

CITY OF WEST TORRENS



Notice of Council & Committee Meetings

NOTICE IS HEREBY GIVEN in accordance with Sections 83, 84, 87 and 88 of the *Local Government Act 1999*, that a meeting of the

Council

and

- **City Services and Climate Adaptation Standing Committee**

of the

CITY OF WEST TORRENS

will be held in the Council Chambers, Civic Centre
165 Sir Donald Bradman Drive, Hilton

on

**TUESDAY, 3 MARCH 2020
at 7.00pm**

**Terry Buss PSM
Chief Executive Officer**

City of West Torrens Disclaimer

Please note that the contents of these Council and Committee Agendas have yet to be considered by Council and officer recommendations may be altered or changed by the Council in the process of making the formal Council decision.

INDEX

1	Meeting Opened	1
1.1	Acknowledgement of Country.....	1
1.2	Evacuation Procedures	1
2	Present	1
3	Apologies	1
4	Disclosure Statements	1
5	Confirmation of Minutes	1
6	Mayors Report	1
7	Elected Members Reports	2
8	Petitions	3
8.1	Request to increase enforcement of parking restrictions in Mile End, Marleston, Keswick and Ashford	3
8.2	Request for parking restrictions on Waltham Street, Ashford.....	6
9	Deputations	9
9.1	Parking in Waltham Street, Ashford.....	9
10	Adjourn to Standing Committee	9
11	Adoption of Standing Committee Recommendations	9
11.1	City Services and Climate Adaptation Standing Committee Meeting	9
12	Adoption of General Committee Recommendations	9
12.1	City Advancement and Prosperity General Committee Meeting	9
13	Questions with Notice	9
	Nil	
14	Questions without Notice	9
15	Motions with Notice	9
	Nil	
16	Motions without Notice	9
17	Reports of the Chief Executive Officer	10
17.1	Sponsorship Grant Application - Australian Lebanese Association Incorporated.....	10
17.2	Swap Spot/Exchange Zones Update.....	38
17.3	Civic Reception - Deputy Foreign Minister Mr. Konstantinos Vlasis of Greece	50
17.4	2020 Council Best Practice Showcase and LGA Ordinary General Meeting.....	51
18	Local Government Business	57
18.1	Local Government Circulars	57
19	Member's Bookshelf	61
20	Correspondence	61
20.1	Adelaide Airport Consultative Committee Minutes	61
20.2	Adelaide Airport Passenger Statistics.....	61

20.3	Adelaide Airport Consultative Committee Briefings	61
20.4	Aircraft Operations during Adelaide Curfew.....	61
20.5	Adelaide Airport Curfew Dispensation Report	61
20.6	Australian Mayoral Aviation Council Executive Committee Minutes.....	61
21	Confidential	82
21.1	3RT Technologies Pty Ltd Lease - 240 Morphett Road, North Plympton.....	82
22	Meeting Close	82

1 MEETING OPENED

1.1 Acknowledgement of Country

1.2 Evacuation Procedures

2 PRESENT

3 APOLOGIES

Apologies

Council Members:

Cr Jassmine Wood

4 DISCLOSURE STATEMENTS

Elected Members are required to:

1. Consider Section 73 and 75 of the *Local Government Act 1999* and determine whether they have a conflict of interest in any matter to be considered in this Agenda; and
2. Disclose these interests in accordance with the requirements of Sections 74 and 75A of the *Local Government Act 1999*.

5 CONFIRMATION OF MINUTES

RECOMMENDATION

That the Minutes of the meeting of the Council held on 18 February 2020 be confirmed as a true and correct record.

6 MAYORS REPORT

(Preliminary report for the agenda to be distributed Friday, 28 February 2020)

In the 2 weeks since the last Council Meeting of 18 February 2020 functions and meetings involving the Mayor have included:

Wednesday 19 February

- Attended the Official Launch of the South Australian Council for the Greek Cultural Month Inc "Festival Hellenika" at the Adelaide Pavilion.

Thursday 20 February

- Attended the Airport Over 50s Club 38th Birthday Lunch at the Club Rooms.

Sunday 23 February

- Attended the Greek Orthodox Community and Parish of St George Thebarton and Western Suburbs Annual Church Service followed by a lunch at St George College Hall where I presented The Very Reverend Father Patsouris OAM with his City of West Torrens Australia Day 'Anniversary Award'.

Tuesday 25 February

- Attended a meeting of the Probus Club of Brooklyn Park at Adelaide West Uniting Church.
- Participated in the City Advancement and Prosperity General Committee meeting.

Wednesday 26 February

- Met with Father Patsouris of the Greek Orthodox Community and Parish of St George Thebarton and Western Suburbs.
- Met with representatives from the Australian Lebanese Association of SA regarding a grant application for their event.
- Met with CEO Terry Buss and Ms Robyn Butterfield regarding a resident complaint.

Friday 28 February

- Meeting with representatives from the West Torrens Rotary Club along with General Manager Business and Community Ms Pauline Koritsa to discuss Council's ongoing support of the Club.

Sunday 1 March

- Attending the AFLW match between the Adelaide Crows and Carlton at Hisense Stadium.

Tuesday 3 March

- Meeting with resident Helen Costanzo regarding traffic management in Hayward Avenue and West Street, Torrensville.
- Council and City Services and Climate Adaptation Standing Committee meeting.

RECOMMENDATION

That the Mayor's Report be noted.

7 ELECTED MEMBERS REPORTS

8 PETITIONS

8.1 Request to increase enforcement of parking restrictions in Mile End, Marleston, Keswick and Ashford

Brief

This report presents a petition requesting an increase in the resources available for surveillance of timed parking restrictions in the suburbs of Mile End, Marleston, Keswick and Ashford and use any budgeted income towards environmental initiatives.

RECOMMENDATION(S)

It is recommended to Council that:

1. The Petition be received.
2. A report be presented to a future meeting of the City Services and Climate Adaptation Standing Committee and the Head Petitioner be notified accordingly.

Introduction

A petition has been received from Barbara Burr, Head Petitioner, on behalf of 113 residents of Mile End, Marleston, Keswick and Ashford suburbs. The petitioners request:

'that the Council increase the resources available for surveillance of timed parking restrictions in these suburbs and use any budgeted income towards environmental initiatives, for example planting more trees. There is no changes to the existing parking permits and warning policies.'
(Attachment 1).

Discussion

The petition also states that the residents of Mile End, Marleston, Keswick and Ashford suburbs:

'Draws the attention of the Council to the lack of enforcement of time restricted parking zones that reduces the effectiveness of the parking control and limits access to car parking for local residents.'

The petition contains one hundred and thirteen (113) signatures, all of which are compliant with requirements of Clause 8 of the *Code of Practice - Procedures at Meetings* (Code) and Regulation 10 of the *Local Government (Procedures at Meetings) Regulations 2013* (Regulations).

- Sixty two (62) signatories are residents of Keswick;
- Twenty four (24) signatories are residents of Mile End;
- Twenty one (21) signatories are residents of Ashford; and
- Six (6) signatories are residents of Marleston.

Of the one hundred and thirteen (113) signatures, two (2) entries only list the first name. These two (2) entries are still taken into account given 10 (1)(c) of the Regulations does not specifically define name requirements. Consequently, the petition is deemed compliant with the requirements of the Code and the Regulations.

Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

There is no direct climate impact consideration in relation to this report.

Conclusion

A petition has been received that seeks to increase the resources available for surveillance of timed parking restrictions in the suburbs of Mile End, Marleston, Keswick and Ashford and use any budgeted income towards environmental initiatives.

Attachments

1. **Petition to increase enforcement of parking restrictions in Mile End, Marleston, Keswick and Ashford**

PETITION

To the Mayor and Councilors of the City of West Torrens

Part 1.

Head Petitioner (contact person): Barbara Burr
Telephone number: 0427 397 746
Address: 14 Kent Rd
Keswick SA 5035

Part 2.

The petition of (identify the individuals or group, eg. Residents of the City of West Torrens)

Residents of the Mile End, Marlestone, Keswick, Ashford

Part 3.

Draws the attention of the Council to (identify the circumstances of the case)

The lack of enforcement of time restricted parking zones that reduces the effectiveness of the parking control and limits access to car parking for local residents.

Part 4.

The petitioners therefore request that the Council (outline the action that the petitioners are requesting Council should or should not take)

Increase the resources available for surveillance in these suburbs and use any budgeted income towards environmental initiatives, e.g. planting more trees. There are no changes to the existing parking permits and warning policies...

Part 5.

Please use **CAPTIAL LETTERS**

FULL NAME (i.e. JOHN SMITH)	FULL ADDRESS (i.e. 185 SIR DONALD BRADMAN DRIVE, HILTON, SA, 5031)	SIGNATURE
Barbara Burr	14 Kent Rd. KESWICK 5035	B Burr
Michael COLLINS	14 Kent Rd KESWICK 5035	michaelcollins
THOMAS MORELIMER	25 ASHFORD ROAD KESWICK 5035	Thomas Morelimer
NORMAN BAKER	25 ASHFORD ROAD KESWICK 5035	N Baker
HELEN PAULOW	23 ASHFORD RD KESWICK 5035	Helen Paulow

8.2 Request for parking restrictions on Waltham Street, Ashford

Brief

This report presents a petition requesting two hour parking restrictions to be introduced on the eastern side of Waltham Street, Ashford.

RECOMMENDATION(S)

It is recommended to Council that:

1. The Petition be received.
2. The Head Petitioner be notified of the results of the subsequent community engagement for the proposed new parking controls.

Introduction

A petition has been received from Angela Shoolbread, Head Petitioner, on behalf of 8 residents of Waltham Street and Tyson Street, Ashford requesting that two hour parking restrictions be introduced during the hours of 9am to 5pm, Monday to Friday on the eastern side of Waltham Street, Ashford (**Attachment 1**).

Discussion

The petition states that:

"We the undersigned request two-hour parking restrictions be introduced during the hours of 9am-5pm Mon-Fri on the eastern side of Waltham Street, Ashford. Weekends and nights would be unchanged..."

We ask:

- *2 hour parking restriction signage be fixed onto two existing stobie poles located on the eastern side of Waltham Street, between 1/1 Waltham Street and 4/1 Waltham Street. Utilising existing poles would minimise installation costs.*
- *The western side of the street would continue to offer all day parking and it would allow apartment block residents to continue to park their second vehicles in front of their building.*
- *All residents who live on Waltham Street, Ashford who hold a valid residential permit would be exempt from the 2 hour time limit."*

The petition contains eight (8) signatures, all of which are compliant with requirements of Clause 8 of the *Code of Practice - Procedures at Meetings* (Code) and Regulation 10 of the *Local Government (Procedures at Meetings) Regulations 2013* (Regulation).

- Five (5) signatories are residents of Waltham Street, Ashford; and
- Three (3) signatories are residents of Tyson Street, Ashford.

The head petitioner is not clearly identified on the petition, although supporting documentation contains Angela Shoolbread's contact details and previous correspondence relating to the matter. The petition is otherwise complying.

Traffic Services subsequently conducted on-site investigations to assess existing on-street parking conditions on Waltham Street. The road was measured to be approximately 7.6m in width which is sufficient for legal parking on both sides of the street. The volume of parking was found to be nearing the street capacity with a high proportion of parking found to be for prolonged periods of time. The conditions were found to meet the warrant for parking controls to be considered on both sides of the street.

Following the investigation, Traffic Services initiated community engagement with the residents and/or ratepayers on Waltham Street to determine support for new 2 hour parking controls, applicable on Monday to Friday between 9:00am and 5:00pm. The aim of the proposed parking controls is to increase the sharing of on-street parking spaces and deter all-day parking from non-local traffic. Following the completion of the community engagement the head petitioner be notified of the outcome.

Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

There is no direct climate impact consideration in relation to this report.

Conclusion

A petition has been received to introduce parking restrictions to Waltham Street, Ashford. Traffic Services are underway in the investigation and community engagement.

Attachments

- 1. Petition to introduce parking restrictions on Waltham Street, Ashford**

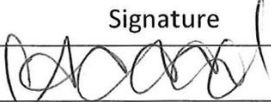
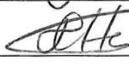


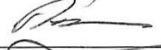



PETITION TO HAVE 2 HOUR PARKING RESTRICTIONS INTRODUCED DURING WEEKDAYS ON EASTERN SIDE OF WALTHAM STREET, ASHFORD

We the undersigned request two-hour parking restrictions be introduced during the hours of 9am – 5pm Mon - Fri on the eastern side of Waltham Street, Ashford. Weekends and nights would be unchanged.

1. Waltham Street, Ashford is a narrow street. During week days staff from the nearby school and other workers in the area park on both sides of the street all day. Both sides of the street are full with some vehicles repeatedly encroaching onto resident driveways. This impacts local residents' ability to navigate their driveways safely and avoid causing damage to vehicles.
2. It prevents personal visitors and tradespeople gaining immediate access to properties in this street during these times.
3. All the streets in Ashford offer weekday restrictions on one or both sides of each street except for Waltham Street. Many of these streets are wider than Waltham, in particular Alexander Avenue & Herbert Road.

We ask:

- 2 hour parking restriction signage be fixed onto two existing stobie poles located on the eastern side of Waltham Street, between 1/1 Waltham Street and 4/1 Waltham Street. Utilising existing poles would minimise installation costs.
- The western side of the street would continue to offer all day parking and it would allow apartment block residents to continue to park their second vehicles in front of their building.
- All residents who live on Waltham Street, Ashford who hold a valid residential permit would be exempt from the 2 hour time limit.

Name	Address	Signature
ANGELA SHOOLBREAD	2/1 WALTHAM ST ASHFORD	
James Hardy	3/1 Waltham St, Ashford	
Jess Goss	1/1 Waltham St, Ashford	
Crystal Yuen Ting Liu	2/9 Tyson St, Ashford	
Russell Grimes	3/9 Tyson St Ashford	
David MARTIN	8 WALTHAM ST, ASHFORD	
Silviya Petkova	4/1 Waltham St, Ashford	
MEG DICKINSON	1/9 TYSON ST ASHFORD	

RECEIVED - CWT IM
13 FEB 2020

9 DEPUTATIONS**9.1 Parking in Waltham Street, Ashford**

Ms Angela Shoolbread, wishes to address Council in relation to parking in Waltham Street, Ashford.

10 ADJOURN TO STANDING COMMITTEE**RECOMMENDATION**

That the meeting be adjourned, move into Standing Committee and reconvene at the conclusion of the City Services and Climate Adaptation Standing Standing Committee.

11 ADOPTION OF STANDING COMMITTEE RECOMMENDATIONS**11.1 City Services and Climate Adaptation Standing Committee Meeting****RECOMMENDATION**

That the recommendations of the City Services and Climate Adaptation Standing Committee held on 3 March 2020 be adopted.

12 ADOPTION OF GENERAL COMMITTEE RECOMMENDATIONS**12.1 City Advancement and Prosperity General Committee Meeting****RECOMMENDATION**

That the Minutes of the City Advancement and Prosperity General Committee held on 25 February 2020 be noted and the recommendations adopted.

13 QUESTIONS WITH NOTICE

Nil

14 QUESTIONS WITHOUT NOTICE**15 MOTIONS WITH NOTICE**

Nil

16 MOTIONS WITHOUT NOTICE

17 REPORTS OF THE CHIEF EXECUTIVE OFFICER

17.1 Sponsorship Grant Application - Australian Lebanese Association Incorporated.

Brief

This report presents the sponsorship grant application from the Australian Lebanese Association for an event being held at Kings Reserve in November 2020.

RECOMMENDATION

It is recommended to Council that the sponsorship grant of \$5,000 to the Australian Lebanese Association for its November 2020 Community Event be approved for payment in the 2020/21 financial year on condition that the event is located within the City of West Torrens.

Introduction

The Australian Lebanese Association (ALA) has requested that their 2020/21 sponsorship grant application be considered now for an event at King's Reserve and Thebarton Community Centre in the 2020/2021 financial year to enable them to include a letter from Council confirming its in-principle approval of the grant with their application to Multicultural Affairs.

This report presents that application for consideration by Council (**Attachment 1**).

Discussion

The ALA is proposing to host a two day 'Australian Lebanese Association Community Event' at Kings Reserve and Thebarton Community Centre later this year, on 21 and 22 November 2020. However, ALA has requested a sponsorship grant of \$5,000 towards this event be approved now for, but not provided to them until, the 2020/21 financial year in order to obtain a \$10,000 grant from Multicultural Affairs. The requested funds are to go towards the cost of venue hire, promotional materials, event equipment and sound equipment. This has been explained via an email to Mayor Coxon (**Attachment 2**).

Based on the time span that they were in attendance at ALA's 2019 event, Council staff has estimated overall attendance being less than 1,000 people with 150-200 people at the event at any one time. While these figures are quite low for an event at Kings Reserve, it is recognised that the event has the potential to grow attendance.

It is also worth noting that due to the potential for upcoming works to occur at Thebarton Oval/Kings Reserve, the booking for Kings Reserve is currently tentative. If, due to these works, Kings Reserve is not available then it is possible that ALA will hold the event outside of the City of West Torrens. However, based on estimated attendance at the 2019 event, it could be adequately located at Mellor Park or one of Council's other larger reserves, which while they don't have the same location value as Kings Reserve, would be more than equipped to cope with the estimated numbers of attendees.

Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

All grant applicants applying for sponsorship grants are encouraged and supported to consider climate impact and eco-friendly options in their events.

Conclusion

It is recommended to Council that the sponsorship grant of \$5,000 to the Australian Lebanese Association for its November 2020 Community Event be approved for payment in the 2020/21 financial year on condition that the event is located within the City of West Torrens.

Attachments

1. **ALA Sponsorship Application**
2. **Email to Mayor Coxon from ALA**

Sponsorship Program 2019-20
Sponsorship program application
Application SP000071920 From Australian Lebanese Association Incorporated
Form Submitted 29 Nov 2019, 10:30am ACDT

Eligibility and Contact Details

* indicates a required field

Applicants: please note

An online application to our grants program is an acceptance that the applicant agrees to the City of West Torrens conditions for any grant approval.

Incomplete applications and/or applications received after the activity/event date will not be considered.

Privacy Notice

City of West Torrens pledges to respect and uphold your rights to privacy protection under the Australian Privacy Principles (APPs) as established under the Privacy Act 1988 and amended by the Privacy Amendment (Enhancing Privacy Protection) Act 2012. To view our privacy statement, go to [City of West Torrens - Privacy](#)

Applicant Organisation Details

Applicant organisation name *

Australian Lebanese Association Incorporated

Please use your organisation's full name. Check your spelling and make sure you provide the same name that is listed in official documentation such as with the ABR, ACNC or ATO.

Primary (physical) address *

Mr. Simon Haddad
1 Torrens Crescent
PENNINGTON SA 5013 Australia
Must be an Australian postcode.

If your organisation operates in multiple locations or from multiple offices, please pick one as your primary address.

Postal address (if different to above)

Mr. Simon Haddad
1 Torrens Crescent
PENNINGTON SA 5013 Australia

Applicant website

<https://www.facebook.com/events/414469289268134/>

If available. Must be a URL

Primary contact person *

Mr SIMON HADDAD

This is the person we will correspond with about this grant

Position held in organisation *

Secretary
e.g. Manager, Board Member, Fundraising Coordinator

Primary phone number *

Sponsorship Program 2019-20
Sponsorship program application
 Application SP000071920 From Australian Lebanese Association Incorporated
 Form Submitted 29 Nov 2019, 10:30am ACDT

Back-up phone number

Fax number

If applicable

Primary contact person's email address *

australianlebaneseassociation@gmail.com

This is the address we will use to correspond with you about this grant.

Organisation Details

* indicates a required field

Describe why your organisation exists, what does it aim to achieve and how? *

Vision: Australian Lebanese Association to act as a charitable non-profit organisation dedicated

to supporting and developing the health, welfare, education, social, cultural, artistic and sporting needs of the Australian Lebanese people, their family and their descendants and also Australian Lebanese (AL), both in Australia and in Lebanon.

Mission: ALA Inc is a non-sectarian, non-religious, non-political and egalitarian association.

- To liaise with other like-minded and similarly aligned associations for the promotion and enhancement of the ALA

- Search out and respond to the hopes, ideas, needs and concerns of all AL and grow ALA through continuous improvement, knowledge and awareness.

Must be no more than 100 words.

Does your organisation have an ABN? *

Yes No

ABN *

47 805 412 466

Information from the Australian Business Register	
ABN	47 805 412 466
Entity name	Australian Lebanese Association Incorporated
ABN status	Active
Entity type	Other Incorporated Entity
Goods & Services Tax (GST)	No
DGR Endorsed	No

Sponsorship Program 2019-20
Sponsorship program application
Application SP000071920 From Australian Lebanese Association Incorporated
 Form Submitted 29 Nov 2019, 10:30am ACDT

ATO Charity Type	Not endorsed More information
ACNC Registration	No
Tax Concessions	No tax concessions
Main business location	5013 SA

Information retrieved at 9:10am today

Must be an ABN

What type of not-for-profit organisation are you?

- | | |
|--|--|
| <input type="radio"/> Educational institution (includes pre-schools, schools, universities & higher education providers) | <input type="radio"/> Professional association |
| <input type="radio"/> Religious or faith-based institution | <input type="radio"/> Healthcare not-for-profit |
| <input type="radio"/> Philanthropic organisation | <input checked="" type="radio"/> Community group |
| <input type="radio"/> Peak body | <input type="radio"/> Political party / lobby group |
| <input type="radio"/> Social enterprise | <input type="radio"/> Research body |
| <input type="radio"/> International NGO | <input type="radio"/> General not-for-profit (i.e. none of the sub-types listed above) |

Please choose the option that best applies to your organisation.

What is your organisation's annual revenue?

- | | |
|--|---|
| <input checked="" type="radio"/> Less than \$50,000 | <input type="radio"/> \$1 million or more, but less than \$10 million |
| <input type="radio"/> \$50,000 or more, but less than \$250,000 | <input type="radio"/> \$10 million or more, but less than \$100 million |
| <input type="radio"/> \$250,000 or more, but less than \$1 million | <input type="radio"/> \$100 million or more |

Your revenue includes grants, donations, and other fundraising activities, fees for services, sale of goods, interest, royalties and in-kind donations that have been included in your accounts as 'revenue'. The Australian Charities and Not-for-profits Commission (ACNC) has more detailed information here: www.acnc.gov.au/ACNC/Manage/Reporting/SizeRevenue/ACNC/Report/SizeRevenue.aspx

What is your organisation's legal structure?

- | | |
|--|---|
| <input type="radio"/> Unincorporated association | <input type="radio"/> Organisation established through specific legislation |
| <input checked="" type="radio"/> Incorporated association | <input type="radio"/> Trust |
| <input type="radio"/> Cooperative | <input type="radio"/> Unknown |
| <input type="radio"/> Company limited by guarantee | <input type="radio"/> Other: |
| <input type="radio"/> Indigenous corporation, association or cooperative | |

If your organisation is unincorporated it must have an auspice organisation

Event Details

* indicates a required field

Sponsorship Program 2019-20**Sponsorship program application**

Application SP000071920 From Australian Lebanese Association Incorporated

Form Submitted 29 Nov 2019, 10:30am ACDT

Event title: *

Australian Lebanese Association Community Event

Provide a name for your project/program/initiative. Your title should be short but descriptive

Location of event *

Thebarton Community Centre, Hall A and B, South Rd & Ashwin Parade, Torrensville SA 5031

. Awaiting Response from Kings Reserve Availability. Awaiting ability to host 2 day event or single day event.

Please provide the address.

Event start date *

21/11/2020

Event end date *

22/11/2020

Type of event: Education Entertainment Arts / Culture Community Sports Charity Environment Business Other: Exhibition and Displays

You may select more than one option

Event attendees expected age range: Under 18 18 to 30 31 to 40 41 to 50 51 to 60 60+

You may select more than one option

Where will the attendees be travelling from? City of West Torrens Adelaide metropolitan area Other: Various Australian Lebanese Communities from Adelaide/SA Western suburbs SA generally**What is the estimated total attendance?**

1000

Must be a number.

How does your event align to the strategic priorities of Council as outlined by the Community Plan? *

The Australian Lebanese Association Community Event hopes to bring our communities together in thankful recognition of the achievements that have been made to Australian Society.

Our event also seeks to align to the strategic priorities of the Towards 2025 Community Plan by Facilitating public awareness and appreciation of City of West Torrens history.

We envision a continued combined partnership and promotion of the event with the City of West

Torrens Council.

Sponsorship Program 2019-20
Sponsorship program application
Application SP000071920 From Australian Lebanese Association Incorporated
 Form Submitted 29 Nov 2019, 10:30am ACDT

After the success of the 2019 Event, which brought in an estimated 1000 people according to sales of the event day, we wish to build upon this yearly event.

Three Australian Lebanese descendants and Mayors from Thebarton include: Norman Edwin Najjar, Steve (Stephen) John Hamra and Annette O'Reilly.

We would like to celebrate Lebanese National Day and continue to highlight Australian Lebanese, particularly from South Australia who have played a part in working towards a good society.

Must be no more than 150 words.

Refer to the City of West Torrens Community Plan at <https://indd.adobe.com/view/cdf238c2-6408-493c-b378-4e81069d4783>

Does this application respond to one or more of the program priority areas? *

The Australian Lebanese Community has been present in Australian Society from the last century.

Please refer to the attached newsletters.

Our focus needs to aim at developing institutions and projects, that help bring us as together as a community and to highlight our achievements in Australian Society. We need to educate and train our youth into the benefits of giving back to our local community and to people in need.

The community need is great both to our internal community and to the wider community.

There are many social issues that we can progressively tackle, through the necessary structure training to our members.

Within the attached Stakeholder Overview for the Australian Lebanese Association, we in fact are aiming towards all of the common aspirations that the City of West Torrens Council has in the "Towards 2025 Community Plan".

Also refer to attached newsletter, and events, have addressed these common aspirations.

Must be no more than 150 words.

For Program Priority areas, refer to Page 2 of the Guidelines for City of West Torrens Grants and Sponsorships.

How does your event demonstrate innovation? Is there evidence and/or a clear reason for why it has been developed? *

The Australian Lebanese Community has been present in Australian Society from the last century.

Please refer to the attached newsletters.

But throughout the years, for various reasons, the cohesiveness of our communities has slowly become distant from the original foundation.

It is without doubt, that there have been many successful Lebanese individuals, both within the local community and general population.

Our current members will aim to present a State Wide Exhibition open to the public.

This will help our community become more involved in our wider

Australian population. And we would like to introduce the Australian community more to our values, culture and achievements.

We would like to commence engaging our regular community members, with our surrounding communities, whom we seldom look at reaching out to invite. And we would like to instil that spirit of community engagement into our own Australian Lebanese members to continue giving back to society.

Sponsorship Program 2019-20

Sponsorship program application

Application SP000071920 From Australian Lebanese Association Incorporated

Form Submitted 29 Nov 2019, 10:30am ACDT

Must be no more than 150 words.

How do you plan to engage the groups you are targeting for this event? *

The Australian Lebanese Association (ALA) Community Event will be promoted within the business, community and personal networks of ALA.

During the preparation of the ALA Community Event in 2019, a large number of community networks, and mailing lists were accumulated.

An acceptance of the event grew as it was being developed, as well as the encouraging outcome of volunteers and community groups that attended the event in 2019.

The Multicultural Affairs Festival that was on simultaneously reduced attendance.

Engagement will also be through:

- Our bank of deposit, Bank of Sydney with Lebanese ownership
- Multicultural associations to which we are members, ie. MCCSA
- Personal emails to existing community members as well as information leaflets to the local community, as well as community announcements at all our projects
- Personal emailed invitations to numerous governments, business and social organisations
- Request to local Newspaper and radio media advertisements

Must be no more than 150 words.

Do you have a plan for how your event will be delivered? Does your plan consider risks involved, and how you will work with partner organisations (if applicable)? *

The Australian Lebanese Association Community Event, is assisted by the many members of the association, and they are all playing some part in the organisation of this event.

Meetings to organise the are continuously organised between the members on a fortnightly and monthly basis. Communications for specific tasks are taking place on a daily basis.

To reduce risk, there are numerous roles to be managed, by the management committee team.

The delivery of the 2019 ALA Community Event showed the ability of the association to successfully deliver the event.

Designated volunteers provide their in-kind support, are ready to commit to assigned to their tasks, within the ALA, as has been done for the many years in our individual communities. Additional nominated and suitable individuals, as a formality, have to be simply confirmed in writing.

Taking note, the dedicated Management team of the Australian Lebanese Association consists of many qualified professionals.

Must be no more than 150 words.

Reporting your success

How will you evaluate the effectiveness of your event? *

The most appropriate way for the effectiveness of the ALA

Community Event to be evaluated is to receive feedback from the partners/sponsors:

Attendees will be encouraged to provide feedback, which will include:

- Feedback from Multicultural Aged Care
- Government officials and representatives
- Nominated responsible individuals, speakers and special guests

Sponsorship Program 2019-20
Sponsorship program application
Application SP000071920 From Australian Lebanese Association Incorporated
 Form Submitted 29 Nov 2019, 10:30am ACDT

- Community groups and their members
- General public attendees
- Media outlets

It is important also to get community feedback from our community itself. The level of participation in the event itself by our own community members will also be a good indication on the good delivery of the Australian Lebanese Association projects. We will task our committee members to do a survey of their experiences at the projects. An audit of all income and expenditure will be made after the completion of this event in order to determine if the budget was properly prepared and delivered. Must be no more than 150 words.

Will the project be carried out in partnership with other relevant organisations? *

- Yes No

Name of organisation	Contact person	Role/contribution
Maronite Community of SA	Mr. Lebba Chakkour	Participant / Sports
Discussed by Email - Bank of Sydney	Nissrine.Khadra@banksyd.com.au	Presence, potential retainer of Bond
St. Elias Antiochian Orthodox Church	Fr. Nicholas Haddad	Participant - In discussion

Partner organisation funding

What is the amount to be funded by your partner organisation (if applicable)?

\$500.00

Must be a dollar amount.

What will the grant funds be spent on?

Equipment (specify)	Materials (specify)	Other (specify)
Pull up Banners	Printing of Banners	Hire of Thebarton Community Centre Hall A and Hall B and Kitchen
Hire of Musical Equipment for Musicians	Printing of Posters and Pamphlets	Security Company Hire
Traditional Costume Wear	Printing of Booklets	Bunting, Flags
Hire of Marquees and Chairs / Tables	Arts Paper and Pencils / Crayons	Refer to Australian Lebanese Association Community Event - Volunteers.doc

Sponsorship Program 2019-20
Sponsorship program application
Application SP000071920 From Australian Lebanese Association Incorporated
 Form Submitted 29 Nov 2019, 10:30am ACDT

What is the total cost of the proposed purchases? *

\$30,000.00

Must be a dollar amount.

What is the amount sought from Council? *

~~\$25,000.00~~ \$5000 (as per email),

Must be a dollar amount.

What is the amount to be funded by your organisation? *

\$1,000.00

Must be a dollar amount.

Publicity and Promotion

How will you promote your event? *

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Advertorials | <input type="checkbox"/> Television | <input checked="" type="checkbox"/> Web site |
| <input checked="" type="checkbox"/> Advertising - newspaper | <input checked="" type="checkbox"/> Signage | <input checked="" type="checkbox"/> Social Media |
| <input checked="" type="checkbox"/> Radio | <input type="checkbox"/> Letterbox Drop | <input checked="" type="checkbox"/> Other: Multicultural Organisations and Lebanese Organisations and Associations |

Provide details of the level of coverage anticipated:

The Australian Lebanese Association members come from many various fields of expertise including media, advertising, engineering, pharmacy, business and many other professional backgrounds. The Australian Lebanese Association Community Event will be open to all the South Australian Public, as well as all the Australian Lebanese Diaspora. It is therefore anticipated that the level of coverage will be a high in all areas of the State, via all available mediums of advertising and promotion. Furthermore, as we promote this event throughout the next four months, it is anticipated there will be a keen interest from many of the Australian Lebanese Community, due to the many areas of display for the event. With the last event, we advertised in the Herald Weekender, the Advertiser, Facebook Public Invite, and the Multicultural Community Groups and the Forums.

Documentation checklist and further information

Attached is:

Supporting documents that may be appropriate (maximum of two pages)

Filename: 001 Nov 26th 2019 - MCSA Meeting.doc
 File size: 66.0 kB

Filename: 190726 Letter of Support Ref 7904 JM.pdf
 File size: 98.3 kB

Filename: 2019 PL Certificate (amended).pdf
 File size: 509.7 kB

Filename: 20190724_ALA_190464_Letter of Support.pdf
 File size: 160.1 kB

Filename: ABN 47805412466 - Australian Lebanese Association.pdf
 File size: 42.6 kB

Sponsorship Program 2019-20
Sponsorship program application
Application SP000071920 From Australian Lebanese Association Incorporated
Form Submitted 29 Nov 2019, 10:30am ACDT

Filename: AHWm_311019_PG_12.pdf
File size: 2.4 MB

Filename: ALA Certificate.pdf
File size: 289.2 kB

Filename: ALA Letter of Support_Bank of sydney 01082019.pdf
File size: 278.3 kB

Filename: ASIC - A2730 - Australian Lebanese Association.pdf
File size: 358.9 kB

Filename: Australian Lebanese Association - Steve Hamra - Mayor of City of West Torrens.pdf
File size: 1.9 MB

Filename: Australian Lebanese Association Community Event - A2 Poster - Landscape - Arabic 2020.pdf
File size: 1.8 MB

Filename: Australian Lebanese Association Community Event - A2 Poster - Landscape 2020.pdf
File size: 1.7 MB

Filename: DSCF4838.jpg
File size: 4.9 MB

Filename: DSCF4858.jpg
File size: 5.0 MB

Filename: DSCF4898.jpg
File size: 4.9 MB

Filename: DSCF4905.jpg
File size: 4.8 MB

Filename: DSCF4946.jpg
File size: 5.5 MB

Filename: Gmail - ALA - Bank of Sydney.pdf
File size: 117.3 kB

Filename: Hon Rachel Sanders - Adelaide - Letter of Support.pdf
File size: 365.8 kB

Filename: Sponsors.pptx
File size: 4.2 MB
Maximum 25mb, recommended size no bigger than 5mb

Three quotes for purchases of any items more than \$1000

Filename: ALA Quote Quote 2019 v1 - Confirmed.pdf
File size: 548.3 kB

Filename: allBIZ Print Quote 2019.pdf
File size: 238.3 kB

Filename: Australian Lebanese Association Community Event - Budget.xlsx
File size: 39.6 kB

Sponsorship Program 2019-20
Sponsorship program application
Application SP000071920 From Australian Lebanese Association Incorporated
 Form Submitted 29 Nov 2019, 10:30am ACDT

Filename: CWP1716 - Sunday 10 November 2019.pdf
 File size: 285.5 kB

Filename: Display signs 2019 .pdf
 File size: 245.5 kB

Filename: Electrical 2326 Aust Leb Assoc Event.pdf
 File size: 167.3 kB

Filename: Kings Park Reserve Permit Invoice.pdf
 File size: 344.3 kB
 Maximum 25mb, recommended size no bigger than 5mb

Previous Grants received from Council

If applicable, please list all grants received from the City of West Torrens in the past three years.

Amount	Date received	Project, initiative or resource
5000	10 September 2019	Australian Lebanese Association Community Event

Certification and Feedback

* indicates a required field

Certification

I certify that to the best of my knowledge the statements made within this application are true and correct.
 I also confirm that I have read and understood the conditions for funding as outlined in the [Guidelines for City of West Torrens Grants and Sponsorships](#) and accept and agree to abide by the conditions therein.
 I also accept and agree to abide by any additional conditions outlined in any approval letter.

I agree * Yes No

Name of authorised person * Mr SIMON HADDAD
 Must be a senior staff member, board member or appropriately authorised volunteer

Position * Secretary
 Position held in applicant organisation (e.g. CEO, Treasurer)

Contact phone number * +61 8 833 3333

Sponsorship Program 2019-20
Sponsorship program application
Application SP000071920 From Australian Lebanese Association Incorporated
Form Submitted 29 Nov 2019, 10:30am ACDT

Must be an Australian phone number.

Mobile number

Contact Email *

australianlebaneseassociation@gmail.com
Must be an email address.

Date *

29/11/2019
Must be a date

Applicant Feedback

You are nearing the end of the application process.

Before you review your application and click the **SUBMIT** button please take a few moments to provide some feedback.

This section is not mandatory

Please indicate how you found the online application process:

Very easy Easy Neutral Difficult Very difficult

Please provide us with your suggestions about any improvements and/or additions to the application process/form that you think we need to consider.

Celine Luya

Subject: FW: Receipt of Application to Hire Thebarton Community Centre

Dear Mayor Michael Coxon,

In our upcoming requirement to lodge a grant application by February 29 from the Multicultural affairs grant.

This is a dollar per dollar match over 5000.

Hence we would like to apply for 10,000 from this grant, and 5000 from the City of West Torrens Grant.

Would the City of West Torrens be amenable to sponsor the Australian Lebanese Association once again in 2020?

If so, then can you please provide an in-principle letter to this extent, and we will include this in the grant application, in order to try and attain a \$15,000 total grant funding.

We discovered from last event, both hall and park, that we exceeded this amount, to which we submitted our acquittal report to the City of West Torrens Officer.

If you could please confirm this, and if in accordance, please provide us a letter of support and wording to support our event with financial support in 2020, post the July date submittal period..

Thank you kindly.

Simon Haddad

----- Forwarded message -----

From: **ALA Inc** <australianlebaneseassociation@gmail.com>

Date: Mon, Feb 17, 2020 at 4:54 PM

Subject: Re: Receipt of Application to Hire Thebarton Community Centre

To: Council Enquiries <csu@wtcc.sa.gov.au>, Gordon Andersen <GAndersen@wtcc.sa.gov.au>

Cc: Ray Najar <raynajar@australiabusinessconnect.com.au>, NAJAR, RAYMOND

<ray.najar@idatamap.com>, Kevin Stevens <kevinstevens@esc.net.au>

Dear City of West Torrens, and Gordon

Thank you kindly for our previous dialogue.

Now that we are commencing the application process for grant funding, we would like to come back to the tentative booking you have for us on November 22, Sunday of 2020.

Can you please advise us of the availability of the Kings Reserve.

What options do we have to only book the Kings Reserve only, and we will then put the stage on the park and other.

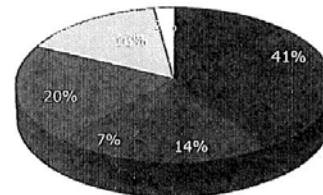
Sunday 10 November 2019

Australian Lebanese Association Community Event

Event Budget for ALA Community Event: EXPENSES

Site	Total	GST	Excluding GST
Thebarton Community Centre	\$1,500.00	\$136.36	\$1,363.64
Refundable Deposit (No GST)	\$1,000.00	\$0.00	\$1,000.00
Kings Reserve Permit (No GST)	\$924.00	\$0.00	\$924.00
Public Liability Insurance 1	\$1,080.00	\$89.45	\$990.55
Public Liability Insurance	\$750.00	\$63.10	\$686.90
Event Cover - ex Stamp Duty	\$190.00	\$15.54	\$174.46
Security	\$1,636.80	\$148.80	\$1,488.00
Parking Attendants	\$699.93	\$63.63	\$636.30
Total	\$7,080.80	\$453.25	\$6,627.55

Actual Cost Breakdown



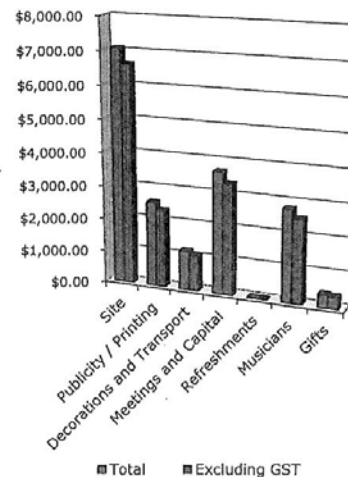
- Site
- Publicity / Printing
- Decorations and Transport
- Meetings and Capital
- Refreshments

Publicity / Printing	Total	GST	Excluding GST
Weekender Herald	\$250.00	\$22.73	\$227.27
Printed A5 Pamphlets	\$465.00	\$42.27	\$422.73
Posters	\$176.00	\$16.00	\$160.00
Banners	\$200.00	\$18.18	\$181.82
Pull up Banner	\$1,178.50	\$107.16	\$1,071.34
Artwork Design	\$297.10	\$27.01	\$270.09
Total	\$2,566.60	\$233.35	\$2,333.25

Decorations and Transport	Total	GST	Excluding GST
Bunting and Flags	\$1,030.00	\$93.64	\$936.36
MCCSA Bus Driver	\$30.00	\$0.00	\$30.00
Bus Hire (Awaiting)	\$120.00	\$10.91	\$109.09
Total	\$1,180.00	\$104.55	\$1,075.45

Meetings and Capital	Total	GST	Excluding GST
Thebarton Community Centre	\$62.50	\$5.68	\$56.82
Electrical Tag and Testing	\$231.00	\$21.00	\$210.00
Membership MCCSA	\$50.00	\$4.55	\$45.45
Apollo Lighting (deposit.)	\$937.20	\$85.20	\$852.00
Apollo Lighting (Includes spons.)	\$937.20	\$85.20	\$852.00
Audio Internal	\$1,100.00	\$100.00	\$1,000.00
Audio External	\$374.00	\$34.00	\$340.00
Total	\$3,691.90	\$335.63	\$3,356.27

Estimated vs. Actual



Refreshments	Total	GST	Excluding GST
Food		\$0.00	\$0.00
Drinks		\$0.00	\$0.00
Linens		\$0.00	\$0.00
Staff and gratuities		\$0.00	\$0.00
Total	\$0.00	\$0.00	\$0.00

Musicians	Total	GST	Excluding GST
Alex Hadchiti	\$600.00	\$54.55	\$545.45
Fouad Haraka	\$500.00	\$45.45	\$454.55
Charlie Yarak	\$600.00	\$54.55	\$545.45
Habib Boutros	\$600.00	\$54.55	\$545.45
Aboud Abaza	\$500.00	\$45.45	\$454.55
Total	\$2,800.00	\$254.55	\$2,545.45

Gifts	Total	GST	Excluding GST
Joolz Mosaic Art	\$400.00	\$40.00	\$360.00
			\$0.00
Total	\$400.00	\$40.00	\$360.00

Total Expenses	Total	GST	Excluding GST
	\$17,719.30	\$1,421.32	\$16,297.98

Made in Office 2007 for office2007.com



Thursday, 17 October 2019

Attention: Simon Haddad

Name/Company: Australian Lebanese Association Community	Project Type:	Representative: Di Bellamy
---	----------------------	--------------------------------------

Quote No: 35462 Email:

Allbiz thank you for your enquiry and have pleasure in submitting the following quotation.

Printing:
Description: A5 flyers

Size: 210 x 148.5mm
Print: Double sided (full CMYK colour)
Finishing: Bulk pack

Quantity:	Price:
Stock: 150gsm satin art stock	
5000	\$425.00 plus GST
Stock: 250gsm satin art card	
5000	\$580.00 plus GST

Address
125 O'Sullivan Beach
Road, Lonsdale SA 5160

Phone
8326 2899
Fax
8382 5532

print@allbizsupplies.biz
www.allbizsupplies.biz

ABN 66 107 210 382

Description: Posters

Print: single sided (full CMYK colour)
Finishing: Bulk pack
Stock: 160g bonded art stock

Quantity:	Price:
20 x A2	\$ 8.00 each plus GST
20 x A0	\$26.00 each plus GST
Stock: 190g photo art stock	
Quantity:	Price:
20 x A2	\$14.00 each plus GST
20 x A0	\$40.00 each plus GST





Description: Pull up Banner Xtra value

Size: 850 x 2000mm

Print: Single sided (full CMYK colour)

Stock: Durable SyniTec PP film. No glare quality matt finish.

Finishing: Includes hardware, ready to use plus carry bag.

Quantity:	Price:
10	\$86.00 plus GST each
20	\$75.00 plus GST each

'Prices plus GST'

This quotation is submitted subject to the sighting of final artwork. Any required modifications to artwork are considered authors changes and will incur an additional charge. This quotation is valid for 30 days.

Team allbiz

Address
125 O'Sullivan Beach
Road, Lonsdale SA 5160

Phone
8326 2899
Fax
8382 5532

print@allbizsupplies.biz
www.allbizsupplies.biz

ABN 66 107 210 382





Address
125 O'Sullivan Beach
Road, Lonsdale SA 5160

Phone
8326 2899
Fax
8382 5532



print@allbizsupplies.biz
www.allbizsupplies.biz

ABN 66 107 210 382

Monday, 28 October 2019

Attention: Simon Haddad

Name/Company: Aust. Lebanese Ass,	Project Type: Display Sign-age	Representative: Di Bellamy
Quote No: 35618	Email:	

Allbiz thank you for your enquiry and have pleasure in submitting the following quotation.

Printing Job	Display Sign
Description: External 5mm corflute signs	
Print: CMYK full colour UV printing	
Stock: 5mm corflute signs	
Finishing: 4 eyelets ready to use	
Size: 1200x2400mm	
Quantity:	Price each sheet:
1	\$ 140.00 plus GST \$154.00
2	\$ 256.00 plus GST \$ 281.60
4	\$ 360.00 plus GST \$ 396.00
Description: External Banner Economy	
Print: CMYK full colour UV printing	
Stock: Heavy duty, 440gsm external grade banner vinyl	
Finishing: 6 eyelets ready to use	
Size: 1200x2400mm	
Quantity:	Price each sheet:
1	\$ 100.00 plus GST \$110.00
2	\$ 200.00 plus GST \$220.00
4	\$ 400.00 plus GST \$440.00

'Prices include GST'

This quotation is submitted subject to the sighting of final artwork.
Any required modifications to artwork are considered authors changes
and will incur an additional charge. This quotation is valid for 30 days.

Team allbiz



allbiz. your print team

APOLLO LIGHTING

ELECTRICAL SERVICE

Powering Your Event

QUOTE

Australian Lebanese Assoc Inc 1 Torrens Crescent Pennington South Australia 5013 Australia	Site Aust Leb Assoc Event Job Address Torrensville Community Centre, South Rd, Torrensville, SA	Date 03 November 2019 Expiry Date 03 December 2019	Apollo.Lighting Service Pty Ltd U2 / 4 Manton St Hindmarsh SA 5007 ph: 08 8241 7770 e: admin@apollolighting.com.au Elec Lic: PGE 281565
		Quote Number QT-2326	
		ABN 43 619 933,998	

Aust Leb Assoc Event
Torrensville Community Centre
South Rd
Torrensville SA

Sunday 10th Nov 2019

This quote is based on 'best guess' layout of stalls and Food outlets
 To be updated once further details are advised.

To Supply, Install and Remove:

- Power for the stage area - off building, up to 4x 10A outlets
- Power for stallholders and Food Outlets, as advised to Sun 03/11, 11x 10A 1ph, - 1x generators
- Generator to be parked with-in 10m of stalls

Connection and compliance of Stallholders and Food Outlets

- Inspect for Test & Tag compliance
- Test & Tag any items requiring it - cost charged direct to the Stallholder of Food Outlet.
- Supply compliance certificate

Install: Sunday 10/11/2019 am
 Remove: Sunday 10/11/2019 pm

Assumption - Daytime event, no marquee or area lighting required

Description	Amount
Labour	885.00
Equipment Hire	330.00
Cable Tray Hire (est 30 pieces)	180.00
Equipment Transport	50.00
Generator Hire	180.00
Generator Transport	180.00
Generator Fuel (est 40L)	88.00
Community Event Sponsorship	-189.00
<hr/>	
	Subtotal 1,704.00
	Total GST 170.40
	<hr/>
	Total AUD 1,874.40
	<hr/> <hr/>

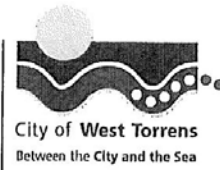
Apollo Lighting Service thanks you for the opportunity to provide you with this quotation.

Please read the attached Terms and Conditions carefully.

Payment Terms

A 50% deposit is required (invoiced upon confirmation),
with the balance invoiced and payable 7 days prior to the event.

Civic Centre
 165 Sir Donald Bradman Drive
 Hilton, SA 5033
 Tel: 08 8416 6333
 Email: csu@wtcc.sa.gov.au
 Web: westtorrens.sa.gov.au



TAX INVOICE

ABN: 16 346 877 634

AUSTRALIAN LEBANESE ASSOCIATION INCORPORATED
 1 Torrens Cres
 PENNINGTON SA 5013

Date
 12-Nov-2019
Invoice No
 507329
Customer No
 75323 6

Description	GST	Total
Use of Local Government Land - Kings Reserve and the Thebarton Community Centre 10th November 2019, including Amplification, Entertainment Stalls, Vehicle parking, Advertising sign, Line Marking and filming		924.00

Invoice Total **\$924.00**

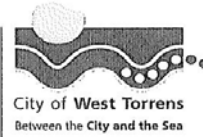
Customer No	Invoice No	Invoice Date	Amount Payable
75323 6	507329	12-Nov-2019	\$924.00

Credit Card Payments
www.westtorrens.sa.gov.au or
 Phone: 8416 6333 (8.30am - 5.00pm Mon-Fri)

Cheque / Money Order / In Person
 165 Sir Donald Bradman Drive
 HILTON SA 5033

Cheques / Money Orders should be made payable to the "City of West Torrens"

Civic Centre
 165 Sir Donald Bradman Drive
 Hilton, SA 5033
 Tel 08 8416 6333
 Fax 08 8443 5709
 Email: csu@wtcc.sa.gov.au
 Web: westtorrens.sa.gov.au



TAX INVOICE

ABN: 16 346 877 634

**AUSTRALIAN LEBANESE ASSOCIATION
 INCORPORATED
 1 Torrens Cres
 PENNINGTON SA 5013**

Date
22 August 2019
Invoice No
506681
Customer No
75323 6

Invoice No	Description	GST	Total
506681	Thebarton Community Centre - Booking ID: 2822 Australian Lebanese Association Incorporated Contact Name: Booking Date: 10 November 2019 Hall Event Block - Full Day	\$136.35	\$1500.00

Invoice Total	136.35	\$1500.00
----------------------	---------------	------------------

Customer No	Invoice No	Invoice Date	Amount Payable
75323 6	506681	22 August 2019	\$1500.00

<p>Credit Card Payments</p> <p>www.westtorrens.sa.gov.au or</p> <p>Phone: 8416 6333 (8.30am - 5.00pm Mon-Fri)</p>	<p>Cheque / Money Order / In Person</p> <p>165 Sir Donald Bradman Dr, HILTON SA 5033</p> <p>Cheques / Money Orders should be made payable to the "City of West Torrens"</p>
---	--

11 September 2019



Australian Lebanese Association Incorporated
1 Torrens Crescent,
Pennington
SA 5013

**CITY RURAL INSURANCE
BROKERS PTY LTD**

200 Greenhill Road, Eastwood, SA 5063
PO BOX 7138 Hutt St Adelaide SA 5000
Telephone: (08) 8272 7785
Facsimile: (08) 8357 8994
Toll Free: 1300 887 429
www.cityrural.net.au
AFSL: 237491
ABN: 52 074 444 296

Dear Simon

Re: Public Liability and Voluntary Personal Accident Quotation

Thank you for your request for a quote regarding your business. We have reviewed the quotes from different Insurance companies and following are the terms which we believe suit your requirements.

Details are as follows:

Public Liability Quotation

Insurer: Ansvar Insurance

Total Premium Including Charges: Base: 794.12
GST: 79.42
SDuty: 96.09
Admin 100.34
Admin GST: 10.03
\$1,080.00 (All in including charges)

Voluntary Personal Accident Quotation

Insurer: Dual Australia Pty Ltd

Total Premium Including Charges: Base: 462.00
GST: 46.20
SDuty: 55.90
U/w Fee 105.00
U/W GST 10.50
Admin 64.00
Admin GST: 6.40
\$750.00 (All in including charges)

TOTAL FOR BOTH POLICIES: \$1,830.00

PUBLIC LIABILITY INSURANCE

Insured: **Australian Lebanese Association Incorporated**

BUSINESS DESCRIPTION

Your operations are described as:

Community service organisation which may include
Non-Profit organisation dedicated to supporting & developing the health, welfare, education, social culture, artistic and sporting needs of Australian Lebanese people, their families and descendants

Activities may also include outings, organised games, op shops, camps and excursions, fundraising such as walkathons and picnics events/festivals held at your place of occupancy.

Excluding any events/festivals held at premises other than your own where more than 500 attendees are expected unless specifically agreed by endorsement detailed within this document. Some activities are excluded as per policy wording.

LIMITS OF INDEMNITY

Public Liability	\$20,000,000
Products Liability	\$20,000,000
Advertising Liability	\$20,000,000
Contract Works liability (Maximum contract value)	\$500,000
Sublimits	
Property in care, custody & control	\$250,000
Automatic Extensions	
1. Counsellor's Liability	\$1,000,000
2. Indemnifiable Fines/Penalties	\$100,000 (Nil Excess)
Optional Extensions	
1. Sexual Abuse	Not Insured
2. Replacement Wages	Not Insured
3. Medical Malpractice	Not Insured
4. Retroactive Liability Endorsement	
- General Public & Products Liability	Not Insured
- Sexual Abuse Only	Not Insured
5. Member to Member Extension	Not Insured
6. Trauma Counselling Costs	Not Insured
Geographical Limits:	Anywhere in the world excluding USA and/or Canada

SPECIAL TERMS & CONDITIONS**SEXUAL ABUSE EXCLUSION:**

This Policy does not cover any claim arising from:

Any actual or alleged Sexual Behaviour, (as defined below), committed, attempted, or allegedly committed or attempted, by an Insured Person.

Sexual Behaviour means any attempted or committed verbal or non-verbal act, communication, contact or other conduct or similar conduct of sexual discrimination, intimidation, molestation, harassment, abuse or lewdness.

VOLUNTARY WORKERS INSURANCE

Insured: Australian Lebanese Association Incorporated

Insured Persons: All Committee Members and Voluntary Workers of the Insured
Scope of Cover: Cover under this policy shall only apply whilst the Insured Person is actually engaged in unpaid voluntary work performed on behalf of the Insured provided always that the Policy shall apply only in respect of such work officially organized by and under the control of the Insured including necessary direct travel to, from or during such voluntary work.

Number of Volunteers: ^
Aggregate Limit of Liability:
Insured Event(s) \$1,000,000
Non Scheduled Flights Not Insured
Age Limit: Up to 85 years

Sublimit of Liability:	Benefit amount per Insured Person
Benefit	
Section 1 Lump Sum Benefits	
Accidental Death and Disablement Insured Events 1 to 25	\$100,000
Section 2 Surgical Lump Sum Benefits	
Injury resulting in Surgery	\$20,000
Section 3	
Weekly Benefits Injury	\$1,000
Percentage of Salary	85%
Excess Period (Days)	7
Benefit Period (Weeks)	104
Section 4	
Fractured bones Benefits Injury	\$3,000
Section 5	
Dental Benefits Injury	\$500
Section 6 Additional benefits under the policy	
Non Medicare Medical Expenses	\$1,500
Excess	\$ 50
Domestic Home Help	100% of expenses to a maximum
of	
Excess	\$500 per week
Benefit Period	7 Days
Student Education Assistance	26 Weeks
of	100% of expenses to a maximum
Excess	\$500 per week
Benefit Period	7 Days
Transport to and from work benefit	26 Weeks
weeks	\$25 per day for a maximum of 12
Reimbursement of professional or membership fees	
maximum of	\$250 per membership for a
Escalation benefit (Weekly benefit increase after 12 months)	2 memberships
Return to work assistance	5% compound
Twelve (12) weeks guaranteed payment	\$5,000
Exposure to the elements	Included
Disappearance	Included

Please note, cover will only become effective from the date the completed application form and payment of the premium is received in our office.

Should you wish to discuss this, or any other matter relating to the policy, please feel free to contact this office.

Thank you for contacting City Rural Insurance Brokers for your insurance solutions.

Kind regards,



Amy Ku QPIB
Internal Account Executive

Enclosures:
Financial Services Guide - Version 5 1/11/18
Policy Wording Product Disclosure Statement


CITY RURAL INSURANCE BROKERS PTY LTD

200 Greenhill Road, Eastwood SA 5063, PO Box 7138 Hutt St Adelaide SA 5000 I Telephone: (08) 8272 7785
 Facsimile: (08) 8357 8994 I Toll Free: 1300 887 429 I www.cityrural.net.au I APSSL: 237491 I ABN: 52 074 444 296


Request For Cover – Business Insurance

Please issue cover in accordance with the above quotation with effect from the / / 2019.

Signed:  Date: 18 / 09 / 2019
 Name: Simon Haddad, Phone Number: 04 22 33 51 75
 Secretary of Australian Lebanese Association Incorporated
 Reference: ALA AK

Important: The above *Request For Cover* form must be faxed, emailed or delivered to City Rural Insurance Brokers on or before the inception date. If the cover is to commence on a weekend or public holiday, your request must be received on the business day prior to the weekend or public holiday

Premium Payment

Please forward the CHEQUES to:

City Rural Insurance Brokers Pty Ltd
 PO Box 7138, Hutt Street, ADELAIDE SA 5000

Alternatively, the amount can be deposited directly into our account, details as follows:

Institution:	Macquarie Bank
BSB:	185300
Account No:	215338237
Reference:	ALA- AK



Credit Card / EFTPOS Payment Available
 (An administration fee of 1.50% will apply to all Credit Card &/or EFTPOS payments)

Dear Mayor Michael Coxon,

In our upcoming requirement to lodge a grant application by February 29 from the Multicultural affairs grant.

This is a dollar per dollar match over 5000.

Hence we would like to apply for 10,000 from this grant, and 5000 from the City of West Torrens Grant.

Would the City of West Torrens be amenable to sponsor the Australian Lebanese Association once again in 2020?

If so, then can you please provide an in-principle letter to this extent, and we will include this in the grant application, in order to try and attain a \$15,000 total grant funding.

We discovered from last event, both hall and park, that we exceeded this amount, to which we submitted our acquittal report to the City of West Torrens Officer.

If you could please confirm this, and if in accordance, please provide us a letter of support and wording to support our event with financial support in 2020, post the July date submittal period..

Thank you kindly.

Simon Haddad

17.2 Swap Spot/Exchange Zones Update

Brief

The purpose of this report is to provide the outcome of the legal advice sought for the Council proposal to establish a Safe Swap Spot within the City of West Torrens.

RECOMMENDATION

It is recommended to Council that based on independent legal advice and advice from the Local Government Association Mutual Liability Scheme that:

1. Council not proceed at this point in time on its own with the proposal to establish a Safe Swap Spot within the City of West Torrens due to the inherent liability risks that Council may face if the proposal was implemented.
2. The Chief Executive Officer be authorised to write to the Commissioner of Police seeking SAPOL support and involvement to partner with Council to consider establishing a Safe Swap Spot within the City of West Torrens.

Introduction

Council at its meeting of 5 November 2019 resolved that the Administration prepare "a report on the costs and feasibility of setting up a safe swap spot for the residents of West Torrens to ensure that the residents have a safe place to buy/sell and swap goods." The proposed safe swap spot was a proactive effort to provide rate payers with a suitable public location to promote e-commerce amongst residents who wish to exchange goods in a safe public space.

Following discussions with the mover and seconder of the 5 November 2019 motion, it was suggested that the proposed safe swap spot operate 7 days a week and the operating hours be between 8am - 5pm during standard daylight hours and between 8am -8pm during daylight saving times. Council's investment towards the proposed safe swap spot would also include access to a suitable public space, appropriate signage and for an operating CCTV system for recording.

Potential locations such as the Civic Centre/Hamra Centre, Thebarton Community Centre, Camden Oval or Apex Park were mentioned.

The Administration sought the views of our insurer, the Local Government Association Mutual Liability Scheme (LGAMLS - the Scheme) about the concept of establishing a safe swap spot within the City of West Torrens and presented these views to Council at its meeting of 21 January 2020 (**Attachment 1**).

The Scheme was not generally supportive of the concept indicating that Council has no law enforcement powers like SAPOL (and the police who establish and promote safe swap spot locations in the United States). The Scheme was of the view that there is no way that Council can risk manage the environment of the location, including limiting the access to local residents and the quality/safety/legality of the swap so when something goes wrong with any part of the swap process, any alleged negligence and/or failure to provide a 'safe' environment would fall to Council.

Given the advice from the Scheme and the likelihood that Council would not be covered insurance wise if something went wrong during the swap process at the safe swap spot, Council at its meeting of 21 January 2020 resolved that the Administration seek formal legal advice, including the inherent risks associated with the proposal to establish a Safe Swap Spot within the City of West Torrens.

Discussion

Following the resolution of Council, legal advice was sought and a response was provided on 12 February 2020. A copy of the legal advice was provided to Elected Members via email on 14 February 2020 and has not been attached to this report given the *commercial in confidence* nature of the advice.

Key considerations reviewed within the legal advice included:

- The general principles of negligence and Councils responsibility as the occupier and operator of the land;
- Council's obligations in implementing the proposed safe swap spot to enact responsible decision making for the community under section 6(a) *Local Government Act 1999*;
- The advice from the Scheme and Council's obligations as a member of the LGAMLS;
- The balance of the benefit to the public, against the level of identified risk.

The recommendations provided in the legal advice were similar to the views of the Scheme, and were not generally supportive of the concept as it would be challenging for Council as the owner of the land, to fulfil its duty of care to mitigate the risk of a person suffering harm and/or loss whilst participating in a Council operated safe swap spot. Furthermore, it was anticipated that should a person suffer harm and/or loss whilst participating in a Council operated safe swap spot, Council may be liable for damages.

These recommendations were provided electronically to Elected Members and following discussions with the mover of the 5 November 2019 motion, it was suggested that whilst Council not proceed at this point in time on its own due to the inherent liability risks that Council may face if the proposal was implemented, the Chief Executive Officer be authorised to write to the Commissioner of Police seeking SAPOL support and involvement to partner with Council to consider establishing a Safe Swap Spot within the City of West Torrens.

Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

There is no direct environmental impact in relation to this report.

Conclusion

Following the resolution of Council, legal advice was sought and a response was provided on 12 February 2020. The legal advice received was generally consistent with recommendations from the Scheme; that whilst the proposal to establish a Safe Swap Spot within the City of West Torrens has good intentions to provide a benefit to the public, continuing with the proposal has been outweighed by the potential to expose the Council to indemnifiable levels of risk.

Discussions took place regarding the legal advice recommendations with the mover of the 5 November 2019 motion and it was suggested that whilst Council not proceed at this point in time on its own due to the inherent liability risks that Council may face if the proposal was implemented, the Chief Executive Officer be authorised to write to the Commissioner of Police seeking SAPOL support and involvement to partner with Council to consider establishing a Safe Swap Spot within the City of West Torrens.

Attachments

1. **21 January 2020 Council Agenda Report Item 17.2 Swap Spot/Exchange Zones**

17.2 Swap Spot/Exchange Zones

Brief

The purpose of this report is to respond to the resolution of Council at its meeting of 5 November 2019 that the Administration prepare "a report on the costs and feasibility of setting up a safe swap spot for the residents of West Torrens to ensure that the residents have a safe place to buy/sell and swap goods."

RECOMMENDATION

It is recommended to Council that the Chief Executive Officer be authorised to obtain formal legal advice specifically related to the inherent risks Council would face if it proceeds with the proposal to establish a Safe Swap Spot within the City of West Torrens and Council's insurer, the Local Government Association Mutual Liability Scheme, deems the risk profile of the proposal too great to effectively manage and accordingly, any alleged negligence and/or failure to provide a 'safe' swap spot environment will fall to Council. Further, following receipt of the legal advice, a further report be provided to Council.

Introduction

Council at its meeting of 5 November 2019 resolved that the Administration prepare "a report on the costs and feasibility of setting up a safe swap spot for the residents of West Torrens to ensure that the residents have a safe place to buy/sell and swap goods." The proposed safe swap spot is a proactive effort to provide rate payers with a suitable public location to promote e-commerce amongst residents who wish to exchange goods in a safe public space.

Following discussions with the mover and seconder of the motion, it is suggested that the proposed safe swap spot operate 7 days a week and the operating hours be between 8am - 5pm during standard daylight hours and between 8am -8pm during daylight saving times. Council's investment towards the proposed safe swap spot would also include access to a suitable public space, appropriate signage and for an operating CCTV system for recording.

Potential locations such as the Civic Centre/Hamra Centre, Thebarton Community Centre, Camden Oval or Apex Park were mentioned.

Discussion

A safe swap spot looks to promote e-commerce transparency amongst residents who are looking to make online purchases and exchange transactions in a monitored area. It is envisaged that the safe swap spot will be located outdoors and will offer clear signage, visibility, parking availability and CCTV recording.

Research material on this topic has not been locally or nationally available, all of the information has been sourced from United States given safe swap spots or 'exchange zones' as they are also called are common in America. Local Australian examples cannot be cited and if Council was to proceed with the concept of a safe swap spot, it is the Administration's belief that it would be a first for South Australia and possibly Australia.

Swap Spots or Exchange Zones (other researched names include Safe Exchange Zone; Safe Trade Station; etc.) in the United States are established, controlled and monitored by the relevant State/City Police Departments. Web site examples of such safe swap spots are provided in

Attachment 1.

From the available information, a Swap Spot is essentially a public meeting place chosen by the buyer/seller to complete a local sale. The buyer and seller will communicate after a local listing is purchased to determine the time and date of the meeting to complete the sale. In the absence of a designated and promoted safe swap spot, common sense should apply to complete the sale like:

- Always meet the buyer/seller in a public place, with plenty of people around;
- Use the 'buddy' system and don't go alone;
- Avoid meeting in secluded areas or places that are not well lit;
- Avoid inviting a stranger into your home or going into a stranger's home unaccompanied;
- Be suspicious of a buyer/seller who changes the agreed upon meeting location; and
- If something doesn't feel right, don't meet the buyer/seller.

Of course, the buying and selling of large household items such as furniture, white goods and large electrical appliances will often require the buyer to enter, or the seller to invite strangers into their homes which may create an unsafe situation. Designated and promoted safe swap spots are not intended for the buying and selling of large household items.

As part of preparing this report and before Council ventures too far into the concept of establishing a safe swap spot, the Administration sought the views of our insurer, the Local Government Association Mutual Liability Scheme (LGAMLS - the Scheme).

The Scheme's advice is that once Council promotes that there is a place where the public can 'safely' buy/sell and/or swap goods, then that introduces a duty of care (increase in risk profile) on Council to monitor, manage and ensure people can 'safely' undertake that task. The advice also indicates that given local government has no law enforcement powers like SAPOL (and the police who establish and promote safe swap spot locations in the United States), there is no way that Council can risk manage the environment of the location, including limiting the access to local residents and the quality/safety/legality of the swap so when something goes wrong with any part of the swap process, any alleged negligence and/or failure to provide a 'safe' environment will fall to Council.

Irrespective of whether the word 'safe' is omitted from the nomenclature of the location (for example, just calling it a swap spot or exchange zone) the Scheme's advice suggests that by simply making a place available by a level of government will be interpreted as having made a 'safe' place available. The Scheme also suggests that this type of activity would not be contemplated with respect to the objectives of Community Land as contained in the *Local Government Act 1999*.

Further, it is the view of the Scheme that CCTV won't stop poor behaviours and signs won't mitigate the risks and as a member of the LGAMLS, the Council has an obligation pursuant to the LGAMLS Rules to effectively risk manage its functions, duties, obligations pursuant to the *Local Government Act 1999*.

The Scheme's advice concludes by posing the question "Why Council thinks it has a duty to provide such a community service?"

If Council was to proceed with establishing a safe swap spot at a suitable location, it is estimated that the CCTV establishment costs would be in the order \$4,000 and internet provider costs would be approximately \$90 per month (ongoing) to allow for recording and remote access requirements. Other establishment costs including appropriate signage and any other civil infrastructure costs required dependent on the location chosen have not been costed at this stage.

Given the advice from the Scheme and their view that Council would find it difficult to provide a 'safe' environment free of risk if it established a safe swap spot and the fact that the Scheme would most likely not cover any liability that would fall to Council if something went wrong at the proposed safe swap spot, it may be appropriate to seek formal legal advice, including the inherent risks associated with the proposal to establish a Safe Swap Spot within the City of West Torrens.

Alternatively, Council may at this point decide not to proceed any further with the proposal to establish a Safe Swap Spot within the City of West Torrens.

Conclusion

Council at a recent meeting resolved that the Administration prepare a report on the costs and feasibility of setting up a safe swap spot for the residents of West Torrens.

A safe swap spot is intended to be a safe place where residents can deal directly with another person to buy and sell items advertised online. Swap spots or exchange zones are very prominent in the United States where they are established, controlled and monitored by the relevant State/City Police Departments. Local Australian examples cannot be found and if Council was to proceed with the concept of a safe swap spot, it is the Administration's belief that it would be a first for South Australia and possibly Australia.

The Administration sought the views of our insurer, the Local Government Association Mutual Liability Scheme (LGAMLS - the Scheme) about the concept of establishing a safe swap spot within the City of West Torrens.

The Scheme was not generally supportive of the concept indicating that Council has no law enforcement powers like SAPOL (and the police who establish and promote safe swap spot locations in the United States). The Scheme is of the view that there is no way that Council can risk manage the environment of the location, including limiting the access to local residents and the quality/safety/legality of the swap so when something goes wrong with any part of the swap process, any alleged negligence and/or failure to provide a 'safe' environment will fall to Council.

Given the advice from the Scheme and the likelihood that Council would not be covered insurance wise if something went wrong during the swap process at the safe swap spot, it would be appropriate to seek formal legal advice, including the inherent risks associated with the proposal to establish a Safe Swap Spot within the City of West Torrens.

Attachments

1. Swap Spot/Exchange Zones Examples

14/01/2020

Lincoln Police | Swap Spot



lincoln.ne.gov Police Swap Spot

SWAP SPOT

1501 N. 27th Street
Lincoln, Nebraska

The Lincoln Police Department has set aside locations inside and outside the Center Team Station as a meeting place for exchanges. This could include pre-arranged online transactions, child custody exchanges, etc. Similar initiatives are in place across the country in an attempt to minimize frauds and robberies which have occurred when meeting with a stranger.

The Lincoln Police Department permits the physical exchange of items/currency within the public lobbies of department facilities during regular operating hours only and in parking lots between 5:00 a.m. and 11:00 p.m. All sales, trades, transactions, and child custody exchanges are purely civil matters which must be agreed upon by all involved parties prior to arriving on city property. LPD employees or officers will not act as arbitrators, mediators, witnesses, or direct supervisors of transactions or exchanges. LPD does not guarantee the safety of any persons utilizing the Swap Spot service and will not be liable for any criminal activity which may occur during a transaction or exchange. Citizens are welcomed and encouraged to utilize LPD lobbies and the Swap Spot service, but will do so at their own risk.



Two stalls on the north side of the Center Team Station are marked with signs bearing the Swap Spot logo.

RULES OF SWAP SPOT

- The Swap Spot service is available at the LPD Center Team station located at 1501 N. 27th Street (NW corner of 27th and Holdrege Street).
- In the event of an emergency, parties must call 911 to receive assistance. LPD will not provide officers/employees to directly supervise transactions.
- All transactions and exchanges are purely civil matters. LPD will not intervene in determining fair market value of items or goods and will not act as a mediator, arbitrator, witness, or direct supervisor for any transaction or custody exchange.
- No weapons, drugs, medication, or hazardous items (chemicals, explosives, etc.) will be allowed to be traded utilizing the Swap Spot service.
- Under no circumstance may any children or items be left unattended on LPD property. If children are left unattended, the parents, guardians, or responsible party may be criminally prosecuted.
- LPD Service Desk personnel may check items upon request to verify if they are stolen. If items are found to be stolen, an officer will be requested to respond and seize the property. No refunds or compensation will be provided for items found to be stolen.
- All buyers/sellers are encouraged to verify the identity of persons they are interacting with. If you are given a cashier's check, money order, or other equivalent, call the bank (via the number listed online, not one provided to you by the person giving you the check) to verify validity of the check or funds.
- Video evidence will be retained for 30 days. Any requests for video must be made within that timeframe. Any requests beyond 30 days will not be accommodated.
- Beware of common scams, such as checks for amounts higher than the amount of the transaction or persons requesting pre-paid cards instead of currency.

About LPD

<https://www.lincoln.ne.gov/city/police/swapspot.htm>

1/2

14/01/2020

Lincoln Police | Swap Spot

Reporting a Crime
Join Our Team
Departments
Police Activity
Police Records
Documents & Publications
History
Home



Lincoln Police Department

lpd@cjis.lincoln.ne.gov

Jeff Bliemeister
Chief of Police

575 S 10th St
Lincoln, NE, 68508 USA

Tel 402-441-6000

Fax 402-441-7010



Lincoln Police Department on Instagram

- Mission & Goals
- Department Policies
- Frequently Asked Questions
- Community Based Policing
- Mental Health Resources: Adults & Kids

<https://www.lincoln.ne.gov/city/police/swapspot.htm>

2/2

14/01/2020

Safe Swap Spot | City of Bloomington MN



☰ POLICE LINKS

Safe Swap Spot



What is Safe Swap Spot?

Safe Swap Spot is a designated location for residents to conduct transactions in a public location. Transactions may include online purchases, child custody exchanges or transactions where meeting in a public location will help improve personal safety.

<https://www.bloomingtonmn.gov/pd/safe-swap-spot>

1/4

14/01/2020

Safe Swap Spot | City of Bloomington MN

Where is the Safe Swap Spot located?

The swap spot is located in the Civic Plaza parking lot at 1800 W. Old Shakopee Rd. near the police department entrance (row of parking spots closest to Logan Ave.) and available for exchanges at all time. The area is identified by Safe Spot signage. In addition, during police department lobby hours, exchanges can be made within the police department lobby (Monday - Friday 8 a.m.-8 p.m.).

Is the Safe Swap Spot monitored 24 hours a day?

- While security monitoring is in place, a staff person is not assigned to viewing the footage or exchanges on a regular basis.
- An officer will NOT monitor each exchange nor facilitate transactions.
- Safe Swap Spot is not a guarantee of safety, but rather used as an additional option when people want to schedule an exchange or transaction in a public place.

Safety Tips About In Person Transactions

While many people who conduct business online are honest and sincere in buying and selling items, there are those who use it to facilitate crimes. These tips are suggested as extra safety measures:

- Tell a friend or family member where you are going and when you will return.
- If possible, have someone accompany you.
- Conduct exchanges during daylight hours.
- Make sure the product works. Remember once you give the seller cash and leave, there aren't any refunds.
- Bring a cell phone and make sure it is turned on.
- Only purchase items from sellers who will meet in person and accept cash. If a seller insists on money transfer, itunes gift cards, or online payment, don't do it.
- If you are purchasing or selling a large ticket item (such as a vehicle), consider meeting at a bank.
- Always trust your instincts and take additional safety precautions as necessary.
- Cancel plans for a transaction if you identify any red flags or have additional concerns for your safety.
- If it's too good to be true, it probably is.

To see where other meet-up locations are in the area, visit www.safetradespots.com, the largest national database of police and sheriff's departments that have designated locations for in-person transactions.

Contact Information

Police Department

[952-563-4900](tel:952-563-4900)

police@BloomingtonMN.gov

<https://www.bloomingtonmn.gov/pd/safe-swap-spot>

3/4



[City Government](#) » [City Departments](#) » [Police Department](#)

Safe Exchange Zone

Font Size: [+](#) [-](#) [+](#) [Share & Bookmark](#) [Feedback](#) [Print](#)

The Grand Prairie Police Department is now offering three locations for online exchanges and child custody arrangements.

The "Exchange Zone" spaces are well-lit and under 24-hour surveillance, giving residents and commuters a safe place to purchase or exchange property from sites such as Craigslist, Facebook and OfferUp. In addition to online purchases, we also invite blended families to utilize the Exchange Zone for child custody arrangements.



Exchange Zone Locations in Grand Prairie

Public Safety Building
1525 Arkansas Lane, Grand Prairie TX 75052

We also welcome the public to use the inside lobby during normal business hours to request a check of serial and/or VIN numbers to ascertain if the item(s) are stolen.

Police Substation
5610 Lake Ridge Parkway, Grand Prairie, TX 75052

Police Training Center
310 College Street, Grand Prairie, TX 75050

Safety Tips if You are Unable to Use an Exchange Zone:

Here are a few safety tips if you are unable to use the "Exchange Zone":

- Use a well-lit, public parking lot with video surveillance
- Bring a friend or family member with you
- Let others know where you are meeting and what time
- Avoid meeting at your home
- Avoid nighttime transactions





[Departments](#) » [Police Department](#) » [Community Services](#) »

SAFE TRADE STATION

Font Size: [+](#) [-](#) [+](#) Share & Bookmark [+](#) Print

About Safe Trade

The internet can be a great place to buy or sell property, but conducting the transaction should be as safe as possible for both the buyer and the seller.

In a proactive effort to safeguard our citizens, the Cedar Park Police Department is welcoming the public to our department to close their online transactions in a safer way.

Some online sites require transactions to be conducted in person. The Cedar Park Police Safe Trade Station is a location set up by CPPD to aid in the safe transfer of goods purchased online at classified or social media web sites, such as Craigslist, Facebook, and other online sites where you deal directly with another person to exchange money for items purchased.



Meetup Spot

For your safety and convenience, the Cedar Park Safe Trade location has been designated as the 4 parallel spots directly in front of the Police Department Expansion along Discovery Blvd (see image references below). This location is monitored and recorded on a 24-hour surveillance video system. We recommend that transactions be conducted during daylight hours for increased safety but this area is also well lit if you must conduct the transaction during early morning or night time hours.





How Does It Work?

It's simple! Those who have made arrangements to buy or sell items over social media such as Facebook groups and Craigslist, agree to meet ONLY at a SafeTrade location.

Our lobby is only open Monday-Friday from 8:00 a.m. - 5:00 p.m.

Please note: Cedar Park Police Officers will not personally witness, facilitate or participate in exchanges as these are a civil matter.

SafeTrade Tips

SafeTrade offers a few tips for a successful exchange:

- Ask for proof of the seller's identity. Take a photo with a cell phone.
- If you're carrying a large sum of cash, either before or after the transaction, don't make it obvious, and be careful to ensure that you're not followed after the transaction.
- Beware of common scams, like checks for an amount higher than the amount of the deal; "cashier's checks" that are forged and presented when the bank is closed.
- If you are given a cashier's check, money order or other equivalent, call the bank - at the number listed online, not a number the buyer gives you - to verify the validity of the check.

A list of SafeTrade Stations is online at www.safetradestations.com. For more information on the SafeTrade program, please email police2@cedarparktexas.gov.

Cedar Park Police Personnel do not get involved in, enforce, guarantee, or become a party in any way to the transactions of the individuals trading. We are simply offering a safer environment to conduct your prearranged transaction. Currently, the only restrictions on transactions at the Cedar Park Police Department, is the buying or selling of weapons or medications of any kind, and obviously no transactions involving items prohibited by law.

Like any crime prevention initiative, a SafeTrade station is not a 100% guarantee against unpredictable behavior or that something will go wrong, but it is a step to make your transaction safer.

17.3 Civic Reception - Deputy Foreign Minister Mr. Konstantinos Vlasis of Greece

Brief

This report advises that the Deputy Foreign Minister Mr. Konstantinos Vlasis of Greece will be visiting the State of South Australia between 18 and 20 March 2020.

RECOMMENDATION

It is recommended that Council hosts a Welcome Reception in honour of the visit to South Australia and the City of West Torrens by the Deputy Foreign Minister Mr. Konstantinos Vlasis of Greece and that the Office of the Mayor and Chief Executive organise a suitable function.

Introduction

Council has been notified that the Deputy Foreign Minister Mr. Konstantinos Vlasis, will be visiting the State of South Australia between 18 and 20 March 2020.

Discussion

During his visit, Mr Vlasis will be attending the official opening on Wednesday 18 March 2020 of an art exhibition in the Hamra Auditorium as part of the Festival Hellenika.

In honour of his visit to our City, it is proposed to hold a Civic Reception for members of the Greek community to be held in the George Robertson Room on Friday 20 March 2020 from 6pm until 8pm.

The approximate cost to hold a Civic Reception would be in the order of \$4,000-\$5,000, with the number of guests limited to 150 which will include members of the Greek Community, Elected Members and partners and senior management.

Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

To reduce the environmental impact from the proposed Civic Reception, reusable linen will be used in lieu of disposable plastic tableware along with biodegradable plates and serviettes, food scraps will be composted and bottles/cans will be recycled appropriately.

Conclusion

Council has been notified that the Deputy Foreign Minister Mr. Konstantinos Vlasis, will be visiting the State of South Australia between 18 and 20 March 2020. In honour of his visit to our City, it is proposed to hold a Civic Reception for members of the Greek community to be held in the George Robertson Room on Friday 20 March 2020 from 6pm until 8pm.

Attachments

Nil

17.4 2020 Council Best Practice Showcase and LGA Ordinary General Meeting

Brief

This report provides notice of the 2020 Council Best Practice Showcase and Local Government Association Ordinary General Meeting to be held at the Adelaide Entertainment Centre on Thursday 2 and Friday 3 April 2020.

RECOMMENDATION(S)

It is recommended to Council that:

1. The voting delegates to the 2020 Local Government Association Ordinary General Meeting be Mayor Michael Coxon and Deputy Mayor John Woodward (proxy), as previously resolved by Council at its meeting of 10 December 2019.
2. Subject to their confirmation, Council approves the attendance of Mayor Michael Coxon, Cr John Woodward and Cr/sat the 2020 Council Best Practice Showcase and Local Government Association Ordinary General Meeting on Thursday 2 and Friday 3 April 2020 at the Adelaide Entertainment Centre including the Networking Dinner being held on Thursday 2 April 2020 at the Adelaide Entertainment Centre.
3. Expenses be reimbursed in accordance with Council policy.

Introduction

The 2020 Council Best Practice Showcase and Local Government Association (LGA) Ordinary General Meeting is being held on Thursday 2 and Friday 3 April 2020 at the Adelaide Entertainment Centre.

The draft program for the event is available at **Attachment 1**.

Discussion

The Council Best Practice Showcase and LGA Ordinary General Meeting is an annual event which provides an opportunity for SA councils to learn from the sector's success stories, discuss important policy positions, and network with council members and staff from around the State.

The keynote speaker for the 2020 Showcase event is Malcolm Alexander, Chief Executive, Local Government New Zealand (LGNZ). Malcolm leads the LGNZ's management, relationships with its members and external stakeholders, and strategy and policy development. He is also a qualified lawyer and has practiced law in New Zealand and London.

Following the presentation by Malcolm Alexander, there will be an opportunity for attendees to attend concurrent sessions ranging from waste and recycling, financial and asset management, strategies for engaging with community, service transformation and leadership programs.

Registration Fees

Type of Registration	Inclusions	Cost
Full Conference + Dinner	Access to exhibition and conference Day 1 and 2 and Dinner for Thursday 2 April 2020	\$660 including GST
Full Conference	Access to exhibition and conference Day 1 and 2	\$544.50 including GST
Day 1 Pass (Thursday 2 April)	Access to exhibition and conference Day 1	\$385 including GST
Day 2 Pass (Friday 3 April)	Access to exhibition and conference Day 2 - OGM	\$209.00 including GST

Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

There is no direct climate impact consideration in relation to this report.

Conclusion

Notification has been received from the Local Government Association of South Australia regarding the 2020 Council Best Practice Showcase and LGA Ordinary General Meeting being held on Thursday 2 and Friday 3 April 2020 at the Adelaide Entertainment Centre.

Attachments

- Draft Program for 2020 Council Best Practice Showcase and LGA OGM**



Thursday 2 &
Friday 3 April

2020

Council Best Practice

showcase

+ LGA Ordinary General Meeting (OGM)

Venue:
**Adelaide
Entertainment
Centre**



Keynote
speaker:



**Malcolm
Alexander**
Chief Executive,
Local Government
New Zealand

Draft
Program

Thursday 2 April Day 1

Council Best Practice



8.30am Registrations open

8.45am **LGA President's welcome**
Mayor Sam Telfer
President, Local Government Association

9.00am **Keynote address**
Malcolm Alexander
Chief Executive, Local Government New Zealand

9.40am **Welcome to Country**
Mickey Kumatpi
Marrutya O'Brien

9.55am **Sponsor**

10.00am **Morning tea**

10.30am **No wasted opportunity**
Local government continues to rise to waste and recycling challenges by turning complex problems into innovative solutions. Hear about how councils are leading best practice in waste and recycling to progress towards a circular economy.

11.30am **Stronger than before**
As the closest government to communities, people look to councils to provide support, answers and hope in times of hardship. Our State is enduring some pretty tough times and this panel will share stories about how their councils and communities are coming back stronger than before.

12.35pm **Lunch**

1.40pm **A1 Closest to communities.**
Tell us what you want, what you really, really want! Learn about successful strategies for engaging with and listening to your community.

B1 Built to last
South Australian councils manage around \$23 billion worth of infrastructure and facilities. This session will highlight how integrated asset management is the key to making good long-term strategic decisions.

2.10pm **A2 Friends, books and nooks.**
Find out from new research how much your community loves their library and how councils are achieving strategic goals through investment in new creative spaces.

B2 Data driven decisions
The SA Productivity Commission has recommended a new information framework for local government to support decision making and drive efficiencies. Hear about how data driven decision making is already working in South Australian councils.

2.30pm **Afternoon tea**

3.15pm **A3 Smiles, beats and treats.**
Councils invest in hundreds of community events that boost local economies and help make our State great. Can a great local event put your council on the national stage?

B3 Global problems. Local solutions.
Learn about how councils are partnering to drive positive social, economic and environmental change within their community.

4.00pm **A4 Give happy. Live happy.**
This session will showcase how councils are supporting and enabling their workforce and local volunteers to make a difference in the community.

B4 Your council here!
Is your council following best practice and finding innovative solutions? Let us know and this spot could be yours!

5.00pm **Close**

6.30pm **Networking dinner**
Pre dinner drinks at 6.30pm and dinner to start at 7pm
Presentation of Service Certificates and Joy Baluch Award



OGM

**Friday 3 April
Day 2**

8.30am	Registrations open
9.00am	LGA President's welcome Mayor Sam Telfer <i>President, Local Government Association</i>
9.10am	ALGA update Mayor David O'Loughlin <i>President, Australian Local Government Association</i>
9.30am	Minister for Health and Wellbeing - Excellence in Public Health Awards Hon Stephen Wade MLC <i>Minister for Health and Wellbeing</i>
9.55am	Platinum sponsor LGA Mutual Liability Scheme Workers Compensation
10.00am	Morning tea <i>Business card draws</i>
10.30am	Keynote address Hon Stephan Knoll MP <i>Minister for Transport, Infrastructure and Local Government and the Minister for Planning</i>
10.55am	National anthem Be Vocal group <i>Adelaide Botanic High School</i>
11.00am	Ordinary General Meeting
1.00pm	Lunch
2.00pm	Close

Draft **Program**

This event is an opportunity for SA councils to share and demonstrate their projects and services with their peers and fellow councils and to learn about new and innovative ways that local government is delivering value to South Australian communities.

Venue:
Adelaide Entertainment Centre
98 Port Road, Hindmarsh
Free car parking

Accommodation options
For accommodation details and offers, please visit our website www.lga.sa.gov.au/showcase and contact hotels directly for bookings or more information.

www.lga.sa.gov.au/showcase

Register now

2020

Council Best Practice showcase
+ LGA Ordinary General Meeting (OGM)



2020

Council Best Practice showcase

+ LGA Ordinary General Meeting (OGM)

For more information please visit
www.lga.sa.gov.au/showcase

If you have any questions please contact
Angie D'Amato on 8224 2047 or events@lga.sa.gov.au

**Register
now**

Thank you to our Platinum sponsors



Mutual Liability Scheme
Workers Compensation Scheme
Local Government Association
of South Australia

18 LOCAL GOVERNMENT BUSINESS

18.1 Local Government Circulars

Brief

This report provides a detailed listing of current items under review by the Local Government Association.

RECOMMENDATION

It is recommended to Council that the Local Government Circulars report be received.

Discussion

The Local Government Association (LGA) distributes a weekly briefing on a range of matters affecting the general functions, administration and operations of councils through a 'General Circular'.

The indices attached for Members' information in this report are numbers 7 and 8.

If Members require further information, they may contact the Chief Executive Officer's Secretariat. In some circumstances, it may then be appropriate for the Member to contact the relevant General Manager for more information.

Attachments

1. Local Government Circulars Weeks 7 and 8



Local Government Association of South Australia

- 7.1 New look - Grants and Funding program**
Get your grant application over the line!
- 7.2 It's almost here! Elected Member Leadership Forum**
Additional Location
- 7.3 The role of an Audit Committee is important to understand! LGA Training can help**
Have your Members enrolled yet?
- 7.4 Improve your engagement skills & techniques with IAP2 training**
Book Now! Places filling up fast!
- 7.5 ChemAlert Training - Book Now**
Don't miss out!
- 7.6 Calling all Council Staff – Learn how to ‘Own the Room’ and communicate effectively**
Do you want to become a strong, vibrant communicator?
- 7.7 Review into South Australia’s 2019/20 bushfire season**
The independent review into South Australia’s 2019/20 bushfire season closes on Sunday 22 March 2020. The LGFSG will also be undertaking a separate debrief into its operations during the recent events.
- 7.8 2020 Council Best Practice Showcase & OGM - Draft program available & registrations now open**
The 2020 Council Best Practice Showcase & Ordinary General Meeting will be held at the Adelaide Entertainment Centre on Thursday 2 and Friday 3 April. Further information can be found in this Circular.
- 7.9 Nominations for the 2020 Joy Baluch Award are open**
Nominations for the 2020 Joy Baluch Award are now open. Further information can be found in this Circular.
- 7.10 UDIA SA – International Women’s Day Event – Telstra Business Woman of the Year**
Come and hear from SA Telstra Business Woman of the Year, Daph Crowhurst at UDIA SA International Women’s Day Event on Wednesday 4th March. Further information can be found in this Circular.
- 7.11 LGFSG – Covid-19 (Novel Coronavirus) working group**
The LG Functional Support Group is establishing a working group in conjunction with SA Health to discuss and plan for the potential consequences of Covid-19 (formerly known as Novel Coronavirus). And is seeking expressions of interest for the working group.



Local Government Association of South Australia

- 8.1 Want to learn how to write effective business cases?**
Book Now
- 8.2 Taking Project Management to another level with LGA Training**
Let's get back to basics
- 8.3 Fresh off the press - LGA Training Program**
Check it out
- 8.4 LGA Board of Directors meeting - 20 February 2020 - Agenda Available**
The LGA Board of Directors will meet on Thursday 20 February 2020 at LG House, 148 Frome Street, Adelaide. The agenda is now available and this circular provides a list of reports to be considered at the meeting.
- 8.5 Powerline-friendly list of species for planting in urban areas**
Councils are encouraged to refer to the SA Power Networks (SAPN) guide to assist councils in selecting and planting appropriate trees under powerlines to minimise pruning and tree removal.
- 8.6 LGASA Recruitment - current vacancies**
LGASA Recruitment are currently recruiting for some exciting positions in Robe and Coober Pedy! Further information can be found in this Circular.
- 8.7 Public Health Update - AdMental 2020 and SANE Australia Survey**
This Circular provides information on the Don Dunstan Foundation's AdMental 2020 event as well as how members of your community can provide input into SANE Australia's national survey to better understand the issues for people living with complex mental health issues.
- 8.8 2020 LGA Ordinary General Meeting - Voting Delegate**
The 2020 Ordinary General meeting will be held at 11am on Friday 3 April at the Adelaide Entertainment Centre. Members are asked to advise if their registered voting delegate is unable to attend.
- 8.9 Nominations for the 2020 Joy Baluch Awards are open**
Nominations for the 2020 Joy Baluch Award are now open. Further information can be found in this Circular.
- 8.10 2020 Council Best Practice Showcase & OGM - Draft program available & Registrations open**
2020 Council Best Practice Showcase & OGM - Draft program available & Registrations open. Further information can be found in this Circular.
- 8.11 Community Engagement Training – Check out what's on offer**
Are you engaged? Need some training? Click through for details
- 8.12 Local Government Tourism, Hospitality & Retail Award**
There have been changes to the Local Government Tourism, Hospitality & Retail (LGTHR) Award. Please find further details in this circular.
- 8.13 Have you seen what's on offer with LGA Training?**
Check out the program

8.14 Grant opportunity - Local Government Information Linkages and Capacity Building (LGILC) Program

LGA SA is seeking grant applications from South Australian councils and regional LGA's for the Local Government Information Linkages and Capacity Building Program (LGILC). The LGILC funding is available to support South Australians with disabilities to live more connected lives by increasing the understanding of the needs of people living with a disability in rural, regional or remote South Australia. Applications close at 4pm on Friday 3 April 2020.

8.15 Local Government and You – Now Available

Book Now

8.16 Cyber Security Training (New Program)

Numbers are limited

8.17 Calling all Elected Members - Community Engagement Training

Book Now

8.18 The Premier's Certificate of Recognition for outstanding volunteer service is now open for nominations.

Nominations are now open for the Premiers Certificate of Recognition for outstanding volunteer service

8.19 Your Year of Understanding a Council Budget with Q & A

Free Information Session for Councillors

19 MEMBER'S BOOKSHELF

- Australian Institute for Disaster Resilience 2018-19 Year in Review

RECOMMENDATION

That the additions to Members' bookshelf be noted.

20 CORRESPONDENCE

20.1 Adelaide Airport Consultative Committee Minutes

Correspondence has been received from the Adelaide Airport, regarding the minutes of the Adelaide Airport Consultative Committee meeting held 15 November 2019 (**Attachment 1**).

20.2 Adelaide Airport Passenger Statistics

Correspondence has been received from the Adelaide Airport Limited, providing passenger statistics for the January Quarter 2020 (**Attachment 2**).

20.3 Adelaide Airport Consultative Committee Briefings

Correspondence has been received from the Adelaide Airport Limited, regarding the Sustainability, Environment, and Wildlife Hazard Management briefings of the Adelaide Airport Consultative Committee for February 2020 (**Attachment 3**).

20.4 Aircraft Operations during Adelaide Curfew

Correspondence has been received from the Adelaide Airport Limited, summarising airport operations during the Adelaide Airport curfew period from October to December 2019 (**Attachment 4**).

20.5 Adelaide Airport Curfew Dispensation Report

Correspondence has been received from the Adelaide Airport Limited, regarding the granted curfew dispensation from October to December 2019 (**Attachment 5**).

20.6 Australian Mayoral Aviation Council Executive Committee Minutes

Correspondence has been received from Australian Mayoral Aviation Council regarding the minutes from the meeting of the Executive Committee held on 8 February 2020 (**Attachment 6**).

RECOMMENDATION

That the correspondence be received.

Attachments

- 20.1 Adelaide Airport Consultative Committee Minutes
- 20.2 Adelaide Airport Passenger Statistics
- 20.3 Adelaide Airport Consultative Committee Briefings
- 20.4 Aircraft Operations during Adelaide Curfew
- 20.5 Adelaide Airport Curfew Dispensation Report
- 20.6 Australian Mayoral Aviation Council Executive Committee Minutes

Adelaide Airport Consultative Committee (AACC) MINUTES



Date: 15 November 2019

Starting time: 9:00am

Location: Royal Flying Doctor Service (RFDS), 1 Tower Road, Adelaide Airport SA 5950

1.0 WELCOME

The Chairman opened the meeting at 0901hrs and welcomed those present.

Present	Company
Russell Synnot – Chair	Synnot & Wilkinson
Brett Eaton	Adelaide Airport Limited (AAL)
Mark Williams	On secondment to AAL
Rob Kaftan	Adelaide Airport Limited (AAL)
Kym Meys	Adelaide Airport Limited (AAL)
Matthew Eygenraam	Adelaide Airport Limited (AAL)
Jamie Sangster	Adelaide Airport Limited (AAL)
Sarah Tink	Department of Infrastructure, Transport, Cities and Regional Development (DITCRD)
Adam Osborne	Department of Infrastructure, Transport, Cities and Regional Development (DITCRD)
Russell McArthur	Department of Infrastructure, Transport, Cities and Regional Development (DITCRD)
Walter Dollman	North Adelaide Residents Society
Phillip Martin	Adelaide City Council
Klinton Devenish	City of Adelaide
Brenton Burman	AECOM
Robert Owen	Netley Residents Association
Marylou Bishop	Town of Walkerville
Evan Knapp	South Australia Freight Council (SAFC)
Chris Wallace	Airservices Australia (ASA)
Bob Patton	City of Holdfast Bay
Barry Salter	Holdfast Bay Residents Alliance
Michael Coxon	City of West Torrens
Terry Buss	City of West Torrens
Hon Rachel Sanderson	State Member for Adelaide
Lindsay Jervis	West Beach Resident Alliance

Apologies	Company
Mark Young	Adelaide Airport Limited (AAL)
Brenton Cox	Adelaide Airport Limited (AAL)
Kenzie Van Den Nieuwelaar	City of Charles Sturt
Juergen Ruppert	Department of Planning, Transport and Infrastructure (DPTI)
Brenton Griguol	North Adelaide resident
Gerard Mears	Airservices Australia (ASA)

2.0 MINUTES OF PREVIOUS MEETING – 16 August 2019

The below amendment was made and then the proposed – Robert Owen and Seconded Evan Knapp that the notes of the 16 August 2019 meeting be adopted – Carried.

~~The Government has until the second half of September to table their Productivity Commission response in Parliament.~~

The Government has until the 22 October to table their Productivity Commission report in Parliament.

3.0 CORRESPONDENCE

3.1 Correspondence In:

- Apologies
- Reports

3.2 Correspondence Out:

- Previous Minutes, Agenda and Reports

4.0 SUMMARY OF ACTION ITEMS

4.1 Air quality study – AAL

AAL have engaged third party consultants, Lathwida Pty Ltd, to review the monitoring program proposed by Adelaide University for Stage 3 of the air quality assessment program. Following the Lathwida review, AAL will meet with and seek input from the SA EPA to ensure the proposed monitoring program provides appropriate and reliable data. A short update will be provided at the next meeting.

4.2 Netley Noise Attenuation Mound update – AAL

The weeds were treated in early September. The Airports maintenance team are monitoring the site. It was noted that the watering will be checked and will make sure the site including the weeds are checked regularly.

4.3 Trash collection Keswick/ Brown Hill Creek Update - AAL

The Airport's maintenance team check the flood risks to the airport site regularly. A joint meeting between AAL and NRM was requested by a Committee member and it was noted this meeting will be arranged.

4.4 Update on South Road extension work – DPTI

No update. DPTI to update at the next meeting.

4.5 Building heights CBD development – AAL

It was noted that the Airport is still sourcing information from the proponent to help with the crane assessment. CASA and ASA have provided preliminary advice. A meeting has been organised in Canberra with all the agencies and the proponent in December. AAL to report at the next meeting.

5.0 AIRPORT UPDATE

5.1 Adelaide Airport Limited (AAL) Report – The Report was tabled and taken as read. It was noted that approx. 800 guests attended the Vickers Vimy open day in October.

5.2 Property and Development and Land Use Report – The Report was tabled and taken as read. It was noted that the planned Harbour Town upgrade is under review in conjunction with Harbour Town.

5.3 Environment Report – The Report was tabled and the following was noted: ASA provided an email update on PFAS. Monitoring was undertaken for PFAS at Airservices groundwater wells in September this year inclusive of the off-site wells recently installed. Results were below the trigger level value required for further investigations (value as agreed with SA EPA), i.e., results were below 0.3ppb. The next round of monitoring will be undertaken in December this year – and results are expected to be available by February 2020. Airservices will be available to attend the next Adelaide Airport Consultative Committee in 2020, and should have two sets of quarterly monitoring results available for discussion.

5.4 Adelaide Airport Technical Working Group (AATWG) –

The Group reviewed a number of items including the consistently low number of noise complaints. A noise complaint was received in Warradale which is unusual and ASA will investigate. Track compliance was discussed particularly for Emirates departures. ASA noted no new changes or procedures for flight paths. The Group noted all noise-related Master Plan submissions will be reviewed. Curfew dispensations were discussed in relation to causes and actions being taken by the Department. No road or runway closures are planned in the near future.

5.5 Adelaide Airport Master Plan – The 2019 Adelaide Airport Preliminary Draft Master Plan public consultation period has now closed. The team are working through the various submissions and responses. It was noted that 71 submission have been received with 355 individual comments. Roads, especially the Sir Donald Drive one-way solution was noted in a number of submissions. Aircraft noise was also a theme across a number of submissions. A number of these submissions refer to existing aircraft noise and these submissions have been referred to the AATWG. Submissions were received regarding further recognition of South Australian Aviators.

A request for additional information regarding cycle paths and more visual representations was noted.

Comments were made about the drop off and pick up area and the timing of improvements. Public transport was another theme. Additional information was requested about stormwater and the level of design undertaken. Traffic modelling was also a theme, more specifically on the use of different intersections. Car parking was also a theme regarding airport access and also vehicle and freight access around Airport East was also noted.

The Airport is currently reviewing all submissions and determining if there needs to be any changes to the documentation, including whether any additional information needs to be added with a target to submit the document to the Commonwealth Minister by the 9 January 2020 but are targeting to submit before Christmas.

A question was asked about how responses are prioritised. It was noted that all feedback is important and all submissions will receive a response.

A Committee member noted that traffic needs to be a major consideration. It was noted that May Terrace is a popular intersection and if you add too many traffic signals together it won't work. It was noted that travellers leaving the Airport are going all over Adelaide so all options need to be reviewed and the fastest way to have passengers exit the terminal quickly and most productively. It was noted the Airport is working closely with surrounding Councils and have looked at many options. It was noted that the best flow of traffic is the main objective.

6.0 AIRPORT AGENCY UPDATE REPORTS

6.1 Department of Infrastructure, Transport, Cities and Regional Development – The report was tabled with the following items noted: The National Airport Safeguarding Advisory Group met on 21st August and agreed to undertake a review of the implementation of the Airport Safeguarding Framework. The submissions close on 22 November 2019.

A summary of the dispensations from the quarter were provided with the reports. At the AATWG, the JQ776 flight MEL-ADL 10:10pm arrival into Adelaide was discussed as a number of dispensations were requested for this flight. The Department has spoken with Jetstar and recommend they look at a scheduling a review of this route. It was noted that a contributing factor to the dispensations related to the previous flight sectors being late.

It was noted that in July to September, Sydney had a number of flight delays. Sixty-one hours of West South Westerly winds, greater than 20 knots were detected which meant network-wide delays and dispensations were increased for the period. Melbourne Airport also has single-runway operations due to strong polar winds. These events have increased the number of dispensations which are normally reviewed.

A Committee member asked if the dispensations that aren't approved could also have an explanation in the report. It was noted that the criteria for approving and rejecting dispensations is complex. These include hardship on passengers, babies on board, special assistance etc. A number of considerations was noted.

The Sun-Setting Regulations is progressing and has a completion date of 2024. No further update at this stage.

6.2 State Department of Planning, Transport and Infrastructure Report – Nothing to report.

6.3 Airservices Australia (ASA) Report – 27 complainants were received in the quarter, a slight increase from 25 in Q2 and 23 in Q1. The main complaint issues related to curfew movements, standard flight path movements and helicopters. The use of Runway 05 was the main cause of concern. Historically, R05 use decreases in Q3 and R23 use increases.

A new interactive online reporting tool will become available for Adelaide at the normal link over the next few months.

Airservices has created a four-episode video series on Air Traffic Control. All episodes are [available here](#).

Airservices Aircraft Noise Information Reports for Adelaide are available here: <http://www.airservicesaustralia.com/aircraftnoise/airports/>.

It was noted that there are a number of ways to lodge a complaint or make an enquiry about aircraft noise or operations with Airservices Noise Complaints and Information Service (NCIS).

- directly via WebTrak - <https://webtrak.emsbk.com/adl3>
- using Airservices' online form – www.airservicesaustralia.com/aircraftnoise/about-making-a-complaint/how-to-make-a-complaint/
- by calling 1800 802 584 (freecall).
The hotline is staffed Monday to Friday, excluding public holidays, from 9 am-5 pm Sydney time.
- by fax (02) 9556 6641 or
- by mail – Noise Complaints and Information Service PO Box 211, Mascot NSW 1460
- Adelaide Historical WebTrak Noise application: <http://myneighbourhood.bksv.com/adl5/>

6.4 Aircraft Noise Ombudsman Report – Nothing to report to Committee.

7.0 PLANNING AND LOCAL GOVERNMENT REPORTS

7.1 Planning Co-ordination Forum Report (PCF) – The Report was tabled and the following was noted: A presentation was provided by DPTI at the last PCF meeting regarding the new planning reforms. It was noted that 16 development codes were being replaced by 1 code. The code is on public review until 28 November 2019. It was noted that the intent of the changes is good and will streamline the process, but a lot of work stills needs to be done. A number of issues with State policy were mentioned including Airport Building Heights Overlay, Aircraft Noise Exposure Overlay and Building near Airfields Overlay. Inconsistencies were noted and the 6 km radius surrounding airports/airfields (to address lighting and bird strike issues) will have consequential changes on the performance assessment of various forms of development (potentially making assessment of minor development more complex). Both State and Federal Governments agreed more work needs to be done. It was noted that AS2021 was not easily accessible and that was the reason for not using it. It was noted that the authorised ANEF needed to be included. Many Councils are preparing submissions.

7.2 City of West Torrens (CWT) – The Report was tabled and taken as read and the following was noted: The council have submitted a Master Plan submission noting Ground transport as their main concern. The council agree that more work still need to be undertaken on the Planning reforms. The Council received a Master Plan submission from a resident which they passed onto AAL. AAL will respond to the Council who will forward on the response.

7.3 City of Holdfast Bay – The Council have submitted a Master Plan submission with 4 recommendations. It was noted that stage 1 of the \$13m Brighton Oval re-development has commenced and the 2 storey Rugby Club structure has been installed. Stage 2 has been approved which includes a \$5m grant from the Federal Government and will be completed in 2020.

Glenelg's Wigley Reserve will undergo a transformation including an outdoor gym and playground revamp which will likely be completed in September 2020.

7.4 City of Adelaide – The Council have submitted a Master Plan submission and noted they are also concerned on the new planning code.

7.5 City of Charles Sturt – Nothing to report to Committee.

7.6 West Beach Parks Report – Nothing to report to Committee.

7.7 Town of Walkerville Report – Nothing to report to Committee.

8.0 FORMAL PRESENTATIONS

8.1 PFAS Update – Airservices

Please refer item 5.3.

8.2 Master Plan – AAL

Please refer item 5.5.

8.3 Advances in Airservices Technology

A presentation was provided by ASA on the Future Airspace Environment which included a summary of current work programs and the application of new technologies. It was noted that Australia is in the middle of the fastest growing air traffic region putting pressure on traffic networks.

Long Range Air Traffic Flow Management (LR-ATFM) is a new initiative to enhance demand and capacity management by integrating international flights into Airservices air traffic flow management system. LR-ATFM is one of a suite of Airservices Australia initiatives, like OneSKY and Airport

Collaborative Decision Making, designed to build a predictable, high performing and resilient air traffic flow management network to support current and anticipated growth in demand and complexity.

Metron Aviation has been awarded the contract to develop and implement LR-ATFM functionality into their 'Harmony for ASNPs' software which Airservices currently uses to manage Ground Delay Programs (GDPs) for domestic flights into Melbourne, Sydney, Brisbane and Perth. Work has commenced on the implementation of this world-first project with go-live scheduled for late 2020. A wide range of domestic and international stakeholders have been consulted in the development of this concept. Further information about specific changes and impacts will be communicated over the coming months.

Airport Collaborative Decision Making (A-CDM) will improve the way airports, aircraft operators, ground handling organisations and Air Traffic Control work to harmonise airport operations through data sharing and decision support technology along with improvements in how the various parties come together to make collaborative decisions. This will lead to:

- Better utilisation of runway and gate capacity;
- Smoother recovery from adverse operations; and
- Higher predictability.

A Digital Aerodrome Services (DAS) solution can provide an enhanced traditional control tower service, while minimising infrastructure, facilities and systems requirements. The aerodrome control facility can be sited at an aerodrome or at any location away from an aerodrome such as a National Aerodrome Service Centre (NASC). DAS will alleviate the following constraints:

- The high cost of replacing ageing infrastructure (i.e. Control Towers and associated supporting systems);
- Inefficient utilisation of staff (including provision of a standardised tower solution that would benefit training);
- Lack of automated safety detection tools;
- Inability to quickly respond to emerging services in the industry; and
- Inability to quickly deploy tower contingency capability and, in some cases, provide full business continuity.

Australia has led the world in the use of Automatic Dependent Surveillance – Broadcast, or ADS-B, as a surveillance technology. The series of mandates for IFR aircraft from 2013 to 2017 has resulted Australia having one of the highest proportion of ADS-B equipped aircraft in the world. This high equipage rate, combined with the installation of a network of ground stations, has resulted in almost 100% surveillance coverage in controlled airspace over continental Australia. It has fundamentally changed how aircraft are separated outside secondary surveillance radar (SSR) coverage.

This will enable clear and real-time communications between air traffic controllers and pilots over oceanic airspace, as a preliminary step. Given that space-based ADS-B is still an emerging technology and the maximum benefits of space based VHF are yet to be defined, Airservices is continuing to develop our strategic position on satellite based communications, navigation and surveillance to maximise benefits, at an appropriate cost, of these new technologies.

Some of the services ASA are exploring:

- Detection, tracking UAV surveillance;
- how detection systems and operations interface with Airservices and help inform responses and future procedures;
- UAV surveillance system integration;
- integrating technology to detect, identify and track UAVs near controlled airspace;
- Urban air corridor design;
- Designing air traffic corridors for UAV use within different urban environments;
- Emergency services prioritisation;

- Ability for Airservices to communicate and coordinate emergency service UAVs and existing traffic to prioritise emergency services passage;
- Real time warning for ATC of UAV in exclusion zone;
- Notifications transmitted to ATC in real time; and
- Study environmental impacts: e.g. assessing noise pollution and the impact on existing urban infrastructure.

It was noted that a significant amount of drone activity around airports has been reported recently.

8.4 Terminal Expansion Update (TEEx)

A large amount of progress has been completed since the last meeting. This includes:

- Handover of Virgin Lounge for fitout at end of August;
- Taxi Drop Off Road complete and open for taxi operations;
- New Build area complete and ready for testing and commissioning to occur; and
- Hoarding in Terminal centre concourse installed in September 2019 including a number of retail closures, relocations and pop-ups.

Upcoming works

- Testing and commissioning of new area base build;
- Fit out of Virgin Lounge and first group of retail to commence;
- Commence opening of new northern spaces; and
- Continue refurbishment in main concourse.

A number of images of the construction process were shown to the Committee. It was noted that an announcement about new retailers will be released end of November 2019.

9.0 NEW/ OTHER BUSINESS

A Committee member asked a question about the progress of the noise attenuation barrier on Beare Ave. It was noted that this area is currently under review with the Airport East plans and is an area of focus.

A question was also asked about the Kick Start for Kids facility as it was noticed not much was happening. It was noted this is a community effort build and the community are doing so at own time and expense but it is still going ahead.

10.0 SUMMARY OF ACTION ITEMS

10.1 Air Quality Study Update – AAL

10.2 Netley noise mound Update – AAL

10.3 Trash Collection Keswick/ Brown Hill Creek Update – AAL

10.4 Update from DPTI on South Road extension work – DPTI

10.5 Building heights CBD development – AAL

10.0 DATE OF NEXT MEETING

The date of the next formal meeting is scheduled for Friday 21 February 2020 at 9am - location Royal Flying Doctor Service Central Operations, Frank England Room, 1 Tower Road, Adelaide Airport SA 5950.

Meeting Closed at 10:15am

.....
Chair / /

Passenger Statistics

January 2020

Adelaide Airport records strong overall passenger growth of 4.2% for Q2 FY20

PAX ('000s)	Quarter to Date			Financial Year to Date		
	Dec-19	Dec-18	Growth (%)	Dec-19	Dec-18	Growth (%)
Domestic*	2,018	1,951	3.4%	3,954	3,828	3.3%
International	298	271	10.0%	608	539	12.7%
Total	2,316	2,222	4.2%	4,562	4,368	4.4%

*Including regional



Adelaide Airport Limited (AAL) continued solid growth across both travel sectors into the second quarter of FY20. International travel saw strong growth of 10.0% while Domestic passenger traffic grew by 3.4%.

International traffic growth of 10.0% for the December quarter was due to increased demand from the October school holidays and stimulation from increased capacity. The commencement of Malindo Air's four-weekly services on the Adelaide - Denpasar (Bali) - Kuala Lumpur route, Jetstar's additional services to Denpasar (Bali) and the additional capacity from Singapore Airlines' up-gauge of aircraft from the Airbus A330 to the Airbus A350, and their additional three weekly services during December, all contributed to the stimulation of international traffic to and from Asia.

Domestic travel for the December Quarter grew by 3.4% to 2.02 million passengers, driven by increased demand to the domestic capital cities of Brisbane, Melbourne and Perth. The commencement of Jetstar's fourth weekly service on the Adelaide-Hobart in late October, also contributed to the strength in domestic growth. Key regional resource routes such as Olympic Dam, Port Augusta and Moomba also saw strong growth, indicating continued strength in the resource sectors.

Quarter in Review

- [Iconic SA food and wine favourites unveiled for Adelaide Airport's newly expanded terminal](#)
- [Flight Paths Installation](#)
- [New taxi drop-off zone opens at Adelaide Airport](#)
- [Terminal expansion update](#)



Adelaide Airport Consultative Committee

February 2020



Sustainability Briefing

- Sustainability Strategy Targets – benchmarking is complete and work is progressing to assess and prioritised a set of initiatives which will provide an indicative pathway to 2030 targets
- Waste – AAL continues to work with tenant and airline lounges to facilitate removal of single use plastic from the terminal, Coopers Bar, Terra Rossa and the both Qantas and Virgin lounges have made excellent progress in removing single use plastic service ware.
- Climate and Resilience – AAL has revised its climate change adaption plan and has kicked off work to complete a TCFD gaps analysis and disclosure plan.

Environment Briefing

PFAS

- PFAS concentrations remained similar or decreased across the September and December 2019 quarterly groundwater sampling events undertaken by Airservices, and remained consistent with the original sampling data. Further data from future quarterly sampling events will be required to draw any definite conclusions about long-term trends and fluctuations in concentrations.
- Airservices are negotiating the trial of a groundwater remediation technology for use on the former firefighting training ground. Further details will be provided as these negotiations progress.
- EnRisks have updated the Adelaide Airport PFAS Human Health and Ecological Risk Assessment using the additional data collected by Airservices and AAL since the initial PFAS HHERA was completed in August 2016. In the revised PFAS HHERA EnRisks concludes that all potential on- and off-airport human health and ecological risks are low and acceptable; the only exception to this is the Patawalonga Creek Conservation Zone, where EnRisks has recommended additional soil investigations if there is evidence to suggest these areas may be impacted. To this end, AAL will initially commission a desktop review to determine if further soil sampling is required.

AIR QUALITY

- AAL have engaged third party consultants, Lathwida, to lead the multi-staged air quality human health risk assessment (HHRA), with the ultimate aim of developing public health objectives. The University of Adelaide will continue to provide input to the process.
- as the next step in the process, Lathwida in collaboration with the University of Adelaide will undertake a human health risk assessment based on the outcomes of stages 1 and 2 of the process. Stage 1 was a literature review covering aircraft emissions and potential health effects and stage 2 involved reviewing previous air quality investigations undertaken by AAL.
- the initial HHRA will inform the scope of any required additional air quality monitoring and will be provided to the SA EPA for review and comment.

NOISE

- Sonus are in the final stages of collecting ground-based noise monitoring data for Adelaide Airport and will commence the modelling component of their work following the completion of noise data collection.

Wildlife Hazard Management (WHM) Briefing

Strike Summary

There were seven confirmed strikes and eight suspected strikes reported at Adelaide during the quarter with no significant strikes reported.

Table 1. Strike Summary

Strikes	November	December	January	Quarter
Confirmed	1	2	4	7
Suspected	3	2	3	8
Near Miss	0	0	0	0
Total Number of Strikes	4	4	7	15

Significant Strikes	November	December	January	Quarter
Multiple Strike	0	0	0	0
Delay in flight	0	0	0	0
Damage to aircraft	0	0	0	0
Significant Strikes	0	0	0	0

WHM Program

Following some issues with engaging Avisure, AAL have engaged Jasko to develop and undertake the off-airport monitoring program.



Australian Government
Department of Infrastructure, Transport,
Regional Development and Communications

Aircraft operations during the Adelaide Airport curfew period October to December 2019 Summary

LNHF	Dispensations approved	Pre-curfew Taxi Clearance	Emergency & Search/Rescue Movements	Permitted Jet Movements	Exempt Propeller Driven Aircraft	Diversions
214	18	4	739	13	62	0

Low Noise Heavy Freight (LNHF)

- There were 214 permitted Low Noise Heavy Freight movements by Toll Aviation (Airwork), Cobham Aviation, Qantas Freight and Virgin Australia Cargo using B737-300/400 freighters and British Aerospace 146 aircraft.

Movements approved by the Department

- Eighteen dispensations were approved during the October to December 2019 period. There was one application refused.
- There were four movements during the curfew period which were granted pre-curfew taxi clearance.
- There were no diversions to Adelaide.

Emergencies/ Search and Rescue

- There were 739 movements declared as emergencies (48 police helicopter movements, 97 Search and Rescue movements, 577 Royal Flying Doctor Service (RFDS) movements using the BE20 or PC12 aircraft, four movements by police using a PC12, and 13 aeromedical movements using Learjet 45 aircraft, Pilatus PC24's and Hawker 400's).
- There was one arrival by a commercial aircraft for an onboard medical emergency.

Other approved aircraft movements:

- There were 62 approved propeller driven aircraft movements in addition to the RFDS operations. These aircraft included: 13 x Beech Super King Air's; 12 x Fokker 27's; 10 x Saab 340's; 9 x PC12; 7 x Swearingen Metroliner's; 5 x Fokker 50's; 5 x Partenavia P68's and 1 x Beechcraft Travel Air.
- There were 13 business jet movements, including 4 x Cessna 525A's; 3 x Dassault Falcon 7X's; 2 x Bombardier Challenger's; 2 x Learjet 35's; 1 x Hawker 800 and 1 x Global Express.

1

Jet Runway Usage (excluding aeromedical)

- Jets included in the below table include Low Noise Heavy Freight, Diversions, Permitted jet movements, Pre-Curfew taxi clearance and Dispensations granted.

	October	November	December	Totals
Runway 05 Arrivals	69	50	58	114
Runway 05 Departures	2	2	1	5
Runway 23 Arrivals	12	34	17	63
Runway 23 Departures	15	16	34	65
Runway 12 Arrivals	0	0	0	0
Runway 12 Departures	0	0	0	0
Runway 30 Arrivals	0	0	0	0
Runway 30 Departures	0	0	1	1



Australian Government
 Department of Infrastructure, Transport,
 Regional Development and Communications

Curfew Dispensation Report - Adelaide

Curfew Dispensations October to December 2019

Approved Dispensations

Date	Carrier	Aircraft Type	Movement	Summary of events
04/10/2019	Virgin Australia	B737-800	Arrival	Virgin Australia flight VA444 (Sydney to Adelaide) was delayed on the previous sector due to ATC holding. A dispensation was approved to land no later than 11:25pm. There were 164 passengers and six crew members on board. The aircraft landed at 11:23pm.
04/10/2019	Jetstar Airways	A320	Arrival	Jetstar Airways flight JQ776 (Melbourne to Adelaide) was delayed on the previous sector due to ATC holding. A dispensation was approved to land no later than 11:30pm. There were 179 passengers and seven crew members on board. The aircraft landed at 11:19pm.
26/10/2019	Jetstar Airways	A320	Arrival	Jetstar Airways flight JQ680 (Hobart to Adelaide) was delayed on the previous sector due to unforeseen additional cleaning. A dispensation was approved to land no later than 11:15pm. There were 165 passengers and six crew members on board. The aircraft landed at 11:06pm.
27/10/2019	Qantas Airways	B737-800	Arrival	Qantas Airways flight QF584 (Perth to Adelaide) was delayed when a crew member became ill and a replacement was sourced. A dispensation was approved to land no later than 11:10pm. There were 145 Passengers and seven crew members on board. The aircraft landed at 11:06pm.
02/11/2019	Jetstar Airways	A320	Arrival	Jetstar Airways flight JQ776 (Melbourne to Adelaide) suffered an engineering issue on the previous sector which required an aircraft swap. A dispensation was approved to land no later than 11:30pm. There were 181 passengers and six crew members on board. The aircraft arrived at 11:22pm.
08/11/2019	Emirates	B777-200	Departure	Emirates Airline flight EK441 (Adelaide to Dubai) was delayed due to a water leak detected on the flight arriving into Adelaide Airport. A dispensation was approved to depart no later than 11:30pm. There were 233 passengers and 20 crew members on board. The aircraft departed at 11:10pm.

1

25/11/2019	Qantas Airways	B737-800	Arrival	Qantas Airways flight QF667 (Sydney to Adelaide) was delayed due to Air Traffic Control (ATC) holding and reruns of the slot management system resulting in exceptional delays in Sydney. A dispensation was approved to land no later than 11:40pm. There were 110 passengers and six crew members on board. The aircraft landed at 11:15pm on Runway 23 for safety reasons.
26/11/2019	Qantas Airway	B737-800	Arrival	Qantas Airways flight QF667 (Brisbane to Adelaide) was delayed on the previous sector due to ATC holding in Sydney. A dispensation was approved to land no later than 11:59pm. There were 138 passengers and seven crew members on board. The aircraft landed at 11:54pm.
26/11/2019	Qantas Airways	B737-800	Arrival	Qantas Airways flight QF783 (Sydney to Adelaide) was delayed due to ATC holding in Sydney. A dispensation was approved to land no later than 11:30pm. There were 124 passengers and seven crew members on board. The aircraft landed at 11:16pm.
30/11/2019	Emirates Airways	B777-200	Departure	Emirates Airways flight EK441 (Adelaide to Dubai) was delayed during refuelling when the aircraft refuelling system was required to be reset. A dispensation was approved to depart no later than 11:55pm. There were 298 passengers and 16 crew members on board. The aircraft departed at 11:48pm.
10/12/2019	Emirates Airways	B777-200	Departure	Emirates Airways flight EK441 (Adelaide to Dubai) was delayed by an engineering defect which required maintenance. A dispensation was approved to depart no later than 11:59pm. There were 299 passengers and 18 crew members on board. The aircraft departed at 11:42pm
20/12/2019	Qantas Airways	B737-800	Arrival	Qantas Airways flight QF785 (Sydney to Adelaide) suffered a delay leaving Sydney Airport as the entire operating crew was delayed enroute into Sydney. A dispensation was approved to land no later than 11:45pm. There were 158 passengers and seven crew members on board. The aircraft landed at 11:29pm.
20/12/2019	Emirates Airways	B777-200	Departure	Emirates Airways flight EK441 (Adelaide to Dubai) was delayed due to a passenger having a medical episode after boarding which also required their baggage to be offloaded. A dispensation was approved to depart no later than 11:45pm. There were 296 passengers and 18 crew members on board. The aircraft departed at 11:32pm.
22/12/2019	Virgin Australia	B737-800	Arrival	Virgin Australia flight VA722 (Perth to Adelaide) was delayed on the previous sector due to low oxygen on the aircraft which required an aircraft swap. A dispensation was approved to arrive no later than

				11:15pm. There were 156 passengers and six crew members on board. The aircraft landed at 11:05pm.
24/12/2019	Qantas Airways	B737-800	Arrival	Qantas Airways flight QF667 (Brisbane to Adelaide) was delayed due to Air Traffic Control (ATC) ground holding after aircraft had pushed back from the bay. A dispensation was approved to arrive no later than 11:25pm. There were 82 passengers and six crew on board. The aircraft landed at 11:17pm.
25/12/2019	Qatar Airways	A350	Departure	Qatar Airways flight QR915 (Adelaide to Doha) was fully boarded and ready to depart when technical fault was detected. A dispensation was approved to depart no later than 11:30pm. There were 265 passengers and 18 crew members on board. The aircraft departed at 11:10pm.
26/12/2019	Jetstar Airways	A320	Arrival	Jetstar Airways flight JQ801 (Sunshine Coast to Adelaide) was delayed due to ATC ground holding delays on the previous sector. A dispensation was approved to arrive no later than 11:25pm. There were 157 passengers and six crew members on board. The aircraft arrived at 11:09pm.
30/12/2019	Jetstar Airways	A320	Arrival	Jetstar Airways flight JQ776 (Melbourne to Adelaide) was delayed due to ATC ground holding in Melbourne. A dispensation was approved to land no later than 11:35pm. There were 165 passengers and six crew members on board. The aircraft landed at 11:28pm.

Refused Dispensations

Date	Carrier	Aircraft Type	Movement	Summary of events
07/11/2019	Jetstar Airways	A320	Arrival	Jetstar Airways flight JQ776 (Melbourne to Adelaide) was delayed into Melbourne on the previous sector. A dispensation was requested, however was refused as there were no exceptional circumstances to justify the granting of a dispensation.
09/12/2019	Jetstar Airways	A320	Arrival	Jetstar flight JQ776 (Melbourne to Adelaide) was delayed due to an engineering issue earlier in the day which caused a delay with this flight. A dispensation was requested, however was refused as it was not of exceptional in nature. There were 178 passengers and six crew members on board.
09/01/2020	Jetstar Airways	A320	Arrival	Jetstar Airways flight JQ801 (Sunshine Coast to Adelaide) was delayed on the previous sector out of Adelaide Airport. The original operating aircraft was swapped out due to forecast bad weather enroute to the Sunshine Coast. A request for dispensation to land at Adelaide Airport no later than 11:30pm was sought, however was refused.

3

22/01/2020	Jetstar Airways	A320	Arrival	Jetstar Airways flight JQ776 (Melbourne to Adelaide) was delayed in Melbourne due to taxiway delays. A dispensation was approved to land no later than 11:25pm, however as Jetstar Airways was unable to use the main runway, the dispensation was revoked due to safety. There were 178 passengers and six crew members on board. The aircraft returned to Melbourne.
------------	-----------------	------	---------	--



AMAC Australian Mayoral Aviation Council

PO BOX 8, BANKSTOWN NSW 1885

MINUTES OF A MEETING OF THE EXECUTIVE COMMITTEE OF THE AUSTRALIAN MAYORAL AVIATION COUNCIL, HELD IN THE OLINDA BOARDROOM, PARKROYAL HOTEL, MELBOURNE AIRPORT AT 11.15 AM ON SATURDAY 8th FEBRUARY 2020.

MINUTES

ITEM 1 Welcome to Delegates.

ITEM 2 Attendance and Apologies

The following were in attendance:

Mayor Phil Marks, President WA – via Conference Call
Mayor Michael Coxon, Vice President SA – Meeting Chair
Councillor Jack Medcraft, VIC
Councillor Michael Polley, TAS
Mayor Khal Asfour, NSW
John Patterson Executive Director, AMAC

An apology was tendered and accepted from:

Ron Hoenig MP, Past President NSW

ITEM 3 Confirmation of Minutes of the Executive Committee meeting held in the Olinda Boardroom, Parkroyal Hotel, Melbourne Airport on Saturday 14th September 2019

RESOLVED

THAT: The Minutes, as circulated, be confirmed.

ITEM 4 Business arising from the Minutes

Noted that any ongoing matters are covered in reports contained in the agenda.

ITEM 5 Domestic Aviation Activity 2018-2019

The contents of the 2018-2019 report on passenger aircraft and freight movements and general domestic and international aviation activity was canvassed.

RESOLVED

THAT: The information be received and noted.

ITEM 6 Rate Equivalent Payments – Tasmania

The meeting was updated by the Executive Director and Councillor Polley on the meeting of the Executive director with Northern Midlands Council on the evening of 3rd February.

The meeting canvassed Clarence and Northern Midlands Council intentions following the September Federal Court ruling regarding rate equivalent payments by Hobart and Launceston Airports.

The issue of financial support by AMAC members was also discussed including a possible “post case” contribution should an appeal be pursued with a finding that delivers a positive financial return to other recipients of rate equivalent income.

RESOLVED

THAT: At this time, the Committee continues to monitor the Tasmanian situation with regular updates should matters proceed.

FURTHER

THAT: A press release in support of Tasmanian member Councils be authorized, if required.

ITEM 7 Airservices Activities**RESOLVED**

THAT: The report be received, and the information noted.

ITEM 8 Airport Activities**RESOLVED**

THAT: The report be received, and the information noted.

ITEM 9 Western Sydney Airport**RESOLVED**

THAT: The information be received and noted, and progress of construction and associated infrastructure projects continue to be monitored.

ITEM 10 Productivity Commission Submission**RESOLVED**

THAT: The report be noted and that the implementation of strategies and actions as detailed in the government’s response to the Productivity Commission’s findings be monitored.

ITEM 11 Airlines for Australia and New Zealand (A4ANZ)

RESOLVED

THAT: The information be received and noted and that the activities of A4ANZ continue to be monitored.

ITEM 12 Memberships and Financial Position.

RESOLVED

THAT: The currency of the AMAC name be examined and be the subject of an out-of-session report with a view to making a submission to the 2020 Annual General Meeting should an amendment to the Associations' name be contemplated.

FURTHER

THAT: AMAC and the 2020 Conference be promoted to identified non-member and past member Councils, including direct correspondence to Mayors.

FURTHER

THAT: The President and Vice President be authorized to conduct discussions with the Executive Director with a view to achieving a concurrence about his remuneration package and then circulate to Committee members for resolution. Other issues to be addressed to include:

- Recruitment of members;
- Succession planning; and
- Length of tenure.

ITEM 13 National Airports Safeguarding Framework Review

RESOLVED

THAT: The report be received and the submission to the Review be endorsed.

ITEM 14 CASA Update

RESOLVED

THAT: The report be received, and the information noted.

ITEM 15 ANO Review of Airservices Community Engagement Systems

RESOLVED

THAT: The AMAC submission to the Aircraft Noise Ombudsman regarding Airservices Community Engagement Systems be endorsed.

ITEM 16 2020 Conference and Annual General Meeting

RESOLVED

THAT: The update on the 2020 Conference program be received and noted.

ITEM 17 Future Conference Scheduling

RESOLVED

THAT: A change in scheduling of the Conference and Annual General Meeting from early to late May is supported and that the 2021 Conference and AGM dates be recommended as being from 26th to 28th May 2021.

ITEM 18 AMAC Website

RESOLVED

THAT: The development of a web site is supported, and the Executive Director be authorized to pursue a development partner.

ITEM 19 Upcoming Executive Committee Meetings

RESOLVED

THAT: The next meeting of the Committee following the May meeting in Brisbane in conjunction with the 2020 Conference, to be scheduled in Melbourne Saturday 7th November 2020.

ITEM 20 General Business

The Executive Director advised the meeting that Ms. Narelle Bell had decided not to seek reappointment as Aircraft Noise Ombudsman for a further term after her current three-year tenure.

RESOLVED

THAT: A letter of appreciation be forwarded to Ms. Bell in recognition of her contribution as Aircraft Noise Ombudsman.

CLOSE: The meeting closed at 1.35pm.

21 CONFIDENTIAL

21.1 3RT Technologies Pty Ltd Lease - 240 Morphett Road, North Plympton

Reason for Confidentiality

The Council is satisfied that, pursuant to Section 90(3)(b)(i) and (b)(ii) of the *Local Government Act 1999*, the information to be received, discussed or considered in relation to this agenda item is:

- (b)(i) information the disclosure of which - could reasonably be expected to confer a commercial advantage on a person with whom the council is conducting, or proposing to conduct, business, or to prejudice the commercial position of the council.
- (b)(ii) information the disclosure of which - would, on balance, be contrary to the public interest.

RECOMMENDATION

It is recommended to Council that:

1. Pursuant to Section 90(2) of the *Local Government Act 1999*, Council orders, that the public, with the exception of the Chief Executive Officer, members of the Executive and Management Teams in attendance at the meeting, and meeting secretariat staff, be excluded from attendance at so much of the meeting as is necessary to receive, discuss and consider in confidence, information contained within the confidential report Item 21.1 3RT Technologies Pty Ltd Lease - 240 Morphett Road, North Plympton, attachments and any associated documentation submitted by the Chief Executive Officer, specifically on the basis of the provisions of Section 90(3)(b)(i) and (b)(ii) because it may prejudice the commercial position of the Council and lead to Council not obtaining or securing the best possible outcome with 3RT Technologies Pty Ltd. In addition, Council is satisfied that the principle that the meeting be conducted in a place open to the public has been outweighed in the circumstances because the disclosure of Council's commercial position may severely prejudice Council's ability to satisfactorily resolve the lease matter with 3RT Technologies Pty Ltd and consequently, Council considers the disclosure of this information would, on balance, be contrary to the public interest.
2. At the completion of the confidential session the meeting be re-opened to the public.

22 MEETING CLOSE

INDEX

1	Meeting Opened	1
2	Present	1
3	Apologies	1
4	Disclosure Statements	1
5	Confirmation of Minutes	1
6	Communications by the Chairperson	1
7	Questions with Notice	1
	Nil	
8	Questions without Notice	1
9	Motions with Notice	1
	Nil	
10	Motions without Notice	1
11	City Services and Climate Adaptation Reports	2
11.1	Australian Championships - Novar Gardens Bowling and Petanque Club	2
11.2	AdaptWest - Western Adelaide Region Coastal and Inundation Modelling Report	11
11.3	Climate Mitigation and Adaptation Initiatives in the City of West Torrens	14
11.4	Urban Services Activities Report	25
11.5	Community Services Activities Report - February 2020.....	47
12	Meeting Close	66

1 MEETING OPENED**2 PRESENT****3 APOLOGIES****Apologies****Committee Members:**

Cr Jassmine Wood

4 DISCLOSURE STATEMENTS

Committee Members are required to:

1. Consider Section 73 and 75 of the *Local Government Act 1999* and determine whether they have a conflict of interest in any matter to be considered in this Agenda; and
2. Disclose these interests in accordance with the requirements of Sections 74 and 75A of the *Local Government Act 1999*.

5 CONFIRMATION OF MINUTES**RECOMMENDATION**

That the Minutes of the meeting of the City Services and Climate Adaptation Standing Committee held on 4 February 2020 be confirmed as a true and correct record.

6 COMMUNICATIONS BY THE CHAIRPERSON**7 QUESTIONS WITH NOTICE**

Nil

8 QUESTIONS WITHOUT NOTICE**9 MOTIONS WITH NOTICE**

Nil

10 MOTIONS WITHOUT NOTICE

11 CITY SERVICES AND CLIMATE ADAPTATION REPORTS

11.1 Australian Championships - Novar Gardens Bowling and Petanque Club

Brief

This report advises Elected Members that the Novar Gardens Bowling and Petanque Club has been awarded the opportunity to host the Australian National Petanque Championships for 2020.

RECOMMENDATION

The Committee recommends to Council that:

1. Permission be granted to the Novar Gardens Bowling and Petanque Club to host the 2020 Australian National Petanque Championships over the Easter long-weekend, from Friday 10 April to Monday 13 April 2020 at Camden Oval in Novar Gardens as detailed in Attachment 2 of the Agenda report;
2. A new 5 year lease continue to be negotiated between Council and the Novar Gardens Bowling and Petanque Club.
3. Council provide financial assistance to the Novar Gardens Bowling and Petanque Club to help host the Australian National Petanque Championships to the value of \$5,000 through the Community Grants and Sponsorship Program.

Introduction

The Novar Gardens Bowling and Petanque Club Inc, which leases land from Council in the south-western corner of the Camden Oval complex, has been awarded the opportunity to host the Australian Petanque Championships for 2020 (and also, should the Club desire, the following two years - 2021 and 2022).

The Club's 5 year lease is currently in holding over, having expired on the 31 January 2020. The Club currently pays a rental of \$3,245.95pa, (plus GST). An updated lease is currently being negotiated and it is anticipated that a separate report dealing with the proposed grant of a new lease/licence to the Club will be provided to Council's City Facilities and Waste Recovery Committee.

Discussion

The National Championships are to be held over the Easter 2020 long weekend (from Friday 10 April until Monday 13 April 2020).

The Club has recently written to Council advising of the event and identified a number of matters that require Council's consideration and consent in association with the staging of the event (**Attachment 1**):

Event Requirements

Additional Pistes

Given the expected number of competitors, there is a requirement for the Club to provide additional pistes (regulation size strip). The proposed site layout (**Attachment 2**) shows an additional 14 pistes constructed on site in four distinct areas. The approximate area sizes are:

- Temporary Area 1 = 16m x 9m (approximately)
- Temporary Area 2 = 16m x 16m (approximately)
- Temporary Area 3 = 17m x 17m (approximately)
- Temporary Area 4 = 16m x 13m (approximately)

Preparation of the temporary pistes includes: removal of the grass layer; laying a base of compacted quarry rubble followed by a top coat layer of dolomite sand; watering and compacting the surface. Finally a loose surface is spread on the top. Any construction of temporary pistes will require the assurance of the contractor that Tree Protection Zones of significant/regulated trees in the vicinity will be adhered to.

The cost of the temporary piste construction will be significant for the Club, especially when considering additional expenses required as hosts of the Championships. In order to assist with mitigating the cost of the temporary pistes, Council could consider sponsoring the event through the Community Grants/Sponsorship program where up to \$5,000 can be awarded to eligible applicants.

Following the event, it is suggested that any works to remediate the area (i.e. to remove the additional pistes that have been created for the event) be delayed until the Club has had sufficient time and opportunity to conduct a post event debrief and determine whether it wishes to hold the event in the ensuing two years.

This will also allow the lease/licence areas to be more clearly defined (i.e. should the pistes which have been created for the National Championships be retained, they would form part of the new lease/licence area).

Temporary Site Closure for Event

The event will also require temporary closure of the pistes area from the Thursday 9 April to Tuesday 14 April 2020 to ensure security for the event. The temporary closure will extend along Anzac Hwy from Ferguson Ave to the club building and along Ferguson Ave to the tennis courts. The temporary closure will allow for facilities and equipment to be setup and secure overnight, (monitored by security staff). The general public will be allowed access throughout the day to watch the event.

Other Assistance for Event

The Administration will also investigate and undertake some tree maintenance in the general area of the event to improve the amenity of the area and will undertake the installation of two permanent bench seating in the vicinity for the event.

Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

In the Club's proposal, some turf areas are ear-marked for additional (temporary) pistes which would result in additional hardsurface on site. The turf areas are not currently irrigated and the temporary nature of the additional pistes would result in minimal environmental implications, if any.

Conclusion

The Novar Gardens Bowling and Petanque Club has been awarded the Australian Petanque Championships for 2020 to be held over the Easter long weekend (from Friday 10 April until Monday 13 April 2020).

In order to prepare for the Championships, the Club has identified a number of matters that require Council's consideration and consent i.e. the expiry of the lease period held by the Club; financial assistance towards the cost of constructing four new piste areas; additional seating across the site and tree trimming especially around light towers.

The Administration recommends:

- consent be granted to host the Championships for 2020 event notwithstanding the expiry of the Club's lease period;
- a new 5 year lease continue to be negotiated and reported back to Council;
- sponsorship of the event be supported (of up to \$5,000) through the Council's Community Grants and Sponsorship Program.

Attachments

- 1. Letter of request from the Novar Gardens Bowling and Petanque Club**
- 2. Site layout plan - Camden Oval (Petanque Australian Championships)**

**Novar Gardens Bowling & Pétanque Club****A:** 489 Anzac Highway, Novar Gardens. SA 5040**P:** (08) 8295 4803**E:** admin@novargardensbowlingclub.com**President:** Jonathan Giddings **Mob:** 0418 831 446**E:** jon@hpsafety.com.au

Australian National Championships**Easter Carnival of Petanque****Event Requirements**

Attention: Michael Coxon **Mayor**
City of West Torrens
Civic Centre 165 Sir Donald Bradman Drive
Hilton SA 033

24/01/2020

Re: Australian National Championships Easter Carnival of Pétanque at Novar Gardens

Dear Michael

As you are aware Novar Gardens Bowling & Pétanque Club is host of the Australian National Championships Easter Carnival of Pétanque for the next 3 years. This is a 4-day event consisting of singles, doubles & triples championships in Open, Women's, Open Over 60's & Women's Over 60's categories (4). The championships will be conducted April – Friday 10th, Saturday 11th, Sunday 12th & Monday 13th. We will also be hosting the national AGM for the PFA (Pétanque Federation of Australia) on Thursday April 9th.

There is a list of provisions we are obligated to provide to meet our hosting requirements. The key list includes:

- Playing Area
- Playing Equipment
- Clubhouse & Amenities Facilities
- Catering
- Event Administration
- Administrative Equipment
- Volunteer Personnel
- OHS Requirements Met
- Safe & Secure Venue





Novar Gardens Bowling & Pétanque Club

A: 489 Anzac Highway, Novar Gardens. SA 5040

P: (08) 8295 4803

E: admin@novargardensbowlingclub.com

President: Jonathan Giddings **Mob:** 0418 831 446

E: jon@hpsafety.com.au

As a club our primary aims for this event are as follows:

- Provide a well-run and enjoyable event for our overseas, interstate & local competitors
- Provide playing surfaces, clubhouse/amenities & catering of a standard that competitors & officials will be impressed with
- To leverage off this event to build the profile of the sport & the club in our area by way of different forms of advertising. The goal is to expose more people to the joys & benefits provided by the game of Pétanque which in turn will result in increased community participation in the game at our club & then additional club membership.

We request from the council assistance & permissions to help stage the championships & seek advice on how the council might best help & contribute. Ideally support would help alleviate direct financial cost to the club. This best be best achieved by:

1. Direct financial assistance to help purchase material required
2. Provision of materials & resources
3. Provision of labour

Below are areas where council may be best positioned to contribute:

Playing Area

The aim is to provide up 35 pistes (rinks) dimensions to maximise player registrations. Currently we have 20 permanent pistes, so we require a further 15. These are to be constructed to approved international competition specifications & dimensions (or as near enough to as we can). This would allow for maximum participation numbers in each event to be:

- Singles x 70
- Doubles x 140
- Triples x 210

Council is e able to help for this in the ways of providing/financing material, equipment & labour required to construct the extra pistes required. Total area 980 m2 approx.

Piste Construction Methods

Options 1,2 & 3 are constructed of a semi-permanent nature & could be removed after year 3 of titles.





Novar Gardens Bowling & Pétanque Club

A: 489 Anzac Highway, Novar Gardens. SA 5040

P: (08) 8295 4803

E: admin@novargardensbowlingclub.com

President: Jonathan Giddings Mob: 0418 831 446

E: jon@hpsafety.com.au

Option 1. (preferred)

- Remove ground level grass & weeds back to bare soil, poison if necessary
- Insert piste boarders
- Lay rubble base level at 5cm high, bind together with filler material, water & compact
- Apply loose top surface

Cost of approximately \$10,000 (excluding labour) for quarry rubble (80 tonne), cement dust (200 bags), 2.4m sleepers (250m), plus fixings. Materials quotes received from National Terrazzo, Bunnings

Option 2. (will require most upkeep & maintenance of the time frame)

- Remove ground level grass & weeds back to bare soil, poison if necessary
- Insert piste boarders
- Lay dolomite base, water & compact
- Apply minimal loose top surface

Cost \$TBC

Option 3.

CoreGrid gravel construction. Materials cost \$TBC. Will be advised of CoreGrid Gravel costs next week. If economically viable this would be an excellent method.

Other

Rubber mat laid over tennis courts with dolomite/gravel topping as discussed with council representatives. Constructed just for the event & removed straight afterwards. Ideally this would be on the Glenlea courts as closer proximity to clubhouse & administration.

Hire Equipment

Items we are likely to have to hire include:

Festival Hire refer QT#3063

- Pavilion Marquee (to increase clubhouse capacity). 12m x 6m or 12m x 5m, weights & accessories, lighting & electrical @ \$1,968
- Kitchen equipment to assist with catering: 6 Shelf Warming Oven, Coffee Machine, 6 Tray 3 Bay Bain Marie @ \$630





Novar Gardens Bowling & Pétanque Club

A: 489 Anzac Highway, Novar Gardens. SA 5040

P: (08) 8295 4803

E: admin@novargardensbowlingclub.com

President: Jonathan Giddings Mob: 0418 831 446

E: jon@hpsafety.com.au

1300TempFence refer QT#G956200002

- Temporary Fencing 1.7m H, 155m @ \$6.00pm = \$960
- Portaloo x 2 @ \$TBC

Fence required as security measure for the nighttime period to protect club assets in public park. These include marquees, umbrellas, wine barrels, seating, scorers, drink stations, bins & other equipment. The fence will minimise the necessity to set up & pack up all equipment each & every day.

Fence panels will be removed during day/play to allow public access & thoroughfare, locked up after dark.

Security Guard

To aid with security / protection of assets. Quote & price TBC.

PA System

- PA system audible from all playing location as well as inside club & courtyard area. Required to announce game time commencement & completion, results, announcements, spruiking & play music (Spotify or similar). Suggest 6 external speakers. Quote & price TBC

Note: Current internal PA system hardly functions & will need to be replaced.

Electronic Scoreboard/Large Screen

To be hooked up to computers at score tables to provide score results & match draws. Quote & price TBC

Permanent Park Seating

Request for permanent park seating to be positioned around existing permanent pistes. Quantity required is 6 to 8. Suggest 4 at main large piste & 1 or 2 at the 2 smaller pistes. Exact positioning to be confirmed with Pétanque Club before installation. This is important.

Our club has already invested over \$15K for shade, signage, & playing equipment requirements in order to properly meet hosting obligations & we still have a way to go. On behalf of the club we would be very grateful for any assistance City of West Torrens would be able to provide in ways of funding, material/labour, advertising, advice or other types of support.

I look forward to discussing with you further at your earliest convenience.





Novar Gardens Bowling & Pétanque Club

A: 489 Anzac Highway, Novar Gardens. SA 5040

P: (08) 8295 4803

E: admin@novargardensbowlingclub.com

President: Jonathan Giddings **Mob:** 0418 831 446

E: jon@hpsafety.com.au

Warm Regards

Jonathan Giddings

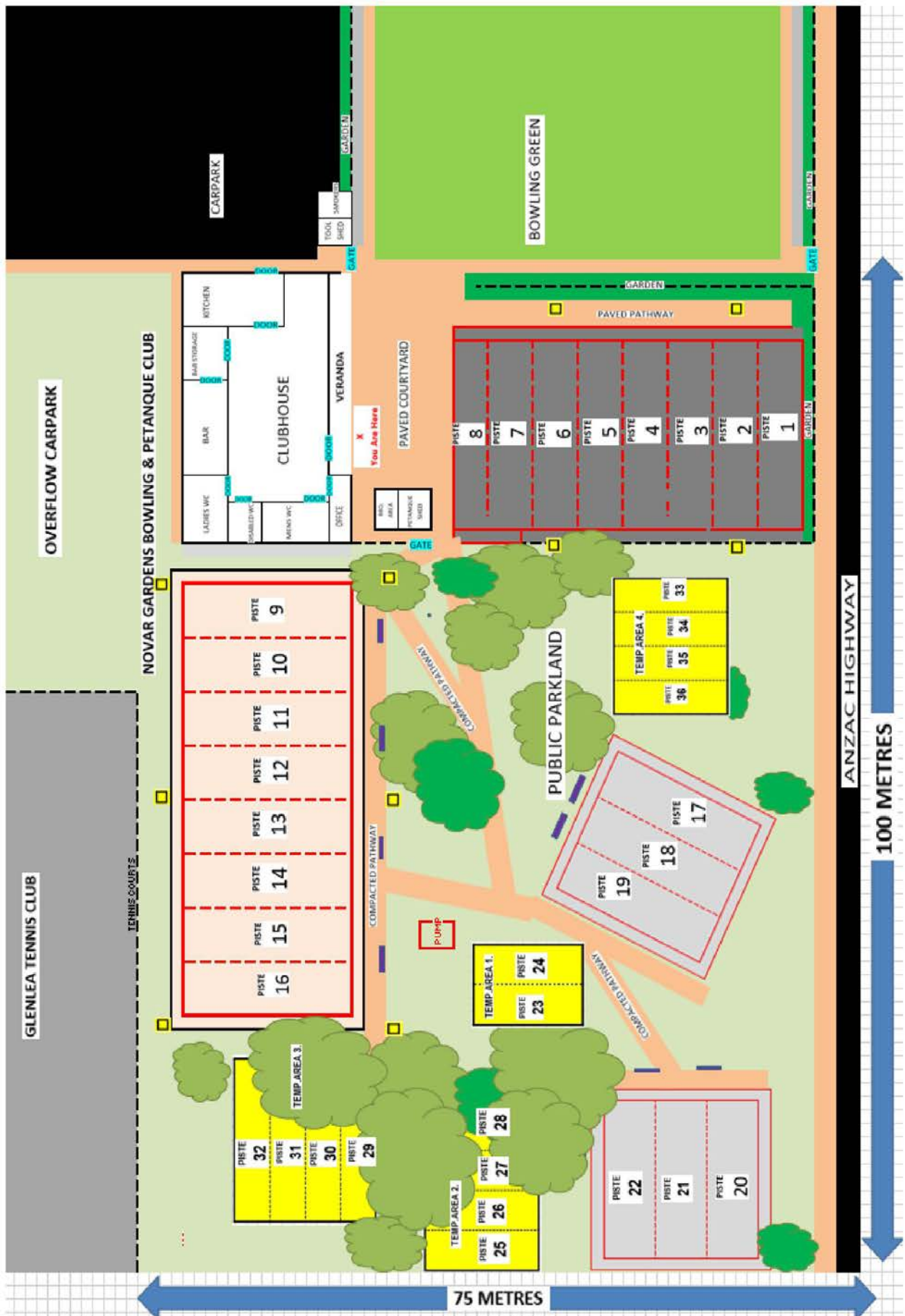
Club President

Novar Gardens Bowling & Petanque Club

A: 489 Anzac Highway, Novar Gardens. SA 5040

M: 0418 831 446 **W:** (08) 8234 1920, **Club:** (08) 8295 4803





11.2 AdaptWest - Western Adelaide Region Coastal and Inundation Modelling Report

Brief

This report presents the *AdaptWest- Western Adelaide Region Coastal and Inundation Modelling Phase 3 Report*.

RECOMMENDATION

The Committee recommends to Council that the *AdaptWest- Western Adelaide Region Coastal and Inundation Modelling Phase 3 Report* be received.

Introduction

The City of West Torrens is working in partnership with the Cities of Charles Sturt and Port Adelaide Enfield to implement AdaptWest, a program which seeks to ensure that our communities, environment, businesses and industries can respond positively to the challenges and opportunities presented by a changing climate.

As part of the AdaptWest Climate Change Adaptation Program, the *Western Adelaide Region Coastal and Inundation Modelling Phase 3 Report* (Report) was undertaken to investigate the potential impact of projected climatic changes on sea water and stormwater inundation in sensitive coastal catchments. Vulnerable systems were identified and several scenarios were modelled to determine the potential impact of sea level rise on low lying systems and also considered future climate change driven rainfall intensity and increased flows due to an arbitrary allowance for increased developments upstream.

Discussion

Tonkin Consulting was engaged to examine three key coastal stormwater systems which were identified as being potentially vulnerable to projected sea level rise and increased downstream flows as a result of development.

The coastal stormwater systems modelled due to their potential vulnerability to the impacts of sea level rise were:

- The Patawalonga System which borders the City of West Torrens and City of Holdfast Bay
- Gillman Basin System in the City of Port Adelaide Enfield
- West Lakes System in the City of Charles Sturt.

This project and the works fit alongside the stormwater management plans which Council is currently and has previously undertaken. The information contained within these reports should be read in conjunction with each other and fundamentally do not conflict with one another.

Prior to the release of the report, the Administration met with and discussed its content with key stakeholders including Adelaide Airport, City of Holdfast Bay, Coast Protection Board and West Beach Parks who are also likely to be interested in the potential climate impacts of the Patawalonga Lake as the system which impacts the City of West Torrens.

The project was undertaken in three stages:

Phase 1: identify coastal stormwater systems at highest risk

Phase 2: define modelling scenarios to assess the risk

Phase 3: modelling of key systems and potential adaptation options.

Other than the Le Fevre Peninsula (for which Port Adelaide Enfield has previously undertaken a detailed review), this study identified three major systems with vulnerability to climate change as well as a handful of small coastal drains predominately located within the City of Charles Sturt.

From a City of West Torrens context, the only two systems that deliver runoff from the West Torrens area to the coast are the Patawalonga System and River Torrens. Due to the elevation difference at the River Torrens outlet at West Beach, it was determined that the performance of the River Torrens would not fundamentally be impacted by sea level rise.

The interaction between storm events and tide were modelled for each system, along with the impact of sea level rise on average water levels. For each of the simulations, sea level rises of 300, 500 and 1000mm were modelled representing current, 2050, 2070 and 2100 scenarios respectively.

The Patawalonga System was the key system modelled with potential impact for the City of West Torrens. The system has a large upstream catchment, surrounding low lying land and outfall which is impacted by tidal levels. It is an engineered structure which was established predominately for water quality improvement in the lake and has the dual functionality of dissipating smaller stormwater flows received from upstream catchments and daily tidal flushing of the lake. The system receives large volumes of stormwater from across rural and urban areas, taking in over 200 square kilometres from across key catchments including Brown Hill Creek and Sturt River.

The Patawalonga System was not designed to function as a storage basin and hence has a limited storage capacity. Under favourable tidal conditions, the Patawalonga system has historically been considered appropriate to pass most major flows with limited flooding impact in the surrounding suburbs. The system has always been considered vulnerable to extreme tidal conditions driving localised flooding from catchment flows. This characteristic means that it has less storage to buffer certain conditions which may occur under a changing climate with increased rainfall and sea level rise.

The system is currently managed by the Department of Environment, Water and Natural Resources and is closely monitored and managed during large rainfall events. Part of this management regime includes undertaking pre-draining of the lake prior to large storm events and monitoring of lake levels during storm events.

Modelling investigated the interaction between tides and floods under sea level rise scenarios. Each of these scenarios corresponds with mapping which is included as part of the report and should be considered in context of future scenarios and timeframes.

1 year ARI flood interaction with 100 year ARI tide (existing sea level)

Under the current scenario, there is some localised flooding in the surrounding catchments where water is unable to enter the surrounding drainage systems. In this event, Patawalonga Lake does not result in a lake level which would drive adjacent suburban flooding. The lake is filled and stored until flows can be discharged to the sea.

1 year ARI flood interaction with 100 year ARI tide (300mm sea level rise - 2050 scenario)

Under this scenario, there is an increased flood impact around Glenelg North due to higher tide levels. Higher tides reduce the opportunity for stormwater to discharge from the Lake, meaning water is stored for longer and more volume is required within the system to accommodate this. Under this scenario, the peak water level would result in a circumstance which would drive adjacent suburban flooding.

1 year ARI flood interaction with 100 year ARI tide (500mm sea level rise - 2070)

Results show increased flooding in Glenelg North due to higher tide levels which delay the discharge of stormwater from the lake out to sea. Under this scenario, there is also increased flooding within the vicinity of Patawalonga Creek.

1 year ARI flood interaction with 100 year ARI tide (1000m sea level rise 2100)

Results show increased flooding impact, again around Glenelg North as a result of higher tide levels which delay the discharge of stormwater from the lake out to sea. Higher peak water levels will exceed the system's capacity resulting in the lake's banks being flooded. Under this scenario the peak water level would result in a circumstance which would drive adjacent suburban flooding.

It should be noted that areas of Glenelg North in West Torrens are at a similar ground level as those impacted by flooding in the City of Holdfast Bay and are included as part of this report. The stormwater systems have mechanised gates to stop the water coming from the river into the suburb and there is a pump and pumping station to get only local water up and into the River.

Impacted areas of West Beach (around West Beach Road, Tapleys Hill Road and Adelaide Shores golf course) were designed for controlled flooding within drainage upgrade works undertaken by Council over the past 10-15 years and were identified in current arrangements with key landholders including Adelaide Airport Limited and West Beach Parks.

As can be seen from above, specifically within the City of West Torrens, due to existing circumstances and controls there are no predicted residential impacts. There are also minimal impacts predicted on non-residential land, not only reflected on current scenarios, but also for future scenarios.

Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

There is no direct climate impact consideration in relation to this report.

Conclusion

The *Western Adelaide Region Coastal and Inundation Modelling Phase 3 Report* provides modelling for key coastal catchments. The Patawalonga System was a key focus for the City of West Torrens, with a range of future climate change scenarios modelled for the impacts of sea level rise and stormwater received from the upstream catchments.

Due to the project for which these studies were undertaken, not all stakeholders involved in the ownership, operation and impacts of the Patawalonga system were directly party to the project. This was also due to the scale and complexity of the Patawalonga catchment operation and relationship to the coast. A more detailed study of the climate risks and impacts of the system are recommended to be undertaken, and driven by the system owner.

Attachments

- 1. Coastal and Inundation Modelling Report (under separate cover)**

11.3 Climate Mitigation and Adaptation Initiatives in the City of West Torrens

Brief

This report provides an update of general climate mitigation and adaptation initiatives currently being implemented by Council.

RECOMMENDATION

The Committee recommends to Council that the Climate Mitigation and Adaptation Initiatives in the City of West Torrens report be received and that the initiatives be listed on Council's website.

Introduction

Following a decision to amend the title of the Committee to provide greater emphasis on climate adaptation activities, a recent report provided an update on key adaptation initiatives as part of AdaptWest in Action for the current financial year to date.

Following on from this, this reports specifically articulates some of those additional adaptation initiatives undertaken directly by Council outside of the AdaptWest project banner.

Discussion

Council is directly undertaking a large number of initiatives which contribute to mitigating and adapting to our changing climate i.e. urban greening, reducing greenhouse gas emissions, community incentive schemes, waste management and emergency management which do not form part of the *AdaptWest in Action 3-year Action Plan* which was approved by Council at its 20 August 2019 meeting.

Attachment 1 provides an overview of some of those key projects and initiatives which have been progressed by Council, or are currently in progress.

Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

There is no direct climate impact consideration in relation to this report.

Conclusion

This report provides an update on actions which are being progressed directly by Council that contribute towards mitigating and adapting to our changing climate.

Attachments

1. Climate Change Initiatives Summary Table

General Climate Change initiatives

Project	Outcomes	Lead Department	Status
	<p>Raingardens Successful grant application to the Environment Protection Authority to contribute toward the creation of a new raingarden and interpretive trail. Amongst a range of benefits, plants within the raingarden help cool urban heat through creating cooler micro-climates.</p>	City Assets & Strategy	Completed
	<p>Growing trees in challenging spaces Successful grant application to the Greener Neighbourhoods funding program to enable the development of a suite of detailed designs for growing trees in challenging spaces. Applying the new designs and associated planting preparation will enable council to improve the growth of its trees, develop an improved tree canopy and as a result reduce urban heat.</p>	City Assets & Operations Horticulture	In progress
Urban greening initiatives	<p>Tree Strategy Council's Tree Strategy includes a range of actions aimed at improving urban greening and building resilience to climate change. It contains information on tree species, planting and maintenance, and actions to develop a sustainable urban forest.</p>	Operations- Horticulture	Implementation phase
	<p>Greening Council's shared path network More landscaping and trees have been planted along the Westside Bikeway. This helps encourage people to use low carbon forms of transportation/movement, as well as improve biodiversity habitat, and create shading and cooling.</p>	Operations - Horticulture	Ongoing
	<p>Street Tree Audit An audit has been undertaken of council's trees which will provide information on each street tree, its growing conditions, as well as identify gaps in the streetscape where additional trees and other green cover could potentially be planted. This information will then be used to determine the vulnerability of species to the effects of climate change, which will then help inform future tree planting programs.</p>	Operations - Horticulture	Almost complete

General Climate Change initiatives

	<p>Choice of Plants/Planting The choice of plants is focussing on those that are better able to tolerate heatwaves as well as those that are diverse pollinators. In addition, trees are planted with better soil construction to improve their chances of surviving and thriving.</p>	Operations - Horticulture	Ongoing
	<p>Streetscape Designs Methods are being trialled to improve the growing conditions of streetscape vegetation and standard designs are being developed for capital road projects. The aim is to improve tree growth and reduce road infrastructure maintenance. This will help improve the environmental sustainability of streetscapes, reduce the carbon footprint, and improve the financial sustainability of assets.</p> <p>Example of methods being used in many streets to maximise access to water, improve growing conditions and reduce urban heat:</p> <ul style="list-style-type: none"> • Permeable paving - stormwater seeps through the spaces between the pavers into the soil to improve stormwater management and to provide water to plants • Brick paving along footpaths increases infiltration and improves soil moisture • Tree inlets and water wells direct stormwater to the tree roots • Raingardens 	Assets	In progress
Public Realm Design Manual	<p>The Public Realm Design Manual sets out a pro-active approach to managing the City's tree and vegetation assets in response to climate change by experimentation and monitoring of new species to test suitability for climate change, planting trees for canopy cover and creation of micro climates, and planting programs that incorporate species diversity throughout the city.</p> <p>The Manual also sets out aspects of designing spaces for pedestrians, cyclists and motorists to help encourage low carbon forms of transportation and movement.</p>	Strategy lead - council-wide collaboration	Design Manual has been produced, now implementation phase

General Climate Change initiatives

<p>Stormwater initiatives</p>	<p>Water in the landscape Several methods are being used in many streets to maximise access to a sustainable source of water in order to increase permeability and soil moisture to encourage deep root growth and stable trees, as well as creating a cooling effect. Examples of methods include:</p> <ul style="list-style-type: none"> • Permeable paving to enable stormwater to seep between the pavers to support healthy vegetation growth and tree canopies; • Footpath brick paving to increase infiltration, improve soil moisture and create healthier growing conditions and tree canopy; and • Tree inlets and water wells to direct stormwater to the tree roots. 	<p>Assets</p>	<p>In progress</p>
<p>Recycled printer cartridge trial - Mortimer Street road reconstruction</p>	<p>A sustainable approach to reconstructing Mortimer Street was undertaken involving the use recycled printer toner and reuse of old road pavements. This approach makes the project the most sustainable pavement reconstruction project undertaken to date by the City of West Torrens resulting in a significant carbon reduction impact, saving CO² greenhouse gas from entering the atmosphere, decreasing the use of virgin natural resources and preventing materials from entering landfill.</p>	<p>Assets</p>	<p>Complete</p>
<p>West Torrens Local Drainage Stormwater Management Plan</p>	<p>Preparation of the Stormwater Management Plan involves assessing the projected climate change scenarios to understand the likely impacts for flooding within the catchment and the performance requirements of council's stormwater systems. A series of flood maps are then produced to help understand the implications of that flood risk and to develop strategies to prepare and adapt to the projected climate change impacts (increased storm intensity, sea level rise) on a variety of scales (site to catchment scale). This project also includes the analysis of opportunities for the harvest and use of stormwater and water quality improvements overlay, as water quality can often be achieved in manners which also contribute to greening and cooling of neighbourhoods.</p>	<p>Assets</p>	<p>In progress</p>
<p>Planning and Design Code - green cover</p>	<p>Staff are providing comment on the draft Planning and Design Code to the Planning Commission - focusing on the importance of providing green cover and permeable land within private allotments, and providing greater protection for trees from development.</p>	<p>Strategy, City Assets & City Development</p>	<p>In progress</p>

General Climate Change initiatives

Development Assessment	Staff assess development applications against the West Torrens (Council) Development Plan and National Construction Code which include policies addressing climate change mitigation and adaption, including topics on urban densification, flood hazard management, coastal hazard management, green space, conservation of trees and native vegetation, urban heat island effect, water sensitive urban design, energy efficiency and active transport. Staff also discuss with community members and applicants additional opportunities to improve the climate performance of proposed development.	City Development	Ongoing
Solar Panel Rebate Program for Community Groups	Rebates are available to eligible community groups for the purchase and installation cost of solar panels on buildings that they occupy that are situated within West Torrens. Rebates are scaled based on the size of solar system installed, up to a maximum of \$3,000. Two applications have been received to date for 2019/20, these being for a 10kW solar system, and one for a 30kW solar system.	Strategy	Ongoing
Residential Rainwater Tank and Rain Garden Rebates.	Rebates are available to eligible residents for the installation of rainwater tanks to reduce mains water consumption and reduce pollutants entering the stormwater system. Rebates are based on a sliding scale up to \$500. An additional rebate of \$200 is also available for rainwater tanks which are plumbed into new developments or extensions. Twenty-one rainwater tank applications have been received to date for 2019/20, with a combined capacity of 57,394 litres this financial year.	Strategy	Ongoing
Solar installations on Council owned buildings	There are currently sixteen solar systems installed on council owned buildings. In 2013 these systems generated over 100,000 kWh of renewable electricity, and abate around 61 tonnes of CO ² -e per annum.	Strategy	In progress
GreenPower	10% GreenPower was purchased for above 160 sites up until 2017. Since then, GreenPower has not been purchased due to increased costs associated with electricity prices.		

General Climate Change initiatives

<p>Emergency Management Framework and Emergency Management Operations Plan</p>	<p>The City of West Torrens Emergency Management Framework contains strategic information relevant to local government and the CWT. The structure of this framework mirrors the structure of the SEMP and contains information and actions relevant to Council across the spectrum of prevention, preparedness, response and recovery. The framework sets the structure for CWT's emergency suite of documents and incorporates a full five year assurance plan.</p> <p>The CWT Emergency Management Operations Plan has a strong focus on CWT's immediate response to an emergency. It sets out the Incident Management Team (IMT) and explains roles and responsibilities. It is a functional and guiding document as opposed to a policy or framework.</p> <p>This document has been completely reviewed with stakeholders and training workshops have been conducted with the IMT.</p>	<p>Resilience</p>	<p>Completed</p>
<p>Business Continuity Plan</p>	<p>The CWT Business Continuity Plan contains the CWT critical functions to ensure the continued achievement of critical business objectives during disruption. It is the third document in the suite of emergency management documents.</p> <p>This document has been completely reviewed with stakeholders with testing incorporated. The documents is awaiting executive approval.</p>	<p>Resilience</p>	<p>In progress</p>
<p>Hazard Plan Review</p>	<p>The CWT has numerous Hazard Plans each attached to a comprehensive hazard risk assessment for our community. The first of these plans for review was the Flood and Extreme Weather (Storm) Hazard Plan.</p> <p>The Flood and Extreme Weather (Storm) Hazard Plan provides the relevant prevention and preparedness actions, recovery strategies and requirements when the organisation is confronted by Storm and Flood situations. This document has been completely reviewed with stakeholders and approved by the Executive.</p> <p>Further hazard plans will be reviewed in 2020.</p>	<p>Resilience</p>	<p>In progress</p>
<p>Incident Management Team Coordination</p>	<p>The CWT Incident Management Team (IMT) has been formed to lead in the event of an incident or emergency. Workshops, which include scenario testing, have been conducted so each IMT member is aware of their roles and responsibilities.</p>	<p>Resilience</p>	<p>Completed</p>

General Climate Change initiatives

Council Commander and Council Liaison Officer Training	The Council Commander and three (3) Council Liaison Officers have received external training from the LGA Emergency Management Unit. This training will better equip these employees in the event of an emergency.	Resilience	Completed
i-Responda training	Depot employees have been trained in i-Responda emergency management principles which provide a highly operational approach to managing emergencies and events. These employees have also participated in additional or expanded i-Responda courses to provide skills in flood and fast moving water.	Resilience	Completed
Emergency Warning and Communication System	System is being developed to communicate to all staff by text message during and after an emergency or incident. This system will replace existing informal systems including phone and email communication trees.	Resilience	In progress
Coping in the Heat	Community and vulnerable residents throughout summer through the CHSP program and the Hamra Centre Library. The Resilience team will also attend two (2) Summer Festival events in early January to provide further information and bags to the community. This will be supported by a Talking Points article in the February edition where the community can read about strategies to cope in the heat. Other media including Facebook and the CWT website have also been used to promote Coping in the Heat messaging, risks and tactics.	Resilience	In progress
Red Cross RediPlan Sessions	A Coping in the Heat workshop is scheduled for 24 January 2020 and will be run in conjunction with the SES. This event will be free of charge and advertised in January. Red Cross RediPlan sessions are aimed all community members and promote emergency preparation. These measures include emergency plans, medical plans and ensuring sufficient food and water is available. These sessions are delivered by Red Cross volunteers directly to the community. Two (2) sessions have already been presented to community groups. Two (2) sessions are scheduled for January 2020 for CWT employees.	Resilience	In progress

General Climate Change initiatives

Multi-Council Earthquake Exercise	<p>The Western Adelaide and Northern Adelaide Zone Emergency Management Committees held a joint earthquake exercise in September 2019. CWT were members of the organisation committee and worked with five (5) other councils and the LGA Emergency Management Unit to facilitate an earthquake scenario exercise focusing on recovery.</p> <p>There were approximately 70 participants with 8 attending from the CWT. Participants varied in technical expertise and understanding of emergency management.</p>	Resilience	Completed
Business Resilience Breakfast	<p>A free business breakfast focusing on resilience was held in September 2019. This attracted 50 local businesses from the area who heard SAPOL present on the business related outcomes of the 2016 black systems event (blackout).</p> <p>This breakfast also provided an opportunity to listen to a 'real life' example of business resilience from Paul Clark of Kersbrook Hill Wines who provided his detailed and harrowing story of the Sampson Flat bushfires devastating his business, how he has recovered and his tips for better business resilience.</p>	Resilience	Completed
Little Day Out	<p>The Resilience team attended a Little Day Out School Holiday event in April and utilised the Red Cross to facilitate several Pillow Case Project sessions. The Pillowcase Project aims to educate children in a non-threatening environment about emergency preparedness and what they can do to assist their families if they need to evacuate or prepare for an incident.</p> <p>These sessions ran throughout the afternoon and involved approximately 45 children.</p>	Community Services	Completed
Community and Resilience Action Plan	<p>A Community Resilience Action Plan is currently being drafted to provide actions for the CWT in order to build the community's resilience.</p> <p>This is being drafted in consultation with the LGA's Council Ready team and will involve stakeholders across Council in due course.</p>	Resilience	In progress
CWT Recovery Plan	<p>A CWT Recovery Plan is currently in progress in consultation with the LGA Council Ready team. This project will involve stakeholders across the CWT and will seek to facilitate a smoother transition from the response phase of an incident to the recovery phase.</p>	Resilience	In progress

General Climate Change initiatives

LED Street lighting upgrade	The option to upgrade public street lighting with more efficient LED's is being investigated. LED lights offer a reduction in greenhouse gas emissions and lower ongoing energy costs while providing an opportunity to redesign the light network to move towards the Australian Standards and enable smart lighting solutions. This project is expected to result in the abatement of around 634 tonnes of greenhouse gas emissions per annum.	Assets	In progress
LED Linear Parks, Pathways and Reserve lighting upgrade	Replacement and upgrade of the existing reserve/open space, linear parks (+ shared pathway) and facilities lighting from metal halide / sodium type fittings to LED type fittings	Urban Services	Ongoing
Sustainable Procurement	The LGA has prepared a listing of sustainable product suppliers which are being considered as part of the procurement process and current level of green purchasing across the Administration. This project will look at integrating sustainable procurement into policy, market documents, templates and strategy as sustainability forms part of the value for money consideration in evaluating tender submissions, rather than being a separate and supplementary consideration.	Procurement	In progress
Sports Floodlighting	Use of LED technology for all new oval/court floodlighting; planned conversion of all existing halogen floodlighting to LED (Council assistance to clubs in seeking grant funding etc).	Urban Services	Ongoing
New/Upgrade Buildings+ Facilities	Building design cognisant of environmental factors - e.g. siting, shading, overhangs etc to minimise heat effects/impacts. All new buildings to provide solar systems/battery, rain water tanks, light sensors, air conditioning / mechanical services types + timers	Urban Services	Ongoing
Fleet - New & Replacement	Heavy vehicles compliant with the latest European Standards (emission control), Hybrid + Plug-in Motor Vehicles, Fleet Replacement program to ensure all vehicles/fleet/plant & equipment are regularly replaced (i.e. no more than 8 to 10 years) to ensure latest standards.	Urban Services	Ongoing

General Climate Change initiatives

<p>Waste Education</p>	<p>Minimise waste going to landfill through education of the community, schools and at events including: Extensive waste and recycling content on council's website -</p> <ul style="list-style-type: none"> • Tips to reduce waste • A-Z search engine • Bindy the 'chatbot', the virtual assistant for waste and recycling • Recycling and Organics Videos • Waste Quiz <p>Community presentations including Composting and Worm farming workshops Sessions and resources for schools -</p> <ul style="list-style-type: none"> • Resource Recovery: What and Why? • Go for Green and Gold • Composting and Worm farming • Waste and recycling games for loan • Support for schools with waste management systems. 	<p>Regulatory Services</p>	<p>Ongoing</p>
<p>Waste reduction initiatives in council owned buildings</p>	<p>Waste education content on Council website and National Recycling Week activities. Council's operational facilities including the Civic Centre, Hamra Library and Depot have source separation systems for multi waste streams including soft plastics, 10c CDL containers, food organics, paper and general recycling.</p>	<p>Regulatory Services</p>	<p>Ongoing</p>
<p>Waste reduction initiatives at events on Council land</p>	<p>Waste from single use plastics have also been reduced at events with single-use plastics bottles no longer being used for Council run events for the Community. Compostable cups, plates and cutlery are also used at events.</p>	<p>Strategy and Business</p>	<p>Ongoing</p>
<p>Household Chemicals and paint facility</p>	<p>This project was undertaken in conjunction with Solo Waste Resource Recovery and Green Industries SA in building a facility at the transfer station, as a free drop off facility for household chemicals and paints.</p>	<p>Regulatory Services</p>	<p>Completed</p>

General Climate Change initiatives

Native Bee BnB Hotels	As part of the River Torrens Recovery Project in conjunction with the Adelaide Mount Lofty Ranges Natural Resources Management Board, three native bee BnB's were installed along the River Torrens Linear Park in West Torrens. The initiative was a joint project between the eight councils along the River Torrens. Community members helped to build the native bee hotels at the 2018 Arbor Day community planting event in conjunction with Gardening Australia's Sophie Thomson and local native bee expert Dr Katja Hogendoorn. Educational signage was installed to promote the different types of native bees which can be found in the area.	City Operations and Strategy	Completed
Environment Grant Program	Through its Environment Grant Program, an annual budget of \$10,000 is allocated to community groups through a competitive application process to implement environment initiatives.	Strategy	Ongoing
Environment Sustainability Strategy	An Environment Sustainability Strategy is currently being developed. The strategy will be an overarching document which outlines the direction for key areas of environment sustainability including urban greening, waste management, water consumption and mitigation of greenhouse gas emissions. Where appropriate, specific targets will be set guide outcomes and measure performance.	Strategy	In progress
AdaptWest Climate Change Adaptation Program	West Torrens is working in partnership with the Cities of Charles Sturt and Port Adelaide Enfield to implement the AdaptWest in Action. A 3-year action plan was recently adopted by the participating councils to guide performance and outcomes.	Strategy	In progress
Water Management Plan	A review of Council's Water Management Plan is currently being undertaken.	Strategy	In progress
Carbon Management Plan and Carbon Footprint Report	A carbon footprint report is currently being developed. The carbon footprint aims to capture information regarding council's emissions across multiple sectors including energy, transport and waste. As part of the 2020/21 financial year, the development of a Carbon Management Plan is currently being considered.	Strategy	In progress

11.4 Urban Services Activities Report

Brief

This report provides Elected Members' with information on activities within the Urban Services Division.

RECOMMENDATION

The Committee recommends to Council that the Urban Services Activities Report be received.

Discussion

This report details the key activities of the City Assets, City Development, City Operations and City Property departments.

Special Project Work	
Rutland Avenue, Lockleys secondary drainage upgrade	Construction works commenced in October 2019 and are ongoing. Works are scheduled to be completed in late March 2020.
Westside Bikeway and Captain McKenna, (Pedestrian Path Lighting Project)	<p>The following is an update for the 2019/2020 program:</p> <ul style="list-style-type: none"> Westside Bikeway - Long Street and Osborn Tce, Plympton, (up to Stonehouse Ave) and Birdwood Tce (adjacent the Weigall Oval) are now both completed. The program will continue into 2020 with further new lighting installed on Creslin Tce/Gunnawarra Ave (between Stonehouse Ave and Morphett Rd), Camden Park. Procurement is currently underway for this stage with the project expected to commence late May 2020. Captain McKenna Bikeway - The procurement process has commenced for stage 2 of the program for this bikeway and the project is expected to commence in May 2020.
River Torrens Bank Repair Works - SA Water	<p>Council has engaged contractors to undertake the installation of new safety fencing and new pathway reconstruction, these works commenced in late February 2020.</p> <p>Works are due for completion around end of March 2020, which will then enable reopening of the pathway along this side of the river.</p> <p>Further progressive upgrade works along the section of linear pathway between Hardys Road and Jervois Street are being considered and investigated, with potential further works to be undertaken in the coming financial years.</p>
Stirling Street Stormwater Drainage Upgrade, Thebarton	<p>Design and documentation works for this project are completed. The open tender request for construction works closed on January 24th 2020 and the post tender review process in is progress.</p> <p>Construction works are anticipated to commence in April 2020.</p>
Sherriff Street Stormwater Drainage Upgrade, Underdale	Design and documentation works for this project are ongoing. The tendering process for construction works is to commence in March 2020.

<p>Transition to LED Street Lighting</p>	<p>Administration are currently evaluating an offer from SAPN to undertake the commencement of street lighting transition to LED.</p>
--	---

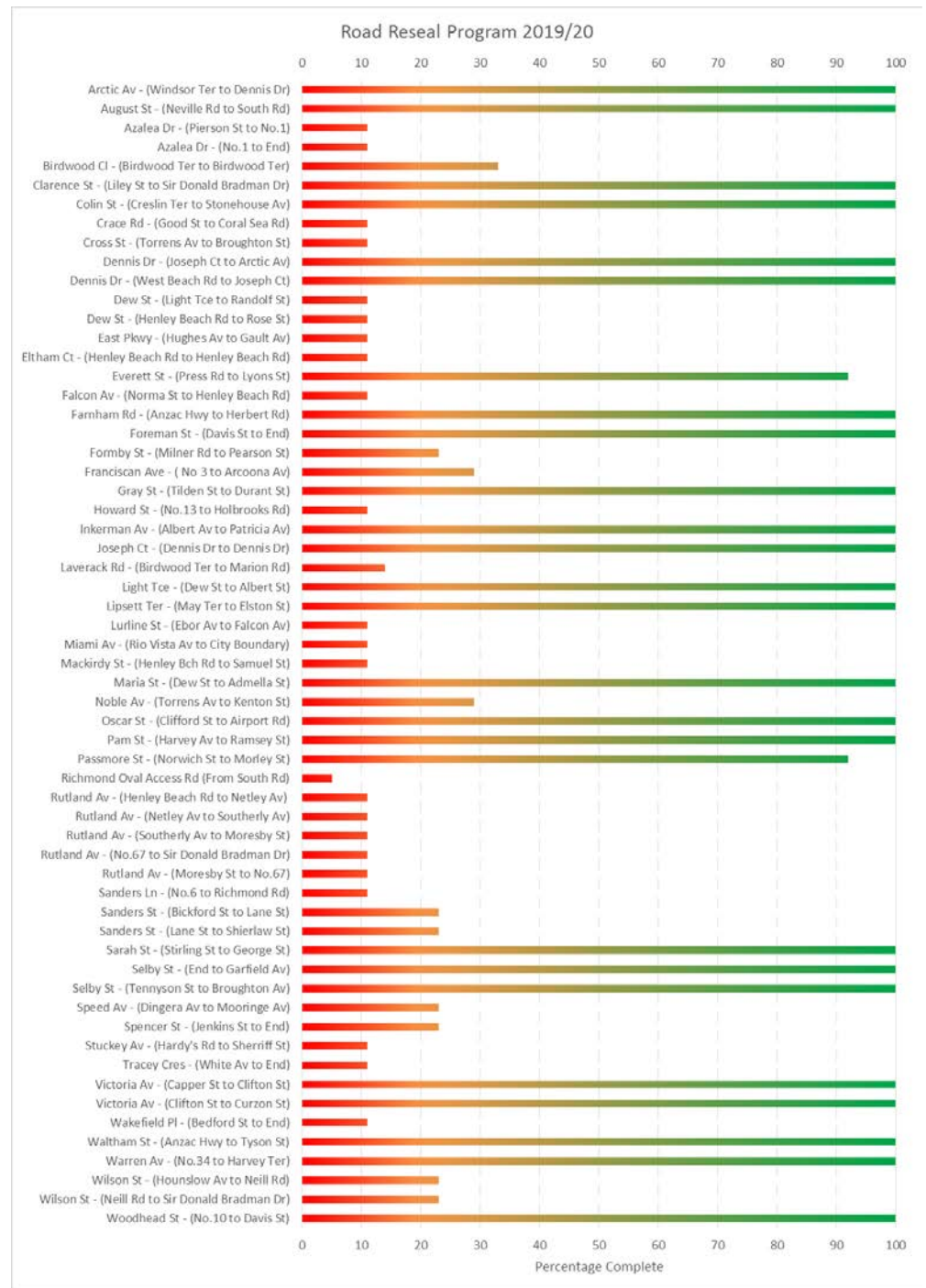
Capital Works

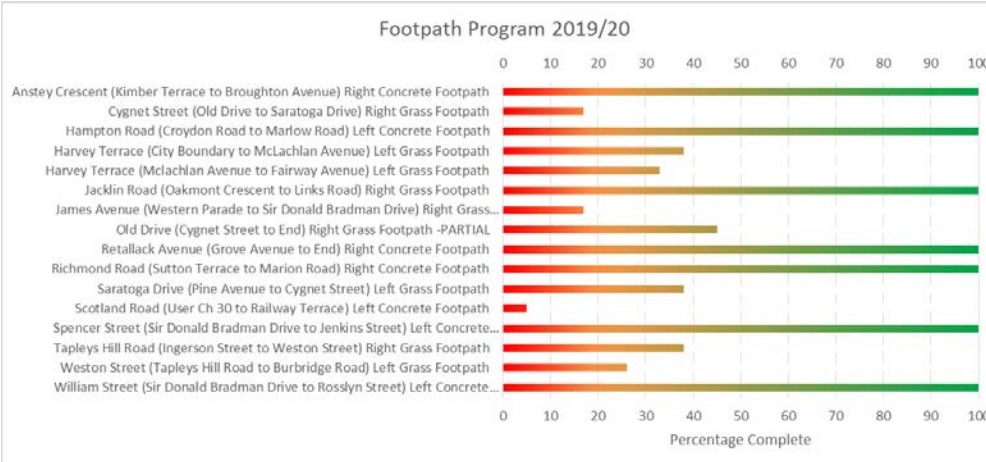
<p>Road Reconstruction Works</p>	<p>The following is an update on the road reconstruction projects occurring in our City:</p> <p>Engineering surveys and underground service identifications have been completed for the 2019/20 program.</p> <p>Detailed design works are in progress for the following road reconstructions:</p> <ul style="list-style-type: none"> - Halsey Road, Fulham (Coral Sea Road to Dewey Street) - Bagot Avenue, Cowandilla (Sir Donald Bradman Drive to Hounslow Avenue) - Marleston Avenue, Ashford (South Road to Alexander Avenue) - Holland Street, Thebarton (Phillips Street to Anderson Street) <p>Construction works for the following road reconstruction projects are currently in progress:</p> <ul style="list-style-type: none"> - Surrey Road, Keswick (Richmond Road to Everard Avenue) - Weetunga Street, Fulham (Samuel Street to Murray Street) - Starr Avenue, North Plympton (Morphett Road to Deeds Road) <p>The following road reconstructions are completed:</p> <ul style="list-style-type: none"> - Norma Street, Mile End (South Road to Falcon Avenue)
----------------------------------	---

<p>Kerb and Gutter Program 2019/20</p>	<p>The works associated with Kerb and Gutter Program 2019/20 have been awarded to two separate contractors.</p> <p>Concurrently, survey and designs works for the program are progressing.</p> <p>Construction works are ongoing.</p> <div> <table border="1"> <caption>Kerb & Water table Program 2019/20 - Percentage Complete</caption> <thead> <tr> <th>Project</th> <th>Percentage Complete</th> </tr> </thead> <tbody> <tr><td>Carlow Av - (Rowells Rd to Chester St)</td><td>100</td></tr> <tr><td>Castlebar Rd - (Franciscan Av to Fulham Park Dr)</td><td>95</td></tr> <tr><td>Castlebar Rd - (Fulham Park Dr to Durham Av)</td><td>95</td></tr> <tr><td>Cawthorne St -1949 (Phillips Street to Road Closure)</td><td>95</td></tr> <tr><td>Cuming St - (South Rd to No.43)</td><td>30</td></tr> <tr><td>Curzon St - (Victoria Av to Stonehouse Av)</td><td>80</td></tr> <tr><td>Fairway Av - (Harvey Ter to Mattner Av)</td><td>20</td></tr> <tr><td>Fulham Park Dr - (Corona Av to Castlebar Rd)</td><td>95</td></tr> <tr><td>Hampton St - (Pine St to Henley Beach Rd)</td><td>100</td></tr> <tr><td>Hampton St - (Pine St to Marshall Tce)</td><td>100</td></tr> <tr><td>Horsley St - (Frontage Rd to Corona Av)</td><td>80</td></tr> <tr><td>Kandy St - (Raikaoff Ct to Chippendale Av)</td><td>35</td></tr> <tr><td>Kingston Av - (Brooker Ter to Holder Ave)</td><td>100</td></tr> <tr><td>Kingston Av - (Milner Rd to Deacon Av)</td><td>100</td></tr> <tr><td>Lewis St - (Lipsett Ter to Marshall Ter)</td><td>35</td></tr> <tr><td>Lewis St - (Marshall Ter to Henley Beach Rd)</td><td>70</td></tr> <tr><td>Lyons St - (Carnarvon Av to Everett St)</td><td>15</td></tr> <tr><td>Lyons St - (Everett St to No.29)</td><td>40</td></tr> <tr><td>Morley St - (Leicester St to Britton St)</td><td>100</td></tr> <tr><td>Pearse St - (Henley Beach Rd to Norman St)</td><td>25</td></tr> <tr><td>Reynolds Av - (Jeffrey St to Lipsett Ter)</td><td>100</td></tr> <tr><td>Sarah St - (George St to Richmond Rd)</td><td>40</td></tr> <tr><td>Somerset Av - (Davenport Ter to Sir Donald Bradman Dr)</td><td>15</td></tr> <tr><td>Ulinga St - (No.12 to Wongala Av)</td><td>100</td></tr> </tbody> </table> </div>	Project	Percentage Complete	Carlow Av - (Rowells Rd to Chester St)	100	Castlebar Rd - (Franciscan Av to Fulham Park Dr)	95	Castlebar Rd - (Fulham Park Dr to Durham Av)	95	Cawthorne St -1949 (Phillips Street to Road Closure)	95	Cuming St - (South Rd to No.43)	30	Curzon St - (Victoria Av to Stonehouse Av)	80	Fairway Av - (Harvey Ter to Mattner Av)	20	Fulham Park Dr - (Corona Av to Castlebar Rd)	95	Hampton St - (Pine St to Henley Beach Rd)	100	Hampton St - (Pine St to Marshall Tce)	100	Horsley St - (Frontage Rd to Corona Av)	80	Kandy St - (Raikaoff Ct to Chippendale Av)	35	Kingston Av - (Brooker Ter to Holder Ave)	100	Kingston Av - (Milner Rd to Deacon Av)	100	Lewis St - (Lipsett Ter to Marshall Ter)	35	Lewis St - (Marshall Ter to Henley Beach Rd)	70	Lyons St - (Carnarvon Av to Everett St)	15	Lyons St - (Everett St to No.29)	40	Morley St - (Leicester St to Britton St)	100	Pearse St - (Henley Beach Rd to Norman St)	25	Reynolds Av - (Jeffrey St to Lipsett Ter)	100	Sarah St - (George St to Richmond Rd)	40	Somerset Av - (Davenport Ter to Sir Donald Bradman Dr)	15	Ulinga St - (No.12 to Wongala Av)	100
Project	Percentage Complete																																																		
Carlow Av - (Rowells Rd to Chester St)	100																																																		
Castlebar Rd - (Franciscan Av to Fulham Park Dr)	95																																																		
Castlebar Rd - (Fulham Park Dr to Durham Av)	95																																																		
Cawthorne St -1949 (Phillips Street to Road Closure)	95																																																		
Cuming St - (South Rd to No.43)	30																																																		
Curzon St - (Victoria Av to Stonehouse Av)	80																																																		
Fairway Av - (Harvey Ter to Mattner Av)	20																																																		
Fulham Park Dr - (Corona Av to Castlebar Rd)	95																																																		
Hampton St - (Pine St to Henley Beach Rd)	100																																																		
Hampton St - (Pine St to Marshall Tce)	100																																																		
Horsley St - (Frontage Rd to Corona Av)	80																																																		
Kandy St - (Raikaoff Ct to Chippendale Av)	35																																																		
Kingston Av - (Brooker Ter to Holder Ave)	100																																																		
Kingston Av - (Milner Rd to Deacon Av)	100																																																		
Lewis St - (Lipsett Ter to Marshall Ter)	35																																																		
Lewis St - (Marshall Ter to Henley Beach Rd)	70																																																		
Lyons St - (Carnarvon Av to Everett St)	15																																																		
Lyons St - (Everett St to No.29)	40																																																		
Morley St - (Leicester St to Britton St)	100																																																		
Pearse St - (Henley Beach Rd to Norman St)	25																																																		
Reynolds Av - (Jeffrey St to Lipsett Ter)	100																																																		
Sarah St - (George St to Richmond Rd)	40																																																		
Somerset Av - (Davenport Ter to Sir Donald Bradman Dr)	15																																																		
Ulinga St - (No.12 to Wongala Av)	100																																																		

Surface Reseal Program 2019/20

The 2019/20 Surface Reseal Program commenced onsite in September 2019 and is progressing.



<p>Footpath Program 2019/20</p>	<p>The works associated with Footpath Program 2019/20 have been awarded. Works commenced in October 2019 and are progressing.</p>  <table border="1"> <caption>Footpath Program 2019/20 - Percentage Complete</caption> <thead> <tr> <th>Project Name</th> <th>Percentage Complete</th> </tr> </thead> <tbody> <tr> <td>Anstey Crescent (Kimber Terrace to Broughton Avenue) Right Concrete Footpath</td> <td>100</td> </tr> <tr> <td>Cygnets Street (Old Drive to Saratoga Drive) Right Grass Footpath</td> <td>100</td> </tr> <tr> <td>Hampton Road (Croydon Road to Marlow Road) Left Concrete Footpath</td> <td>100</td> </tr> <tr> <td>Harvey Terrace (City Boundary to McLachlan Avenue) Left Grass Footpath</td> <td>100</td> </tr> <tr> <td>Harvey Terrace (McLachlan Avenue to Fairway Avenue) Left Grass Footpath</td> <td>100</td> </tr> <tr> <td>Jacklin Road (Oakmont Crescent to Links Road) Right Grass Footpath</td> <td>100</td> </tr> <tr> <td>James Avenue (Western Parade to Sir Donald Bradman Drive) Right Grass...</td> <td>100</td> </tr> <tr> <td>Old Drive (Cygnets Street to End) Right Grass Footpath -PARTIAL</td> <td>45</td> </tr> <tr> <td>Retallack Avenue (Grove Avenue to End) Right Concrete Footpath</td> <td>100</td> </tr> <tr> <td>Richmond Road (Sutton Terrace to Marion Road) Right Concrete Footpath</td> <td>100</td> </tr> <tr> <td>Saratoga Drive (Pine Avenue to Cygnets Street) Left Grass Footpath</td> <td>100</td> </tr> <tr> <td>Scotland Road (User Ch 30 to Railway Terrace) Left Concrete Footpath</td> <td>100</td> </tr> <tr> <td>Spencer Street (Sir Donald Bradman Drive to Jenkins Street) Left Concrete...</td> <td>100</td> </tr> <tr> <td>Tapleys Hill Road (Ingerson Street to Weston Street) Right Grass Footpath</td> <td>100</td> </tr> <tr> <td>Weston Street (Tapleys Hill Road to Burbridge Road) Left Grass Footpath</td> <td>100</td> </tr> <tr> <td>William Street (Sir Donald Bradman Drive to Rosslyn Street) Left Concrete...</td> <td>100</td> </tr> </tbody> </table>	Project Name	Percentage Complete	Anstey Crescent (Kimber Terrace to Broughton Avenue) Right Concrete Footpath	100	Cygnets Street (Old Drive to Saratoga Drive) Right Grass Footpath	100	Hampton Road (Croydon Road to Marlow Road) Left Concrete Footpath	100	Harvey Terrace (City Boundary to McLachlan Avenue) Left Grass Footpath	100	Harvey Terrace (McLachlan Avenue to Fairway Avenue) Left Grass Footpath	100	Jacklin Road (Oakmont Crescent to Links Road) Right Grass Footpath	100	James Avenue (Western Parade to Sir Donald Bradman Drive) Right Grass...	100	Old Drive (Cygnets Street to End) Right Grass Footpath -PARTIAL	45	Retallack Avenue (Grove Avenue to End) Right Concrete Footpath	100	Richmond Road (Sutton Terrace to Marion Road) Right Concrete Footpath	100	Saratoga Drive (Pine Avenue to Cygnets Street) Left Grass Footpath	100	Scotland Road (User Ch 30 to Railway Terrace) Left Concrete Footpath	100	Spencer Street (Sir Donald Bradman Drive to Jenkins Street) Left Concrete...	100	Tapleys Hill Road (Ingerson Street to Weston Street) Right Grass Footpath	100	Weston Street (Tapleys Hill Road to Burbridge Road) Left Grass Footpath	100	William Street (Sir Donald Bradman Drive to Rosslyn Street) Left Concrete...	100
Project Name	Percentage Complete																																		
Anstey Crescent (Kimber Terrace to Broughton Avenue) Right Concrete Footpath	100																																		
Cygnets Street (Old Drive to Saratoga Drive) Right Grass Footpath	100																																		
Hampton Road (Croydon Road to Marlow Road) Left Concrete Footpath	100																																		
Harvey Terrace (City Boundary to McLachlan Avenue) Left Grass Footpath	100																																		
Harvey Terrace (McLachlan Avenue to Fairway Avenue) Left Grass Footpath	100																																		
Jacklin Road (Oakmont Crescent to Links Road) Right Grass Footpath	100																																		
James Avenue (Western Parade to Sir Donald Bradman Drive) Right Grass...	100																																		
Old Drive (Cygnets Street to End) Right Grass Footpath -PARTIAL	45																																		
Retallack Avenue (Grove Avenue to End) Right Concrete Footpath	100																																		
Richmond Road (Sutton Terrace to Marion Road) Right Concrete Footpath	100																																		
Saratoga Drive (Pine Avenue to Cygnets Street) Left Grass Footpath	100																																		
Scotland Road (User Ch 30 to Railway Terrace) Left Concrete Footpath	100																																		
Spencer Street (Sir Donald Bradman Drive to Jenkins Street) Left Concrete...	100																																		
Tapleys Hill Road (Ingerson Street to Weston Street) Right Grass Footpath	100																																		
Weston Street (Tapleys Hill Road to Burbridge Road) Left Grass Footpath	100																																		
William Street (Sir Donald Bradman Drive to Rosslyn Street) Left Concrete...	100																																		
<p>Playground Upgrade 2019/2020</p>	<p>The following is an update on the 2019/2020 replacement program for playgrounds at:</p> <ul style="list-style-type: none"> • Mellor Park Reserve, Lockleys - The project will be implemented as part of the Reserve Upgrade later this financial year - design has been completed; • Swan Ave Reserve, West Beach - The procurement process is currently underway; • Lockleys Oval, Lockleys - The project will be implemented as part of the upgrade works, after completion of the building project/oval works; • Camden Oval, Novar Gardens - The project will be implemented as part of the upgrade works to the Oval. 																																		
<p>Reserve Irrigation Upgrades 2019/2020</p>	<p>The following is an update on the 2019/2020 irrigation upgrade program for reserves at:</p> <ul style="list-style-type: none"> • Westside Bikeway, Marleston / Plympton, (staged project, selected areas within the linear park - Design has been completed and work is scheduled to commence in the new year • Lockleys Oval and surrounds - Project is included as part of the Lockleys Oval Redevelopment, and is scheduled for March 2020; • Lindfield Reserve, Novar Gardens - Design and scheduling of the project is underway; • Pine Ave verge area, Novar Gardens - Design and scheduling of the project is underway; • Swan Ave Reserve, West Beach - Project will be scheduled after completion of the playground upgrade; • Coast Watchers Reserve, Fulham, (selected areas by Airport Over 50's Building) -The project is completed. 																																		

Traffic Projects and Parking Management	
Torrensville/ Thebarton LATM	Following the decision at the 4 February 2020 Council meeting, a notification letter will be distributed during the week commencing 2 nd March 2020 to the properties initially included in the consultation process. Works will begin in the following weeks.
Novar Gardens/Camden Park LATM	<p>The Final Report was endorsed on the 5 November by Council. City of Holdfast Bay have presented the report to their Council meeting on the 26 November 2019 where they endorsed the two recommended treatments on the Council boundary.</p> <p>The project will be prioritised and budget allocation will be submitted for the 2020/21 financial year. A notification letter of the endorsed final report will be posted to all properties in the area in March-April 2020.</p>
Richmond/Mile End LATM	Concept designs were completed and presented to the working party meeting which was conducted on the 15 October 2019. Consultation material for the subsequent round of consultation is to be prepared for consultation in April 2020.
Marleston / Keswick / Kurralta Park / North Plympton / Ashford	<p>Full data collection has been completed in mid-October. Crash data analysis for the area has been completed.</p> <p>The Department of Planning, Transport and Infrastructure (DPTI) have provided traffic data for some of the key traffic count locations identified which adjoin Council and State roads.</p> <p>The broad community engagement material has been submitted to the printing contractor for proofing and printing. Engagement material should be received by the community in the coming week and the community engagement period is set to conclude on the Friday 20 March 2020.</p>
Traffic and Parking Review	<p>Parking Review:</p> <ul style="list-style-type: none"> • Goodenough Street, Mile End - notify residents of results and install parking restrictions in coming weeks. • Miranda Avenue, Lockleys - Consultation with residents for the removal of parking restrictions on weekends concludes on the 4 March 2020. • Waltham Street, Ashford - Consultation with residents for new 2 hour parking controls concludes on the 4 March 2020. • Brian Street, Lockleys - Consultation with residents for the removal of existing 2 hour parking controls concludes on the 4 March 2020. • Clifford Street, Brooklyn Park - consult with residents to install area parking controls in streets adjacent to airport • Passmore Street, West Richmond - New 2 hour parking controls to be implemented on the eastern end towards Marion Road in the coming week. • May Terrace, Brooklyn Park - New 2 hour parking controls to be implemented on west side of May Terrace in the coming week. • Pearse Street, Underdale - New 4 hour parking controls to be installed on both sides of the street between Henley Beach Road and Norman Street in the coming week. • Michel Avenue, Plympton - Analysis of the street geometry and site investigations have been completed. Consultation material is being prepared for proposed new no stopping zones to alleviate congestion.

	<p>Traffic Review:</p> <ul style="list-style-type: none"> • Everard Avenue, Ashford/Keswick - Site survey, line marking and minor works concept plan has been prepared for Everard Avenue between Surrey Road and South Road. The aim of the concept plan is to extend bicycle access along Everard Avenue and improve delineation. Quote for works has been completed. Consultation material to be prepared in the coming week.
E-Scooter Trial	<p>The tender process has been completed.</p> <p>A formal application has been submitted to the State Government for approval and route gazettal. The formal application is with the Ministers Office and approval for gazettal is likely to be forthcoming by mid-March 2020 for a 6-month trial.</p> <p>The Administration are currently reviewing the draft On-Street Activity Permit pursuant to the provisions of section 222 of the <i>Local Government Act 1999</i> which is required to be issued by each participating Council.</p>

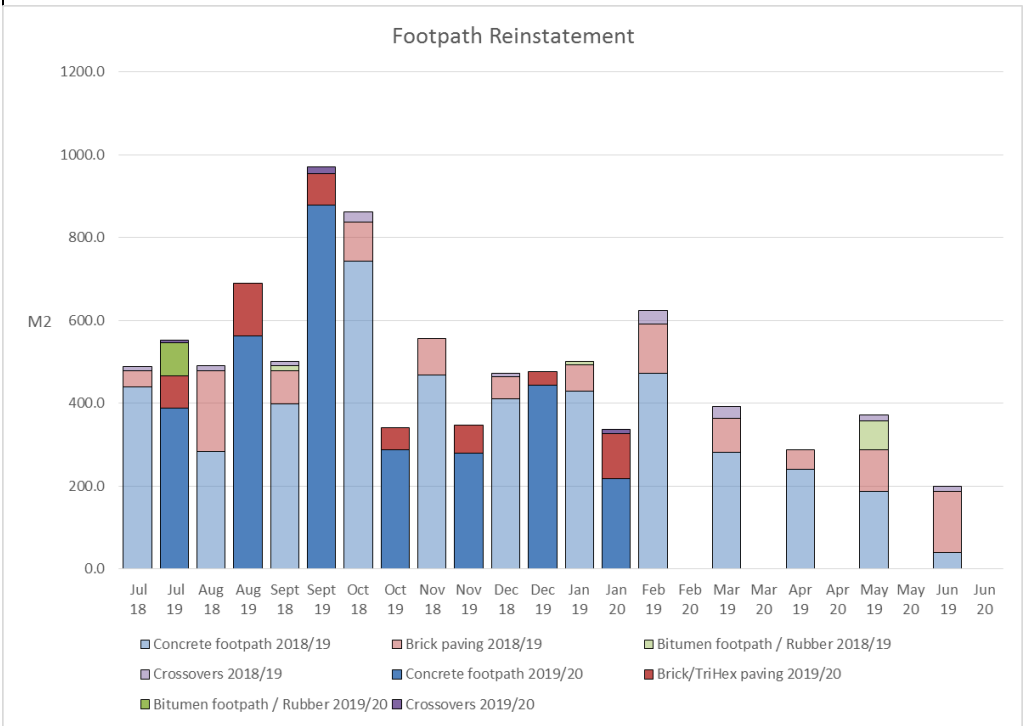
Property and Facilities

Weigall Oval Facility Development	<p>The contractor is continuing to progress both the building and the sport fields / external works on site. The current status of the building works include the laying of the blockwork and installation of the internal walls and electrical/mechanical/hydraulic services. The external works are continuing with the construction of the sport fields and installation of the underground services, (i.e. drainage, electrical and hydraulic).</p> <p>A complete project update report will be provided to the next scheduled City Facilities and Waste Recovery General Committee meeting for 24 March 2020.</p>
Lockleys Oval Facility Development	<p>The contractor is currently finalising the building project for handover to Council in early March 2020. Current remaining works to be completed prior to handing over to Council include the cleaning of the building and commissioning of the equipment/services and the completion of the tennis courts. On completion and handover to Council by the contractor the remaining site works - which include the oval reinstatement, landscaping and minor improvements to reserve areas will be undertaken in the coming month(s).</p> <p>Further information will be provided by Administration regarding an opening event proposed later in March 2020.</p> <p>A complete project update report will be provided to the next scheduled City Facilities and Waste Recovery General Committee meeting for 24 March 2020.</p>
Camden Oval Facility Development	<p>The turf and irrigation contractor(s) are currently finalising the project with the Oval expected to be opened for use (by the club and public) in early March 2020. There will be remaining works to be completed on site including the irrigation to the reserve areas and outside of the Football Oval / Soccer Pitches.</p>

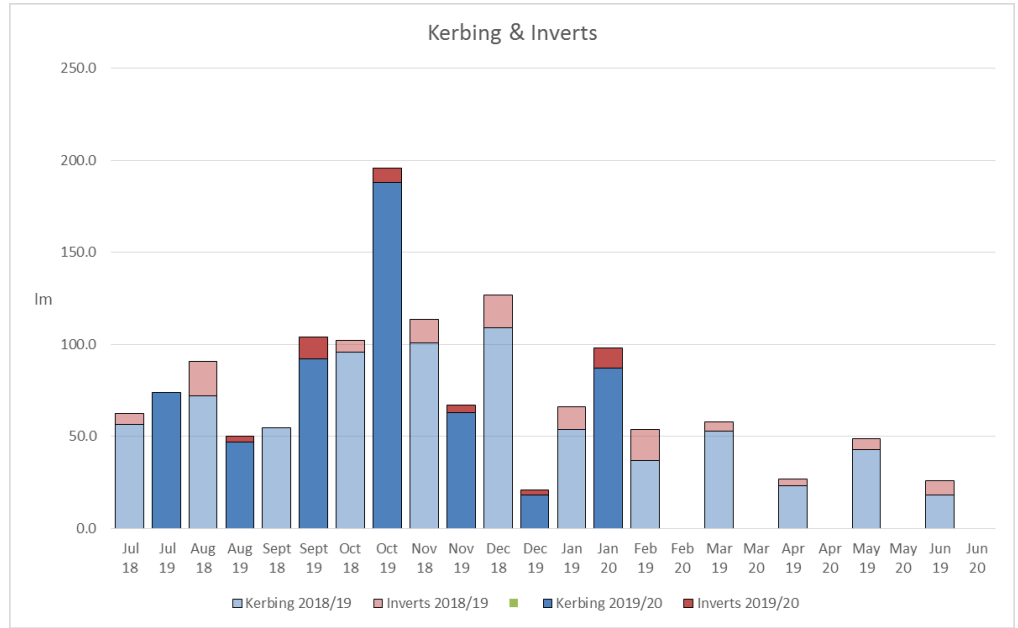
	<p>A complete project update report will be provided to the next scheduled City Facilities and Waste Recovery General Committee meeting for 24 March 2020.</p>
<p>Mellor Park Facility Development</p>	<p>The procurement process is currently underway for this project and the Administration is reviewing the submissions.</p> <p>A project update report will be provided to the next scheduled City Facilities and Waste Recovery General Committee meeting for 24 March 2020.</p>

City Operations

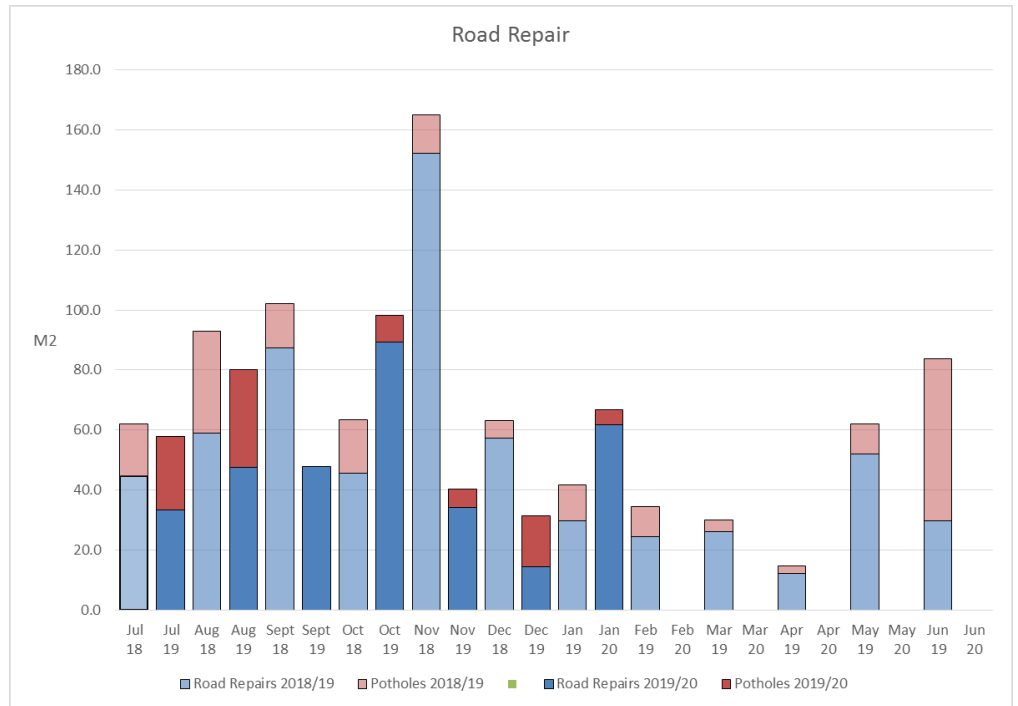
Footpath Reinstatement



**Kerb and Watertable /
Invert
Reinstatement**

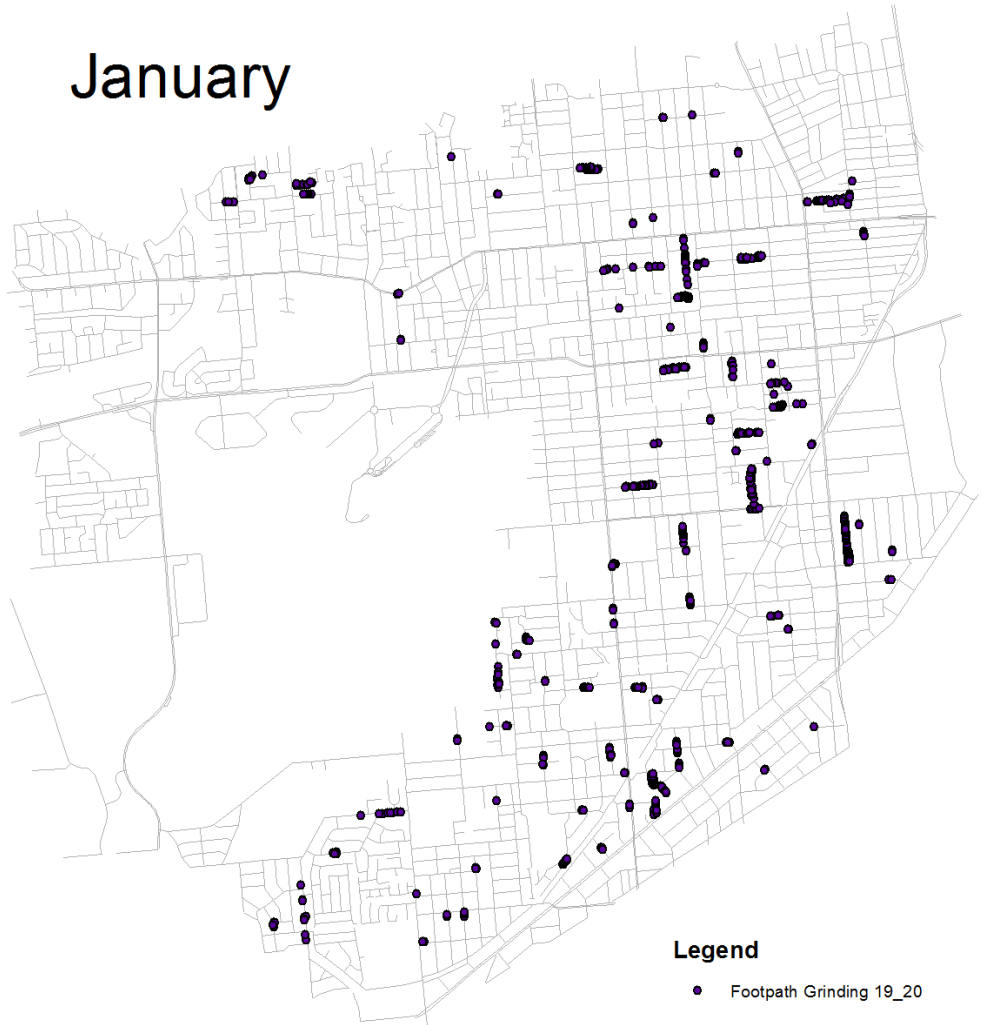


**Road Repair and
Potholes**

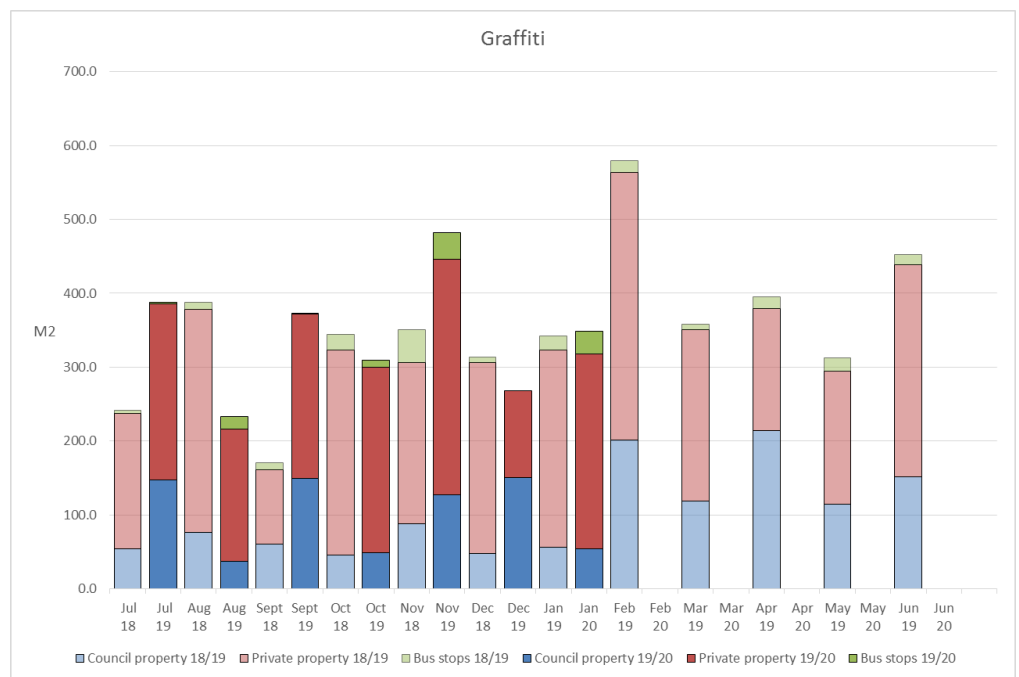


Footpath Grinding Program

January

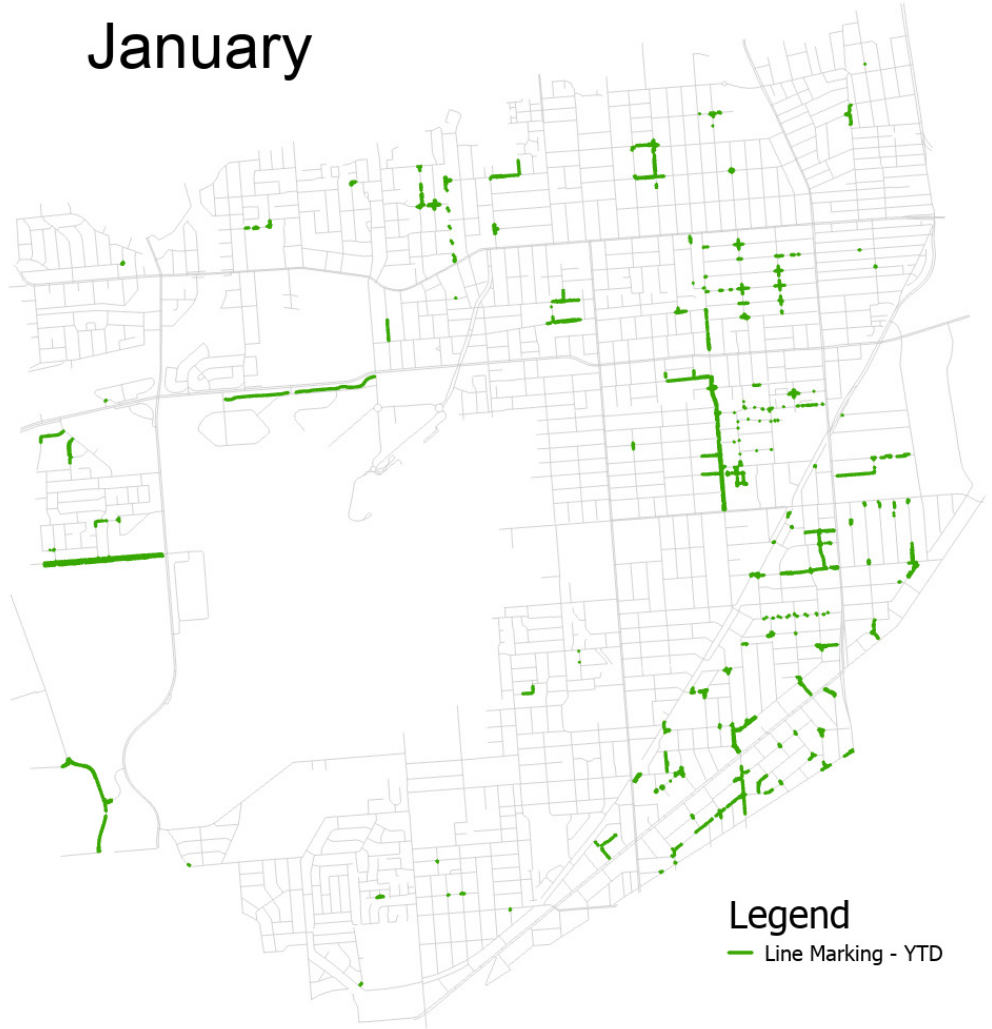


Graffiti Removal



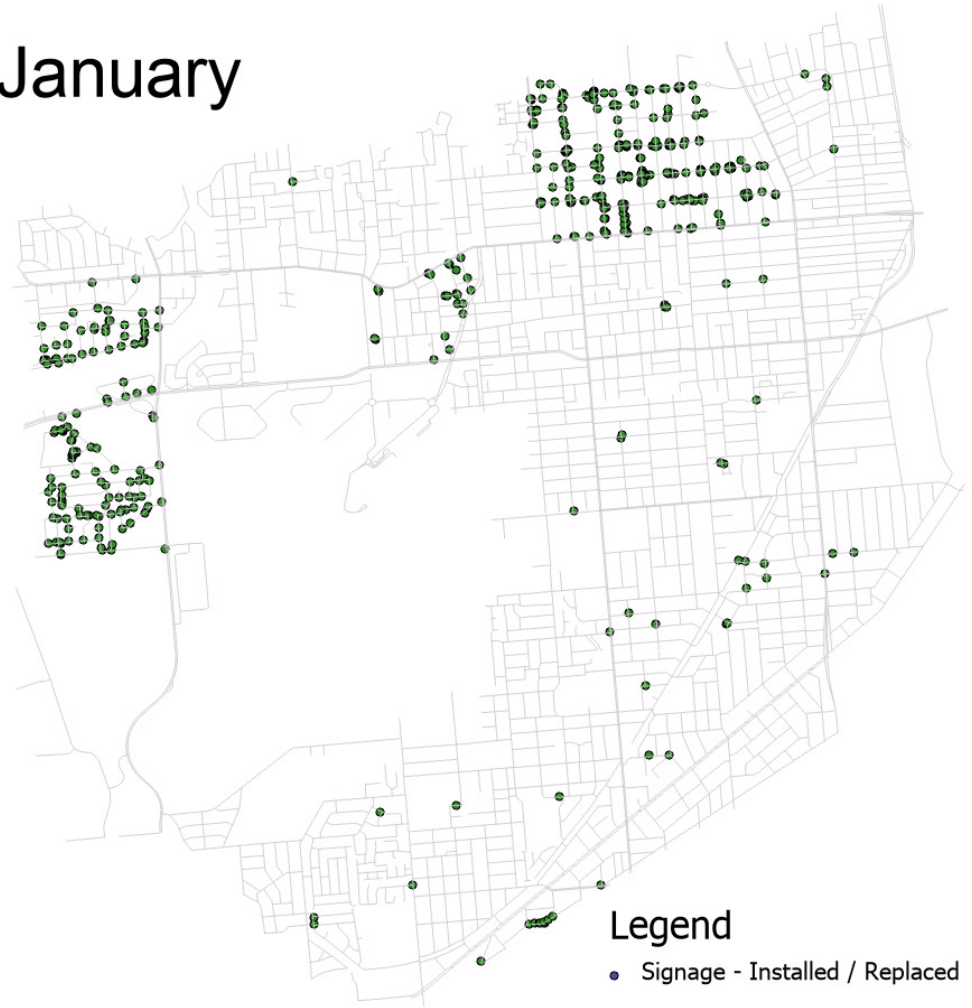
Line Marking

January



Signage

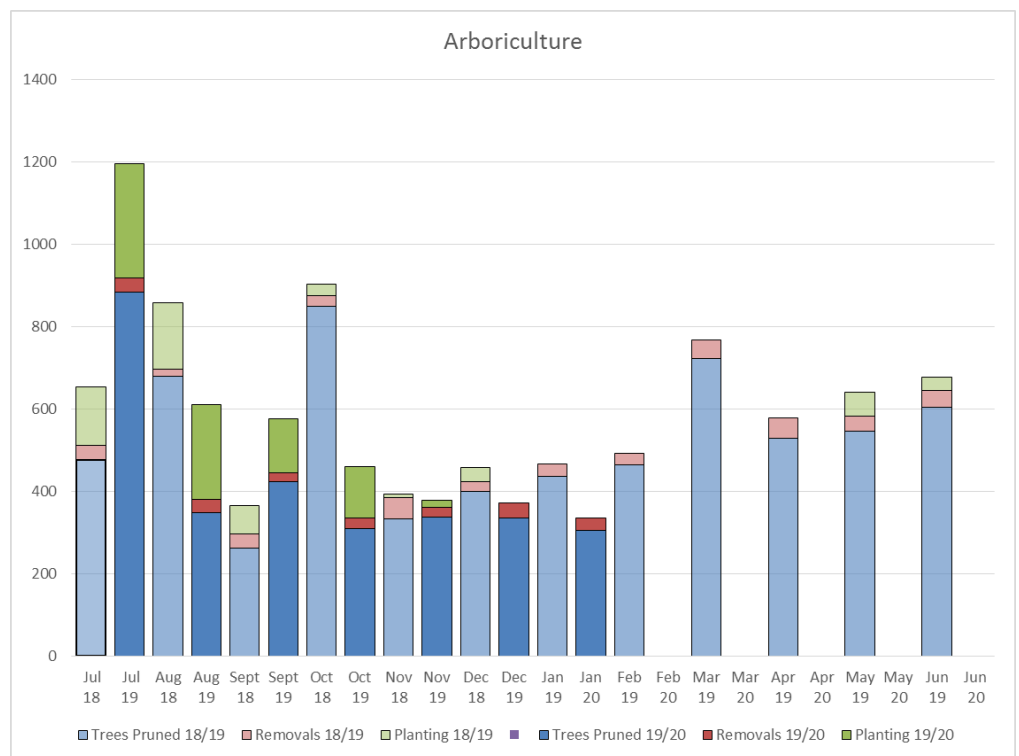
January



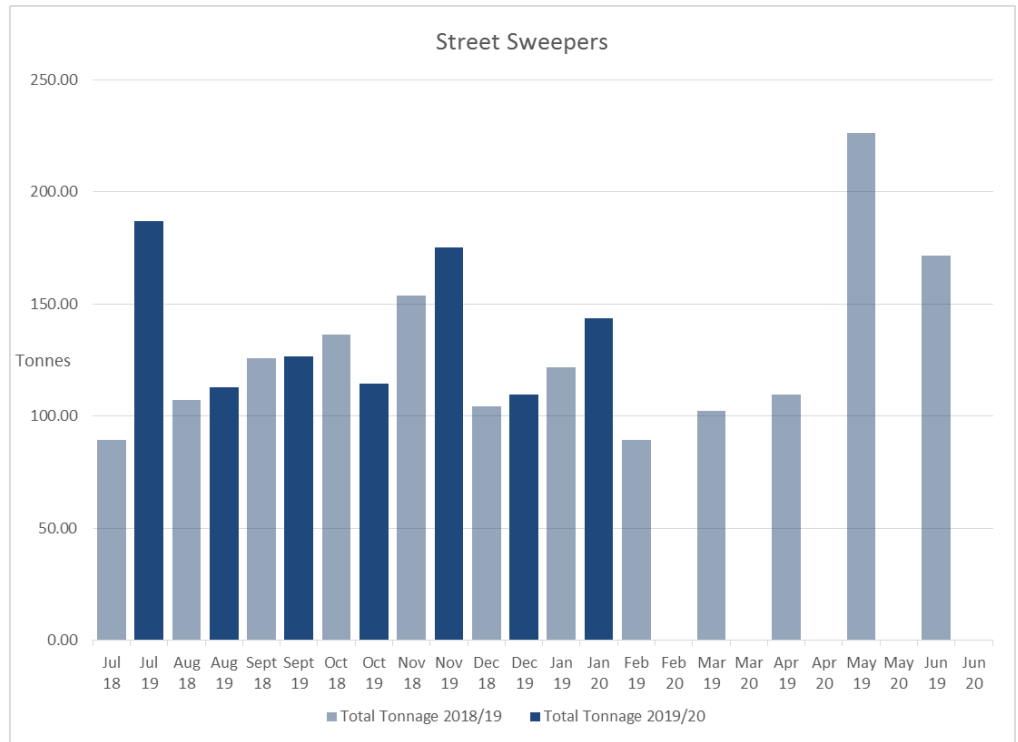
Legend

- Signage - Installed / Replaced

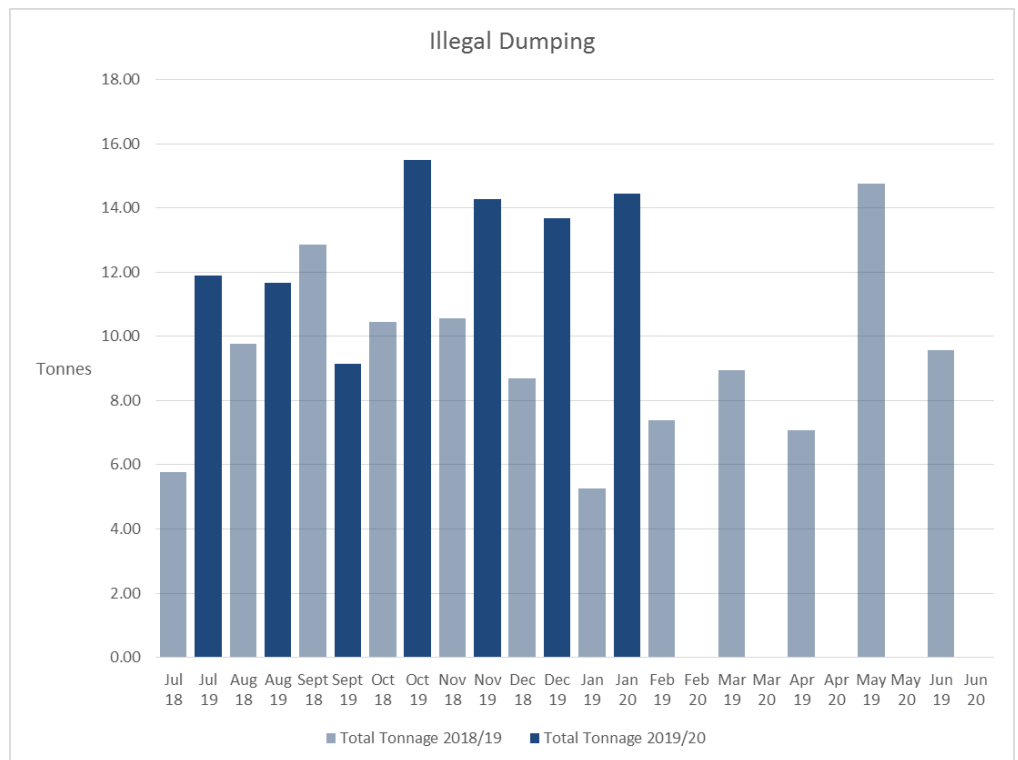
Arboriculture



Street Sweeper

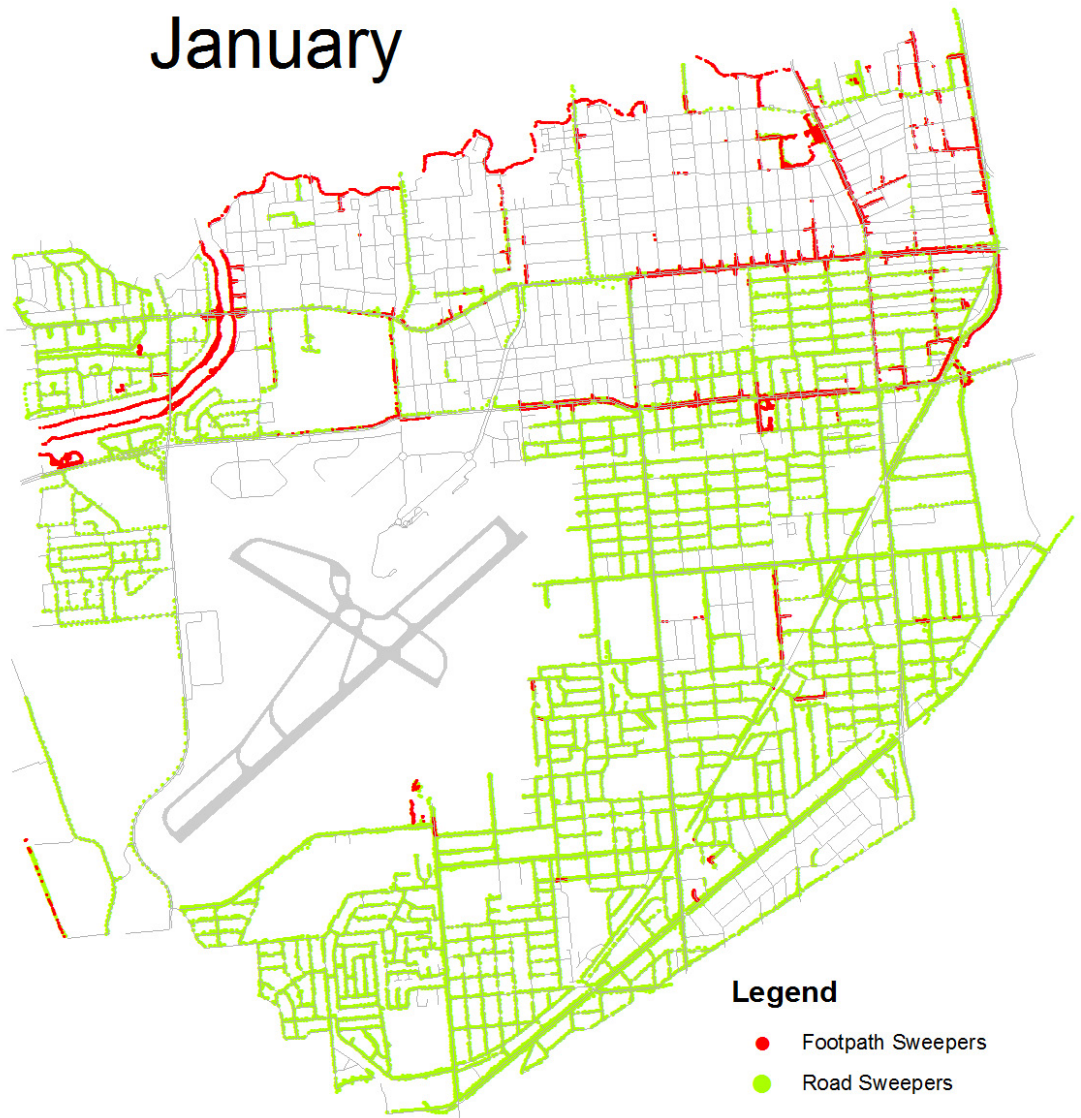


Illegal Rubbish Collection



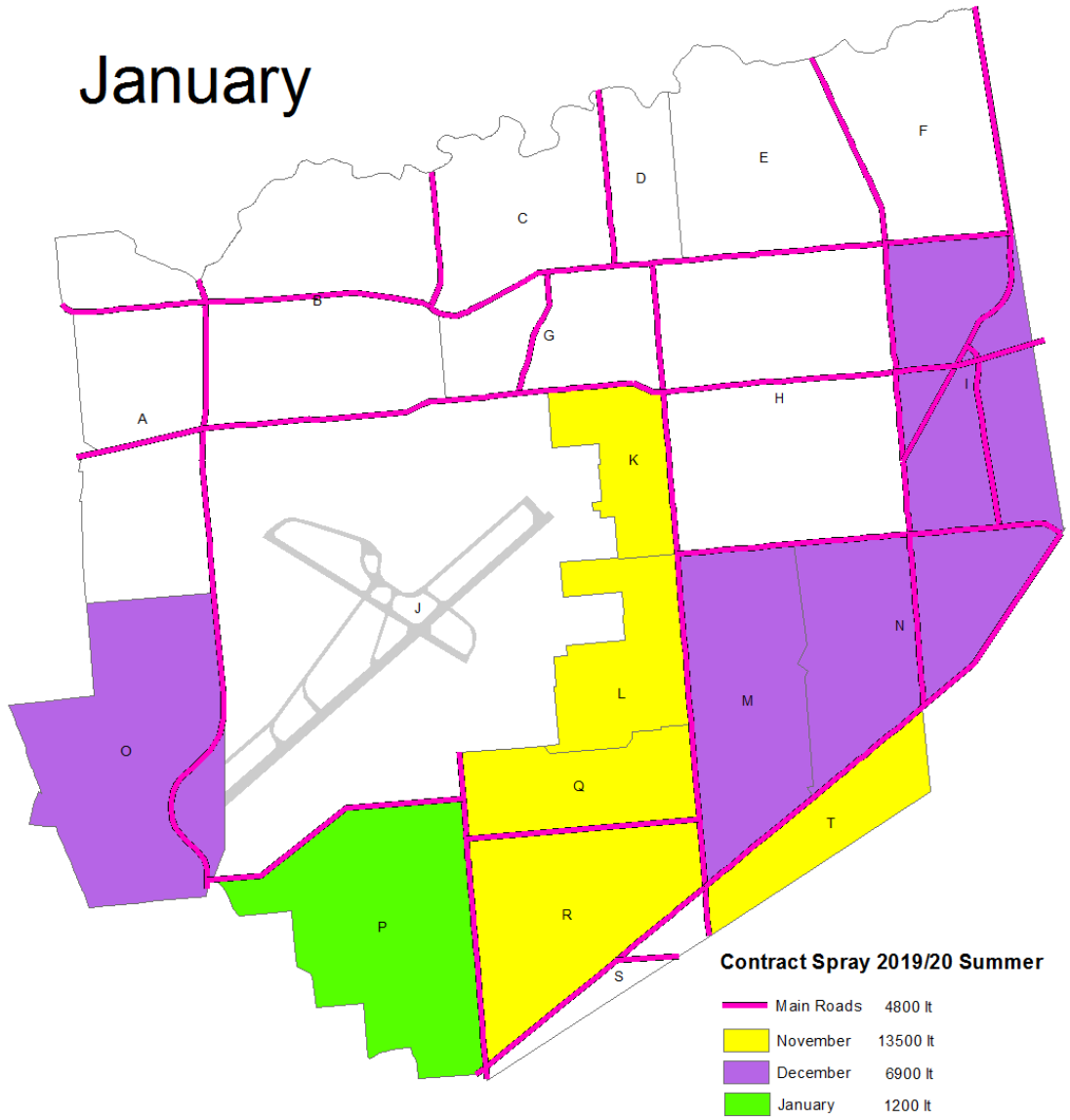
Road and
Footpath
Sweeping

January



Contract
Weed
Spraying
(1st Cycle)

January

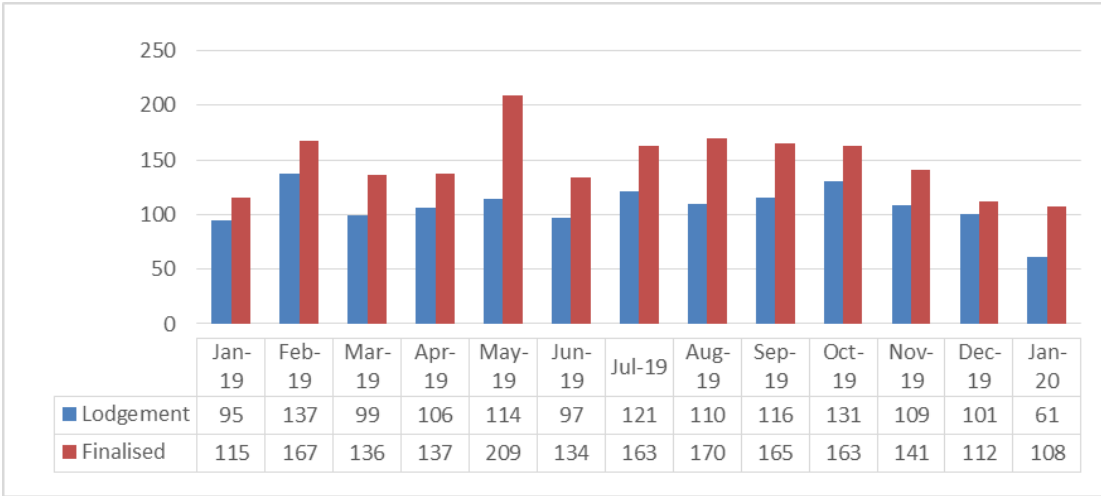


Development Assessment

Development Applications

Lodgments and Decisions

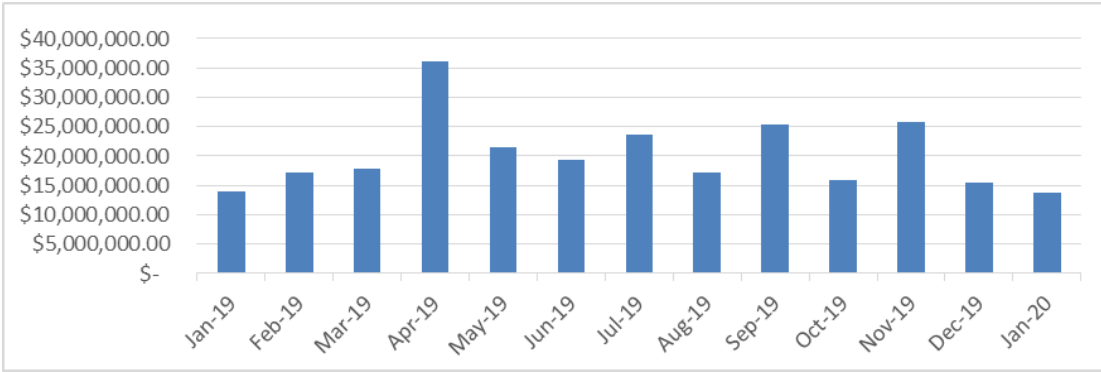
Sixty-one (61) applications were lodged and one hundred and eight (108) applications were finalised in January 2020.



Note: 'Lodgement' relates to the number of new development application lodged during the month which is represented by the number of new development application numbers issued (including variation applications). 'Finalised' relates to the number of decision notification forms issued during the month and may including decisions relating to development plan consent, land division consent, building rules consent and development approval. This includes consents issued by both Council and private certifiers.

Estimated Construction Cost (Lodged Development Applications)

Development applications with a total estimated construction cost of \$13,693,238 were lodged in January 2020.



Planning Assessment

Assessment Timeframes (Staff Decisions)

	2018		2019		
	Dec Qtr. 4	Mar Qtr. 1	June Qtr. 2	Sep Qtr. 3	Dec Qtr. 4
BUILDING CODE ONLY					
Total applications	90	73	73	53	59
Median timeframe	3 days	1 day	2 days	2 days	2 days
COMPLYING					
Total applications	42	24	47	56	49
Median timeframe	6 days	5 days	6 days	2 days	2 days
CAT 1 MERIT					
Total applications	203	183	211	206	192
Median timeframe	22 days	21 days	15 days	12 days	12 days
CAT 2 MERIT					
Total applications	18	14	8	15	12
Median timeframe	64 days	71 days	37.5 days	46 days	34 days
CAT 3 MERIT					
Total applications	8	4	4	6	4
Median timeframe	39 days	34.5 days	42 days	57 days	65.5 days
CAT 1 NON-COMPLYING					
Total applications	0	2	3	5	1
Median timeframe	-	122 days	87 days	95 days	58 days
CAT 3 NON-COMPLYING					
Total applications	3	0	2	0	1
Median timeframe	109 days	-	112 days	-	211 days

Assessment Timeframes (CAP Decisions)

	2018		2019		
	Dec Qtr. 4	Mar Qtr. 1	June Qtr. 2	Sep Qtr. 3	Dec Qtr. 4
CAT 1 MERIT					
Total applications	4	0	3	0	2
Median timeframe	43.5 days	-	67 days	-	29 days
CAT 2 MERIT					
Total applications	1	5	4	2	0
Median timeframe	87 days	64 days	83 days	42 days	-
CAT 3 MERIT					
Total applications	0	1	0	0	1
Median timeframe	-	50 days	-	-	126 days
CAT 1 NON-COMPLYING					
Total applications	1	0	3	1	1
Median timeframe	33 days	-	93 days	18 days	58 days
CAT 3 NON-COMPLYING					
Total applications	0	0	2	0	2
Median timeframe	-	-	159.5 days	-	105.5 days

Note: This data does not include withdrawn applications, refused applications, Land Division Consent applications and decisions under appeal. Category 3 Non-complying applications are not included until SCAP have made a decision whether to concur with Council's decision.

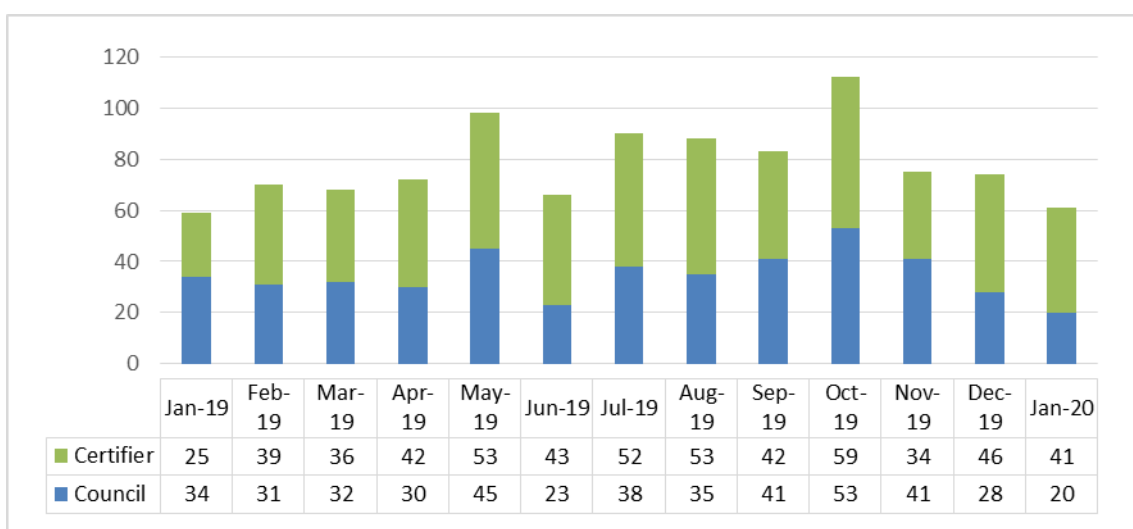
Maximum statutory time frames (excluding additional time for further information requests, statutory agency referrals and SCAP concurrence) are summarised as:

- *Building Code Only: 4 weeks*
- *Building Rules Consent only: 4 weeks*
- *Complying Development: 2 weeks for Development Plan Consent only; additional 4 weeks for Building Rules Consent*
- *Category 1-3 Development: 8 weeks for Development Plan Consent only; additional 4 weeks for Building Rules Consent.*

Assessment Appeals
There are no new, ongoing or finalised appeals against Council's development assessment decisions as at 17 February 2020.

Building Rules Assessment

Building Rules Consent issued By Relevant Authority
Council issued twenty (20) building rules consents and private certifiers issued forty-one (41) building rules consents in January 2020.



Note: Building Rules Consents are assessed by Council or private assessors known as Private Certifiers, these privately certified assessments still need to be registered and recorded with Council.

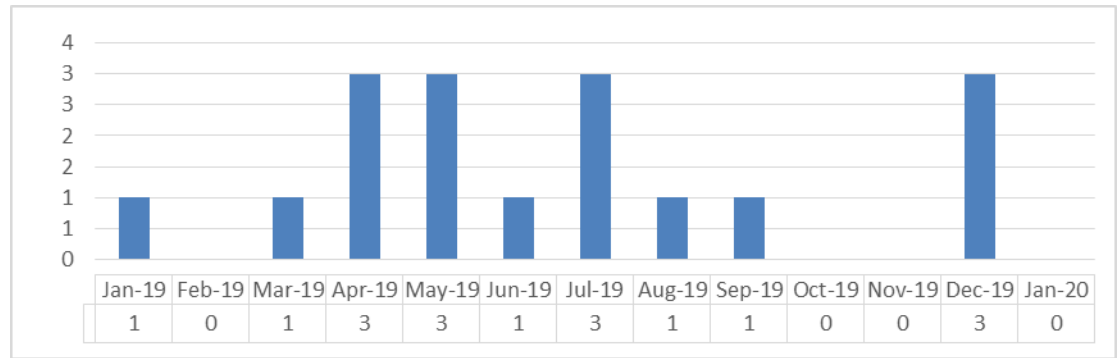
Community advice and education

Pre-lodgment advice
Rostered Duty Planner and Duty Building Officers are available to answer preliminary pre-lodgment and general enquiries during Service Centre opening hours. Advice is provided to the general public and applicants via the phone, email and in person at the Service Centre.

The Administration participates in DPTI's Pre-lodgement case management service for development five storeys or more in height within the Urban Corridor Zone.

Category 3
Public
notification

No Category 3 applications were notified in January 2020.

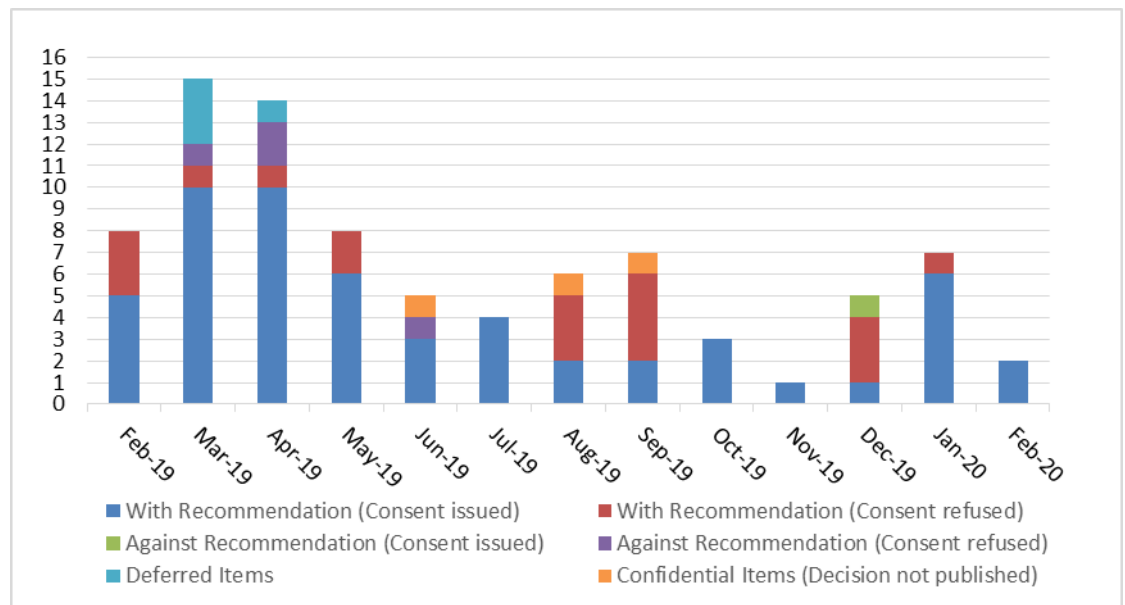


Council Assessment Panel

The Council Assessment Panel (CAP) held a meeting on 11 February 2020.

The next CAP meeting will be held on 10 March 2020.

Council
Assessment
Panel
Decisions



Referrals from other statutory agencies

Council is a statutory referral agency for some applications that are assessed by other agencies, including State Commission Assessment Panel (SCAP), Minister for Planning, Governor of South Australia (under the Development Act 1993) and Adelaide Airport Limited (Airports Act 1996). Council is also informally referred applications for development five storeys or more in height within the Urban Corridor Zone that are assessed by SCAP.

Service improvements

Work has continued on a suite of business improvement initiatives including:

- Draft a Council enforcement policy
- Review site visit and inspections process
- Annual operational risk review
- City Development staff are contributing to internal Planning Reform working parties on planning policy, accredited professionals, communications and the ePlanning Portal.

Development compliance

Compliance Requests

Twenty-one (21) new development compliance requests were received in January 2020. Sixteen (16) development compliance requests were resolved within the month and eight (8) requests were resolved from a previous month in January 2020. At the end of January there were thirty-eight (38) ongoing development compliance requests.

Month / Year	No of Requests Received	Requests resolved within the month	Requests resolved from previous months	Total Ongoing Actions
Jan 2019	15	10	5	48
Feb 2019	22	19	1	52
Mar 2019	18	10	12	38
April 2019	11	5	3	43
May 2019	23	13	7	46
Jun 2019	11	4	6	52
Jul 2019	16	13	11	47
Aug 2019	24	21	7	41
Sep 2019	20	17	4	43
Oct 2019	16	11	5	37
Nov 2019	22	16	2	36
Dec 2019	13	8	4	46
Jan 2020	21	16	8	38

Note: Compliance actions include investigating potential use of properties for activities that haven't been approved, buildings being constructed without the required approvals, checking of older buildings that may be becoming structurally unsound.

Enforcement
Action

No Section 84 enforcement notice were issued in January 2020.

There was one (1) ongoing court matter as at 17 February 2020.

- An appeal against Council's enforcement notice relating to the breach of conditions for DA211/1231/2016 for the creation of two (2) additional allotments and construction of three (3) two-storey detached dwellings at 519 Henley Beach Road. The breach relates to the failure to develop driveways, parking and manoeuvring areas and landscaping to all three front yards

A minor variation to the development approval has been approved. As work was not completed by the agreed date decided during the conference, the matter has been sent to a directions hearing set down for 16 March 2020.

There were no finalised court matters since last month's report.

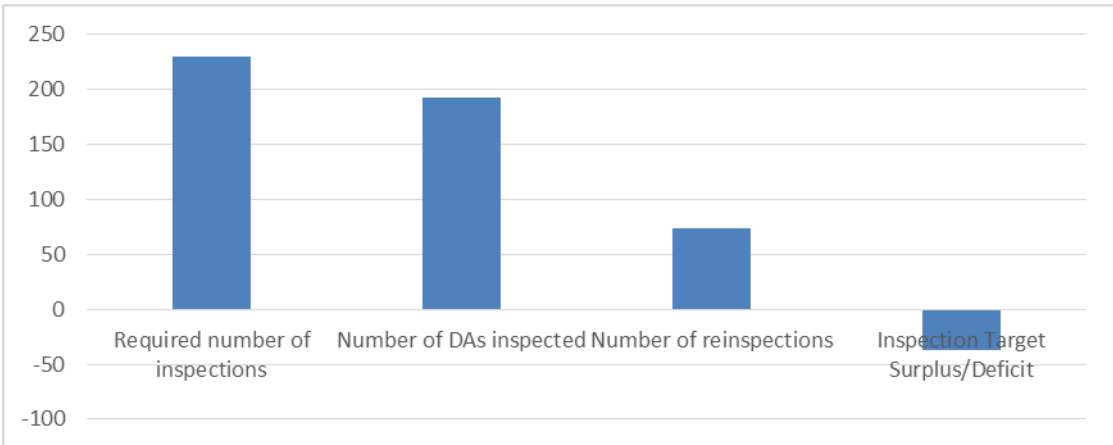
Month / Year	Section 84 Issued	Section 69 Issued	New Actions with ERD Court	Resolved Actions with ERD Court	Total ongoing Actions with ERD Court
Jan 2019	1	-	-	1	1
Feb 2019	-	-	-	-	1
Mar 2019	1	-	-	-	1
April 2019	-	-	-	-	1
May 2019	1	-	-	-	1
Jun 2019	1	1	-	-	1
Jul 2019	3	-	1	-	2
Aug 2019	-	-	-	-	2
Sep 2019	-	-	-	-	2
Oct 2019	-	-	-	1	1
Nov 2019	-	-	-	1	1
Dec 2019	1	-	-	-	1
Jan 2020	1	2	-	-	1

Note: Section 84 enforcement notices are the first stage of prosecution for unapproved development. Section 69 emergency orders are the first stage of prosecution for unsafe buildings.

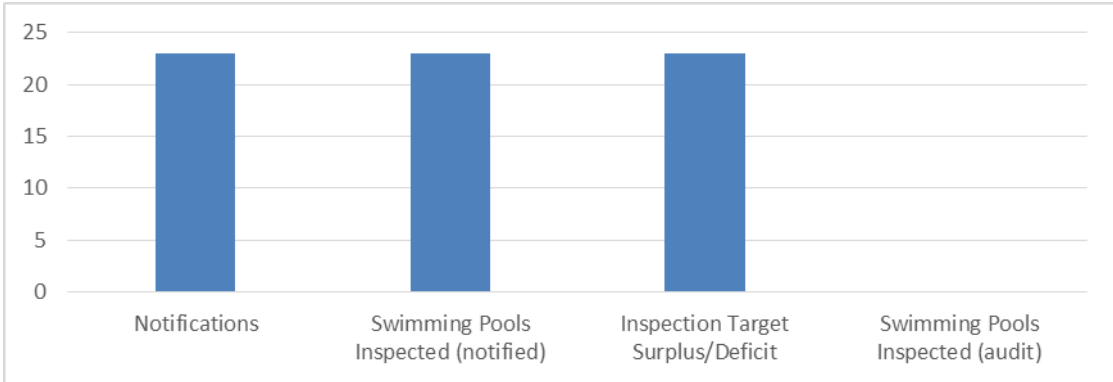
Building compliance inspections

Building Inspections (July 2019 - January 2020)

Council's Building and Swimming Pool Inspection Policy sets out the minimum number of inspections required to be undertaken during the year.



Swimming Pool Inspections (July 2019 - January 2020)



Note: The Development Act and Council's Building and Swimming Pool Inspection Policy requires that a minimum number of approved buildings and notified swimming pools are inspected for compliance with their associated Development Approval documentation. Where 100% of inspections have not been met in a month the requirement is rolled over to the next month until all required inspections have been undertaken. The inspection target is based on the first inspection of a building or swimming pool and re-inspections are not included in the target.

City of West Torrens Building Fire Safety Committee

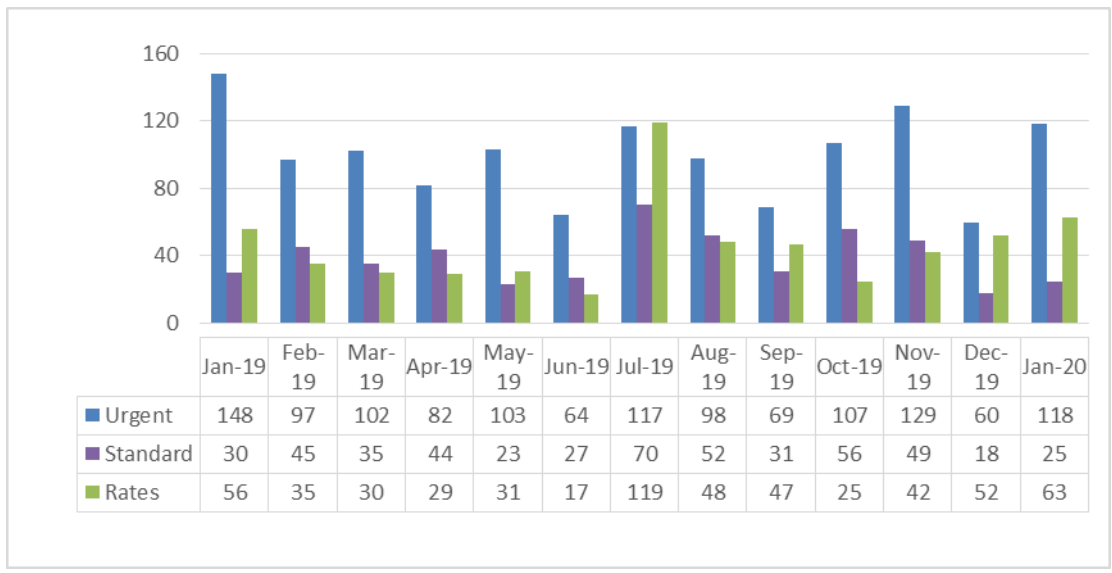
Meetings

A meeting of the Building Fire Safety Committee was held on 10 December 2019.
The next Building Fire Safety Committee meeting will be held on 3 March 2020.

<p>ACP Cladding Audit</p>	<p>The Building Fire Safety Committee has completed Phase 2 of the Aluminium Composite Panel (ACP) Cladding Building Audit which is being coordinated across South Australia by the Department of Planning, Transport and Infrastructure and is being undertaken in collaboration with councils, the Metropolitan Fire Service (MFS) and the Country Fire Service (CFS).</p> <p>The State Government has released a Summary of the South Australian Building Cladding Audit Interim Report which can be located on the SA Planning Portal.</p> <p>The State Government have appointed Wendy Campana to coordinate the response to the ACP Cladding Audit. Staff have attended forums regarding the state-wide approach to the ACP Cladding Audit.</p>
---------------------------	---

Property and land information requests

<p>Property Searches</p>	<p>One-hundred and eighteen (118) urgent search requests, twenty-five (25) standard search requests and sixty-three (63) rates search requests were received in January 2020.</p>
--------------------------	---



Note: When a property is purchased, the purchasers are provided with a Form 1 (commonly known as cooling off paperwork) Council contributes to this Form 1 with a Section 12 Certificate, the certificate provides the potential purchaser with all relevant known history for the property. Prior to settlement on the property the relevant Conveyancer will also request a Rates statement from Council to ensure the appropriate rates payments are made by the purchaser and the vendor (seller).

Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

There is no direct climate impact consideration in relation to this report.

Attachments

Nil

11.5 Community Services Activities Report - February 2020

Brief

This report details the activities of the Community Services Department for February 2020.

RECOMMENDATION

The Committee recommends to Council that the Community Services Activities Report - February 2020 be noted.

Introduction

The Community Services department (Department) provides a report to each City Services and Amenity Committee meeting detailing the status of key projects and activities for the preceding month.

Discussion

The key projects and activities undertaken by the Department during the month of December 2019 are as follows:

Community Centres

Over the month of February, 81 groups were booked into Thebarton Community Centre and 29 groups were booked into Plympton Community Centre.

Thebarton Community Centre is completely booked on weekends until October 2020 and all the meeting room meeting spaces are completely booked in the evenings by regular hirers. New once-off and regular events at Thebarton Community Centre during the month included:

- *HeartKids* - Art therapy program supporting families with children affected by congenital heart disease
- *Bowtie Bears* - Volunteer group who raise funds for children and events
- *Linking Futures* - Indigenous focused agency to enhance cultural awareness between companies & government
- *The Sudanese Cultural and Social Society of South Australia INC.*- Event celebrating Sudanese Independence Day
- *Laxmi Narayana Nikhil Talluri* - International students Indian Festival (Sankranti)

The Community Centres team are working on initiatives focussed on creating connection opportunities for vulnerable and isolated people in the community. The initiatives they are working on include:

- *Community Kitchen* - Reserved time within the kitchen at Thebarton, providing quality facilities and hardware for residents seeking cooking facilities for personal meal preparations.
- *Community Fridge* - Providing secured fridge space for residents without access to cold storage for food and medicines.
- *Community Breakfast* - providing community connection opportunities and meals for those in need, or simply those who would like to meet neighbours and have a chat.

Library Services

Digital Literacy

The digital literacy program, "Rewire", was finalised for the next 6 months and the new brochure went out for promotion (**Attachment 2**). The focus for February was education on library apps and resources. LibrariesSA also launched the new free wi-fi network which will not require people to be a library customer and will not require a password. In addition, the 1GB limit has been increased to 5GB and the range is also wider resulting in people in part of Memorial Gardens being able to access the free wi-fi.

Library Youth and Cultural Activities

Lego Club started up again for the year. This is where groups of children work collaboratively to create Lego builds (from their imagination) and then the builds are displayed in the library. There are at least 30 regular families who attend the sessions.



Author Talk and Book Launch by Rose Helen Mitchell was held early in the month. The session was called "Long is the Way and Hard". Rose Helen's short stories and poems have been published in many anthologies and magazines both in Australia and internationally. Her first major work "Siege of Contraries" won the 2011 People's Choice Award and is now in its 4th print. Helen talked about the origin of ideas for her stories, the importance of research, her publishing history, future writing projects and her experience of writing. "Long is the Way and Hard" is the sequel to "Siege of Contraries". A total of 67 people attended the event.

A Chinese New Year cultural celebration was held in the auditorium on 13 February. The event was a free evening of Chinese music and food. "The Happy Joy" song and dance troupe danced, played and sang to classical Chinese folk, pop and rock music. Everyone had an opportunity to indulge in traditional Chinese food and immerse themselves in Chinese culture. There was a wonderful Chinese lion dance later in the evening. A total of 90 people attended.



Community Development

Children and Youth

The department supported the delivery of the final Summer Festival events by providing opportunities for children and families to work together to create, build and play. Hundreds of people participated in the activities and feedback was very positive.

The team met with AFL MAX, an indoor AFL facility located in the Adelaide Airport area, to investigate a collaboration to deliver a concussion prevention program for upper primary school students from the CWT area who play football.

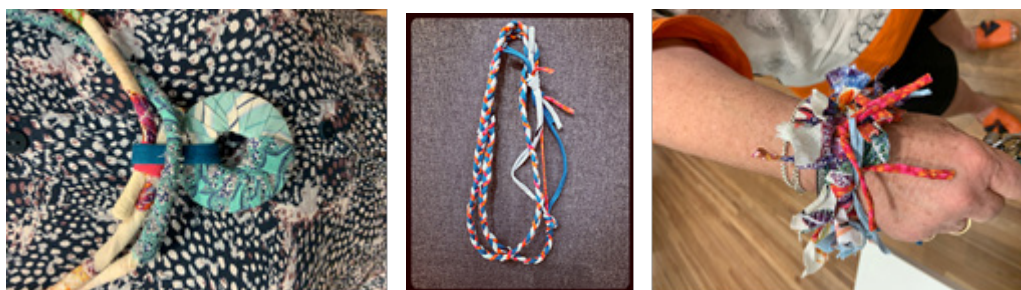
The team attended Netfest, a major professional development and networking event for youth sector workers in SA run by YACSA (Youth Advisory Council of South Australia). Highlights included guest speakers from SA Network of Drug and Alcohol Services, and the Tea Tree Gully Youth Leadership Group.

Our Big Backyard

The Our Big Backyard (OBBY) project team met this month, with the group deciding to include students from two local schools in meetings and decision making for the project. The students contributed useful, well thought out and unique ideas and feedback to the project, and have been all very passionate and excited to be involved. They will continue to be involved throughout the lifespan of the project. The OBBY team are in the process of analysing the data from the consultations with local children and families, as part of this process the team has visited many of the parks and open spaces that were specified to understand and decide what places should be included on the final version of the map.

Arts and Culture

The exhibition in the Auditorium this month was called "The Fabric of Things" featuring artworks made with fabrics by South Australian artists. Some of the artworks featured techniques that artists had learnt at an up-cycling fabric jewellery workshop held at the Hamra Centre earlier in the month.



Climate Impact Considerations

(Assessment of likely positive or negative implications of this decision will assist Council and the West Torrens Community to build resilience and adapt to the challenges created by a changing climate.)

All Community Services programs have, when relevant, implemented climate adaptation strategies. This includes Rediplan sessions for the community via the Resilience Team, biodegradable bags for the shopping buses, biodegradable cups, plates, cutlery and napkins at activities and repurposing of fabrics and materials by the sewing and knitting groups.

Conclusion

The report details key projects and activities undertaken by the Community Services Department during the month of February 2020.

Attachments

- 1. Community Services Activities - March 2020**
- 2. Rewire Brochure - January to June 2020**

Community Services Activities and Events - March 2020

2/3-5/3	Adelaide Writers' Week live streamed at the Library, from 10.00am	Hamra Centre
1/3-15/3	The Fabric of Things - Fringe Exhibition	Auditorium Gallery
16/3-12/4	Greek Inspired Exhibition - Festival Hellenika	Auditorium Gallery

Date	Time	Activity/Event	Location
Sun 1/3			
Mon 2/3	8.00am	NHF Walking Group	Kurralta Park
	10.00am	Yarn Knitting Group	Hamra Centre - Sun Room
	10.30am	Community Meal - CHSP	Plympton Community Centre
	10.30am	ESL Reading Group: intermediate - advanced	Hamra Centre
	12.15pm	Social Scrabble	Hamra Centre
	2.00pm	Rewire Tech Help: one-to-one	Hamra Centre
	6.00pm	Sewing Studio	Plympton Community Centre
Tue 3/3	10.30am	Baby Time: 0-18 months	West Torrens Auditorium
	11am-2pm	Share-a-Table: Active Ageing	Plympton Community Centre
	11.15am	Toddler Time: 18 months - 3 years	West Torrens Auditorium
	1.00pm	ESL class with free crèche	Hamra Centre
Wed 4/3	10.30am	Story Time: 5 years & under	Hamra Centre
	10.30am	ESL Reading Group: post beginner - pre-intermediate	Hamra Centre
	11am-2pm	Sewing Studio	Plympton Community Centre
	11.00am	Book Club	Hamra Centre - Sun Room
	1.30pm	Aqua Fun - Swimming Classes	Thebarton Aquatic Centre
Thu 5/3	8.00am	NHF Walking Group	Kurralta Park
	9.00am	Fulham Shopping Centre Bus Run 1	Fulham Gardens Shopping Cnt
	10.00am	Rewire Tech Help: one-to-one	Hamra Centre
	10.30am	Thursday West Torrens Senior Citizens	Plympton Community Centre
	10.30am	Fulham Shopping Centre Bus Run 2	Fulham Gardens Shopping Cnt
	10.30am	Baby Time: 0-18 months	West Torrens Auditorium
	11.15am	Toddler Time: 18 months - 3 years	West Torrens Auditorium
	4.00pm	ARA Homework Help: assisting high school students from refugee backgrounds resident in Australia for 5 years or less.	Hamra Centre
6.00pm	Book Club	Hamra Centre - Sun Room	
Fri 6/3	8.45am	Central Market Bus Run	Central Market - Adelaide
	9.00am	Brickworks Shopping Centre Bus Run	Brickworks Marketplace
	9.45am-11.30am	Movers and Shakers Exercise Group	Plympton Community Centre
	10.00am	Orange Tree Quilters	Hamra Centre - Sun Room
	10.30am	Story Time: 5 years & under	Hamra Centre
	12.30pm	Kmart Shopping Centre Bus Run	Kurralta Park
	1.00pm	Rewire Tech Help: drop-in session	Hamra Centre
	3.00pm	Book Club	Hamra Centre - Sun Room
4.00pm	Friday Fun: 10 years & over	Hamra Centre	
Sat 7/3	10.00am	Rewire Tech Help: drop-in session	Hamra Centre
Sun 8/3			

Date	Time	Activity/Event	Location
Mon 9/3	8.00am	NHF Walking Group	Kurralta Park
	10.00am	Yarn Knitting Group	Hamra Centre - Sun Room
	10.30am	Community Meal - CHSP	Plympton Community Centre
	10.30am	ESL Reading Group: intermediate - advanced	Hamra Centre
	12.15pm	Social Scrabble	Hamra Centre - Sun Room
	2.00pm	Rewire Tech Help: one-to-one	Hamra Centre
	6.00pm	Sewing Studio	Plympton Community Centre
Tue 10/3	9am-11am	Blokes Brekky - Active Ageing	Plympton Community Centre
	10.30am	Baby Time: 0-18 months	West Torrens Auditorium
	11.15am	Toddler Time: 18 months - 3 years	West Torrens Auditorium
	1.00pm	ESL class with free crèche	Hamra Centre
Wed 11/3	10.30am	ESL Reading Group: post beginner - pre-intermediate	Hamra Centre
	10.30am	Story Time: 5 years & under	Hamra Centre
	11am-2pm	Sewing Studio	Plympton Community Centre
	1.30pm	Aqua Fun - Swimming Classes	Thebarton Aquatic Centre
	4pm-6pm	Dungeons and Dragons Club	Hamra Centre - Sun Room
Thu 12/3	8.00am	NHF Walking Group	Kurralta Park
	9.00am	Fulham Shopping Centre Bus Run 1	Fulham Gardens Shopping Cnt
	10.00am	Rewire Tech Help: one-to-one	Hamra Centre
	10.30am	Baby Time: 0-18 months	West Torrens Auditorium
	10.30am	Thursday West Torrens Senior Citizens	Plympton Community Centre
	10.30am	Fulham Shopping Centre Bus Run 2	Fulham Gardens Shopping Cnt
	11.15am	Toddler Time: 18 months - 3 years	West Torrens Auditorium
	4.00pm	ARA Homework Help: assisting high school students from refugee backgrounds resident in Australia for 5 years or less.	Hamra Centre
Fri 13/3	8.45am	Hilton Shopping Centre Bus Run	Hilton Plaza Shopping Centre
	9.45am-11.30am	Movers and Shakers Exercise Group	Plympton Community Centre
	10.00am	Knitter and Natter Group	Hamra Centre - Sun Room
	10.30am	Story Time: 5 years & under	Hamra Centre
	12.00pm	Central Market Bus Run	Central Market - Adelaide
	12.30pm	Kmart Shopping Centre Bus Run	Kurralta Park
	1.00pm	Rewire Tech Help: drop-in session	Hamra Centre
	4.00pm	Friday Fun: 10 years & over	Hamra Centre
Sat 14/3	10.00am	Rewire Tech Help: drop-in session	Hamra Centre
	1.30pm	Rewire feature class: Job Applications	Hamra Centre
Sun 15/3			
Mon 16/3	8.00am	NHF Walking Group	Kurralta Park
	10.00am	Yarn Knitting Group	Hamra Centre - Sun Room
	10.30am	Community Meal - CHSP	Plympton Community Centre
	10.30am	ESL Reading Group: intermediate - advanced	Hamra Centre
	12.15pm	Social Scrabble	Hamra Centre - Sun Room
	2.00pm	Rewire Tech Help: one-to-one	Hamra Centre
	6.00pm	Sewing Studio	Plympton Community Centre
Tue 17/3	10am-1pm	CPR Training	Cowandilla Community Room
	10.30am	Baby Time: 0-18 months	West Torrens Auditorium
	11am-2pm	Share-a-Table: Active Ageing	Plympton Community Centre
	11.15am	Toddler Time: 18 months - 3 years	West Torrens Auditorium
	1.00pm	ESL class with free crèche	Hamra Centre
	2pm-4pm	Manual Handling Training	Cowandilla Community Room
6pm-8pm	Manual Handling Training	Cowandilla Community Room	

Date	Time	Activity/Event	Location
Wed 18/3	10.30am	Story Time: 5 years & under	Hamra Centre
	10.30am	ESL Reading Group: post beginner - pre-intermediate	Hamra Centre
	11am-2pm	Sewing Studio	Plympton Community Centre
	1.30pm	Aqua Fun - Swimming Classes	Thebarton Aquatic Centre
Thu 19/3	8.00am	NHF Walking Group	Kurralta Park
	9.00am	Fulham Shopping Centre Bus Run 1	Fulham Gardens Shopping Cnt
	10.00am	Rewire Tech Help: one-to-one	Hamra Centre
	10.30am	Baby Time: 0-18 months	West Torrens Auditorium
	10.30am	Thursday West Torrens Senior Citizens	Plympton Community Centre
	10.30am	Fulham Shopping Centre Bus Run 2	Fulham Gardens Shopping Cnt
	11.15am	Toddler Time: 18 months - 3 years	West Torrens Auditorium
	4.00pm	ARA Homework Help: assisting high school students from refugee backgrounds resident in Australia for 5 years or less.	Hamra Centre
6.00pm	Financial Counselling	Hamra Centre	
Fri 20/3	8.45am	Central Market Bus Run	Central Market - Adelaide
	9.00am	Brickworks Shopping Centre Bus Run	Brickworks Marketplace
	9.45am-11.30am	Movers and Shakers Exercise Group	Plympton Community Centre
	10.00am	Orange Tree Quilters	Hamra Centre - Sun Room
	10.30am	Story Time: 5 years & under	Hamra Centre
	12.30pm	Kmart Shopping Centre Bus Run	Kurralta Park
	1.00pm	Rewire Tech Help: drop-in session	Hamra Centre
4.00pm	Friday Fun: 10 years & over	Hamra Centre	
Sat 21/3	10.00am	Rewire Tech Help: drop-in session	Hamra Centre
Sun 22/3			
Mon 23/3	8.00am	NHF Walking Group	Kurralta Park
	9am-5pm	Child Safe Environment	Hamra Centre
	10.00am	Yarn Knitting Group	Hamra Centre - Sun Room
	10.30am	Community Meal - CHSP	Plympton Community Centre
	10.30am	ESL Reading Group: intermediate - advanced	Hamra Centre
	12.15pm	Social Scrabble	Hamra Centre - Sun Room
	2.00pm	Rewire Tech Help: one-to-one	Hamra Centre
	3.30pm	Lego Club: suitable for school aged children	Hamra Centre - Sun Room
6.00pm	Sewing Studio	Plympton Community Centre	
Tue 24/3	9.00am	Blokes Brekky - Active Ageing	Plympton Community Centre
	10.30am	Baby Time: 0-18 months	West Torrens Auditorium
	11.15am	Toddler Time: 18 months - 3 years	West Torrens Auditorium
	1.00pm	ESL class with free crèche	Hamra Centre
Wed 25/3	10.30am	ESL Reading Group: post beginner - pre-intermediate	Hamra Centre
	10.30am	Story Time: 5 years & under	Hamra Centre
	11am-2pm	Sewing Studio	Plympton Community Centre
	1.30pm	Aqua Fun - Swimming Classes	Thebarton Aquatic Centre
	4pm-6pm	Dungeons and Dragons Club	Hamra Centre - Sun Room

Date	Time	Activity/Event	Location
Thu 26/3	8.00am	NHF Walking Group	Kurralta Park
	9.00am	Fulham Shopping Centre Bus Run 1	Fulham Gardens Shopping Cnt
	10.00am	Rewire Tech Help: one-to-one	Hamra Centre
	10.30am	Baby Time: 0-18 months	West Torrens Auditorium
	10.30am	Thursday West Torrens Senior Citizens	Plympton Community Centre
	10.30am	Fulham Shopping Centre Bus Run 2	Fulham Gardens Shopping Cnt
	11.15am	Toddler Time: 18 months - 3 years	West Torrens Auditorium
	4.00pm	ARA Homework Help: assisting high school students from refugee backgrounds resident in Australia for 5 years or less.	Hamra Centre
Fri 27/3	8.45am	Hilton Shopping Centre Bus Run	Hilton Plaza Shopping Centre
	9.45am-11.30am	Movers and Shakers Exercise Group	Plympton Community Centre
	10.30am	Story Time: 5 years & under	Hamra Centre
	12.00pm	Central Market Bus Run	Central Market - Adelaide
	12.30pm	Kmart Shopping Centre Bus Run	Kurralta Park
	1.00pm	Rewire Tech Help: drop-in session	Hamra Centre
	4.00pm	Friday Fun: 10 years & over	Hamra Centre
	4.00pm	Friday Fun: 10 years & over	Hamra Centre
Sat 28/3	10.00am	Rewire Tech Help: drop-in session	Hamra Centre
Sun 29/3			
Mon 30/3	8.00am	NHF Walking Group	Kurralta Park
	10.00am	Yarn Knitting Group	Hamra Centre - Sun Room
	10.30am	Community Meal - CHSP	Plympton Community Centre
	10.30am	ESL Reading Group: intermediate - advanced	Hamra Centre
	12.15pm	Social Scrabble	Hamra Centre - Sun Room
	2.00pm	Rewire Tech Help: one-to-one	Hamra Centre
	6.00pm	Sewing Studio	Plympton Community Centre
Tue 31/3	10.30am	Baby Time: 0-18 months	West Torrens Auditorium
	11am-2pm	Share-a-Table: Active Ageing	Plympton Community Centre
	11.15am	Toddler Time: 18 months - 3 years	West Torrens Auditorium
	1.00pm	ESL class with free crèche	Hamra Centre

*** Dates and times are correct from date of publication**

Rewire

digital literacy program



Brought to you by

City of West Torrens
Between the City and the Sea

What is Rewire?



Rewire is the West Torrens Library Service's digital literacy program.

We provide a variety of tech help options for people using computers, phones and tablets. From troubleshooting issues to group information sessions, the flexible Rewire program enables ongoing digital learning for all members of our community.

The Rewire program provides individual assistance and covers functional skills, new technologies, e-safety, creativity and critical thinking.

Rewire also offers additional opportunities to keep practising the new skills you have learned.

Get ready to learn in a fun, relaxed, and interactive way!

**To book a session, telephone 8416 6228
or visit westtorrens.sa.gov.au/rewire.**



Tech Help



Book a 30 minute session with one of our volunteers or staff members and receive assistance, troubleshooting or ongoing training on most IT related topics.

Library computers are available for use or you can bring your own device. Please ensure you know your library barcode and PIN as well as any user accounts or passwords setup on your device (eg. Apple ID, Google Account and social media details).

Tech help sessions are scheduled on:

- Monday 2pm - 4pm.
- Thursday 10am - 12pm.
- Friday 1pm - 4pm - drop in session, no need to book.
- Saturday 10am - 1pm - drop in session, no need to book.



Library Apps and eResources



February 2020

Did you know that with your Library membership you can access ebooks, emagazines and online newspapers, as well as movie and tv streaming for free?

Join us for a demonstration of the Libby, Kanopy, PressReader, and SA Public Libraries apps, as well as the Lynda.com online learning resource. Discover how to access or download a huge range of books, audio, video and educational materials that will keep you entertained for hours!

When: Saturday 15 February, 1.30pm – 3.30pm.

Where: Learning Centre, Hamra Centre Library.

Skill level: Beginners and intermediate.

Book now to secure your place!



Job Applications



March 2020

Do you want to learn more about writing an excellent resume and cover letter? Would you like to develop your digital skills to create a professional looking job application? If so, this class is for you!

As a small group we will investigate current job advertisements, unpack what employers are really looking for, and discuss how to address selection criteria in your application. Then learn how to type and edit your resume, convert to PDF and transfer to USB.

When: Saturday 14 March, 1.30pm – 3.30pm.

Where: Learning Centre, Hamra Centre Library.

Skill level: Beginners and intermediate.

Book now to secure your place!



eSafety



April 2020

The first step in staying safe online is knowing how to protect yourself and your devices. In this comprehensive information session, we will discuss a range of tips and tricks that you can apply when using the internet to make online accounts, do your internet banking, shopping online, and how to protect your privacy when using social media.

Learn how to identify or find the latest information about scams and where you can report suspicious emails or accounts.

When: Saturday 11 April, 1.30pm – 3.30pm.

Where: Learning Centre, Hamra Centre Library.

Skill level: Beginners and intermediate.

Book now to secure your place!



Efficient email



May 2020

Take your email skills to the next level with our email masterclass. We will demonstrate all the different ways you can manage your email account. From creating folders and automatically sorting your emails, to updating your contacts, creating mail groups or unsubscribing from online newsletters, we will equip you with all the skills you need to keep your online correspondence organised.

If you would like the opportunity to update your email inbox while these great ideas are fresh in your mind, then bring along your account details and follow along as our digital literacy tutor walks you through each feature in the practical, hands-on component of the class.

When: Saturday 9 May, 1.30pm – 3.30pm.

Where: Learning Centre, Hamra Centre Library.

Skill level: Intermediate.

Book now to secure your place!



Pinterest



June 2020

If you have ever wanted to find a great way to organise all your favourite ideas, images, recipes, DIY's or other resources that you have found online – then look no further – our brand-new Pinterest class is for you!

Learn how to find and save pins, create and edit your own Pinterest boards, follow others or share your work with friends and family. Discover how to search for pins using keywords or themes and follow the path of similar ideas to immerse yourself in a world where you can explore any hobby, or any interest, from anywhere!

When: Saturday 6 June, 1.30pm – 3.30pm.

Where: Learning Centre, Hamra Centre Library.

Skill level: Intermediate.

Book now to secure your place!



Outreach



Are you part of a community group in the City of West Torrens? Do you want to try using some new technology or increase your current skills?

We can bring Digital Literacy to you through Outreach - a new component of the Rewire digital literacy program. Access technology-based library services and digital resources and receive on-the-spot tech help in your community group's premises.

Contact the Hamra Centre Library for more information, telephone 8416 6228 or visit westtorrens.sa.gov.au/rewire.



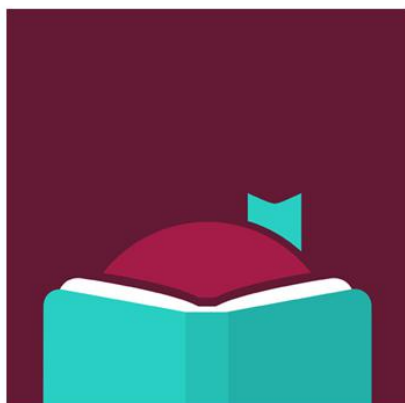
eResources



Use your new digital literacy skills to access these popular e-resources at westtorrens.sa.gov.au/library.



Kanopy is a movie streaming service that allows you to view up to 10 films per month using your library card.



Libby gives you access thousands of downloadable e-books and e-audiobooks to your computer, tablet or mobile device.



Libraries SA App allows you to use your phone as a library card, search all public libraries in the state, read ebooks and digital magazines and scan any book or DVD to see if it's in a library.



LyndaLibrary is a web-based video service offering quality courses and video tutorials on the latest software and business skills.



PressReader is the leading digital newspaper and magazine provider with over 7,500 publications from over 120 countries in over 60 languages.

Rewire




digital literacy program

Harma Centre Library
1 Brooker Terrace, Hilton
Telephone 8416 6228
Web westtorrens.sa.gov.au/rewire

Opening hours
Monday 10am - 6pm
Tuesday 10am - 6pm
Wednesday 8am - 6pm
Thursday 10am - 8pm
Friday 10am - 6pm
Saturday 10am - 4pm
Sunday 1pm - 4pm
Public holidays closed

A dark grey rounded rectangular banner containing the City of West Torrens logo, the text "City of West Torrens" and "Between the City and the Sea", and social media icons for Facebook, Twitter, and Instagram.

City of
West Torrens
Between the City and the Sea



12 MEETING CLOSE

CITY OF WEST TORRENS



ATTACHMENT

UNDER SEPARATE COVER

City Services and Climate Adaptation Committee

3 March 2020

Item 11.2 AdaptWest - Western Adelaide Region Coastal and Inundation Modelling Report

Table of Contents

11.2 AdaptWest - Western Adelaide Region Coastal and Inundation Modelling Report	
Attachment 1 Coastal and Inundation Modelling Report	1

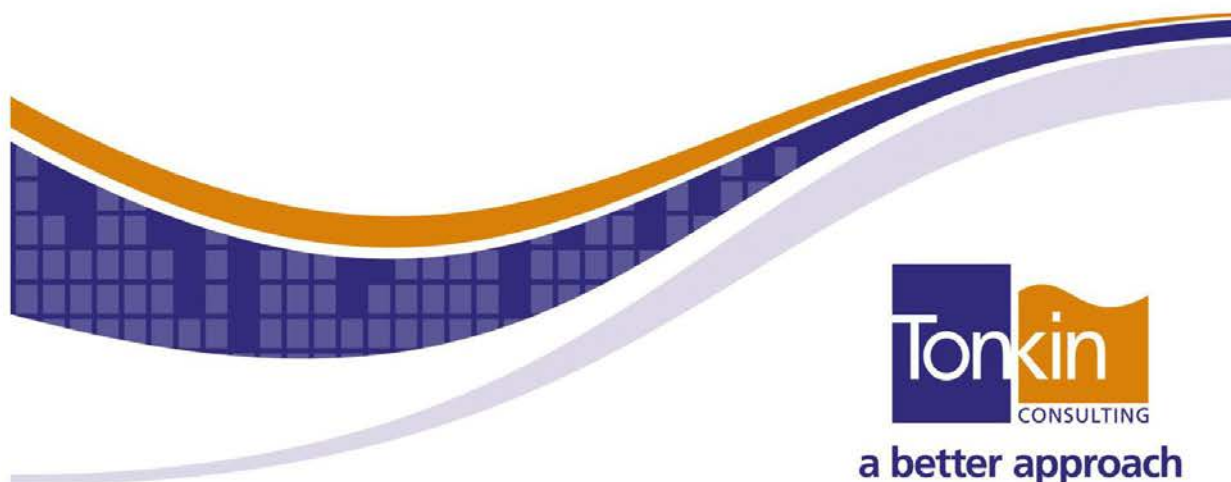
Western Adelaide Region Climate Change Adaption Plan

Coastal and Inundation Modelling Phase 3 Report

City of Charles Sturt
City of Port Adelaide Enfield
City of West Torrens

February 2018

Ref No. 20140329R3C





Document History and Status

Rev	Description	Author	Reviewed	Approved	Date
A	First Issue	PDS	KSS		23 March 2017
B	Second Issue	PDS	KSS		30 June 2017
C	Minor Amendments – Council comments	KSS	KSS		2 February 2018

© Tonkin Consulting 2016

This document is, and shall remain, the property of Tonkin Consulting. The document may only be used for the purposes for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Ref No. 20140329R3B

Climate Change Adaptation Plan Phase 3 Report

Executive Summary

Background

The Western Adelaide Region Councils together with the SA Coast Protection Board, SA Department of Environment, Water and Natural Resources (DEWNR) and South Australian Fire and Emergency Services Commission (SAFECOM) have developed a regional Climate Change Adaptation Plan for the western suburbs of Adelaide. As a part of this study, Tonkin Consulting have been commissioned to undertake modelling of the impacts of climate change on tidal and storm water flooding around the most vulnerable coastal locations in the Western Region.

The investigation has been undertaken in three stages. Stage 1 of the project involved a scoping investigation to identify key assets at highest risk of inundation as a result of climate change. Stage 2 involved a definition of modelling requirements to assess this risk and Stage 3 (this current Stage) involved modelling of the coastal systems and identification of potential adaptation options to mitigate the adverse impacts of climate change on coastal flooding.

Systems Examined

There are many drainage systems discharging to the coast within the Study Area. The scoping investigations carried out in Stage 1 identified many of these as being at low risk of impact due to rising sea level due to:

- Land within their catchments being high enough above the anticipated rises in sea level so as to be largely unaffected by any increase; and
- Catchments already being served by stormwater pumping stations and therefore being unaffected by rises in sea level.

Catchments meeting the above criteria were excluded from further analysis.

In addition, catchments on the Lefevre Peninsula were excluded from analysis as these systems were being investigated as part of the Lefevre Peninsula Stormwater Management Plan (Southfront, 2016).

Following this initial analysis, three key coastal stormwater systems were identified as being most vulnerable to the impacts of rising sea level. These were:

- The *Gillman* Basin System, as it is currently low lying and high tides can prevent the discharge of stormwater.
- The *West Lakes* System, as it is low lying and is similar to the Gillman system in that high tides can prevent the outflow of stormwater. West Lakes also relies on tidal flushing and a rise in sea level will have significant impacts on day-to-day flushing flows through of the lake.
- The *Patawalonga* System, as it has a large upstream catchment, a tidally affected outfall and is surrounded by low lying land.

In addition to the above, modelling of flooding within three low lying catchments along the Gulf St Vincent coast has been undertaken, these catchments being at:

- Gilmore Road
- Henley Beach Road
- Iluka Place

Modelling of Impact of Sea Level Rise on Average Water Levels

For the Gillman, West Lakes and Patawalonga systems, the modelling initially involved an examination of the impacts of sea level rise on the day to day operation of these systems. A continuous simulation of water levels was undertaken using historical data on tide, rainfall, evaporation and runoff for the period from 1971 to 1991 for the Gillman and West Lakes systems. This period was chosen as it precedes the baseline year from which current predictions of sea level rise have been based. For the Patawalonga, the period from 1995 to 2005 was chosen for the baseline analysis due to missing data within the period 1971 to 1991.

The simulations were run using the USEPA SWMM model. The results from the simulations were used to establish a baseline average water level in the various systems.

The simulations were then re-run assuming sea level rises of 300, 500 and 1000 mm, in conjunction with anticipated increases in runoff due to future development. The results from these simulations were used to assess the likely change in average water level in the various systems.

The modelling showed that the average level of the Gillman and West Lakes systems would exhibit a rise as a result of increasing sea level, but that the Patawalonga (which currently operates at a higher level than these other systems) would be able to be maintained at its existing level. The modelling also showed that with increasing sea level, flushing of West Lakes would become more difficult under its current gravity operation, and under a sea level rise of 1 m, flushing would rarely occur.

Modelling of Storm – Tide Interaction

All of the catchments examined in this investigation are low lying and exhibit a potential for interaction between tides and floods. This interaction was modelled using the TUFLOW hydrodynamic flood model to determine the likely changes in 100 year ARI flood levels brought about by sea level rise.

For Gillman and West Lakes, a tide cycle corresponding to the Mean High Water Springs tide (MHWS) tide was chosen to be modelled in combination with the occurrence of a 100 year ARI flood event. Such a combination provides a balance between the probability of a flood and the probability of a high tide occurring at the same time.

At the Patawalonga, the most severe flooding in a 100 year event is expected to result from a 100 year ARI tide, in combination with some rainfall. For the purposes of the modelling a 1 yr ARI rainfall event was selected to occur in conjunction with this tide.

For flood modelling of the selected local catchments both of the above event combinations were modelled as it was unclear which would be critical.

For all of the flood modelling, current sea levels and rises of 300, 500 and 1000 mm were considered. The modelling of increased sea levels was undertaken in conjunction with inflows that were adjusted to account for the effects of increasing future rainfall intensity and development. Initial water levels in the various flood storages were based on increases predicted by the earlier SWMM modelling.

Floodplain maps showing the extent of flooding for each of the scenarios examined are contained in the Appendices to the report. Broadly, the modelling has shown that:

- At Gillman, flood levels in a 100 year ARI event are expected to rise by approximately 150 mm above existing levels with 1 m of sea level rise.
- At West Lakes, flood levels in a 100 year ARI event are expected to rise by 0.84 m with 1 m of sea level rise. While such a rise is significant, the lower increases in flood level produced by sea level rises of up to 500 mm are contained to the current Lake.

- Areas surrounding The Patawlonga (but outside the Western Region) have the potential to be significantly impacted by flooding as a result of sea level rise during events having a combination of high tide and some inflow. Increased areas of flooding within the Western Region brought about by sea level rise are largely contained to undeveloped land.
- The impacts of sea level rise on flooding of the three local catchments examined in this investigation are relatively minor.

Adaptation Options

A number of possible options to mitigate the impacts of sea level rise have been identified. These are outlined below and have been broadly categorised under the headings of protection, planning and monitoring. The approximate timing and trigger points for these actions has also been identified.

City of Port Adelaide Enfield

- *Protection* – Magazine Creek tidal gate upgrade to mitigate increased water levels in Gillman basins: 2020-2025 (structural assessment), 2050 – 2070 (gate replacement)
- *Protection* – Port Adelaide Sea Wall construction: 2025-2030 (physical construction)
- *Planning* – Gillman development planning for recommended development extents, building floor levels and gate upgrades: timeframe depends on land development
- *Planning* – Control of floor levels for new development in low lying areas of Rosewater to allow for sea level rise impacts: ongoing
- *Planning* – Port Adelaide Sea Wall to protect properties from sea surges: 2020-2025 (funding arrangements finalized, planning and commencement of design / construction)
- *Planning* – Continued stormwater flood modelling to keep flood maps up to date with current climate change predictions and undertake critical asset vulnerability analysis: (ongoing)
- *Monitoring* – Monitoring of inflows to the Gillman system by monitoring flows in Eastern Parade and Hanson Road to gauge the impact of ongoing development: ongoing
- *Monitoring* – Gillman infrastructure within basin system observed to be deteriorating and needs ongoing checking and maintenance: 2020 – 2025 (initial assessment and ongoing)

City of Charles Sturt

- *Protection* – West Lakes tidal gate upgrade to mitigate increased water levels in West Lakes: 2050 – 2070 (gate replacement for flood mitigation purposes)
- *Protection* – West Lakes pump installation to mitigate decrease in flushing in West Lakes: 2020 – 2025 (further water quality studies which will form basis for future planning)
- *Protection* – Port Adelaide Sea Wall Construction: 2025-2030 (physical construction)
- *Planning* – Continued stormwater flood modelling to keep flood maps up to date with current climate change predictions and undertake critical asset vulnerability analysis: (ongoing)
- *Monitoring* – Monitoring of inflows to West Lakes at Port Road and Trimmer Parade to gauge the impact of ongoing development: ongoing

- *Monitoring* – It should be ensured that West Lakes water quality monitoring and recording is undertaken to provide planning data: 2020 – 2025 (initial assessment and ongoing)

City of West Torrens

- *Planning* – Areas within Adelaide Airport land in the vicinity of Patawalonga Creek will become more susceptible to flooding with future increases in sea level. Development of this land should consider this potential increase in flooding: 2020 – 2025 (planning)
- *Planning* – Some small areas of Adelaide Airport land (Morphettville Precinct) will become more susceptible to flooding with future increases in sea level. Development of this land should consider this potential increase in flooding: 2020 – 2025 (planning)
- *Planning* – Continued stormwater flood modelling to keep flood maps up to date with current climate change predictions and undertake critical asset vulnerability analysis: (ongoing)
- *Monitoring* – Accurate recording of major Patawalonga inflows from major catchments should be undertaken for future planning: 2020 – 2025 (initial assessment and ongoing)

Contents

1	Introduction	1
2	Objective and Scope of Work	3
2.1	Objective	3
2.2	Scope of Work	3
3	SWMM Modelling	4
3.1	Background	4
3.2	Tidal Data	4
3.2.1	Background	4
3.2.2	Data conversion to AHD	5
3.2.3	Missing Data	5
3.2.4	Final Data Processing	6
3.3	Rainfall Data	6
3.3.1	Background	6
3.3.2	Gillman Rainfall Adjustment	7
3.3.3	West Lakes Rainfall Adjustment	8
3.3.4	Patawalonga Rainfall Adjustment	9
3.4	Evaporation Data	10
3.5	Storage Basin Data (Digital Terrain Model)	10
3.5.1	Gillman Basins	11
3.5.2	Patawalonga Basins	11
3.6	Sub-Catchment Boundary Delineation	12
3.6.1	Gillman Sub-Catchments	12
3.6.2	West Lakes Sub-Catchments	13
3.6.3	Patawalonga Sub-Catchments	14
3.7	Streamflow Data	15
3.7.1	Sturt River Data	15
3.7.2	Brown Hill Creek Data	16
3.7.3	Final Data Processing	16
3.8	Sub-Catchment Hydrology	17
3.8.1	Sub-Catchment Width and Routing	17
3.8.2	Sub-Catchment Slope	19
3.8.3	Impervious Area Parameters	19
3.8.4	Pervious Area Infiltration	21
3.9	Hydraulic Assumptions and Modelling	21
3.9.1	Gillman System	21
3.9.2	West Lakes System	23
3.9.3	Patawalonga System	24
3.10	SWMM Model Validation	28
3.10.1	Gillman System	28
3.10.2	West Lakes System	28
3.10.3	Patawalonga System	30
3.11	Scenarios Analysed	30
3.12	SWMM Results	31
3.12.1	Gillman System	31

3.12.2	West Lakes System	31
3.12.3	Patawalonga System	33
4	TUFLOW Modelling	35
4.1	Background	35
4.2	Tidal Regimes	35
4.3	Rainfall Intensities	35
4.3.1	2016 Intensity-Frequency-Duration Data	36
4.3.2	2016 Australian Rainfall and Runoff Analysis of Climate Change	36
4.4	Catchment Imperviousness	39
4.5	Hydrological Analysis	39
4.6	Modelling	39
4.6.1	Gillman TUFLOW Modelling	39
4.6.2	West Lakes TUFLOW Modelling	40
4.6.3	Local Catchments TUFLOW Modelling	41
4.6.4	Patawalonga TUFLOW Modelling	41
4.7	Results	43
4.7.1	Gillman System	43
4.7.2	Gillman Development	45
4.7.3	West Lakes System	46
4.7.4	Local Catchments	47
4.7.5	Patawalonga System	47
5	Extension of Tidal Inundation Mapping	50
5.1	Background	50
6	Adaptation Options	52
6.1	Protection Options - City of Port Adelaide Enfield	52
6.1.1	Magazine Creek Tidal Gate Upgrade	52
6.1.2	Port Adelaide Sea Wall	53
6.2	Planning Options - City of Port Adelaide Enfield	54
6.2.1	Gillman Development	54
6.2.2	Port Adelaide Sea Wall	55
6.2.3	Floor Level Management	55
6.2.4	Localized Flooding	56
6.3	Monitoring Options - City of Port Adelaide Enfield	56
6.3.1	Gillman Culvert System	56
6.3.2	Stormwater Flow Monitoring	56
6.4	Protection Options - City of Charles Sturt	56
6.4.1	Water Quantity - West Lakes Tidal Gate Upgrade	56
6.4.2	Water Quality - West Lakes Pumping Option	57
6.4.3	Port Adelaide Sea Wall	57
6.5	Planning Options - City of Charles Sturt	57
6.5.1	Floor Level Management	57
6.5.2	Localized flooding	57
6.6	Monitoring Options - City of Charles Sturt	58
6.6.1	West Lakes Water Quality	58
6.6.2	Stormwater Flow Monitoring	58
6.7	Protection Options - City of West Torrens	58

6.8	Planning Options - City of West Torrens	58
6.8.1	Patawalonga Creek	58
6.8.2	Glenelg North	58
6.8.3	Localized flooding	59
6.9	Monitoring Options – Patawalonga Lake	59
7	References	60
Tables		
Table 3.1	Analysis of Rain Gauges in the Vicinity of the Gillman Catchment	8
Table 3.2	Analysis of Rain Gauges in Vicinity of West Lakes catchment	9
Table 3.3	Average Monthly Pan Evaporation Rates for Adelaide	10
Table 3.4	Sturt River Data Quality	16
Table 3.5	Brown Hill Creek Data Quality	16
Table 3.6	Gillman Sub-Catchment Impervious Area Fractions	19
Table 3.7	West Lakes Sub-Catchment Impervious Area Fractions	20
Table 3.8	Patawalonga Sub-Catchment Impervious Area Fractions	21
Table 3.9	Horton Infiltration Model Parameters	21
Table 3.10	Key Patawalonga Infrastructure Data	26
Table 4.1	Mean High Water Springs Tidal Cycle Modelling Parameters	35
Table 4.2	Summary of Rainfall Intensity Factors for each Modelling Scenario	38
Table 4.3	Summary of Loss Parameters	39
Table 6.1	Summary of Potential Timeframes for Magazine Creek Tide Gate Upgrade	53
Table 6.2	Summary of Required Sea Wall Levels	54
Figures		
Figure 1.1	Study Area	1
Figure 3.1	Time Series of Inner and Outer Harbour Tides	5
Figure 3.2	Relationship between Inner and Outer Harbour Tides	6
Figure 3.3	Approximate Location of Gillman Rain Gauges	7
Figure 3.4	Approximate location of West Lakes rain gauges	8
Figure 3.5	Patawalonga Local Catchments around Adelaide Airport	9
Figure 3.6	Gillman Basin Locations	11
Figure 3.7	Patawalonga Basin Locations	12
Figure 3.8	Gillman Sub-Catchments	13
Figure 3.9	West Lakes Sub-Catchments	14
Figure 3.10	Lower Patawalonga Sub-Catchments	15
Figure 3.11	Conceptual Diagram of SWMM Catchment Model (SWMM Reference Manual, 2016)	17
Figure 3.12	Calibration of SWMM Hydrologic Model to DRAINS	18
Figure 3.13	Gillman Basin System Overview	22
Figure 3.14	Schematic of Configuration of West Lakes	23
Figure 3.15	Schematic of Configuration of the Patawalonga	25
Figure 3.16	Schematic of Patawalonga in Stormwater Dissipation Mode	27
Figure 3.17	Schematic of Patawalonga in Tidal Flushing Mode	27
Figure 3.18	West Lakes Tidal Event Validation Sample	29
Figure 3.19	West Lakes Storm Event Validation Sample	29
Figure 3.20	Patawalonga Tidal Event Validation Sample	30
Figure 3.21	Average Water Levels in the Magazine Creek Wetland	31
Figure 3.22	Average Water Levels in West Lakes	32
Figure 3.23	West Lakes Existing Tidal Range with Change in Tidal Regime	33
Figure 3.24	Average Water Levels in the Patawalonga	33

Figure 4.1	Comparison of 1987 and 2016 Design Rainfalls for Woodville	36
Figure 4.2	ARR 2016 Climate Change Intensity Adjustment for Woodville	37
Figure 4.3	Projections of GMSL Rise (extracted from IPCC, 2013)	38
Figure 4.4	Main Catchments Contributing Stormwater to West Lakes	40
Figure 4.5	Main Catchments Contributing Stormwater to the Patawalonga	42
Figure 4.6	Gillman Stormwater - Tide Interaction - 36hr event	44
Figure 4.7	Sea Level Rise Impacts on 100-year ARI Gillman Peak Water Levels	44
Figure 4.8	Sea Level Rise Impacts on 100-year ARI Gillman Peak Water Levels – With Gillman Development and Mitigation Strategies	46
Figure 4.9	West Lakes Stormwater – Tide Interaction – 36hr event	46
Figure 4.10	Sea Level Rise Impacts on 100-year ARI West Lakes Peak Water Levels	47
Figure 4.11	Patawalonga Lake Stormwater - Tide Interaction – 3hr event	48
Figure 4.12	Sea Level Rise Impacts on Peak Patawalonga Flood Levels for a 100 yr ARI Tide in Combination with a 1 yr ARI Rainfall Event	48
Figure 5.1	Excerpt from Port Adelaide Tidal Inundation Mapping (Tonkin 2005a)	50
Figure 6.1	Existing Gillman Tidal Gates	52
Figure 6.2	Limit of Development within Gillman Site	55

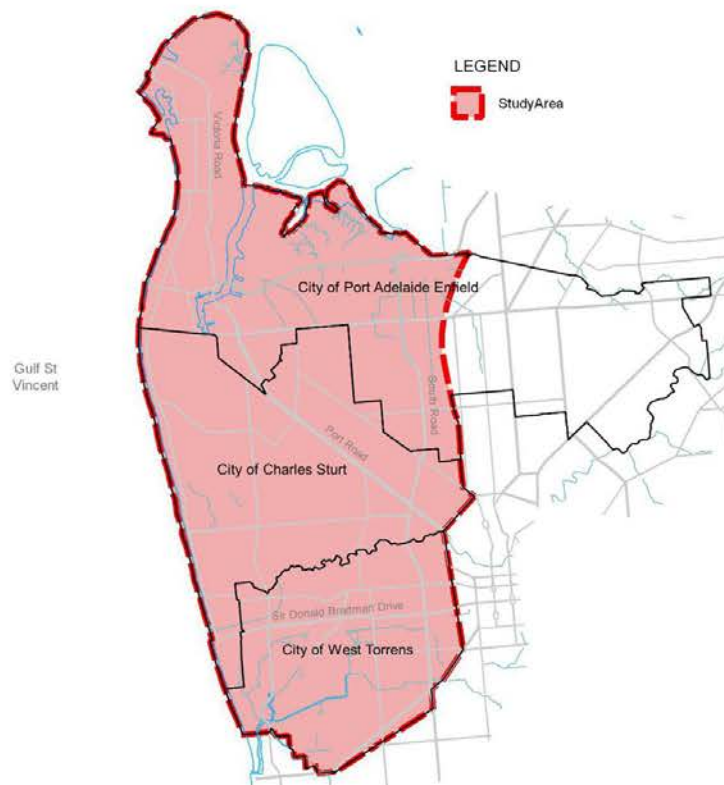
Appendices

Appendix A	Gillman Flood Mapping
Appendix B	West Lakes Floodplain Mapping
Appendix C	Local Catchments Floodplain Mapping
Appendix D	Patawalonga Floodplain Mapping
Appendix E	Tidal Inundation Mapping

1 Introduction

The Western Adelaide Region Councils together with the SA Coast Protection Board, SA Department of Environment, Water and Natural Resources (DEWNR) and South Australian Fire and Emergency Services Commission (SAFECOM) have completed an Integrated Vulnerability Assessment (IVA) for the Western Adelaide Region. The Study Area adopted for the assessment is shown in below.

Figure 1.1 Study Area



The key output from the IVA was the development of a Regional Climate Change Adaptation Plan (URPS, 2016).

A key element of the overall project has been the development of high resolution inundation mapping due to sea water and storm water flooding within the area, based on climate change projections for the region. The aim has been to use these results to assess, at a high level, potential climate change mitigation strategies from an engineering perspective. The modelling for adaptation options considered in this report aligns to some of the adaption options considered in the following AdaptWest Report chapters:

- Chapter 4.2 Business and industry
- Chapter 4.4 Estuarine waters

- Chapter 4.7 Public coastal built assets
- Chapter 4.8 Stormwater management infrastructure
- Chapter 4.11 West Lakes

The modelling and mapping component of the project has been undertaken in three Phases.

The first Phase of the project has involved collating existing sea water and storm water flooding information relating to the Study Area, assessing this data and defining any gaps in information. The modelling required to fill the identified information gaps was also identified in this first Phase of the project.

The second Phase of the project involved the development of a detailed specification of the required modelling identified in Phase 1.

This report forms the output from the third Phase and contains:

- Reporting on the modelling process
- Results from the modelling process
- Identification of potential adaptation options



2 Objective and Scope of Work

2.1 Objective

The objective of the investigation has been to quantify the impact of climate change on sea water and stormwater flooding in potentially sensitive coastal catchments. Once these impacts were quantified, potential mitigation options have been considered.

2.2 Scope of Work

Reporting from Stage 2 of this study (Tonkin, 2015c) highlighted three main coastal systems which could potentially be susceptible to climate change impacts on stormwater / sea water interactions. These included:

- Magazine Creek / Range / Gillman System
- West Lakes System
- Patawalonga System

Continuous simulations have been run to determine the long-term average water levels for each of the three systems. This modelling was undertaken using SWMM. The aim of the modelling was to determine the impact of climate change on the average water level in each system. Determination of these average water levels is important as they define the likely water level in these systems at the start of a flood event. An increase in average water level brought about as a result of rising sea level will reduce the storage available for capturing storm water in the event that a flood coincides with a high tide.

Flood modelling of each system was then undertaken using TUFLOW. This modelling considered the interaction of a flood occurring during a high tide cycle.

The need to model other key catchments within the western area of Adelaide was considered in Stage 1 of this study (Tonkin, 2015b). Modelling of these catchments was not undertaken for the reasons outlined in this previous report. These catchments included the Torrens River Catchment, Coastal Catchments (including LeFevre Peninsula) and the Barker Inlet Wetland Catchment.

Floodplain modelling has also been undertaken as part of this current Study to determine the potential impacts of climate change on the ability of three local low lying catchments to discharge stormwater with rising sea level. These catchments included:

- Gilmore Road
- Henley Beach Road
- Iluka Place

This current study also involved manual extension of existing tidal inundation mapping for the Port Adelaide Seawater Flooding Study into the City Charles Sturt.

The outputs derived from the above investigations have been used to identify potential adaptation options.

3 SWMM Modelling

3.1 Background

Modelling has been undertaken to assess the impact of rising sea levels on the average pool level in the ponding systems at Gillman, West Lakes and the Patawalonga. An increase in average pool level will result in a reduction in available flood storage in these systems which in turn could impact on upstream flooding.

The modelling was undertaken by carry out a continuous simulation of water levels in the three systems using the USEPA SWMM model. This model has the capability to undertake the type of analysis required for these systems having modules to determine catchment runoff (based on rainfall, soil type and imperviousness), storage behaviour (based on a given height – volume relationship), evaporation, outflows through a hydraulic structure and a hydraulic analysis engine that is capable of routing flows through a tidal gate structure. The model has further capabilities associated with pump modelling as well as complex operating rules for gates and other structures.

The following tasks were undertaken as part of the modelling:

- Preparing the models including compilation of data such as catchment runoff parameters, rainfall time series data, evaporation time series data, tide level time series and data describing the hydraulic characteristics of the gates and storages.
- Running the model for the existing tide regime to establish a base line water level series in the various basin systems (nominally for the period 1971 to 1991); and
- Re-running the model for sea level rises of 300 mm (current CPB policy), 500 mm (possible 2070 level), and 1000 mm (possible 2100 level) to determine the water level regime in the ponding basins with these increased levels.

The data used in the modelling, the modelling process and model results are described below.

3.2 Tidal Data

3.2.1 Background

Modelling of outflows from the Gillman and West Lakes systems utilized tidal data for the Port River. The Gillman and West Lakes systems discharge to the Port River through flap gates. Flow to the River is driven by the water level difference between the River and the upstream flood storage, with the flap gates preventing any tidal backflow into the flood storage. The gates have been modelled within SWMM using the Port River tidal time series as the downstream water level boundary for determining the hydraulics of the outlets. Flap gates were placed at each outlet in the model to prevent tidal back flow.

Modelling of inflows to the West Lakes system and the Patawalonga utilized Gulf St Vincent tidal data. Flow into West Lakes is driven by tide levels in Gulf St Vincent and controlled by tidal gates which allow water into the southern end of West Lakes at high tide. This water flows south to north through West Lakes and out into the Port River through another set of tide gates.

Runoff discharge and tidal flushing within the Patawalonga system is determined by tide levels in Gulf St Vincent at either the Barcoo Outlet or the Glenelg Gates.

Recorded tidal data for the period 1971 to 1991 has been chosen for the Gillman and West Lakes modelling as this period immediately precedes the baseline year (1991) against which sea level rise is currently being reported. However, the tidal data for the Patawalonga modelling was chosen from 1993 to 2005, due to a lack of quality data (creek inflows) in the earlier time period.

The tidal data for the Port River was chosen from the Port Adelaide Inner Harbour Gauge as this is the best available data to reflect water levels at the Gillman and West Lakes outlets. The tide

levels in Gulf St Vincent closely correlate to Outer Harbour tide levels which have been used in modelling sea levels at the West Lakes inlet and the Patawalonga system. The tidal data was provided at hourly intervals which provides sufficient resolution to undertake the continuous simulation.

3.2.2 Data conversion to AHD

Data provided for the period before 2001 was recorded in Old Harbour Datum. This data required conversion to the Australia Height Datum (AHD) by subtracting 1.723m from the measured water levels.

3.2.3 Missing Data

The Inner Harbour tidal data set contained a total of approximately 150 days of missing data over the 20-year analysis period from 1971 to 1991. If the Outer Harbour tidal data set contained measured tide levels correlating to the missing data, this data was adjusted as described below and inserted into the Inner Harbour tidal data set. If there was no data measured by either the Inner Harbour Gauge or the Outer Harbour Gauge, data from surrounding days was filled into the gap to complete the record. The case where there was no data across both gauges occurred within under 0.5% of the record, and hence the approximation of tide levels to fill these gaps is likely to have minimal impact on the overall results.

The Outer Harbour data set contained approximately 135 days of missing data over the period between 1971 and 2005. Missing data was filled using the same process as outlined above for the Inner Harbour tidal data set.

In order to determine the relationship between Outer Harbour and Inner Harbour tide levels, (for use in patching missing data) fourteen years of correlating data was chosen where both Inner and Outer Harbour Data existed. Part of this data is plotted in Figure 3.1.

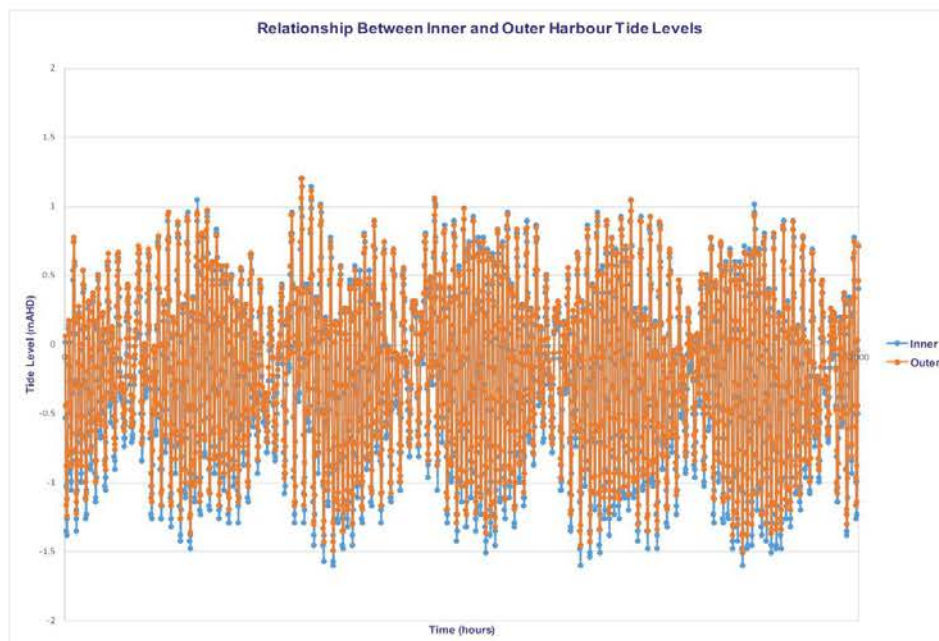


Figure 3.1 Time Series of Inner and Outer Harbour Tides

Figure 3.1 indicates a relationship where Inner Harbour tides are slightly lower than Outer Harbour tides at low tide and Inner Harbour tides are slightly higher than Outer Harbour tides at high tide. A plot of the Inner and Outer Harbour tide levels against each other is provided in Figure 3.2 below.

A line of best fit was plotted through the data. This gave the following relationship:

$$\text{Inner Harbour Tide Level} = 1.06 \text{ Outer Harbour Tide Levels} + 0.0091 \text{ (all levels in metres).}$$

This equation was then used to adjust Outer Harbour tides to Inner Harbour tides in the case where there was no Inner Harbour tide data or to adjust Inner Harbour tides to Outer Harbour tides in the case where there was no Outer Harbour tide data.

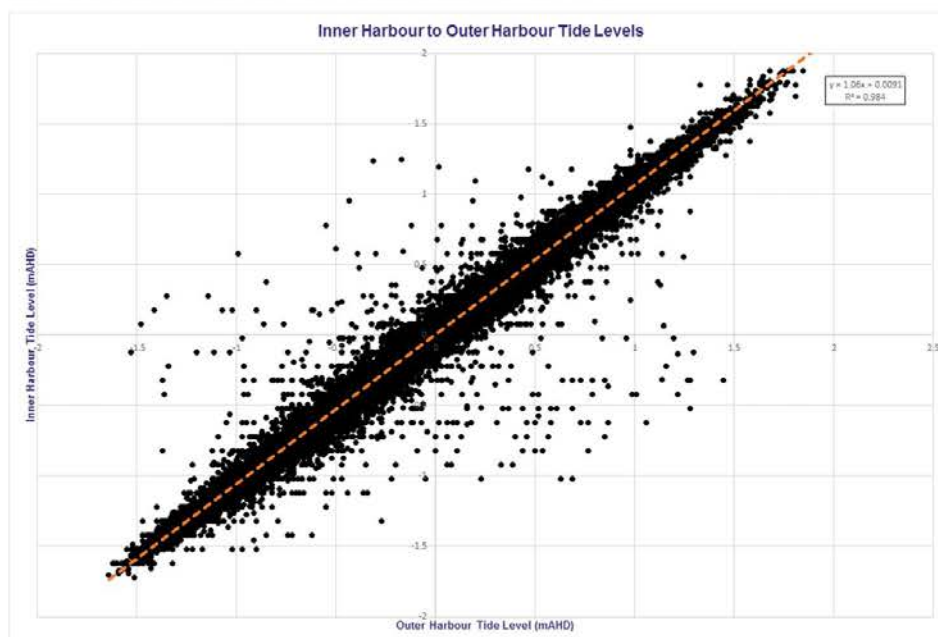


Figure 3.2 Relationship between Inner and Outer Harbour Tides

3.2.4 Final Data Processing

The final tidal data was exported to a text file with the formatting required for a SWMM time series import. This tidal data was also duplicated and modified to reflect sea level rises of 300 mm, 500 mm and 1000 mm as required by the scenarios chosen.

3.3 Rainfall Data

3.3.1 Background

Rainfall data from the Bureau of Meteorology Adelaide Airport pluviograph was chosen as the base for continuous modelling of runoff from the Western Adelaide Region catchments. This was because it contained a long-term quality record of 6 minute rainfall data for the base modelling period of 1971 to 2005, and is the closest pluviograph to the area.

While sea level rise associated with climate change was modelled in the SWMM runs, no change in rainfall has been modelled.

Climate change modelling has suggested the peak rainfall intensities will increase in the future and average rainfall will generally decrease. The continuous simulations being run in SWMM

examine the impact of long term average water levels in the various storages, which are more likely to be impacted by average rainfall rather than peak intensities. The modelling of no increase in rainfall is therefore considered to be a conservative assumption.

3.3.2 Gillman Rainfall Adjustment

Due to the spatial variation of average rainfall across Adelaide, the rainfall measured at Adelaide Airport has been factored to match the likely rainfall over the Gillman catchment. This was undertaken by comparing average annual rainfall totals for Adelaide Airport with annual totals for stations in close proximity to the Gillman catchment.

There are four daily read rainfall gauges in the immediate vicinity of the catchment. The approximate location of each gauge is shown in Figure 3.3 below.

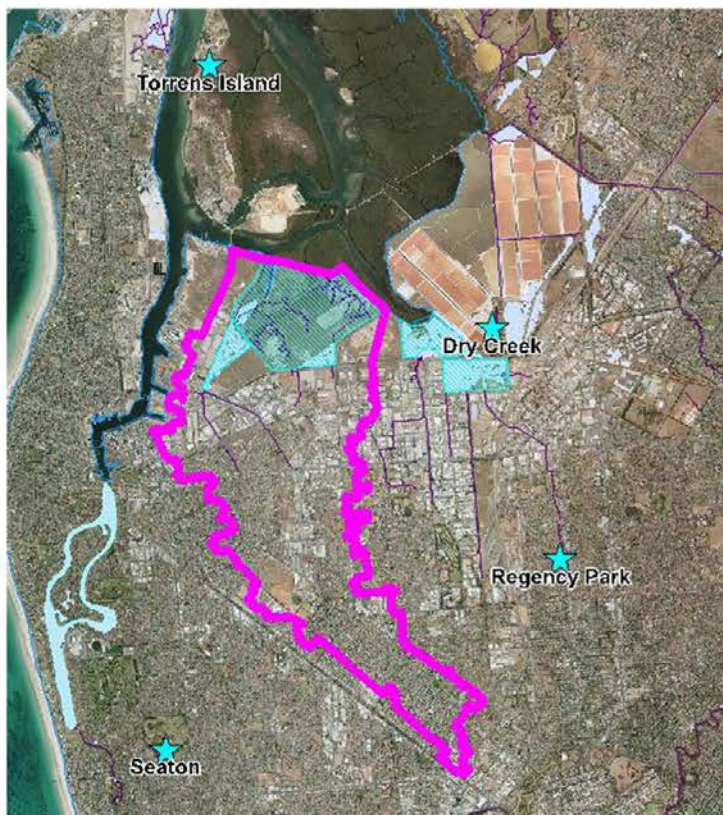


Figure 3.3 Approximate Location of Gillman Rain Gauges

Table 3.1 below contains average annual rainfall totals for the various gauges. It can be seen from the data in the Table that the westerly gauges (Seaton and Torrens Island) have similar total annual rainfalls compared with Adelaide Airport. However, the easterly gauges (Dry Creek and Regency Park) have total annual rainfalls of approximately 80% of Adelaide Airport's total annual rainfall. Based on the above, a rainfall factor of 0.9 was chosen for the Gillman catchment.

Table 3.1 Analysis of Rain Gauges in the Vicinity of the Gillman Catchment

Rain Gauge	Gauge Number	Record Period	Annual Rain (mm) Total	Annual Rain (mm) 2007 to 2015
Adelaide Airport	023034	1955-2015	439.2	389.7
Seaton	023024	1912-2015	442.5	420.8
Torrens Island	023018	1928-2013	433.1	448.1
Dry Creek (Wingfield)	023138	2007-2015	337.3	337.3
Regency Park	023137	2007-2015	364.3	364.3

3.3.3 West Lakes Rainfall Adjustment

The only daily read rainfall gauge within the West Lakes catchment is at Seaton. Figure 3.4 shows the location of gauges.



Figure 3.4 Approximate location of West Lakes rain gauges

The rainfall factor applied to modelling runoff from the West Lakes catchment was calculated by comparing the annual rainfall from the Adelaide Airport gauge with the annual rainfall from the Seaton gauge as shown in Table 3.2 below.

Table 3.2 Analysis of Rain Gauges in Vicinity of West Lakes catchment

Rain Gauge	Gauge Number	Record Period	Annual Rain (mm) Total	Annual Rain (mm) 2007 to 2015
Adelaide Airport	023034	1955-2015	439.2	389.7
Seaton	023024	1912-2015	442.5	420.8

A rainfall factor of 1.0 chosen for the West Lakes catchment as there is little long-term difference between the rainfall at Seaton and the rainfall at Adelaide Airport.

3.3.4 Patawalonga Rainfall Adjustment

The Patawalonga catchment is extensive and has significant spatial variability in rainfall. However, the use of flow data from streamflow gauges on Brown Hill Creek and the Sturt River eliminates the need to undertake rainfall-runoff modelling for the majority of the catchment. The Airport Drain, West Beach (Coast), Glenelg North and Drain 18 (Holdfast Bay) catchments are not covered by the streamflow data and hence will require rainfall-runoff modelling within SWMM.

As the Adelaide Airport pluviograph lies approximately in the centre of these catchments as shown in Figure 3.5 below, data from this gauge has been adopted for the modelling with no factoring.

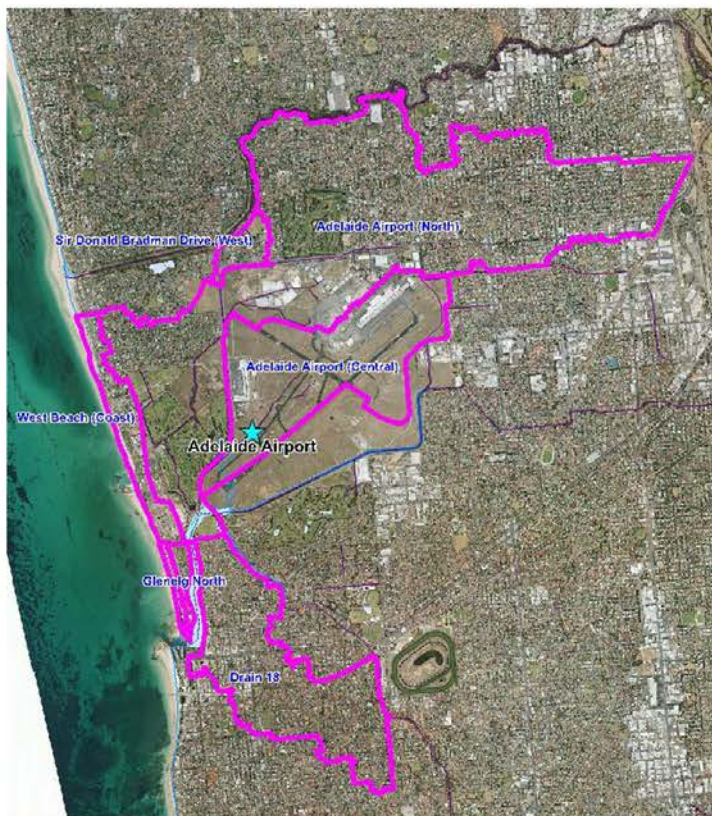


Figure 3.5 Patawalonga Local Catchments around Adelaide Airport

3.4 Evaporation Data

The key evaporation process modelled within the SWMM simulation was evaporation from the surface of the various storages.

Evaporation will have an impact on water levels in all the systems, but this impact will be most evident in the Gillman basins. Evaporation will have a much less evident impact on average water levels in the West Lakes and Patawalonga systems as water levels are constantly being replenished by tidal circulation.

In the West Lakes system, evaporation was not simulated as the system was modelled as an open channel to account for differences in measured water levels at the inlet and outlet. Calibration of West Lakes water levels was undertaken with respect to the measured data from the Department of Planning, Transport and Infrastructure (DPTI) to ensure the model accurately represented water levels in the lake.

At Gillman and in the Patawalonga, the evaporation rate was modelled using average monthly pan evaporation rates for Adelaide published by the Bureau of Meteorology. The average monthly evaporation rates are shown in Table 3.3 below. A lake factor of 0.8 was used to convert the pan evaporation to actual evaporation.

Table 3.3 Average Monthly Pan Evaporation Rates for Adelaide

Month	Evaporation Rate (mm/day)
January	8.50
February	8.19
March	6.04
April	3.92
May	2.37
June	1.63
July	1.74
August	2.38
September	3.30
October	4.82
November	6.65
December	7.80

3.5 Storage Basin Data (Digital Terrain Model)

Ponding areas were analysed within SWMM as storage units in order to model water levels. A Digital Terrain Model (DTM) was used to develop contours within each basin which were then used to determine a height – storage relationship of each basin. The relationships were developed at height increments of 0.1 m. The invert level of each basin was estimated based on the DTM, known inverts of inlets and outlets and design drawings.

3.5.1 Gillman Basins

Four storage areas within the Gillman pond system were analysed within SWMM as discrete storage units, in order to model the long-term water level. These basins were the Range wetland, Range Basin, Magazine Creek wetland and the Magazine Basin as shown in Figure 3.6 below. The basin system was modelled using the existing layout and does not incorporate future Gillman development and associated drainage systems.



Figure 3.6 Gillman Basin Locations

3.5.2 Patawalonga Basins

Four storage basins within the Patawalonga pond system have been modelled within SWMM as storage units. These basins are the Patawalonga Lake, Diversion Pond, Collection Pond and Sturt River Pond (ponding area upstream of Sturt River Weir) as shown in Figure 3.7 below.

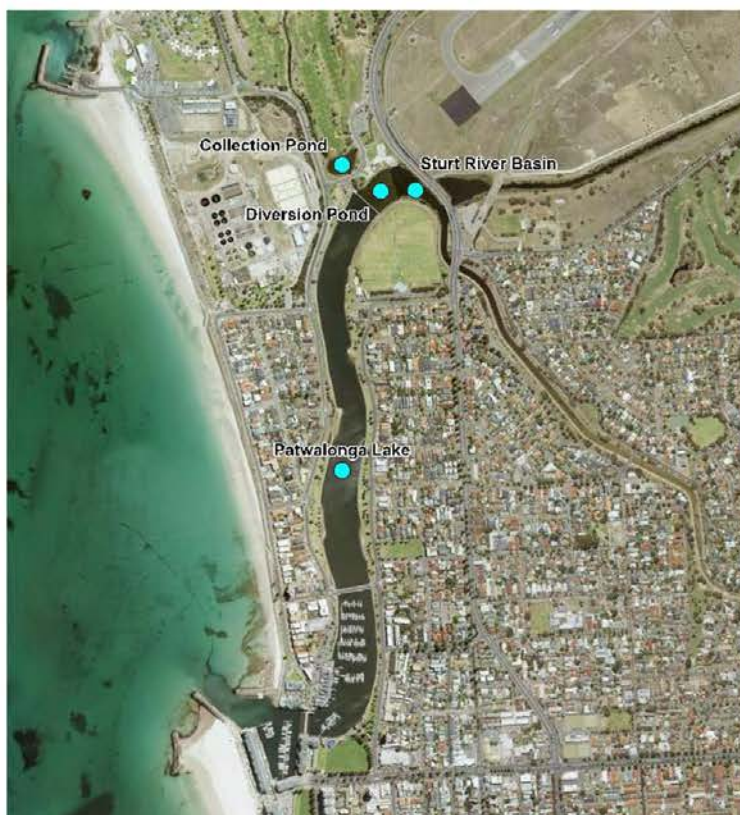


Figure 3.7 Patawalonga Basin Locations

3.6 Sub-Catchment Boundary Delineation

3.6.1 Gillman Sub-Catchments

In order to model runoff into the Gillman system in SWMM, the upstream catchment was subdivided into twenty-two sub-catchments. Sub-catchments within the urban area were delineated based on major pipe network data. These sub catchments were modelled to feed the pipe network which then conveyed water to the Gillman basins. The urban sub-catchment breakdown is shown in Figure 3.8 below. Pond catchments and sub-catchments adjacent to the ponds feed their water directly into the ponds.

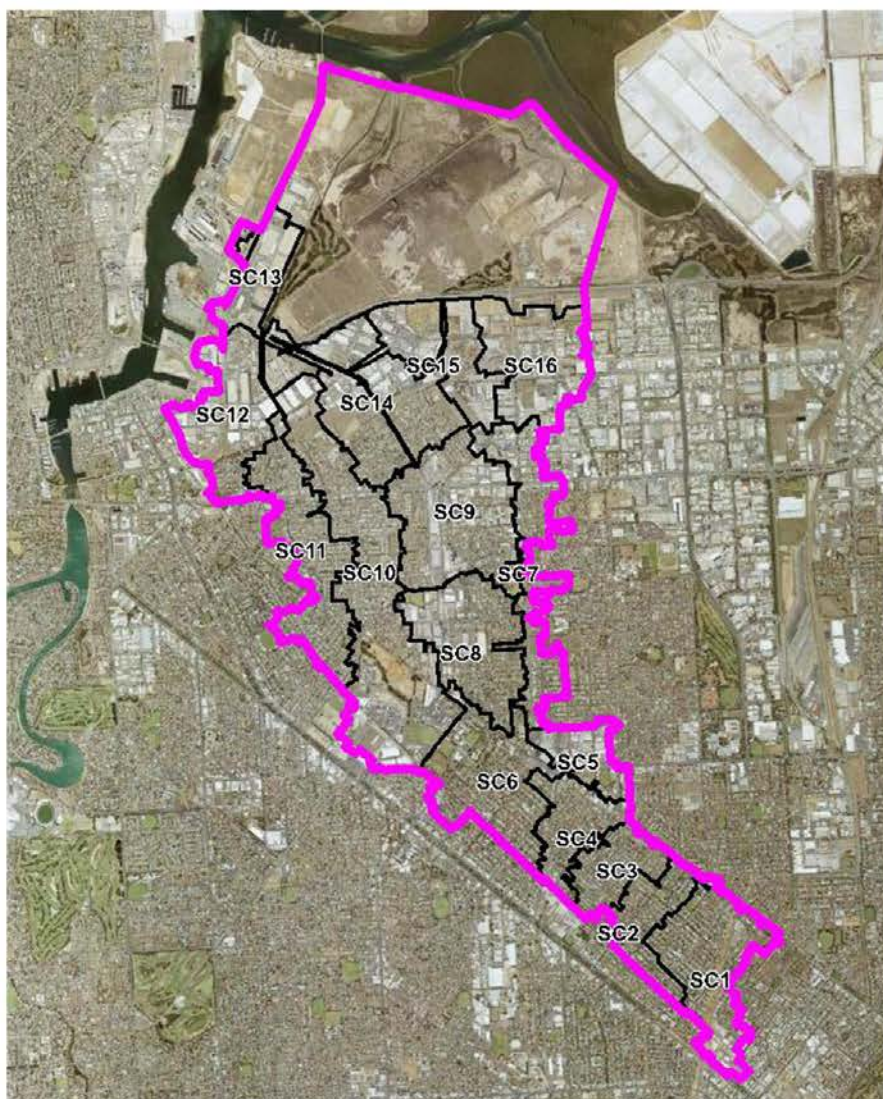


Figure 3.8 Gillman Sub-Catchments

3.6.2 West Lakes Sub-Catchments

The West Lakes catchment was subdivided into seventeen sub-catchments as shown in Figure 3.9 below. Many of the sub-catchments within this area feed directly into West Lakes. Catchments which do not feed directly into West Lake were delineated based on the arrangement of the trunk drainage network. These smaller catchments were modelled to feed the pipe network which then conveyed water into West Lakes.



Figure 3.9 West Lakes Sub-Catchments

3.6.3 Patawalonga Sub-Catchments

The key catchments upstream of the Patawalonga are the Sturt River and Brown Hill Creek catchments. These larger catchments were modelled in SWWM using recorded streamflow data as outlined in Section 3.7.

In order to model the runoff from the remaining parts of the catchment, which do not contribute to flows at the Sturt River and the Brown Hill Creek gauges, the area was subdivided into nine sub-catchments as shown in Figure 3.10 below. Sub-catchments within this area were delineated based on the arrangement of the trunk drainage network.

The sub-catchments shown in Figure 3.10 include:

- Patawalonga Creek / West Beach (SC5 and GC)
- Adelaide Airport Drains (AC1 to 3)
- Mile End / Cowandilla Drains (SC3 and 4)
- Drain 18 catchment (SC1)
- Sturt River / Brown Hill Creek Catchments downstream of flow gauges (SC2)

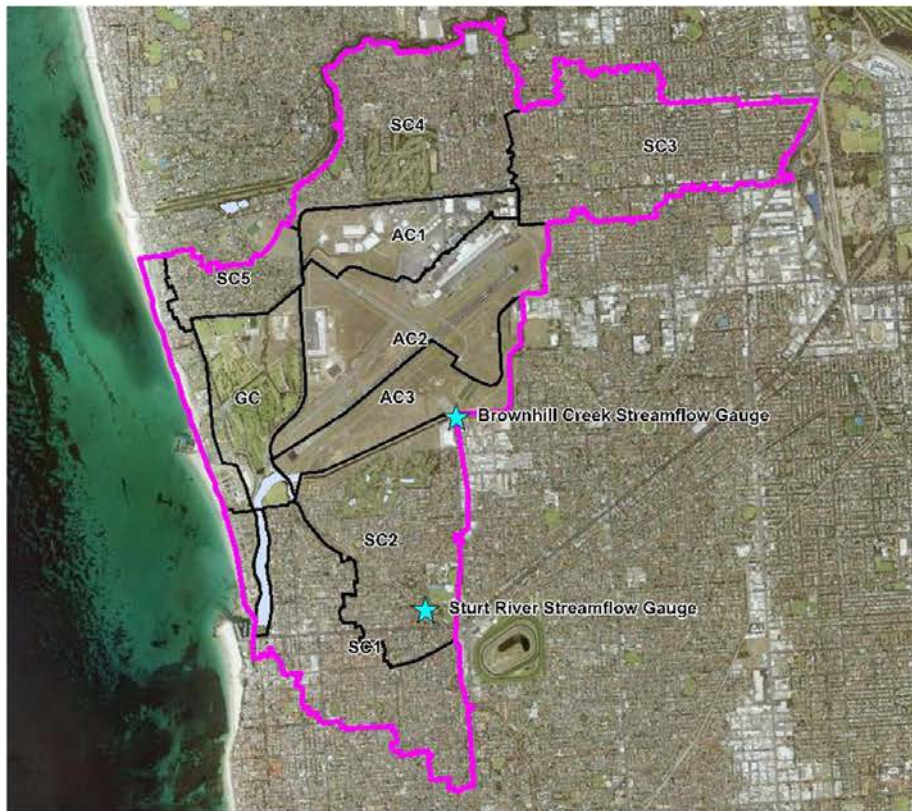


Figure 3.10 Lower Patawalonga Sub-Catchments

3.7 Streamflow Data

Runoff from the Sturt River and Brown Hill Creek catchments was modelled within SWMM using recorded streamflow data. Over the period between 1993 and 2005, there is streamflow data with a rating of sufficient quality for both Brown Hill Creek and Sturt River, to undertake the modelling of inflows to the Patawalonga Lake.

The stream flows have been factored up by 30% to account for an increase in future runoff due to development as discussed in Section 3.8.3.

3.7.1 Sturt River Data

Sturt River has multiple streamflow gauges along its length which can be used for streamflow analysis. The most downstream gauge is station A5040549, located downstream of the Anzac Highway (see Figure 3.10 above for approximate gauge location). Hourly flow data for this gauge was obtained from Water Data Services Pty Ltd. This data contained a continuous record of flows from November 1993 to the end of 2005.

A breakdown of data quality is provided in Table 3.4 below. With the vast majority of the data (approximately 89%) from November 1993 to December 2005 being rated as good or fair, the data set has been assessed to have sufficient quality for use in the rainfall runoff analysis.

Table 3.4 Sturt River Data Quality

Quality Record	% of Data (Nov 1993 to Dec 2005)
Good Record	81.6
Fair Record	0.7
Fair-Estimated Record	6.7
Smoothed Data Record	1.4
Poor Record	8.2
Poor – Theoretical Rating Record	0
Quality Unknown Record	1.3
Unverified Telemetry Data Record	0
Missing Record	0

3.7.2 Brown Hill Creek Data

Brown Hill Creek has multiple streamflow gauges along its length which can be used for streamflow analysis. The most downstream gauge is station A5040583, located at Adelaide Airport (see Figure 3.10 above for approximate gauge location). Hourly flow data for this gauge was obtained from Water Data Services Pty Ltd. This data contained a continuous record of flows from November 1993 to the end of 2005, apart from an approximately three and a half month gap in the recorded data between October 1995 to January 1996.

The missing data was filled by synthesising flows for this period using a SWMM model of the catchment upstream of the gauge. The process used for patching the data involved calibrating the SWMM model to flows recorded during a summer period with similar rainfall to the period of missing data. The calibrated model was then run for the rainfall during the period October 1995 to January 1996 to generate flows which were used to patch the recorded flow data series.

A breakdown of data quality is provided in Table 3.5 below. With the vast majority of data (above 91%) from November 1993 to December 2005 being rated as good or fair, the data set has been assessed to have sufficient quality for use in the rainfall runoff analysis.

Table 3.5 Brown Hill Creek Data Quality

Quality Record	% of Data (Nov 1993 to Dec 2005)
Good Record	57.3
Fair Record	32.3
Fair-Estimated Record	1.9
Smoothed Data Record	5.0
Poor Record	0
Poor – Theoretical Rating Record	0.3
Quality Unknown Record	0.7
Unverified Telemetry Data Record	0
Missing Record	2.4

3.7.3 Final Data Processing

The final streamflow data was exported to text file with the formatting required for a SWMM time series import.

3.8 Sub-Catchment Hydrology

The hydrological model used within SWMM differs from the time-area method used in models such as ILSAX and DRAINS.

SWMM models sub-catchments as a rectangular surface with a constant slope and uniform width which drains into a single outlet channel through the centre of the catchment. The conceptual model is shown in Figure 3.11 below. The width value is generally difficult to calculate directly when modelling large urban catchments and correlates (conceptually) to the time of concentration used in hydrological models based on the time-area method. For large-scale urban modelling, the catchment width needs to be calibrated such that the model produces a hydrograph of the required timing, peak and shape.

Each sub area can be assigned an impervious area and infiltration parameters for pervious areas in a similar manner to the ILSAX and DRAIN models.

As there is no available streamflow data for the catchments being modelled using SWMM in this study, the approach taken was to calibrate the SWMM model for a representative catchment to flows generated by DRAINS for the same catchment. In addition, outputs from SWMM for West Lakes were validated against recorded water level data from DPTI to ensure the model produced a reasonable representation of runoff from the urban catchments.

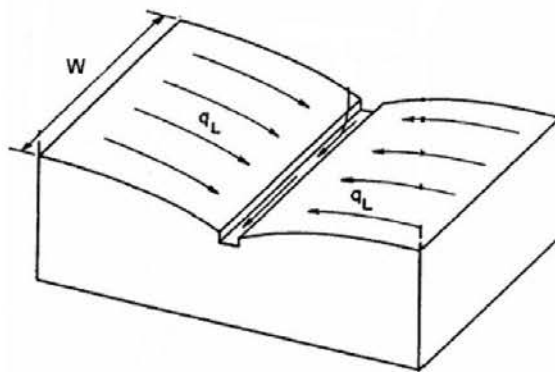


Figure 3.11 Conceptual Diagram of SWMM Catchment Model (SWMM Reference Manual, 2016)

3.8.1 Sub-Catchment Width and Routing

For the calibration catchment, the catchment width was evaluated by considering a 9 hour ARR storm pattern and a 25 minute ARR storm pattern in order to capture the effects of events of different durations.

The following process was undertaken within the calibration process for both the SWMM and DRAINS model:

- Input the same Horton infiltration parameters for modelling pervious areas;
 - Input the same depression storage for both pervious and impervious areas;
 - Assume the same directly connected impervious area across both models;
 - Assume the same catchment area;
 - Assume the same routing process:
- DRAINS models areas as contributing directly to the pipe system.

- SWMM models three sorts of catchment routing. The "Outlet" option was chosen as this routes runoff from the impervious area and pervious area directly to the sub-catchment outlet.

For the DRAINS model, the time of concentration for the catchment was estimated for the paved area (30 minutes) and the grassed area (45 minutes). The model was then run producing the two hydrographs.

For the SWMM model, the model was run with a catchment roughness appropriate for overland flows within an urban area and the catchment slope calculated from the digital terrain model of the test catchment. By varying the catchment width, the runoff hydrograph was calibrated to the outputs of the DRAINS model considering hydrograph timing, peak flows and flow volumes.

The analysis indicated that the optimum catchment length was 115 m. This value represents an estimate of the average distance water has to flow in the catchment until it reaches a drainage system, and given the nature and development of the underground drainage system within most of the catchments being modelled seemed to be a reasonable estimate of this length. The calibrated hydrographs are shown in Figure 3.12 below.

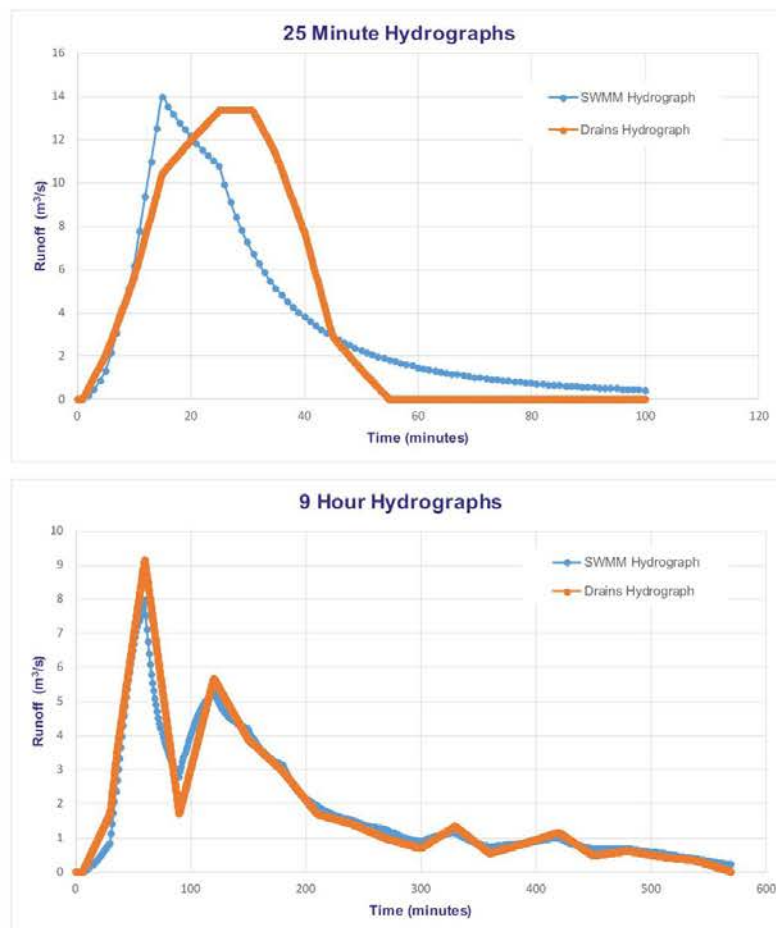


Figure 3.12 Calibration of SWMM Hydrologic Model to DRAINS

3.8.2 Sub-Catchment Slope

Sub-catchment slope was estimated using the average slope across each sub-catchment. This slope was calculated from the digital terrain model of the area.

3.8.3 Impervious Area Parameters

Impervious areas within the urban catchments considered in this study are expected to increase as a result of ongoing development. This increase in impervious area is expected to result in an increase in runoff. Modelling undertaken as a part of this Study has been based on estimates of runoff using projected increases in impervious area as described below.

Within the Gillman catchment, impervious areas have been based on development levels as outlined in the 30 Year Plan for Greater Adelaide. The existing and future impervious area fractions were assessed as part of the development of the Stormwater Management Plan for the catchment (Tonkin, 2015a). The existing average impervious area fraction for all the sub-catchments draining to the Gillman basins was estimated to be 0.45. This impervious area fraction was estimated to increase to 0.56 within the planning horizon of the 30 Year Plan, an increase of 24%. A breakdown of the estimated future sub-catchment impervious area fractions is provided in

Table 3.6 below and was used in the SWMM modelling.

Table 3.6 Gillman Sub-Catchment Impervious Area Fractions

Sub-Catchment	Area (ha)	Future Impervious Area Fraction
1	115.2	0.48
2	58.1	0.42
3	53.3	0.48
4	62.4	0.50
5	43.1	0.74
6	126.0	0.48
7	105.3	0.56
8	116.5	0.62
9	152.6	0.60
10	249.6	0.50
11	121.2	0.46
12	120.6	0.66
13	52.5	0.72
14	151.1	0.60
15	89.5	0.64
16	107.6	0.62

In the West Lakes catchment, impervious area fractions were calculated from projections of increased urban density due to development over a 50 year horizon. The existing and future impervious area fractions were estimated as a part of floodplain mapping work undertaken for the City of Charles Sturt. The existing average impervious area fraction for all the sub-catchments draining to West Lakes was estimated to be 0.35. This impervious area fraction was estimated to increase to 0.44 over the 50 year planning horizon, an increase of 26%.

A breakdown of the estimated future impervious area fractions is provided in Table 3.7 below and these were used in the SWMM modelling. The values for the Wellington Street catchment (Sub-catchment 4), Royal Adelaide Golf Course catchment and SA Water Port Adelaide Pump Station catchment were estimated manually as these were outside the area analysed as part of the previous Charles Sturt floodplain mapping.

Table 3.7 West Lakes Sub-Catchment Impervious Area Fractions

Sub-Catchment	Area (ha)	Future Impervious Area Fraction
1	204.5	0.45
2	121.5	0.45
3	101.0	0.48
4	205.8	0.55
5	329.1	0.48
6	327.2	0.48
7	165.4	0.36
8	279.9	0.40
9	120.5	0.35
10	164.9	0.42
11	158.4	0.43
12	98.5	0.46
13	395.5	0.45
14	296.8	0.45
15	306.9	0.42
Royal Adelaide Golf Course	0	0
SA Water PA Pump Station	14.1	0.25

Within the greater Patawalonga catchment, there is little data on the expected increase in impervious area due to development, especially in relation to the Sturt River.

In the absence of any data, flows from the Sturt River and Brown Hill Creek were increased by 30% (cf. 24 and 26% used for Gillman and West Lakes) to conservatively allow for the effects of future development.

Impervious area fractions used for modelling of local catchments around the Patawalonga were developed from data contained in the Holdfast – Marion Stormwater Management Plan, past modelling of the Airport Drain catchment and manual calculation. The future impervious fractions for the various sub-areas are provided in Table 3.8 below and were used in the SWMM modelling.

Table 3.8 Patawalonga Sub-Catchment Impervious Area Fractions

Sub-Catchment	Area (ha)	Future Impervious Area Fraction
1	338.7	0.59
2	329.9	0.42
3	386.0	0.61
4	348.4	0.51
5	95.5	0.45
6	76.5	0.60
Airport1	145.8	0.70
Airport2	344.1	0.50
Airport3	153.8	0.20
Adelaide Shores Golf Park	181.3	0.10

3.8.4 Pervious Area Infiltration

Infiltration within the pervious portion of each subarea was modelled using the Horton Infiltration Curve. The soil type was assumed conservatively as Type C (or 3) which has slow infiltration rates when well wetted (NRCS, 2009, Chapter 7). The Horton parameters were chosen based on this soil type as outlined in

Table 3.9 below (from DRAINS Manual p5.11). Being a continuous simulation, the antecedent moisture condition will be determined by previous rainfall events. Typical drying times used in SWMM range from 2 to 14 days (Chiwater manual p123) and the assumed drying time has been conservatively assumed at 14 days.

Table 3.9 Horton Infiltration Model Parameters

Factor	Symbol	Unit	Value
Initial Rate	f_0	mm/hr	125
Final Rate	f_c	mm/hr	6
Shape Factor	k	hr ⁻¹	2
Drying Time	-	days	14

3.9 Hydraulic Assumptions and Modelling

3.9.1 Gillman System

The Gillman Basin system collects runoff from the Torrens Road Catchment. Within the SWMM model, runoff from the various sub areas within the catchment was routed through a pipe network comprising the main spines of the trunk drainage network. Data on pipe sizes and grades were obtained from GIS data provided by the City of Charles Sturt and the City of Port Adelaide Enfield.

The general arrangement of the Gillman system is shown in Figure 3.13 below.



Figure 3.13 Gillman Basin System Overview

Water from the Torrens Road Catchment enters the Gillman basin system through two main wetland systems, the Magazine Creek wetland and the Range wetland.

Water entering the Magazine Creek wetland flows into the Magazine Basin and out to sea via a set of flap gates. There are currently three rectangular tide gates which have a 2.44 m width, 1.52 m height and 6 m length. The tide gates have an estimated invert of -1.7 mAHD. A weir separates the wetland and the basin to the north of the wetland. This weir has a width of approximately 50 m and a crest level of -0.6 mAHD.

When water levels in the Magazine Basin are greater than the tide level in the North Arm, water from the basin flows out of the tide gates. The flap gates prevent backflow of sea water into the basin when tide levels are higher than the water level in the basin.

Water entering the Range Wetland from the Torrens Road Catchment discharges over a weir into the Range Channel which directs flows into the Range Basin. The weir has a width of 20 m and an estimated crest level of 0.23 mAHD.

There is a pipe outlet with a flap gate to direct floodwaters from the Range Basin to the Magazine Basin, but from site investigations, it is believed that the outlet is blocked. As of such, there is no existing outlet for the Range Basin, with flows thought to dissipate via a combination of evaporation and infiltration.

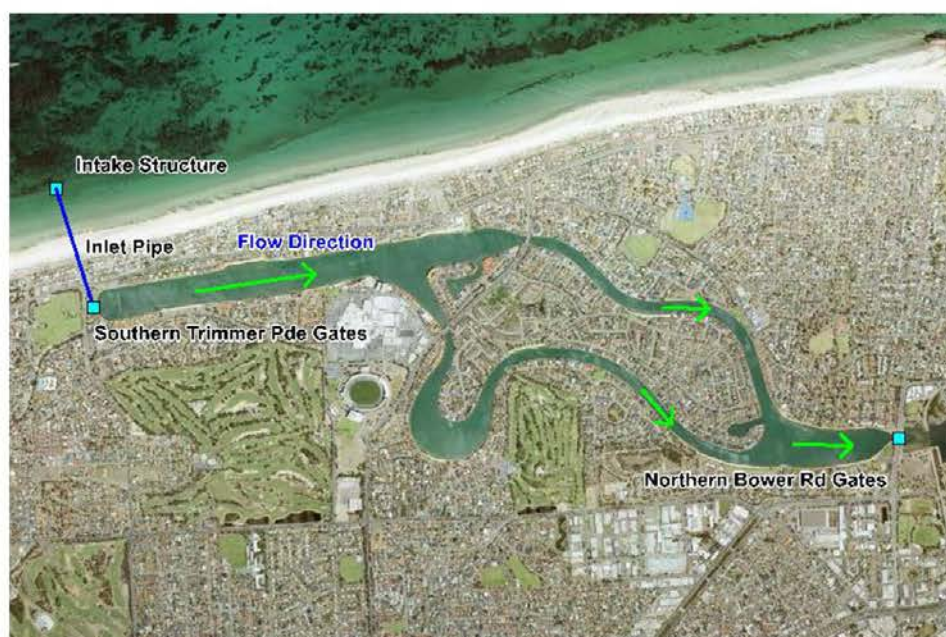
For SWMM modelling of this system, the top of bank between the Range Basin and the Magazine Basin was modelled as the weir level above which water was allowed to escape from the Range Basin to the Magazine Basin. Due to the level of this bank and the considerable upstream storage, overflow did not occur during the modelled period between 1971 and 1991, with all flows lost via evaporation. Further consideration of the impact of this blocked pipe on peak levels during a 100 year ARI flood is provided in Section 4.

Groundwater flows into the basins as well as interactions between the basins and the Port River are possible. However, these potential interactions were not modelled.

3.9.2 West Lakes System

West Lakes is a man-made lake with a significant urban catchment shown in Figure 3.9. The lake is flushed by sea water with tidal flows through the lake being controlled by tidal gates at the lake inlet and outlet as shown in Figure 3.14 below. The southern inlet to West Lakes is supplied by an underground 3.5 m diameter conduit from the sea. The northern gates (three gates which are 1.52 m high and 2.44 m wide at an invert of -1.97 m AHD) discharge into the Port River. Drawings of these structures were obtained from DPTI.

Figure 3.14 Schematic of Configuration of West Lakes



The Department of Planning, Transport and Infrastructure currently own and operate infrastructure associated with the Lake and carry out monitoring of water levels and water quality as part of their operations responsibilities.

While DPTI own and operate the infrastructure, the City of Charles Sturt has responsibility for care and control of the Lake, which includes issuing of permits for use of the Lake and access. Council is also responsible for the maintenance of the various beaches around the Lake. The Council Environmental Health Team responds to community concerns regarding Lake water quality and partner with DHA and the EPA in this regard when required, for example, to issue media releases and to identify pollutant sources.

Day to day operation of the tidal gates is managed by DPTI. The current operating principles of the lake as outlined by DPTI (West Lakes Tidal Flushing System, 2014) are as follows:

- Normal lake level is controlled by the inlet gates (at Trimmer Parade)

- *The inlet gates are opened automatically to allow sea water to flow into the lake whenever the lake is below its preset target height and the sea level is above the lake level at the time*
- *The inlet gates will close when the lake reaches its target height or the sea level falls below lake level before the target height is reached*
- *When the level in the Port River falls below lake level the flap gates at the outlet (at Bower Road) are pushed open and water flows out of the lake*
- *Water will continue to flow out of the lake until the level in the Port River rises again and the flap gates are pushed shut*
- *If the lake level falls below the preset low level then the hydraulic slide gates will close to prevent water flowing out. The gates will automatically open once the Port River rises above the lake level*

Within the SWMM model, runoff from the various sub areas within the West Lakes catchment was routed through a pipe network comprising the main spines of the trunk drainage network. Data on pipe sizes and grades were obtained from GIS data provided by the City of Charles Sturt and the City of Port Adelaide Enfield.

The lake was modelled as an open channel system within SWMM to allow for observed differences in level between the inlet and outlet to be simulated. The channel surface area was matched to the Lake surface area in order to properly model the storage behaviour of the Lake.

Tidal boundaries were applied at either end of the lake (Outer Harbour data at the southern end and Inner Harbour data at the northern end as outlined in Section 3.2.1) and sub-catchment inflows were applied at nodes along the total channel length.

The tidal operation rules were coded into SWMM to simulate the operation of the gates under normal tidal operation as well as in a storm event. However, it should be noted that manual draining of the lake for cleaning or to improve lake storage before a large storm has not been modelled over the twenty years of analysis. These manual interventions will have a negligible impact on the average lake levels over a period of twenty years and their exclusion is likely to result in conservative predictions of lake level.

DPTI have advised that the target level of the lake ranges between -0.35 mAHD and -0.65 mAHD. However, inspection of recorded lake level data indicated that the high lake level regularly fluctuates with a maximum water level of approximately -0.25mAHD being achieved. DPTI have indicated that while the inlet gate is set to close at a level of -0.35mAHD, it takes around half an hour for the gate to close and hence the lake regularly fills to a higher level. Because SWMM applies gate closure instantaneously, the operational rules set in SWMM were adjusted such that the target water threshold had a high water level of -0.25mAHD and a low water level of -0.65mAHD.

Any groundwater interactions within the Lake have not been modelled. These are assumed to be negligible for the purposes of the calculation of the long-term average water level, as the West Lakes water level is mainly controlled by tide levels.

3.9.3 Patawalonga System

The Patawalonga is a complex man-made system with dual functionality of stormwater dissipation and tidal flushing as shown in Figure 3.15 below. It has a significant urban / rural stormwater catchment of over 200 km² and collects water from Brown Hill Creek and Sturt River and other local catchments.

Drawings of key infrastructure within the system were obtained from DEWNR. Key data relating to the system is provided in Table 3.10 below.



Figure 3.15 Schematic of Configuration of the Patowalunga

Table 3.10 Key Patawalonga Infrastructure Data

Name	Type	Number	Width (m)	Height (m)	Diameter (m)	US Invert (mAHD)	DS Invert (mAHD)
Main Duct	Arched Duct	1	-	-	~5.3	0.1	-8.425
Secondary Duct	Box Culvert	1	2.7	2.5	-	-2	-4.205
Underduct	Box Culvert	1	3	3	-	-4.25	-4.25
Sturt River Weir	Weir	1	100	~2	-	0.8	0.8
Weir No. 2	Gates	10	3.2	3.15	-	-1.15	-1.15
Glenelg Gates	Gates	8	~5.5	~3.7	-	-0.44	-0.44

In stormwater dissipation mode as shown in Figure 3.16 below, flows from Brown Hill Creek and the Sturt River back up behind the Sturt River Weir until water levels reach 0.8 mAHD. At this level, stormwater flows into the Diversion Pond where it usually flows out to sea via the Barcoo Outlet Main Duct when the sea level is below the Diversion Pond level. If the Main Duct has insufficient capacity for flows and water in the Diversion Pond reaches a level in the range of 1.8 mAHD to 2.2 mAHD, then Weir 2 is opened. The Patawalonga Lake then acts as a storage basin (if the sea level is above the Patawalonga level) or a stormwater conduit to the Glenelg Gates where flood flows are discharged if sea level is below the Patawalonga level.

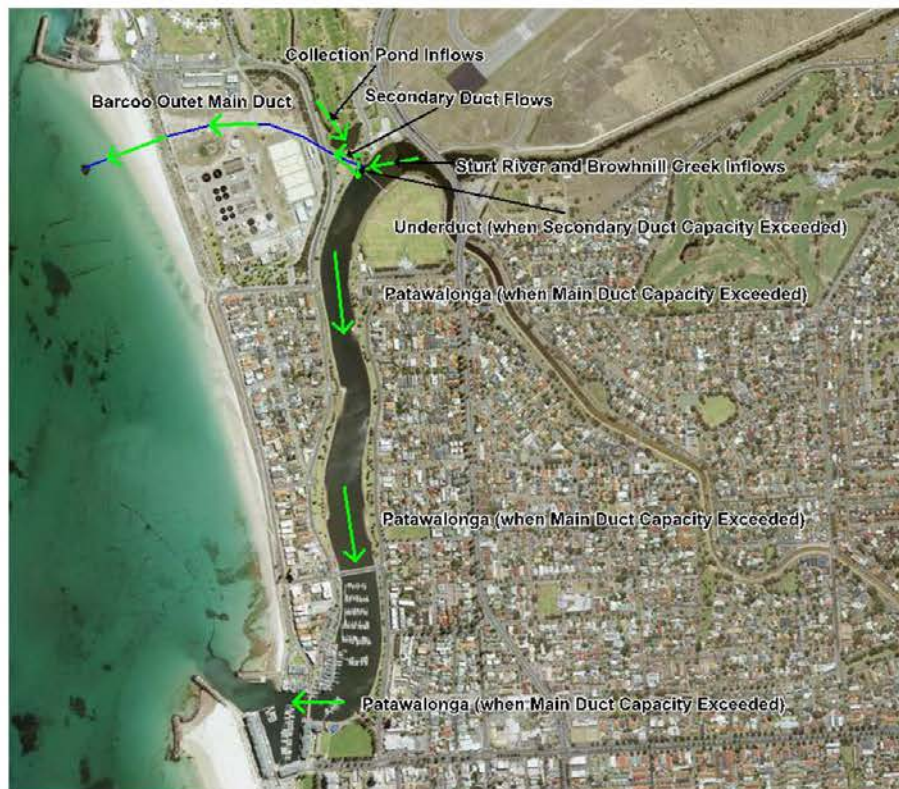


Figure 3.16 Schematic of Patawalonga in Stormwater Dissipation Mode

Stormwater from the Airport, Mile End / Cowandilla, West Beach and Patawalonga Creek catchments enter the system via the Collection Pond. In low flow events, this stormwater is discharged through the Secondary Duct via a venturi into the Barcoo Outlet Main Duct. In events where the Secondary Duct has insufficient capacity, stormwater flows from the Collection Pond directly to the Patawalonga Lake via an underduct.

In tidal flushing mode as shown in Figure 3.17, sea water at high tide is let into the Patawalonga Lake via the Glenelg Gates. The water flows through the lake and Weir 2 where it enters the Diversion Pond and flows out to sea at low tide through the Barcoo Outlet Main Duct. DEWNR have indicated that it takes approximately five days for water held in the lake to be completely exchanged using this mode of operation.

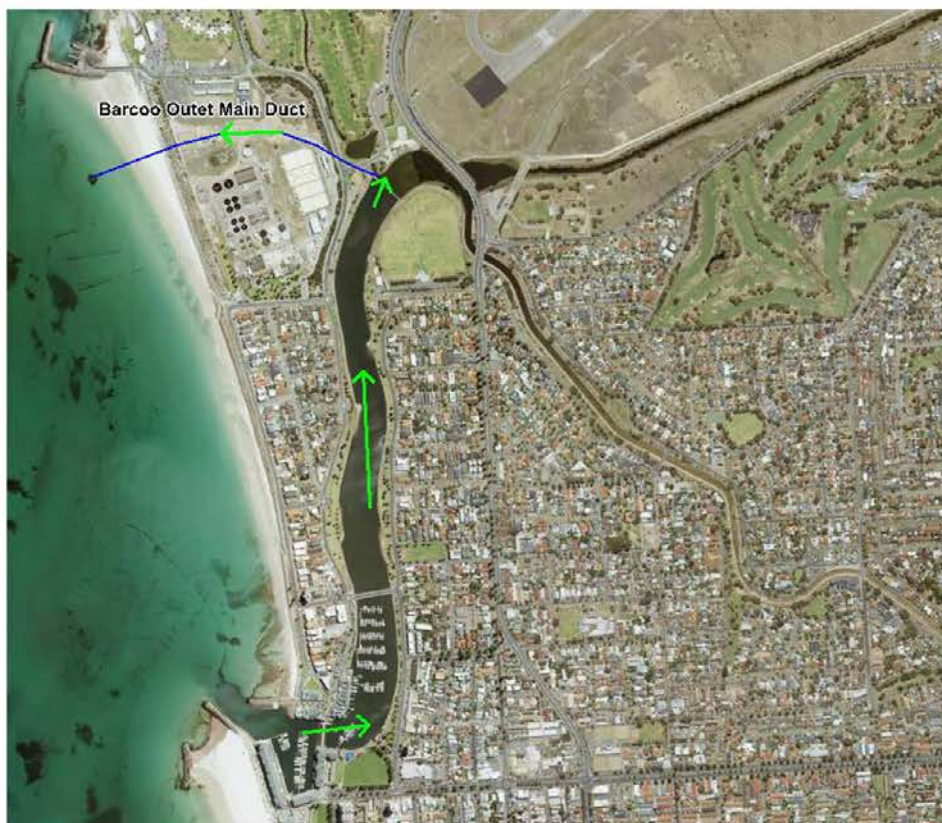


Figure 3.17 Schematic of Patawalonga in Tidal Flushing Mode

Within the SWMM model the calculated runoff from catchments immediately surrounding the Patawalonga was routed through a pipe network comprising the main spines of the trunk drainage network. Data on pipe sizes and grades were obtained from GIS data provided by the

City of West Torrens. Gauged runoff from the catchments of Brown Hill Creek and Sturt River were added to these inflows to obtain the total flow entering the system.

The tidal boundaries at the Glenelg Gates and the Barcoo Outlet Main Duct were modelled using the Outer Harbour tide data.

Operating rules for the system were coded into SWMM to simulate the operation of the lake under normal conditions as well as in a storm event. It is noted that manual draining of the Lake (for cleaning or to improve lake storage before a large storm) or lake filling (for community or recreational activities) have not been modelled over the twelve years of analysis. These manual interventions will not have a significant impact on the modelled lake level frequency over a period of twelve years.

DEWNR specify that the target level for the lake ranges between 0.1 mAHD and 0.6 mAHD. The operating rules set in SWMM modelled the tidal fluctuations within this range.

Any groundwater interactions within the Patawalonga have not been modelled. These are assumed to be negligible for the purposes of the calculation of the long-term average water level, as levels in the Patawalonga are mainly controlled by tide levels.

3.10 SWMM Model Validation

3.10.1 Gillman System

No recorded data is currently available to validate long-term water level modelling from the Gillman system. However, some confidence is gained from the fact that the Gillman hydrology and modelling assumptions are the same as the West Lakes system where good validation was achieved.

3.10.2 West Lakes System

The West Lakes model was able to be validated as recorded historical water levels were provided by DPTI. Two scenarios were checked:

- West Lakes operation under tidal flows
- West Lakes operation under storm event flows

Tidal behaviour validation was chiefly to ensure the model accurately captured the DPTI operation of the lake when there was little or no rain. In this case, lake levels and flows were controlled by the inlet and outlet sea levels. The validation generally returned good correlation to DPTI recorded lake levels with a sample shown in Figure 3.18 below.

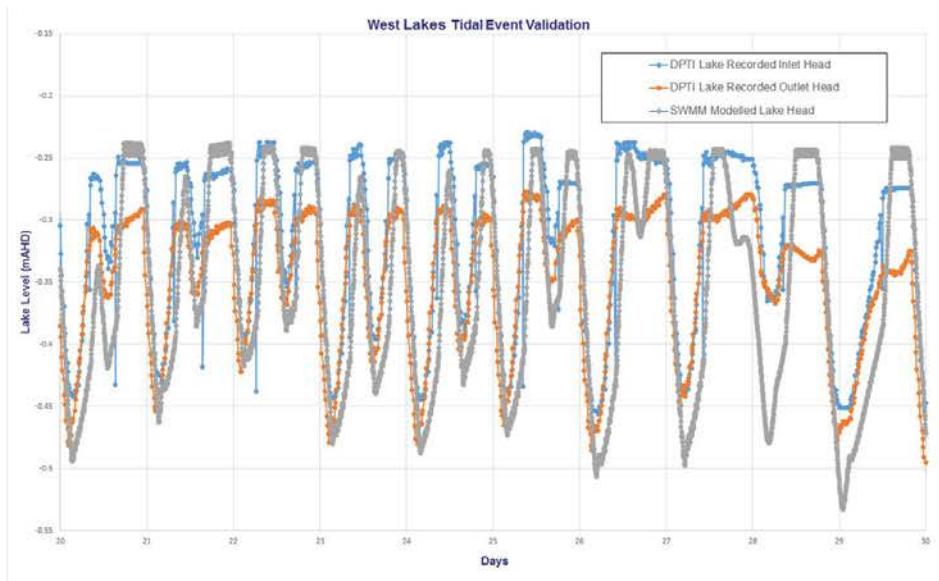


Figure 3.18 West Lakes Tidal Event Validation Sample

Storm event validation was chiefly undertaken to ensure the SWMM model properly simulated rainfall-runoff events within the West Lakes catchment. Under these conditions, lake levels are controlled by tide levels and inflows to the system. The validation generally returned a good correlation to DPTI recorded lake levels as shown in Figure 3.19 below, although the model tended to slightly over-estimate runoff. This is likely to be partly due to the use of runoff coefficients for future catchment conditions for the modelling.

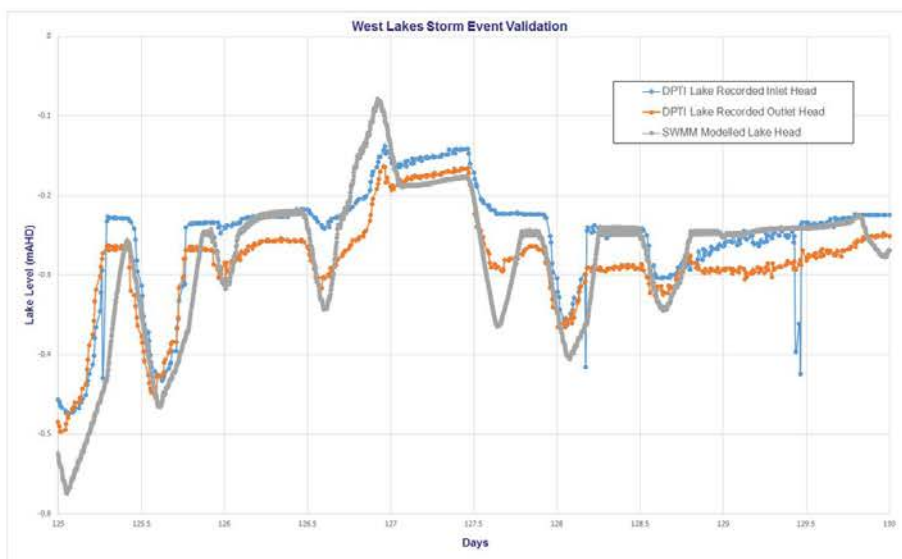


Figure 3.19 West Lakes Storm Event Validation Sample

3.10.3 Patawalonga System

The Patawalonga model was able to be generally validated for tidal flow events with information provided by DEWNR. Storm event calibration was not undertaken due to the complex nature of spatially varied storms within the total Patawalonga catchment and the fact that long-term average water levels are mainly controlled by sea level and tidal interactions.

The first validation criteria undertaken for the Patawalonga model was to ensure that target water levels under tidal operation range between 0.1 mAHD and 0.6 mAHD. Figure 3.20 below indicates the SWMM operating rules of the system accurately capture this criteria.

The second validation criteria undertaken for the Patawalonga model was to ensure that the lake flushes its own volume roughly every five days. Without incorporating manual intervention, the SWMM model calculates the lake is flushed just over every five days, suggesting the model reasonably accurately captures the tidal flushing of the system.

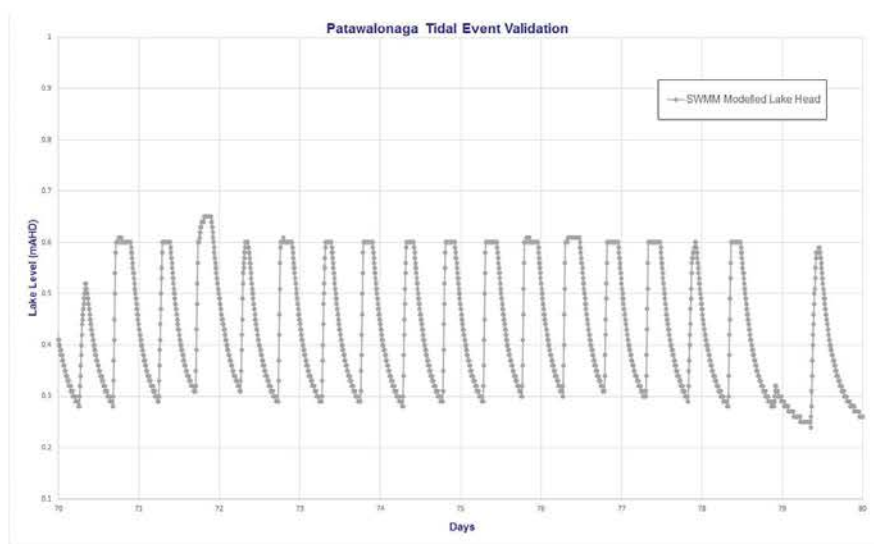


Figure 3.20 Patawalonga Tidal Event Validation Sample

3.11 Scenarios Analysed

Four scenarios were analysed using SWMM to determine average water levels for each of the three systems. The four scenarios that were modelled are outlined below:

- Existing Sea Level with Future Development
- 300 mm Sea Level Rise with Future Development
- 500 mm Sea Level Rise with Future Development
- 1000 mm Sea Level Rise with Future Development

Availability of data as discussed above dictated that the simulations were run for time periods as outlined below as the baseline (or existing) condition.

- Gillman System 1971 to 1991
- West Lakes System 1971 to 1991
- Patawalonga System 1993 to 2005

3.12 SWMM Results

3.12.1 Gillman System

The key output from the SWMM modelling was a time series of water levels within the Magazine Creek wetland and basin over the 20 year simulation period. This time series was analysed to determine the average water level in the system under each of the sea level rise scenarios discussed in Section 3.11 above. Figure 3.21 below shows the results. The results indicate that for sea level rises up to 500 mm, the system is likely to be able to be maintained at an average water level of -0.6 mAHD. However, sea level rises above this value are likely to have a more significant impact on average levels in the system, with the average level rising to -0.35 mAHD for a sea level rise of 1000 mm.

The average water levels for each of the sea level rise scenarios shown in Figure 3.21 were used to set the initial water level in the Magazine Creek system for modelling of flooding in a 100 year ARI event with TUFLOW.

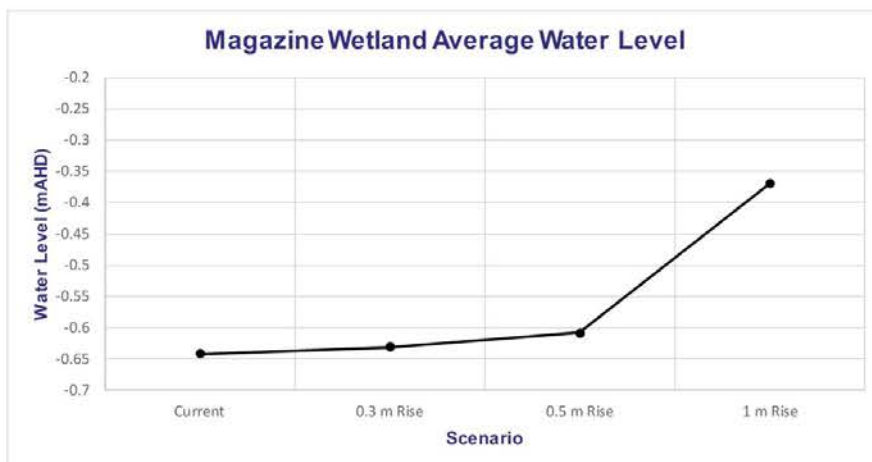


Figure 3.21 Average Water Levels in the Magazine Creek Wetland

The Range wetland and basin, operate at a much higher average level of 0.2 mAHD and as a result are relatively unaffected by changes in sea level. They are also currently isolated from the effects of sea level fluctuations due to blockage of the existing outlet. Flood modelling of these systems has been undertaken with an initial water level of 0.2 mAHD for each of the sea level rise scenarios.

3.12.2 West Lakes System

The time series of water levels in West Lakes produced by SWMM was analysed to determine the average water level in the system, under the range of sea level scenarios described in Section 3.11. Figure 3.22 below shows the increase in average water level in the system for each of the sea level rise scenarios considered.

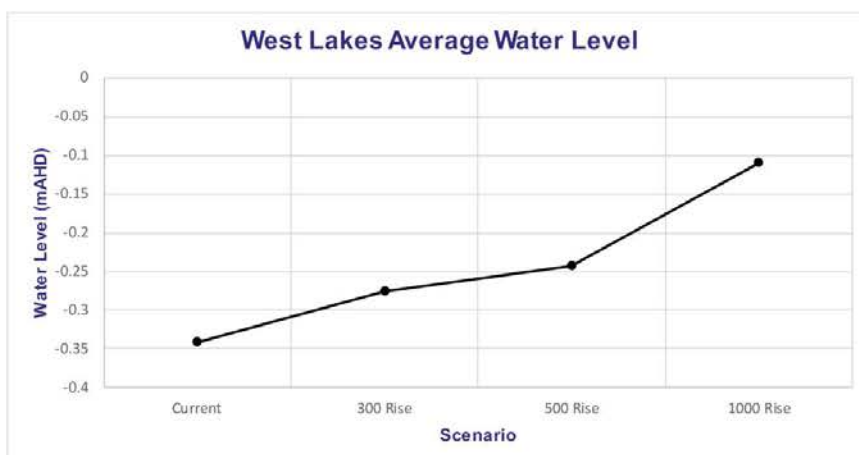


Figure 3.22 Average Water Levels in West Lakes

The results indicate an increase in average level of approximately 250 mm with a 1000 mm rise in sea level, as the impact of rises in sea level is buffered by the operation of the inlet and outlet to the Lake.

The average water levels for each of the sea level rise scenarios shown in Figure 3.22 were used to set the initial water level in the West Lakes system for modelling of flooding in a 100 year ARI event with TUFLOW. It is noted that DPTI undertake pre-draining of the Lake prior to forecast significant rainfall events, which will provide additional storage to contain flood waters. The use of the average Lake level as the initial water level for the flood modelling is therefore considered to be slightly conservative.

The main climate change impact highlighted by the SWMM modelling was the impact of rising sea levels on the ability to regularly flush the Lake. While this was not the focus of the modelling, rising sea levels will decrease the ability of West Lakes to be flushed by gravity operation and may result in a decrease in water quality within the Lake.

A more detailed analysis of changes to lake turnover times and flushing would require more detailed bathymetry for the Lake than was available for this Study, and consequently, modelling of water residence times in the Lake has not been undertaken as a part of this project.

Figure 3.23 illustrates the relationship between water levels in the Lake and tide levels under a range of sea level rise scenarios. The current tidal regime (shown in orange in the Figure) provides approximately equal periods during which tides are either above or below Lake level. This provides reasonable opportunity for flows to be allowed to enter and leave the Lake at high or low tide respectively. As sea level rises, the opportunity to release water from the Lake (when the tide is below Lake level) become shorter. With 1 m rise in level, there are very few periods during which flow can be discharged, with water effectively trapped in the Lake.

It is noted that the modelling assumes the current West Lakes operating range over all sea level rise scenarios. The operating range of West Lakes could potentially be raised to help mitigate the decrease in flushing due to climate change. However, this will result in a decreased storage for flood events in comparison with current operating levels.

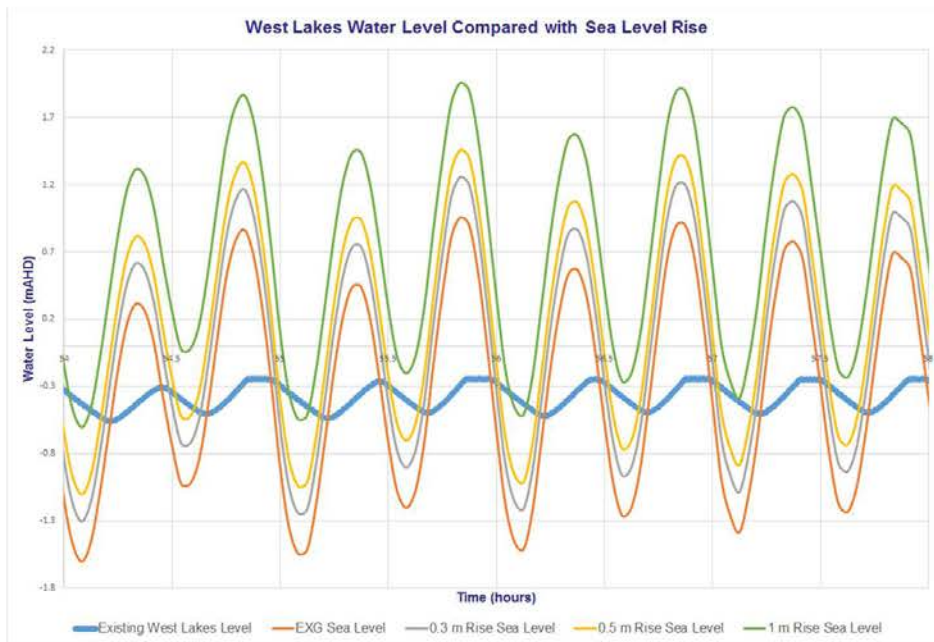


Figure 3.23 West Lakes Existing Tidal Range with Change in Tidal Regime

3.12.3 Patawalonga System

The time series of water levels in the Patawalonga produced by SWMM was analysed to determine the average water level in the system under the range of sea level scenarios described in Section 3.11. Figure 3.24 below shows the increase in average water level in the system for each of the sea level rise scenarios considered.

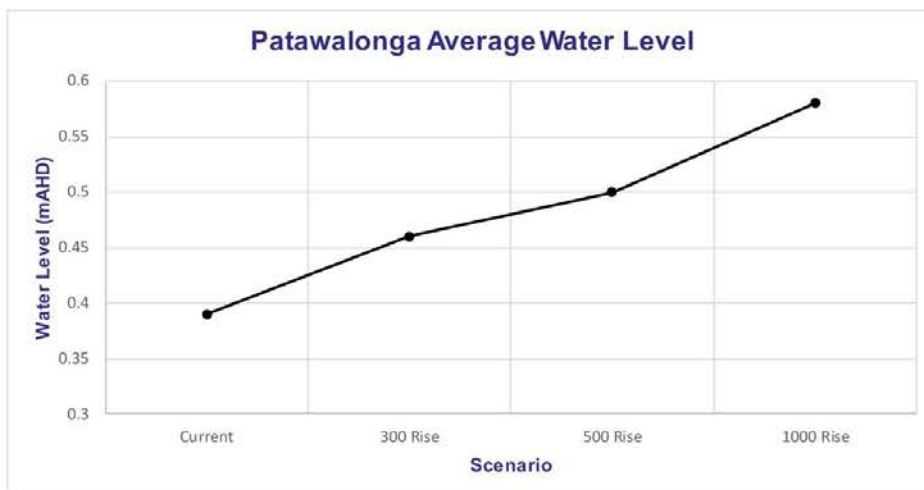


Figure 3.24 Average Water Levels in the Patawalonga

The data shown in Figure 3.24 indicate that even with sea level rise, the average Lake level will remain within DEWNR's target water level range of 0.1 mAHD to 0.6 mAHD.

The Patawalonga is a closely managed system, with DEWNR undertake pre-draining of the lake before large storm events and monitoring of lake levels during storm events. However, in such a regulated system, scenarios can arise where the lake may not be able to be drained effectively. Furthermore, smaller flood events (such as the 1 year ARI event that is being modelled for this investigation) are not always anticipated by operators as being problematic and requiring pre-draining.

Due to the above complexities, the top level of DEWNR's normal operating range (0.6 mAHD) has been adopted as a reasonable estimate of the initial water level for TUFLOW modelling of all of the sea level rise scenarios.

4 TUFLOW Modelling

4.1 Background

Floodplain modelling within TUFLOW was undertaken to determine the interaction between flood waters from the Western Region catchments and tide under various sea level rise scenarios. The following systems were selected for modelling as a part of Stage 2 of this Study (Tonkin, 2015c):

- Gillman System
- West Lakes System
- Patawalonga System
- Local catchments (Gilmore Road, Henley Beach Road, Iluka Place)

Due to the uncertainty surrounding modelling climate change, and the time scales over which predictions of changes in development and rainfall are being made, the floodplain modelling results should be treated as being indicative of broad-scale sea level rise induced trends in flooding. The objective of the modelling is to identify these flood impacts on a general scale and results should not be used as a detailed guide to localized flooding.

4.2 Tidal Regimes

Two different tidal regimes were used in the modelling; the Mean High Water Springs tide (MHWS) cycle and the 100-year ARI tide cycle.

The MHWS tide cycle was used in conjunction with modelling of 100-year ARI flood event to investigate the impacts of such an event in conjunction with an 'average' (but still reasonably high) tide.

The 100-year ARI tide cycle was modelled in conjunction with a 1-year ARI storm event to investigate the impacts of such a tide event, in combination with a small amount of rainfall.

The above combinations of flooding and tide provide a balanced modelling approach between accounting for potential rainfall and tidal interactions without creating an overly extreme event combination of excessively high tide levels combined with a 100-year ARI storm event.

The MHWS tidal parameters used in the modelling are provided in Table 4.1 below. The 100-year ARI tide cycle was modelled based tide curves from the Port Adelaide Seawater Flooding Study (Tonkin, 2005a). This combines a 100-year astronomical tide with storm surge to give a 100-year storm surge tide.

Table 4.1 Mean High Water Springs Tidal Cycle Modelling Parameters

Parameter	Unit	MHWS
Peak Water Level	mAHD	1.02
Mean Water Level	mAHD	0
Amplitude	m	1.02
Period	hrs	12.4

4.3 Rainfall Intensities

The previous edition of Australian Rainfall and Runoff (ARR) was first published in 1987. In late 2016, a new edition of Australian Rainfall and Runoff (ARR) was released. This revision contains an update to rainfall Intensity-Frequency-Duration (IFD) data by the Bureau of Meteorology and advice relating to projected changes in rainfall intensity due to climate change.

4.3.1 2016 Intensity-Frequency-Duration Data

All previous hydrological and flood modelling of catchments within the Western Adelaide Region have been based on the 1987 IFD data. These hydraulic models form the base of models used in this investigation.

A comparison of design rainfall depths for 5-year and 100-year ARI events over a suite of durations is provided in Figure 4.1 below. The data is taken at the centroid of the Western Adelaide Region (Woodville) and shows that the updated (2016) rainfall depths are less than those derived in 1987 for events having durations of greater than 15 minutes.

The stormwater drainage systems likely to be impacted by rising sea levels such as the Gillman Ponding Basins, West Lakes and Patawalonga all have critical storm durations well in excess of 15 minutes. Given the lower IFD values derived in the most recent work by the Bureau of Meteorology, it is likely that if all other factors are equal, the previous hydrological investigations of these systems have marginally over-estimated inflow volumes and peaks.

Consequently, the use of 1987 IFD data is slightly conservative in estimation of volumes and peaks and will only have minimal impacts on results. As a result, the 1987 IFD data is suitable for TUFLOW modelling of the base (existing) flooding scenario of the Western Adelaide Region catchments.

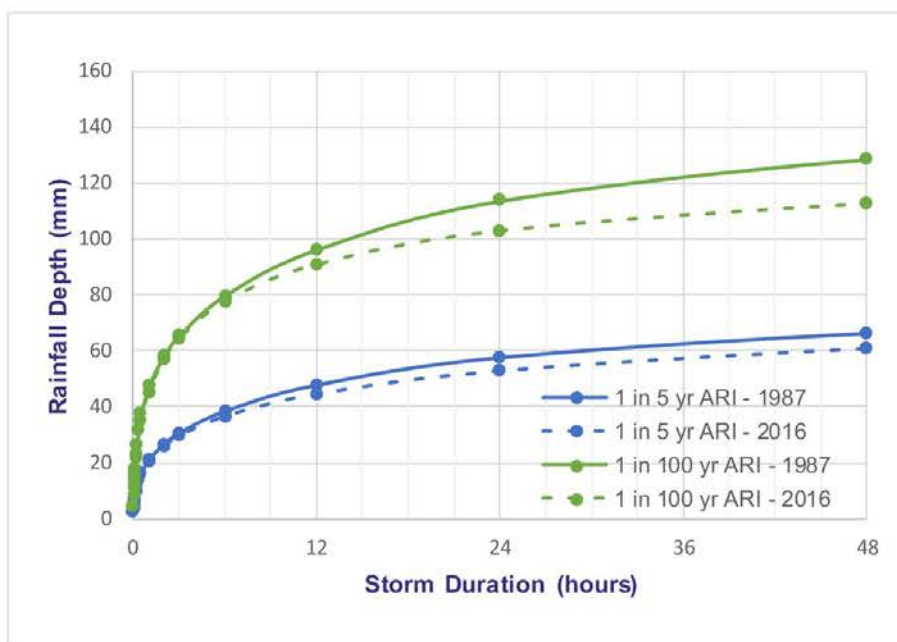


Figure 4.1 Comparison of 1987 and 2016 Design Rainfalls for Woodville

4.3.2 2016 Australian Rainfall and Runoff Analysis of Climate Change

Climate change modelling suggests that rainfall intensities in peak events will generally increase. The TUFLOW floodplain modelling of urban catchments is event-based modelling and inherently depends on peak rainfall intensity to accurately predict floodplain extents, velocities and depths. As a result, rainfall intensities will need to be adjusted according to ARR 2016 factors for each of the future scenarios considered in the TUFLOW modelling.

ARR 2016 specifies that rainfall IFD relationships will be likely impacted by climate change and planning should account for these changes. However, there is currently wide-spread uncertainty in the modelling of rainfall variations within the climate change models. There is more confidence in climate change projections of changes in temperature than changes in rainfall. Consequently, ARR 2016 currently recommends an increase of 5% in rainfall intensity per °C of localized warming.

ARR 2016 contains a data tool, which returns the current climate change projections relating to temperature for a given location. The centroid of the Western Region catchments (Woodville) was entered into this tool to gain the local climate change intensity factors which were used in the modelling. These are outlined in Figure 4.2 below.

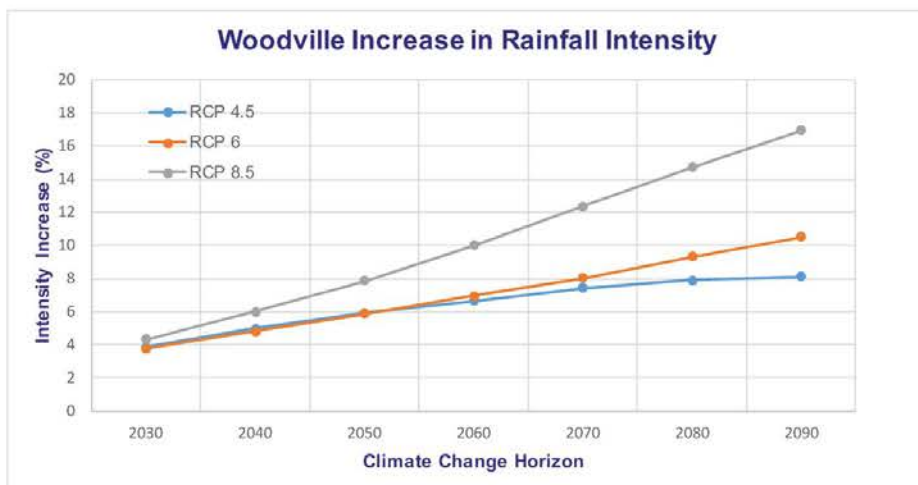


Figure 4.2 ARR 2016 Climate Change Intensity Adjustment for Woodville

In order to select the final rainfall adjustments, each sea level rise scenario needs to be linked to a time frame such that a rainfall adjustment factor can be chosen from Figure 4.2 above. This relationship can be developed using the IPCC climate change Representative Concentration Pathways (RCPs) as outlined in Figure 4.3 below.

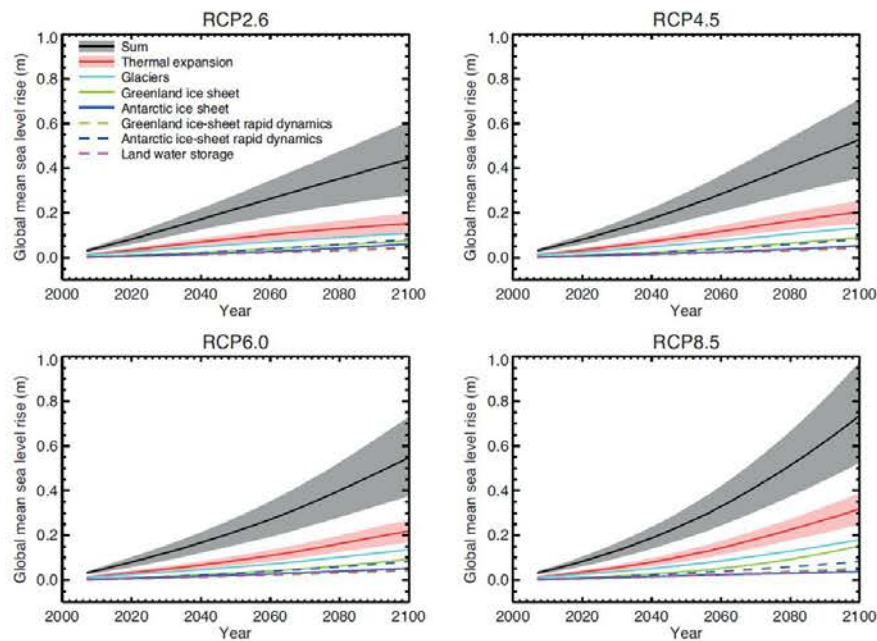


Figure 4.3 Projections of GMSL Rise (extracted from IPCC, 2013)

The Coast Protection Board have adopted a precautionary approach in which their requirements for planning for sea level rise. This approach is closely aligned with the upper bound of RCP 8.5 (this is the IPCC scenario relating to the most accelerated sea level rise). Using Figure 4.3 above to relate each sea level scenario to a future time horizon and then using Figure 4.2 to link the time horizon to a projected increase in rainfall, a relationship between each scenario and rainfall intensity factor can be developed. This is outlined in Table 4.2 below.

Table 4.2 Summary of Rainfall Intensity Factors for each Modelling Scenario

Scenario	Projected Year	Rainfall Intensity Factor
Current Sea Level	2020	0
0.3 m Sea Level Rise	2050	1.078
0.5 m Sea Level Rise	2070	1.124
1 m Sea Level Rise	2100	1.189

The modelling assumed that the increase in intensity directly correlated to the same increase in runoff. While this is not the case in all catchments, this assumption generally holds in relatively developed urban catchments. Considering the uncertainty around the current intensity adjustment factors and the variable effects of climate change in general, this approach provides a reasonable approach to undertaking a sensitivity analysis of potential increases in runoff due to increases in rainfall intensity brought about by climate change.

4.4 Catchment Imperviousness

Impervious areas within the various catchments modelled using TUFLOW are expected to increase due to development and will result in greater stormwater runoff.

Increases in impervious area adopted to model changes in peak flow due to ongoing development were the same as those used in the SWMM modelling as outlined in Section 3.8.3.

4.5 Hydrological Analysis

The Gillman, West Lakes and Local Catchments have previously been divided into subareas draining to each inlet of the underground drainage system. Hydrographs from each of these subareas were generated using the time-area method with an ILSAX type runoff model using subarea specific direct, supplementary and pervious area proportions and times of concentration. Losses applied to the pervious areas are shown in

Table 4.3 below. Rainfall data used for modelling flooding associated with the sea level rise scenarios was factored in accordance with data provided in Section 4.3.2.

Table 4.3 Summary of Loss Parameters

Parameter	Unit	Value
Paved (impervious) area depression storage	mm	1
Supplementary area depression storage	mm	1
Pervious area depression storage for urban areas (Initial loss, IL)	mm	45
Continuing loss	mm/hr	3

For the Patawalonga catchment, a RORB model was used to calculate inflows to the system from Brown Hill Creek and the Sturt River in a 1 yr ARI event. The model was derived from data contained in the Patawalonga Lake Level Frequency Study (AWE,2006). The remaining inflows for the Patawalonga model were calculated using lumped catchment DRAINS models for each of the main inflows. These models were based on ILSAX models of the Adelaide Airport and Cowandilla / Mile End Catchments prepared for the design of the Cowandilla – Mile End Drain Upgrade (Tonkin, 2004).

4.6 Modelling

4.6.1 Gillman TUFLOW Modelling

The aim of urban floodplain modelling in TUFLOW for this system was to determine the impact of sea level rise, increasing rainfall intensity and increasing initial water levels on flooding within the Gillman basins and upstream catchments.

Floodplain modelling of this catchment was previously undertaken for the Torrens Road Stormwater Management Plan (Tonkin, 2015a). This model was used for the current investigation, with adjustment of inflow hydrographs, initial water level and tidal boundary conditions to reflect the various climate change scenarios that were modelled.

The impact of possible development within the Gillman area was also modelled, to determine desirable development extents, required changes in the numbers of outlet gates and changes to the configuration of the system.

Modelling of each flood event was undertaken such that the tide was timed to rise with the rising water level in the basin system. This simulates the situation where the beginning of the main storm outflow coincides with the rise of the first high tide, a situation which is most likely to result in the highest flood level in the upstream storage.

The model was run with the 100-year ARI storm event in combination with a Mean High Water Springs tide cycle. As described above, the following four sea-level rise scenarios were considered:

- Current Sea Level
- 0.3 m Sea Level Rise
- 0.5 m Sea Level Rise
- 1 m Sea Level Rise

4.6.2 West Lakes TUFLOW Modelling

The aim of urban floodplain modelling in TUFLOW for this system was to determine the impact of sea level rise, increased rain intensity and increasing initial Lake water levels on flooding within West Lakes and the surrounding areas.

Urban floodplain modelling of West Lakes was undertaken by amalgamating five TUFLOW models of catchments contributing flows into West Lakes. These were previously completed for the City of Charles Sturt. These models include West Lakes (Tonkin, 2009), Port Road (Tonkin, 2005b) Trimmer Parade (Tonkin, 2005c), Meakin Terrace (Tonkin, 2005c) and Henley Grange (Tonkin, 2005c). Catchments for these models are shown in Figure 4.4 below.

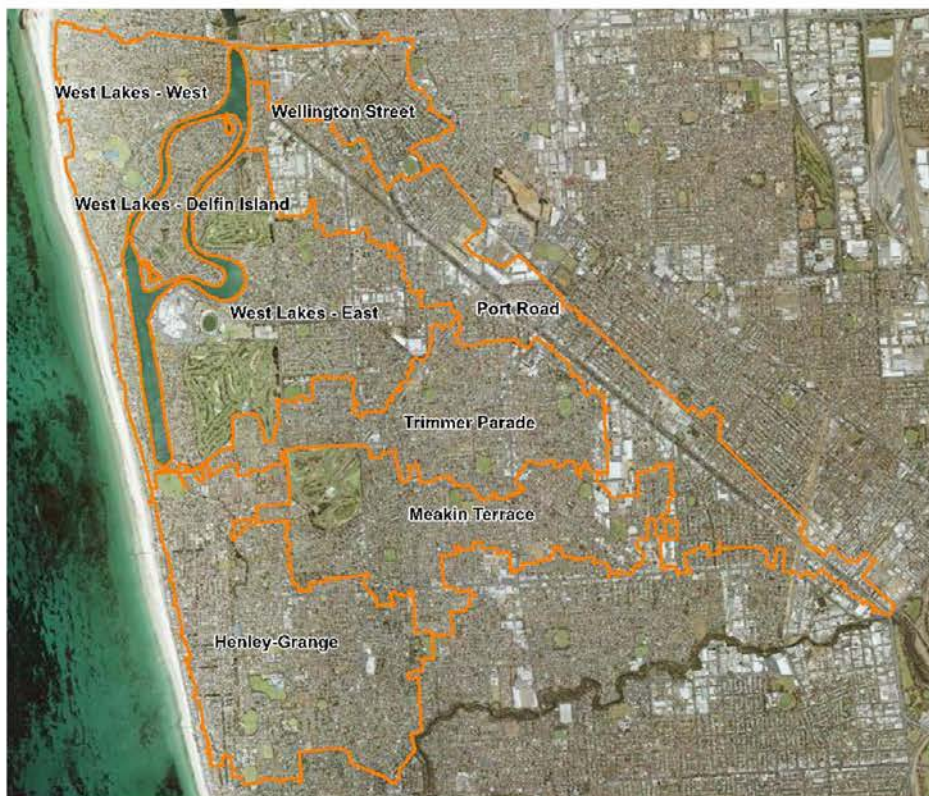


Figure 4.4 Main Catchments Contributing Stormwater to West Lakes

The Port Road stormwater system has undergone significant upgrades in recent years. These upgrades are continuing at the present time. The Port Road model used in this project incorporates a number of basins and pipe upgrades along Port Road as proposed in the Stormwater Management Plan for the catchment.

The City of Port Adelaide Enfield provided a DRAINS model of the Wellington Street catchment which discharges into West Lakes via a pumped outlet. Inflows to West Lakes from the Wellington Street pump were directly applied to the Lake to ensure the impact of flows from this catchment on flood levels within the Lake were modelled. Localized flooding within this catchment has not been modelled in TUFLOW.

West Lakes was assumed to have an invert of -2 mAHD in the absence of accurate lake bathymetry. This invert is based on the level of the outlet gates. The assumed invert will have no impact on projected flood levels as the initial water level determines the Lake's capacity to store stormwater runoff.

Modelling of each flood event was undertaken such that the tide was timed to rise with the rising water level in the Lake system. This simulates the situation where the beginning of the main storm outflow coincides with the rise of the first high tide, a situation which is most likely to result in the highest flood level in the upstream storage.

The model was run for a 100-year ARI storm event in combination with a Mean High Water Springs tide cycle. As described above, the following four sea level rise scenarios were considered:

- Current Sea Level
- 0.3 m Sea Level Rise
- 0.5 m Sea Level Rise
- 1 m Sea Level Rise

4.6.3 Local Catchments TUFLOW Modelling

The aim of urban floodplain modelling in TUFLOW was to determine the impact of sea level rise and increased rainfall intensity on flooding of localized low-lying catchments. The three catchments identified for investigation were low lying areas around Gilmore Road, Henley Beach Road and Illuka Place.

The low-lying area near Gilmore Road and Henley Beach Road lies within City of Charles Sturt Patawalonga Catchment model (Tonkin, 2012). The low-lying area near Illuka Place was analysed as part of the West Lakes modelling.

The model for each catchment was run for a 100-year ARI storm event in combination with a Mean High Water Springs tide cycle. The catchments were also analysed for a 1-year ARI storm in combination with a 100-year ARI tide cycle. Storms ranging from a 1 hour to a 9 hour duration were considered.

The following four sea-level rise scenarios were considered:

- Current Sea Level
- 0.3 m Sea Level Rise
- 0.5 m Sea Level Rise
- 1 m Sea Level Rise

4.6.4 Patawalonga TUFLOW Modelling

The aim of modelling using TUFLOW for this system was to determine the impact of sea level rise, increased rain intensity and increasing initial water levels on flooding within the

Patawalonga system and surrounding areas. Flood modelling of the Patawalonga was undertaken using inflows from the catchments shown in Figure 4.5 below.

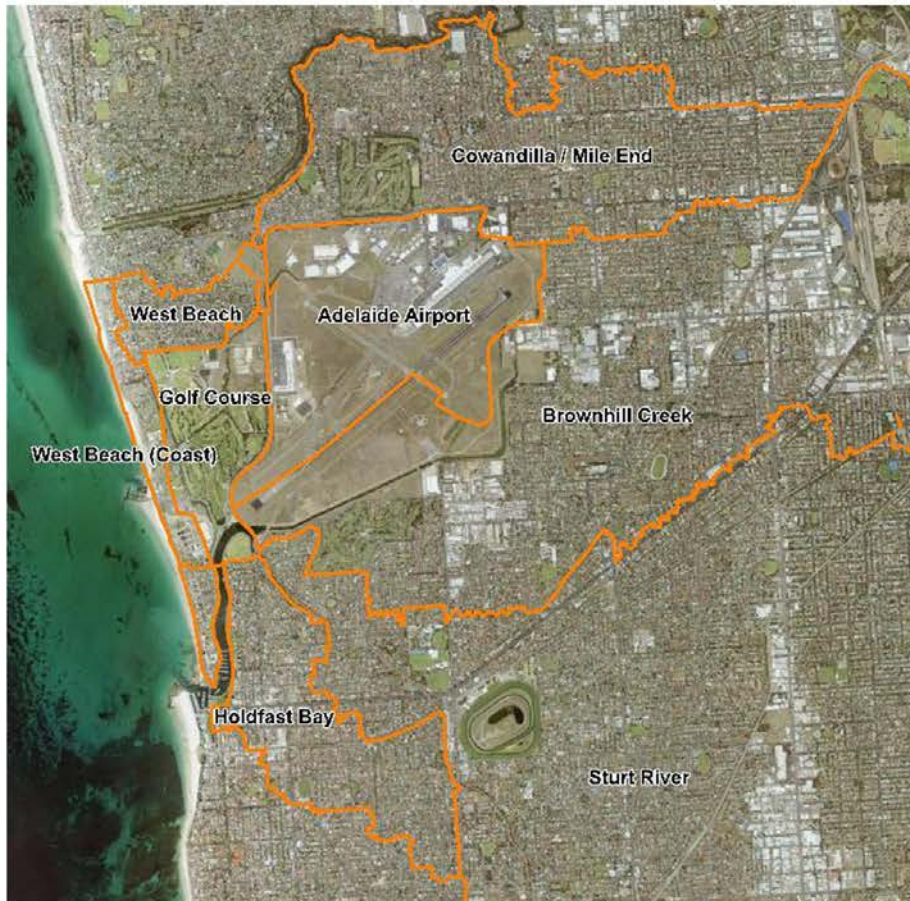


Figure 4.5 Main Catchments Contributing Stormwater to the Patawalonga

The TUFLOW model of the Patawalonga covered the urban catchments draining directly into the Lake from the City of Holdfast Bay. The model extended north to cover areas within the suburb of West Beach, as well as the Cowandilla Mile-End outfall downstream of Sir Donald Bradman Drive. The most eastward extent of the model was along Brown Hill Creek to the drop weir at Morphett Road.

Inflow hydrographs from the main upstream catchments were applied at the boundaries of the model at Donald Bradman Drive (Cowandilla – Mile End system), Morphett Road (Brown Hill Creek system), the outfall channels from the Airport and at the upstream end of the Sturt River weir (Sturt River system).

The model included walls along the northern side of the Mile End-Cowandilla Drain upstream of West Beach Road (top level 3.0 mAHD), as well as the recently constructed West Beach Ponding Basin and pumps.

The Patawalonga Lake was assumed to have an invert of -1.8 mAHD in the absence of accurate lake bathymetry. This level was based on design drawings for the Lake.

The behaviour of the Patawalonga Lake is different to the systems at Gillman and West Lakes, both of which have significant storage to buffer the effects of a small flood in combination with an extreme tide. The peak flood levels in these systems are more likely to be caused by large floods in combination with moderate tides, the modelling of which has been described above. Due to the lack of storage, the Patawalonga, is likely to be most severely impacted by an extreme tide in combination with a small amount of rainfall.

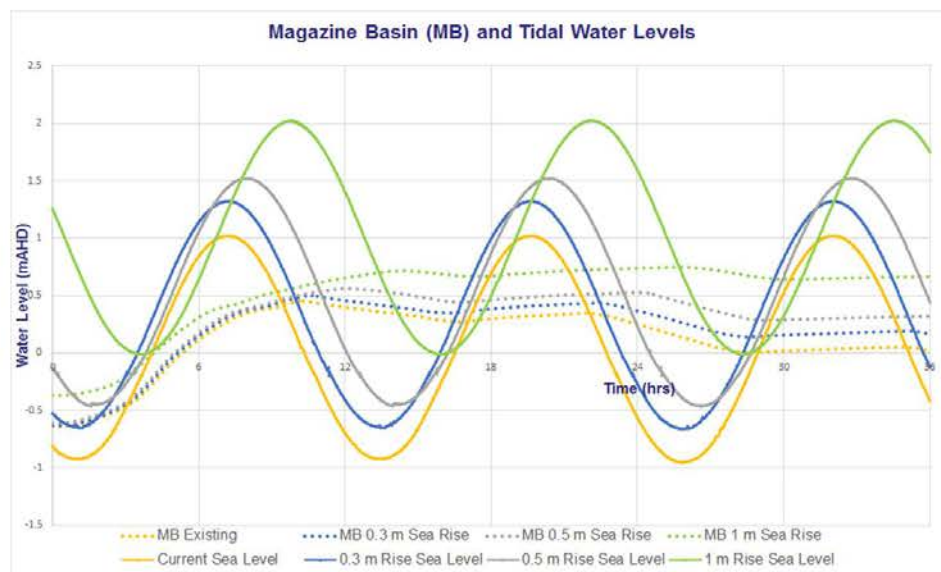
To simulate the effects of such an event, the TUFLOW model was run for a 1-year ARI storm event in combination with a 100-year tide cycle. Storms ranging from a 1 hour to a 36 hour duration were considered in combination with the following sea-level rise scenarios:

- Current Sea Level
- 0.3 m Sea Level Rise
- 0.5 m Sea Level Rise
- 1 m Sea Level Rise

4.7 Results

4.7.1 Gillman System

The TUFLOW modelling has indicated that a 36 hour duration storm will produce the peak water level in the Gillman Basins for the 100-year ARI event. Figure 4.6 below shows the modelled relationship between the sea level, Magazine Creek wetland water level and Magazine Creek Basin water level in the critical event.



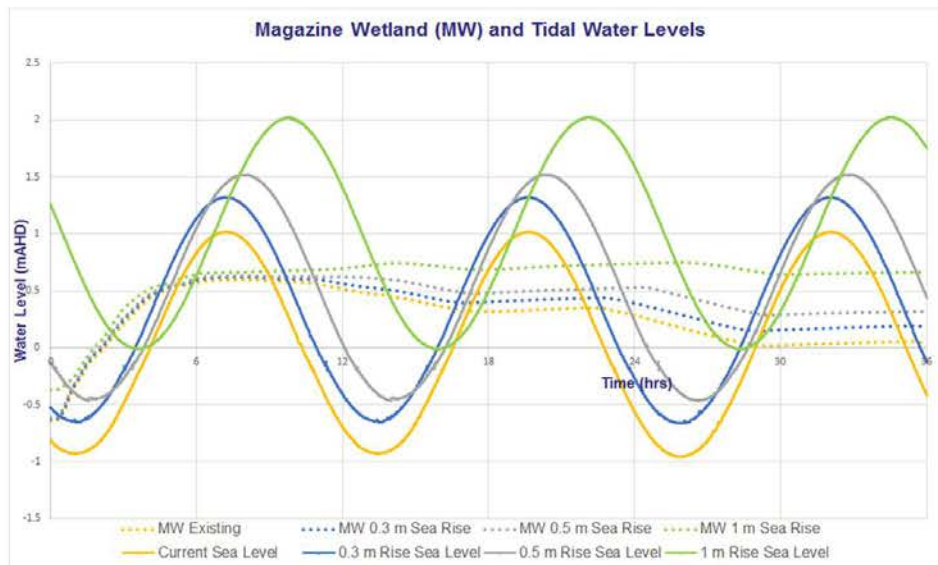


Figure 4.6 Gillman Stormwater - Tide Interaction - 36hr event

Data from Figure 4.6 was analysed to extract the peak water level reached in the Magazine Creek wetland and the Magazine Creek basin under the various sea level rise scenarios investigated. This data is shown in Figure 4.7 below. Of note is the current difference in peak water level in both basins. Peak flood levels in the Magazine Creek wetland will govern flooding in the upstream catchment. The modelling has shown that the peak flood level reach in the wetland is relatively unaffected by sea level rises up to 500 mm, with most of the impact of these rises in sea level being taken up by increasing flood levels in the Magazine Creek Basin downstream of the wetland.

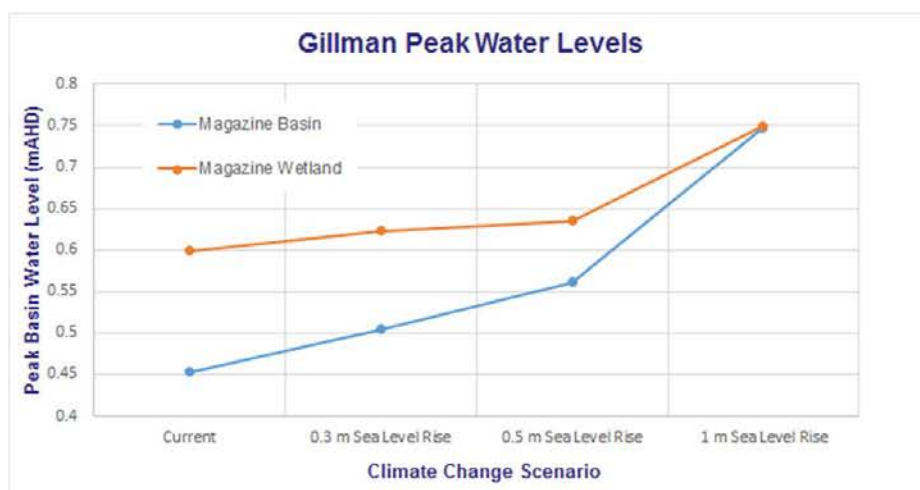


Figure 4.7 Sea Level Rise Impacts on 100-year ARI Gillman Peak Water Levels

For sea level rises above 500 mm, the impact on Magazine Creek wetland flood levels is more significant. The modelling has indicated that 1 metre of sea level rise will result in the 100-year ARI peak water level in the Magazine Creek Basin to rise by 300 mm and the 100-year ARI peak water level in the Magazine Creek wetland to rise by 150 mm.

The higher 100 year ARI flood level in the Gillman system will cause some increased flooding upstream of the basins. Appendix A contains flood maps showing the impact of rising sea levels on flooding around the Gillman basin system.

Under all the scenarios investigated, flood levels in the Range wetland and further upstream are relatively unaffected by sea level rise, primarily due to their higher level and the fact that they are currently isolated from Magazine Creek by a dividing bank and blocked outlet pipe. The impact of unblocking the existing outlet was investigated and found to have a minimal impact on 100 year ARI flood levels due to its relatively limited capacity.

4.7.2 Gillman Development

Development of the Gillman area has been proposed including filling within the area currently used for flood storage. Investigations have previously been undertaken for Renewal SA to examine the impact of this development on flood levels and to develop a strategy to mitigate these impacts. The proposed management strategy involved:

- Limiting the extent of filling within the current ponding areas;
- Upgrading the Magazine Creek outlet gates and improving the capacity of the channel downstream of the Magazine Creek wetland;
- Separating the Magazine Creek and Range Basins to allow floodwaters to pond to a greater level in the Range Basin;
- Constructing a new outlet for the Range Basin

These works are described in the current Gillman Masterplan prepared by Renewal SA. At the time this strategy was developed, it had been assumed that the starting water level in the Magazine Creek system would be unaffected by sea level rise.

Work undertaken for this current Study has shown that average water levels in the Gillman system are likely to increase as a result of sea level rise (refer Section 3.12.1). The proposed management strategy has therefore been reviewed by adjusting the proposed maximum extents of filling to create additional flood storage to offset this increase. Modelling of the adjusted extents of filling was undertaken in TUFLOW for the various sea level rise scenarios, with the peak water level plotted in Figure 4.8 below.

The maximum extents of filling and gate upgrade requirements as determined by the modelling is outlined in Section 6.2.1 below with the other climate change mitigation options. With these filling and gate upgrade constraints, all sea level rise scenarios up to a 1 m increase will have negligible or no adverse impact on water levels upstream of the Magazine Creek wetlands in comparison to the existing configuration.

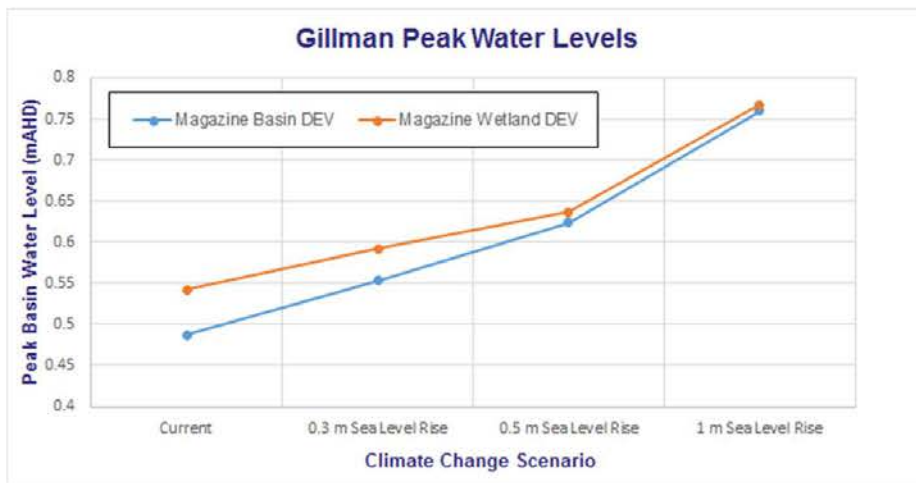


Figure 4.8 Sea Level Rise Impacts on 100-year ARI Gillman Peak Water Levels – With Gillman Development and Mitigation Strategies

4.7.3 West Lakes System

The TUFLOW modelling has indicated that a 36 hour duration storm will produce the peak water level in the West Lakes system for the 100-year ARI event. Figure 4.9 below shows the modelled relationship between the sea level and West Lakes level in the critical event.

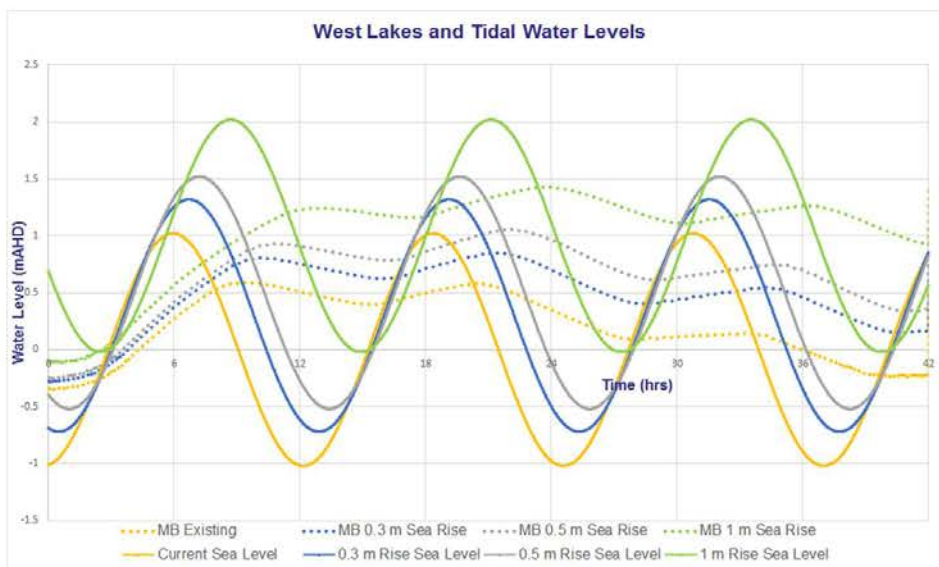


Figure 4.9 West Lakes Stormwater – Tide Interaction – 36hr event

Figure 4.10 below indicates the peak 100 year ARI water level reached in West Lakes in the critical event for each of the sea level rise scenarios considered. The modelling has indicated

that a metre of sea level rise causes the 100-year ARI peak water level in West Lakes to rise by 840 mm.

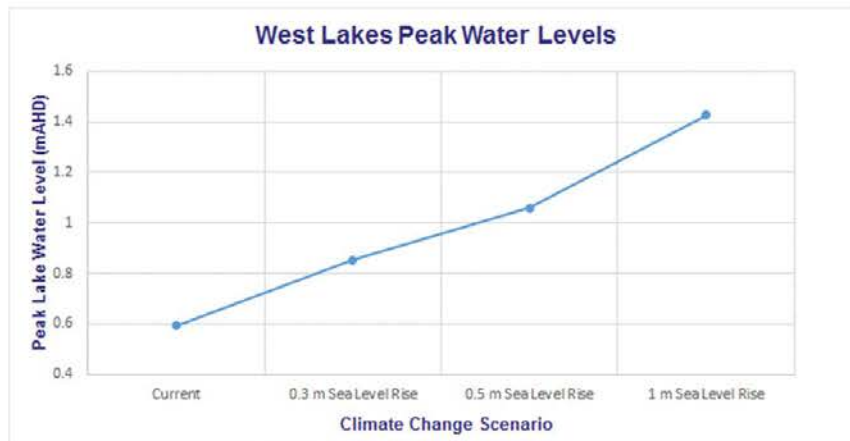


Figure 4.10 Sea Level Rise Impacts on 100-year ARI West Lakes Peak Water Levels

The higher flood levels in West Lakes will cause increased flooding around the Lake, especially for the 1 m sea level rise scenario. The lowest point around the Lake is at a level of approximately 1.2 mAHD. Appendix B contains flood maps showing the impact of the higher flood levels.

4.7.4 Local Catchments

Modelling of the Henley Beach Road and Gilmore Road catchments indicated that in the scenario of the 100-year tide combined with 1-year ARI storm, there is a small increase in flooding, mainly on East Terrace with 1 m of sea level rise. The flood maps and a summary of modelling scenarios are provided in Appendices C.1 to C.4.

Modelling of the Henley Beach Road and Gilmore Road catchments indicated that in the scenario of a MHWS tide cycle combined with 100-year ARI storm, there is a moderate increase in flooding, mainly along Military Road and East Terrace. The flood maps and a summary of modelling scenarios are provided in Appendices C.5 to C.8.

Modelling of the Iluka catchment indicated only small increases in flooding for the various scenarios examined. The flood maps and a summary of modelling scenarios are provided in Appendices C.9 to C.16.

4.7.5 Patawalonga System

The TUFLOW modelling has indicated that for current conditions, a 3 hour duration storm event will produce the peak water level in the Patawalonga Lake for the 1-year ARI event coinciding with a 100 year ARI tide. In all three sea level rise scenarios, the Lake capacity will be exceeded with a 100 year ARI tide coinciding with a 1 year ARI rainfall event. The critical storm duration for these scenarios was a 12 hour event.

Figure 4.11 below demonstrates the modelled relationship between sea level and the Patawalonga Lake water level in the 12 hour event. For the 3 hour event with current sea levels, a slightly higher peak water level in the lake of 2.14 mAHD was produced (cf 2.01 mAHD for the 12 hour event).

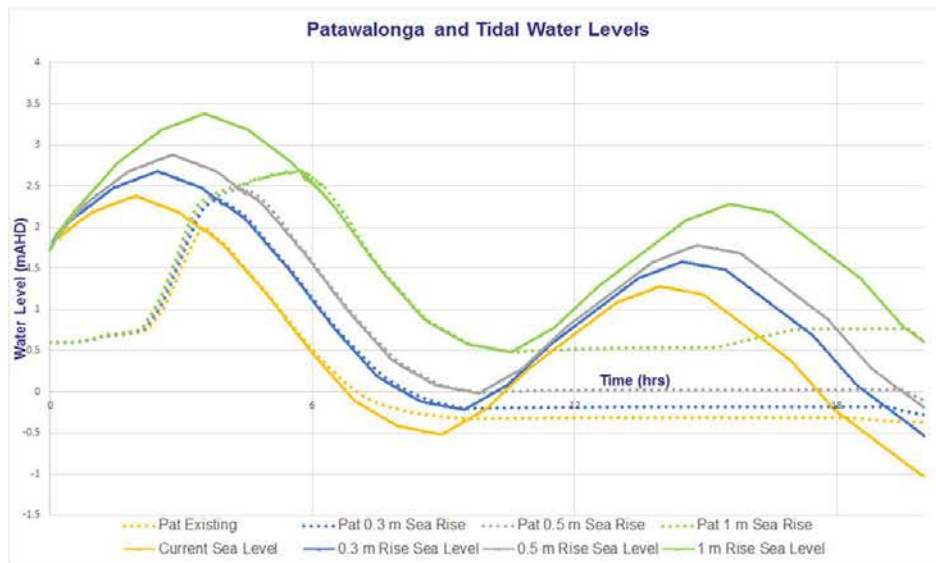


Figure 4.11 Patawalonga Lake Stormwater - Tide Interaction – 3hr event

Figure 4.12 below provides the peak water levels in the Patawalonga Lake for the various sea level rise scenarios analysed using TUFLOW. The modelling has indicated that 1 metre of sea level rise will cause the peak water level in the Patawalonga to rise significantly if a 100 year ARI tide were to coincide with a 1 yr ARI rainfall event. Such an event will cause extensive flooding within Glenelg North, east of the Sturt River, within the City of Holdfast Bay.

Areas within the City of West Torrens appear to be less effected by the increase, with the greatest impact being within the West Beach Golf Course.

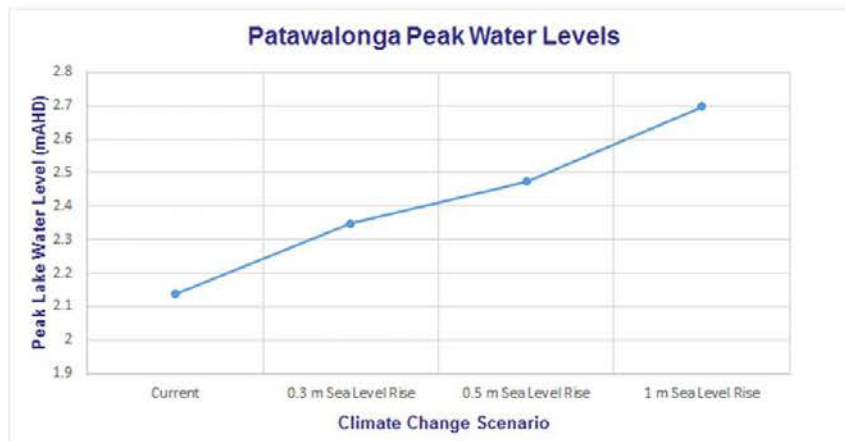


Figure 4.12 Sea Level Rise Impacts on Peak Patawalonga Flood Levels for a 100 yr ARI Tide in Combination with a 1 yr ARI Rainfall Event

Appendix B contains flood maps and a summary of the modelling scenarios showing the impact of sea level rise on flooding around the Patawalonga.

5 Extension of Tidal Inundation Mapping

5.1 Background

Extension of tidal inundation mapping from the Port Adelaide Seawater Flooding Study (Tonkin, 2005a) was undertaken to project inundation levels into the City of Charles Sturt. This process was undertaken by determining tidal inundation levels just north of the council boundary and then projecting these uniformly across the City of Charles Sturt area. This type of analysis will produce a conservative assessment of flooding caused by high tide as it does not take into account the attenuation of flows due to storage effects.

The Port Adelaide Seawater Flooding Study modelled three sea level rise scenarios as listed below and shown in Figure 5.1.

- S1 (yellow): 0.3 m sea level rise, 50 years of land subsidence
- S3 (green): 0.5 m sea level rise, 100 years of land subsidence
- S4 (red): 0.88 m sea level rise, 100 years of land subsidence.



Figure 5.1 Excerpt from Port Adelaide Tidal Inundation Mapping (Tonkin 2005a)

The S1 scenario results suggest that overland flows in this event would not result in significant flooding into the City of Charles Sturt. Under this scenario, inundation appears to be contained to the area north of Bower Road and east of Old Port Road, although some overflow could occur near the intersection of Old Port Road and Frederick Road. The S3 scenario results suggested that north of Bower Road, the inundation would reach a level of 2.2 mAHD. In areas east and west of the West Lakes outlet, floodwaters at such a level will be able to cross into the City of Charles Sturt. The resulting extension of the flood inundation map using S3 flood levels can be found in Appendix E.

It is noted that ongoing development along the Inner Harbour waterfront is being constructed at a level of 3.2 mAHD. This development will act to partly contain high tides to the Port River and

forms part of a sea defence system contemplated in the Port River Seawater Flooding Study to provide protection from extreme tide events, including the impact of sea level rise. The current extent of this development will not prevent the breakout of high tides as shown on the mapping.

6 Adaptation Options

The final part in this investigation has involved the identification of adaptation options to alleviate the adverse effects of climate change on sea water and stormwater flooding. These options have been divided into the following categories:

- Protection – relates to existing, directly threatened assets requiring safeguarding from adverse effects of climate change impacts on sea water and stormwater flooding
- Planning – relates to future development requiring controls to mitigate adverse effects of climate change impacts on sea water and stormwater flooding
- Monitoring – relates to existing or future assets requiring regular checking to progressively assess any potential adverse effects of climate change impacts on sea water and stormwater flooding

The adaptation options are presented below for each Council area.

6.1 Protection Options - City of Port Adelaide Enfield

6.1.1 Magazine Creek Tidal Gate Upgrade

Due to the adverse effects of climate change on the dynamics of the Gillman basin system, the Magazine Creek tidal gates will require upgrading. Incorporating increased rainfall intensities, higher basin initial water levels and higher sea levels due to climate change, the peak 100 year ARI water level at the upstream end of the Magazine Wetland is expected to rise as outlined in Figure 4.7. This will result in an increase in flood risk in the upstream catchment.

From previous site investigations, it appears that the condition of the Magazine Creek Tidal Gates is deteriorating. In the future, these gates will require replacement from a structural perspective as well as a capacity perspective.



Figure 6.1 Existing Gillman Tidal Gates

Three potential *trigger points* are envisaged for the upgrade of the Magazine Creek tidal gates.

The gates should be upgraded when:

- The gates require replacement from a structural perspective. An assessment of any potential required works and timeframes should be undertaken relatively soon as part of this protection option.
- The Gillman site is developed. Any development of the Gillman site which involves filling of the flood storage will require expanding the tidal gates to offset potential storage losses. This is further discussed in Section 6.2.1.
- The increase in Magazine Wetland water levels brought about by rising sea level causes an increase in upstream flood risk as indicated in Figure 4.7. For all scenarios up to the 0.5 m sea level rise, the increase in flood risk in a 100 year ARI event is relatively small, with the Magazine Wetland water level rising by under 50 mm. However, in the 1 m sea level rise scenario, the Magazine Wetland water level increases by approximately 150 mm. It is proposed the gate upgrade occurs before the increase in peak Magazine Wetland water levels exceeds 50 mm in a 100 year ARI event. Hence, once the mean sea level is measured to have risen by 300 - 500 mm (i.e. to the 2050 - 2070 level), a gate upgrade should be considered.

The following *timeframes* are assumed in alignment with the above trigger points as outlined in Table 6.1 below. The base year has been assumed as 2020. The timeframes have been linked to future dates using the analysis in Table 4.2.

Table 6.1 Summary of Potential Timeframes for Magazine Creek Tide Gate Upgrade

Trigger Point	Time Frame (years)	Date Range
Existing Gate Structural Assessment	1-5	2020 - 2025
Gate Replacement (Gillman Development)	5-10	2020 - 2025
Gate Replacement (Increase in flood risk)	30-50	2050 - 2070

The first action will be to undertake a structural assessment to ascertain the remaining life of the existing gates and whether they can be remediated. Depending on the results of this assessment, and the timing of development within Gillman, it may be appropriate to simply replace the existing gates (with provision for future expansion) or to undertake replacement with a partial increase in capacity (say to cater for 300 mm sea level rise with development of Gillman).

6.1.2 Port Adelaide Sea Wall

Inundation of properties by sea water flooding around the Port River has been previously modelled and investigated by Tonkin Consulting (Tonkin, 2005a). An outcome of these investigations was the identification of the need for upgrading the existing sea defences between Outer Harbour and Gillman to protect the area from tidal flooding. A subsequent more detailed investigation of proposed sea defences was undertaken which included an examination of land requirements, environmental considerations including protection and enhancement of the existing mangrove and samphire communities near the wall alignment, implications for planning policy and engineering requirements was undertaken with the outcomes contained in the Port Adelaide River Sea Wall Study (Tonkin, 2013).

A summary of the recommended seawall levels is found in Table 6.2 below.

Table 6.2 Summary of Required Sea Wall Levels

Sea Wall Protection Time Frame	Inner Harbor (mAHD)	Outer Harbor (mAHD)	Gillman (mAHD)
2050	3.4	3.3	3.7
2100	4.1	4	4.4

Inner Harbor seawall levels are slightly higher than Outer Harbor levels to account for Inner Harbor tidal amplification. Gillman seawall levels are recommended higher again to account for predicted long-term land subsidence.

It is understood that the City of Port Adelaide Enfield has implemented mechanisms within its Development Plan to ensure land is reserved for the construction of this wall in the future. However, responsibilities for funding any works and coordinating the construction have not been resolved.

Construction of the entirety of this seawall is critical to the protection of assets around both Inner Harbour and Outer Harbour in Port Adelaide as well as protecting the Gillman area and preventing sea water entering the City of Charles Sturt. A funding and construction plan needs to be developed between relevant stakeholders to ensure the full construction of the sea wall and hence protection of affected assets.

Recent and historical tidal flooding within the Port Adelaide Inner Harbor area, highlights the importance of establishing responsibilities for construction of the wall, particularly in this area. This option is therefore considered to be of high importance. Consequently, the *trigger point* has been assumed to have already been reached and the *timeframe* for funding arrangements to be finalized and works to be planned and begin should be in the 1-5 year timeframe, which correlates to 2020-2025.

6.2 Planning Options - City of Port Adelaide Enfield

6.2.1 Gillman Development

It is anticipated that the general area around the current Gillman basins will undergo significant development. This has the potential to significantly reduce the amount of storage within the basins. Consequently, based on modelling results from Section 4.7.2, any filling into the basin area associated with any development should be limited, the Gillman tidal gates should be upgraded at the Magazine Creek outlet, the Range and Magazine Creek basins should be separated and a new Range Creek outlet should be constructed.

Development extents in the Gillman area should not exceed the boundaries marked in Figure 6.2 below as determined by modelling undertaken as a part of this investigation. The development should also involve some channel works to improve flow through the area.

An upgrade of the existing outlet gates will be required. There are currently three rectangular tide gates at the Magazine Creek outlet which are 2.44 m wide, 1.52 m high and 6 m long. Modelling has suggested that nine of the same sized gates will be required to offset the development impacts of encroaching into the existing basin area as outlined in Figure 6.2 above. Additionally, two new gates, 1.8 m wide by 0.9 m high, will be required at the new Range Creek outlet.

Any final development planning should involve modelling of proposed fill and upgraded gate systems to determine the extent of flood impact. There may be some scope to reduce gate upgrade requirements, depending on the final design of the development.

In addition to the above, the development will need to implement measures to provide protection from seawater flooding in accordance with the Coast Protection Board requirements. This would most logically involve the raising of the existing seawall along the northern boundary of the area.

The *trigger point* and *timeframe* for this planning option will be determined the rate of sale and development of the land.



Figure 6.2 Limit of Development within Gillman Site

6.2.2 Port Adelaide Sea Wall

Current planning regulations for developments around the Port River are based on recommended sea wall levels for a sea level rise scenario corresponding to the year 2050 as found in Table 6.2. However, existing regulations also ensure sufficient provision is made to allow sea defences to be modified to provide protection for up to 1 m sea level rise.

The main long-term planning consideration relates to the timeframe under which a higher sea wall defence level is chosen. The *trigger point* to raise the planning requirements for the sea wall above the 2050 level is recommended to be based on mean sea level. Once mean sea level rises up to 300 mm (i.e. to the 2050 level), a higher sea wall level is to be recommended by planners. Based on current modelling this would likely occur over a long-term *timeframe* of 10-30 years, in the years 2030 - 2050.

6.2.3 Floor Level Management

Floodplain maps for the area upstream of the Gillman basins have been produced as part of the Torrens Road Stormwater Management Study. These floodplain maps show flooding of low lying areas in the general area of Rosewater, upstream of the Magazine Creek wetland. Modelling undertaken for this investigation has indicated the potential for flood levels in this area to increase by up to 150 mm as a result of sea level rise.

It is proposed that flood levels for new development in this area should be set with a minimum floor level based on the currently predicted 100 year flood level, plus freeboard, plus an additional allowance of 150 mm to cater for the above increase.

6.2.4 Localized Flooding

While the adverse impacts of climate change on the water levels within the Gillman basin system can be mitigated by upgrades in the tidal gates, increased flash flooding of all catchments across the council area due to increased rainfall intensity needs to be considered in the long term. Consequently, as Stormwater Management Plans are revised the effects of increased rainfall intensity should be considered. This planning should involve a vulnerability and damage assessment of specific critical assets as part of any hazard analysis.

6.3 Monitoring Options - City of Port Adelaide Enfield

6.3.1 Gillman Culvert System

Currently the Gillman system has a pipe and flap gate at the downstream end of the Range Basin within the tidal wall as outlined in Section 3.9.1. However, it appears from site visits that this is currently blocked and will not allow any stormwater outflow.

It is recommended that better monitoring and maintenance is undertaken of the existing stormwater system, as well as of any development stormwater system. This will ensure the system will operate as designed which could potentially reduce flooding in the Gillman area. There is no recommended *trigger point* for this option as it should be implemented immediately, so the assumed *timeframe* for this option is around 1-5 years, in the years 2020 - 2025.

6.3.2 Stormwater Flow Monitoring

One of the most significant unknowns within the modelling, has been the estimation of the impact of increasing development on runoff. It is recommended that flow gauging stations be constructed on the Eastern Parade and Hanson Road drains to enable monitoring of changes in flow with time.

6.4 Protection Options - City of Charles Sturt

6.4.1 Water Quantity - West Lakes Tidal Gate Upgrade

Modelling has shown that increased rainfall intensities, rising average water levels and higher sea levels due to climate change, will increase the peak 100 year ARI flood level in West Lakes. The impact has been shown in Figure 4.10. This will result in an increase in flood risk in the upstream catchment.

In order to mitigate the impact of sea level rise on the peak 100 year ARI water level, an increase in size of the Bower Road outlet could be undertaken. Increasing the gate size will result in more water being able to be discharged from the lake during flood events when the tide is sufficiently low for outflows to occur. This could be used to offset the impact of higher tide levels, higher average lake levels and increased runoff associated with climate change.

The *trigger point* for investigation for the gate upgrade is recommended to be based on mean sea level. Once the mean sea level is measured to have risen by 300 mm (i.e. to the 2050 level), a gate upgrade should be considered by operators, as at this point the peak water level in West Lakes potentially will have risen by around 260 mm. This correlates to a lake peak water level of approximately 0.85 mAHD which is still well below the top of the lake. Based on current modelling this would likely occur over a *timeframe* beyond 30 years, in the years beyond 2050.

6.4.2 Water Quality - West Lakes Pumping Option

SWMM modelling of the long term behaviour of West Lakes as outlined in Figure 3.23 has demonstrated that flushing of the lake decreases to the point that with 1 m sea level rise, flushing will not occur. It is envisaged that installation of a pump combined with altered lake operating rules will be required to flush the lake.

It should be also noted that to assist in managing water quality issues, the operating level of West Lakes could be raised to improve the ability to carry out flushing into the sea. Such an option would decrease the lake storage available for flood storage. Pre-draining before large storms could help manage this, but the pre-draining may not be as effective with higher future sea levels. The flooding impacts associated with operating the lake at a raised level could be offset by an increase in gate size, to enable the Lake to be drained at a faster rate at low tide. This widening would be in addition to the widening required to offset flooding impacts from the rising sea level as discussed in Section 6.4.1.

The *trigger point* for dealing with water quality issues within West Lakes is uncertain on two fronts:

- Uncertainty surrounding the quantity of flushing within the lake currently as well as in the future under different climate change scenarios.
- Uncertainty around measurement of acceptable water quality in West Lakes. DPTI have suggested that phytoplankton levels could potentially be used as a measure of water quality (DPTI, 2014). Clarification of DPTI's measurement of acceptable water quality targets should be undertaken. If necessary DPTI should undertake a study to develop a framework and methodology to quantify water quality targets.

The *timeframe* for the installation of the pump, based on Figure 3.23 appears to be beyond the 30 year timeframe, which correlates to post-2050. This assumes the magnitude of flushing is not significantly decreased by a 0.3 m rise in sea level as, under this tidal regime, the tide still drops well below the low level of the West Lakes operating range.

However, studies relating to the clarification of the water quality trigger points in terms of flushing capacity and water quality should be undertaken in the next 1-5 years, during 2020-2025. This will provide a basis to adequately monitor the lake over the time period up to 2100 and determine the trigger point to plan, cost and upgrade the lake infrastructure with respect to a new pump and intake structure.

6.4.3 Port Adelaide Sea Wall

Construction of the Port Adelaide Inner Harbour sea wall as outlined in Section 6.1.2 will have some benefit to City of Charles Sturt as it provides protection against sea storm surges entering the City of Charles Sturt area. The City of Charles Sturt should be involved in stakeholder discussions relating to construction of this wall as outlined in Section 6.1.2.

6.5 Planning Options - City of Charles Sturt

6.5.1 Floor Level Management

The analysis suggests that assets around West Lakes will likely be able to be protected against the impact of up to a metre of sea level rise by upgrading the Bower Road gates to discharge stormwater in a 100 year ARI event as outlined in Section 6.4.1. Hence, no particular land use planning requirements are currently proposed for the West Lakes area.

6.5.2 Localized flooding

While the adverse impacts of climate change on the water levels within the West Lakes system can be mitigated by upgrades in the tidal gates, increased flash flooding of all catchments across the council area due to increased rainfall intensity needs to be considered in the long term.

Consequently, as Stormwater Management Plans are revised the effects of increased rainfall intensity should be considered. This planning should involve a vulnerability and damage assessment of specific critical assets as part of any hazard analysis.

6.6 Monitoring Options - City of Charles Sturt

6.6.1 West Lakes Water Quality

Overall, it appears that DPTI have an inspection and maintenance schedule for the management of the infrastructure and hydraulics of West Lakes. However, because water quality will likely become an issue over the long-term horizon, it should be ensured that monitoring and recording of the water quality in West Lakes is also undertaken regularly. This will provide data to assess any impacts of climate change on the water quality in West Lakes and provide the basis to determine when augmentation of the lake flushing is required.

6.6.2 Stormwater Flow Monitoring

One of the most significant unknowns within the modelling, has been the estimation of the impact of increasing development on runoff. It is recommended that flow gauging stations be constructed on the main outfall drains into the Lake (at Trimmer Parade and Port Road) to enable monitoring of changes in flow with time.

6.7 Protection Options - City of West Torrens

No specific protection options have been identified within the City of West Torrens as existing development in the Council area appears to be largely unaffected by the impacts of rising sea level.

6.8 Planning Options - City of West Torrens

6.8.1 Patawalonga Creek

A portion of the Patawalonga Creek land south of the suburb of West Beach is within Adelaide Airport. The Airport's 2014 Masterplan (AAL, 2014) has classified this area as the West Beach Precinct. This Precinct is zoned as an area for commercial development as well as an area reserved for a future parallel runway. A second area adjacent to Brown Hill / Keswick Creek is denoted as the Morphettville Precinct and is also been earmarked for future development

The floodplain maps in Appendix D indicate that parts of both these areas will become more susceptible to flooding with future increases in sea level. Any planning and development associated with this land should therefore ensure that consideration is given to setting floor levels (in particular) to provide protection from the impacts of these future increases as well as considering the impacts of loss of flood storage in this area on the ability to contain runoff from small rainfall events that may coincide with an extreme tide.

This planning should be undertaken as soon as possible to ensure future development is compatible with long-term sea level rise. The proposed timeframe for this work is 1-5 years, such that it will occur before 2025.

6.8.2 Glenelg North

The TUFLOW modelling has shown that extensive flooding outside of the Study Area could occur in Glenelg North as a result of a relatively small flood event in combination with an extreme tide and sea level rise.

This flooding cannot be addressed by enlarging the existing gravity driven outlets as it is caused by high tide levels preventing stormwater outflows, resulting in flooding of the low lying areas around the Patawalonga. The affected areas are outside of the area covered by the Adaptwest Climate Adaptation Plan, lying within the City of Holdfast Bay.

Flooding of this area under elevated tide conditions has previously been identified within the Coastal Catchments Stormwater Management Plan, prepared for the Cities of Holdfast Bay and Marion (Tonkin, 2014). The modelling undertaken as part of this current investigation should be provided to the City of Holdfast Bay to assist in the preparation of their Adaptation Plan.

6.8.3 Localized flooding

Increased flash flooding of all catchments across the West Torrens council area due to increased rainfall intensity needs to be considered in the long term. Consequently, as Stormwater Management Plans are undertaken the effects of increased rainfall intensity should be considered. This planning should involve a vulnerability and damage assessment of specific critical assets as part of any hazard analysis.

6.9 Monitoring Options – Patawalonga Lake

The Patawalonga Lake is currently managed by DEWNR. Extensive resources are currently directed at monitoring and managing the lake during large rainfall events. The current flow management and monitoring regime is able to track water levels within the Patawalonga system itself, but does not appear to have an accurate measurement of lake inflows. Consequently, upgrades and ongoing maintenance to the flow gauging at the main inlets to the lake is recommended to gain quality inflow data on which to base future works.

There is no recommended *trigger point* for this option as it should be implemented in the short term such that the improved data can be obtained for monitoring and analysis of the system over the next decades. Hence the assumed *timeframe* for this option is around 1-5 years, in the years 2020 - 2025.

7 References

- Adelaide Airport Limited, 2015, *Master Plan 2014*, Adelaide Airport Limited,
- Australian Water Environments, 2006, *Patawalonga Lake Level Frequency Study, Final Report*, Australian Water Environments, Adelaide
- DPTI, 2014, *West Lakes Tidal Flushing System Preliminary Assessment Sea Level Rise Impact*, Department of Planning, Transport and Infrastructure
- United States Environmental Protection Agency, 2016, *Storm Water Management Model Reference Manual*, Ohio, USA
- Southfront, 2016 *Lefevre Peninsula Draft Stormwater Management Plan*, City of Port Adelaide Enfield.
- Tonkin Consulting, 2005a, *Port Adelaide Seawater Flooding Study*, Report 20020477RA3, Tonkin Consulting, Adelaide
- Tonkin Consulting, 2009, *West Lakes TUFLOW Floodplain Modelling*, Report 20060049RA1, Tonkin Consulting, Adelaide
- Tonkin Consulting, 2005b, *Port Road Catchment TUFLOW Floodplain Modelling*, Report 20050210RA1, Tonkin Consulting, Adelaide
- Tonkin Consulting, 2005c, *Floodplain Mapping Data*, Report 20030699LA2, Tonkin Consulting, Adelaide
- Tonkin Consulting, 2012, *Flood Inundation Mapping Report HEP, Torrens East, Western Coastal & Patawalonga Catchments*, Report 20111158RA1, Tonkin Consulting, Adelaide
- Tonkin Consulting, 2013, *Port Adelaide/LeFevre Peninsula (Phase 2) Port Adelaide River Seawall Study Volume 2 – Engineering Assessment*, Report 20060417RA6B, Tonkin Consulting, Adelaide
- Tonkin Consulting, 2014, *Stormwater Management Plan Coastal Catchments Between Glenelg and Marino*, Report 20100878RA7F, Tonkin Consulting, Adelaide
- Tonkin Consulting, 2004, *Cowandilla-Mile End Outfall Drain Upgrade Drawings*, Tonkin Consulting, Adelaide
- Tonkin Consulting, 2015a, *Torrens Road Catchment Stormwater Management Plan*, Report 20080801RA2, Tonkin Consulting, Adelaide
- Tonkin Consulting, 2015b, *Western Adelaide Region Climate Change Adaptation Plan - Coastal and Inundation Modelling – Phase 1 Report*. Report 20140329R1A. Tonkin Consulting, Adelaide. May, 2015
- Tonkin Consulting, 2015c, *Western Adelaide Region Climate Change Adaptation Plan - Coastal and Inundation Modelling – Phase 2 Report*. Report 20140329R2A. Tonkin Consulting, Adelaide. September, 2015
- URPS, 2016, *AdaptWest Climate Change Adaptation Plan*, UPRS, Adelaide

Appendix A

Gillman Flood Mapping

Appendix A.1 (Gillman Existing Scenario)

Gillman Floodplain Model with:

- Mean High Water Springs (MHWS) tide curve - Existing
- Rainfall Intensity - existing
- 100 year ARI storm event
- Existing mean basin water level set as initial water level
- Storm Duration 1hr to 36 hr (36 hr critical for basin level)
- Results show existing flood impact of this event on the downstream end of the Torrens Road catchment. Flooding is caused in the immediate catchment upstream of the basins where water is unable to enter the drainage systems. Flooding also occurs in the existing Gillman Basin system which stores stormwater until it can discharge to sea. Due to the size of the basin system and upstream catchment, the greatest flooding extents are caused by high volume events (critical event is 36 hours) which take over two tide cycles for the system to start to significantly lower stormwater levels in the basin system.
- Associated mitigation option: Magazine Creek Tidal Gate Upgrade (Section 6.1.1)

Appendix A.2 (Gillman 2050 Scenario)

Gillman Floodplain Model with:

- Mean High Water Springs (MHWS) tide curve - 0.3 m tide rise
- Rainfall Intensity - 2050
- 100 year ARI storm event
- 2050 mean basin water level set as initial water level
- Storm Duration 1hr to 36 hr (36 hr critical for basin level)
- Results show a slight increase in flood impact of this event with a 0.3 m tide rise on top of the existing MHWS Tide Curve. Both the basin and the Torrens Road catchment directly upstream have slightly greater flood extents. This is because the higher tide prevents stormwater exiting the basin for a longer period, and hence more volume is required to store this water. As a result, the basin peak water level is slightly higher. Higher water levels in the basin system cause slightly more flooding in catchments around the basin as water cannot drain away as quickly. It should be noted there will also be some more flooding in the upper catchment due to the increase in rainfall intensity in this scenario.
- Associated mitigation option: Magazine Creek Tidal Gate Upgrade (Section 6.1.1)

Appendix A.3 (Gillman 2070 Scenario)

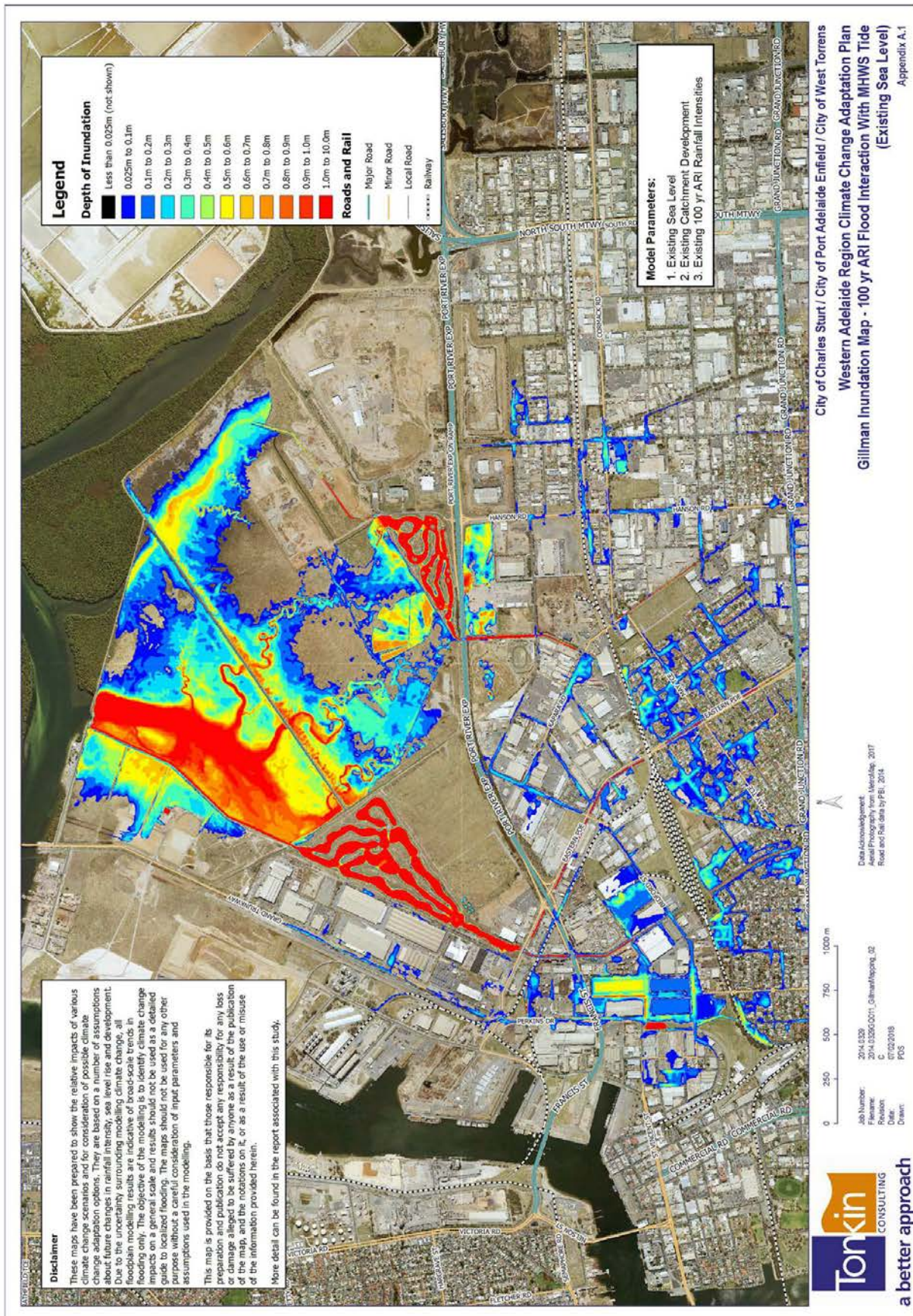
Gillman Floodplain Model with:

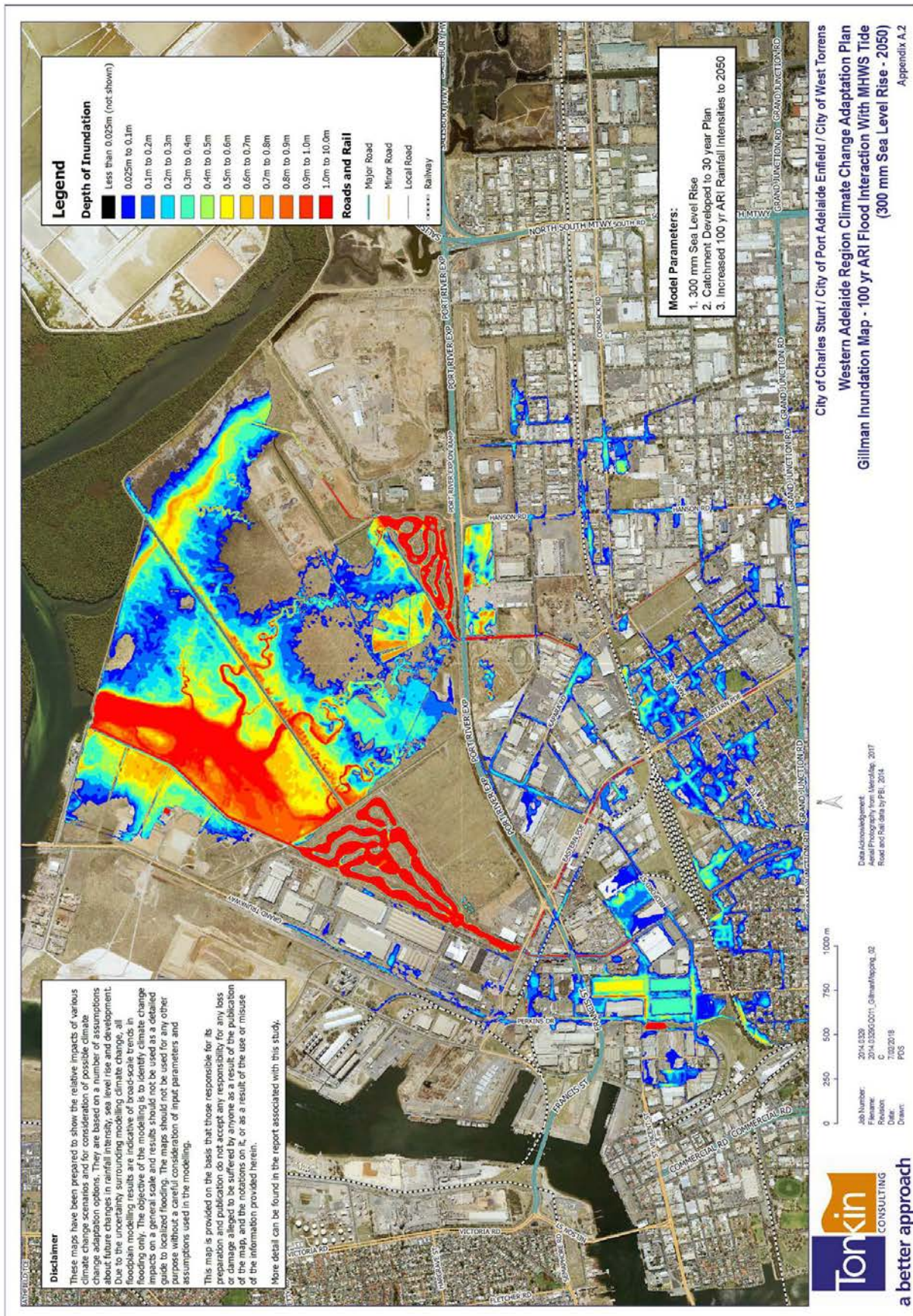
- Mean High Water Springs (MHWS) tide curve – 0.5 m tide rise
- Rainfall Intensity - 2070
- 100 year ARI storm event
- 2070 mean basin water level set as initial water level
- Storm Duration 1hr to 36 hr (36 hr critical for basin level)
- Results show a noticeable increase in flood impact of this event with a 0.5 m tide rise on top of the existing MHWS Tide Curve. Both the basin and the Torrens Road catchment directly upstream have slightly greater flood extents. This is because the higher tide prevents stormwater exiting the basin for a longer period, and hence more volume is required to store this water. As a result, the basin peak water level is slightly higher. Higher water levels in the basin system cause slightly more flooding in catchments around the basin as water cannot drain away as quickly. It should be noted there will also be some more flooding in the upper catchment due to the increase in rainfall intensity in this scenario.
- Associated mitigation option: Magazine Creek tidal gate upgrade (Section 6.1.1)

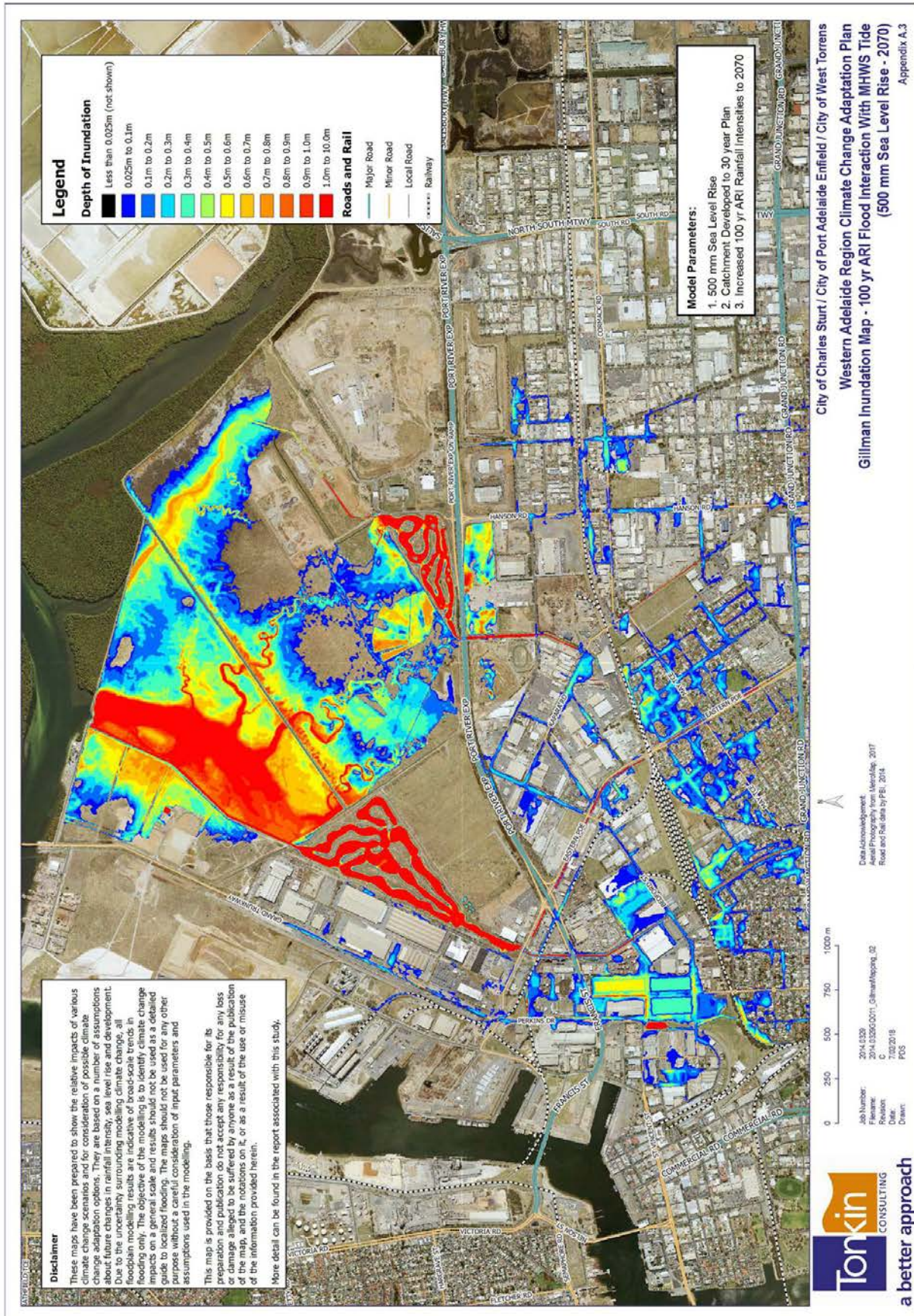
Appendix A.4 (Gillman 2100 Scenario)

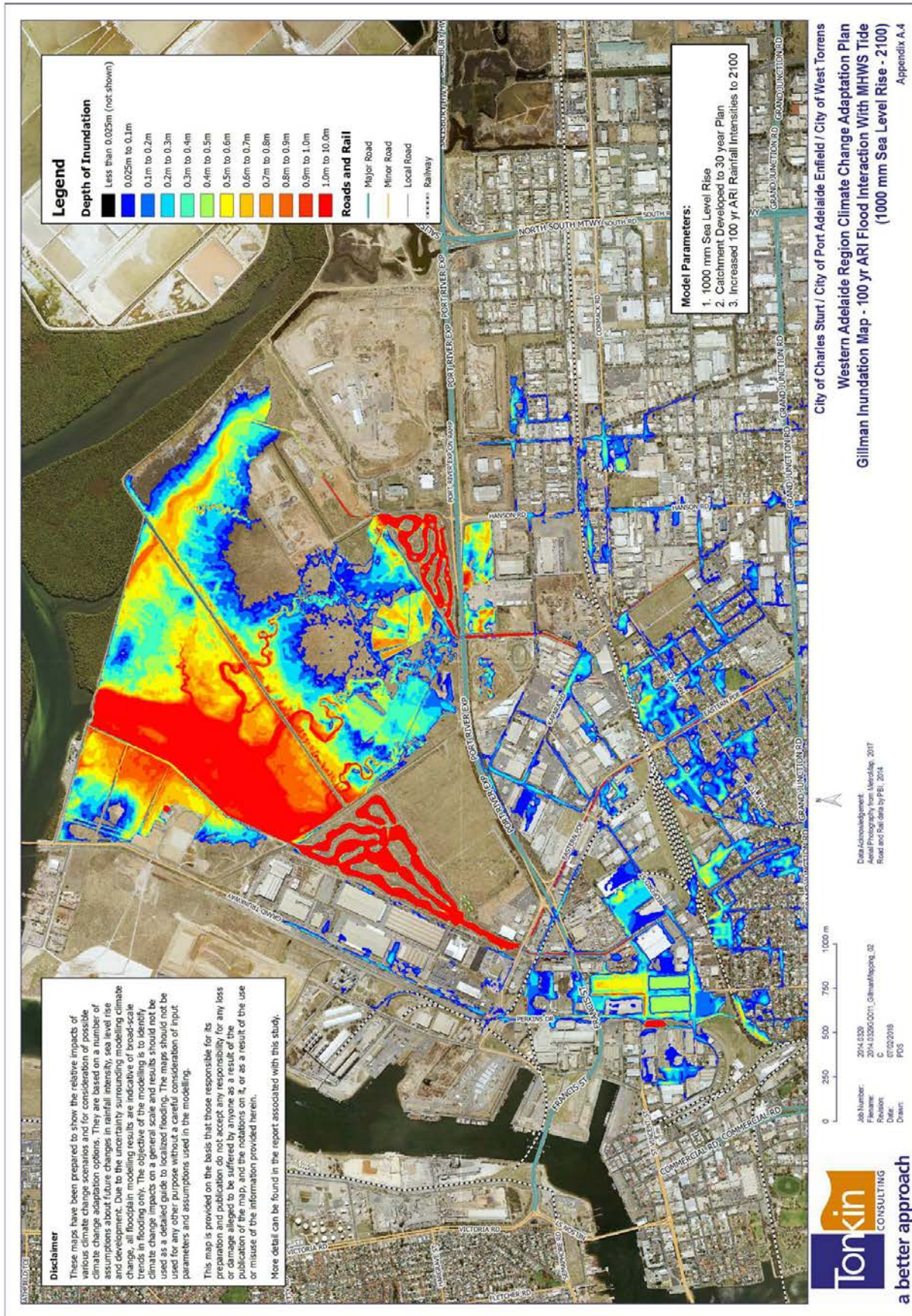
Gillman Floodplain Model with:

- Mean High Water Springs (MHWS) tide curve – 1 m tide rise
- Rainfall Intensity - 2100
- 100 year ARI storm event
- 2100 mean basin water level set as initial water level
- Storm Duration 1hr to 36 hr (36 hr critical for basin level)
- Results show a moderate increase in flood impact of this event with a 1 m tide rise on top of the existing MHWS Tide Curve. Both the basin and the Torrens Road catchment directly upstream have slightly greater flood extents. This is because the higher tide prevents stormwater exiting the basin for a longer period, and hence more volume is required to store this water. As a result, the basin peak water level is slightly higher. Higher water levels in the basin system cause slightly more flooding in catchments around the basin as water cannot drain away as quickly. It should be noted there will also be some more flooding due to the increase in rainfall intensity in this scenario.
- Associated mitigation option: Magazine Creek Tidal Gate Upgrade (Section 6.1.1)









Appendix B

West Lakes Floodplain Mapping

Appendix B.1 (West Lakes Existing Scenario)

West Lakes Floodplain Model with:

- Mean High Water Springs (MHWS) tide curve - existing
- Rainfall Intensity - existing
- 100 year ARI storm event
- Existing mean lake water level set as initial water level
- Storm Duration 1hr to 36 hr (36 hr critical for lake level)
- Results show existing flood impact of this event on West Lakes and its surrounding catchments. Flooding is caused in the surrounding catchments where water is unable to enter the surrounding drainage systems. The lake fills until it can discharge to sea. Due to the size of the lake system and surrounding catchments, the greatest flooding extents are caused by high volume events (critical event is 36 hours) which take over two tide cycles for the system to start to significantly discharge stormwater out of the lake.
- Associated mitigation option: West Lakes Tidal Gate Upgrade (Section 6.4.1)

Appendix B.2 (West Lakes 2050 Scenario)

West Lakes Floodplain Model with:

- Mean High Water Springs (MHWS) tide curve - 0.3 m tide rise
- Rainfall Intensity - 2050
- 100 year ARI storm event
- 2050 mean lake water level set as initial water level
- Storm Duration 1hr to 36 hr (36 hr critical for lake level)
- Results show a slight increase in flood impact of this event with a 0.3 m tide rise in addition to the existing MHWS Tide Curve. Both the lake and the surrounding catchment directly upstream have slightly greater flood extents. This is because the higher tide prevents stormwater being discharged from the lake for longer, and hence more volume is required to store this water. As a result, the lake peak water level is slightly higher and causes slightly more flooding around the lake. It should be noted there will also be some more flooding in the upper catchment due to the increase in rainfall intensity in this scenario.
- Associated mitigation option: West Lakes Tidal Gate Upgrade (Section 6.4.1)

Appendix B.3 (West Lakes 2070 Scenario)

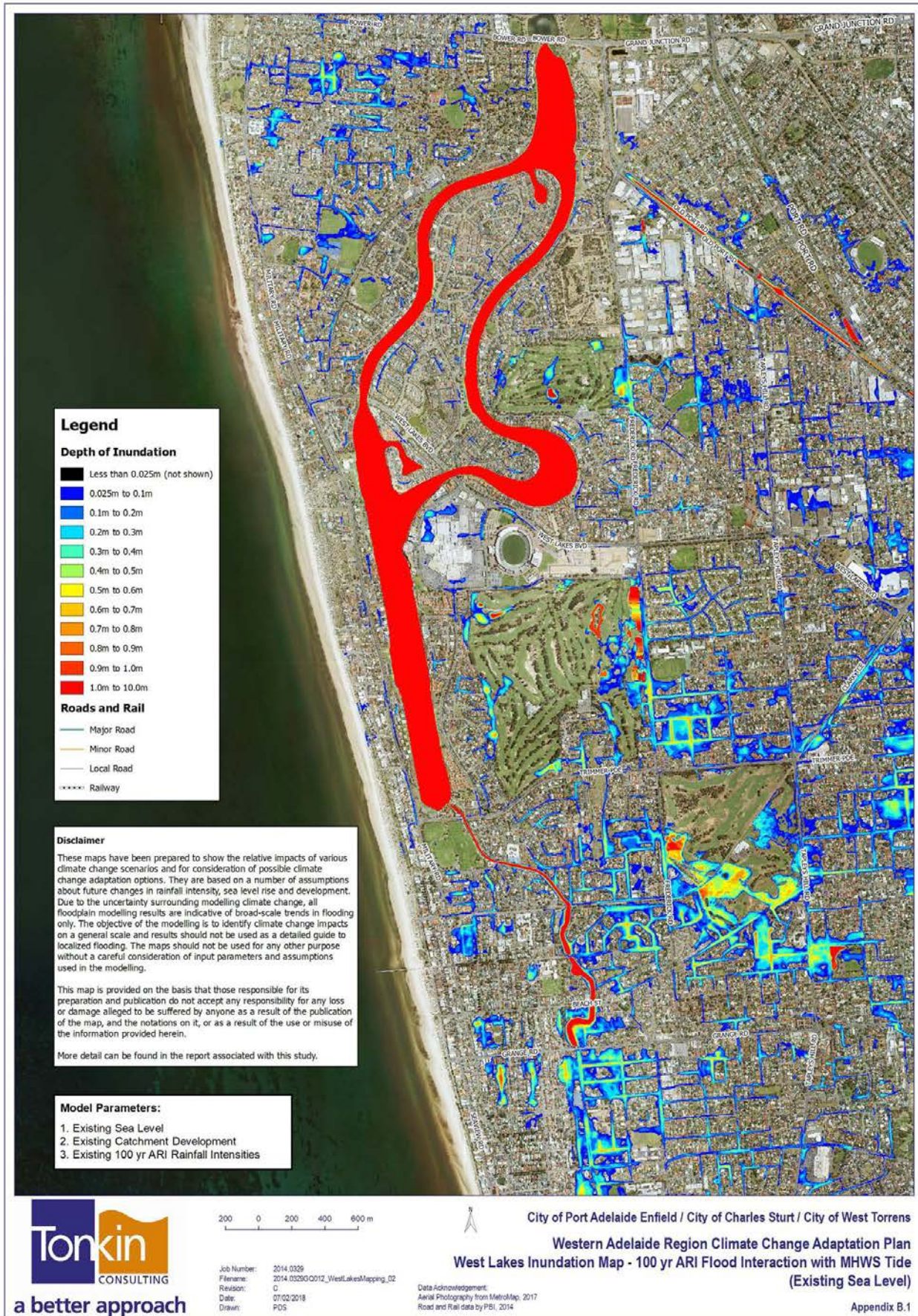
West Lakes Floodplain Model with:

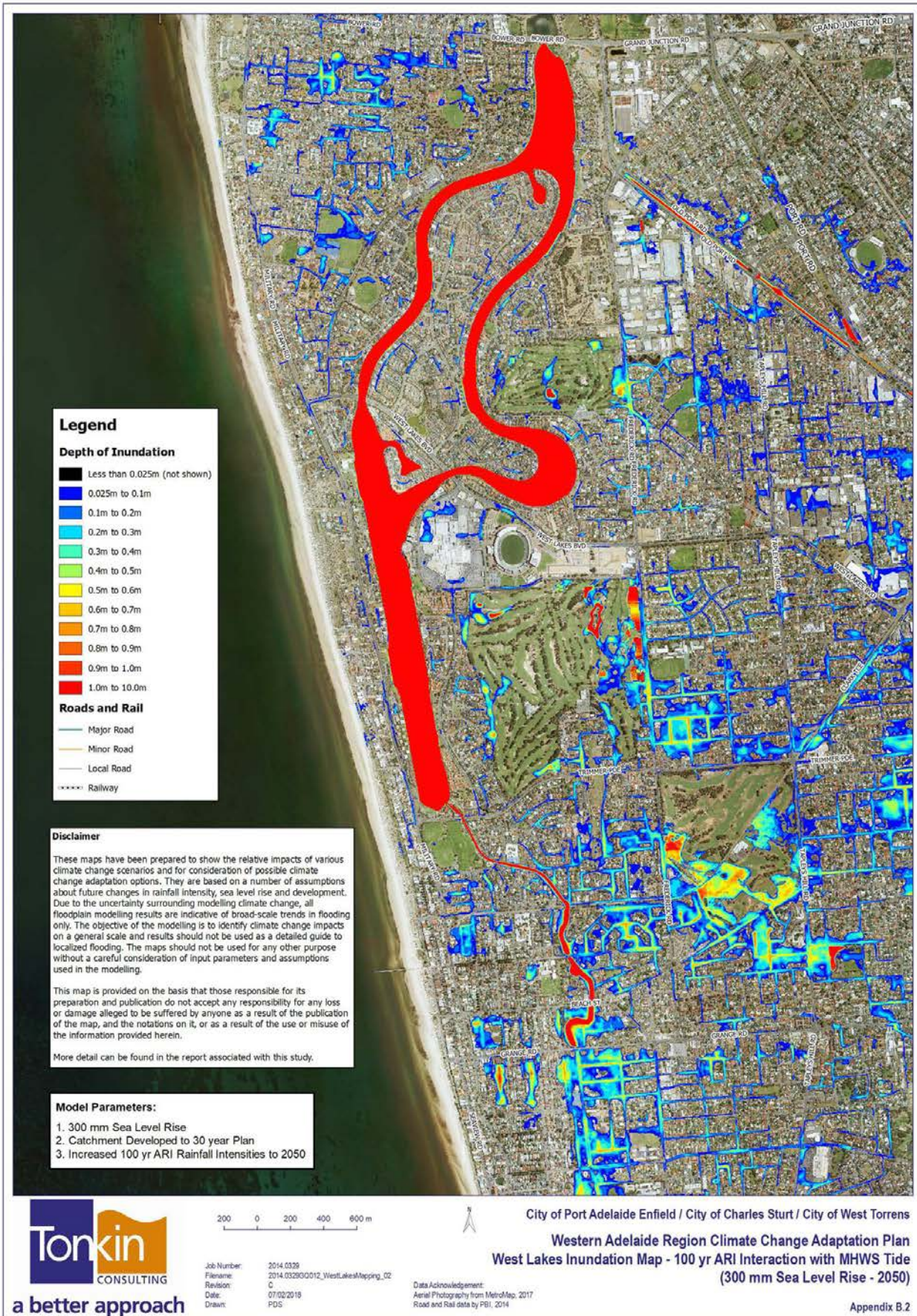
- Mean High Water Springs (MHWS) tide curve – 0.5 m tide rise
- Rainfall Intensity - 2070
- 100 year ARI storm event
- 2070 mean lake water level set as initial water level
- Storm Duration 1hr to 36 hr (36 hr critical for lake level)
- Results show a noticeable increase in flood impact of this event with a 0.5 m tide rise in addition to the existing MHWS Tide Curve. This is because the higher tide prevents stormwater being discharged from the lake for longer, and hence more volume is required to store this water. As a result, the lake peak water level is slightly higher and causes slightly more flooding around the lake. It should be noted there will also be some more flooding in the upper catchment due to the increase in rainfall intensity in this scenario.
- Associated mitigation option: West Lakes Tidal Gate Upgrade (Section 6.4.1)

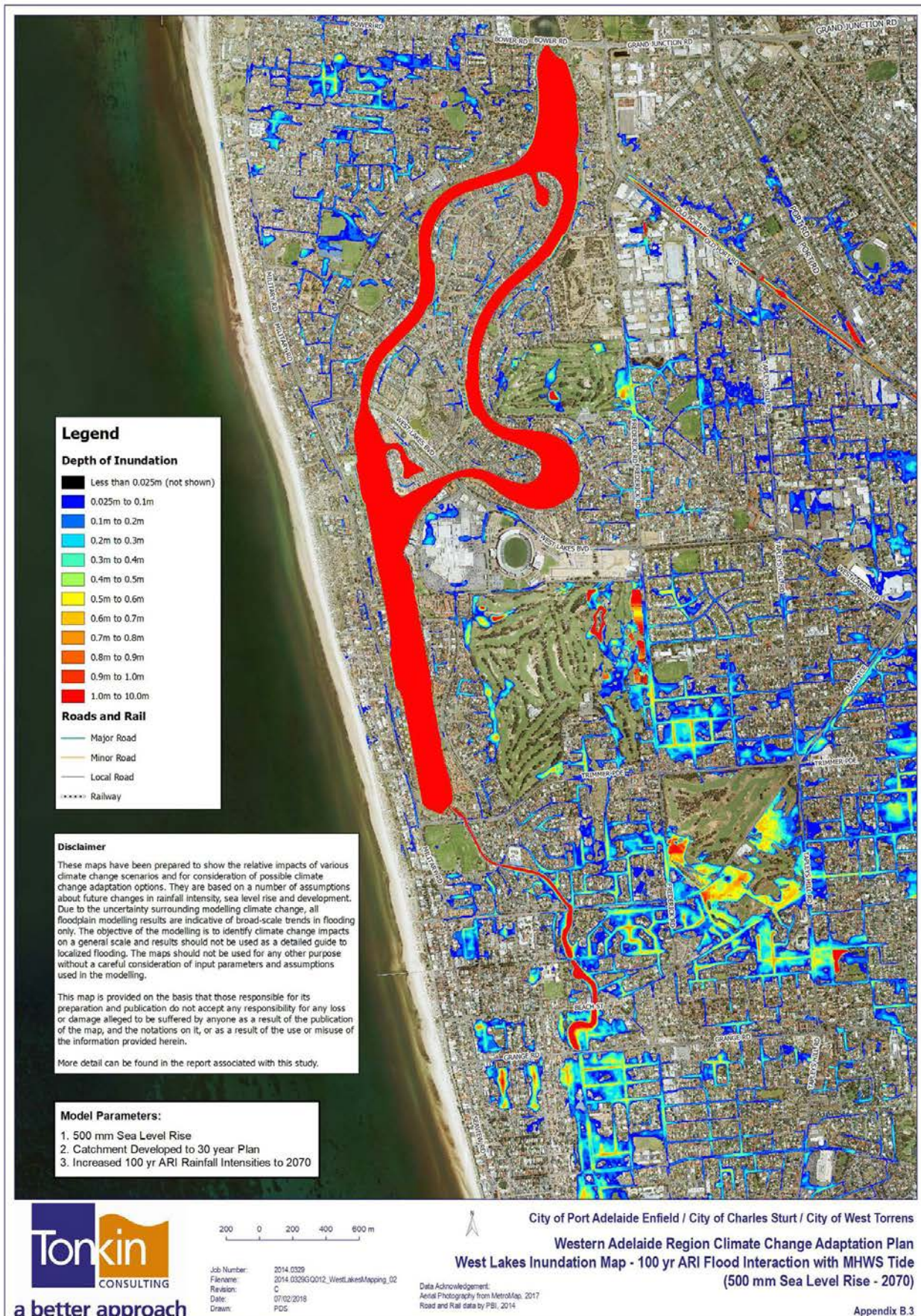
Appendix B.4 (West Lakes 2100 Scenario)

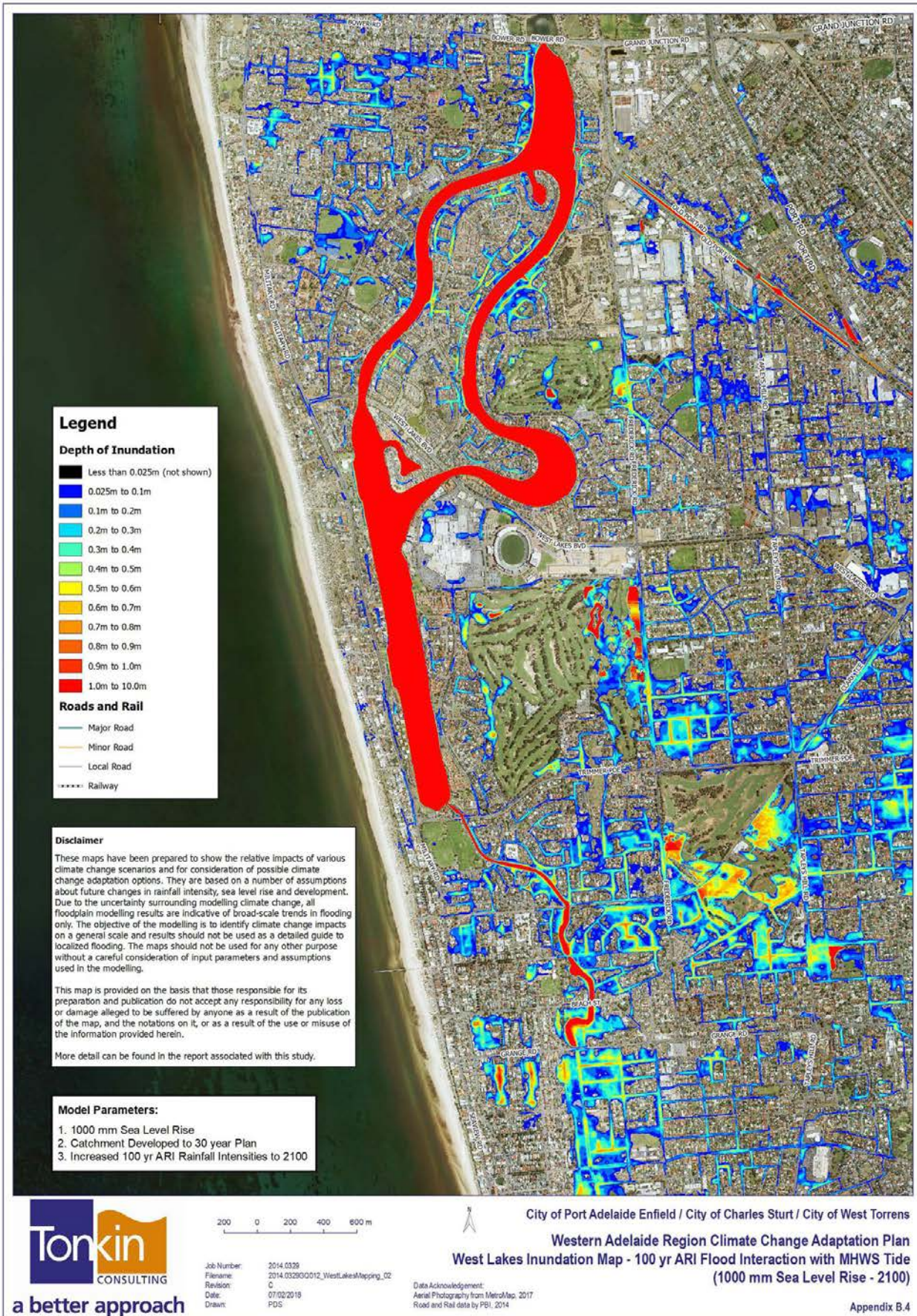
West Lakes Floodplain Model with:

- Mean High Water Springs (MHWS) tide curve – 1 m tide rise
- Rainfall Intensity - 2100
- 100 year ARI storm event
- 2100 mean lake water level set as initial water level
- Storm Duration 1hr to 36 hr (36 hr critical for lake level)
- Results show a marked increase in flood impact of this event with a 1 m tide rise compared with the existing MHWS Tide Curve. Both the lake and the surrounding catchment directly upstream have greater flood extents, especially around Delphin Island where it appears the lake will break out of its banks. This is because the higher tide prevents stormwater being discharged from the lake for longer, and hence more volume is required to store this water. As a result, the lake peak water level is higher and causes flows to escape from the Lake. It should be noted there will also be some more flooding in the upper catchment due to the increase in rainfall intensity in this scenario.
- Associated mitigation option: West Lakes Tidal Gate Upgrade (Section 6.4.1)









Appendix C

Local Catchments Floodplain Mapping

Appendix C.1 (Gilmore Rd / Henley Beach Rd Existing Scenario)

Gilmore Road / Henley Beach Road Floodplain Model with:

- 100 year tidal curve - existing
- Rainfall Intensity - existing
- 1 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show minimal existing flood impact of this event around Gilmore Road / Henley Beach Road. This is because the 1 year ARI storm in combination with the small size of the catchment generates sufficiently small volumes of water that all flows appear to be able to drain to sea even with the 100 year tide.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.2 (Gilmore Rd / Henley Beach Rd 2050 Scenario)

Gilmore Road / Henley Beach Road Floodplain Model with:

- 100 year tidal curve - 0.3 m tide rise
- Rainfall Intensity - 2050
- 1 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show minimal existing flood impact of this event around Gilmore Road / Henley Beach Road. This is because the 1 year ARI storm in combination with the small size of the catchment generates sufficiently small volumes of water that all flows appear to be able to drain to sea even with the higher 100 year tide.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.3 (Gilmore Rd / Henley Beach Rd 2070 Scenario)

Gilmore Road / Henley Beach Road Floodplain Model with:

- 100 year tidal curve – 0.5 m tide rise
- Rainfall Intensity - 2070
- 1 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show minimal existing flood impact of this event around Gilmore Road / Henley Beach Road. This is because the 1 year ARI storm in combination with the small size of the catchment generates sufficiently small volumes of water that all flows appear to be able to drain to sea even with the higher 100 year tide.

- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.4 (Gilmore Rd / Henley Beach Rd 2100 Scenario)

Gilmore Road / Henley Beach Floodplain Model with:

- 100 year tidal curve – 1 m tide rise
- Rainfall Intensity - 2100
- 1 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show an increased flood impact of this event around Gilmore Road / Henley Beach Road. This is because the 1 year ARI storm flows cannot discharge to sea due to the levels of the 100 year tide cycle with 1 m of sea level rise. However, the resulting increase in flooding is not significant.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.5 (Gilmore Rd / Henley Beach Rd Existing Scenario)

Gilmore Road / Henley Beach Road Floodplain Model with:

- Mean High Water Springs (MHWS) tide level - existing
- Rainfall Intensity - existing
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show existing flood impact of this event around Gilmore Road / Henley Beach Road. Inundation is caused by localized flash flooding in a 100 year ARI event.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.6 (Gilmore Rd / Henley Beach Rd 2050 Scenario)

Gilmore Road / Henley Beach Road Floodplain Model with:

- Mean High Water Springs (MHWS) tide level - 0.3 m tide rise
- Rainfall Intensity - 2050
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show a minimal increase in flood impact of this event around Gilmore Road / Henley Beach Road due to the rise in MHWS tide level from existing levels. The increase in flood extents is caused by the higher tide which prevents outflows from the catchment to the sea for slightly longer, resulting in slightly greater flood extents.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.7 (Gilmore Rd / Henley Beach Rd 2070 Scenario)

Gilmore Road / Henley Beach Road Floodplain Model with:

- Mean High Water Springs (MHWS) tide level – 0.5 m tide rise
- Rainfall Intensity - 2070
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show a noticeable increase in flood impact of this event around Gilmore Road / Henley Beach Road due to the rise in MHWS tide level from existing levels. The increase in flood extents is caused by the higher tide which prevents outflows from the catchment, resulting in greater flood.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.8 (Gilmore Rd / Henley Beach Rd 2100 Scenario)

Gilmore Road / Henley Beach Road Floodplain Model with:

- Mean High Water Springs (MHWS) tide level – 1 m tide rise
- Rainfall Intensity - 2100
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show a noticeable increase in flood impact of this event around Gilmore Road / Henley Beach Road due to the rise in MHWS tide level from existing levels. The increase in flood extents is caused by the higher tide which prevents outflows from the catchment, resulting in greater flood.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.9 (Iluka Place Existing Scenario)

Iluka Place Floodplain Model with:

- Mean High Water Springs (MHWS) tide curve - existing
- Rainfall Intensity - existing
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show existing flood impact of this event around Iluka Place. Inundation is caused by localized flash flooding in a 100 year ARI event.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.10 (Iluka Place 2050 Scenario)

Iluka Place Floodplain Model with:

- Mean High Water Springs (MHWS) tide curve -0.3 m tide rise
- Rainfall Intensity - 2050
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show a small increase in flood impact of this event around Iluka Place due to the rise in MHWS tide level from existing levels. The increase in flood extents is caused by the higher tide which prevents outflows from the catchment to the sea for slightly longer, resulting in slightly greater flood extents.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.11 (Iluka Place 2070 Scenario)

Iluka Place Floodplain Model with:

- Mean High Water Springs (MHWS) tide curve – 0.5 m tide rise
- Rainfall Intensity - 2070
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show a small increase in flood impact of this event around Iluka Place due to the rise in MHWS tide level from existing levels. The increase in flood extents is caused by the higher tide which prevents outflows from the catchment to the sea for slightly longer, resulting in slightly greater flood extents.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.12 (Iluka Place 2100 Scenario)

Iluka Place Floodplain Model with:

- Mean High Water Springs (MHWS) tide curve – 1 m tide rise
- Rainfall Intensity - 2100
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show a small increase in flood impact of this event around Iluka Place due to the rise in MHWS tide level from existing levels. The increase in flood extents is caused by the higher tide which prevents outflows from the catchment to the sea for slightly longer, resulting in slightly greater flood extents.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.13 (Iluka Place Existing Scenario)

Iluka Place Floodplain Model with:

- 100 year tidal curve - existing
- Rainfall Intensity - existing
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show existing flood impact of this event around Iluka Place. Inundation is caused by localized flash flooding in a 100 year ARI event.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.14 (Iluka Place 2050 Scenario)

Iluka Place Floodplain Model with:

- 100 year tidal curve - 0.3 m tide rise
- Rainfall Intensity - 2050
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show a small increase in flood impact of this event around Iluka Place due to the rise in MHWS tide level from existing levels. The increase in flood extents is caused by the higher tide which prevents outflows from the catchment to the sea for slightly longer, resulting in slightly greater flood extents.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.15 (Iluka Place 2070 Scenario)

Iluka Place Floodplain Model with:

- 100 year tidal curve – 0.5 m tide rise
- Rainfall Intensity - 2070
- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show a small increase in flood impact of this event around Iluka Place due to the rise in MHWS tide level from existing levels. The increase in flood extents is caused by the higher tide which prevents outflows from the catchment to the sea for slightly longer, resulting in slightly greater flood extents.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

Appendix C.16 (Iluka Place 2100 Scenario)

Iluka Place Floodplain Model with:

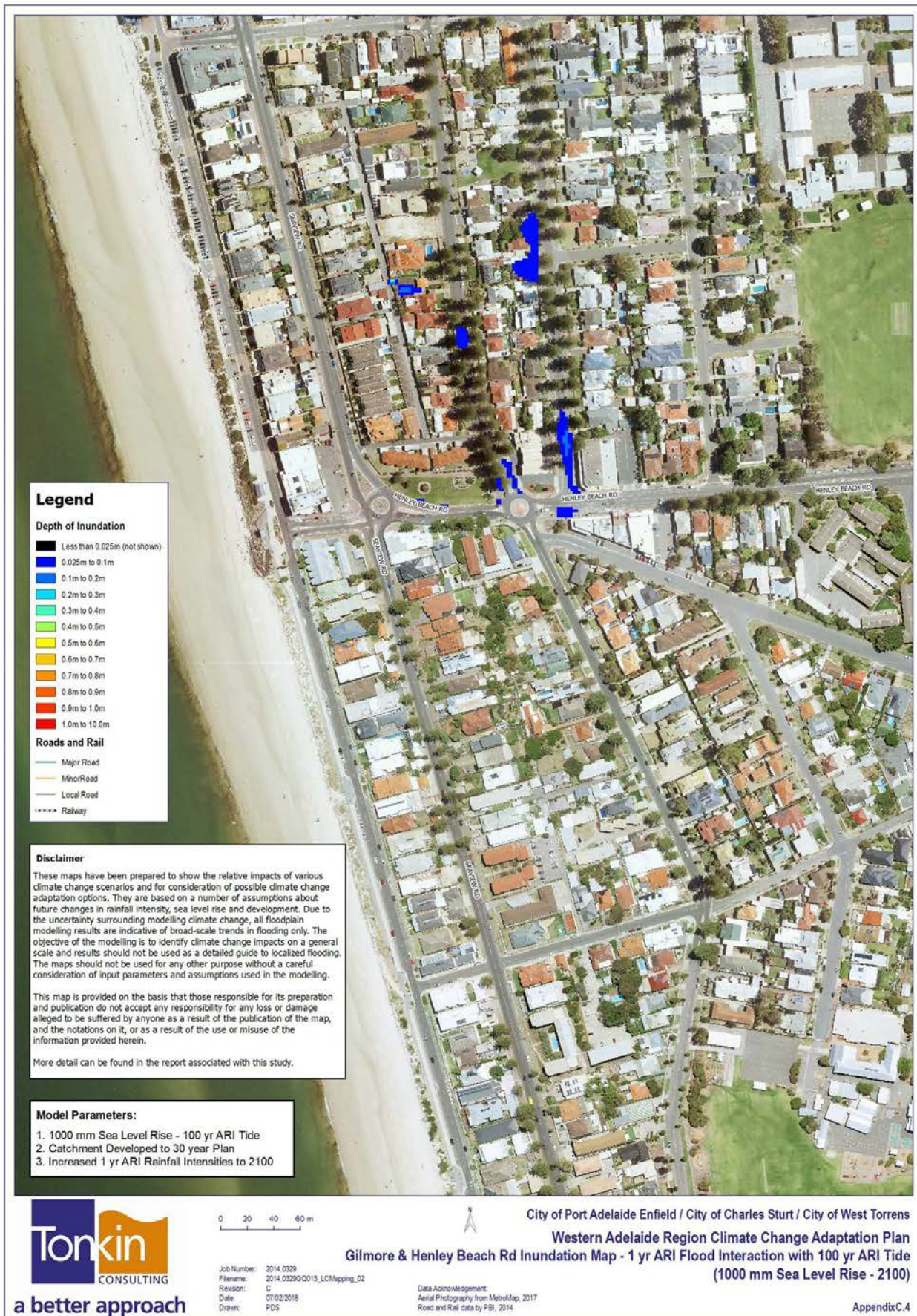
- 100 year tidal curve – 1 m tide rise
- Rainfall Intensity - 2100

- 100 year ARI storm event
- Storm Duration 1hr to 9 hr
- Results show a small increase in flood impact of this event around Iluka Place due to the rise in MHWS tide level from existing levels. The increase in flood extents is caused by the higher tide which prevents outflows from the catchment to the sea for slightly longer, resulting in slightly greater flood extents.
- Associated mitigation option: Ongoing Localized Flood Modelling and Planning (Section 6.5.2)

































Appendix D

Patawalonga Floodplain Mapping

Appendix D.1 (Patawalonga Existing Scenario)

Patawalonga Floodplain Model with:

- 100 year tidal curve - existing
- Rainfall Intensity - existing
- 1 year ARI storm event
- Mean lake water level assumed to be set at 0.6 mAHD
- Storm Duration 1hr to 36 hr (3 hr critical for lake level)
- Results show the existing flood impact of this event on the Patawalonga and its local surrounding catchments. Flooding is caused in the surrounding catchments where water is unable to enter the surrounding drainage systems. The lake fills and stores flows until they can be discharged to sea. Currently in this event, the lake does not overtop. Due to the small size of the lake and the existing tide cycle peaking at a level of 2.38 mAHD, water levels in the lake reach 2.14 mAHD which is just below the estimated top of bank. The greatest flooding extents are caused by an event which can fill the lake before the tide recedes, allowing the lake to drain (critical event in this case is 3 hours).
- Associated mitigation options: Check / Upgrade Glenelg North flap gates (Section **Error! Reference source not found.**), planning for future development relating to Patawalonga Creek, Glenelg North and localized flooding around council area (Section 6.8)

Appendix D.2 (Patawalonga 2050 Scenario)

Patawalonga Floodplain Model with:

- 100 year tidal curve - 0.3 m tide rise
- Rainfall Intensity - 2050
- 1 year ARI storm event
- Mean lake water level assumed to be set at 0.6 mAHD
- Storm Duration 1hr to 36 hr (12 hr critical for lake level)
- Results show an increase in flood impact of this event with a 0.3 m tide rise in addition to the existing 100 year tide curve. There is a marked increase in flooding of Glenelg North. This is because the higher tide prevents stormwater being discharged from the Lake for longer, and hence more volume is required to store this water. As a result, the peak water level is slightly higher and causes the lake to flood its banks. There is also a noticeable increase in flooding within the Patawalonga Creek area. It should be noted there will also be more flooding in the upper catchment due to the increase in rainfall intensity in this scenario.
- Associated mitigation options: Check / Upgrade Glenelg North flap gates (Section **Error! Reference source not found.**), planning for future development relating to

Patawalonga Creek, Glenelg North and localized flooding around council area (Section 6.8)

Appendix D.3 (Patawalonga 2070 Scenario)

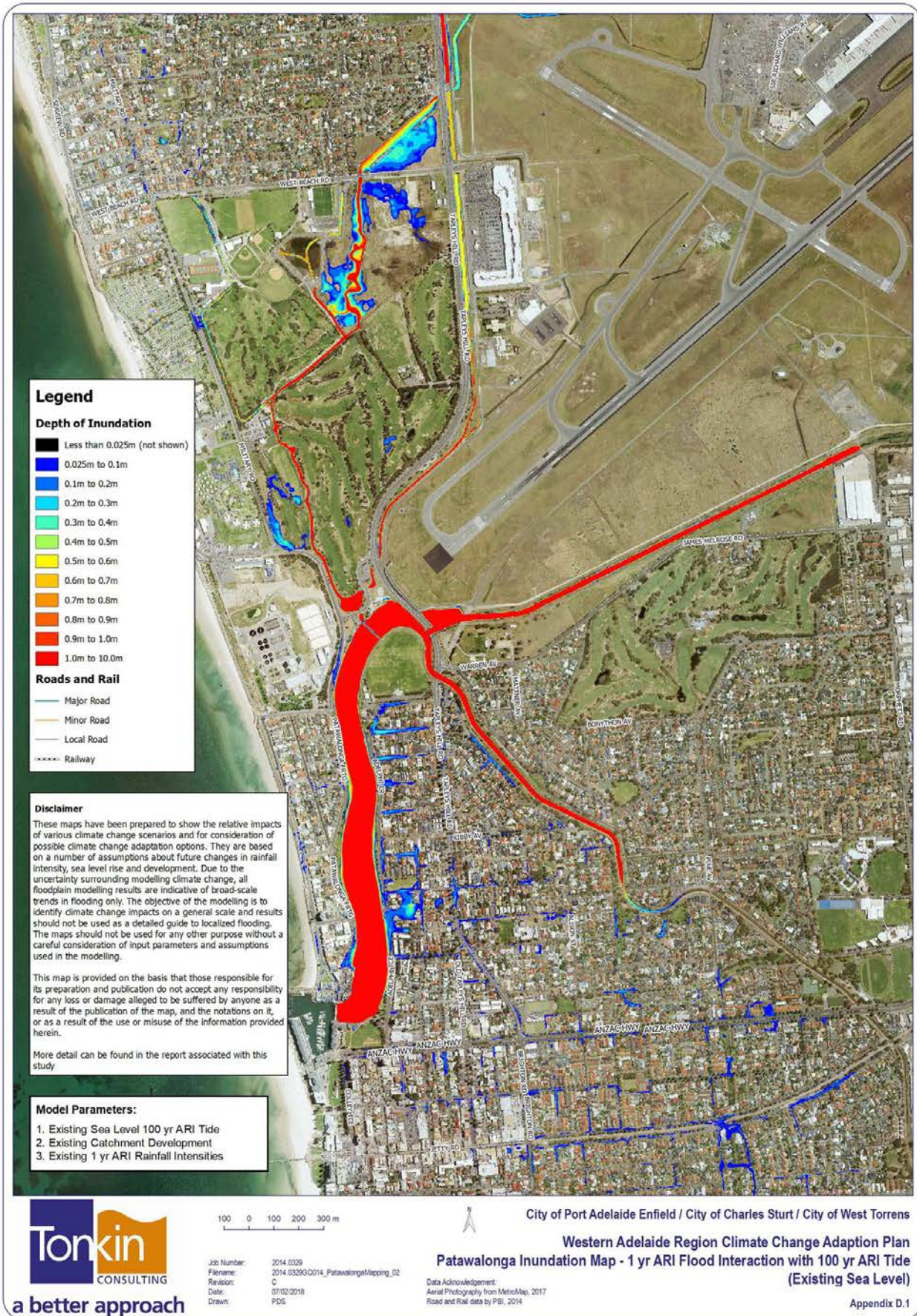
Patawalonga Floodplain Model with:

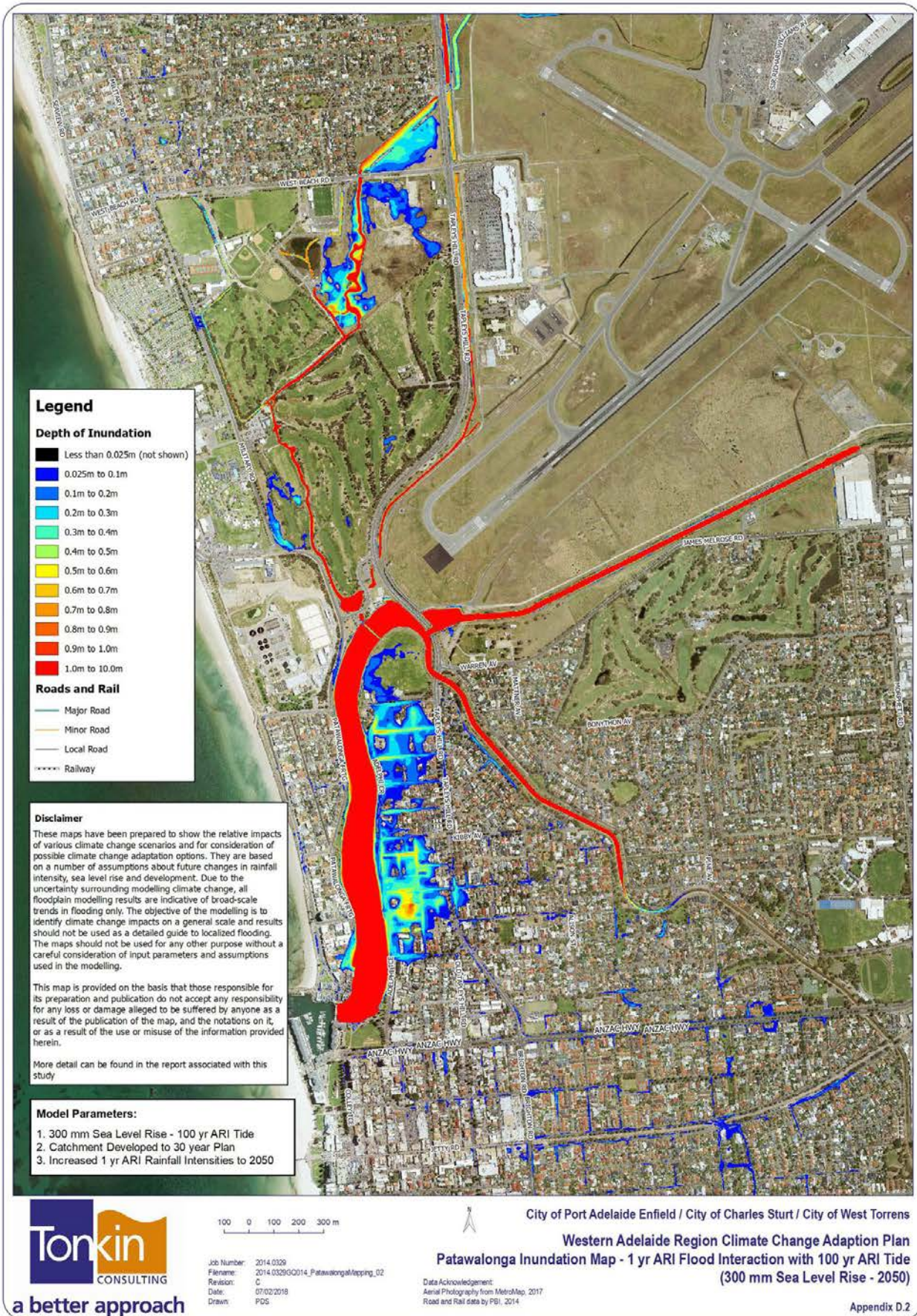
- 100 year tidal curve – 0.5 m tide rise
- Rainfall Intensity - 2070
- 1 year ARI storm event
- Mean lake water level assumed to be set at 0.6 mAHD
- Storm Duration 1hr to 36 hr (12 hr critical for lake level)
- Results show an increase in flood impact of this event with a 0.5 m tide rise in addition to the existing 100 year tide curve. There is a marked increase in flooding of Glenelg North. This is because the higher tide prevents stormwater being discharged from the Lake for longer, and hence more volume is required to store this water. As a result, the peak water level is slightly higher and causes the lake to flood its banks. There is also a noticeable increase in flooding within the Patawalonga Creek area. It should be noted there will also be more flooding in the upper catchment due to the increase in rainfall intensity in this scenario.
- Associated mitigation options: Check / upgrade Glenelg North flap gates (Section **Error! Reference source not found.**), planning for future development relating to Patawalonga Creek, Glenelg North and localized flooding around council area (Section 6.8)

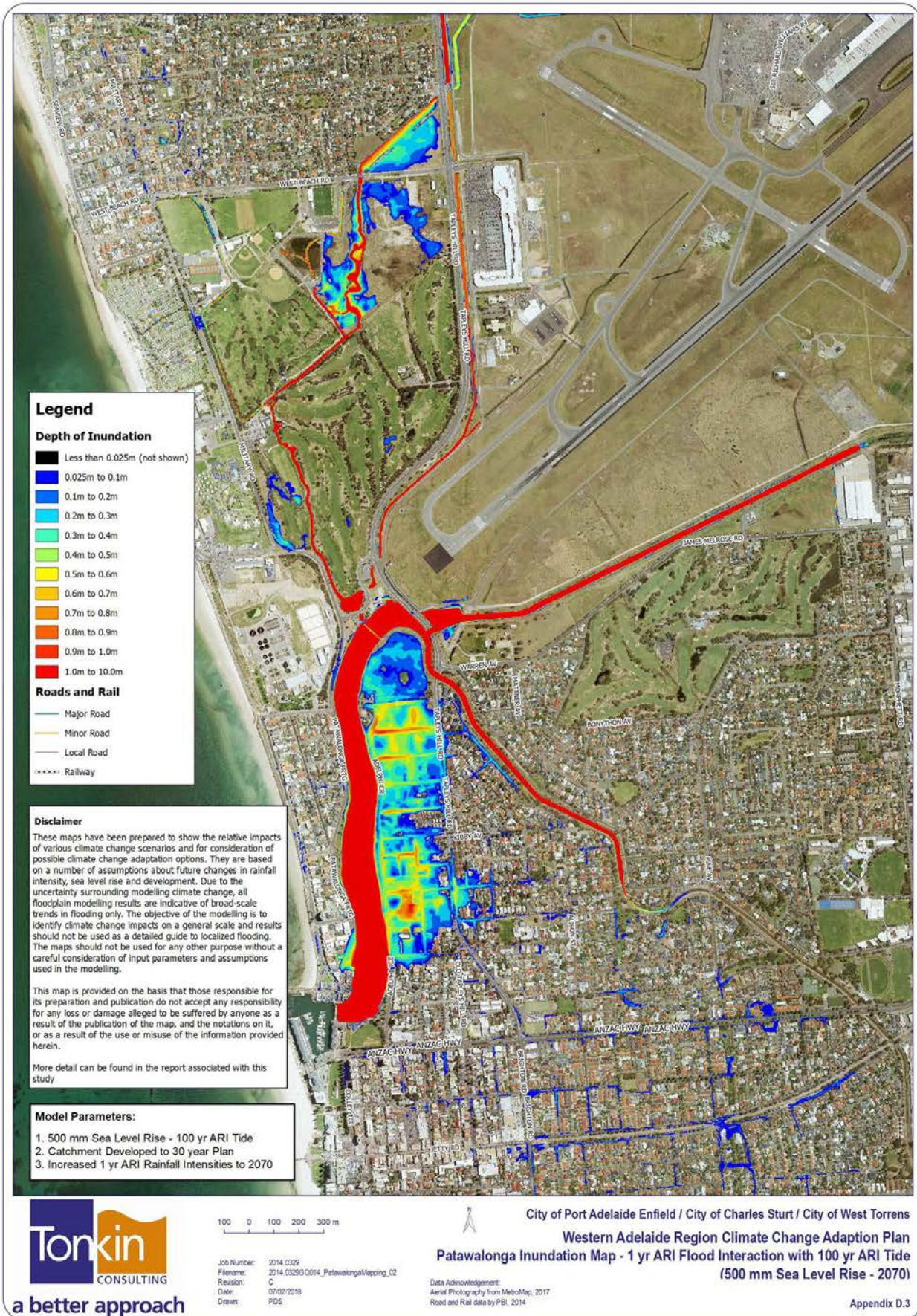
Appendix D.4 (Patawalonga 2100 Scenario)

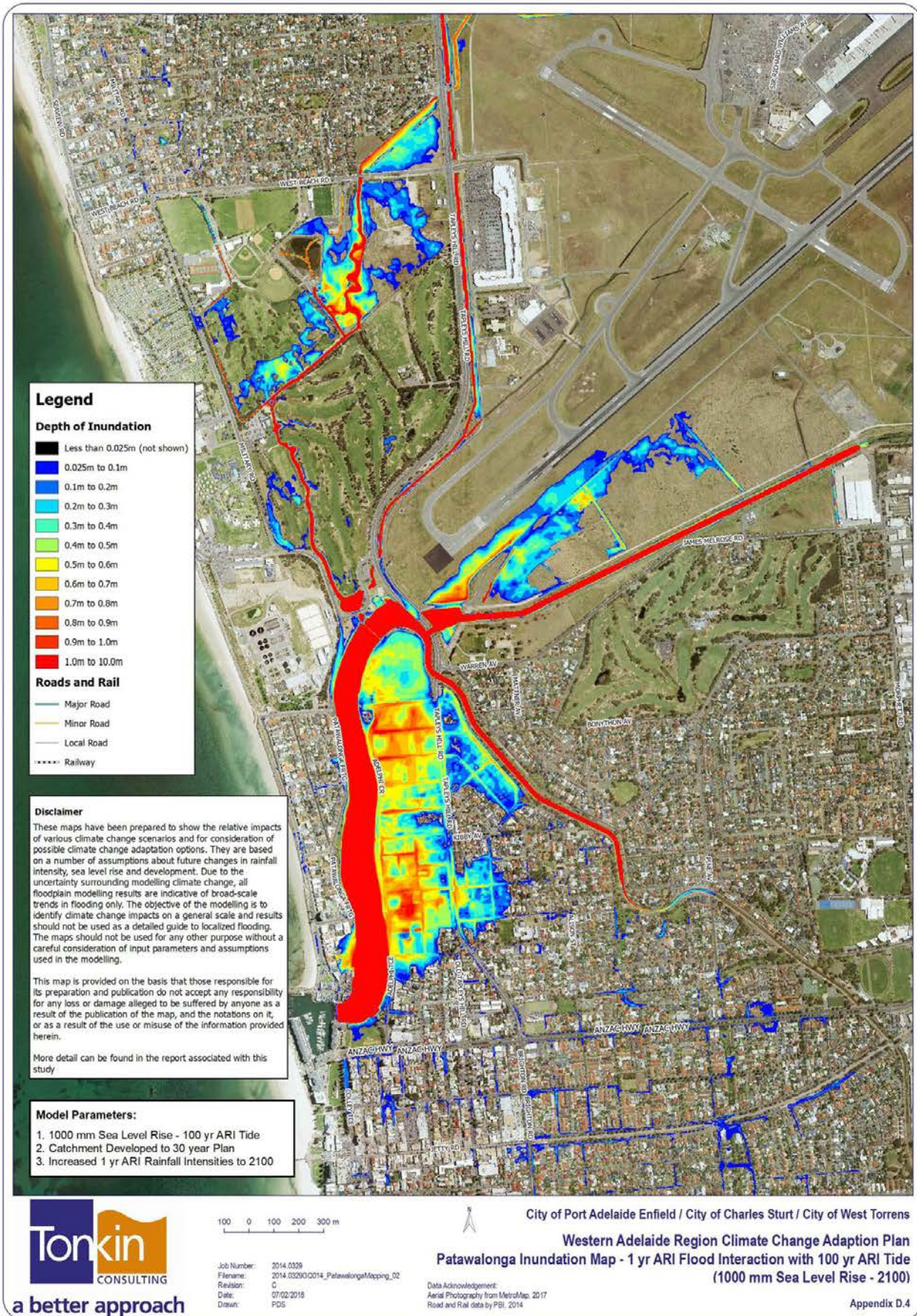
Patawalonga Floodplain Model with:

- 100 year tidal curve – 1 m tide rise
- Rainfall Intensity - 2100
- 1 year ARI storm event
- Mean lake water level assumed to be set at 0.6 mAHD
- Storm Duration 1hr to 36 hr (12 hr critical for lake level)
- Results show an increase in flood impact of this event with a 1 m tide rise in addition to the existing 100 year tide curve. There is an extensive increase in flooding of Glenelg North. This is because the higher tide prevents stormwater being discharged from the Lake for longer, and hence more volume is required to store this water. As a result, the peak water level is slightly higher and causes the lake to flood its banks. There is also a noticeable increase in flooding within the Patawalonga Creek area. It should be noted there will also be more flooding in the upper catchment due to the increase in rainfall intensity in this scenario.
- Associated mitigation options: Check / Upgrade Glenelg North flap gates (Section **Error! Reference source not found.**), planning for future development relating to Patawalonga Creek, Glenelg North and localized flooding around council area (Section 6.8)









Appendix E

Tidal Inundation Mapping

Appendix E (Tidal Inundation Mapping)

City of Charles Sturt Storm Surge Extension Map

- S3 – 0.5 m sea level rise, 100 years of land subsidence
- Associated mitigation option: Port Adelaide Sea Wall (Section 6.1.2, Section 6.4.3)

