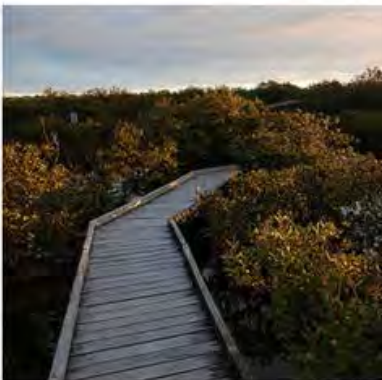




# St Kilda Precinct Plan Stage 2- Marine Recreation Precinct and Mangroves



# Contents

|   |    |
|---|----|
| Executive Summary                                 | 2  |
| Strategic Context                                 | 5  |
| Planning Principles                               | 5  |
| Staging of Planning                               | 5  |
| Broader Planning Opportunities and Considerations | 7  |
| Northern Connector                                | 8  |
| Greater Edinburgh Parks Employment Lands          | 9  |
| Future Uses of Salt Crystallisation Pans          | 10 |
| International Bird Sanctuary                      | 11 |
| Environmental Significance                        | 12 |
| Land Fill   | 12 |
| Land Ownership and Use                            | 13 |
| Native Title                                      | 13 |
| City of Salisbury Tourism and Visitor Strategy    | 16 |
| Current Planned Infrastructure Investment         | 17 |
| Facilities, Infrastructure and Recommendations    | 18 |
| Traffic Movement and Car Parking                  | 18 |
| Recreational Boat Launch Facilities               | 24 |
| Pedestrian Links                                  | 26 |
| Commercial Facilities                             | 27 |
| Mangrove Trail                                    | 28 |
| Issues and Recommendations                        | 30 |
| Condition of Mangrove Trail                       | 30 |
| Boat Club & Marina                                | 31 |
| Breakwater & Channel                              | 31 |
| Proposed Implementation (Unfunded)                | 33 |

## Executive Summary

In 2013, Council endorsed the St Kilda Township Planning Framework to inform investment and development of the coastal precinct.

This Framework articulated a vision for how the area could develop over the next 10 to 25 years. It was prepared in recognition of the growing investment by the City of Salisbury in its western boundaries, arising rezoning opportunities for housing, economic development and tourism potential and infrastructure investment by the public and private sector.

It was determined that a Master Plan for St Kilda was to be developed in four stages:

- Stage 1: adventure play space and associated car parking/green space (complete);
- Stage 2: the Marine Recreation Precinct and Mangroves;
- Stage 3: existing residential area; and
- Stage 4: future development options of surrounding areas (Bolivar and Penrice Salt Pans).

This report presents the finding and recommendations associated with Stage 2: Marine Recreation Precinct and Mangroves.

The St Kilda Marine Recreation Precinct and Mangroves includes significant Council owned and managed assets including:

- 1km breakwater and channel
- Boat launch ramp
- Boat trailer parking area
- Mangrove trail and interpretive centre

The St Kilda Master Plan Stage 2 has been developed within a broader strategic context which has taken into consideration:

- Facilitation of delivery of key directions and objectives within the City Plan
- Alignment with Council's City Pride Strategy
- Alignment with the State Government's Northern Economic Plan
- Alignment with Council's newly developed Tourism and Visitor strategy within which St Kilda is identified as a key tourism asset for the City
- The implications of the development of the Northern Connector on the site and surrounds
- Storm water management issues arising from the impacts of urbanisation at Greater Edinburgh Parks
- Future uses of the decommissioned salt crystallisation ponds
- Native Title issues
- The tourism and visitation opportunities for St Kilda associated with the development of the adjacent International Bird Sanctuary
- Possible development of the privately owned Boat Club which sits within the Stage 2 area

This report provides a detailed analysis of the issues and recommended solutions surrounding the Marine Recreation Precinct and Mangroves, which in summary are to:

- Create improved traffic movement around the site by addressing efficiency of movement and ensuring safety for all vehicles and pedestrians
- Identify a dedicated parking area for RV vehicles which has better security and amenity/views and is located within proximity of key facilities within the precinct
- Improve the condition, quantity and configuration of parking facilities to provide greater capacity and address the conflicts that are currently arising between coaches, visitors utilising the boat facilities and visitors to the adventure play space
- Improve the experience for users of the boating facilities by addressing the current congestion and issues associated with gaining access to the boat launch ramp
- Improve the amenity, visibility, efficiency and safety of pedestrian movement and wayfinding to key destination points
- Improve the condition of the Mangrove Trail for a safer and improved visitor experience and to capitalize on future tourism opportunities through partnerships with Kaurua and the International Bird Sanctuary

This report contains fourteen recommendations for endorsement by Council as the basis for further consultation with the community and key stakeholders:

1. Improve traffic movement efficiency and safety by constructing a roundabout on Cockle Street and coach drop off area.
2. Stabilise and surface underutilized open space on Cockle Street and construct 164 additional car parking bays.
3. Stabilise and resurface the existing trailer park. Line mark for 120 long trailer bays and 51 standard bays. Increase washdown area from 4 to 5 bays (new 3.1 width, including acoustic barriers) and install new gross pollutant trap.
4. Modify the intersection at St Kilda Road and Whiting Street with a roundabout to direct coaches to the secondary northern car park near the hotel.
5. Asphalt the Fooks Terrace northern car park near the hotel to include coach layover and drop off – configuration to include 6 coach bays and 61 car parks.
6. Construct RV layover area, for 8 RVs, near to the boat launch facility toilet block.
7. Asphalt the main carpark adjacent to the playspace formalising 189 carparks.
8. Asphalt Mangrove Trail parking near main entrance.
9. Increase boat launch / retrieval capacity by constructing an additional ramp lane.
10. Improve safety and efficiency of launching and retrieval by providing additional pontoons for mooring and pedestrian path connection.
11. Encourage pedestrian access to the Mangrove Trail by establishing a footpath connection from the kiosk.
12. Improve visitor safety along the breakwater by improving the footpath surface and installation of solar lighting
13. Explore opportunities for the area taking into consideration the Visitor and Tourism Strategy, International Bird Sanctuary, water front amenity and potential future services.
14. Explore opportunities for the Mangrove Trail and Interpretive Centre in a separate report to be presented.

It is envisaged that the proposed capital works to improve the Marine Recreation Precinct and Mangroves would be implemented in four stages, preceded by detailed design and consultation:

- 2017/18 Commence detail design and consultation - \$250,000
- 2018/19 Stage 2a: Traffic flow - \$2,470,000
- 2019/20 Stage 2b: Additional boat lane - \$960,000
- 2020/21 Stage 2c: New parking and wayfinding - \$1,750,000
- 2021/22 Stage 2d: Reconstruction of existing parking area - \$2,960,000
- Commercial precinct and Mangrove trail – To be reviewed within the next 6-12 month period.
- Total estimated cost for all Stage 2 works - \$8,390,000

The funding of works summarised above have not yet been included in our Transport Asset Management Plan or Long Term Financial Plan and will require consideration and approval through the annual budget process for the works to progress.

## Strategic Context

In 2013, Council endorsed the St Kilda Township Planning Framework to inform investment and development of the coastal precinct.

This Framework articulated a vision for how the area could develop over the next 10 to 25 years. It was prepared in recognition of the growing investment by the City of Salisbury in its western boundaries, arising rezoning opportunities for housing, tourism opportunities, economic development potential and infrastructure investment by the public and private sector.

The Planning Framework identified what was valued about the St Kilda Township and provided recommendations on how to retain these elements for future generations. The Planning Framework also examined opportunities to support the growth of the Township as a coastal destination.

The vision of the Township Plan and Planning Framework is:

***To develop the coastal township of St Kilda as a regional environmentally sensitive recreation, leisure and tourism focus, building on the existing strengths of the town, and providing high levels of amenity and services for residents and visitors while limiting expansion of residential development.***

## Planning Principles

The following principles underpin the St Kilda Township Planning Framework:

1. quality of life for residents and visitors;
2. provision of an Adventure Play Space;
3. improvement of pedestrian legibility through way finding and path networks;
4. optimising car parking for all users;
5. improving boat launching facilities;
6. improving quality of surrounding environments for residents and visitors;
7. promotion of the environmental assets of St Kilda;
8. improving legibility and safety of vehicle movement; and
9. encouraging investment in residential and business development.

## Staging of Planning

In March 2013 Council endorsed an approach that resulted in the commencement of a Master Plan being prepared in four stages:

- Stage 1: adventure play space and associated car parking/green space (complete);
- Stage 2: the marine recreation precinct & mangroves;
- Stage 3: existing residential area; and
- Stage 4: future development options of surrounding areas (Bolivar and Penrice Salt Pans).



**St Kilda Stage 2 study area – Marine Recreation Precinct and Mangroves**



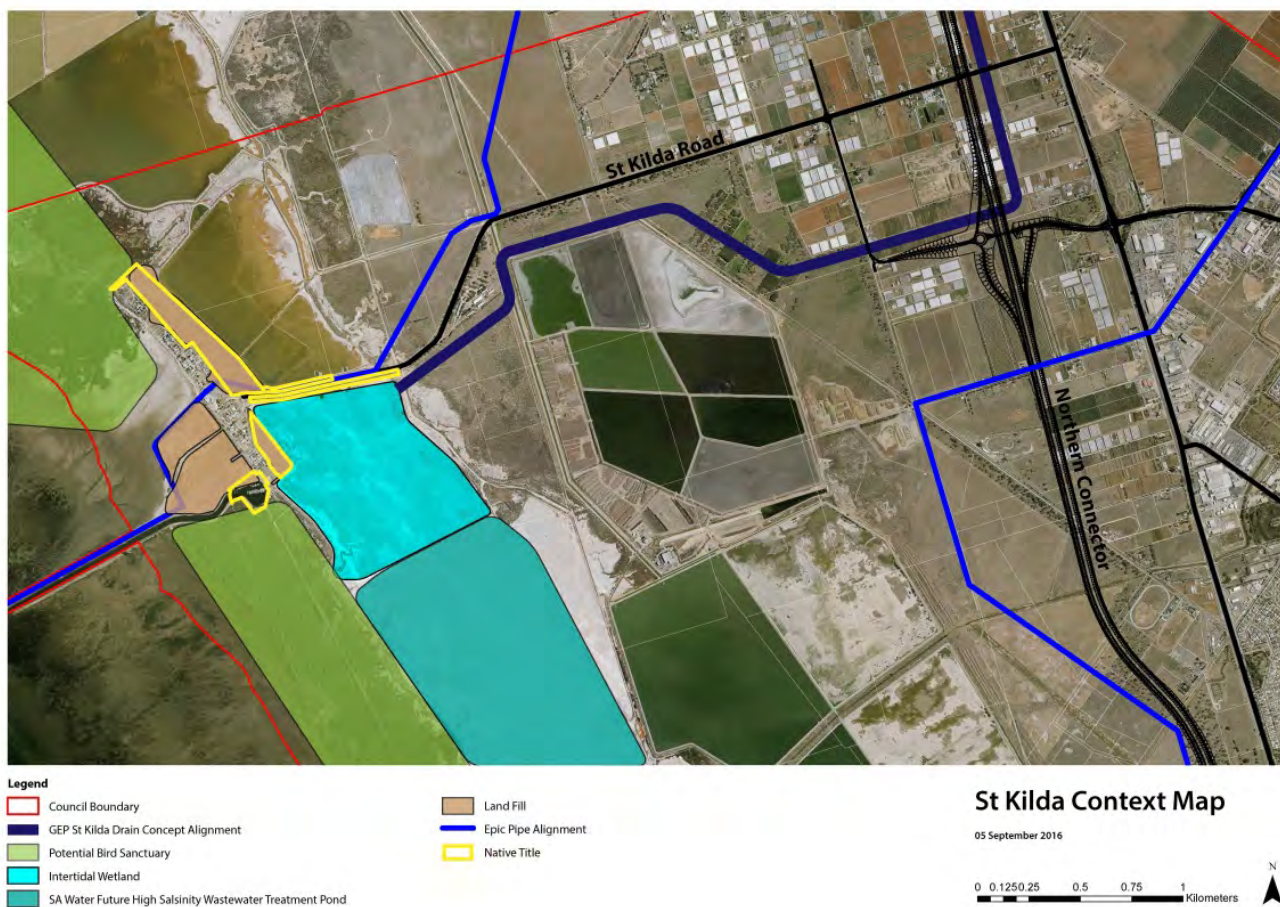


## Broader Planning Opportunities and Considerations

The north western sector of Salisbury will be subject to considerable change over the coming years that will see a significant increase in infrastructure and development investment. These investments have the opportunity to contribute to the objectives of the St Kilda Township Master Plan and value-add to the social, economic, tourism and environmental outcomes for the township and the region.

Projects and Initiatives underway or planned in the region include:

- The \$985 million Northern Connector project that links the South Road Superway with the Northern Expressway
- Future land development opportunities associated with the rezoning of Greater Edinburgh Parks and the infrastructure augmentation required to realise this development.
- The decommissioning, environmental management and future development of the Salt Crystallisation Ponds that extend from Gillman in the south to Middle Beach in the north.
- The identification of the Adelaide International Bird Sanctuary that has the potential for significant international interest and visitation
- The ecological significance of the Barker Inlet area which includes the Adelaide Dolphin Sanctuary and the fish nursery for a number of commercial and recreational fish species.
- The pattern and extent of land ownership that may provide opportunities for innovation and implementation of initiatives that otherwise may not have been achievable because of fragmented ownership.





The following is a synopsis of each of the projects listed above and the opportunities for integration and value-add projects to the St Kilda Township Master Plan Development

## **Northern Connector**

### ***Context***

Construction has commenced of the Northern Connector linking the Port River Expressway and South Road Superway with the Northern Expressway. The interchange at Waterloo Corner will provide full access to St Kilda via a link road, being Robinson Road. This will enable greater access for visitors from all parts of metropolitan Adelaide. It is intended that the road corridor will have a thematic approach to the four interchange gateways (South Road, Bolivar Road, Waterloo Corner Road and Northern Expressway) based upon Kaurana heritage and the environmental significance of the area through which it traverses. The project will be completed in late 2019. As part of the project a shared bike / walking trail will be constructed and opportunities are being considered to extend this scope of work.

### ***Opportunities for linkage with St Kilda Master Plan***

- The development of the gateway themes (landscape and infrastructure design) can reinforce the environmental significance of the region and opportunities to link with key destinations such as St Kilda, the Adelaide International Bird Sanctuary and Barker Inlet.
- The landscape design of the Northern Connector can integrate with St Kilda through the development of continual green gateways that link the Northern Connector to St Kilda and the Mangrove Trail.
- The Northern Connector Project has had to contribute to the Native Vegetation Offset fund for the loss of native vegetation at the southern end of the project. The Native Vegetation Branch of the Department of Environment, Water and Natural Resources (DEWNR) is seeking regional opportunities for investment to use this and other carbon offset funds. The opportunities associated with a broader native vegetation scheme that encompasses the mangrove trail, samphire and sabka areas around St Kilda and vegetation corridors, could be established as part of open channel drainage infrastructure that may service future developments such as Greater Edinburgh Parks through the SA Water site to the Northern Connector.

## Greater Edinburgh Parks Employment Lands

### **Context**

The Greater Edinburgh Parks area has been identified in the State Government's 30 year Plan for Greater Adelaide as future employment lands for northern Adelaide. The investment of the Northern Connector will facilitate this future development by providing high quality transport linkages with this area, thereby increasing its attractiveness for future investment particularly around logistics and transport industries. One of the key infrastructure requirements is the stormwater headworks infrastructure that is necessary to service this future development.

Stormwater drainage strategies have been developed that identify future infrastructure necessary to service this area and also provide opportunities for stormwater quality control and capture for re-use. One of the options that has been identified is the delivery of a drainage path that extends from Port Wakefield Road, integrates with the design of the Northern Connector and utilises the SA Water buffer land to the north of the Bolivar wastewater treatment plant, and links to the unused salt crystallisation ponds in and around St Kilda.

The opportunities that were pursued as part of this solution, were include maintaining the migratory bird habitat of those ponds around St Kilda through the development of wetlands / basins that would achieve the drainage service the drainage requirements of the future employment lands, and also provide an inter-tidal wetland of fresh and salt water for migratory bird habitat.

### ***Opportunities for linkage with St Kilda Master Plan***

- The construction of the channel and inter-tidal wetlands as headworks for the Greater Edinburgh Parks Employment lands would be able to provide an opportunity to develop native landscape vegetation corridor and multi-use trail that would link the Mangrove trail, via the intertidal wetland (dis-used salt crystallisation ponds) and the drainage channel to the Northern Connector.
- The planting of the native vegetation landscape could be an adjunct to the Northern Connector project and educational and employment opportunities linked to the Northern Connector programs. These include indigenous employment programs.
- The construction of this drainage network and interface with the marine environment would be designed in such a way as to ensure flood protection to the St Kilda Township and maintain a wetland environment for migratory birds.

## Future Uses of Salt Crystallisation Pans

### **Context**

Solar evaporation lagoons for salt production extend north and south of the St Kilda Township from Dry Creek to Port Gawler alongside the Barker Inlet, either owned by the Crown and leased to Ridley Corporation or owned outright by the Ridley Corporation. This land forms a network of natural and artificial wetlands, in conjunction with the coastal mangrove environment.

These crystallisation ponds are now owned by the company, Adelaide Resource Recovery. The ponds are being decommissioned through the requirements identified under the State Mining Act. The intention of the new owner is to consider opportunities for economic development associated with the land whilst maintaining the environmental habitat for migratory birds.

The sections that impact upon St Kilda are to the south adjoining the SA Water Bolivar Wastewater treatment site (section 2) and to the north of St Kilda Road up to the Gawler River (section 3). The majority of the land within section 2 is owned by the Crown and SA Water have pursued the option to take control of this land to manage the high salinity waste water stream. Initial trials have proved successful in reducing nutrients from this waste stream by the utilisation of the redundant salt fields. SA Water propose to fully utilise this section of the salt crystallisation ponds with the exception of the area near St Kilda, where they will maintain required buffer distances for odour management. This redundant section of the ponds to the south of St Kilda Road is to be considered for an inter-tidal wetland as part of a drainage solution option that will service Greater Edinburgh Parks.

At the stage of writing this Plan, there have been no economic land uses identified for the utilisation of the ponds to the north of St Kilda Road that will achieve the necessary area for migratory birds and co-exist with the bird habitat.

The owner has indicated that the two Crown Land owned ponds to the north may be able to be used for the management of stormwater for Greater Edinburgh Parks and the maintaining of a migratory bird habitat.

### ***Opportunities for linkage with St Kilda Master Plan***

- There are potential portions of redundant crystallisation ponds that could be used to deliver a future drainage solution for Greater Edinburgh Parks and provide a migratory bird habitat. This area could be provided as part of the Adelaide International Bird Sanctuary and Mangrove Trail.

## International Bird Sanctuary

### **Context**

The Adelaide International Bird Sanctuary is being created to help protect resident and migratory shorebirds that gather along the coast of Gulf St Vincent in the north-west of Adelaide.

St Kilda has been identified as the southern gateway to the bird sanctuary. The declaration of the Sanctuary is expected to result in significant international interest and visitation to the northern region.

Salisbury is represented on the working group that has been established through the Department of Environment, Water and Natural Resources who are developing the details of the Sanctuary. The Collective has been working with State Government, Local Government and community leaders developing the direction for the Bird Sanctuary and ensuring that planning is grounded in the four pillars of Conservation, Economy, Wellbeing and Global Expansion. The Department has begun developing some concept plans for some of the ideas presented, all focused on developing infrastructure that supports opportunities for the Kaurua community, with a focus on stimulating the economy. These concept plans will be supported by a business case that sets the direction for the sanctuary and outlines the funding opportunities.

The State Government has committed \$1.7 million over four years (2014-18) for the establishment and ongoing maintenance of the Bird Sanctuary. This investment includes establishing a national park for the Sanctuary, revegetation works, signage and tourism infrastructure.

### ***Opportunities for linkage with St Kilda Master Plan***

- The potential re-badging of the Mangrove trail to incorporate an interpretive centre for migratory birds.
- Investment in infrastructure and vegetation that will enhance this facility and its linkage with the surrounding area.
- Consideration of how this may align or support the commercial area.
- Partnering with the Kaurua community to support infrastructure and the ongoing tourism agenda.



## Environmental Significance

### **Context**

The Barker Inlet, St Kilda area and the adjoining mangrove creeks serve as important nursery areas for a number of commercial and recreational marine fish and crustacean species. The variety of coastal habitats provide roosting, sheltering and feeding grounds for a large number of waterbirds and provide early spring to late summer refuge for many migratory waders.

The area also provides significant breeding habitats for pelicans, cormorants, oystercatchers, gulls, terns, egrets and herons. The Barker Inlet has the largest area of mangroves in the Gulf St Vincent.

The areas used for salt extraction include the evaporation pans, areas of natural wetland and salt marshes and are listed as being of national and international significance for migratory shorebirds that travel annually to Australia along the East Asian-Australasian Flyway.

The Adelaide Dolphin Sanctuary was established in 2005 and includes the Barker Inlet, St Kilda and the St Kilda – Chapman Creek Aquatic Reserves. The Sanctuary was established to protect the mangroves, seagrass, saltmarsh, tidal flats, tidal creeks and estuarine rivers from the effects of stormwater, treated effluent and industrial discharges.

### ***Opportunities for linkage with St Kilda Master Plan***

- The ecological value of the coastal and inland waters surrounding St Kilda has the potential to result in ecotourism growth.
- Development of a new Mangrove Trail boardwalk to enhance the environmental experience in partnership with the Kaurna Community including potential ongoing tourism agenda

## Land Fill

### **Context**

Until the early 1960s significant areas of land surrounding the Township were used for landfill including burial of industrial waste. The land fill site is owned by the Minister for Planning Transport and Infrastructure and City of Salisbury assumed care and control of this land fill area in the early 2000's. It is noted that some of the land fill areas are under Native Title Claim.

Soil conditions within this area limit the locations, height and types of plants that can be grown. The height of topsoil over the reclaimed land and the effects of methane gas on root systems make growing any vegetation in these conditions difficult. This has significant implications for the amenity of the Township.

### ***Opportunities for linkage with St Kilda Master Plan***

- Consideration to build major infrastructure eg. buildings/structures on solid land and supporting works eg. Car parking and open space on landfill areas to minimise future maintenance and build costs.

## Land Ownership and Use

### **Context**

There are multiple land owners across the St Kilda district including:

- Minister for Planning, Transport and Infrastructure who own the areas comprising the adventure play space, boat launch facilities and boat channel
- Minister for Environment, Water and Natural Resources who own the St Kilda Mangrove Trail, the marina and areas of the salt evaporation pans
- SA Water Corp who own land comprising the Bolivar waste water treatment plant and surrounds and
- Private residences.

### ***Opportunities for linkage with St Kilda Master Plan***

- The structure and extent of the land ownership in government control provides opportunities for the delivery of most of the initiatives highlighted earlier

## Native Title

### **Context**

In March 2005, the City of Salisbury was alerted to the Native Title Claim lodged with the Native Title Court for the Kaurna Region which covers an area from Cape Jervis in the south to Port Broughton in the north, and from the ridge of Mount Lofty ranges in the east and west to the coast. Even though some of the land has had its native title extinguished there are some other key areas within St Kilda that are still affected. The areas that currently are under native title are portions of the Marina, boat channel, as well as the whole of the St Kilda Mangrove Trail. The area where the St Kilda playground, St Kilda Tackle & Tucker shop, reserve, carparks and public toilets are located and known as Lot 1002, was extinguished many years ago.

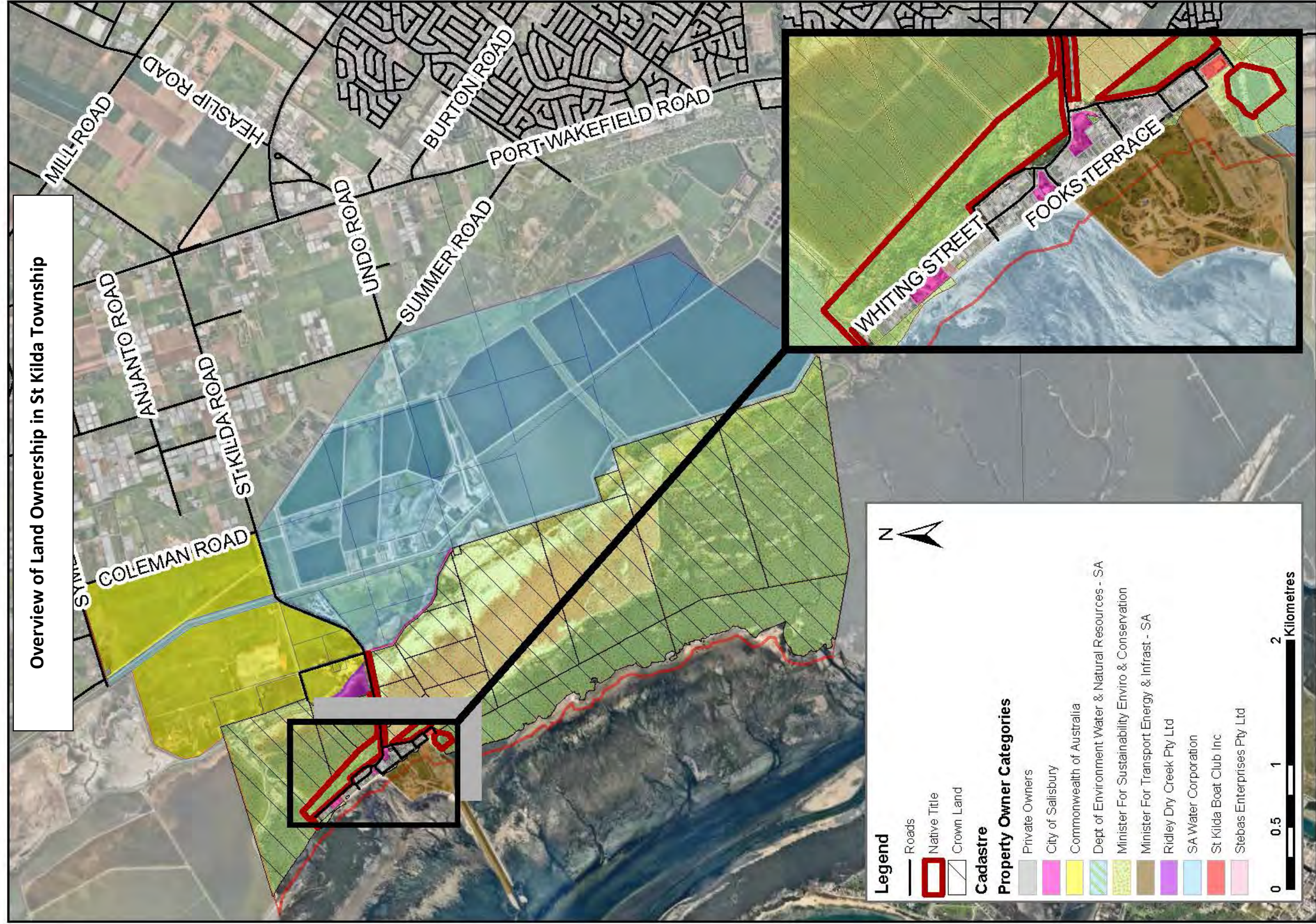
The LGA and Councils in consultation with Kaurna claimants have drafted an Indigenous Land Use Agreement (ILUA). It is expected that once all parties have signed the ILUA and it is registered that negotiations can commence in relation to the management of the areas under Native Title within the St Kilda Township. However it is noted that the Crown, who own the majority of lands in the St Kilda Precinct, is not a signatory to the ILUA.

The Native Title claim prevents a full upgrade of the St Kilda Mangrove Trail and marina but maintenance works can still be undertaken.

### ***Opportunities for linkage with St Kilda Master Plan***

- Moving forward until the ILUA is signed by the parties Council will need to partner with DEWNR & the Kaurna Community.







Overview of Land Use Precincts in St Kilda Township





## City of Salisbury Tourism and Visitor Strategy

### **Context**

The City of Salisbury Tourism and Visitor Strategy was endorsed by Council in July 2016 and has been developed in line with our Building City Pride Strategy, City Plan 2030 and the City's economic development goals. The strategy defines the opportunities and enablers for tourism and visitor growth; and outlines the necessary leadership and vision to achieve that growth over the next five years.

Within the Strategy we have identified key themes, precincts and experiences that will, over time, help to create a profile for the City of Salisbury as a visitor destination. One of the themes identified is nature based tourism. With St Kilda as the southern gateway to the Adelaide International Bird Sanctuary and the network of wetlands and nature trails threading throughout the area; it can be a key attractor of nature based visitors. 'Family friendly' is another theme identified, complementing the nature based theme and capitalising on the area being home to South Australia's best adventure playground and a range of military, aeronautical and educational attractions.

The State Government's Northern Economic Plan identifies tourism, recreation and culture as an 'economic sector of the future' as an important sector for future growth and job creation and provides programs and projects to support that growth. As a key partner in delivering on that plan and in line with our City Plan 2030; the Tourism and Visitor Strategy has been developed to help guide that future growth.

### ***Opportunities for linkage with St Kilda Master Plan***

- Continue to partner with key stakeholders such as State Government, Kaurana and the "Tourism and Visitor" sub-committee to capitalise on these initiatives to create investment and job outcomes for our local visitor economy.

## Current Planned Infrastructure Investment

Council recently committed \$3.6 million towards the upgrade of the St Kilda Adventure Play Space which included \$1 million of grants from the Stage Government.

There are extensive assets owned and managed by Council and these are exposed to harsh marine conditions including tidal action, inundation and salt laden winds. Infrastructure includes playground, sea wall, breakwater, boat channel, car parking, boat ramp, kayak launch, Mangrove trail/boardwalk, amenities, information centre and CCTV.

Regular maintenance and capital activities are required to maintain these existing facilities in good working order.

Through its forward budget and asset management programs, Council has allocated \$1,758,000 of capital renewal expenditure over the next 4 years at St Kilda as below:

### **2016/17 - \$845,000**

- \$325K - Play space – Volcano slide, modification of slides
- \$20K – Progress Association Hall Air-conditioning
- \$150K – Sea wall improvement
- \$240K – Channel markers/ breakwater renewal
- \$110K – CCTV upgrade
- Not included above (\$270K – New Wave Slide subject to 2<sup>nd</sup> quarter budget review)

### **2017/18 - \$210,000**

- \$210K – Channel / breakwater renewal

### **2018/19 - \$332,000**

- \$215K – Channel / breakwater renewal
- \$105K – Sea wall improvement
- \$12K – Play space irrigation design

### **2019/20 – \$371,000**

- \$150K – Play space irrigation renewal
- \$221K – Channel / breakwater renewal

The proposed stage 2 upgrade works have not been funded and require consideration by Council.

# Facilities, Infrastructure and Recommendations

The Stage 2 planning area includes:

- Traffic movement and car parking
- Recreational boat launch facilities;
- Pedestrian links
- Commercial facilities
- Mangrove Trail.
- Boat club and marina facilities; and
- Break water and channel.

## Traffic Movement and Car Parking

There are two distinct activities within St Kilda that attract individual cohorts that also compete for access to car parking. Notably ideal boating conditions – fair warm weather – are also perfect conditions for people seeking to visit the Adventure Play Space.

The existing boat trailer park with parking capacity for 100 vehicles with trailers, services the boat ramp and on peak days is also used by visitors to the Adventure Play Space. On such days visitors seeking to launch vessels may not be able to park their vehicles and trailers safely.

Coaches also utilise the trailer park particularly during school holidays even though coach facilities are not currently provisioned. Feedback received indicates that passenger movement from the coaches across Cockle Street is risky and that mass set down and pick up could be better provided if adjacent to the open space on



the northern side of Cockle Street. It should be noted that it is also common to see vehicles parked on both sides of Cockle St impeding vision at peak times.

Vehicles entering and exiting the boat launch facilities contend with vehicles attending the adventure play space. Exit from the boat launch facilities is by right turn and traffic movement is prioritised to the play space – exiting whilst towing a load is therefore risky.

The existing boat trailer park was constructed over landfill and configured to service the old boat ramp. Over time the fill has broken down forming sizeable undulations in the tarmac. Repair is beyond the scope of programmed renewal. Also the traffic flow does not work efficiently to access the kiosk, launch / retrieve the vessel, wash down and then exit the parking area.

The data below validates the increase in visitation to St Kilda although it is comparing holiday weeks in October 2009 with weeks in January 2016 (which is after the playground upgrade). It is consistent with other data collected at different times, which shows the significant increase in car trips, boat traffic and the number of coaches travelling to St Kilda during the holiday periods. It is noted that normal week traffic in early 2016 was equivalent to the holiday traffic in 2009.

| <b>St Kilda Traffic Data</b>                 | Average<br>Trips | Percentage of Medium<br>Vehicles, Boat Traffic<br>(Class 2 to 4) | Percentage of<br>Coach/Bus Traffic,<br>(Class 6 to 8) | Number of Medium<br>Vehicles (Boat Traffic -<br>not including<br>township) | Number of<br>Coaches per<br>Day |
|--|------------------|--|---|--|---------------------------------|
| School Holiday Daily Average Early 2016      | 966              | 12   | 1.1   | 116  | 11                              |
| School Holiday Daily Average October 2009    | 534              | 8.3  | 0.2   | 44   | 1                               |
| Percentage Increase in Average Daily Traffic | 81%              |  |   |  |                                 |

It is expected that these vehicle numbers will further increase as a result of:

1. Increasing tourist numbers associated with the Bird Sanctuary and associated Environmental attractions including an RV parking area
2. The increase in visitors to the St Kilda Play Space
3. An expected increase in recreational boating over the next 10 years

These traffic increases will significantly add to existing pressure on a number of areas within the St Kilda Recreational and Boating network, which includes the following:

1. Recreational Boating numbers have increased which has put increased pressures around boat parking, ramp facilities and particularly the time required and the queues formed, when attempting to exit the waterway.
2. The increase in boating numbers and car numbers has placed significant pressure on parking spaces and car movements around the boating facilities. Car parks have been full/congested at peak times.
3. Coach traffic has significantly increased in numbers, whether for the hotel or St Kilda Play space areas. This has highlighted the lack of coach parking facilities and inadequate turning space for safe manoeuvres within the township. These movements include St Kilda Rd/Mangrove Street intersection and St Kilda Rd adjacent to the hotel.
4. The increase in visitations has also created the need for additional parking for those using the St Kilda Play space and appropriate traffic management to access these sites.



## Overall Traffic Movement and Car Parking Plan





Installation of a roundabout at the junction on Cockle Street will separate traffic, assist in slowing vehicle traffic entering the adventure play space and prioritise exit from boat launch facilities improving safety for all users.

This roundabout also provides for coaches to turnaround and drop off passengers adjacent the open space providing safe access to the play space and parking in the Northern car park.

### **Recommendation 1: New roundabouts & Coach dropoff**

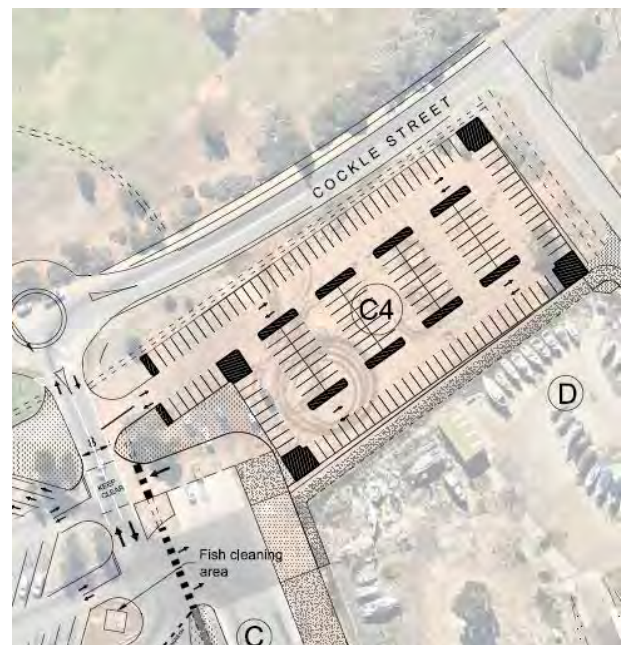
**Improve traffic movement efficiency and safety by constructing roundabouts and Coach drop off on Cockle Street.**



To support the precinct, the opportunity to utilise an open undeveloped area adjacent to the new ramp for overflow parking is recommended. The works need to consider the adjacent residential area on Fooks Terrace.

### **Recommendation 2: New car parking area – Cockle St**

**Stabilise and surface underutilised open space on Cockle Street and construct 164 additional car spaces.**



Major works to support the flow of boat users and parking. The area provides kayak parking adjacent to the old ramp, boat rigging area in front of the shop and additional exit onto cockle street.

### **Recommendation 3: Reconstruction of car park**

**Stabilise and resurface the existing trailer park. Line mark for 120 long trailer bays and 51 standard carparks. Increase wash down from 4 to 5 bays and install new gross pollutant trap (100 Existing long trailer parks)**



#### Recommendation 4: Intersection modifications

Modify the intersection at St Kilda Road/Whiting Street and St Kilda Rd/Mangrove St to direct coaches to the secondary car park near the hotel.



Recommendation 5: Asphalt the Fooks Terrace car park to include coach layover and drop off – configuration to include 6 coach bays and 61 car parks.





St Kilda is an RV friendly town. Waste discharge facilities are located to the west of the boat trailer parking facilities. RVs must collect a permit from the kiosk in order to stay overnight. It is understood that RV visitors have been harassed overnight particularly by hoon behaviour in the car park.

Feedback has been received that more secure and attractive layover areas would be preferred by visitors. Local stakeholders have suggested that RV owners would appreciate the vista of the boat channel overlooking Outer Harbour. The proposed location is near the public amenities and also picnic and bbq area.

#### **Recommendation 6: RV parking area**

**Construct RV layover area near to the boat launch facility toilet block**



#### **Recommendation 7: Asphalt Main Playspace Carpark**

**Asphalt and formalise 189 carparks**



#### **Recommendation 8: Asphalt Mangrove Trail parking area**

**Increase carparks from 25 to 45**





## Recreational Boat Launch Facilities

St Kilda is the only location in the City of Salisbury where recreational vessels can be launched lawfully. There is a boat ramp within the private boat club which is available to members, and two ramp areas adjacent the kiosk, only one of which is operational. In addition to wash down bays there is a newly constructed fish cleaning station

There are two boat ramp areas – the original ramp was closed in and has had pontoons placed across it to support fishing, kayak launching and for approaching vessels to cleat off whilst waiting for access to the ramp for removal.

The new ramp was constructed in 2005 with three lanes demarked by pontoons. Launching is challenging due to the long and steep manoeuvring lane.



Launch permits are managed through the shop on behalf of the Council – and who draws a small income from the sale of each permit. Permits are issued manually and are linked to the trailer. An evaluation of permit books sold estimates that 12,200 boats were launched in 2015/16. Boat launching is seasonal with the majority of launches occurring between September and March. It is estimated that at peak times 350 boats might launch over a weekend.

There are 3 lanes on the boat ramp which is consistent with many of the boat ramps around metro Adelaide. Other popular locations do have more lanes such as North Haven which has 5 lanes and West Beach which has 4 lanes.

Common to all boat ramps is the congestion surrounding ideal climatic conditions and launching and retrieval with the tide. This results in “rush hours” followed by lengthy times of inactivity. These peak times may see launch and retrieval occurring at the same time, further increasing congestion.



As previously identified with an increase in usage derived from traffic data, it is clear that at peak times there is congestion and there is limited opportunity for vessels to moor whilst owners collect their vehicles to retrieve vessels.

Boating activities are predictable. Boat operators seek fair weather and will often launch to take advantage of high tide. Vehicles with trailers will arrive within a condensed time and the wait time to launch could be over an hour. There are three lanes for launching and capacity can be improved by 30% through the construction of a fourth lane.

On arrival the operator will collect a permit from the kiosk then rig the vessel. When the ramp is free the operator will back down the ramp and launch the vessel which is then tied off to the pontoon. The vehicle and trailer are then parked in the trailer park and the operator will return to the vessel. Retrieval is similar – the vessel is tied off to the pontoons, the owner will return to the vehicle and back down the lane. The vessel is then winched on to the trailer and secured. The vessel will be towed to the wash down bay before exiting the parking area.

Conflict arises particularly when launch/retrieval etiquette is not followed and also where inexperienced owners struggle with reversing the trailer down the long ramp. Efficiency for launching and retrieval can be improved through the installation of additional pontoons where owners can moor and clear the launching area while parking / retrieving their trailers.

**Recommendation 9: Additional boat ramp**

**Increase boat launch / retrieval capacity by constructing an additional ramp lane.**

**Recommendation 10: Pontoon/Pedestrian access**

**Improve safety and efficiency of launching and retrieval by providing additional pontoons for mooring and pedestrian path connection.**



## Pedestrian Links

There are four focal areas for pedestrian activity within the precinct and these are: Adventure Play Space, kiosk, break water and the Mangrove Trail. Presently there are no clearly defined paths of travel between these destinations, and pedestrians move haphazardly across the precinct. Stakeholders have identified a need for safe and clear paths of travel and logical wayfinding.

Of particular concern is the link from the shop to the Mangrove Trail as an access pass must be collected prior to entry. A proposed pedestrian link traverses Cockle Street and Fooks Terrace behind the premises of the Boat Owners Club. The concept was reviewed by representatives of the Boat Owners Club who would support the link behind their boat parking facilities.

Connections to existing paths and minor upgrade works to the foreshore and breakwater path network will create a significant network with varying enjoyable vistas.

In addition, the breakwater is also used for fishing at all hours. The surface can be wet and uneven. Council resolved for staff to investigate the installation of pedestrian lighting for safety and visibility of visitors on the breakwater. It is not intended for the lights to be a navigational aid for boat operators.

### **Recommendation 11: Access to Mangrove Trail**

**Encourage pedestrian access to the Mangrove Trail by establishing a footpath connection from the kiosk.**

### **Recommendation 12: Visitor safety along breakwater**

**Improve visitor safety along the breakwater by improving the surface and installation of solar lighting.**





## Commercial Facilities

The shop provides a focal point for the precinct as the owner provides the following services:

- Food and drink sales to all visitors
- Sale of boat and fishing supplies
- Issues boat launch permits
- Patrols trailer parking and issue expiations when necessary
- Issues entry passes to mangrove trail
- Provides local visitor advice including to interstate and international tourists

The facility is accessed by vehicles towing boat trailers, visitors in standard vehicles and also by pedestrians. Parking in front of the facility is undefined.

The facility is positioned with views across an impressive vista. There may be opportunities to support extended visitor length of stay via improvements to surrounding underutilised open space.

Due to its important visitor information and service function to the St Kilda Precinct the facility may also have an opportunity to play a supporting role for the southern gateway of the International Bird Sanctuary.

### **Recommendation 13: Consideration of future services and amenity**

**Explore opportunities for the area taking into consideration the Visitor and Tourism strategy, International Bird Sanctuary, water front amenity and potential future services.**



## Mangrove Trail

The boardwalk was constructed in 1984 and opened in 1985 by the City of Salisbury to encourage appreciation of the mangrove's ecological importance. The Interpretive Centre was opened in 1995 at the entrance to the boardwalk which showcases the flora, fauna and processes within the mangrove forest. A private operator managed the mangrove trail for approximately 10 years hosting school visits as well as casual visitors.

The trail commences traversing calccrete, before branching to the west over samphire flats and then entering the forest. A look out has been constructed close to the forest edge enabling visitors to gain perspective of the Barker Inlet and the forest.

The Mangrove trail was once a 1.7km loop with the eastern embankment servicing the southern extent of the trail. A significant storm event destroyed a section of the trail in 2006. Due to the Native Title Claim, capital works could not be undertaken to renew/repair the trail and the southern loop was closed between the look out and the embankment. The closed section has been further damaged by storm events.



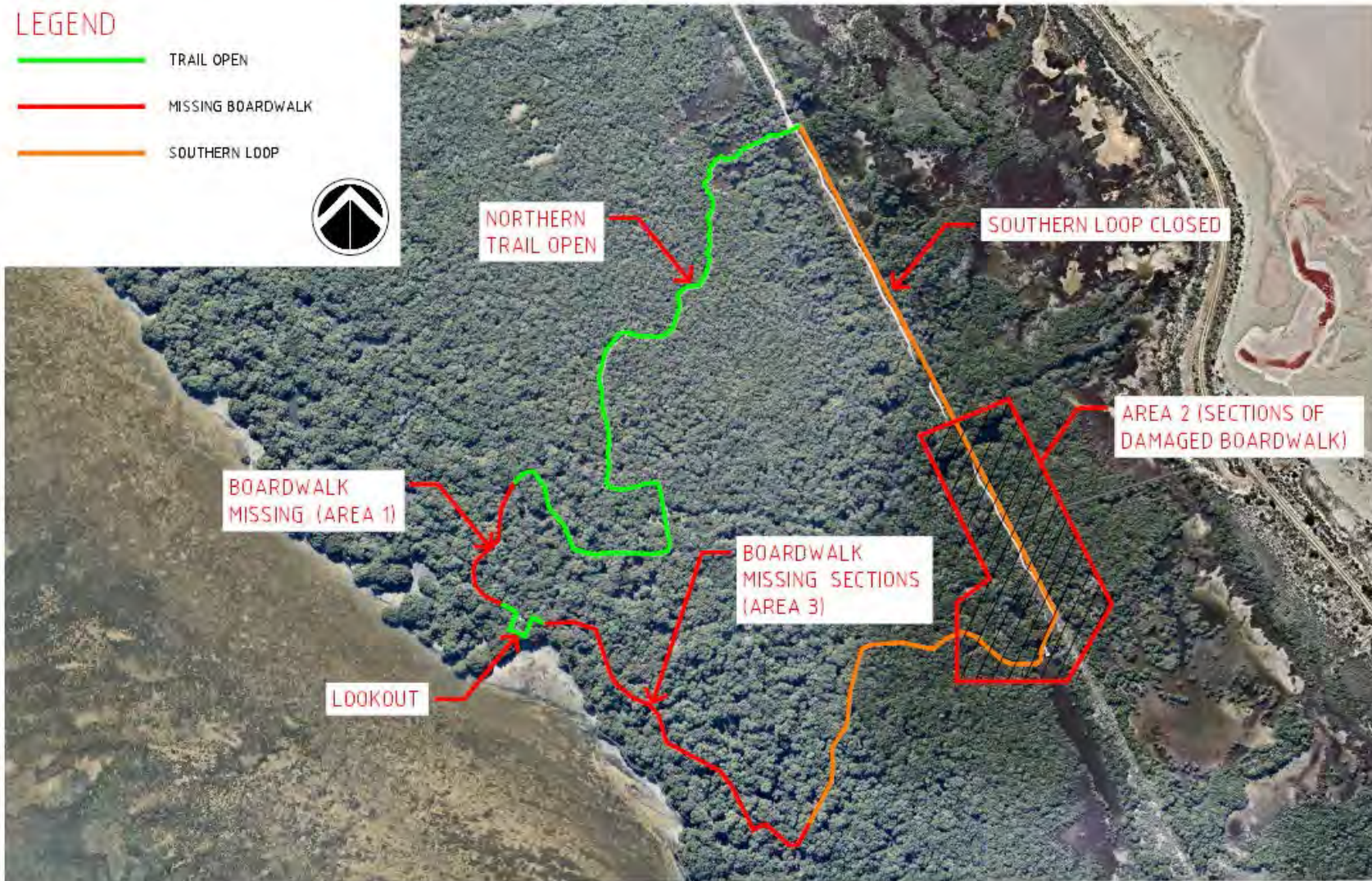
Being of timber construction the boardwalk can be slippery when wet due to an accumulation of algae. Staff patrol the trail regularly to remove sea weed and also to grit the surface to reduce the likelihood of accidents.

The Trail is a fixed height and the area is tidal. During high tides the trail may be submerged. The trail is most vulnerable during storm events and king tides as the western most sections are not sufficiently protected by the forest against wave action.

Access to the trail is now managed via the kiosk – visitors must collect a swipe card to enter the trail. Data collected by kiosk staff demonstrates visitation from all around metropolitan Adelaide as well as by international travellers.



## St Kilda Mangrove Trail – areas in red / orange are in poor condition



**MANGROVE TRAIL**  
SCALE 1:2500



# Issues and Recommendations

## Condition of Mangrove Trail

The St Kilda Mangrove Trail is an educational icon and unique visitor attraction to the north. It is a vulnerable asset which has been battered by tides and storms and less than half of the original trail remains accessible to the public. A number of restrictions prevent the restoration and renewal of the trail including Native Title and also land ownership (DEWNR).

Substantial investigation and negotiation is still required to establish:

- Care and control
- Opportunity for reconstruction
- Partnerships and grant opportunities with Kaurua
- Function with International Bird Sanctuary
- Materiality and constructability
- Role and location of the interpretive centre

### **Recommendation 14: Mangrove Trail and Interpretive Centre**

**Explore opportunities for the Mangrove Trail and Interpretive Centre in a separate report to be presented.**

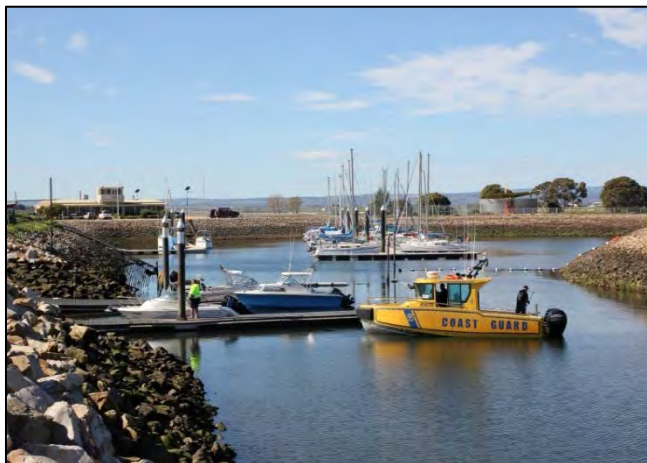


## Boat Club & Marina

The Boat Club and Marina area has a complex tenure arrangement as it is owned by two separate Ministers with care and control vested in the Council.

The Minister of Transport and Infrastructure owns all the land from the northern shore to the Adventure Play Space. The majority of this land is land fill, and a small section of it also has a Native Title Claim.

The Minister for Environment and Conservation owns all of the harbour, boat channel, the land to the east of the harbour including the boat club and all of the land to the south of the harbour comprising mangroves. A Native Title Claim exists over much of this land.



The boat club was founded as the "St Kilda Boat owners Association Incorporated" in 1964, after permission was gained from the council and landowners to develop St Kilda tidal creek as the area lacked boat launching facilities. The creek was straightened and deepened repeatedly, originally by hand, and a causeway extended out to sea to protect the channel.

The Club owns their own building and it was constructed in 1980 on crown land. The Council manages the lease on behalf of the Crown. There is mooring for approximately 50 boats in the harbour.

The Club has been in communication with the Council for several years as it has plans to increase the berthing facilities and undertake further works. The club has constructed a gated entrance down to the marina to improve security of the area. Additional works are subject to Native Title over the harbour and this is a consideration for any capital works.

## Breakwater & Channel

The channel and break water were constructed in 1964 by widening the original tidal creek – the channel is over 1km long. It was last dredged in 2005 and it has a constructed base of 15metres and depth of AHD - 3.5. This depth is suitable depth under keel for sail vessels up to 35metre in length.

Over the last 10 years a silt layer has accumulated at the bottom of the channel reducing its actual depth – approximately 16,000M<sup>3</sup> of silt is required to be removed to restore this depth.

Works on the breakwater have been undertaken including minor removal of silt which has slightly improved the depth.

One of the challenges in the dredging process is the disposal of the silt – in previous operations the spoil has been discharged to sites within the St Kilda precinct. If spoil cannot be discharged on site, then arrangements would be necessary to transport the heavy and wet spoil which is costly.



There is a northern and southern breakwater forming the channel. The southern breakwater is in poor condition due to tidal/storm activities and from bow wash from vessels entering and exiting the channel. It must be accessed from the water making repairs challenging and costly. Recent works have been undertaken to repair and renew the northern breakwater – which is accessible via land.

The channel is popular for fishing – fishing can occur on both sides of the break water. The waterway is shared by powered and unpowered vessels including kayaks and canoes. It is a popular launch location for personal watercraft to explore the mangroves and for fishing via kayak.

Renewal works as identified previously on the breakwater is ongoing. In addition channel markers will be replaced and Council have just been notified of the approval of a 4 knot speed limit in the channel.

## Proposed Implementation (Unfunded)

| Preliminary Stage 2 - 2017/18   |   | Estimate           |
|---|---|--------------------|
| Commence detail design / consultation   |   | <b>\$250,000</b>   |
| <b>Stage 2a – 2018/19</b>   | <b>Traffic Flow</b>   | <b>Estimate</b>    |
| RV Friendly Parking   | Provision of RV friendly parking – 8 bays   | \$180,000          |
| Roundabout and coach put down area  | Construction of the new roundabout and the coach bay on Cockle Street   | \$410,000          |
| Asphalt Main Playspace carpark  | Full asphalt treatment for areas C1 and C2  | \$810,000          |
| St Kilda Road / Mangrove St Intersection upgrade  | Coaches slip lane both sides & Signage  | \$350,000          |
| Intersection upgrade/roundabout for coach access on St Kilda Road/Whiting Street to Fooks Terrace | Both directions   | \$210,000          |
| Upgrade to Northern Car Park – off Fooks Tce  | Full asphalt treatment for area C3  | \$510,000          |
| <b>Stage 2a total</b>   |   | <b>\$2,470,000</b> |
| <b>Stage 2b – 2019/20</b>   | <b>Additional boat lane</b>   | <b>Estimate</b>    |
| Boat ramp   | Construction of an additional ramp lane   | \$650,000          |
| Channel works   | Installation of pontoons, bouys etc to assist with traffic congestion plus pathway(possible lights x 3)   | \$310,000          |
| <b>Stage 2b total</b>   |   | <b>\$960,000</b>   |
| <b>Stage 2c – 2020/21</b>   | <b>New parking and wayfinding</b>   | <b>Estimate</b>    |
| Way finding   | Improve access to St Kilda and around township & track improvements (pram ramps etc) and additional path to Mangrove Trail + solar lighting                                     | \$330,000          |
| New car park & roundabout   | Construction of new car park off Cockle St (164 carparks) area C4   | \$1,420,000        |
| <b>Stage 2c total</b>   |   | <b>\$1,750,000</b> |
| <b>Stage 2d – 2021/22</b>   | <b>Reconstruction of boat parking</b>   | <b>Estimate</b>    |
| Construct additional car parking  | Mangrove Trail entrance (45 carparks – increase of 20) area C5  | \$100,000          |
| Reconstruction of car park and construction of new wash down bays                                 | Construction of main carpark, wash down bays including new pump system and water supply, lighting modifications (120 car/trailer parks and 51 carparks) areas C6, C7, C8 and C9 | \$2,860,000        |
| <b>Stage 2d total</b>   |   | <b>\$2,960,000</b> |
| <b>TOTAL estimated cost</b>   |   | <b>\$8,390,000</b> |
| <b>Other Stage - Timing TBD</b>   | <b>Commercial precinct</b>  | <b>Estimate</b>    |
| Commercial precinct   |   | TBD                |
| Mangrove Trail  | Subject to further reporting  | TBD                |
| <b>Other Stage Total</b>  |   | <b>TBD</b>         |





|             | Bay type,     | Zone,              | Proposed Count | Existing Count |
|-------------|---------------|--------------------|----------------|----------------|
| C1          | Car (2.4x5.4) | Playground South 1 | 76             | 65             |
| C2          | Car           | Playground South 2 | 13             | 90             |
| C3          | Car           | Playground North   | 61             | 40             |
| C4          | Car           | Cockle Street      | 164            | 0              |
| C5          | Car           | Mangroves          | 45             | 25             |
| C6          | Car           | Kiosk              | 5              | 4              |
| C7          | Car           | Kyak               | 15             | 0              |
| C8          | Car           | Central- cars      | 51             | 0              |
| C9          | Car Trailer   | Central - Trailer  | 120            | 100            |
| Total Parks |               |                    | 645            | 324            |

CAR PARKS = 2.4m WIDE x 5.4m LONG  
TRAILER PARKS = 3.1m WIDE x 13.5m LONG

CONCEPT PLAN  
SCALE 1:1000 AT A1

| REVISIONS AND ISSUES |                   |      |          |
|----------------------|-------------------|------|----------|
| REV                  | ISSUE/DESCRIPTION | DATE | APPROVED |
| PR                   | -                 | -    | -        |
|                      |                   |      |          |
|                      |                   |      |          |
|                      |                   |      |          |
|                      |                   |      |          |
|                      |                   |      |          |
|                      |                   |      |          |
|                      |                   |      |          |

| DRAWING SHEET DETAILS  |          |
|------------------------|----------|
| ORIGINAL SHEET SIZE    | A3       |
| HORIZONTAL SCALES USED | AS SHOWN |
| COORDINATE SYSTEM      | MGA94    |
| CAD FILE NAME          |          |
| PR No.                 | #####    |

APPROVED \_\_\_\_\_  
  
NAME **DAMEON ROY**  
MANAGER TECHNICAL SERVICES  
  
DATE \_\_\_\_\_



| DESIGN VERIFICATION                |                  |           |      |
|------------------------------------|------------------|-----------|------|
| DESIGN TITLE                       | NAME             | SIGNATURE | DATE |
| SURVEYOR                           | -                |           |      |
| CIVIL DESIGNER                     | SIMON KRETSCHMER |           |      |
| TEAM LEADER CIVIL DESIGN & TRAFFIC | JASON TAMAS      |           |      |
| SENIOR TRAFFIC ENGINEER            | TONY CALANDRO    |           |      |
| TEAM LEADER LANDSCAPE DESIGN       | CRAIG JOHANSEN   |           |      |
| LANDSCAPE DESIGNER                 |                  |           |      |
| SENIOR ASSET & PROJECT ENGINEER    | PETER STOKES     |           |      |
| MANAGER PROJECTS                   | JOHN HUTTON      |           |      |

ST KILDA MASTER PLAN - STAGE 2  
CONCEPTUAL LAYOUT PLAN  
LOCAL AREA PARKING AND TRAFFIC MANAGEMENT