine the present value of revenue and costs.

In undertaking my review for the LGA, I became aware of a SA Government Department of Treasury and Finance (DTF) publication that discussed the selection of a suitable discount rate for SA Government project analysis purposes.[15]

DTF guidance stipulates the use of a discount rate based on the current long-term bond-rate. This rate is nominal (i.e., takes into account expected future inflation rates), and needs to be adjusted for the expected inflation rate if analyses are undertaken in real values). DTF also suggest the rate be adjusted to allow for risk. CWMS projects are not risk-free. There are invariably uncertainties associated with long-term projects (future costs and possible changes in needs, ability-to-pay, technology and regulatory requirements etc).

Current nominal long-term bond rates are 1.75%. State agencies can generally borrow (directly or indirectly) through the South Australian Government Financing Authority (SAFA). SAFA rates are slightly more favourable to borrowers than rates that councils can access. The best rate available to councils is generally through the Local Government Finance Authority. This rate is currently about say 0.7% above SAFA's comparable rate. [16] Assuming a low risk factor would give a 3% (nominal) risk factor. A 2.5% long term inflation rate (the Reserve Bank of Australia aims to keep inflation within a band of 2-3% over the medium/longer-term), would suggest an appropriate real discount rate (inclusive of cost of capital and risk) of 2.9%.

It is reasonable that the cost of capital applied in determining CWMS charges be based on the above DTF guidance. This would result (currently) in a real cost of capital (for real interest) of 1.3% and a cost for risk of 1.6% (as have been applied in Table 3).

[15] See Step 3.2 (p.20 onwards) of 'Guidelines for the evaluation of public sector initiatives Part B: Investment Evaluation Process', 2014, (available at https://www.treasury.sa.gov.au/__data/assets/pdf_file/0019/36316/ti17-guidelines-part-b.pdf).
[16] As advised by LGFA CEO 27 Jan 2021.

The LGA will review its CWMS subsidy program project discount rate in light of the above information. It may also update its 'CWMS Accounting Principles - The Costing and Pricing of CWMS' document.

5. An appropriate Mallala CWMS charge

Comparing Table 1 with Table 3 shows the material impact of a reduction in the suggested rates for the cost of capital and risk ($141,000 in Table 1 compared with $105,400 in Table 3). This reduction has though been more than offset by higher operating costs ($129,300 in Table 1 compared with $302,400 in Table 3).

The APC Mallala CWMS charge was $640/connection in 2020/21. This is well below current estimated operating and cost of capital and risk costs. Council faces significant financial and operating capacity risks in the longer-term if it doesn't ensure it generates sufficient long-run revenue from CWMS charges to offset long-run costs.

Before settling an appropriate charge though it is important to be confident regarding long-run costs. APC needs to understand why reported costs have increased in recent years and whether the scheme is being operated as efficiently as possible and therefore whether costs are likely to remain at this level on average in future.

Assuming that average costs in future will be similar to those indicated in Table 3 would mean that Council should be applying a charge (or average service rate equivalent) of the order of $1,218 per connection (the $1182 as shown in Table 3 plus $36 for higher depreciation). Clearly an increase of this order is significant and its impact would likely warrant it being phased-in over several years (but perhaps say no more than 7 years).

If operating costs in future were on average more like the lower figures in Table 1, and using the lower cost of capital and risk in Table 3 that would equate to costs per connection in the order of $680pa. This is still slightly more than current actual charging levels. There seems little doubt therefore that charges are less than appropriate particularly given that depreciation is now appropriately likely to be considerably above that shown in Table 1. It is important though that Council is reasonably confident re long-run average cost predictions in determining long-run charging arrangements.

The Mallala CWMS has only been operating for about 6 years. There have been various one-off factors affecting annual operating costs in the early years. It is likely that annual average long-run costs will be able to be estimated with more confidence over the next few years.

6. Conclusions

There are many uncertainties in determining long-run annual costs of CWMS schemes. In order to strike intergenerationally fair charges and ensure ongoing capacity to maintain services and undertake asset renewal as required it is important that councils endeavour as best they can to make reliable estimates of such costs.

Annual operating costs appear to have increased significantly in recent years. These increases more than offset the lower cost of capital and allowance for risk now suggested. Every effort needs to be made to ensure the scheme operates as efficiently as possible and that costs are kept to a minimum.

Staff believe that current operating costs are the current best available indication of long-run operating costs (in total these together with forecast higher depreciation and cost of capital and risk currently equate to perhaps $1,218/connection). Costs will increase over time with inflation and potentially by more than inflation. Periodic asset revaluation will increase depreciation expenses and also the charge for cost of capital (effectively based on current net asset values). An increase in interest rates in future would also increase the cost of capital charge.

On current available evidence it therefore appears that current charging levels are well below likely long-run annual costs. It therefore seems reasonable for charges to be increased materially now with a view to ensuring that charges fully offset costs say within 7 years. That period of time will allow Council to determine with more confidence it's likely long-run annual costs of the scheme.

Adelaide Plains Council	**7.5**	**Green Organics Service in Coastal Communities**
	Department:	**Infrastructure and Environment**
	Report Author:	**General Manger Infrastructure and Environment**
Date: 15 June 2021	**Document Ref:**	**D21/25601**

OVERVIEW

Purpose

The purpose of this report is to provide the Infrastructure and Environment Committee (the Committee) information on providing a Green Organics service in the coastal communities of Middle Beach, Parham, Webb Beach and Thompson Beach.

Background

Council, at its Ordinary Meeting on 22 November 2021, resolved as follows:-

19.1 Motion without Notice

Moved Councillor Keen Seconded Councillor Lush ***2021/ 051***

"that the Chief Executive Officer investigate and bring back a report on the cost and options of providing a green waste collection in the coastal communities of Middle Beach, Parham, Webb Beach and Thompson Beach consulting with residents and ratepayers as necessary."

CARRIED

Council currently provides a fortnightly waste collection service for all three (3) streams (waste, recycling and organics) for the townships of Two Wells, Mallala and Dublin. Coastal Communities, Rural and Lewiston properties receive a fortnightly waste collection service for two (2) streams (waste and recycling), refer to the below table.

	Waste to Landfill (Red Bin)	Recyclable (Yellow Bin)	Green Organic (Green Bin)
Township (Two Wells, Mallala and Dublin)	140L	240L	240L
Rural	240L	240L	
Coastal Communities (Middle Beach, Parham, Webb Beach and Thompson Beach)	240L	240L	
Lewiston	240L	240L	

Discussion

Green Organics bins can accept garden and kitchen organic waste only this includes the following items:

- Small prunings and cuttings.
- Small branches (up to 10cm thick).
- Lawn clippings.
- Leaves.
- Weeds.
- Cut flowers.
- Pet poo (never in plastic bags).
- Shredded paper (mix the shredded paper with your garden and food waste or damp it down so it does not blow down the street when the bin is emptied).
- Paper towel and tissues.
- Pizza boxes.
- Hair.
- General food waste

The following items can not go into the Green Organics bin:

- No plastic bags or bin liners.
- No soil bags.
- No rubble, stones, rocks or bricks.
- No dirt, soil or sand.
- No large logs.
- No gardening tools or hoses.
- No plant pots or trays.
- No painted or treated timber.

Putting non-green organics into a Green Organics bin can contaminate an entire truck load. Bins are monitored by closed circuit cameras and contamination can result in additional cost for Council and divert green organics into general land fill.

Management met with Solo Resource Recovery (Solo) to discuss the coastal communities Green Organic service to determine if there were any major obstacles.

Solo stated that providing the Green Organic service to coastal communities is achievable. However, Solo strongly recommended the following occur prior to a service being offered;

- Education
- Community consultation

The above was raised due to concerns around current bin contamination. For example, a kerbside bin audit conducted revealed that 18% of waste found in recyclable (yellow lid) bins was actually general waste which can contaminate an entire truck load resulting in additional cost for Council and divert recyclables into general land fill.

Furthermore, having examined the bin presentations rates it is clear there is not an overwhelming majority 65% take up of the two (2) bin service currently offered, this may be due to the demographics of the small communities being permanent resident's vs seasonal holiday homes. Additionally, a Green Organics service may be unattractive for those coastal communities that generate very little green organics due to low maintenance coastal gardens and limited or no access to SA Water connections (Middle Beach and Thompson Beach have no SA Water mains connected)

It is unknown what tonnage is currently being placed into general waste rather than green organics bin however base on the current disposal rates there could be a potential saving in disposal.

There are a three (3) potential options for Council to consider;

<u>Option 1</u>

Council undertake an education process to address current issues of bin contamination.

<u>Option 2</u>

Council undertake public consultation in accordance with Council's Public Consultation Policy to determine the level of community support for the introduction of a mandatory (all residential properties within coastal communities) Green Organic Service within the coastal communities. Costs of service would be as follows;

- Solo administration/project management cost to coordinate bin change over
- Cost of bin change over (240 general waste to 140 general waste and new 240 green organics)

- Collection costs $2.30per collections on a fortnightly basis.
- Disposal cost of green organics that were processed other ways e.g. not place into general waste.

Option 3

Continue the fortnightly waste collection service for two (2) streams (waste and recycling).

Conclusion

This report has outlined for Committee Members information the option and cost associated with providing a Green Organics service in the coastal communities of Middle Beach, Parham, Webb Beach and Thompson Beach.

RECOMMENDATION

"that the Infrastructure and Environment Committee, having considered Item 7.5 – *Green Organics Service in Coastal Communities*, dated 15 June 2021, receives and notes the report, and in doing so recommends to Council that, in light of findings presented in this report, it instruct the Chief Executive Officer to bring back a further report to the Infrastructure and Environment Committee in relation to a potential community waste education process."

Attachments

Nil

References

Legislation

Local Government Act 1999

Council Policies/Plans

Annual Business Plan and Budget

Adelaide Plains Council	**7.6**	**Liberty Stages 5-8 – Road Naming**
	Department: **Report Author:**	**Infrastructure and Environment** **Asset Engineer**
Date: 15 June 2021	**Document Ref:**	**D21/26212**

EXECUTIVE SUMMARY

- The purpose of this report is for the Infrastructure and Environment Committee (the Committee) to consider, and make recommendation to Council in relation to, road names for stages 5 - 8 of the Liberty land division.
- The land division (312/12/2014) received planning consent in August 2015 and is being constructed in eight (8) stages. Plan of Division is presented as **Attachment 1** to this report.
- The road names for stages 1 to 4 of Liberty were approved by Council at its Ordinary Meeting on 24 February 2020.
- Stage 4 of Liberty is currently under construction and Management have received and approved Engineering forStage 5, however, no road names have not been approved beyond Stage 4.
- A request was received by Management from the applicant / landowner, with proposed road names and supporting information for stages 5 - 8 within the land division and is presented as **Attachment 2** to this report.
- Subject to further deliberation on this matter, Council may also decide to utilise the list of approved names adopted at the Ordinary Council meeting held 28 September 2020 presented as **Attachment 3** to this report.
- It is now for the Committee to consider and recommend to Council road names for the 10 new roads within stages 5-8 of the Liberty land division.

RECOMMENDATION

"that Council, having considered Item 7.6 – *Liberty Stages 5-8 – Road Naming*, dated 15 June 2021, receives and notes the report and in doing so, assigns the road names…… to the Stages 5-8 of the Liberty land division"

BUDGET IMPACT

Estimated Cost:	$0
Future ongoing operating costs:	$0
Is this Budgeted?	Not Applicable

RISK ASSESSMENT

Risks associated with this report are considered to be low and related to Council's reputation and are generally not of a financial or compliance type.

Attachments

1. Proposed Plan of Division for Liberty, Tranche 1 (Stages 1-8).
2. Applicant / landowner Road naming submission
3. Road Naming List

DETAILED REPORT

Purpose

The purpose of this report is for the Infrastructure and Environment Committee (the Committee) to consider, and make recommendation to Council in relation to, road names for stages 5 - 8 of the Liberty land division.

Background/History

The land division (312/12/2014) known as Tranche 1 of Liberty received planning consent in August 2015 and is being delivered in eight (8) separate stages from an engineering approval perspective. Plan of Division is presented as **Attachment 1** to this report.

The road names for stages 1 to 4 of Liberty were endorsed by Council at its Ordinary Meeting on 24 February 2020.

12.3 *Liberty Stages 1–4 – Road Naming*

Moved Councillor Parker Seconded Councillor Lush ***2020/ 044***

"that Council endorses resolution 2020/007 of the Infrastructure and Environment Committee and in doing so:

1. ***Acknowledges the previously approved street naming to Eden, approved under delegation in 2015***
2. ***Resolves that Meaney Drive remains the road name between the Mallala Road/Old Port Wakefield Road intersection (future roundabout) and the new Jefferson Boulevard roundabout, on the alignment of the former Port Wakefield Road***
3. ***Resolves that the section of new road between the Jefferson Boulevard roundabout and the Meaney Road roundabout be named Benjamin Franklin Boulevard***
4. ***Supports the proposed Liberty theme, in particular the 19 libertarian based street names to Stages 1-4 and***
5. ***Instructs the Chief Executive Officer to develop a list of appropriate road names to be provided to the developer for Stage 5 and beyond."***

CARRIED

Additionally, Council, at its Ordinary Meeting on 24 February 2020, resolved as follows:

12.3

Moved Councillor Panella Seconded Councillor Boon ***2020/ 045***

"that Council endorses resolution 2020/008 of the Infrastructure and Environment Committee and in doing so instructs the Chief Executive Officer develop a list of appropriate road names to be utilised across all developments within the Council region in accordance with Council's Road and Public Places Naming Policy and in particular clause 4.2.2."

CARRIED

Following the above resolution 2020/045, a report was presented to Council with a proposed "Road Naming List" at its Ordinary Meeting on 28 September with the "Road Naming List" endorsed 2020/302.

Discussion

Stage 4 of Liberty is currently under construction and Management have received and approved Engineering for stage 5, however, no road names have not been approved beyond Stage 4.

A request was received by Management from the applicant / landowner, with proposed road names and supporting information for stages 5 - 8 within the land division and is presented as **Attachment 2** to this report. Synonymous with the name for the large land division known as Liberty, Hickinbotham have proposed that the new roads within the estate be named after well-known libertarians.

Subject to further deliberation on this matter, Council may also decide to utilise the list of approved names adopted at the Ordinary Council meeting held 28 September 2020 presented as **Attachment 3** to this report.

Conclusion

It is now for the Committee to consider and recommend to Council road names for the 10 new roads within stages 5 - 8 of the Liberty land division.

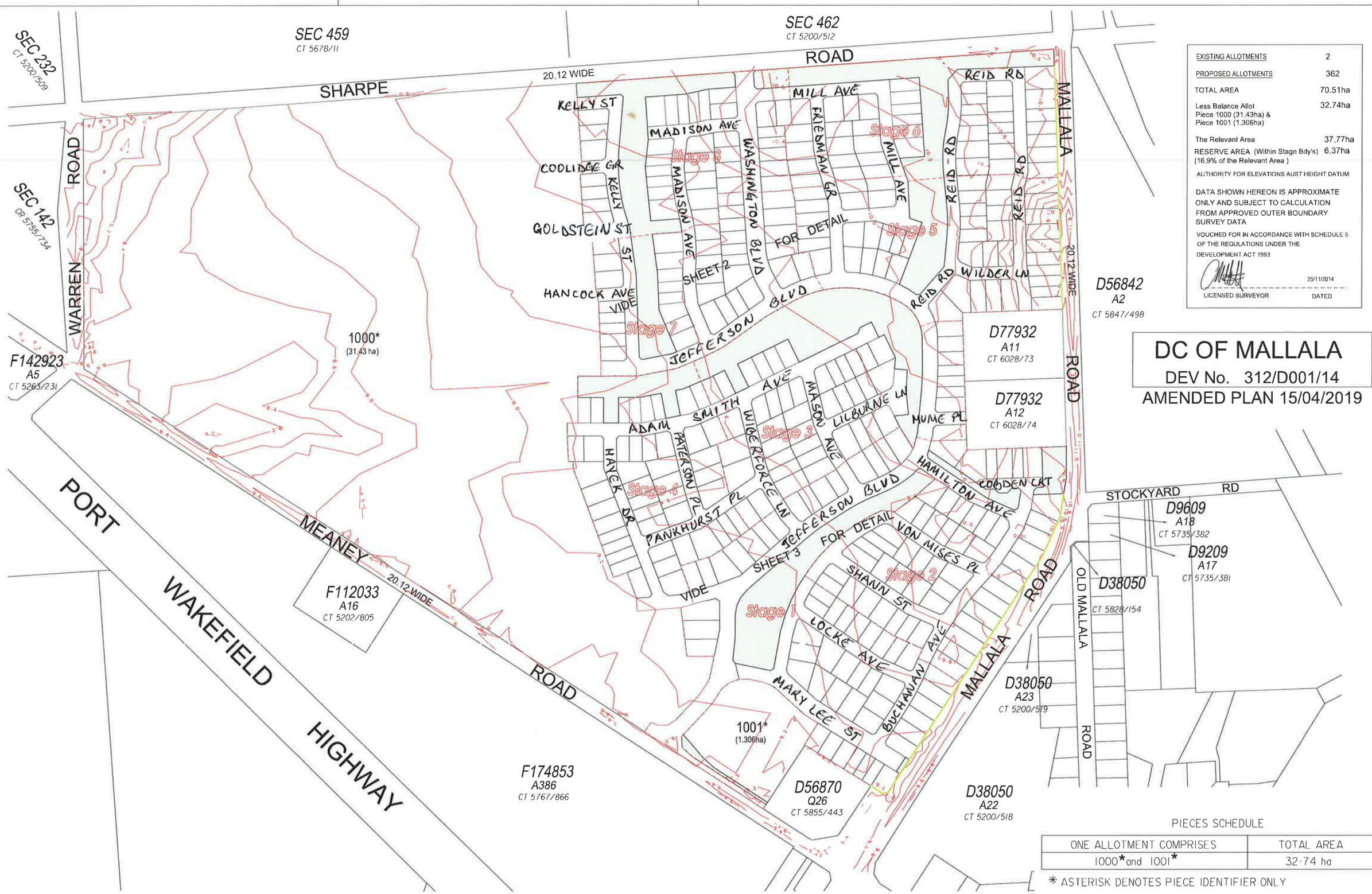
References

Legislation

Local Government Act 1999

Council Policies/Plans

Road and Public Places Naming Policy



EXISTING ALLOTMENTS	2
PROPOSED ALLOTMENTS	362
TOTAL AREA	70.51ha
Less Balance Allot Piece 1000 (31.43ha) & Piece 1001 (1.306ha)	32.74ha
The Relevant Area	37.77ha
RESERVE AREA (Within Stage Bdy's) (16.9% of the Relevant Area)	6.37ha

AUTHORITY FOR ELEVATIONS AUST HEIGHT DATUM

DATA SHOWN HEREON IS APPROXIMATE ONLY AND SUBJECT TO CALCULATION FROM APPROVED OUTER BOUNDARY SURVEY DATA

VOUCHED FOR IN ACCORDANCE WITH SCHEDULE 5 OF THE REGULATIONS UNDER THE DEVELOPMENT ACT 1993

LICENSED SURVEYOR — DATED 25/11/2014

DC OF MALLALA

DEV No. 312/D001/14

AMENDED PLAN 15/04/2019

PIECES SCHEDULE

ONE ALLOTMENT COMPRISES	TOTAL AREA
1000* and 1001*	32.74 ha

* ASTERISK DENOTES PIECE IDENTIFIER ONLY

FYFE
HEAD OFFICE
Level 1, 124 South Terrace
Adelaide SA 5000
GPO Box 2450
Adelaide SA 5001
www.fyfe.com.au
Telephone 61 8 8201 9500
Facsimile 61 8 8201 9650

PLAN DETAILS
COUNCIL : DC OF MALLALA
MAP SHEET :
CT REFS : CT 5855/444, CT 6028/72

SCALE 1: 2000 (0, 50, 100, 150, 200)

LEVEL DATUM : AMG — DATA FILE/S :
LEVEL AUTHORITY : — INSTRUCTION : 18866-1-28
CO-ORD DATUM : MGA

NO.	REVISION	STAFF	CHECK	DATE
16	UPDATE LOTS 72,73,83,84,86 & 87	AGM	JJB	20/03/18
15A	ROAD NAMES ADDED	JJB	FYF	24/06/15
15	RELOCATE ROAD U AND AMEND ALLOTS 90-95	JJB	FYF	16/06/15
14	REVISED ALLOTS 275-290 & ADD 361-363	JJB	FYF	21/03/15
19	REMOVE LOTS 82-85 AND REVISE RES 2008 - 2009	AGM	JJB	22/11/18

HICKINBOTHAM GROUP
PROPOSED LAND DIVISION
LIBERTY
ALLOTMENT 28 in D56870 & 10 in D77932
HUNDRED OF PORT GAWLER
TWO WELLS

DRAWING 18866P09-r19
DATE 15/04/2019
SHEET 1 OF 4
REV. 19
PROPOSED LAND DIVISION

ORIGINAL SIZE A1

Land Australia
A Hickinbotham Group Company

25 North Terrace, Hackney
South Australia 5069

PO Box 63, Stepney
South Australia 5069

Telephone 1300 554 504

www.landaustralia.com.au
info@landaustralia.com.au

4 June, 2021

Mike Ravno
Asset Engineer
Adelaide Plains Council
PO Box 18
Mallala SA 5502

Dear Mike,

Liberty Two Wells Residential Development – DA 312/D001/14

I refer to development approval for the Liberty Two Wells residential land division, development no. DA312/D001/14.

This development incorporates the creation of new public roads on the approved plan of division ref. 18866P09-r19 (enclosed).

Previously Council have endorsed proposed road naming for stages 1-4 inclusive. We are requesting endorsement for proposed road naming for stages 5-8, a copy of the proposed road names are enclosed for reference.

Under section 219 of the *Local Government Act 1999* a Council has the power to and must assign a name to a public road created by land division.

We respectfully request Council consider our request to name the new publics roads being created as part of this land division per the enclosed plan and below list.

We note that the name being proposed is;

- Unique within the suburb of Two Wells.
- Are thematic in accordance with the theming of the "Liberty" residential estate.
- The road will be ultimately vested under the care and control of the Adelaide Plains Council.
- Not a duplicate or similar sounding to other road names within the suburb or locality.
- Meets communication requirements for service providers, emergency services and travelling public.
- Considered to have an appropriate road type suffix.

Stage	Status	Road Name	Reference	Background
1	Approved	Mary Lee Street	Mary Lee (nee Walsh)	Irish-Australian suffragist and social reformer in South Australia.
1	Approved	Buchanan Road	James M Buchanan	American economist known for his work on public choice theory for which he received the Nobel Memorial Prize in Economic Sciences

1	Approved	Locke Avenue	John Locke	English philosopher and physician, widely regarded as one of the most influential of Enlightenment thinkers and commonly known as the "Father of Liberalism".
1	Approved	Steve Jobs Street	Steve Jobs	Jobs is widely recognized as a pioneer of the personal computer revolution of the 1970s and 1980s.
1	Approved	Bastiat Avenue	Frederic Bastiat	French economist, writer and a prominent member of the French Liberal School.
1	Approved	Jefferson Boulevard	Thomas Jefferson	One of the most well-known founding fathers, Thomas Jefferson was the principal author of the Declaration of Independence.
2	Approved	Shann Street	Edward Shann	Australian economist and historian. At a time when Australia's dominant economic philosophy favoured protectionist tariffs, Shann championed a more liberal approach.
2	Approved	Von Mises Place	Ludwig Von Mises	Austrian School economist, historian, logician, and sociologist. Mises wrote and lectured extensively on the societal contributions of classical liberalism. He is best known for his work on praxeology, a study of human choice and action.
2	Approved	Hamilton Avenue	Alexander Hamilton	American politician, legal scholar, military commander, lawyer, banker, and economist.
2	Approved	Cobden Court	Richard Cobden	English manufacturer, radical and Liberal MP, associated with two major free trade campaigns, the Anti-Corn Law League and the Cobden–Chevalier Treaty.
3	Approved	Pankhurst Place	Sylvia Pankhurst	English campaigner for the suffrage and suffragette movement.
3	Approved	Wiberforce Lane	William Wilberforce	British politician, philanthropist, and a leader of the movement to abolish the slave trade.
3	Approved	Lilburne Lane	John Lilburne	English political leveller before, during and after the English Civil Wars 1642–1650. He coined the term "freeborn rights", defining them as rights with which every human being is born, as opposed to rights bestowed by government or human law.
3	Approved	Adam Smith Avenue	Adam Smith	Adam Smith was a Scottish political philosopher and economist, considered one of the forefathers of classical economics and a pioneer of the study of political economy.
3	Approved	Mason Avenue	George Mason	American politician who authored the Virginia Declaration of Rights that later influenced the future Bill of Rights of the United States Constitution.
3	Approved	Hume Place	David Hume	Scottish philosopher, was one of the most highly regarded thinkers who wrote in the English language.
4	Approved	Hayek Drive	Friedrich Hayek	Austrian-British economist and philosopher who is best known for his defence of classical liberalism. Hayek shared the 1974 Nobel Memorial Prize in Economic Sciences with Gunnar Myrdal for his work on economics.

4	Approved	Paterson Place	Isabel Paterson	Canadian-American journalist, novelist, political philosopher, and a leading literary and cultural critic of her day.
5	Proposed	Reid Road	Thomas Reid	Scottish philospoher. Reid held an incompatibilist or libertarian notion of freedom, holding that we are capable of free actions of which we are the cause, and for which we are morally appraisable.
5	Proposed	Wilder Lane	Rose Wilder Lane	American journalist, travel writer, novelist, political theorist. Lane is noted as one of the founders of the American libertarian movement.
5	Proposed	Mill Avenue	John Stuart Mill	An English philosopher. Heavily defended individual rights and freedom. Dubbed "the most influential English-speaking philosopher of the nineteenth century".
5	Proposed	Friedman Grove	Milton Friedman	American economist and statistician who received the 1976 Nobel Memorial Prize in Economic Sciences for his research on consumption analysis, monetary history and theory and the complexity of stabilization policy.
7	Proposed	Kelly Street	Gertrude Kelly	Irish suffragette, labour and social activist, Irish independence supporter, and anarchist.
7	Proposed	Washington Boulevard	George Washington	American political leader, military general, statesman, and Founding Father of the United States, who served as the First President of the United States from 1789 to 1797.
8	Proposed	Hancock Avenue	John Hancock	American merchant, statesman, and prominent Patriot of the American Revolution.
8	Proposed	Goldstein Street	Vida Goldstein	Australian suffragette and social reformer. She was one of four female candidates at the 1903 federal election, the first at which women were eligible to stand.
8	Proposed	Coolidge Grove	Calvin Coolidge	American lawyer and politician who served as the 30th president of the United States from 1923 to 1929.

We understand our requirements in constructing this sub-division the appropriate road name signage consistent with the approved road name and in accordance with the relevant Australian Standards (AS1742.5-1997) will be erected.

We look forward to Council's response to our response to our request in due course.

Yours faithfully,
Hickinbotham Group

DAVID LUU
Land Development Manager

Enc. Fyfe Plan 18866P09-r19

Name	Road Name Suggestion	Location	Reason	Classification	Comment
Margaret Tiller	Court	Mallala	contribution to region	Local Mallala	
Tucker	Court	Mallala	contribution to region	Local Mallala	
Griffiths		Mallala	contribution to region	Local Mallala	
Algar		Mallala	contribution to region	Local Mallala	
Sowerby		Mallala	contribution to region	Local Mallala	
Donlan	Place	Mallala	contribution to region	Local Mallala	
Kakoshke	Drive	Mallala	contribution to region	Local Mallala	
Dunstan	Place	Mallala	contribution to region	Local Mallala	
Moody		Mallala	early settler	Local Mallala	
East		mallala	contribution to the region	Local Mallala	
Huxtable	Road	Mallala	contribution to region	Local Mallala	
Clem Smith	Drive	Mallala	contribution to motorsport in region	Local Mallala	
Soerensen		Mallala	contribution to region	Local Mallala	
Pontt		Mallala	District Clerk DCM 1962-1984	Local Mallala	Pontt Road, Lewiston
Dunlop		Mallala	District Clerk DCM 1984-2007	Local Mallala	Dunlop Boulevard, Lewiston
Pitt		Mallala	District Clerk DCM 1954-1962	Local Mallala	
Jenkin		Lewiston	early settler in Two Wells - all children attended Lewiston School	Local Lewiston	
Bursey		Lewiston	name of Jenkin home	Local Lewiston	
Puro		Lewiston	contribution to TWEPC	Local Lewiston	
Wake		Lewiston	contribution to the region (specifically landcare)	Local Lewiston	
Fielke		Lewiston	contribution to landcare group	Local Lewiston	
Hicks		Two Wells	early settler in Two Wells	Local Two Wells	
Arnold		Two Wells	early settler in Two Wells	Local Two Wells	
Jenkin		Lewiston	early settler in Two Wells - all children attended Lewiston School	Local Two Wells	
Brumby		Two Wells	first lamplighter in town of two wells (est. 1910)	Local Two Wells	
Loller		Two Wells	one of the last councillors of Pt Gawler Council before amalgamation	Local Two Wells	
Murrell		Two Wells	contribution to region	Local Two Wells	

Bet Williams	drive	Two Wells	first female elected to Council, local historian, contribution to the region	Local Two Wells	
Audrey Hart	Way	Two Wells	contribution to region	Local Two Wells	
Arbon		Two Wells	contribution to region	Local Two Wells	
Baker		Two Wells	contribution to region	Local Two Wells	
Barker		Two Wells	contribution to region	Local Two Wells	Bakers Road, Lewiston
Belcher		Two Wells	contribution to region	Local Two Wells	
Bilney		Two Wells	contribution to region	Local Two Wells	
Bobridge		Two Wells	contribution to region	Local Two Wells	
Brechin	road	Two Wells	contribution to region	Local Two Wells	
Burne	Street	Two Wells	contribution to region	Local Two Wells	
Clements	drive	Two Wells	contribution to region	Local Two Wells	Clements Road, Lewiston
Corston	Drive	Two Wells	contribution to region	Local Two Wells	
Daniele	road	Two Wells	contribution to region	Local Two Wells	
Dimasi		Two Wells	contribution to region	Local Two Wells	
Dyer	Street	Two Wells	contribution to region	Local Two Wells	
Harris	road	Two Wells	ran general store (now raine & horne building)	Local Two Wells	
Henwood	Drive	Two Wells	contribution to region	Local Two Wells	
Howell	Street	Two Wells	contribution to region	Local Two Wells	
Kelly	road	Two Wells	contribution to region	Local Two Wells	
Kennewell	Road	Two Wells	contribution to region	Local Two Wells	
Kermeen	Street	Two Wells	contribution to region	Local Two Wells	
Lange		Two Wells	contribution to region	Local Two Wells	
Lamont	Road	Two Wells	contribution to region	Local Two Wells	
Milton	court	Two Wells	contribution to region	Local Two Wells	
Launer		Two Wells	contribution to region	Local Two Wells	
Pellizzari		Two Wells	contribution to region	Local Two Wells	
Pethick	Court	Two Wells	contribution to region	Local Two Wells	
Prior	road	Two Wells	contribution to region	Local Two Wells	
Seccafien		Two Wells	contribution to region	Local Two Wells	
Sims	road	Two Wells	contribution to region	Local Two Wells	
Spurling	road	Two Wells	contribution to region	Local Two Wells	
Stodart	road	Two Wells	contribution to region	Local Two Wells	
Templer	Road	Two Wells	5 generations in Two Wells	includes WW1 soldier	
Wilkinson	Avenue	Two Wells	contribution to region	Local Two Wells	
Wright (Pat & Arch)	Street	Two Wells	contribution to region	Local Two Wells	
Walden (Lynette)	Avenue	Two Wells	contribution to region	Local Two Wells	

Invermay Lodge	Road	Two Wells	First hotel in TW - Invermay Lodge - formerly located on Sharpes property (recenlty demolished)	Local Two Wells	
Wooltana	Avenue	Two Wells	former fertiliser business located on (now) Meaney Drive in Two Wells. Now private residence	Local Two Wells	
Bartlett		Mallala	WW1	Soldiers Mallala	Bartlett Street, Mallala
Buttle		Mallala	WW1	Soldiers Mallala	
Cope		Mallala	WW1	Soldiers Mallala	Received Military Medal - (listed on TW War Memorial) Place of birth and address Mallala
Cullen		Mallala	WW1	Soldiers Mallala	
Earl		Mallala	WW1	Soldiers Mallala	Earl Road, Mallala
Lindsay		Mallala	WW1	Soldiers Mallala	Lindsay Street, Mallala
Nairne		Mallala	WW1	Soldiers Mallala	Nairne Road, Grace Plains
Roberts		Mallala	WW1	Soldiers Mallala	Roberts Road, Lewiston
Shimmin		Mallala	WW1	Soldiers Mallala	
Theobald		Mallala	WW1	Soldiers Mallala	
BAKER Dorothy Emily (female)		Dublin		Soldiers HD Dublin and Lower Light	
BAKER Henry Andrew		Dublin		Soldiers HD Dublin and Lower Light	
BAKER Kelly Charles		Dublin		Soldiers HD Dublin and Lower Light	
BEER Ernest William		Dublin		Soldiers HD Dublin and Lower Light	
BLYTHMAN William Ernest		Dublin		Soldiers HD Dublin and Lower Light	
BUTTLE Samuel Leonard		Dublin		Soldiers HD Dublin and Lower Light	
CHRISTIANSON Louis William		Dublin		Soldiers HD Dublin and Lower Light	
DODD Walter Ernest Wilfred		Dublin		Soldiers HD Dublin and Lower Light	
DRISCOLL Leslie George		Dublin		Soldiers HD Dublin and Lower Light	
HABNER Harold Frederick		Dublin		Soldiers HD Dublin and Lower Light	
HEPWORTH Thomas		Dublin		Soldiers HD Dublin and Lower Light	
ILETT Benjamin		Dublin		Soldiers HD Dublin and Lower Light	

LONG Cecil Charles		Dublin		Soldiers HD Dublin and Lower Light	
MANUEL Stanley Roy		Dublin		Soldiers HD Dublin and Lower Light	
MICHAEL Thomas Francis		Dublin		Soldiers HD Dublin and Lower Light	
PETTITT Percival Arthur Charles		Dublin		Soldiers HD Dublin and Lower Light	
PRICE Harry Albert Enos		Dublin		Soldiers HD Dublin and Lower Light	
REID Thomas Francis		Dublin		Soldiers HD Dublin and Lower Light	
RICHARDSON John William		Dublin		Soldiers HD Dublin and Lower Light	
RICHARDSON Ovine		Dublin		Soldiers HD Dublin and Lower Light	
ROBERTS Errol Edward Vivian		Dublin		Soldiers HD Dublin and Lower Light	
ROBERTS Hugh David		Dublin		Soldiers HD Dublin and Lower Light	
ROBERTS Robert James		Dublin		Soldiers HD Dublin and Lower Light	
TAINSH Carlisle Clinton		Dublin		Soldiers HD Dublin and Lower Light	
TAYLOR Mont Alexander		Dublin		Soldiers HD Dublin and Lower Light	
WILLIAMS Charles John		Dublin		Soldiers HD Dublin and Lower Light	
WILSON Samuel		Dublin		Soldiers HD Dublin and Lower Light	
Pengilly		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Baker		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Manual		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Jones		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Cornford		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Penrose		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Earl		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Cornish		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Briggs		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
McArdle		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Rapko		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Rundle		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Burt		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Lyons		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	
Jones		Wild Horse Plains	WW1	Soldiers Wild Horse Plains	

Zanker		Wild Horse Plains	WW2	Soldiers Wild Horse Plains	
Adams		Wild Horse Plains	WW2	Soldiers Wild Horse Plains	
Carter		Wild Horse Plains	WW2	Soldiers Wild Horse Plains	
Griffiths		Wild Horse Plains	WW2	Soldiers Wild Horse Plains	
Nicholls		Two Wells	Boer	Soldiers Two Wells	
Beames			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Beauchamp			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) Local Baker
Boulter			WW1	Soldiers Two Wells	Place of birth Two Wells
Burdon			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) Address of joining listed as Two Wells (from Islington)
Cavanagh			WW1	Soldiers Two Wells	
Cope			WW1	Soldiers Two Wells	Mallala (listed on TW War Memorial) Place of birth and address Mallala - joined at Two Wells
Cordon			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) Farmer from Pt Gawler
Cowan			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) Farmer from Two Wells
Daves			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Dawkins			WW1	Soldiers Two Wells	
Day			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) from Reeves Plains
Fischer			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Foster			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) Enlisted at Two Wells
Frost x 3 brothers			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Gameau			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Gill			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) awarded Military Medal
Halstead			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Hayden (Haydon)			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) from Kangaroo Flat
Henwood			WW1	Soldiers Two Wells	
Houston			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Ince			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) KIA Gallipoli

Jantke			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) from Nuriootpa
Jenkin			WW1	Soldiers Two Wells	Farmer from Pt Gawler
Johnston			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) Minister not from area - joined at Two Wells
Judd			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) from Lewiston
Kingdon			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) Farm Hand from Two Wells
McCord			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Matheson			WW1	Soldiers Two Wells	Place of birth Two Wells
Moody			WW1	Soldiers Two Wells	Farmer - Two Wells NOK Mallala
Murrell			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial) (address when joining)
Nicholls			WW1	Soldiers Two Wells	Place of birth Two Wells
Pederick			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Phillis			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Pratt			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Radford			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Ray			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Ray			WW1	Soldiers Two Wells	
Ritchie			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Rone			WW1	Soldiers Two Wells	
Rossiter			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Sanford			WW1	Soldiers Two Wells	
Secomb			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Snell			WW1	Soldiers Two Wells	
Taylor			WW1	Soldiers Two Wells	
Temby			WW1	Soldiers Two Wells	
Templer			WW1	Soldiers Two Wells	
Tidmarsh			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Verner			WW1	Soldiers Two Wells	
Vokes			WW1	Soldiers Two Wells	
Wait			WW1	Soldiers Two Wells	
Wasley			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Weatherspoon			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Westland			WW1	Soldiers Two Wells	Two Wells (listed on War Memorial)
Williamson			WW1	Soldiers Two Wells	

Woods - James Park			WW1	Soldiers Two Wells	Two Wells - VC Cross winner WW1
Young			WW1	Soldiers Two Wells	
Adams			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Applebee			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Baker			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Beaton			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Bennett			WW2	Soldiers Two Wells	
Blackham			WW2	Soldiers Two Wells	
Bone			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Brooks			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Carruthers			WW2	Soldiers Two Wells	
Chruches			WW2	Soldiers Two Wells	
Clutterham			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Cordon			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Dawkins			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Dunstan			WW2	Soldiers Two Wells	Mallala
Finch			WW2	Soldiers Two Wells	
Good			WW2	Soldiers Two Wells	
Gordon			WW2	Soldiers Two Wells	
Halliday			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Halstead			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Hamden			WW2	Soldiers Two Wells	
Hart			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Hart			WW2	Soldiers Two Wells	
Hayman			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Henwood			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Hicks			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Hill			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Houston			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Howell			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Innes			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Jarman			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Jarmyn			WW2	Soldiers Two Wells	
Johnson			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Keating			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Kenner			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Lemmey			WW2	Soldiers Two Wells	Two Wells (listed on War Memorial)
Nugent			Malaya	Soldiers Two Wells	
Oliver			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)

Porter			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)
Pratt			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)
Rowe			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)
Rowe			Malaya	Soldiers Two Wells	
Sandford			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)
Simpkins			Malaya	Soldiers Two Wells	
Simpkins			Malaya	Soldiers Two Wells	
Scott			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)
Templer			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)
Ware			Malaya	Soldiers Two Wells	
Johns			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)
Wheller			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)
Williams			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)
Wright			Malaya	Soldiers Two Wells	Two Wells (listed on War Memorial)
Wylie			Malaya	Soldiers Two Wells	
Badman			Vietnam	Soldiers Two Wells	Two Wells (listed on War Memorial)
Gameau			Vietnam	Soldiers Two Wells	Two Wells (listed on War Memorial)
Hart			Vietnam	Soldiers Two Wells	Two Wells (listed on War Memorial)
Prior			Vietnam	Soldiers Two Wells	Two Wells (listed on War Memorial)
Wendland			Vietnam	Soldiers Two Wells	Two Wells (listed on War Memorial)
Temby		Two Wells	1872-73	Chairmen Pt Gawler	Temby Road, Two wells
Cowan - TC		Two Wells	1873-75	Chairmen Pt Gawler	Cowan Road, Two Wells
Day		Two Wells	1875-77	Chairmen Pt Gawler	Day Road, Reeves Plains
Temby		Two Wells	1877-81	Chairmen Pt Gawler	Temby Road, Two wells
Gilks		Two Wells	1881-84	Chairmen Pt Gawler	Gilks Road, Lewiston
H Secomb		Two Wells	1884-87 & 1888-90	Chairmen Pt Gawler	Secomb Road, Two Wells
Condon		Two Wells	1887-88	Chairmen Pt Gawler	Condon Road, Two Wells
Hatcher		Two Wells	1890-92	Chairmen Pt Gawler	Hatcher Road Ward Belt (not in APC Council region)
Cowan - WB		Two Wells	1892-98	Chairmen Pt Gawler	Cowan Road, Two Wells
Wilson		Two Wells	1898-1900 & 1903-13	Chairmen Pt Gawler	Wilson Road, Two Wells
Wasley - WH		Two Wells	1900-01	Chairmen Pt Gawler	Wasley Road, Two Wells
McCord		Two Wells	1901-02 (3 months only)	Chairmen Pt Gawler	McCord Road, Two Wells
Cowan - WB		Two Wells	1901-03	Chairmen Pt Gawler	Cowan Road, Two Wells
Wilson - HW		Two Wells	1903-13	Chairmen Pt Gawler	Wilson Road, Two Wells
Wasley - HJ		Two Wells	1913-15	Chairmen Pt Gawler	Wasley Road, TW & Mallala
Rowe		Two Wells	1915-17	Chairmen Pt Gawler	Rowe Crescent, Two Wells
Day		Two Wells	1917-25	Chairmen Pt Gawler	Day Road, Reeves Plains
Wasley - SA		Two Wells	1925-27	Chairmen Pt Gawler	Wasley Road, TW & Mallala

Brooks		Two Wells	1927-29	Chairmen Pt Gawler	Brooks Road, Two Wells
Green		Two Wells	1929-31	Chairmen Pt Gawler	EH Green was Chairman of Pt Gawler Council from 1929-31. source Life around the Light - 1985)
Loller		Two Wells	1931-33	Chairmen Pt Gawler	Bert Loller was a district councillor for more than 14 years. He took office in July 1931 and served the Pt. Gawler Council for 4 years, and was chairman from 1931-33. When Mallala and Two Wells amalgamated he was elected to office again and continued as a councillor from 1936-46 (source Life around the Light - 1985)
Wilson - AA		Two Wells	1933-35	Chairmen Pt Gawler	Wilson Street, Two Wells
Loveday		Dublin	chairman 1875-76	Chairmen Dublin	Loveday Street, Windsor
Lindsay		Dublin	chairman 1876-77 & 1882-84	Chairmen Dublin	Lindsay Street, Mallala
Porter		Dublin	chairman 1877-80	Chairmen Dublin	Porter Road, Korunye
Simmons		Dublin	chairman 1880-82	Chairmen Dublin	
White		Dublin	chairman 1884-87	Chairmen Dublin	
Diment		Dublin	chairman 1887-88	Chairmen Dublin	Diment Road, Windsor
Chapman		Dublin	chairman 1888-90	Chairmen Dublin	Chapman Street, Two Wells
Baker		Dublin	chairman 1890-92 & 94-98 & 99-1907	Chairmen Dublin	Baker Road, Two Wells
Parker		Dublin	chairman 1898-99	Chairmen Dublin	Parker Road, Long Plains
Bartlett		Mallala	1874	Chairmen Grace	Bartlett Street, Mallala
Moody		Mallala	1874-75	Chairmen Grace	
McHugh		Mallala	1875-76	Chairmen Grace	
Marshman		Mallala	1876-79 & 1880-85 & 85-86 & 1894-1913	Chairmen Grace	Marshman Street, Mallala
Lindsay		Mallala	1879-80	Chairmen Grace	Lindsay Street, Mallala
Jeffries		Mallala	1882-83	Chairmen Grace	
Forbes		Mallala	1883-85	Chairmen Grace	
Butler		Mallala	1886-94	Chairmen Grace	Butler Street, Mallala
Nairne		Mallala	1913-20	Chairmen Grace	Nairne Road, Grace Plains
Brady		Mallala	1929-35	Chairmen Grace	Brady Road, Barabba
Albert Jacka		Adelaide Plains Council		Liberalists	
Albert Namatjira		Adelaide Plains Council		Liberalists	
Banjo Paterson		Adelaide Plains Council		Liberalists	
Barry Humphries		Adelaide Plains Council		Liberalists	
Barry Marshall		Adelaide Plains Council		Liberalists	

Bart Cummings		Adelaide Plains Council		Liberalists	
Betty Cuthbert		Adelaide Plains Council		Liberalists	
Bob Hawke		Adelaide Plains Council		Liberalists	
Bruce Kingsbury		Adelaide Plains Council		Liberalists	
Caroline Chisholm		Adelaide Plains Council		Liberalists	
Dame Nellie Melba		Adelaide Plains Council		Liberalists	
Ddame Enid Lyons		Adelaide Plains Council		Liberalists	
Dennis Lillee		Adelaide Plains Council		Liberalists	
Douglas Mawson		Adelaide Plains Council		Liberalists	
Eddie Mabo		Adelaide Plains Council		Liberalists	
Edith Cowan		Adelaide Plains Council		Liberalists	
Edward Dunlop		Adelaide Plains Council		Liberalists	
Edward Hargraves		Adelaide Plains Council		Liberalists	
Elizabeth Kenny		Adelaide Plains Council		Liberalists	
Errol Flynn		Adelaide Plains Council		Liberalists	
Fred Hollows		Adelaide Plains Council		Liberalists	
Greg Norman		Adelaide Plains Council		Liberalists	
Henry Parkes		Adelaide Plains Council		Liberalists	
John Flynn		Adelaide Plains Council		Liberalists	
John Howard		Adelaide Plains Council		Liberalists	
John Monash		Adelaide Plains Council		Liberalists	
Lionel Rose		Adelaide Plains Council		Liberalists	
Marcus Oliphant		Adelaide Plains Council		Liberalists	
Margaret Court		Adelaide Plains Council		Liberalists	
Reg Grundy		Adelaide Plains Council		Liberalists	
Robert Menzies		Adelaide Plains Council		Liberalists	
Rod Laver		Adelaide Plains Council		Liberalists	
Rupert Murdoch		Adelaide Plains Council		Liberalists	
Vincent Lingiari		Adelaide Plains Council		Liberalists	
Adrian Pagan		Adelaide Plains Council		Liberalists	
Alexander Downer		Adelaide Plains Council		Liberalists	
Alfred Winslow Jones		Adelaide Plains Council		Liberalists	
Alison Preston		Adelaide Plains Council		Liberalists	
Ameer Ali		Adelaide Plains Council		Liberalists	
Andrew Clausen		Adelaide Plains Council		Liberalists	
Andrew Leigh		Adelaide Plains Council		Liberalists	
Anthony Owen		Adelaide Plains Council		Liberalists	
Bernie Fraser		Adelaide Plains Council		Liberalists	
Bill Mitchell		Adelaide Plains Council		Liberalists	

Bill Wentworth		Adelaide Plains Council		Liberalists	
Bob Johnston		Adelaide Plains Council		Liberalists	
Bruce Chapman		Adelaide Plains Council		Liberalists	
Cameron Hepburn		Adelaide Plains Council		Liberalists	
Charles Denton Kemp		Adelaide Plains Council		Liberalists	
Christopher Joye		Adelaide Plains Council		Liberalists	
Clem Tisdell		Adelaide Plains Council		Liberalists	
Cliv Hamilton		Adelaide Plains Council		Liberalists	
Colin Barrnett		Adelaide Plains Council		Liberalists	
Colin Cameron		Adelaide Plains Council		Liberalists	
Craig James		Adelaide Plains Council		Liberalists	
David Andrews		Adelaide Plains Council		Liberalists	
David Griffiths		Adelaide Plains Council		Liberalists	
David Kalisch		Adelaide Plains Council		Liberalists	
David McMullen		Adelaide Plains Council		Liberalists	
David Throsby		Adelaide Plains Council		Liberalists	
David Vines		Adelaide Plains Council		Liberalists	
Deborah Schofield		Adelaide Plains Council		Liberalists	
Des Moore		Adelaide Plains Council		Liberalists	
Donald Cochrane		Adelaide Plains Council		Liberalists	
Donald Lamberton		Adelaide Plains Council		Liberalists	
Donald Markwell		Adelaide Plains Council		Liberalists	
Douglas Copland		Adelaide Plains Council		Liberalists	
Duncan Ironmonger		Adelaide Plains Council		Liberalists	
Edward Lawrence Wheeleright		Adelaide Plains Council		Liberalists	
Edward Ronald Walker		Adelaide Plains Council		Liberalists	
Edward Shann		Adelaide Plains Council		Liberalists	
Eric Jones		Adelaide Plains Council		Liberalists	
Frank Clarke		Adelaide Plains Council		Liberalists	
Frank Milne		Adelaide Plains Council		Liberalists	
Frank Stilwell		Adelaide Plains Council		Liberalists	
Fred Gruen		Adelaide Plains Council		Liberalists	
Gary P. Sampson		Adelaide Plains Council		Liberalists	
Gavan McDonell		Adelaide Plains Council		Liberalists	
Geoff Raby		Adelaide Plains Council		Liberalists	
Geoffrey Harcourt		Adelaide Plains Council		Liberalists	
Glenn Stevens		Adelaide Plains Council		Liberalists	

Graeme Snooks		Adelaide Plains Council		Liberalists	
Graham Somerville		Adelaide Plains Council		Liberalists	
H. C. Coombs		Adelaide Plains Council		Liberalists	
H. M. Knight		Adelaide Plains Council		Liberalists	
Harry Edwards		Adelaide Plains Council		Liberalists	
Heinz Arndt		Adelaide Plains Council		Liberalists	
Helen Hughes		Adelaide Plains Council		Liberalists	
Henry Ergas		Adelaide Plains Council		Liberalists	
Hermann Black		Adelaide Plains Council		Liberalists	
Hieu Van Le		Adelaide Plains Council		Liberalists	
Ian Harper		Adelaide Plains Council		Liberalists	
Ian Macfarlane		Adelaide Plains Council		Liberalists	
J. G. Phillips		Adelaide Plains Council		Liberalists	
James		Adelaide Plains Council		Liberalists	
James Wolfensohn		Adelaide Plains Council		Liberalists	
Jason Potts		Adelaide Plains Council		Liberalists	
Jim Cairns		Adelaide Plains Council		Liberalists	
Jock Anderson		Adelaide Plains Council		Liberalists	
Johb Deeble		Adelaide Plains Council		Liberalists	
John Bilson		Adelaide Plains Council		Liberalists	
John Crawford		Adelaide Plains Council		Liberalists	
John Cunningham Wood		Adelaide Plains Council		Liberalists	
John Guiggin		Adelaide Plains Council		Liberalists	
John Hewson		Adelaide Plains Council		Liberalists	
John Rickard		Adelaide Plains Council		Liberalists	
Jonathan Epstein		Adelaide Plains Council		Liberalists	
Joshua Gans		Adelaide Plains Council		Liberalists	
Judith Sloan		Adelaide Plains Council		Liberalists	
Julian Alston		Adelaide Plains Council		Liberalists	
Justin Wolfers		Adelaide Plains Council		Liberalists	
K. S. Isles		Adelaide Plains Council		Liberalists	
Kim Hawtrey		Adelaide Plains Council		Liberalists	
Kym Anderson		Adelaide Plains Council		Liberalists	
Lee J. Slavutin		Adelaide Plains Council		Liberalists	
Les Bury		Adelaide Plains Council		Liberalists	
Leslie Melville		Adelaide Plains Council		Liberalists	
Lyndhurst Giblin		Adelaide Plains Council		Liberalists	
Margaret Gardner		Adelaide Plains Council		Liberalists	

Martin Ravallion		Adelaide Plains Council		Liberalists	
Matt Canavan		Adelaide Plains Council		Liberalists	
Maureen Brunt		Adelaide Plains Council		Liberalists	
Max Corden		Adelaide Plains Council		Liberalists	
Max Hirsch		Adelaide Plains Council		Liberalists	
Max Ruddock		Adelaide Plains Council		Liberalists	
Michael G. Porter		Adelaide Plains Council		Liberalists	
Michael Keane		Adelaide Plains Council		Liberalists	
Mike Nahan		Adelaide Plains Council		Liberalists	
Mike Young		Adelaide Plains Council		Liberalists	
Murray Milgate		Adelaide Plains Council		Liberalists	
Neil De Marchi		Adelaide Plains Council		Liberalists	
Nicholas Gruen		Adelaide Plains Council		Liberalists	
Paresh Narayan		Adelaide Plains Council		Liberalists	
Pat Conroy		Adelaide Plains Council		Liberalists	
Paul Broad		Adelaide Plains Council		Liberalists	
Paul Oslington		Adelaide Plains Council		Liberalists	
Paul Sheard		Adelaide Plains Council		Liberalists	
Persia Campbell		Adelaide Plains Council		Liberalists	
Peter Costello		Adelaide Plains Council		Liberalists	
Peter Drysdale		Adelaide Plains Council		Liberalists	
Peter Karmel		Adelaide Plains Council		Liberalists	
Peter Whish-Wilson		Adelaide Plains Council		Liberalists	
Philip Lowe		Adelaide Plains Council		Liberalists	
Pike Curtin		Adelaide Plains Council		Liberalists	
Race Mathews		Adelaide Plains Council		Liberalists	
Rhonda Sharp		Adelaide Plains Council		Liberalists	
Richard Charles Mills		Adelaide Plains Council		Liberalists	
Richard Denniss		Adelaide Plains Council		Liberalists	
Richard Holden		Adelaide Plains Council		Liberalists	
Richard Scotton		Adelaide Plains Council		Liberalists	
Robert Hall		Adelaide Plains Council		Liberalists	
Roger Opie		Adelaide Plains Council		Liberalists	
Ross Garnaut		Adelaide Plains Council		Liberalists	
Siobhan Austen		Adelaide Plains Council		Liberalists	
Stephen Hatfield Dodds		Adelaide Plains Council		Liberalists	
Steve Keen		Adelaide Plains Council		Liberalists	
Thomas Smith		Adelaide Plains Council		Liberalists	

Tim Anderson		Adelaide Plains Council		Liberalists	
Tim Harcourt		Adelaide Plains Council		Liberalists	
Tom Fitzgerald		Adelaide Plains Council		Liberalists	
Tom Parry		Adelaide Plains Council		Liberalists	
Tom Piotrowski		Adelaide Plains Council		Liberalists	
Tony Aspromourgos		Adelaide Plains Council		Liberalists	
Trevor Breusch		Adelaide Plains Council		Liberalists	
Trevor Evans		Adelaide Plains Council		Liberalists	
Trevor Swan		Adelaide Plains Council		Liberalists	
Warwick McKibbin		Adelaide Plains Council		Liberalists	
Wendy Carlin		Adelaide Plains Council		Liberalists	
Xiaokai Yang		Adelaide Plains Council		Liberalists	
Yanis Varoufakis		Adelaide Plains Council		Liberalists	
Yew-Kwang Ng		Adelaide Plains Council		Liberalists	
Adams		Mallala		Anglican Church	
Beaumont		Mallala		Anglican Church	
Cornish		Mallala		Anglican Church	
Crosland		Mallala		Anglican Church	
Hopton		Mallala		Anglican Church	
Kenny		Mallala		Anglican Church	
Macully		Mallala		Anglican Church	
Marshall		Mallala		Anglican Church	
Overall		Mallala		Anglican Church	
Parnall		Mallala		Anglican Church	
Slade		Mallala		Anglican Church	
Thomas		Mallala		Anglican Church	
Ward		Mallala		Anglican Church	
Wigram		Mallala		Anglican Church	
Williams		Mallala		Anglican Church	
Worthington		Mallala		Anglican Church	
Yeatman		Mallala		Anglican Church	
Correll		Mallala		Anglican Church	Chaplains from the RAAF station visiting priests supplied the service
Dunkerley		Mallala		Anglican Church	Chaplains from the RAAF station visiting priests supplied the service
Haire		Mallala		Anglican Church	Chaplains from the RAAF station visiting priests supplied the service
Osborne		Mallala		Anglican Church	Chaplains from the RAAF station visiting priests supplied the service

Patterson		Mallala		Anglican Church	Chaplains from the RAAF station visiting priests supplied the service
Pearson		Mallala		Anglican Church	Chaplains from the RAAF station visiting priests supplied the service
Reglar		Mallala		Anglican Church	Chaplains from the RAAF station visiting priests supplied the service
Renfrey		Mallala		Anglican Church	Chaplains from the RAAF station visiting priests supplied the service
Siddell		Mallala		Anglican Church	Chaplains from the RAAF station visiting priests supplied the service
Waterhouse		Mallala		Anglican Church	Chaplains from the RAAF station visiting priests supplied the service
De Sales		Two Wells		Xavier	
Don Bosco		Two Wells		Xavier	
Francis De Sales		Two Wells		Xavier	
Handley		Two Wells		Xavier	
John Bosco		Two Wells		Xavier	
Lynn Martin		Two Wells		Xavier	
Mazzarello		Two Wells		Xavier	
Occhiena		Two Wells		Xavier	
Turin		Two Wells		Xavier	
Australasian Bittern		Adelaide Plains Council		Rare Birds	
Australasian Darter		Adelaide Plains Council		Rare Birds	
Australasian Shoveler		Adelaide Plains Council		Rare Birds	
Australian Painted-Snipe		Adelaide Plains Council		Rare Birds	
Banded Stilt		Adelaide Plains Council		Rare Birds	
Blue-Billed Duck		Adelaide Plains Council		Rare Birds	
Blue-winged Parrot		Adelaide Plains Council		Rare Birds	
Brown Quail		Adelaide Plains Council		Rare Birds	
Cape Barren Goose		Adelaide Plains Council		Rare Birds	
Cattle Egret		Adelaide Plains Council		Rare Birds	
Elegant Parrot		Adelaide Plains Council		Rare Birds	
Freckled Duck		Adelaide Plains Council		Rare Birds	
Glossy Ibis		Adelaide Plains Council		Rare Birds	
Great Crested Grebe		Adelaide Plains Council		Rare Birds	
Intermediate Egret		Adelaide Plains Council		Rare Birds	
Jacky Winter		Adelaide Plains Council		Rare Birds	
Kelp Gull		Adelaide Plains Council		Rare Birds	

Little Egret		Adelaide Plains Council		Rare Birds	
Musk Duck		Adelaide Plains Council		Rare Birds	
Pacific Reef Heron		Adelaide Plains Council		Rare Birds	
Painted Buttonquail		Adelaide Plains Council		Rare Birds	
Restless Flycatcher		Adelaide Plains Council		Rare Birds	
Rock Parrot		Adelaide Plains Council		Rare Birds	
Slender-billed Thornbill		Adelaide Plains Council		Rare Birds	
Sooty Oystercatcher		Adelaide Plains Council		Rare Birds	
Spotless Crake		Adelaide Plains Council		Rare Birds	
Bar-tailed Godwit		Adelaide Plains Council		Shorebird and Waterbird	
Black-tailed Gotwit		Adelaide Plains Council		Shorebird and Waterbird	
Broad-Billed Sandpiper		Adelaide Plains Council		Shorebird and Waterbird	
Caspian Tern		Adelaide Plains Council		Shorebird and Waterbird	
Common Greenshank		Adelaide Plains Council		Shorebird and Waterbird	
Common Sandpiper		Adelaide Plains Council		Shorebird and Waterbird	
Common Tern		Adelaide Plains Council		Shorebird and Waterbird	
Curlew Sandpiper		Adelaide Plains Council		Shorebird and Waterbird	
Double Banded Plover		Adelaide Plains Council		Shorebird and Waterbird	
Far Eastern Curlew		Adelaide Plains Council		Shorebird and Waterbird	
Great Knot		Adelaide Plains Council		Shorebird and Waterbird	
Great Sand Plover		Adelaide Plains Council		Shorebird and Waterbird	
Greater Crested Tern		Adelaide Plains Council		Shorebird and Waterbird	
Grey Plover		Adelaide Plains Council		Shorebird and Waterbird	
Grey-Tailed Tattler		Adelaide Plains Council		Shorebird and Waterbird	
Gull-billed Tern		Adelaide Plains Council		Shorebird and Waterbird	
Lesser Sand Plover		Adelaide Plains Council		Shorebird and Waterbird	
Little Curlew		Adelaide Plains Council		Shorebird and Waterbird	
Little Tern		Adelaide Plains Council		Shorebird and Waterbird	
Long-toed Stint		Adelaide Plains Council		Shorebird and Waterbird	
Oriental Plover		Adelaide Plains Council		Shorebird and Waterbird	
Pacific Golden Plover		Adelaide Plains Council		Shorebird and Waterbird	
Parasitic Jaeger		Adelaide Plains Council		Shorebird and Waterbird	
Red Knot		Adelaide Plains Council		Shorebird and Waterbird	
Red-Necked Phalarope		Adelaide Plains Council		Shorebird and Waterbird	
Red-Necked Stint		Adelaide Plains Council		Shorebird and Waterbird	
Ruddy Turnstone		Adelaide Plains Council		Shorebird and Waterbird	

Ruff		Adelaide Plains Council		Shorebird and Waterbird	
Sanderling		Adelaide Plains Council		Shorebird and Waterbird	
Sharp-tailed Sandpiper		Adelaide Plains Council		Shorebird and Waterbird	
Terek Sandpiper		Adelaide Plains Council		Shorebird and Waterbird	
Whimbrel		Adelaide Plains Council		Shorebird and Waterbird	
White-winged tern		Adelaide Plains Council		Shorebird and Waterbird	
Wood Sandpiper		Adelaide Plains Council		Shorebird and Waterbird	

Adelaide Plains Council	**13.1 CONFIDENTIAL ITEM**
15 June 2021	

13.1 Gracewood, Mallala – Developer Negotiations

13.1 Item 13.1

RECOMMENDATION

"that:-

1. **Pursuant to section 90(2) of the *Local Government Act 1999*, the Infrastructure and Environment Committee orders that all members of the public, except Chief Executive Officer, Acting General Manager – Governance and Executive Office, General Manager – Development and Community, General Manager – Infrastructure and Environment, General Manager – Finance and Business, Administration and Executive Support Officer/Minute Taker and IT Support Officer be excluded from attendance at the meeting of the Council for Agenda Item 13.1 *Gracewood, Mallala – Developer Negotiations*;**
2. **Council is satisfied that, pursuant to section 90(3)(b)(i) of the *Local Government Act 1999* Item 13.1 – *Gracewood, Mallala – Developer negotiations c*oncerns commercial information the disclosure of which could reasonably be expected to confer a commercial advantage on a person with whom the council is conducting business, or to prejudice the commercial position of Council, being information relating to ongoing negotiations in relation to Gracewood, Mallala; and**
3. **Council is satisfied that the principle that Council meetings should be conducted in a place open to the public has been outweighed by the need to keep the information, matter and discussion confidential."**