



Bridge to Opportunity

The Rural City of
MURRAY
BRIDGE

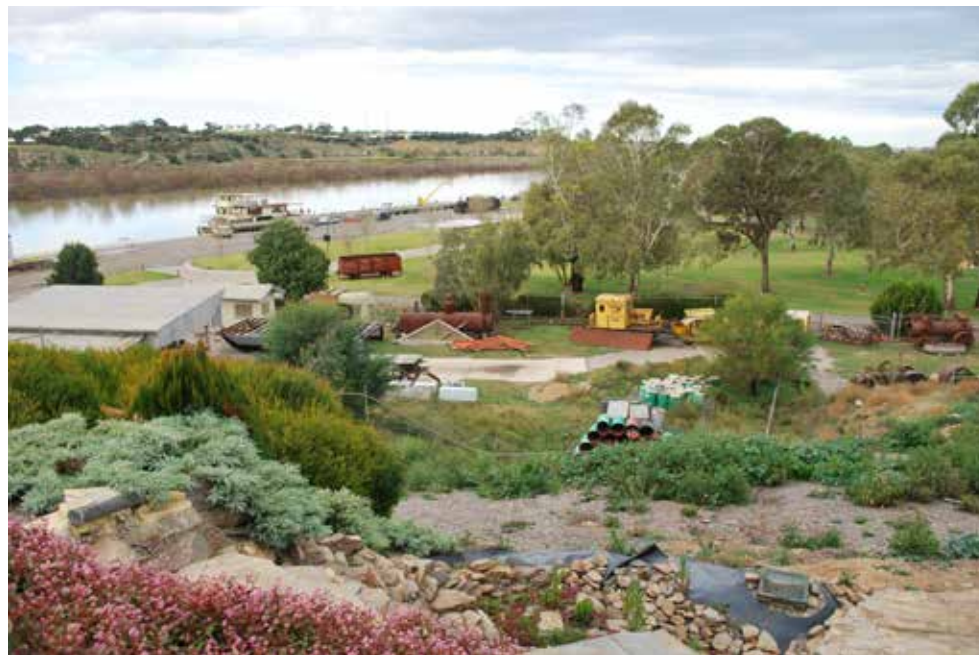


GHDWOODHEAD

Rural City of Murray Bridge Sturt Reserve Master Plan

October 2017





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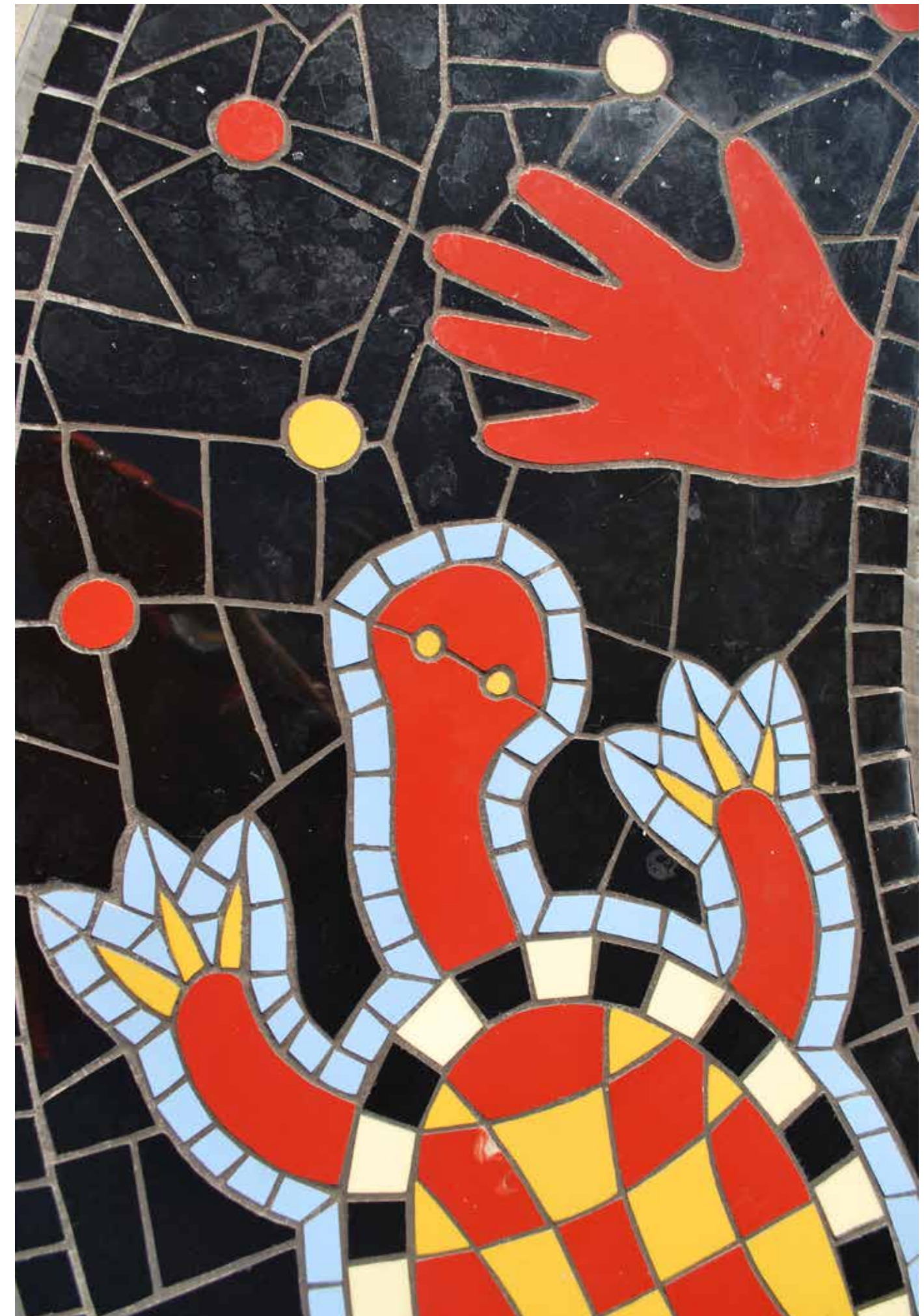
Appendices

Appendix A

Murray River Towns – Reference Reserve Developments

Appendix B

Cost Estimate



1 Introduction



1 Introduction

In 2016, the Rural City of Murray Bridge (Council) developed the Murray Bridge Riverfront Strategy, which was focused on identifying opportunities that encourage more interaction and integration between social, economic and environmental outcomes identified along the rivers edge.

A key recommendation of the strategy was to develop Sturt Reserve as the focal point for both residents and visitors. The Riverfront Strategy defined a Precinct Plan for Sturt Reserve in order to guide future development on the site.

The purpose of this report relates to recommendation SR3 of the Riverfront Strategy, which is to take the Sturt Reserve Precinct Plan to the next level, the development of a detailed Master Plan for Sturt Reserve and concept designs for the various precincts.



1.2 Scope and Limitations

The scope of this report is to develop a Master Plan for Sturt Reserve, which will provide a framework for future, more detailed, project implementation plans. It provides a basis for planning, funding and further design development, providing sound direction for future upgrades and development of Sturt Reserve.

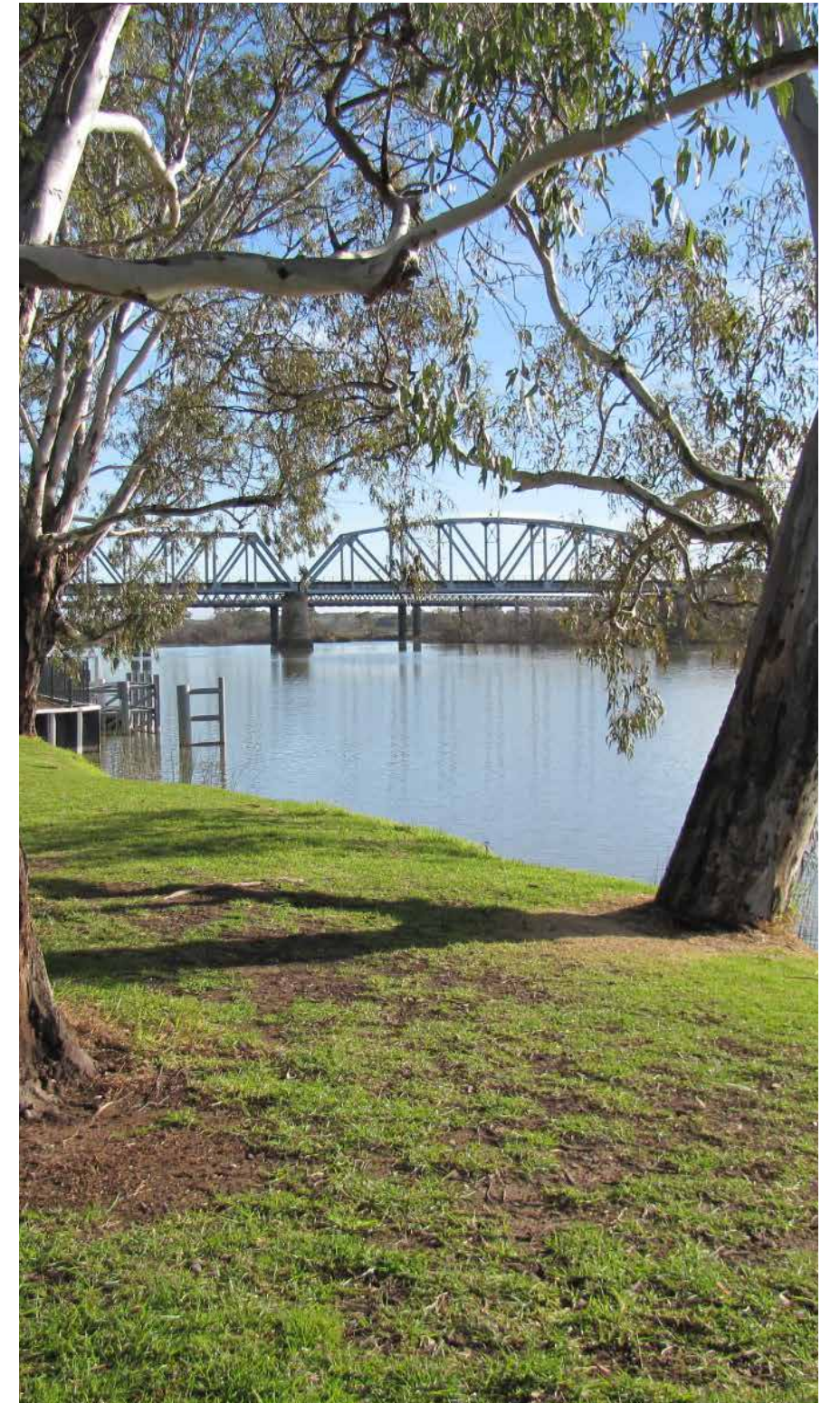
As advised by Council, the recommendations related to Sturt Reserve provided within the Riverfront Strategy were to form the basis for this project.

The following activities were included within the scope of this project, with additional detail on each activity outlined within this report.

- Review of previous reports related to the study area and environs.
- Consultation with the Murray Bridge community, Council staff, Elected Members, state government agencies and statutory authorities in order to establish an understanding of insight, ideas, opinions and alternatives on specific sites within the study area.
- Review of similar Murray River riverfront reserve developments, as recommended by the Riverfront Strategy, and reflect on how, or if these may be applicable to Sturt Reserve.
- Site Analysis and Preparation of a Draft Master Plan;
- Development of a high level cost estimate and staging plan which will set the framework for future development of the reserve;

The following items, recommended within the Riverfront Strategy in relation to Sturt Reserve, are excluded from the scope of this report as Council are currently investigating these issues separately:

- Detailed investigation into riverbank slope stability; and
- Investigations into potential contamination related to the historic landfill.



2 Project Background



2 Project Background

The extent of the Master Plan is as shown in figure 1.

As shown, the study area is bounded by the following:

- The Murray River riverfront, from the Murray Princess Berth (North) to Jaensch Road (South);
- Jaensch Road, Sturt Reserve Road, Olympic Drive and East Terrace to the East; and
- The northern extent of the site area is to include East Terrace up to the corner of South Terrace. Bridge Street is excluded from the scope of this report.

2.2 Description of the Site

Sturt Reserve is situated directly between the Murray Bridge CBD and the River. It is the riverfront site that is best known and most favoured by the local community and visitors to Murray Bridge. The reserve is used by the local community and tourists for a range of passive recreational activities including swimming, walking, cycling and fishing. It is also used for organised sports, particularly rowing and tennis, and community events including a Christmas parade, fireworks and the Pedal Prix. In 2015 the site hosted an ANZAC day dawn service attended by 3,500 people and the RSL would like to see it continue to be used for this purpose in the future. The current economic activities include a café and paddle steamer cruises.

Environmental values are limited due to the nature of the space and its use for active and passive recreation. Values are limited to remnant canopy vegetation. Bank stability is an issue in parts of the reserve as a result of low water levels during the millennium drought and continued wave action and boat wash.

A portion of the site was previously used for landfill of commercial and domestic waste between the 1960's and the early 1990's. The landfill has been capped and is no longer used, although it appears to have not been "formally" closed, as no Closure and Post Closure Plan (CPCP) has been developed.



Figure 1 | Sturt Reserve Master Plan

2 Project Background

2.3 Background Reports

The following reports have been provided by Council as background to the development of the Sturt Reserve Master Plan.

- Rural City of Murray Bridge Riverfront Strategy (May 2016)
- Murraylands River Trail Feasibility Study (March 2015)
- Rural City of Murray Bridge Trails Strategy (February 2017)
- Playspace Strategy (May 2017)
- The Rural City of Murray Bridge Public Toilet Strategy 2016-2021 (February 2017)
- Community Plan 2016 – 2032
- Strategic Plan 2016 – 2020
- Economic Development Strategy
- Skate Park Expansion Project
- Entry in the South Australian heritage register in accordance with the heritage places act 1993, Name: Murray Bridge transport precinct. Place no.: 26373

Although all of the above will influence this project, the most relevant document listed is the Murray Bridge Riverfront Strategy, which sets the framework for development of the Master Plan. Key extracts from the Riverfront Strategy are outlined below.

2.4 Rural City of Murray Bridge Riverfront Strategy

The Rural City of Murray Bridge Riverfront Strategy is a high level strategic document which sets the framework for future planning, funding and recommendations for further design for Council sites along the Murray Bridge Riverfront.

The area included within the study included the Murray Bridge river corridor from Swanport Wetlands in the south to Toora Reserve in the north. Sturt Reserve is central within this corridor.

The scope of the study included the following:

- Review of previous literature relating to the study area.
- Consultation with the Murray Bridge community, Ngarrindjeri, Council staff, Elected Members, state government agencies and statutory authorities.
- Analysis of Environmental Criteria relating to the riverfront including:
 - > River biodiversity
 - > River water flow and extraction
 - > River and wetland infrastructure and rehabilitation
 - > Stormwater management
 - > Erosion and Sediment Deposition
 - > Contamination including acid sulphate soils
- Analysis of Economic Criteria relating to the riverfront including:
 - > Economic Development and Job Creation
 - > Accommodation Opportunities
 - > Tourism
 - > Promotion of the river as a destination
- Development of key environmental and economic strategic directions for the study area.
- Development of recommended actions for 13 sites within the study area.
- Development of a high level implementation plan which will set the framework for future, more detailed, project implementation plans.

Following the review of previous studies, environmental and economic analysis and community consultation, the report outlined seven Guiding Principals which formed the basis for future strategic decisions in relation to the riverfront.

Five of these Guiding Principals are directly applicable to Sturt Reserve. These are outlined in the following pages.

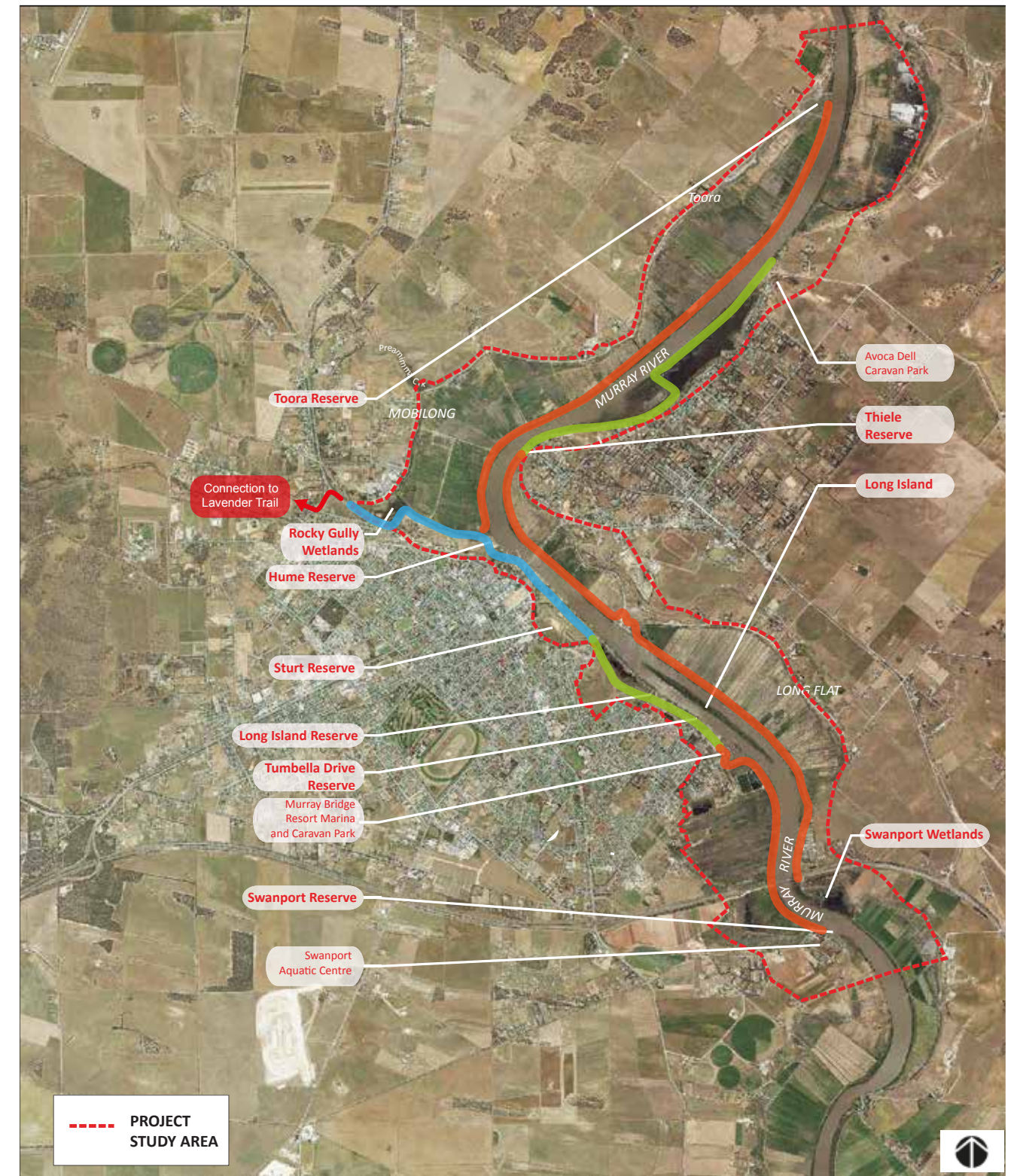
2 Project Background

2.4.1 Guiding Principles Applicable to Sturt Reserve

1. Improve access and build connectivity along the riverfront

Currently the River is inaccessible by the broader public for most of its length. Where the riverfront is accessible, directional and information signage is limited, is inconsistent or in need of renewal. This needs to be remedied, most effectively by creating walking and cycling links along the Riverfront and through improvement of wayfinding and signage. These linkages will provide the benefit of allowing greater access to the riverfront for visitors and the local community, rebuilding the emotional connectivity of the town with the river and providing the ideal outlet for physical activity along the waterfront.

The following figure outlines a suggested route for the linkages, along with priorities for implementation. It should be noted that Sturt Reserve is one of the highest priority areas in this regard.



Riverfront Connectivity

2 Project Background

2. The focal point for the riverfront is Sturt Reserve. It is the hub for community activities, tourism, and promotion of Indigenous and European heritage.

The riverfront strategy identified that to effectively “turn the town around to embrace the river” it requires a focal point, for both residents and visitors. Sturt Reserve is the obvious location due to its proximity to the town, its existing facilities and its potential to be the centre of community, river focused activities. It was recommended that Sturt Reserve becomes a focal point for Councils riverfront investment, which has led to the development of this Master Plan.





3. Focus river based recreational facilities, initiatives and investment around broad river “zones”.

The Riverfront Strategy outlined where Council should invest in various types of infrastructure to support river based recreation. The following figure provides an overview of the recommended recreation zones.

It should be noted that the Sturt Reserve riverfront is specified as a Low Energy Activity Zone; targeted at tourism, houseboats, unpowered craft and swimming.



Targeted River Based Recreation Investment

-  Low Energy Activity Zone
(Tourism, Houseboats, Unpowered Craft, Swimming)
-  General Water Recreation Zone
-  Unpowered Craft Recreation Zone
-  High Energy Craft Recreation Zone
(e.g. Skiing, Jet Skiing)

2 Project Background

4. Balance recreational and environmental values of Councils reserves through defined levels of service.

A series of biodiversity management principles were developed to guide Council's management of remnant vegetation and habitat in its parks and reserves. The principles reflect the highly modified nature of the river frontage in the study area and the services these areas provide supporting recreational uses. In defining the management objectives for the reserves three levels were defined to reflect different recreational expectations for use. These objectives were defined by levels of service for recreational and environmental values, as shown in the following figure.

Sturt Reserve is identified as an area of High Impact Recreational Use. These sites predominantly contain non-native vegetation with large proportions of the site containing grassed areas, playing fields, bank stabilising structures, boat ramps etc. Remnant vegetation, if present, is present as canopy trees only.

The recommended recreational level of service for these areas are:

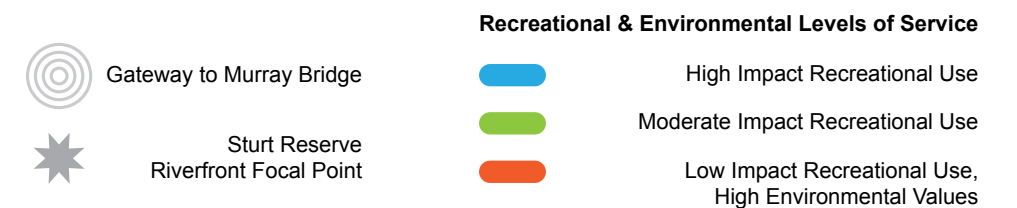
- Maintain current recreational activities and provide opportunities for new or alternative access
- Maintain existing infrastructure and identify opportunities for future infrastructure development

The recommended environmental level of service for these areas are:

- Protect and maintain existing ecological values
- Identify opportunities to increase diversity of canopy and shrub vegetation

5. Improve contact and consultation with the Ngarrindjeri Regional Authority

The whole of the Murray Bridge Riverfront is of importance to the Ngarrindjeri and it all falls within the current Native Title Claim Area. A number of individual sites, such as Hume Reserve, are of particular significance. The Ngarrindjeri wish to be recognised as the traditional owners of their country and for this to form the basis of their ongoing involvement in the development and implementation of projects related to the Riverfront Strategy.



2 Project Background

2.4.2 Site Specific Recommendations

In addition to the overarching Guiding Principles, the Riverfront Strategy also outlined the following site specific recommendations for Sturt Reserve. These recommendations form the starting point for the development of the Master Plan.

1. Focus through Precinct Definition

To assist in the future planning and investment, it is recommended that the reserve is considered as a number of “precincts”.

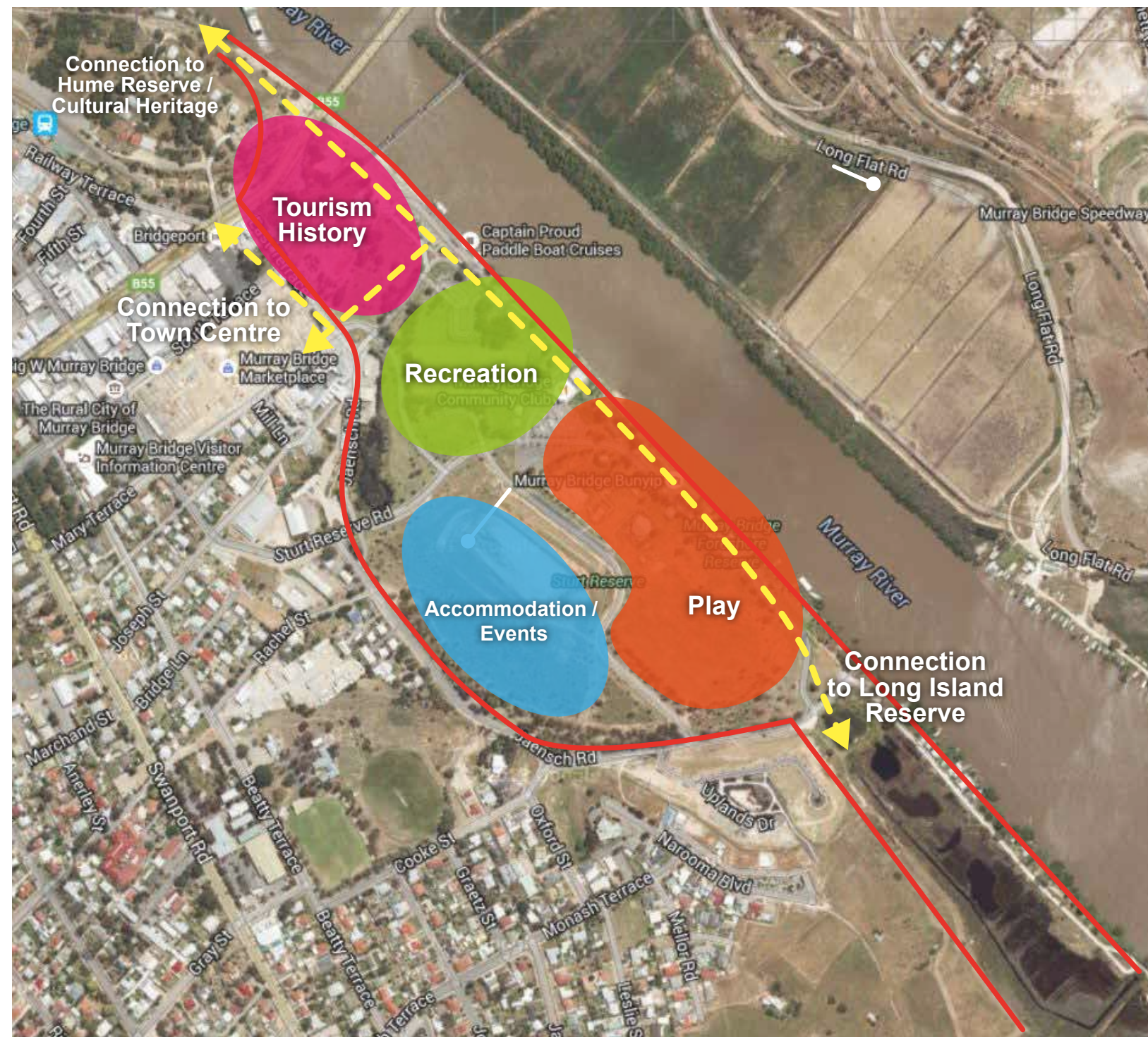
The precinct plan is outlined in the following figure, and has been developed based on existing infrastructure and the expressed future desires of the community.

The character statements that defined these precincts have been carried through to the Master Plan and are outlined in Section 5. Critical to the success of Sturt Reserve is the connection of these precincts, the town centre and adjoining reserves. It is important that future planning of this site includes a riverfront promenade/walking/cycle path, and well defined pathways and directional signage to important locations.

2. Understanding the Constraints and incorporating into the Concept Design

Two major environmental constraints were identified within Sturt Reserve which are currently not well defined; the old Landfill site and the riverbank stability. Although some investigation has been undertaken to identify risks associated with these sites, the investigations to date are not sufficient to fully define the constraints or provide enough detail to design a solution.

Broad consideration has been given to these issues in the development of the Master Plan, however the detailed investigations of these elements fall outside the scope of this project. As these investigations have not been completed to date, the response to any potential issues may require additional consideration in the future.



Sturt Reserve Precinct Plan



2 Project Background



3 Community Consultation



3 Community Consultation

3.1 Introduction

This chapter consolidates the key themes and the summaries of the issues and concerns raised during the Master Plan consultation activities.

Consultation to inform the Master Plan was undertaken between June to August 2017.

The key objectives of the consultation were to:

- To put the community at the centre of the decision making process and provide ownership over the Master Plan.
- Ensure that relevant stakeholders are informed about the project and are given the opportunity to provide feedback.
- Provide stakeholders with an opportunity to ask questions and to identify areas of concern with respect to the Master Plan.
- Demonstrate that all concerns and issues raised by the stakeholders are considered in the development of the Master Plan.
- Implement an approach to stakeholder communications that is transparent and timely, and that is coordinated between the Council and GHD.
- Effectively and proactively identify and manage issues.
- Keep accurate records of consultation with stakeholders.

Underpinning the key objectives of the project was the aim to provide best practice consultation.

On completion of each of the consultation activities all content captured or received via online, notes or the community email and phone number was reviewed to better understand the feedback and issues raised by various stakeholder groups.

3.2 Elected Member Presentation

GHD facilitated two Council workshops at project commencement and following the consultation period. Elected members and executive staff were invited to the workshop which occurred on the following dates:

- Monday 5 June 2017.
- Monday 18 September 2017.

The aim of the first workshop was to:

- Inform Council about the project objectives and milestones.
- Consult about key issues.
- Confirm key stakeholders.

The aim of second workshop was to:

- Inform Council about key findings within the Draft Master Plan and obtain feedback prior to reporting back to Council.

3.3 Roundtable Workshops

GHD facilitated three stakeholder roundtable discussions and specific one on one discussions with key stakeholders.

These events were held on:

- Tuesday 25 July 2017, at GHD offices in Adelaide from 10am to 12pm, 22 attendees.
- Thursday 27 July 2017, at Murray Bridge Council offices from 10am to 12pm, 21 attendees.
- Thursday 27 July 2017, at Murray Bridge Council offices from 1pm to 3pm, 18 attendees.

The purpose of the roundtable workshops was to:

- Inform key stakeholders about Master Plan objectives.
- Consult about key issues and provide opportunity for input of ideas.

GHD developed an invitation letter/email to invite key stakeholders to participate in the roundtable workshop. The invitees included Murray Bridge Community and Sporting Groups, Business Owners, Ngarrindjeri Regional Authority and State Government Agencies. 90 stakeholders were invited to attend and 61 stakeholders attended one of the three events.

A workshop was also held with key Council staff at Murray Bridge Council offices at 8.45am on Thursday 27 July 2017.

3.4 Drop In Sessions – Library and Sturt Reserve

On Thursday 10 August and Saturday 12 August 2017, GHD and Murray Bridge Council facilitated two community information sessions at the Murray Bridge Public Library between 5pm and 7pm and Sturt Reserve between 11am and 2pm respectively.

The purpose of the information session was to provide an informal environment where members of the community could visit, be provided information on the project and ask the project team questions related to the project to obtain real time answers and provide input.

The events were publicised through advertisements in the Murray Valley Standard on the following dates:

- Tuesday 27 July 2017.
- Tuesday 3 August 2017.
- Tuesday 8 August 2017.

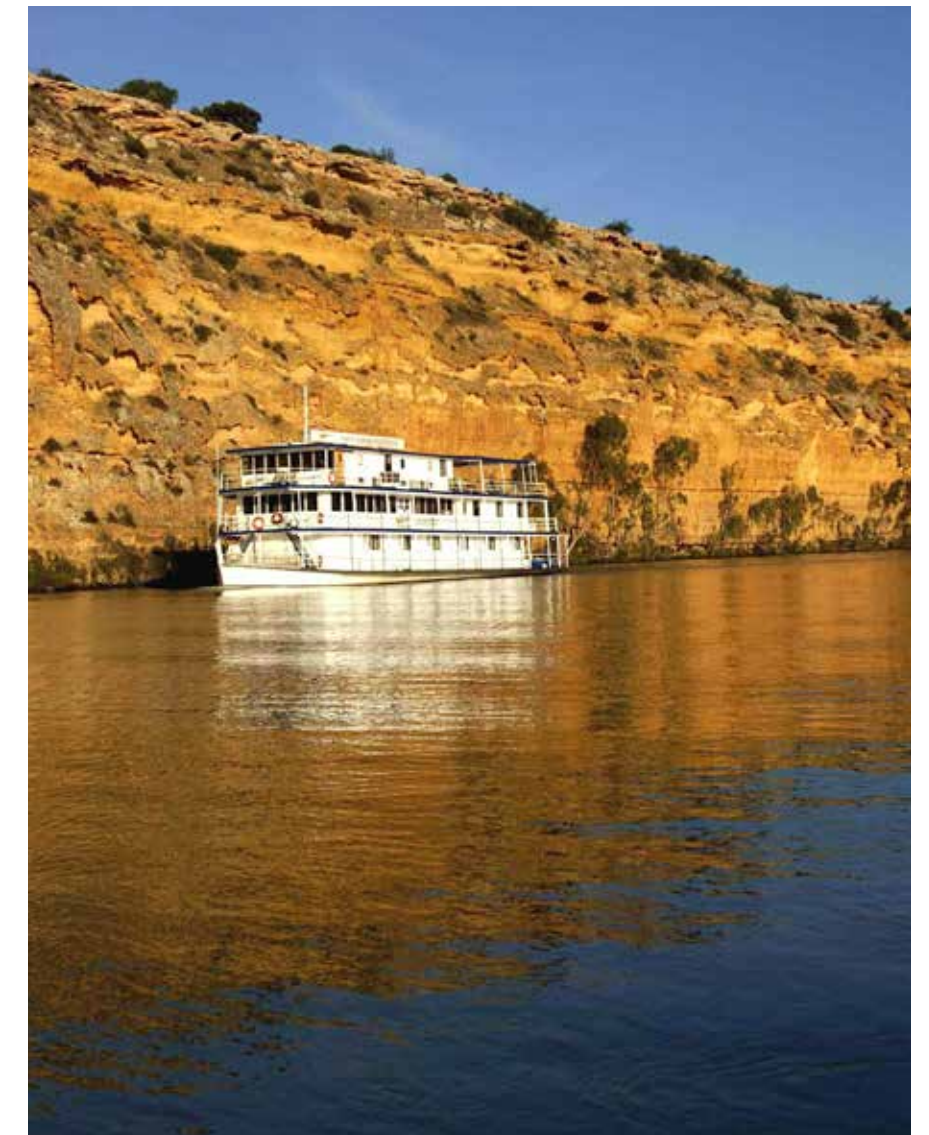
Online advertisements were also placed on the Council website:

<http://www.murraybridge.sa.gov.au/>

Approximately 10 external stakeholders attended the first information session and 15 external stakeholder attended the second. Participants were invited to view the proposal and provide verbal and written feedback.

3.5 Email Submissions

There have been over 20 email submissions that have been sent directly to the project team and Council with ideas and suggestions for the Master Plan.



3 Community Consultation

3.6 Murray Valley Standard Poll

The Murray Valley Standard published an independent poll on Tuesday 8 August 2017 to ask readers 'What do you want to see at Sturt Reserve?' The poll included a set of seven pre-determined answers with the opportunity to provide an 'other' answer and unique suggestion. Results were collated and published one week later. More than 550 people participated in the poll.

The highest responses indicated a preference for either a 'pool, water park or water slide' (134 votes) or a 'stage for concerts and events' (97 votes). The remaining pre-determined answers including a 'better skate park', a 'bigger playground', a 'river swimming area' and a 'caravan park' attracted about 60 votes each. Only one idea, a 'model boat lake' had minimal support with 25 votes.

Just over 10 per cent of participants selected an 'other' answer with suggestions including eateries/food vans, events or live music and sporting facilities.



Sturt Reserve | Existing Walkway Northern End

3.7 Key Themes

The following key themes were identified amongst stakeholder groups and consultation activities

3.7.1 General Themes

The following themes were raised consistently throughout community and stakeholder discussions:

- All precincts need to be unified.
- Connectivity – there needs to be greater connectivity between the town centre and the riverfront.
- Information Centre location – acknowledgement it should be incorporate in the Tourism and History precinct but differing views on the exact location.
- Vehicle access and car parking needs to be reviewed across the entire location.
- Access to riverfront – walkways / pathways / boardwalk along the entire length of the riverfront. Any pathway must be wide enough to cater for different users.
- Accessibility - a walking and cycling path/circuit throughout the area and consideration of reducing speed limit to allow more shared spaces.
- Signage – Wayfinding maps and key themes running through entire precinct.
- Think big – world class infrastructure.
- Lighting - Improved lighting along the riverfront but also opportunity to use feature lighting throughout the precinct.
- Technology/Innovation – Apps to link to heritage and cultural theme; self-guided historic tours; fitness tracking.
- Public Art - incorporated throughout all the precincts
- Houseboat moorings are critical and need to be incorporated in key locations along the riverfront.
- Riverfront edge - needs to be remediated and treated to ensure no further erosion of the riverbank – not necessarily the same treatment the entire length.
- Flexibility – ability to use different spaces for different uses
- Mixed views on commercialisation including:
 - > New café/restaurants along riverfront.
 - > No further commercialisation - Area to be maintained as a green, open space to be used by walkers, families and visitors in its natural state. Still allow the space to be utilised for special events by community groups such as the Pedal Prix.

3.7.2 Tourism and History Precinct

Key themes for the Tourism and History precinct include:

- Conserving and improving access to the existing heritage items – carriages, wharfs and existing rail lines.
- Promote opportunities for re-use of the heritage items.
- Sunken boats in river are an opportunity to tell a story on the history of the town.
- Reconstruction of wharf should be considered.
- Connectivity to other precincts from boat moorings is critical
- Enhance and build on what is already located in the precinct.
- Murray Bridge was always a "Railway Town" not a "River Town" and precinct must reflect and acknowledge this history.
- Opportunity to optimise the heritage/historical component of the town.
- Relocate and make a feature of some of the old machinery eg Steam Locomotives.
- Acknowledge original landing.
- Link between Sturt Reserve and Hume Reserve is important.
- Power needs to be extended to houseboat moorings in this precinct.
- RSL memorial must be included in this precinct and should be linked with an area for reflection.
- Bridges are important and need to be made a feature in the precinct.



Sturt Reserve | Midway along reserve near Cafe

3 Community Consultation

3.7.3 Recreation Precinct

Key themes in this precinct include:

- Accessibility – road layout and parking are critical to make this precinct workable.
- Parking and loading areas are critical.
- Tennis courts – discussion on if this is the right location for the courts or if long term these courts out be relocated.
- Consider making road two ways to stop traffic having to drive through the entire precinct.
- Public access along the riverfront is crucial.

3.7.4 Play Precinct

Key themes for this precinct include:

- Water play and fun!
- Aquatic playground and/or splash park– however need to ensure it doesn't replicate the water park currently under construction at the pool.
- River pool – encourage people to swim in the river.
- Graduated beach to allow for disabled access.
- Interpretative playground.

- Bunyip unique to Murray Bridge and should be acknowledged and incorporated into any new designs.
- New elements need to be natural and in keeping with the river theme, i.e. no plastic.
- Cultural wetland that incorporates different themes from other precincts eg indigenous plantings.
- Opportunity to ensure playground is culturally friendly and also caters for disabled children.
- Exercise equipment should be spaced out along the riverfront not just 'dumped' next to the playground.
- Consideration must be given to future approvals for the Community Club and the Rowing Club.
- Events – important for promoting Murray Bridge and also for attracting visitors to the town. Must ensure any master plan allows space for events to occur.
- Concert / stage / Auditorium should be considered being located in this space.
- BBQ / picnic spaces are well utilised and should be incorporated into new designs.

3.7.5 Accommodation

There were distinct different views between stakeholders as to if this was an appropriate location for future accommodation. General themes that were raised include:

- Need an understanding of the type and extent of contamination on the site and costs to remediate prior to making decisions on the site.
- There are subsidence issues in the area.
- A general consensus that the accommodation offering in Murray Bridge is currently very poor and this could be an opportunity for high end accommodation.
- Differing views from stakeholders on the type of accommodation needed in Murray Bridge. However generally respondents thought that if this site was to be developed it should be natural, low impact accommodation – a mixture of cabins, spaces for caravans and camping.



Sturt Reserve | View from Rose Garden



Sturt Reserve | Existing Walkway Midway along Reserve

4 Opportunities and Constraints Analysis



4. Opportunities and Constraints Analysis

4.1 Development Plan Analysis

As described in Section 2.1 above, the study area is bounded by the following:

- The Murray River riverfront, from the Murray Princess Berth (North) to Jaensch Road (South).
- Jaensch Road, Sturt Reserve Road, Olympic Drive and East Terrace to the East.
- The northern extent of the site area is to include East Terrace up to the corner of South Terrace. Bridge Street is excluded from the scope of this report.

The Development Plan provides guidance on the following issues pertaining to the study area:

- Location and environs
- Transport
- Development constraints
- Zoning Areas

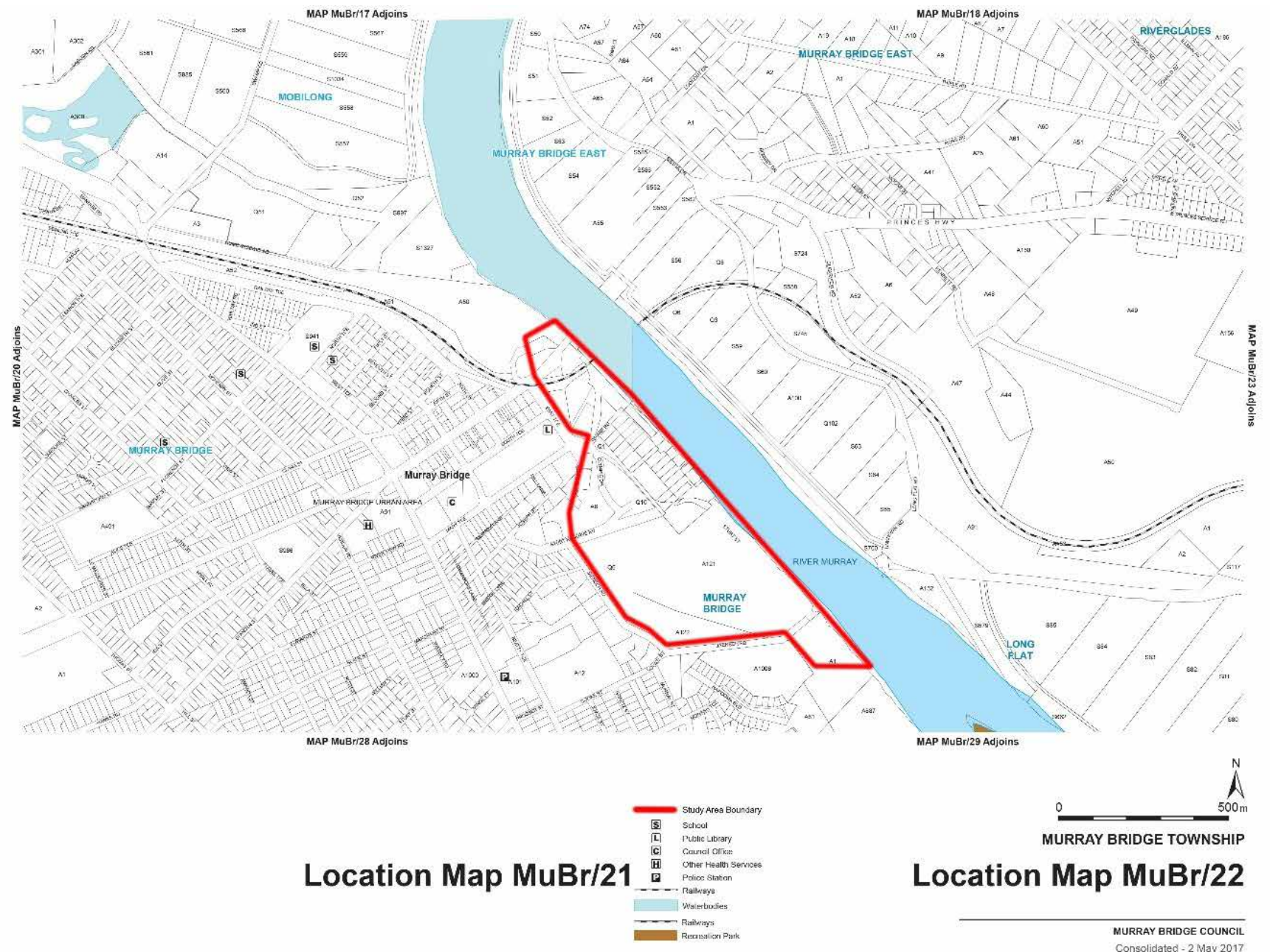
These themes are covered in the following sections below.

4.1.1 Location

The study area is identified within Location Map MuBr/21 and Location Map MuBr/22 of the Murray Bridge Council Development Plan consolidated 2 May 2017. Both maps have been consolidated into a single map with the study area boundary identified in red – see right.

Importantly, the study area is the key gateway into the town centre from the north and is the location of the 'Jewel in the Crown', as far as the quality of the open space areas enjoying frontage to the riverfront within Murray Bridge. Historically, the area adjacent the rail and road bridges was the location where the railway and road met the river, and shipping, commerce and trade were conducted on the wharfs, creating a major bustling riverfront town.

In addition, due to its large scale and central location, Sturt Reserve is used for a variety of regional events, such as the Pedal Prix; a competition where teams race human powered vehicles on a closed controlled circuit.



4. Opportunities and Constraints Analysis

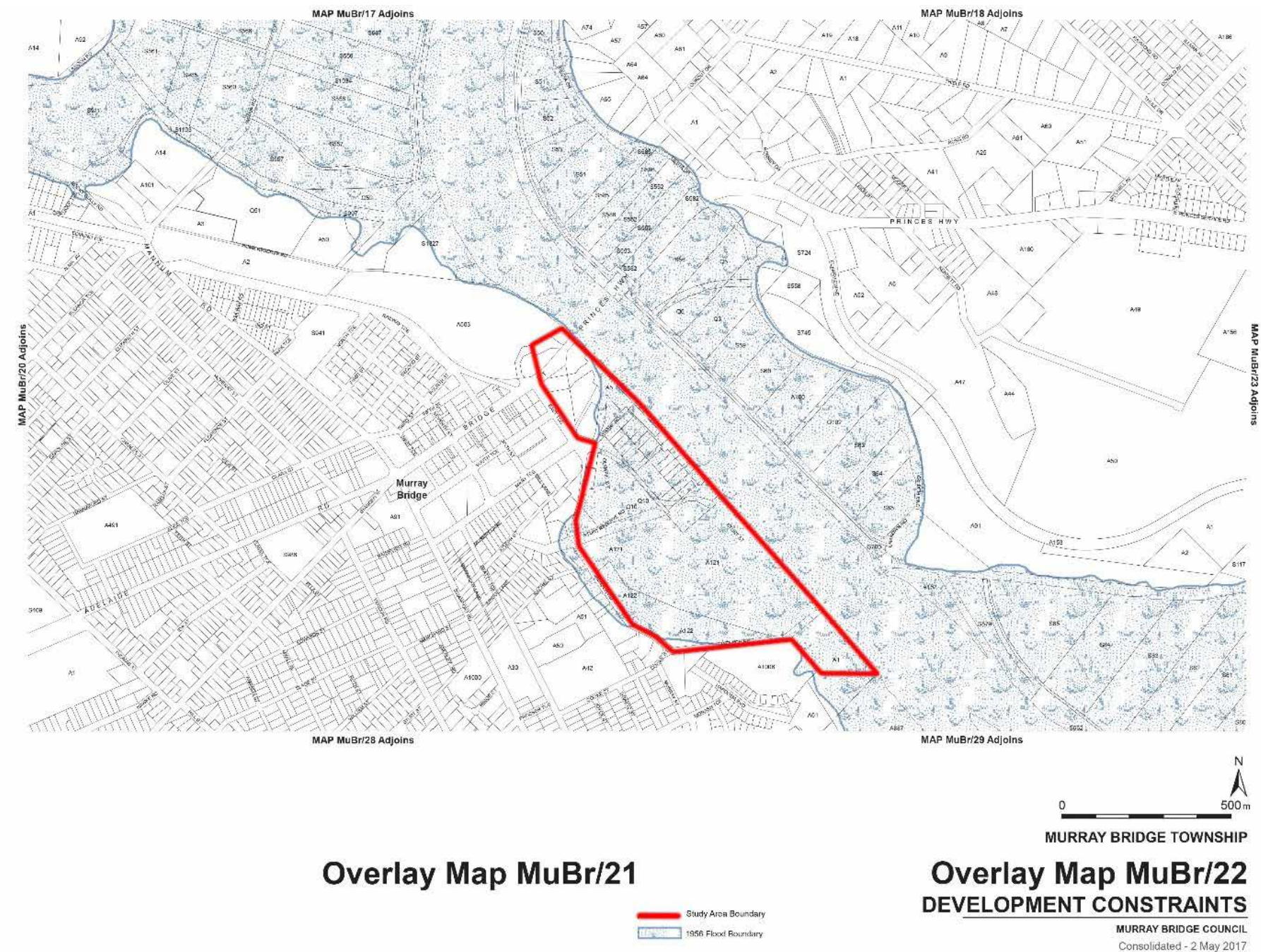
4.1.2 Development Constraints

The 1956 (1 in 100 year) flood level boundary is a key constraint within the study area with only the northern portion, from the railway museum storage yard and northwards, being above the flood level.

This presents a constraint to the master plan as development is currently non-complying. However, there is precedent for development in this zone including the recently approved Rowing Club, the existing Community Centre and "Riverscape" restaurant/café, which are all located within the flood zone.

The key issue for future development is that the finished floor level of any new building structures should be designed 300mm above the flood level.

In addition, other proposed structures and landscape features need to be designed with the potential for intermittent flooding impacts.



4. Opportunities and Constraints Analysis

4.1.3 Zoning Areas

The study area is contained within three zones; RTCe (Regional Town Centre), RMFI (River Murray Flood) and RMFr (River Murray Fringe) zone.

The Tourism and History Precinct falls within the Regional Town Centre zone, while the Recreation and Play Precincts fall within the River Murray Flood zone. The Accommodation Precinct straddles the River Murray Flood zone and the River Murray Fringe zone to the south west boundary of the study area.

Regional Town Centre zone

The Regional Town Centre zone is defined as:

The Regional Town Centre Zone supports an accessible and functioning Murray Bridge Central Business District. This zone encompasses a vibrant, economically viable and attractive centre. Future intensive retail, entertainment, business, administrative, civic, educational, cultural and community facilities will be located in this zone.

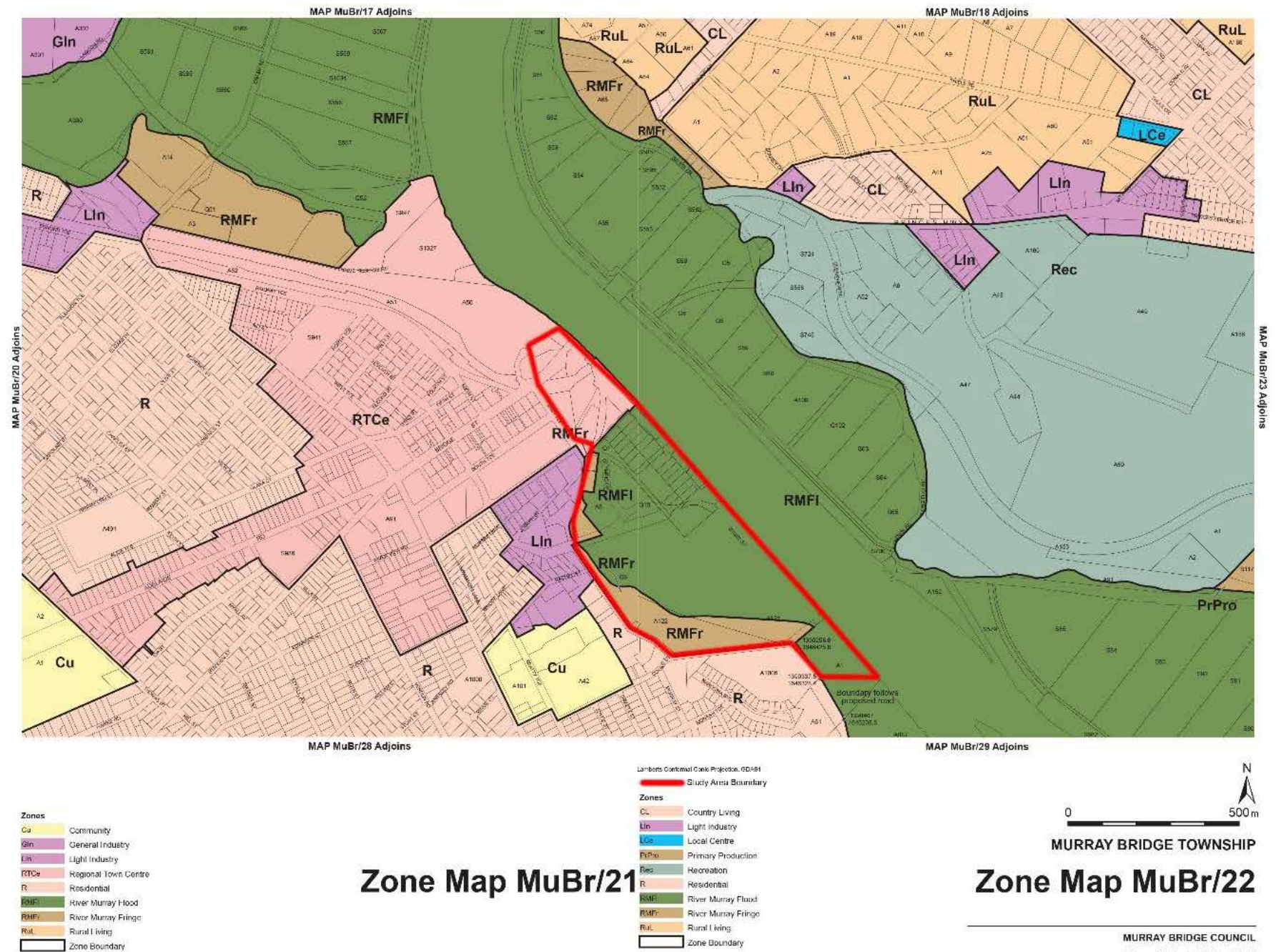
Residential development in association with non-residential development will provide an alternative housing option, and housing choices to meet the demands of residents and visitors. Uses will be distributed in such a manner that both accessibility and vibrancy are encouraged, during and after business hours.

It is desirable that the town centre develops into a walkable, compact, and orderly place, providing an attractive environment for all users. Accordingly, the centre will support the use and function of public transport, walking and cycling, with priority given to a safe and inclusive pedestrian network, complemented by slower speed/ shared environments. Therefore, in this zone, improved pedestrian, cycling and other linkages that acknowledge innovation, context and history and aim to create a place where both residents and visitors live/stay, work, socialise, shop and/or relax, in a comfortable, unique and safe environment are suited.

Design and Character

Contemporary development is appropriate within the centre, with careful consideration of the existing character and setting, of any Heritage items and Historic Conservation Areas that are a part of the zone. It is also expected that development will respond to important historic characteristics through appropriate height, design features (such as verandas and parapets), and the use of complementary materials and finishes.

Upgrades of heritage buildings will follow the principles of preservation, restoration, reconstruction and adaptation.



4. Opportunities and Constraints Analysis

New development will make a positive contribution to this regional centre through the provision of high quality urban design and the appropriate placement of buildings. This can be achieved by contributing towards an interesting and attractive streetscape, through building facades that are meaningfully activated where they face a public road or public space, in order to make the town centre more pedestrian friendly.

An interesting pedestrian environment and human scale will remain the focus of this zone, with careful building articulation and fenestration, frequent openings in building facades, verandas, balconies, awnings and other features that provide weather protection. Long solid walling will be avoided; rather innovative designs better suit this zone.

Water Sensitive Urban Design systems, including harvesting, treatment, storage and the reuse of stormwater, will be integrated throughout the zone at neighbourhood, street, site and building levels. Stormwater management will address potential water quality impacts upon the River Murray, while improving the aesthetic and functional value of open spaces, including public accessways and car parks.

Landscaping plans and detailed design schemes will support the desired character.

Vehicle access points will be consolidated, designed and located to reduce conflict with vehicle, pedestrian and cycle movements.

Public Realm

Future development will be sympathetic to and enhance the public realm. In particular, Bridge and Sixth Streets will maintain a high quality public realm, built form in this zone will encourage public interaction, incorporate passive surveillance and provide landscaping, that engages pedestrians and brings a sense of connection.

Pedestrian comfort will be provided through the use of green walls, green facades, canopies, shading and verandas. Facades will allow for the adaptive reuse of ground floor tenancies, including activities such as outdoor dining, which may spill out onto common areas and footpaths.

Street furniture, car parking areas, including lighting, signs, litter bins, seats and bollards, will be designed and located so as to complement the townscape's riverine character and heritage and improve public spaces. Development within the zone shall be in accordance with Concept Plan Map MuBr/17 - Murray Bridge Town Centre.

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

The following forms of development are envisaged in the zone:

- alterations and additions to existing developed land uses
- bulky goods located in Mixed Use Policy Area 9
- child care centre
- community centre
- consulting room
- department store
- dwelling in conjunction with non-residential development
- educational establishment
- emergency services facility
- entertainment facility
- group dwelling located in Mixed Use Policy Area 9
- hospital
- hotel
- library
- motel
- motel repair station
- multiple dwelling
- office
- place of worship
- primary school located in the Mixed Use Policy Area 9 or Education Policy Area 14
- pre-school located in the Mixed Use Policy Area 9 or Education Policy Area 14
- recreation centre
- public transport terminal
- recreation area
- residential flat building in conjunction with non-residential development
- restaurant
- row dwelling located in Mixed Use Policy Area 9
- service industry
- shop
- swimming pool
- tourist accommodation.

Development listed as non-complying is generally inappropriate.

Active uses such as shops, restaurants and cafes should be concentrated at ground level to ensure:

- (a) residential and other commercial uses are located on higher levels
- (b) integration of land uses within buildings and adjacent public spaces
- (c) promotion of street activation and surveillance.

Development comprising a variety of medium density residential and non-residential uses should only be developed if it does not prejudice the operation of existing or future non-residential activity within the zone.

Form and Character

Items defined in Table MuBr/3 – Contributory Items, Table MuBr/4 - Local Heritage Places and Table MuBr/5 - State Heritage Places as having either State, Local or Contributory heritage value should be conserved or adaptively reused or restored.

Development should provide building frontages and facades that support street activity and engagement with pedestrians, options for achieving this include provision of large street facing windows, articulation of frontages and the use of verandas to improve walkability.

Unless specifically identified within either a policy area or precinct development should have a maximum building height of 8 metres.

River Murray Flood zone

The Objectives of the River Murray Flood zone are defined as follows:

OBJECTIVES

Buildings and structures excluded from the zone where they are likely to impede or be damaged by floodwaters and/or fluctuating pool levels of the River Murray.

The conservation and improvement of water quality that sustains the natural environment and natural ecological processes associated with the River Murray.

Conservation of the natural features of the river environment.

Restricted development in recognition of the hazards associated with floods, by minimising new structures and changes to existing natural ground levels.

4. Opportunities and Constraints Analysis

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

The following forms of development are envisaged in the zone:

- a structure for the purpose of public recreation (e.g. landing and jetty)
- a structure for the purposes of water extraction, wetland management and irrigation management (e.g. channel, pumping stand, flood gate).

Development listed as non-complying is generally inappropriate.

Development should not cause, impede, or be subject to damage by floodwaters and/or fluctuating pool levels of the River Murray.

Mining operations should not be undertaken unless it can be demonstrated that:

- (a) the resource is of paramount significance to the social well being and economy of the State
- (b) the exploitation of the resources would be in State or national interest
- (c) there are no equivalent resources available elsewhere
- (d) the adverse impact on the River Murray is not significant
- (e) the adverse impact can be offset by specific cost effective actions that will benefit the River Murray.

Borrow pits used for the supply of road making materials should not be located in the zone.

Dairies, piggeries or other intensive animal husbandry activities should not be established in zone.

Agricultural buildings should not be constructed unless they are ancillary to and in association with primary production uses.

Swamps should not be drained.

Form and Character

Development should:

- (a) not adversely affect the stability or the natural features of the waterfront
- (b) minimise and limit vehicular access to be associated with the site
- (c) the location of any vehicle access point to the waterfront is sited to avoid adverse environmental impacts
- (d) provide the maximum possible waterfront reserve between buildings and the water
- (e) provide and maintain public access routes to waterfront reserves.

Driveways, access tracks and parking areas should be designed and constructed with a minimum amount of excavation and a maximum fill of 100 millimetres above existing ground level.

Boat ramps, jetties and water pumps should:

- (a) be limited in number
- (b) not interfere with the natural environment or natural ecological processes of the site.

The replacement of an existing dwelling or the redevelopment of an existing dwelling should:

- (a) not exceed one storey in height (excluding the elevation to minimise the potential for personal or property damage as a result of a flood)
- (b) not occur closer to the waterfront than 50 metres
- (c) not result in elevated floor levels that exceed 2.5 metres in height above ground level
- (d) not have associated electricity and telecommunications lines installed underground.

The undercroft areas of elevated dwellings:

- (a) when enclosed, should be enclosed using roller doors, removable panels or other material that can easily be opened or removed during times of flood
- (b) should not be used for living purposes
- (c) maybe used for a toilet, a shower or laundry facilities, to a combined maximum floor area of 10 square metres.

Development (including building work, a change in the use of land, or division of an allotment) for the following is non-complying:

Amusement machine centre, Camping ground, Caravan park, Cemetery, Commercial forestry, Community centre, Consulting room, Crematorium, Dairy, Dwelling, Fuel depot and Horse keeping.

Form of Development – Exceptions

Horticulture, hospital, hotel, indoor recreation centre, industry, intensive animal keeping, land division, motel, motor repair station, nursing home, office, outbuilding, petrol filling station, place of workshop, post office, pre-school, prescribed mining operations, public service depot, residential flat building, road transport terminal, service trade premises, shop, stadium, stock sales yard, stock slaughter works, store, tourism accommodation, warehouse, waste reception, storage, treatment or disposal, and wrecking yard.

River Murray Fringe zone

The Objectives of the River Murray Fringe zone are defined as follows:

The natural character and visual attractiveness of the River Murray, valley face and surrounds unmarred by development.

Preservation and improvement of the water quality of the River Murray and Lake Alexandrina.

Retention of the rural character of the zone.

Development that contributes to the desired character of the zone.

Desired Character

Urban development within the zone needs to be undertaken in such a manner that the valuable visual and ecological assets of the River Murray are protected and enhanced. The form, location and management of such development therefore relies heavily on the specific suitability of particular sites, the likely impact development will have on surrounding areas and the techniques employed for the long-term management of such sites.

Accordingly, whilst it is not envisaged that all urban development within the zone should be prevented in the longer term, investigations and management controls need to be established before any such development is able to proceed. The appropriate mechanism to achieve such initial investigations is through site specific amendments of any area under consideration for development.

It is envisaged that the river-front area to the south of Sturt Reserve will be further developed to provide recreational, residential and tourist facilities. Road and pedestrian links will be created to interlink the area of Sturt Reserve to the recreational area adjacent to Long Island.

Open space development for land within Section 911, Hundred of Mobilong is envisaged. As the area is devoid of vegetation due to the influx of saline water, development will incorporate salt tolerant vegetation species. Car parking facilities on this land will be formalised.

4. Opportunities and Constraints Analysis

Principles of Development Control

The following forms of development are envisaged in the zone:

- farming
- recreation facility.

Development listed as non-complying is generally inappropriate.

Commercial and retail (other than tourist and/or community orientated facilities) development should not occur in this zone.

The plantation and car parking reserve in Section 911, Hundred of Mobilong and low-lying land adjacent to Mannum Road should be developed for open space and recreation activities.

Comprehensive tourist, residential and recreation orientated development should be undertaken south of Sturt Reserve.

River front open space areas, such as Long Island and Sturt Reserve should be developed predominantly for public and tourist orientated usage.

Form and character

Development should not be undertaken unless it is consistent with the desired character for the zone.

Recreational facilities should:

- be consistent with the conservation of the area's natural quality and character
- where occurring on land draining to the River Murray, be designed to require the minimum amount of watering to prevent the aggravation of seepage to the river.

Public access points to recreation and tourism developments should be limited in number and sited so they do not affect the amenity of the zone.

Non-complying Development

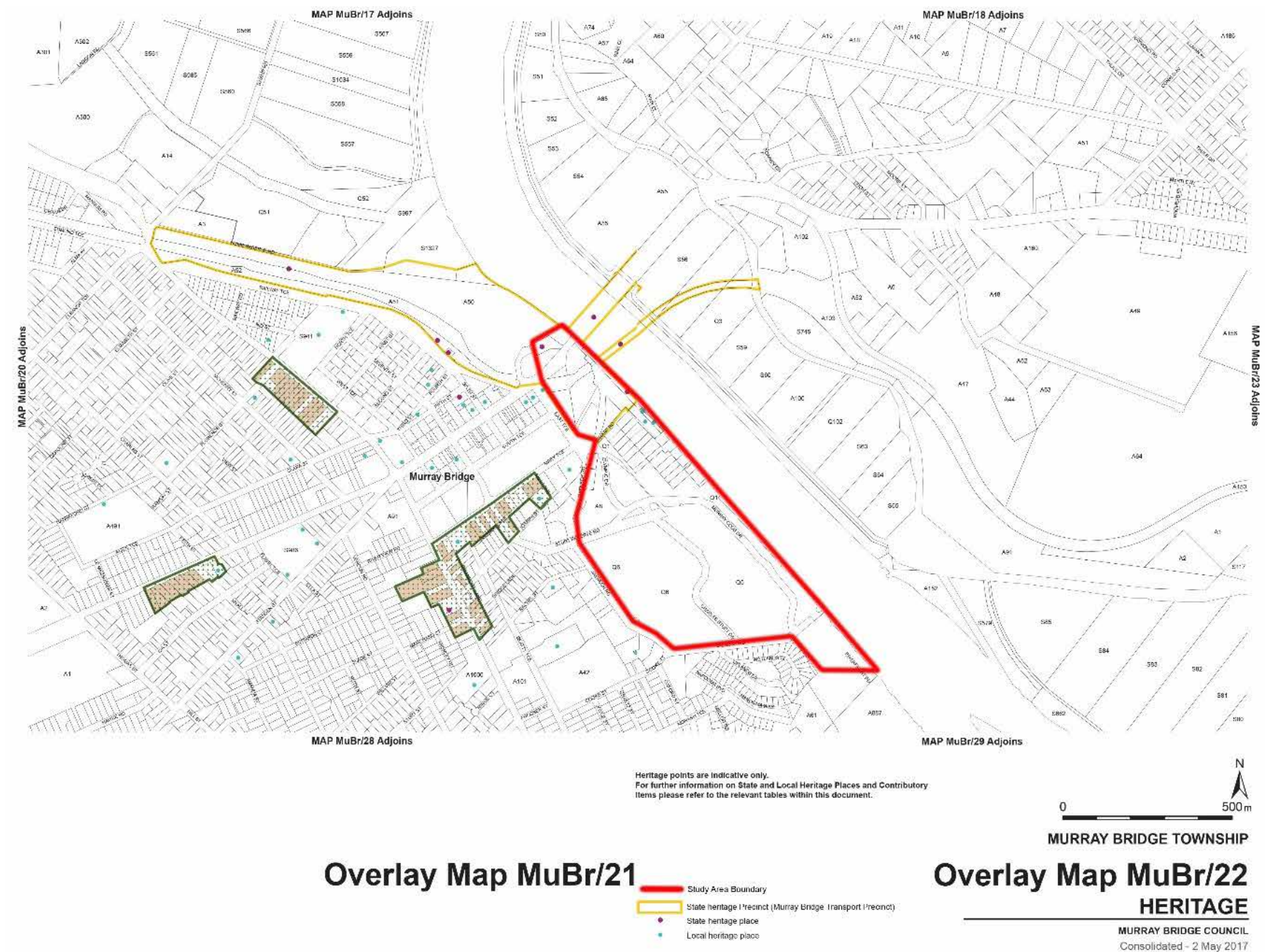
Development (including building work, a change in the use of land, or division of an allotment) for the following is non-complying:

Amusement machine centre, camping ground, cemetery, community centre, consulting room, crematorium, dairy, dwelling, fuel depot, horticulture, hospital, hotel, indoor recreation centre, industry, intensive animal keeping, land division and marina.

Exceptions to non-complying development

Motel, motor repair station, nursing home, office, petrol filling station, place of worship, pre-school, prescribed mining operations, public service depot, residential flat building, restaurant, road transport terminal, service trade premises, shop or group of shops, stock sales yard, stock slaughter works, store, warehouse, waste reception, storage, treatment or disposal and wrecking yard.

4.1.4 Heritage / Policy Areas



4. Opportunities and Constraints Analysis

The study area includes a number of State and Local Heritage items, as per the amalgamated map on the previous page. These include the following:

- State Heritage Places;
- The Rail Bridge (Princess Highway Murray Bridge Road Bridge (Metal Truss)
- The Road Bridge (Princess Highway Murray Bridge Road Bridge (Metal Truss)
- The Murray Bridge Transport Precinct (designated place of archaeological significance) bordered by Railway Tce-East Tce-Wharf Rd-Hume Res Rd- Bridge Rd Murray Bridge.
- Round House (former Murray Bridge Works Superintendent's home)
- Murray Bridge Wharf & Hand Crane
- Local Heritage Places;
- Railway and Wharf Precinct

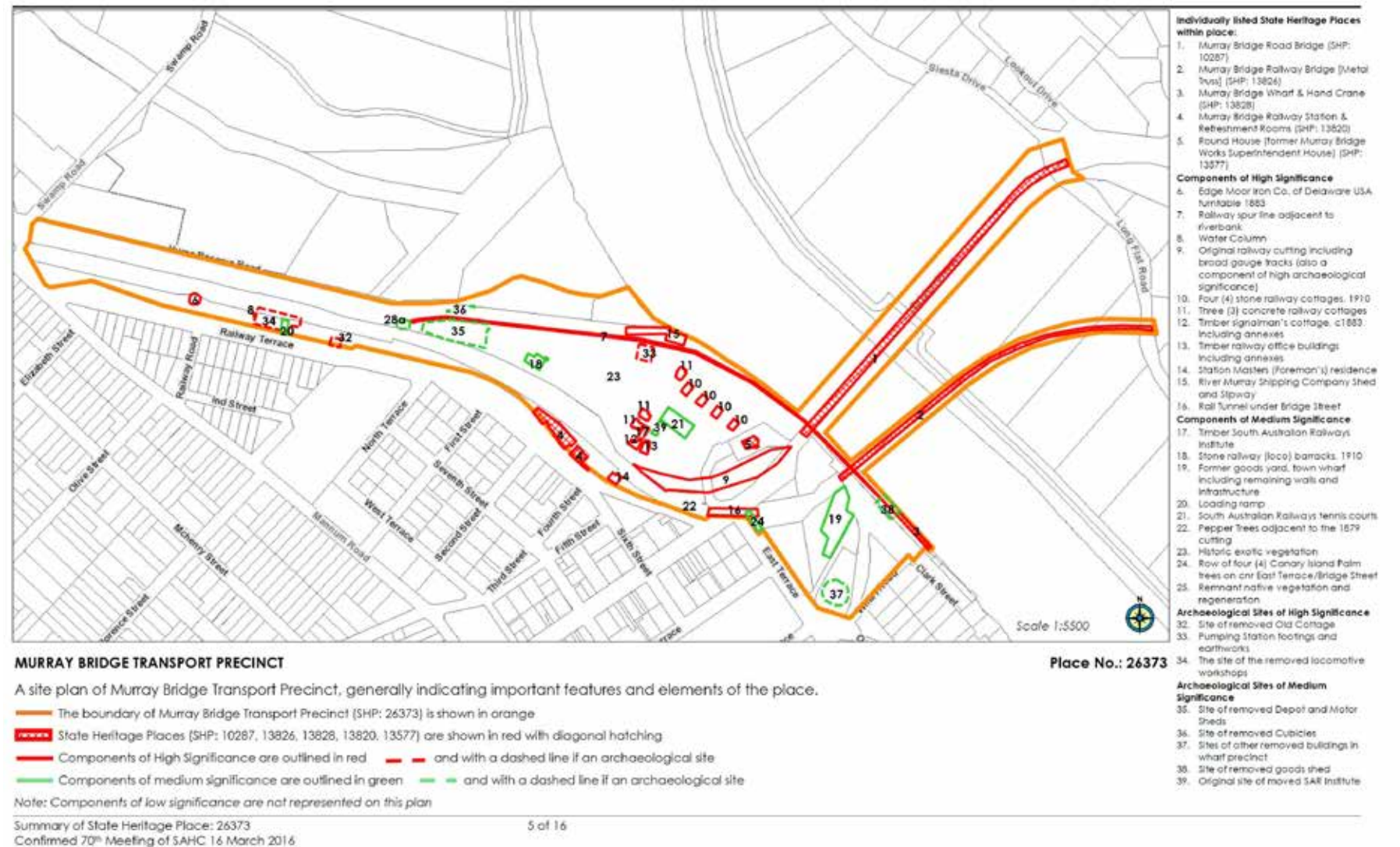
The following detailed plan, extracted from the Summary of State Heritage Place:26373, provides additional information on the location of these elements.

4.1.5 Recommendations

Given the strategic importance of the Sturt Reserve study area as a major tourism, heritage, recreation area, and as some desired elements within the new precincts may be non-complying forms of development within the current zones, we would suggest that Council may consider a separate DPA (Development Plan Amendment) that provides for the creation of a unique zone that specifically identifies the future character of the zone and its importance as an iconic historic, tourism and recreation centre for Murray Bridge.

This is not currently capable of being progressed given the State Government's position on new DPAs during the transition to the Planning & Design Code envisaged by the Planning, Development & Infrastructure Act.

DETAIL PLAN – Plan indicating significant components and archaeological sites at Murray Bridge Transport Precinct



4. Opportunities and Constraints Analysis

4.2 Precinct Analysis

The following outline key opportunities and constraints for each of the precincts.

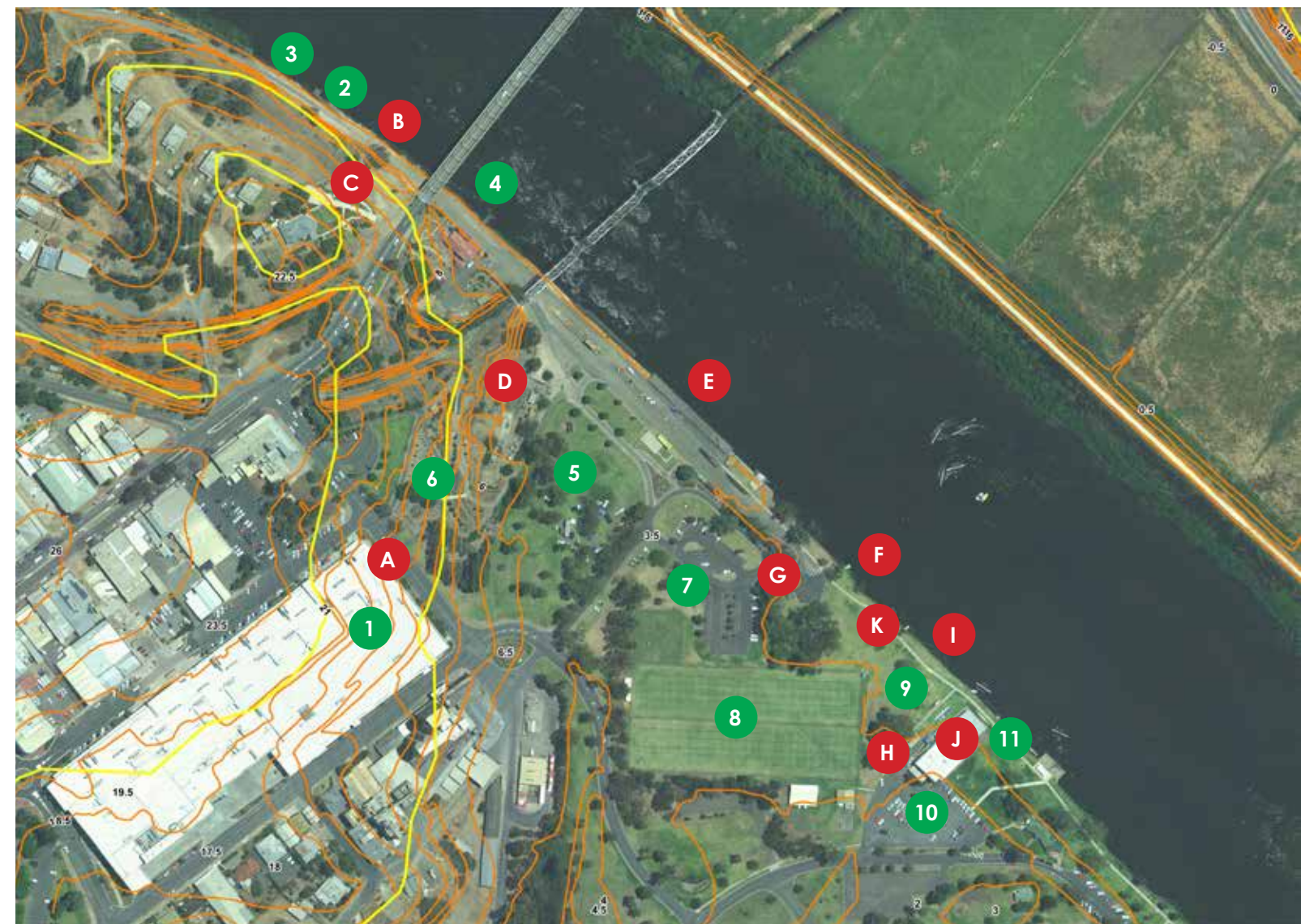
4.2.1 Tourism / History Precinct and Recreation Precinct

Opportunities

1. Major shopping facility in vicinity of precinct
2. Landing area for the Murray Princess. Opportunity for tourists to access the river front
3. Access to Hume Reserve and beyond
4. Historic Bridges
5. Well maintained open space
6. Well maintained and inviting garden area and paths
7. Large parking area
8. Well utilised tennis courts
9. Proposed location of new Rowing Club
10. Large parking area
11. Path provides access along riverfront

Constraints

- A. Lack of connectivity between town centre and riverfront
- B. Poor first impression for tourists as landing area for Murray Princess is under developed and un-welcoming.
- C. Access to Roundhouse is steep and unpaved
- D. Historic storage area is uninviting
- E. Wharf area is currently uninviting and in need of repair
- F. Boat ramp in need of upgrade / repair in the future
- G. Existing road network is confusing
- H. Lack of facilities for Tennis Club, including public toilet in need of repair
- I. Lack of landing facilities for rowing
- J. Privately owned development
- K. Path is too narrow for dual use (pedestrians and bicycles)



Topographic Contours Opportunities Constraints

Tourism / History Precinct and Recreation Precinct
Opportunities and Constraints Plan

4. Opportunities and Constraints Analysis

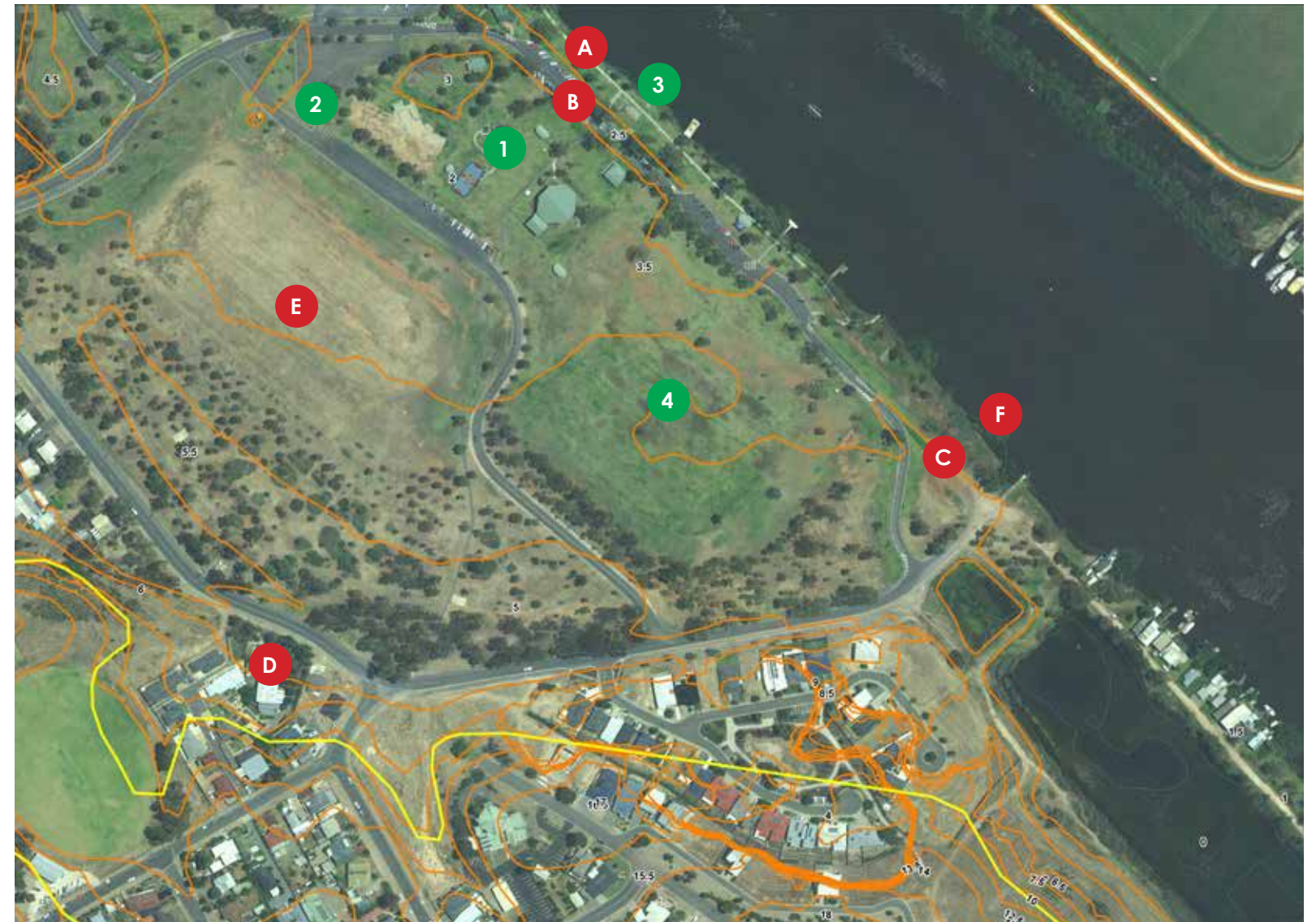
4.2.2 Play Precinct and Accommodation / Events Precinct

Opportunities

1. Well utilised skate park (which is planned to be extended), playground and other facilities for play/recreation
2. Large parking areas
3. Local attraction – The Murray Bridge Bunyip
4. Large area of open space

Constraints

- A. Path is too narrow for dual use (pedestrians and bicycles)
- B. One way road. Road also provides a physical barrier to riverfront development and introduces safety hazard for children in this area.
- C. Lack of connectivity beyond Sturt Reserve
- D. Any development must consider impact on nearby residents
- E. Historic Landfill – Impacts are currently not fully investigated / defined
- F. Potential riverbank stability issues

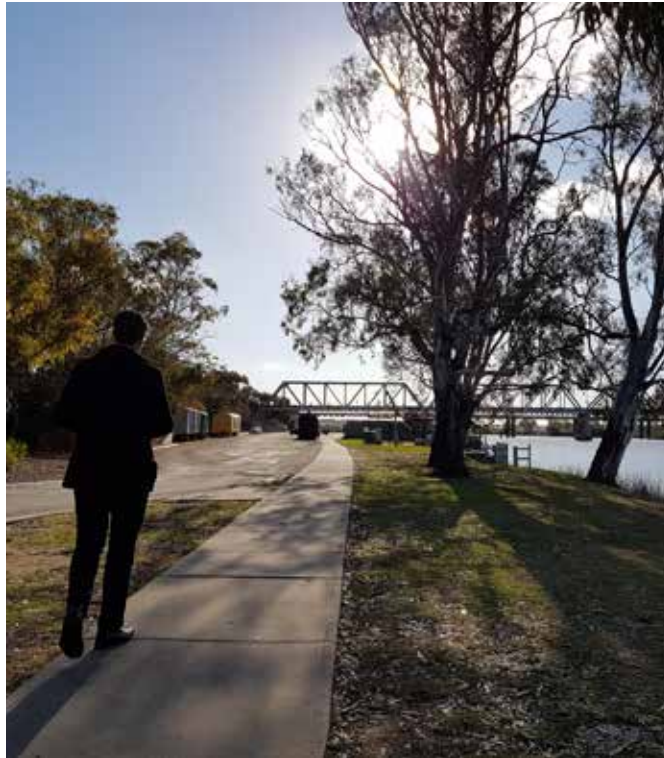


Topographic Contours Opportunities Constraints

Play Precinct and Accommodation / Events Precinct
Opportunities and Constraints Plan



4. Opportunities and Constraints Analysis



Existing path along riverfront (typical)



Existing Playground (Play Precinct)



Murray Bridge Bunyip (Play Precinct)



Garden area (Tourism/Heritage Precinct)



Wharf area (Tourism/Heritage Precinct)



Murray Princess landing area and access to Roundhouse (Tourism/Heritage Precinct)



Historic storage area (Tourism/Heritage Precinct)

4. Opportunities and Constraints Analysis

4.3 Murray River Towns – Reference Reserve Developments

During consultation for the Riverfront Strategy and this Master Plan project a number of towns were referenced as good examples of Murray River riverfront developments. These included Goolwa, Mannum, Renmark, Mildura and Echuca.

The following outlines key features of the riverfront development in these towns, in particular elements which may be applicable to the redevelopment of Sturt Reserve. Photographs of each location are included in Appendix A.

4.3.1 Goolwa

The development along the riverfront at Goolwa provides a good example of the integration of tourist, historic and riverfront development. Key features applicable to Sturt Reserve include:

- Well maintained historic wharf facilities
- Tourist information facilities including ticketing area for river cruises
- Integrating historic structures into the fabric of the development and developing historic elements into places of greater attraction (e.g. incorporating commercial use)
- Recognition of indigenous heritage
- Provision of cafes and function spaces which capitalise on the riverfront location

During the site visit the area appeared to be busy and utilised by both locals and tourists, despite the early morning, mid week timing of the inspection.

Similar to Murray Bridge, the Goolwa riverfront and town centre lack connection. The success of the Goolwa riverfront demonstrates the benefits that a this type of development can bring to a regional town, as the river becomes a drawcard in its own right.

4.3.2 Mannum

Mannum's riverfront development, although well maintained and pleasant, currently suffers from many of the issues seen at Sturt Reserve. Therefore this reinforces some of the elements that should be avoided within the Sturt Reserve Master Plan including:

- Lack of connectivity with the town centre
- Lack of connectivity along the water front
- Tourist Information facilities which lack connection to the riverfront
- Historic elements can be accessed by the public for a fee, although the visitor experience is limited and facilities appear to be in need of restoration.

During the site visit the riverfront reserves and tourist facilities were devoid of activities, although this may be related to the mid week timing of the inspection.

4.3.3 Renmark

The riverfront development at Renmark is focused around the "Renmark Club", a community club development on the river's edge which capitalises on the spectacular views across the river. The river's edge is well maintained and includes paths and structural elements making it an interesting place to walk. Away from the central development are areas where houseboats can be hired. The buildings within the town generally face the river and many cafes take advantage of the views over the river by incorporating alfresco dining.

The site visit indicated that the Renmark Club was extremely busy during the evening and appeared to be a focal point for the community. The river's edge was well used by walkers early in the morning, and many people could be seen enjoying breakfast at the cafes overlooking the river.

4.3.4 Mildura

The riverfront at Mildura has recently been redeveloped and is an excellent example of how riverfront development can activate a town. The riverfront development includes the following:

- Wide dual use path along the entire riverfront which includes areas for exercise equipment and seating.
- Consistent and interesting signage and clear wayfinding
- Stage for community events
- Splash play area
- Redeveloped rowing club which includes a large balcony area overlooking the riverfront
- Combination of hard and soft edges along the riverfront including area for mooring of houseboats
- Well maintained historic wharf which incorporates elements of the recent upgrade (e.g. lighting consistent with the lighting along the dual use path)
- Well maintained public toilet facilities
- "Pop-up" cafes; a caravan café and a shipping container café
- Recognition of indigenous heritage and integration into the fabric of the development.
- Connectivity delivered as a result of railway removal.

During the site visit we spoke to some local residents who explained that prior to the development, the riverfront was rarely used. The recent development of the riverfront has completely changed the way locals and tourists use the riverfront, which has now become a major focal point for the town.

Despite the mid week timing, during the site visit the riverfront was bustling and full of people. The redeveloped rowing club and both "pop up" cafes were extremely busy. Many people were walking or running along the rivers edge either for exercise or for a gentle stroll. People were observed using the river side seating to eat their lunch, while reading a book in the peaceful surrounds. The owners of the "caravan café" related how the redevelopment has provided the opportunity for them to start a new business which has been very successful.

4.3.5 Echuca

Echuca's riverfront development consists largely of a historic tourist development which has been established for many years. Echuca demonstrates how historic elements, if presented in the right way, can be a major drawcard for tourists and important for the preservation of the towns heritage. However, there are no areas open to the public which provide access to the river without payment. Away from the tourist facilities there are no obvious places to access the river and therefore, although the river is an important part of the towns history, it is largely hidden from view.



5 Sturt Reserve Master Plan



5 Sturt Reserve Master Plan

The Master Plan for Sturt Reserve provides a framework for future upgrades and development of Sturt Reserve, and provides a basis for planning, funding and further design development. The Master Plan has been developed through expressed future desires of the community, review of previous investigations, reference to other Murray River riverfront developments and analysis of the sites opportunities and constraints.

5.1 Precinct Plan

To assist in the future planning and investment the reserve should be considered as a number of "precincts" as outlined in the following figure. The character statements that define these precincts are outlined in the following sections.

As recommended by the Rural Council of Murray Bridge Trail Strategy, these precincts will be linked through a 3m wide new recreational shared-use loop trail, suitable for walking, recreational cycling (particularly for families), and running. This will require a new path around the perimeter of the reserve and an upgrade and extension to the existing path which runs along the river front, and which will continue to connect Sturt Reserve with Hume Reserve to the north and other future developments to the south.

The looped path should be designed in a way that it improves the amenity for spectators and support areas during the Pedal Prix event.

Where the path crosses roadways, the road and signage in these areas should be treated to indicate that pedestrians have right of way and to signify that motorists are entering a pedestrian friendly precinct. It is envisaged that the Pedal Prix circuit remains in its current location and therefore any modification to the roads needs to accommodate the needs of this competition.

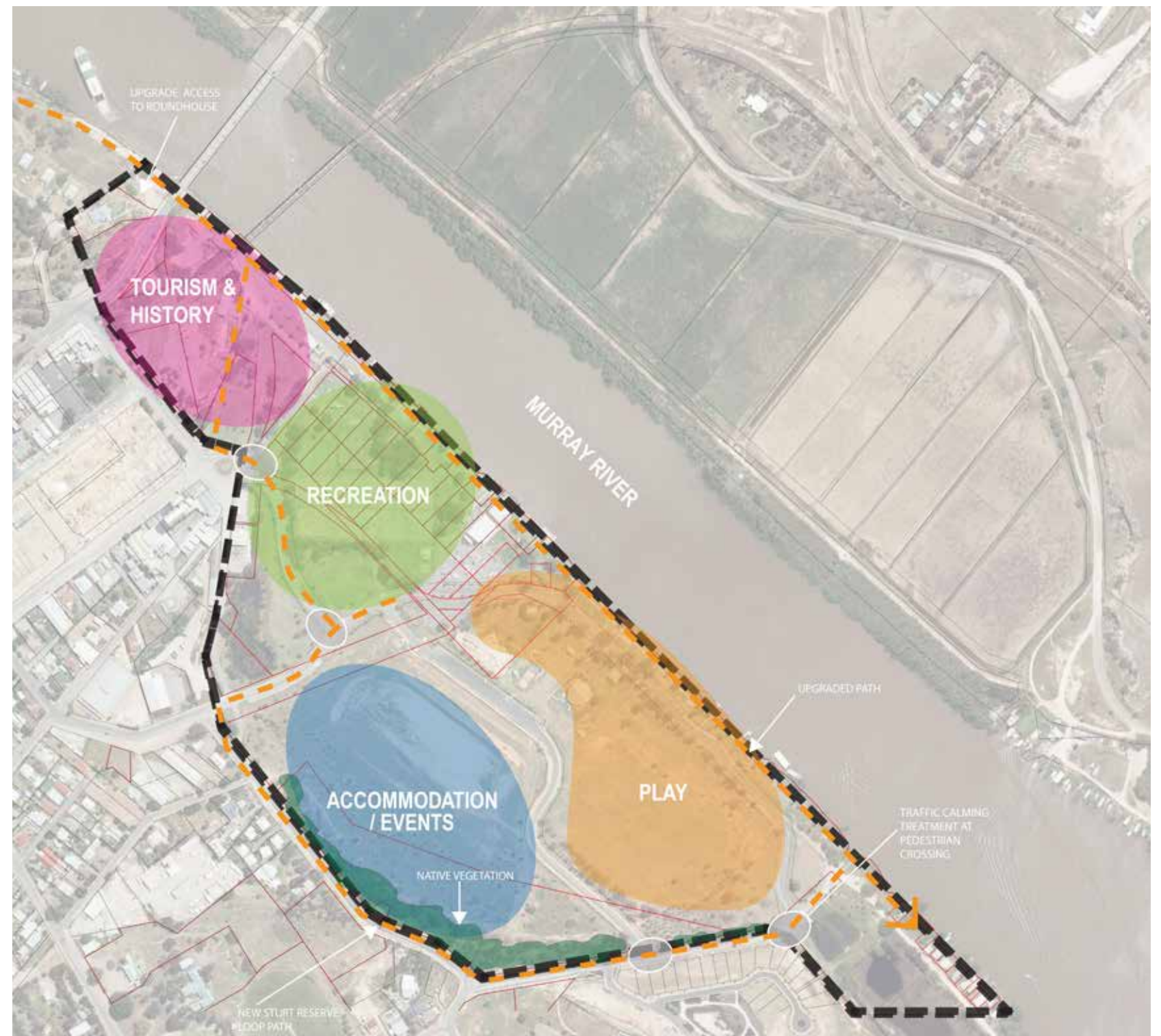
The new and upgraded path shall include new signage and wayfinding elements which:

- Allow visitors to easily identify where they are and the direction to places of interest
- Provide clear linkage of the riverfront precincts and the town centre
- Have a consistent theming and design
- Reflect the character of the riverfront, relevant precinct and celebrate indigenous and European heritage.
- Are made of durable materials that require minimal maintenance.

The new loop path should also include upgraded landscaping, comprising of species native to the area, to enhance the experience for path users and provide a nature buffer for nearby residents.

The path will also include upgraded lighting and nodes of seating, BBQ's and exercise equipment which reflect the theming of the precinct.

Examples of the above are provided on the following page.



Sturt Reserve Precinct Plan

5 Sturt Reserve Master Plan



Typical seating



Typical dual use path



Typical signage for exercise nodes



Typical exercise equipment node



Typical seating



Typical way finding and signage



Typical way finding and signage



Typical dual use path



Typical way finding and signage

5 Sturt Reserve Master Plan

5.2 Tourism and History Precinct Concept Plan

The focus of this precinct is on visitor experiences and information, and celebration and reflection of both Indigenous and European heritage. This precinct includes landing facilities for tourist cruising vessels. The overall theme of this precinct is "Relaxed and Reflective."

The design for the Tourism and History Precinct aims to celebrate the heritage of the area and individual components. To enhance these values, upgrades will be incorporated such as timber steps/seating areas, in order to provide access to key features of the precinct (e.g. providing access and potential reuse of the historic train carriages, the wharf and hand crane). In addition, the pedestrian and the vehicular zones (including car parking areas) have been more clearly designated through new paving patterns, landscaping, handrails and lighting features.

This precinct would make an ideal location for a tourist information, café, discovery centre and/or function space due to its riverfront location, proximity to the landing point for tourist vessels and the town centre, historic surroundings and potential links to Hume reserve.

It is also envisaged that this precinct would be an ideal location for a remembrance memorial, which would be utilised for ANZAC day and other important events for returned service people. The reflective nature of this facility would align with the use of the precinct.

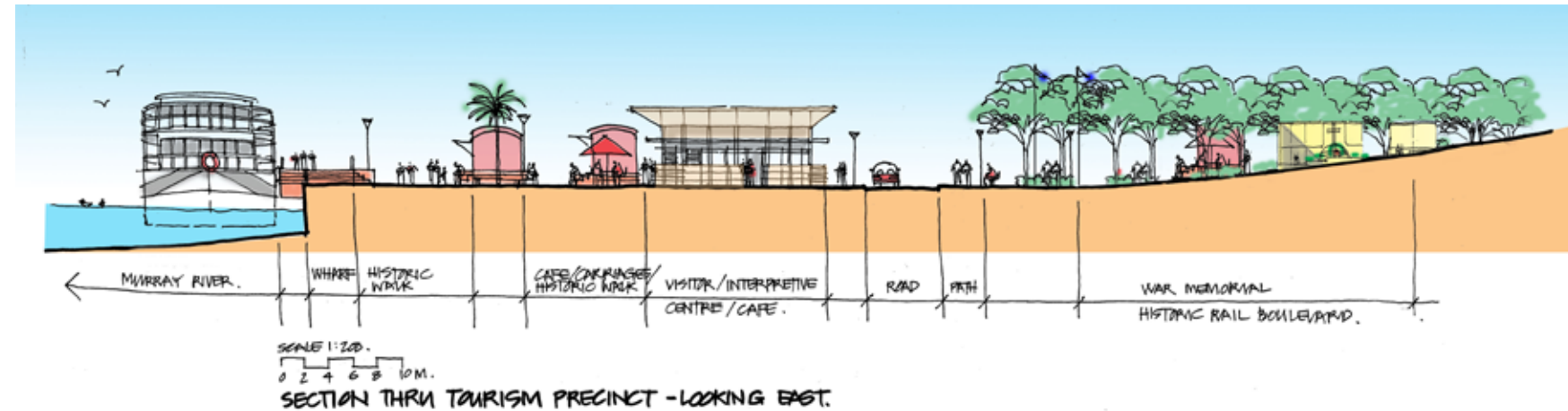


Tourism and History Precinct Concept Plan

5 Sturt Reserve Master Plan

Key elements of the concept plan include:

- General upgrade to the riverfront extending from the Murray Princess landing to the north to the southern end of precinct including formalisation of the river edge, paving, lighting, landscaping and handrails. Existing historic elements should be refurbished where required and incorporated into the fabric of the upgrade. The focus should involve the respectful theming of both indigenous and non-indigenous heritage.
- Asphaltting, or paving, the existing path to the Roundhouse.
- Feature lighting to highlight the historic bridges.
- Simplification of the road system in the precinct including removing permanent vehicle access to the river edge and decommissioning of the boat ramp.
- Maintaining the parking area to the south of the precinct.
- Formalising the road and creating additional parking space to service the northern areas of the precinct, including provision of bus access to collect tourists from the Murray Princess.
- Screening of the historic storage area through use of landscaping and indigenous artwork elements.
- Restoration of the historic wharf.
- Construction of a Tourist Information Centre, incorporating a café, discovery centre and/or function space.
- Creation of a Heritage Rail Boulevard following the route of the disused rail corridor and celebrating this heritage through use of existing carriages, public art and signage.
- Improved linkage with the shopping centre through road markings and creation of pathways / landscaped boulevard along East Terrace.
- Installation of a war memorial adjacent the existing garden area.



Section through Tourism and History Precinct



Typical Perspective looking south – Before



Typical Perspective looking south – After

5 Sturt Reserve Master Plan



Typical Perspective looking north – Before



Example of wharf upgrade and tourism facility



Typical Perspective looking north – After



Incorporating historic elements into fabric of precinct,



Example of café on riverfront



Example views from café over river



Example war memorial



Example of screening incorporating indigenous theming

5 Sturt Reserve Master Plan

5.3 Recreation Precinct Concept Plan

The focus of this precinct is around more formal recreation activities, building on current infrastructure, but in particular on development of rowing infrastructure and establishment of Murray Bridge as the “home of South Australian rowing”.

Key elements of the concept plan include:

- Maintain existing tennis facilities
- Incorporate the proposed rowing club
- Provide landing facility for rowing
- Install public art celebrating rowing and/or “The Murray Cods”
- Upgrade the existing path to a 3m wide dual use path and construct new paths to provide formalised linkages to the riverfront, tennis facilities, toilets and car parking.
- As recommended by the Murray Bridge Public Toilet Strategy, upgrade or replace the existing public toilet.



5 Sturt Reserve Master Plan

5.4 Play Precinct Concept Plan

The theme for this precinct is “Activation, energetic and alive!”

The focus of the play precinct is community activities and events, visitor experiences and fun. It will be an area where there is “always something happening” or something to do, whether you are a community member, day tripper from Adelaide or tourist. It will build on the current infrastructure and events. Examples of future activities may include a moonlight cinema, music, food or cultural festivals, or events to coincide with public holidays.

The potential for additional cafes/eateries should be explored, in particular “pop-up” cafes and/or food truck events.

The key attractor to this precinct will be the iconic regional park which will include a river beach, the Muldjewangk (Bunyip) wetland splash play area and new playground which feeds into the existing play and recreation facilities. The focus should be on natural theming for the play space and the graduation of the swimming, splash and dry play areas should symbolise the transition from river to wetland to bush. The existing Murray Bridge Bunyip will be removed and become incorporated into the play space. It is important that the Ngarrindjeri Regional Authority are consulted on the most appropriate way to incorporate this feature so that the indigenous roots of the Muldjewangk can be respected and built upon, while maintaining the Murray Bridge Bunyip attraction iconic tourism status.

Another key feature is the construction of a stage which will form a secondary focal point for the reserve and capitalise on the large expanse of open space available for events. There is ample parking within walking distance of this area for the majority of events expected at the reserve. For significant major events, the nearby shopping centre car park could be used as overflow parking and / or shuttle bus style parking set up from local ovals, which is common for significant regional events.

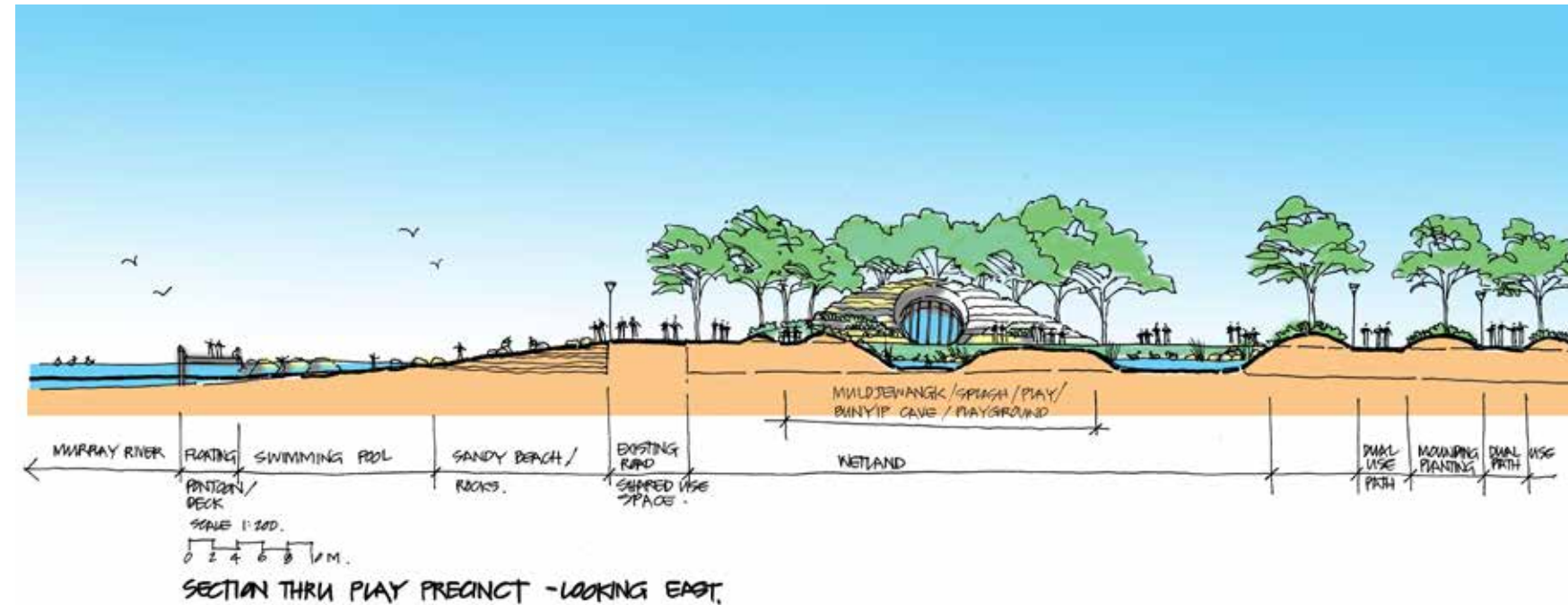


Play Precinct Concept Plan

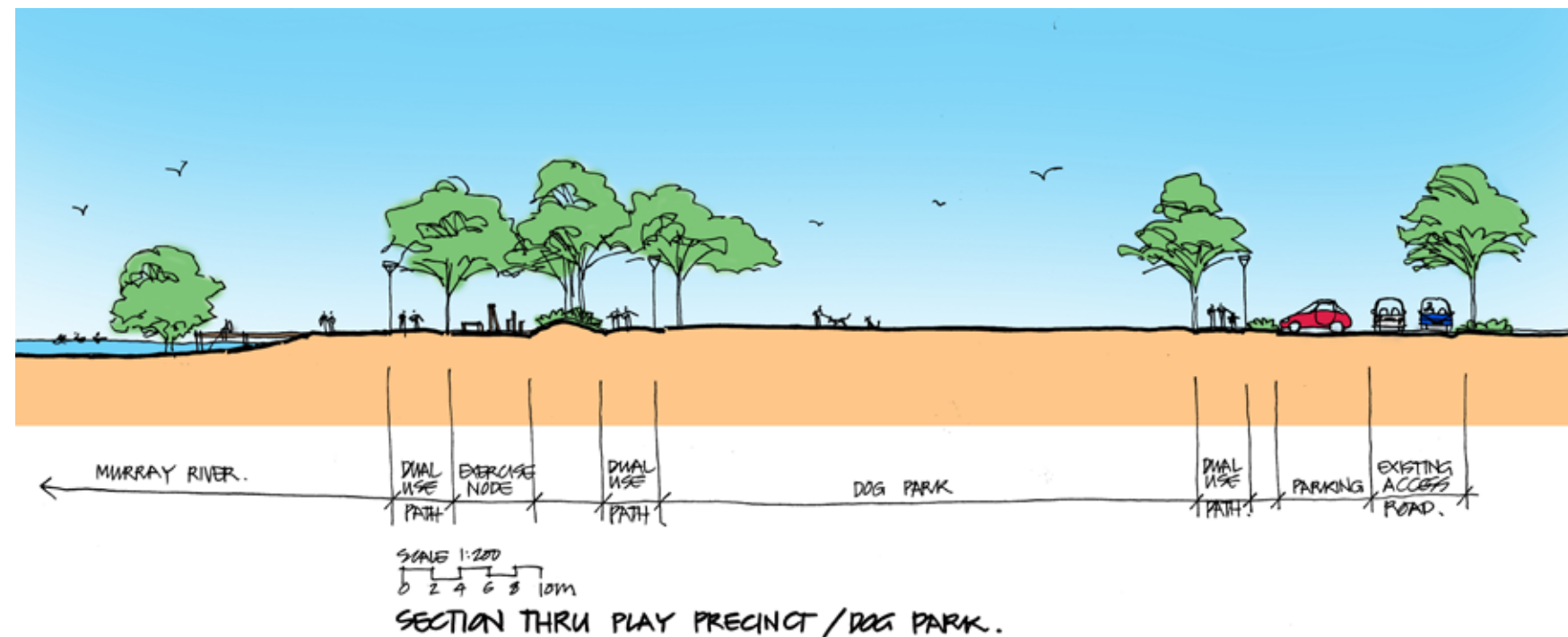
5 Sturt Reserve Master Plan

Key elements of the concept plan include:

- Development of iconic regional level play facility incorporating river beach, the Muldjewangk (Bunyip) wetland splash play area and new playground which feeds into the existing play and recreation facilities. The splash play area or river beach may also provide an opportunity to be used, on occasion, for model boat events.
- Development of a stage area constructed from durable, low maintenance materials and innovative cost efficient construction.
- Upgrade the existing path to a 3m wide dual use path and continue path to end of precinct to facilitate access to future development to the south of the reserve.
- Provide both hard and soft edged houseboat mooring opportunities
- Close a portion of the existing one way riverfront road to permanent traffic and convert adjacent areas to two way roads with parking and turn around facilities. Install removable bollards at each end of the closed road so that the road can be reopened as part of the Pedal Prix circuit or for special events (for example to allow access for food trucks). Treat area of restricted access road to match theming of play space but ensure that the surface remains suitable for the Pedal Prix competition.
- Establish a "Dog Park" at the southern end of the precinct
- Provide additional native vegetation landscape buffer to the rear of the stage area, including exercise, seating and BBQ nodes along perimeter of precinct.



Section through Play precinct looking east



Typical section through Play precinct including dual used path and dog park

5 Sturt Reserve Master Plan



Example of wetland play space



Example of wetland play space, with potential to be used for model boats



Example of splash play space



Example of splash play space



Example of splash play space



Example of playground with natural theming



Example of playground with natural theming



Example of stage



Example of "pop up" shipping container café



Example of "pop up" caravan/food truck café



Example of hard edge houseboat mooring



Example of cost effective stage back of house

5 Sturt Reserve Master Plan

5.5 Accommodation / Events Precinct

The development of this precinct will be dependent on the future investigations of the historic landfill and the opportunities which Council may wish to open up for this area.

The Master Plan envisages that this precinct is ideally located to provide caravan, cabin and/or camping accommodation alongside the river and the key activity area for Murray Bridge. Establishment of accommodation in this location would be a major drawcard for visitors and people attending the regular events held in Sturt Reserve.

The initial proposal for this precinct is outlined in the plan to the right. The key element of this plan is the installation of a dual use loop path, and landscaping as outlined in section 5.1. As detailed previously it is important that this new loop path enhances the area for Pedal Prix spectators and support teams. As a minimum, in particular if this concept represents the long term vision for the precinct, it is recommended that the large area of open space in the middle of the precinct is maintained to improve the aesthetics of the area or potentially be converted to sporting fields.

In addition, a key design outcome is the development of a high quality landscape realm forming a visual buffer to residents along Jaensch Road.



Accommodation / Events Precinct Concept Plan – Initial Development

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6 Cost Estimate and Implementation Plan





6 Cost Estimate and Implementation Plan

A cost estimate has been developed based on the concept level information outlined in the previous section.

The estimate for each precinct is outlined below:

- Tourism and History Precinct Upgrade – \$14.2M
- Recreation Precinct Upgrade - \$2.35M
- Play Precinct Upgrade - \$14.5M
- Accommodation / Events Precinct Upgrade (Stage 1 only) - \$3.54M
- TOTAL STURT RESERVE REDEVELOPMENT - \$34.6M

A full breakdown of the estimate is provided in Appendix B, in addition to details on the accuracy, contingency, inclusions and exclusions within the cost estimate.

6.1 Implementation Plan

The following table provides a recommended schedule for the implementation of the Master Plan recommendations.

Precinct	Estimated Cost (Ex GST)	Timeframe	2018-2020	2021-2023	2024-2026
Tourism and History Precinct	\$14.21M	2018-2026	\$1.5M Key Activities: Seek Funding, Detailed Design, Construction of War Memorial	\$8M Key Activities: Wayfinding, Signage and Shared Use Path Upgrade, Staged Upgrade of Precinct	\$4.71M Key Activities: Staged Upgrade of Precinct
Recreation Precinct	\$2.35M	2021-2023		\$2.35M Key Activities: Upgrade of Precinct	
Play Precinct	\$14.5M	2018-2023	\$4.5M Key Activities: Seek Funding, Detailed Design and commence precinct upgrade	\$10M Key Activities: Upgrade of Precinct	
Accommodation / Events Precinct (stage 1 only)	\$3.54M	2021-2026		\$1M Key Activities: Construction of Shared Use Path only	\$2.54M Key Activities: Additional landscaping and upgrade of precinct
TOTAL	\$34.6M		\$6M	\$21.35M	\$7.25M

Appendix A Murray River Towns Reference Reserve Developments





Goolwa





Mannum





Renmark





Mildura





Echuca



Appendix B Cost Estimate





Appendix B Cost Estimate

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Sturt Reserve Precinct Master Plan Order of Cost Estimate

Location Summary

Rates Current At October 2017

Location	Total Cost
A TOURISM/ HISTORY PRECINCT	14,205,420.05
B RECREATION PRECINCT	2,346,823.40
C ACCOMODATION PRECINCT	3,540,979.60
D PLAY PRECINCT	14,496,517.35
ESTIMATED NET COST	\$34,589,740.40
MARGINS & ADJUSTMENTS	
Aboriginal Site Attendance	Excl.
Escalation Beyond 2017	Excl.
Goods and Services Taxation	Excl.
ESTIMATED TOTAL COST	\$34,589,740.40

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Sturt Reserve Precinct Master Plan Order of Cost Estimate

Location Main Headings Item

A TOURISM/ HISTORY PRECINCT

Rates Current At October 2017

Description	Unit	Qty	Rate	Total
DE Demolition and Site Clearance				
1 Clear existing site of rubbish and debris	m²	68,368	0.10	6,836.80
2 Strip existing topsoil, grass and garden beds ready for new works and dispose off site	m²	6,744	3.50	23,604.00
208 Remove existing bins and dispose off site	No	1	110.00	110.00
209 Remove existing bollards and dispose off site	No	6	80.00	480.00
201 Remove existing lighting including termination, making safe and dispose off site	No	5	1,500.00	7,500.00
3 Sawcut existing bitumen ready for removal	m	75	15.00	1,125.00
4 Break up existing bitumen pavement and dispose debris from site	m²	9,394	10.50	98,637.00
127 Mill existing bitumen from road ready for re-sheeting	m²	3,903	8.50	33,175.50
28 Break up existing raised concrete platform and remove debris from site	m²	190	25.00	4,750.00
5 Take up existing unit paving and dispose off site	m²	699	17.00	11,883.00
27 Break up existing concrete kerb and dispose debris from site	m	1,105	11.00	12,155.00
6 Cut down existing small tree including grubbing up roots and dispose off site	No	28	220.00	6,160.00
26 Cut down existing large tree including grubbing up roots and dispose off site	No	37	480.00	17,760.00
7 Demolish existing corrugated iron shed to wharf and remove debris from site	Item			5,000.00
8 Allowance for sundry and unforeseen demolition	Item			10,000.00
9 No allowance for alterations to existing vehicle and rail bridges	Note			Excl.
10 No allowance for demolition or alterations to existing overhead power lines	Note			Excl.
11 No allowance for taking up entire existing lawn area - assume existing to remain where possible	Note			Excl.
12 No allowance for alteration or demolition of existing 'Murray Bridge Riverboat Rail and Steam Group' compound	Note			Excl.
13 No allowance for alteration to existing Bluestone Rotunda	Note			Excl.
Demolition and Site Clearance				\$239,176.30
EA Earthworks				
29 Minor earthworks to create levels for new Tourist Information building plateau	m²	969	15.00	14,535.00
14 Box out for new bitumen pavement including disposal of spoil off site - assume some reuse of existing base course where possible	m²	2,705	8.50	22,992.50
75 Box out for new asphalt carpark including disposal of spoil off site	m²	925	8.50	7,862.50
15 Box out for new concrete paths including disposal of spoil off site	m²	5,253	13.50	70,915.50
16 Box out for new concrete 'Historic Walk' / wharf pavements including disposal of spoil off site - assume some reuse of existing base course where possible	m²	9,589	8.50	81,506.50



Appendix B Cost Estimate

Sturt Reserve Precinct Master Plan
Order of Cost Estimate

Location Main Headings Item

A TOURISM/ HISTORY PRECINCT (continued)

Rates Current At October 2017

Description		Unit	Qty	Rate	Total
120	Box out for new compacted gravel paths including disposal of spoil off site	m²	1,333	10.50	13,996.50
17	Earthworks to create levels for new limestone tiered retaining structure	Item			30,000.00
98	Detailed earthworks to new war memorial	Item			18,000.00
30	Allowance for earthworks associated with upgrade of existing access ramp	Item			10,000.00
18	No allowance for excavation in rock	Note			Excl.
19	No allowance for removal of contaminated material from site	Note			Excl.
197	No allowance for dewatering	Note			Excl.
Earthworks					\$269,808.50
PV Pavements					
20	Proof roll, trim and compact existing subgrade ready for new pavements	m²	19,803	6.50	128,719.50
21	Quarry rubble sub base to new bitumen road and car park pavement including trimming and compacting - assume some reuse of existing	m²	3,629	11.00	39,919.00
22	Quarry rubble base course to new concrete paths including trimming and compacting	m²	5,253	14.00	73,542.00
25	Quarry rubble base course to new concrete 'Historic Walk' / wharf pavement including trimming and compacting - assume some reuse of existing	m²	9,589	11.00	105,479.00
23	Quarry rubble base course to new compacted gravel paths including trimming and compacting	m²	1,333	11.00	14,663.00
24	Fine crushed rock base course to new bitumen road and car park pavement including trimming and compacting	m²	3,629	15.00	54,435.00
38	Fitzgerald Quarry or similar compacted gravel path	m²	1,333	35.00	46,655.00
31	Concrete path 3.0m wide including edge form, reinforcement, concrete, etc	m²	5,253	85.00	446,505.00
32	Washed surface finish to concrete paths	m²	5,253	18.00	94,554.00
33	Coloured concrete pavement to Historic Walk / wharf including edge form, reinforcement, concrete, etc	m²	9,589	128.00	1,227,392.00
34	Exposed aggregate surface finish to Historic Walk / wharf pavement	m²	9,589	30.00	287,670.00
35	Extra over wharf pavement for edge thickening to river edge	m	345	125.00	43,125.00
37	Asphalt wearing course 30mm thick to new bitumen car park	m²	925	23.50	21,737.50
36	Asphalt wearing course 40mm thick to new bitumen roads	m²	2,705	28.50	77,092.50
128	Asphalt wearing course 40mm thick to re-sheet existing bitumen roads	m²	3,903	28.50	111,235.50
45	Feature green shading or similar road line marking to bitumen roadway at pedestrian crossings	m²	2,002	65.00	130,130.00
39	Concrete kerb and gutter	m	539	68.00	36,652.00
40	Concrete edge kerb	m	438	60.00	26,280.00
41	Concrete pram ramp including tactile indicators	No	21	1,100.00	23,100.00
42	Timber edging to compacted gravel path	m	598	22.00	13,156.00

Sturt Reserve Precinct Master Plan
Order of Cost Estimate

Location Main Headings Item

A TOURISM/ HISTORY PRECINCT (continued)

Rates Current At October 2017

Description		Unit	Qty	Rate	Total
43	Allow to match new and existing pavements	m	32	45.00	1,440.00
44	Allowance to upgrade existing access ramp	m²	384	220.00	84,480.00
49	Allowance for minor upgrade to existing car park to remain	Item			5,000.00
46	Allowance for line marking to new roads and car park	Item			10,000.00
48	No allowance for heavy duty road pavements	Note			Excl.
Pavements					\$3,102,962.00
LA Landscaping					
63	Detailed excavation for new garden beds including disposal of spoil off site	m²	1,588	18.00	28,584.00
64	Deep rip and cultivate existing subgrade ready for new planting and grassing	m²	13,149	2.75	36,159.75
65	Supply and place topsoil to new garden beds assumed 50% site won topsoil 50% imported topsoil	m²	1,588	18.00	28,584.00
68	Organic mulch to garden beds	m²	1,588	6.50	10,322.00
66	Supply and plant groundcover and shrub 140mm pots to garden beds (2-3 plants/m2)	m²	1,588	30.00	47,640.00
69	Irrigation system to new garden beds and lawn	m²	1,588	15.00	23,820.00
71	Respread stockpiled topsoil to lawn areas	m²	11,561	5.50	63,585.50
72	Supply and place seeded turf	m²	11,561	4.50	52,024.50
97	Supply and plant 2.5 - 3.5m high palm trees including preparation	No	203	1,800.00	365,400.00
99	Allowance to revegetate existing landscape areas	m²	19,937	5.50	109,653.50
77	Allowance for 52 week Maintenance period	Item			30,000.00
119	No allowance for edging to garden beds	Note			Excl.
Landscaping					\$795,773.25
FFS Furniture, Fitments and Signage					
55	Galvanised steel balustrade to new concrete wharf	m	345	400.00	138,000.00
80	Allowance for new totem (aboriginal artwork) with perforated metal screen behind	Item			150,000.00
61	Allowance for new statutory signage	Item			10,000.00
62	Allowance for new Sturt Reserve wayfinding signage	Item			50,000.00
108	Allowance for sundry benches, bins, bike racks, BBQ's, etc	Item			125,000.00
106	Allowance for new bollards across site	Item			50,000.00
211	Allowance for Public Artwork (PC Sum)	Item			200,000.00
210	No allowance for new proprietary shelters	Note			Excl.
Furniture, Fitments and Signage					\$723,000.00
WD Wharfs and Decking					
52	Remove select sections of timber decking to existing wharf ready for replacement	m²	435	105.00	45,675.00
50	Minor upgrade of existing wharf structure	m²	131	250.00	32,750.00
51	Supply and install new hardwood timber decking to existing wharf to remain including fixing to existing structure	m²	435	385.00	167,475.00
213	Allowance for sundry upgrade of existing Wharf and Decking	Item			50,000.00



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Sturt Reserve Precinct Master Plan
Order of Cost Estimate

Location Main Headings Item

A TOURISM/ HISTORY PRECINCT (continued)

Rates Current At October 2017

Description	Unit	Qty	Rate	Total
53 No allowance for balustrade to refurbished wharf	Note			Excl.
54 No allowance for treating existing timber decking to refurbished wharf	Note			Excl.
Wharfs and Decking				\$295,900.00
WM New War Memorial				
86 Supply and install for new tiered seating walls to war memorial	Item			50,000.00
91 Supply and install new feature wall to war memorial	Item			75,000.00
92 Extra over to form stairs to war memorial	Item			10,500.00
94 Supply and install handrails to stairs at the war memorial	Item			15,000.00
95 Supply and install flagpoles to war memorial	Item			20,000.00
96 Allowance for landscaping work to war memorial	Item			25,000.00
New War Memorial				\$195,500.00
HRB Heritage Rail Boulevard				
100 Supply and install new concrete pads for trains and carriages	Item			25,000.00
101 Allowance to move existing steam train and carriages to new locations and selected upgrades of carriages	Item			50,000.00
Heritage Rail Boulevard				\$75,000.00
TIC Tourist Infromation Centre				
103 New Tourist Information Centre Building	m²	969	4,000.00	3,876,000.00
Tourist Infromation Centre				\$3,876,000.00
KIOSK Kiosk				
102 Allowance for service points to new kiosk including water and electrical supply points	Item			30,000.00
198 Allowance for new kiosks	Item			50,000.00
Kiosk				\$80,000.00
WF Walls and Fencing				
81 Supply and install new natural limestone tiered retaining structure	m	94	450.00	42,300.00
Walls and Fencing				\$42,300.00
SE Services				
105 Allowance for new lighting to Historic/Tourist Precinct	Item			350,000.00
104 Allowance to upgrade existing drainage infrastructure	Item			100,000.00
214 Allowance for services infrastructure upgrade	Item			400,000.00
Services				\$850,000.00
COC Contractors On-Costs				
187 Contractors Preliminaries and Supervision	Item			950,000.00
188 Traffic and Pedestrian Management	Item			230,000.00
Contractors On-Costs				\$1,180,000.00
PC Project Contingencies				
189 Design Development Contingency	Item			1,180,000.00

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Sturt Reserve Precinct Master Plan
Order of Cost Estimate

Location Main Headings Item

A TOURISM/ HISTORY PRECINCT (continued)

Rates Current At October 2017

Description	Unit	Qty	Rate	Total
190 Construction Contingency	Item			1,300,000.00
Project Contingencies				\$2,480,000.00
TOURISM/ HISTORY PRECINCT				\$14,205,420.05



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Location Main Headings Item

B RECREATION PRECINCT

Rates Current At October 2017

Description	Unit	Qty	Rate	Total
DE Demolition and Site Clearance				
1 Clear existing site of rubbish and debris	m²	48,859	0.10	4,885.90
2 Strip existing topsoil, grass and garden beds ready for new works and dispose off site	m²	2,887	3.50	10,104.50
3 Sawcut existing bitumen ready for removal	m	8	15.00	120.00
4 Break up existing bitumen pavement and dispose debris from site	m²	928	10.50	9,744.00
127 Mill existing bitumen from road ready for re-sheeting	m²	2,620	8.50	22,270.00
126 Break up existing concrete footpath and dispose debris from site	m²	896	17.00	15,232.00
129 Break up existing concrete crossover and dispose debris off site	m²	18	23.00	414.00
6 Cut down existing small tree including grubbing up roots and dispose off site	No	13	220.00	2,860.00
26 Cut down existing large tree including grubbing up roots and dispose off site	No	5	480.00	2,400.00
215 Demolish existing Amenities Building including removing debris from site	Item			15,000.00
8 Allowance for sundry and unforeseen demolition	Item			5,000.00
Demolition and Site Clearance				\$88,030.40
EA Earthworks				
15 Box out for new concrete paths including disposal of spoil off site	m²	2,879	13.50	38,866.50
120 Box out for new compacted gravel paths including disposal of spoil off site	m²	3,238	10.50	33,999.00
130 Box out for new rubber softfall pavement for seating and exercise nodes	m²	174	15.50	2,697.00
18 No allowance for excavation in rock	Note			Excl.
19 No allowance for removal of contaminated material from site	Note			Excl.
197 No allowance for dewatering	Note			Excl.
Earthworks				\$75,562.50
PV Pavements				
20 Proof roll, trim and compact existing subgrade ready for new pavements	m²	6,291	6.50	40,891.50
22 Quarry rubble base course to new concrete paths including trimming and compacting	m²	2,879	14.00	40,306.00
23 Quarry rubble base course to new compacted gravel paths including trimming and compacting	m²	3,238	11.00	35,618.00
38 Fitzgerald Quarry or similar compacted gravel path	m²	3,238	35.00	113,330.00
31 Concrete path 3.0m wide including edge form, reinforcement, concrete, etc	m²	2,879	85.00	244,715.00
32 Washed surface finish to concrete paths	m²	2,879	18.00	51,822.00
128 Asphalt wearing course 40mm thick to re-sheet existing bitumen roads	m²	2,620	28.50	74,670.00

Sturt Reserve Precinct Master Plan

Order of Cost Estimate

Location Main Headings Item

B RECREATION PRECINCT (continued)

Rates Current At October 2017

Description	Unit	Qty	Rate	Total
131 Supply and place rubber softfall including base to exercise node areas	m²	174	225.00	39,150.00
45 Feature green shading or similar road line marking to bitumen roadway at pedestrian crossings	m²	226	65.00	14,690.00
39 Concrete kerb and gutter	m	8	68.00	544.00
42 Timber edging to compacted gravel path	m	1,504	22.00	33,088.00
118 Reinstatement in front on new concrete kerb and gutter	m	8	75.00	600.00
133 No allowance for works to existing carpark	Note			Excl.
Pavements				\$689,424.50
LA Landscaping				
67 Supply and plant 100L tree including preparation works	No	45	395.00	17,775.00
99 Allowance to revegetate existing landscape areas	m²	20,442	5.50	112,431.00
Landscaping				\$130,206.00
FFS Furniture, Fitments and Signage				
85 Supply and install new seating	No	10	2,400.00	24,000.00
87 Allowance for new outdoor exercise equipment	Item			50,000.00
62 Allowance for new Sturt Reserve wayfinding signage	Item			10,000.00
108 Allowance for sundry benches, bins, bike racks, BBQ's, etc	Item			25,000.00
84 Allowance for public art feature	Item			50,000.00
Furniture, Fitments and Signage				\$159,000.00
RL Rowing Landing				
82 New rowing landing including timber decking, piers and balustrading	m	42	550.00	23,100.00
132 No allowance for new building in front of rowing landing	Note			Excl.
Rowing Landing				\$23,100.00
AM Amenities				
183 Allowance for new Public Amenities	Item			300,000.00
Amenities				\$300,000.00
SE Services				
76 Supply and install new external path lighting at 20Lm centres including conduits and wiring	No	19	8,500.00	161,500.00
214 Allowance for services infrastructure upgrade	Item			100,000.00
Services				\$261,500.00
COC Contractors On-Costs				
187 Contractors Preliminaries and Supervision	Item			160,000.00
188 Traffic and Pedestrian Management	Item			40,000.00
Contractors On-Costs				\$200,000.00
PC Project Contingencies				
189 Design Development Contingency	Item			200,000.00



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Location Main Headings Item

B RECREATION PRECINCT (continued)

Rates Current At October 2017

Description	Unit	Qty	Rate	Total
190 Construction Contingency	Item			220,000.00
Project Contingencies				\$420,000.00
RECREATION PRECINCT				\$2,346,823.40

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Sturt Reserve Precinct Master Plan

Order of Cost Estimate

Location Main Headings Item

C ACCOMODATION PRECINCT

Rates Current At October 2017

Description	Unit	Qty	Rate	Total
DE Demolition and Site Clearance				
1 Clear existing site of rubbish and debris	m²	35,566	0.10	3,556.60
2 Strip existing topsoil, grass and garden beds ready for new works and dispose off site	m²	34,242	3.50	119,847.00
3 Sawcut existing bitumen ready for removal	m	100	15.00	1,500.00
4 Break up existing bitumen pavement and dispose debris from site	m²	554	10.50	5,817.00
109 Take up and remove existing asphalt footpath and dispose debris off site	m²	1,034	13.50	13,959.00
115 Break up and remove existing concrete pad and dispose debris off site	m²	13	45.00	585.00
27 Break up existing concrete kerb and dispose debris from site	m	291	11.00	3,201.00
110 Break up existing concrete spoon drain and remove debris from site	m	100	14.00	1,400.00
6 Cut down existing small tree including grubbing up roots and dispose off site	No	128	220.00	28,160.00
26 Cut down existing large tree including grubbing up roots and dispose off site	No	61	480.00	29,280.00
8 Allowance for sundry and unforeseen demolition	Item			5,000.00
111 Allowance to protect existing building throughout construction period	Item			1,000.00
Demolition and Site Clearance				\$213,305.60
EA Earthworks				
15 Box out for new concrete paths including disposal of spoil off site	m²	3,805	13.50	51,367.50
120 Box out for new compacted gravel paths including disposal of spoil off site	m²	3,238	10.50	33,999.00
18 No allowance for excavation in rock	Note			Excl.
19 No allowance for removal of contaminated material from site	Note			Excl.
197 No allowance for dewatering	Note			Excl.
Earthworks				\$85,366.50
PV Pavements				
20 Proof roll, trim and compact existing subgrade ready for new pavements	m²	7,042	6.50	45,773.00
22 Quarry rubble base course to new concrete paths including trimming and compacting	m²	3,805	14.00	53,270.00
23 Quarry rubble base course to new compacted gravel paths including trimming and compacting	m²	3,238	11.00	35,618.00
38 Fitzgerald Quarry or similar compacted gravel path	m²	3,238	35.00	113,330.00
31 Concrete path 3.0m wide including edge form, reinforcement, concrete, etc	m²	3,805	85.00	323,425.00
117 Extra over to form up stairs to concrete footpath	m²	46	150.00	6,900.00
39 Concrete kerb and gutter	m	303	68.00	20,604.00
41 Concrete pram ramp including tactile indicators	No	3	1,100.00	3,300.00
42 Timber edging to compacted gravel path	m	1,131	22.00	24,882.00



Appendix B Cost Estimate

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Sturt Reserve Precinct Master Plan

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Location Main Headings Item

C ACCOMODATION PRECINCT (continued)

Rates Current At October 2017

Description		Unit	Qty	Rate	Total
118	Reinstate pavement in front on new concrete kerb and gutter	m	303	75.00	22,725.00
43	Allow to match new and existing pavements	m	85	45.00	3,825.00
Pavements					\$653,652.00
LA Landscaping					
63	Detailed excavation for new garden beds including disposal of spoil off site	m²	6,583	18.00	118,494.00
64	Deep rip and cultivate existing subgrade ready for new planting and grassing	m²	28,332	2.75	77,913.00
65	Supply and place topsoil to new garden beds assumed 50% site won topsoil 50% imported topsoil	m²	6,583	18.00	118,494.00
68	Organic mulch to garden beds	m²	6,583	6.50	42,789.50
66	Supply and plant groundcover and shrub 140mm pots to garden beds (2-3 plants/m2)	m²	6,583	30.00	197,490.00
69	Irrigation system to new garden beds and lawn	m²	6,583	15.00	98,745.00
71	Respread stockpiled topsoil to lawn areas	m²	21,749	5.50	119,619.50
72	Supply and place seeded turf	m²	21,749	4.50	97,870.50
67	Supply and plant 100L tree including preparation works	No	178	395.00	70,310.00
119	No allowance for edging to garden beds	Note			Excl.
113	No allowance for any works within future caravan park area	Note			Excl.
Landscaping					\$941,725.50
FFS Furniture, Fitments and Signage					
62	Allowance for new Sturt Reserve wayfinding signage	Item			10,000.00
108	Allowance for sundry benches, bins, bike racks, BBQ's, etc	Item			50,000.00
Furniture, Fitments and Signage					\$60,000.00
WF Walls and Fencing					
90	Supply and install fencing for boundary of Accommodation Precinct	m	1,207	140.00	168,980.00
Walls and Fencing					\$168,980.00
SE Services					
112	Allowance to convert existing GIP to DSEP on Sturt Reserve Road and match into new levels	No	1	3,950.00	3,950.00
76	Supply and install new external path lighting at 20Lm centres including conduits and wiring	No	44	8,500.00	374,000.00
125	Allowance to connect new lighting into existing electrical supply	Item			10,000.00
83	Allowance for power and water supply points for future caravan park (PC Sum)	Item			100,000.00
114	No allowance to modify or remove existing pump station	Note			Excl.
Services					\$487,950.00
COC Contractors On-Costs					
187	Contractors Preliminaries and Supervision	Item			240,000.00
188	Traffic and Pedestrian Management	Item			60,000.00
Contractors On-Costs					\$300,000.00

Sturt Reserve Precinct Master Plan

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Location Main Headings Item

C ACCOMODATION PRECINCT (continued)

Rates Current At October 2017

Description		Unit	Qty	Rate	Total
PC Project Contingencies					
189	Design Development Contingency	Item			300,000.00
190	Construction Contingency	Item			330,000.00
Project Contingencies					\$630,000.00
ACCOMODATION PRECINCT					\$3,540,979.60



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Location Main Headings Item

D PLAY PRECINCT

Rates Current At October 2017

Description		Unit	Qty	Rate	Total
DE Demolition and Site Clearance					
1	Clear existing site of rubbish and debris	m²	117,421	0.10	11,742.10
2	Strip existing topsoil, grass and garden beds ready for new works and dispose off site	m²	20,672	3.50	72,352.00
196	Remove existing shelter and dispose debris off site	No	1	1,000.00	1,000.00
208	Remove existing bins and dispose off site	No	7	110.00	770.00
207	Remove existing seats and dispose off site	No	9	150.00	1,350.00
206	Remove existing BBQ including termination, making safe and dispose off site	No	1	550.00	550.00
205	Allowance to protect existing communications cabinets	No	4	50.00	200.00
203	Remove existing bollards along water front and dispose off site	No	27	80.00	2,160.00
201	Remove existing lighting including termination, making safe and dispose off site	No	11	1,500.00	16,500.00
3	Sawcut existing bitumen ready for removal	m	162	15.00	2,430.00
4	Break up existing bitumen pavement and dispose debris from site	m²	3,231	10.50	33,925.50
127	Mill existing bitumen from road ready for re-sheeting	m²	9,632	8.50	81,872.00
126	Break up existing concrete footpath and dispose debris from site	m²	588	17.00	9,996.00
27	Break up existing concrete kerb and dispose debris from site	m	866	11.00	9,526.00
8	Allowance for sundry and unforeseen demolition	Item			15,000.00
111	Allowance to protect existing building throughout construction period	Item			1,500.00
202	Allowance to protect existing transformer	Item			750.00
10	No allowance for demolition or alterations to existing overhead power lines	Note			Excl.
Demolition and Site Clearance					\$261,623.60
EA Earthworks					
14	Box out for new bitumen pavement including disposal of spoil off site - assume some reuse of existing base course where possible	m²	3,230	8.50	27,455.00
75	Box out for new asphalt carpark including disposal of spoil off site	m²	2,155	8.50	18,317.50
15	Box out for new concrete paths including disposal of spoil off site	m²	9,698	13.50	130,923.00
130	Box out for new rubber softfall pavement for seating and exercise nodes	m²	483	15.50	7,486.50
140	Box out for new pavers in road including disposal of spoil off site	m²	661	13.50	8,923.50
178	Fill and place site won material to form mounds for planting	m²	3,270	18.00	58,860.00
184	Allowance to form mound with capping layer in lawn area	Item			75,000.00
18	No allowance for excavation in rock	Note			Excl.
19	No allowance for removal of contaminated material from site	Note			Excl.

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Sturt Reserve Precinct Master Plan

Order of Cost Estimate

Location Main Headings Item

D PLAY PRECINCT (continued)

Rates Current At October 2017

Description		Unit	Qty	Rate	Total
197	No allowance for dewatering	Note			Excl.
Earthworks					\$326,965.50
PV Pavements					
20	Proof roll, trim and compact existing subgrade ready for new pavements	m²	16,225	6.50	105,462.50
21	Quarry rubble sub base to new bitumen road and car park pavement including trimming and compacting - assume some reuse of existing	m²	5,385	11.00	59,235.00
141	Quarry rubble sub base to new pavers in road including trimming and compacting - assume some reuse of existing	m²	661	11.00	7,271.00
22	Quarry rubble base course to new concrete paths including trimming and compacting	m²	9,698	14.00	135,772.00
24	Fine crushed rock base course to new bitumen road and car park pavement including trimming and compacting	m²	5,385	15.00	80,775.00
31	Concrete path 3.0m wide including edge form, reinforcement, concrete, etc	m²	9,698	85.00	824,330.00
32	Washed surface finish to concrete paths	m²	9,698	18.00	174,564.00
37	Asphalt wearing course 30mm thick to new bitumen car park	m²	2,155	23.50	50,642.50
36	Asphalt wearing course 40mm thick to new bitumen roads	m²	3,230	28.50	92,055.00
128	Asphalt wearing course 40mm thick to re-sheet existing bitumen roads	m²	9,632	28.50	274,512.00
131	Supply and place rubber softfall including base to exercise node areas	m²	483	225.00	108,675.00
142	Supply and install trafficable pavers on a mortar bed	m²	661	325.00	214,825.00
45	Feature green shading or similar road line marking to bitumen roadway at pedestrian crossings	m²	1,942	65.00	126,230.00
39	Concrete kerb and gutter	m	1,077	68.00	73,236.00
40	Concrete edge kerb	m	16	60.00	960.00
122	Concrete median kerb	m	46	64.00	2,944.00
41	Concrete pram ramp including tactile indicators	No	14	1,100.00	15,400.00
46	Allowance for line marking to new roads and car park	Item			10,000.00
48	No allowance for heavy duty road pavements	Note			Excl.
Pavements					\$2,356,889.00
LA Landscaping					
63	Detailed excavation for new garden beds including disposal of spoil off site	m²	2,588	18.00	46,584.00
64	Deep rip and cultivate existing subgrade ready for new planting and grassing	m²	46,422	2.75	127,660.50
65	Supply and place topsoil to new garden beds assumed 50% site won topsoil 50% imported topsoil	m²	5,858	18.00	105,444.00
68	Organic mulch to garden beds	m²	2,588	6.50	16,822.00
66	Supply and plant groundcover and shrub 140mm pots to garden beds (2-3 plants/m2)	m²	5,858	30.00	175,740.00
69	Irrigation system to new garden beds and lawn	m²	2,588	15.00	38,820.00
71	Respread stockpiled topsoil to lawn areas	m²	40,565	5.50	223,107.50



Appendix B Cost Estimate

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Sturt Reserve Precinct Master Plan

Order of Cost Estimate

Location Main Headings Item

D PLAY PRECINCT (continued)

Rates Current At October 2017

Description	Unit	Qty	Rate	Total
72 Supply and place seeded turf	m²	40,565	4.50	182,542.50
67 Supply and plant 100L tree including preparation works	No	398	395.00	157,210.00
99 Allowance to revegetate existing landscape areas	m²	12,356	5.50	67,958.00
119 No allowance for edging to garden beds	Note			Excl.
Landscaping				\$1,141,888.50
FFS Furniture, Fitments and Signage				
85 Supply and install new seating	No	14	2,400.00	33,600.00
87 Allowance for new outdoor exercise equipment	Item			30,000.00
61 Allowance for new statutory signage	Item			10,000.00
62 Allowance for new Sturt Reserve wayfinding signage	Item			20,000.00
108 Allowance for sundry benches, bins, bike racks, BBQ's, etc	Item			75,000.00
139 Supply and install proprietary removable steel bollards	No	6	1,800.00	10,800.00
204 Supply and install new bollards along the water front to replace removed bollards	No	27	2,400.00	64,800.00
106 Allowance for new bollards across site	Item			10,000.00
182 Allowance for new proprietary shelters including footings	Item			105,000.00
Furniture, Fitments and Signage				\$359,200.00
RE River Front Works				
147 Supply and install hard edge to riverfront	m	68	550.00	37,400.00
148 Supply and install houseboat moorings including anchors	No	10	2,500.00	25,000.00
149 Supply and install new boardwalk to river edge including piers and balustrading	m²	982	950.00	932,900.00
150 Deep rip and cultivate existing subgrade ready for new grassing	m²	2,241	8.50	19,048.50
151 Supply and place topsoil to new grassing assumed 50% site won topsoil 50% imported topsoil	m²	2,241	15.50	34,735.50
152 Supply and install grassing to river edge	m²	2,241	15.00	33,615.00
153 Supply and install large rocks to river edge including embedding into existing surface	m²	1,135	185.00	209,975.00
154 Supply and install sand to 'River Beach'	m²	1,365	35.00	47,775.00
155 Supply and install new pontoon to river to create 'swimming pool'	Item			50,000.00
River Front Works				\$1,390,449.00
WETLA Wetlands				
162 Excavate new water way to required depths and stockpiling on site	m²	903	55.00	49,665.00
164 Box out for feature pavements in new wetland area	m²	1,688	13.50	22,788.00
165 Proof roll, trim and compact existing subgrade ready for new feature pavements in wetland area	m²	1,688	6.50	10,972.00
166 Quarry rubble base course to new feature pavements including trimming and compacting	m²	1,688	16.50	27,852.00
167 Coloured concrete pavement to feature pavement in wetlands including edge form, reinforcement, concrete, etc	m²	1,688	135.00	227,880.00
168 Washed surface finish to feature pavement in wetlands	m²	1,688	35.00	59,080.00

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Sturt Reserve Precinct Master Plan

Order of Cost Estimate

Location Main Headings Item

D PLAY PRECINCT (continued)

Rates Current At October 2017

Description	Unit	Qty	Rate	Total
170 Detailed excavation for new landscaped areas in wetlands	m²	1,389	18.00	25,002.00
171 Deep rip and cultivate existing subgrade ready for new planting in wetlands	m²	1,389	5.50	7,639.50
172 Supply and place topsoil to new garden beds in wetlands assumed 50% site won topsoil 50% imported topsoil	m²	1,389	15.50	21,529.50
173 Supply and plant groundcover and shrub 140mm pots to landscaped areas in wetlands (3-4 plants/m2)	m²	1,389	45.00	62,505.00
174 Allowance for reed planting to new waterway	m²	790	35.00	27,650.00
179 Supply and install large rocks to waterway edge including embedding into existing surface	m²	324	185.00	59,940.00
180 Supply and place rocks around relocated Bunyip enclosure including embedded in concrete	m²	278	250.00	69,500.00
163 Allowance to relocate existing Bunyip cave and cover with fill material to specified levels	Item			250,000.00
181 Allowance for miscellaneous landscaping to wetland area	Item			15,000.00
175 Allowance for new play equipment to wetlands	Item			100,000.00
176 Allowance for waterplay equipment to wetlands	Item			150,000.00
185 Allowance for new shelter to wetlands	Item			100,000.00
193 Supply new electrical point to wetland area	Item			75,000.00
194 Supply new water supply point to wetland area	Item			25,000.00
192 Allowance for new feature lighting to wetlands	Item			150,000.00
Wetlands				\$1,537,003.00
STG Stage Area				
93 Supply, transport and place 20ft shipping containers in front of new stage	No	4	10,000.00	40,000.00
143 Supply and install stage	Item			500,000.00
144 Supply and install shade structure to shade area	Item			200,000.00
145 Supply and install lighting to stage area	Item			75,000.00
146 Supply and install audio PA system to stage area	Item			100,000.00
Stage Area				\$915,000.00
DG Dog Park				
159 Excavate dog park lawn area to subgrade	m²	1,615	11.50	18,572.50
156 Deep rip and cultivate existing subgrade ready for new grassing	m²	1,615	3.75	6,056.25
157 Supply and place topsoil to new grassing assumed 50% site won topsoil 50% imported topsoil	m²	1,615	24.00	38,760.00
158 Supply and install grassing to dog park	m²	1,615	15.00	24,225.00
161 Supply and install fence to dog park including posts and gates	m	167	155.00	25,885.00
160 No allowance for irrigation system to dog park	m²	1,615		Excl.
Dog Park				\$113,498.75
SKP Skate Park				
199 No allowance for works to existing skate park	Note			Excl.
Skate Park				Excl.



Appendix B Cost Estimate

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Sturt Reserve Precinct Master Plan

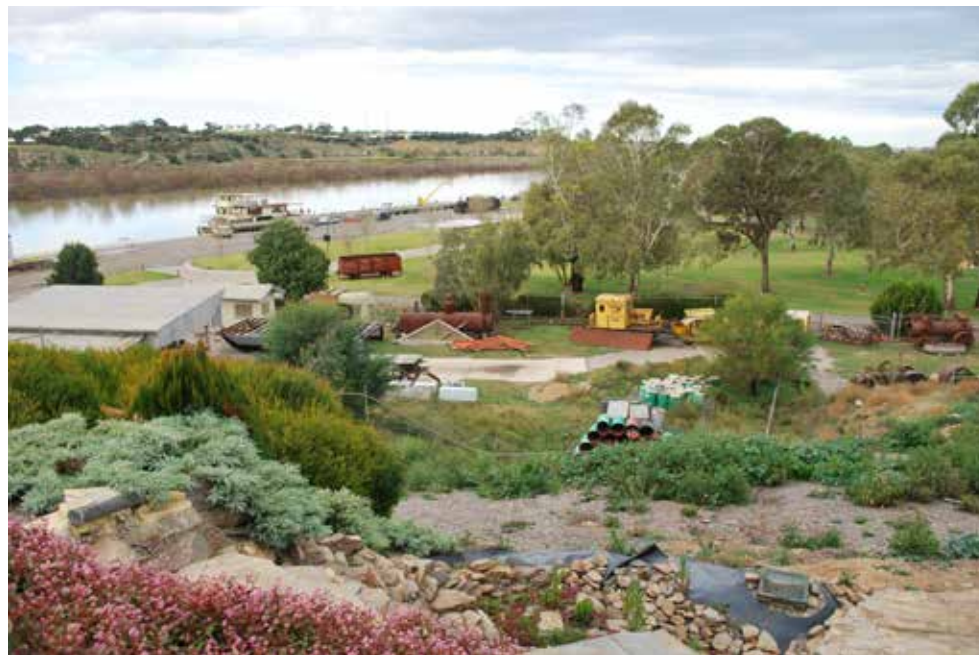
Order of Cost Estimate

Location Main Headings Item

D PLAY PRECINCT (continued)

Rates Current At October 2017

Description	Unit	Qty	Rate	Total
SE Services				
76 Supply and install new external path lighting at 20Lm centres including conduits and wiring	No	107	8,500.00	909,500.00
200 Supply and install new lighting new roadway	No	11	9,500.00	104,500.00
104 Allowance to upgrade existing drainage infrastructure	Item			50,000.00
214 Allowance for services infrastructure upgrade	Item			500,000.00
	Services			\$1,564,000.00
COC Contractors On-Costs				
187 Contractors Preliminaries and Supervision	Item			900,000.00
188 Traffic and Pedestrian Management	Item			220,000.00
	Contractors On-Costs			\$1,120,000.00
PC Project Contingencies				
189 Design Development Contingency	Item			1,110,000.00
190 Construction Contingency	Item			1,220,000.00
212 Professional Fees and Charges	Item			1,080,000.00
	Project Contingencies			\$3,410,000.00
	PLAY PRECINCT			\$14,496,517.35



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Rev No.	Author	Reviewer		Authorisation		
		Name	Signature	Name	Signature	Date
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