

TOWN OF VICTORIA PARK
FORESHORE
ACCESS & MANAGEMENT PLAN

27/02/2015



TOWN OF
VICTORIA PARK

COTERRA
ENVIRONMENT



0.0 SUMMARY

Summary

The Town of Victoria Park Foreshore Access and Management Plan is a document that will provide a framework for the future development and management of the Foreshore area. It will help to ensure that the area is developed as a space for both the local community and visitors as well as ensuring that the ecological values and visual amenity of the area are restored and protected.

An analysis of the site was conducted from visits to the area analysing significant plant species that occur, eroded areas of foreshore, significant pedestrian routes and recreational nodes.

The area is popular with tourists from Perth many of whom are drawn to the waters edge searching for recreation opportunities close to the city.

The management plan for the foreshore will help to improve the quality of the area by increasing the amount of space for social interaction, protecting and enhancing the views and visual amenity and by protecting the environment through revegetation and protecting fragile vegetation and habitat areas.



IMAGE 1. VIEW OF PERTH CBD, MCCALLUM PARK

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01 INTRODUCTION



1.0 INTRODUCTION

01 Introduction

- 1.1 Scope
- 1.2 Site Introduction
- 1.3 Impacting Factors
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- 1.5 Site Context

1.0 INTRODUCTION

There a number of foreshore precincts within the Town of Victoria Park and while the town does not have access to all parts of the foreshore, due to private or government ownership and jurisdiction, it is critical that access is not only maintained but enhanced.

Key foreshore management aspects for these areas include water quality, flora and fauna condition and public access to ensure the sustainability and viability of its foreshore precinct.

The Town would like to develop a holistic Foreshore Access and Management Plan (FAMP) for the area. The aim of this framework to take a coordinated and consistent management approach to the long-term ecological sustainability optimisation of access and utilization to the community.

The Town has been successful in obtaining assistance funding from the Swan River Trust, through the Riverbank Program for the development of the Foreshore Access and Management Plan.

The FAMP has been prepared in accordance with the requirements of the Swan River Trust and relevant State and Local Government policies and guidelines.



FIGURE 2. TOWN OF VICTORIA PARK FORESHORE - STUDY AREA

1.1 SCOPE

Urbis and Coterra Environment (Coterra) have formulated a project team to develop the FAMP as highlighted within the Town of Victoria Park's Strategic Community Plan 2013-2028, in order to satisfy the key objective for the "provision of high standard parks and natural areas that are safe, clean and attractive". It aligns with the Renew Life Program's environmental objectives, which include:

- Improve and provide environmental leadership that focuses on the public domain and which is delivered to a standard that meets community expectation and contributes to a Vibrant Lifestyle in Victoria Park;
- Ensure parks and natural areas are provided to the best standard; and
- Provide leadership on environmental matters.

THE OBJECTIVES OF THE FAMP ARE AS FOLLOWS:

- Describe the key policies and documents directing the management of the foreshore area.
- Describe the environmental features and current condition of the foreshore area.
- Identify the natural resources and processes as well as the necessary management principles and practices across the foreshore, both for long-term ecological sustainability and optimum community access and utilization.

- Identify threats to the health of the foreshore environment and the means to mitigate or minimise these threatening processes.
- Outline any proposed landform stabilisation, rehabilitation, re-vegetation and weed control.
- Identify recreation and leisure resources and provide for public use of the area where appropriate while maintaining and enhancing natural ecosystem processes.
- Outline the appropriate management measures for responsible public use and access to the foreshore area.
- Investigate the potential and opportunity for development of interpretational amenities consistent with the values of the area.
- Provide implementation roles, responsibilities and timeframes.
- Improve the accessibility of the area with better links to and from the site to both the beach and the lookout;
- Rehabilitate the site and improve its appearance and ecological value;
- Provide shelter from the sun and wind to create a comfortable space for patrons;
- Improve legibility and circulation of the area; and
- Provide for multiple types of recreational opportunities.

FORESHORE CHALLENGES

Current and future challenges facing the foreshore include, but are not limited to:

- Future development, increased density and use,
- Weed invasion, and inappropriate landscape treatments;
- Fragmented and disconnected access network
- Clearing and habitat fragmentation,
- Erosion (e.g. from boat wash, uncontrolled access, clearing); and
- Facilities expansion and enhancement
- Infrastructure enhancement and upgrade (e.g. river walling).
- Mosquitos
- Contamination of soil

1.2 SITE INTRODUCTION

Town of Victoria Park is subject to the requirement for a Foreshore Access and Management Plan for key foreshore areas, to satisfy the Town's Strategic Community Plan 2013-2028. The foreshore area within the municipality extends for a distance of approximately 6.3 km of shoreline along the Swan River, of which 2.5 km is managed by the Town (Figure 1). These foreshore areas within the 6.3 km area have been identified as:

- McCallum Park / Taylor Reserve;
- Burswood Park;
- Burswood Park and Golf Course Foreshore;
- Belmont Park Foreshore; and
- Balbuk Way Foreshore.

TABLE 1. AREA MANAGEMENT

Area	Manager
McCallum Park/Taylor Reserve	Town of Victoria Park
Burswood Park	Burswood Parks Board
Burswood Park and Golf Course	Burswood Parks Board/BMC Development Site
Belmont Park/Burswood Peninsula	WA Turf Club/Golden Group Development Site/Main Roads
Balbuk Way	Town of Victoria Park

The Burswood Peninsula District Structure Plan (WAPC 2014) provides a strategic framework to guide the development of key projects, and support the planning, assessment, coordination and implementation of longer term development across the Peninsula.

A Master Plan has been prepared for the new Perth Stadium currently under construction within Burswood Park. It is understood that various environmental assessments, including a foreshore management plan, were completed for the stadium development.

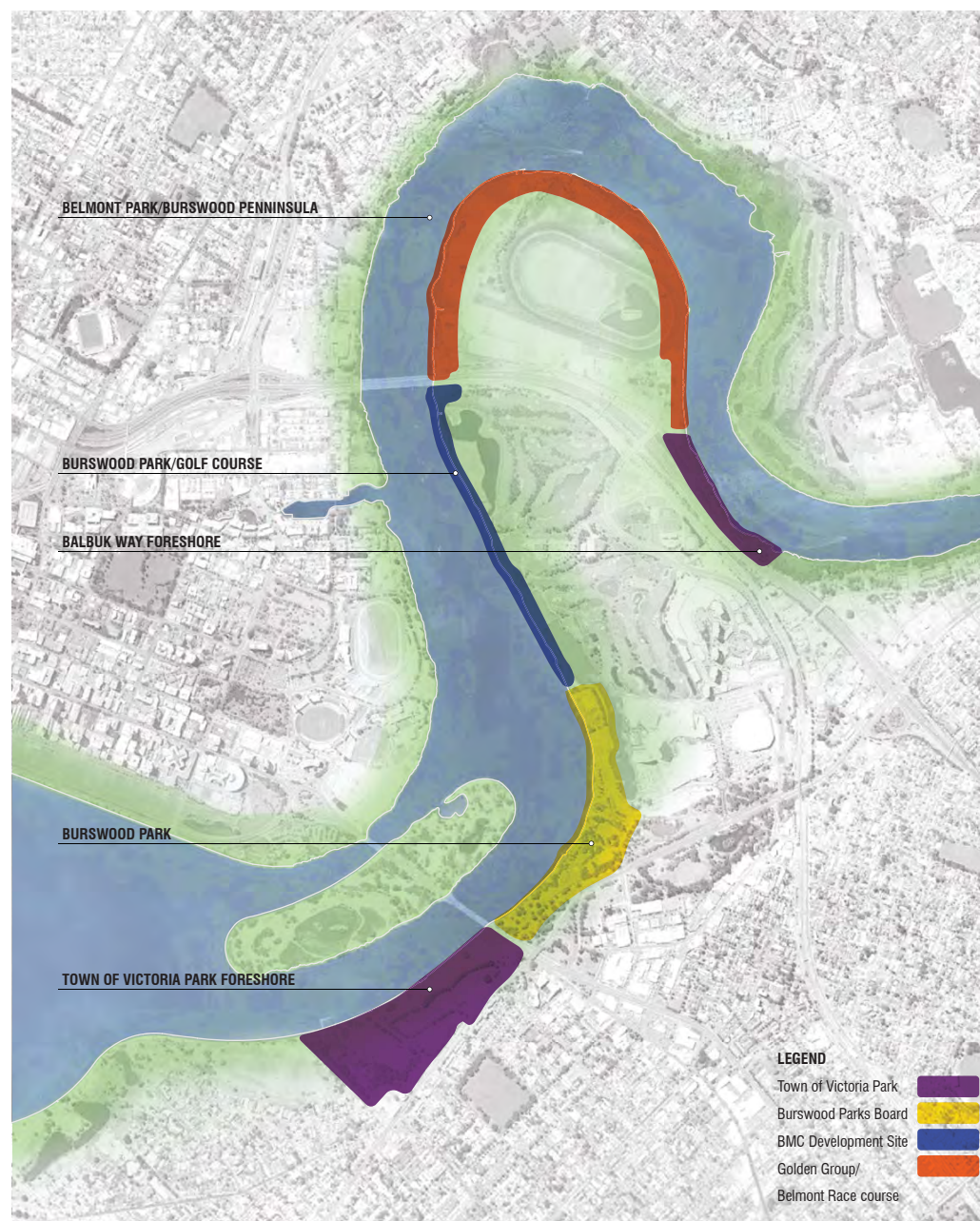


FIGURE 3. TOWN OF VICTORIA PARK FORESHORE - PRECINCTS AND MANAGEMENT AUTHORITIES

1.3 IMPACTING FACTORS

The foreshore is both a natural and cultural asset for the Town of Victoria Park and plays a vitally important environmental, social, and recreational role for the local and wider community. A number of social and environmental factors are influencing the quality of the existing environment within the Town of Victoria Park foreshore.

Some of these include:

AGEING INFRASTRUCTURE :

Many of the footpaths, lights, playgrounds, sports equipment, river walling, and other assets are ageing and deteriorating requiring maintenance or replacement.

MAINTENANCE:

Along the length of the foreshore maintenance appears disjointed, due to lack of co ordination between a number of different management authorities.

DECLINING VEGETATION:

There is limited native remnant vegetation across the study area, as a result of land reclamation, clearing, further modification of the landscape and environmental degradation associated with previous land uses. The native vegetation present that has reestablished over time is in decline as a result of ongoing human pressures on the environment.

DEMANDS FOR ADDITIONAL FACILITIES :

Population growth and increasing usage along the foreshore has resulted in increased demand on foreshore facilities such as more toilet blocks, bbq stations and shade structures.

INCREASED FORESHORE DEVELOPMENT:

The competing demands for improved residential amenity, and recreational opportunities continue to grow with development within the foreshore precincts.

1.4 PROPOSED FORESHORE DEVELOPMENT

THE DEVELOPMENT AT BURSWOOD/CROWN TOWERS

Construction commenced on March 2014 for the new hotel development, which will include some 500 rooms, along with a resort pool, a number of restaurants and bars, a number of other facilities including a grand ballroom and convention centre are planned to be built alongside the existing Crown Perth Resort.

The expected completion date is due around late 2016 for the new Crown Towers Perth that which aims to complement the existing resort and feature a 24 hour casino, nearly 700 hotel rooms, and additional facilities including restaurants, conference rooms, ballrooms, retail and theatre.

NEW PERTH STADIUM

A new multi-purpose venue for cricket, football codes and entertainment events with a 60,000 seat capacity, is currently in construction and is aiming to be open for the start of the 2018 AFL season. Public transport and pedestrian access are key features of the new stadium design, with a pedestrian bridge is proposed across the Swan River to link the site to the City, and the site will be linked by both rail and bus with respective upgrades to the nearby rail and station infrastructure (Draft New Perth Stadium 2014).

The stadium has been developed around a “fans first” ethos that provides shaded area, large seats, and significant food and beverage outlets and toilet facilities.

The stadium also has the capacity to be upgraded to 70,000 people, and has a structural lifespan over around 50 years.

THE GOLDEN GROUP/BELMONT RACE COURSE PENINSULA DEVELOPMENT:

The Belmont Racecourse Development is located on the Burswood peninsula between the Swan River and the existing Belmont Racecourse. The design of the master plan aims to create a series of precincts and communities with some 1.1 million square meters of accommodation. The site will also offer some 4,500 new dwellings, with a mixture of retail, commercial, leisure, and hotel facilities. The sites close proximity to the Perth CBD, Burswood Casino, and new Perth Stadium, coupled with its excellent public transport connections, the site presents an opportunity to provide high quality high density residential housing, in an area of excellent natural and built amenity (Emerge Associates 2011).

An expected upgrade to the foreshore reserve and Swan River that surrounds the site to the east, north and west is expected as part of the Master plan. The opportunity for new buildings and high-density residential areas to have views and physical links with both the Swan River, foreshore and surrounding public open spaces, aims to provide a high quality of life for residents and visitors alike.

Sources :

Draft New Perth Stadium Management Plan July 2014. Available from <http://www.planning.wa.gov.au/dop_pub_pdf/perth_stadium.pdf> . [15 September 2014].

Emerge Associates, Landscape Strategy, Belmont Park Racecourse Redevelopment 2011. [25 August 2014].



FIGURE 4. TOWN OF VICTORIA PARK FORESHORE - SITE CONTEXT

1.5 SITE CONTEXT

CURRENT TRANSPORT OPTIONS

- No pedestrian access around the perimeter of Belmont Racecourse
- Inconsistent and degraded pedestrian and cycle paths
- Unclear vehicle access to McCallum Park / Taylor Reserve
- Poor pedestrian access from CoP to ToVP

The current foreshore accessibility constraints will improve with developments currently underway along the foreshore.

Developments include

- New Pedestrian bridge from East Perth
- New Rail And Bus Stations
- New Pedestrian/Cycle Paths

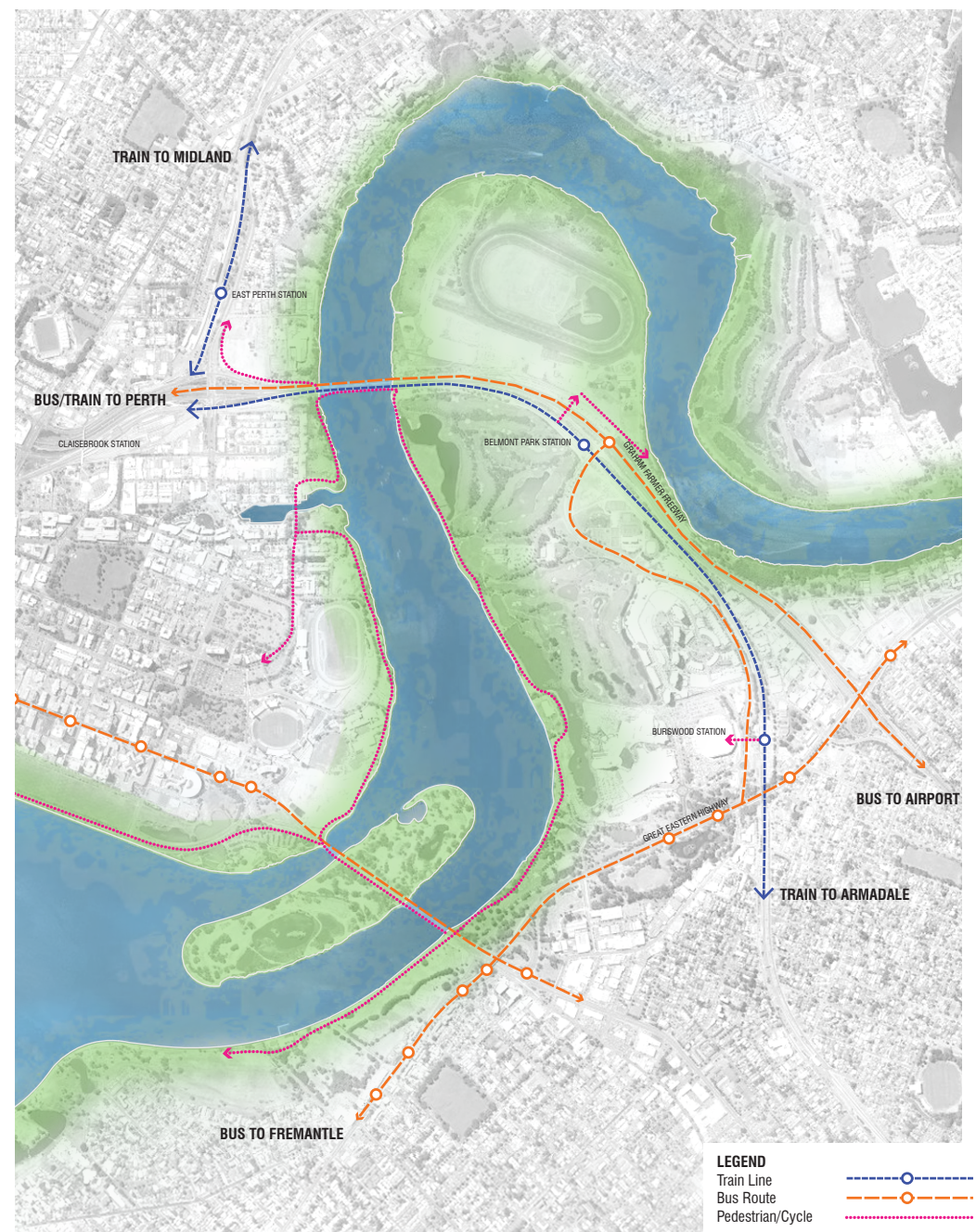


FIGURE 5. TOWN OF VICTORIA PARK FORESHORE - PRIMARY EXISTING ACCESS ROUTES

FORESHORE LANDUSE

Landuse along the foreshore shows that the area is primarily a recreation and entertainment precinct with a focus on sports entertainment and events space. The foreshore area includes large areas of future residential development that will be constructed surrounding intensive entertainment developments.

The intensive developments, such as the New Perth Stadium and associated entertainment precinct will attract large numbers of people, particularly on event days.

These development will require

- Improvements to access;
- Improved maintenance accessibility
- Methods to prevent habitat fragmentation
- Methods to prevent erosion (from clearing); and
- Improvements to Foreshore Infrastructure (e.g. river walling).

CURRENT MANAGEMENT AUTHORITIES

- Segmented management of foreshore areas provides challenges.
- Can cause a fragmented appearance along the foreshore.
- Can cause inconsistencies in environmental management and values.
- To achieve the best aesthetic outcome it is important to provide consistent connections and a number of similar themes throughout the foreshore.
- Establishing a level of amenity that can be affordably managed and maintained by all management bodies.

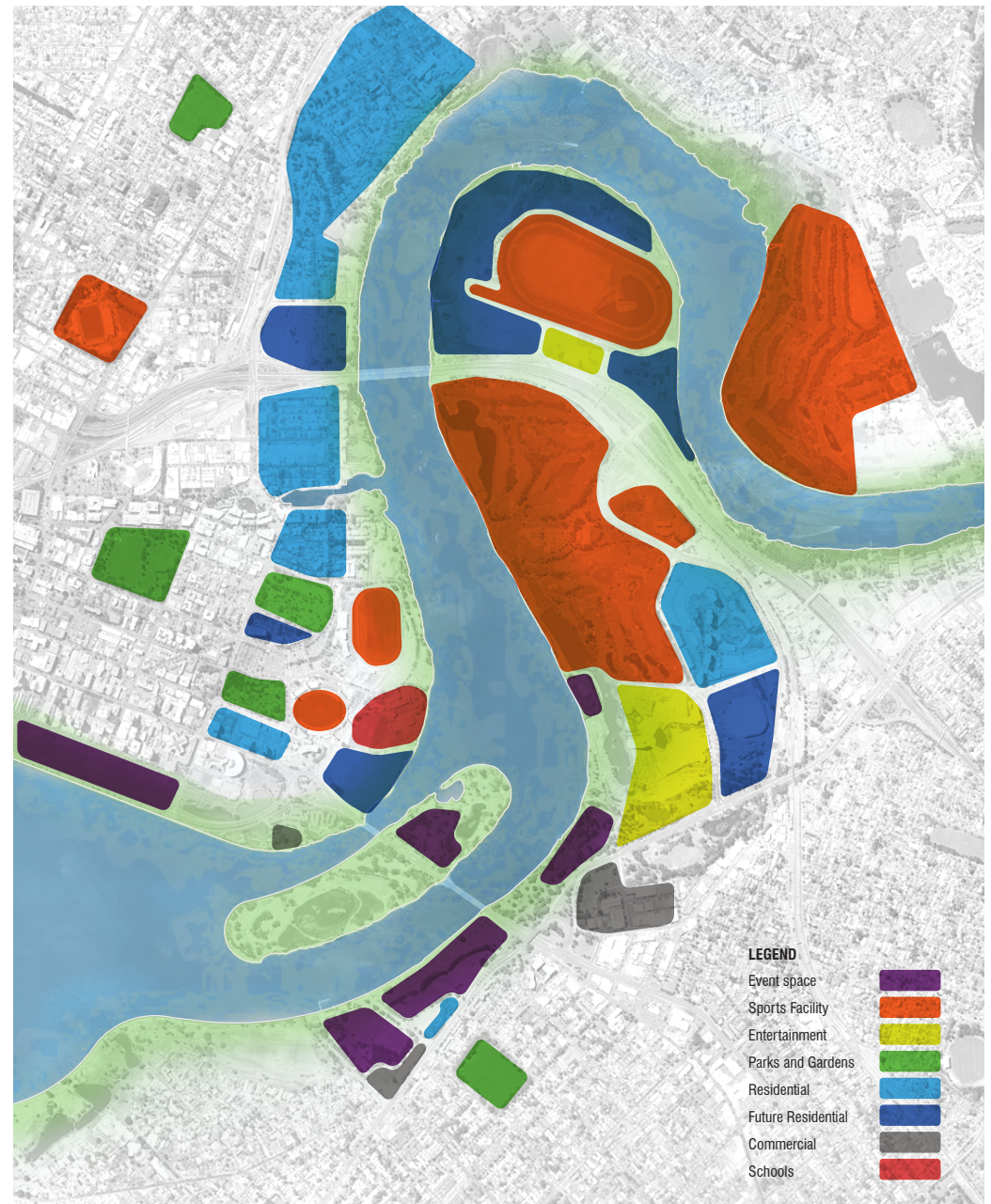


FIGURE 6. TOWN OF VICTORIA PARK FORESHORE - LAND USE



FIGURE 7. TOWN OF VICTORIA PARK FORESHORE - FUTURE WATERFRONT DESTINATIONS

02 MANAGEMENT



2.0 MANAGEMENT

2.0 Management

- 2.1 Purpose of the Plan
- 2.2 Consultation Approach & Plan Development
- 2.3 Study Area & Significant Features
- 2.4 Management Areas
- 2.5 Planning Framework

2.0 MANAGEMENT

2.1 PURPOSE OF THE PLAN

The purpose of the Town of Victoria Park FAMP is to provide guidance for the future use, development and management of the Town of Victoria Park foreshore. The Plan provides a long term strategic vision and direction for the foreshore by identifying values that require protecting, maintaining and enhancing, whilst responding to current and future management issues. The Plan will also help to inform Council's future management and budgeting for the foreshore.

Development areas within the foreshore precinct such as the Crown Casino development, Belmont Park and the New Perth Stadium will be guided by separate studies. These will incorporate individual masterplans for each development area, and should be designed to support the Town of Victoria Park Foreshore Access and Management Plan.

The FAMP considers interface issues with the adjacent municipality of City of South Perth to the southwest of the study area and the City of Belmont to the northeast of the study area. Collaboration between agencies is essential to improve consistency between management practices and maintenance regimes for the benefit of foreshore users. Figure 2 shows the study area subject to this Foreshore Management Plan.

The development of the FAMP was approved by Council, with support funding from the Swan River Trust.

THE OBJECTIVES OF THE TOWN OF VICTORIA PARK FORESHORE MANAGEMENT PLAN ARE TO:

- Provide a long term strategic vision and direction for the foreshore.
- Identify foreshore values that require protection, management and enhancement.
- Provide a framework for future use and development along the foreshore.
- Guide future management, works programming and budgeting.
- Identify current and future management issues.
- Provide a defined and prioritized implementation plan that outlines responsibilities, priorities and cost estimates for future management.



IMAGE 2. ACCESS PATHS - TAYLOR MCCALLUM

2.2 CONSULTATION APPROACH & PLAN DEVELOPMENT

The Town of Victoria Park consulted with Key stakeholders and local community members, acknowledging their values and interests in order to influence the future management of our foreshore.

Town of Victoria Park Council Officers, provided early input into the development of the Foreshore Management Plan through the identification of key issues, values and opportunities. The officers provided guidance in the development of the foreshore principles and actions whilst also considering the feedback received via the various consultation activities.

To ensure a representative number of opinions were captured, the Town of Victoria Park approached Key foreshore stakeholders and advertised widely throughout the local paper and online to attract local community members and businesses to discussion workshops.

The stakeholder and community consultation workshops occurred during June and July 2014. It was clear from discussions that the foreshore environment is highly valued by the Victoria Park community and that there were a range of different opinions and competing needs associated with managing the foreshore.

To capture opinions from Council Officers, community organisations and the foreshore users, a variety of media were applied to ensure a representative number of individuals and groups were surveyed.



IMAGE 3. STAKEHOLDER WORKSHOP



IMAGE 4. COMMUNITY CONSULTATION

2.3 STUDY AREA & SIGNIFICANT FEATURES

The Victoria Park Foreshore Management Plan covers the 6.3 kilometres of shoreline between South Perth and Belmont. Currently the foreshore is managed by a range of different Authorities including the Town of Victoria Park, the Burswood Parks Board, the BMC Stadium Development site and land developer The Golden Group in association with Belmont Race Course. In addition, the study area includes foreshore development control areas that are under the development control of the Swan River Trust.

Additionally there is a current arrangement between the Town of Victoria Park and City of Belmont regarding management of the southern end of the Balbuk Way Foreshore. Under this agreement, the existing boat ramp, revetment, toilet block and carpark are currently managed by the City of Belmont with a financial contribution from the Town of Victoria Park.

There are few areas of native vegetation across the study area which on a whole are relatively degraded, with some areas of greater ecological value. Additional planted areas within the foreshore area comprise of mostly exotic species, which are recognised in contributing to the visual amenity, may be limited in their provision of habitat for native fauna. The existing landscape displays a fragmented and incoherent appearance, and lacks both visual and physical connection, largely due to the different management authorities of each foreshore section. The challenge of producing a co-ordinated approach with the different managing authorities and stakeholders is seen as a key opportunity to remedy this situation.

SIGNIFICANT FEATURES:

WETLANDS & MAN-MADE LAKES

OPEN TURFED AREAS

SIGNIFICANT TREES

WINDAN AND CAUSEWAY BRIDGES

BUILDINGS & FACILITIES

SEA WALLS

RECREATION AND ACTIVITY AREAS

A number of activity nodes are located across the study area, however these are found predominately in the Taylor Reserve, McCallum Park and Balbuk Way areas.

There are a small number of developed nodes throughout the precincts however these are grouped to the south of the site with large areas lacking activation.

The dual use path is extremely popular for cyclists, walkers, runners and commuter cyclists, and forms a key recreational path within the Perth area. A variety of exercise equipment stations are located in a number of areas immediately adjacent to the path which are well frequented by commuters, and local residents.

Whilst much of the Taylor Reserve, McCallum Park, and Burswood Foreshore are fairly uniform in appearance, the study area has a number of very distinct and definable landscape character types.



IMAGE 5. SHADE TREES TAYLOR MCCALLUM

2.4 MANAGEMENT AREAS

The five identified foreshore areas within the Town of Victoria Park have been identified separately due to the different management authorities overseeing them. As a result of the management boundaries they have each developed unique characteristics and issues. Key characteristics of each precinct are listed below.

TAYLOR RESERVE / MCCALLUM PARK CHARACTER

- Well established mature tree lines (*Ficus sp.*) and stands of native woodland (flooded gums, sheoaks and peppermint trees)
- Fragmented park amenities
- Degraded / out-dated facilities (playground)
- Erosion behind river wall
- Open and exposed to prevailing wind conditions
- Limited shade areas
- Degraded pedestrian and cycle path
- Underutilised waterfront
- Limited physical connection with river
- Large areas of unused turf
- Opportunity to improve links with surrounding areas.
- Changes recommended to pedestrian/cycle network to improve integration and maximise public accessibility.

BURSWOOD PARK

- Multi-purpose use - available for party hire, etc.
- Tree lined shaded walking environment along dual use path
- Significant waterbird habitats
- Natural river edges
- Sheltered from prevailing wind conditions
- Large multiuse playground
- Movies by Burswood
- New shared path
- Easy access to large carpark

A major new development is proposed at Crown Casino offering a mix of commercial, retail, tourism, entertainment and residential uses.

The landscape and pedestrian routes provide a more legible and accessible public environment for locals and visitors. Car parking is provided within the foreshore area improving accessibility.

BURSWOOD PARK/GOLF COURSE

- New shared path
- Open and exposed to prevailing wind conditions
- Eroded rivers edge
- Orientation and aspect captures excellent views

- Underutilised waterfront
- No flooding protection
- Existing lakes providing faunal habitat
- Limited facilities
- Significant water bird populations utilising the area

Intensive redevelopment of the foreshore as part of the stadium development.

Rehabilitation of the foreshore will be necessary to repair erosion and environmental damage.

Retention of a significant, landscaped public park adjacent to the river will help ensure a consistent foreshore aesthetic within Victoria Park.

BELMONT PARK FORESHORE

- No pedestrian connection around waterfront
- Weed infestation
- Eroded and collapsing river banks
- Potential soil contamination from historical land uses and fill, remediation may be required. Retention and upgrade of racing facilities
- New medium to high density mixed use community
- Maximises transit oriented development opportunities (within 800m) around Belmont Park railway station
- Opens up new areas of the peninsula foreshore to public access

Development will enhance public access to the Swan River and therefore must respond sensitively to its environmental and cultural setting.

BALBUK WAY FORESHORE

- Degraded and exposed rivers edge due to boat wave wash and uncontrolled pedestrian access
- Water ski boat access and water ski spectator area
- Undermined and collapsed trees on rivers edge
- Narrow foreshore reserve
- Sheltered from prevailing winds
- Excellent northern solar access
- Passive surveillance and security issues

Stronger linkages across the railway and Graham Farmer Freeway reserves, will help to improve pedestrian connectivity.

While the Foreshore Access and Management Plan does not include water environments and offshore activities, the Plan takes into account the impacts of offshore activities on the foreshore reserve. Activities affecting the condition of the foreshore include:

- jet skiing
- water skiing
- recreational fishing
- boating activities , including mooring and launching access

The boat wash caused from the many powered vessels that frequent this area of the river is recognised as increasing the amount of high energy waves that reach the rivers edge.

The impacts felt from boat wash are most evident near the waterski areas located near the eastern side of the Belmont Race Course, and Balbuk Way, with banks collapsing and eroding. Many trees are now having been undermined and collapsed, with several more that appear close to collapse.

Whilst the relationship between the speed and size of a vessel, coupled with water depth is reasonably complex, it has been documented that at "...5 knots, all vessels produced much lower-energy waves than the extreme wind waves"(SRT 2010). It was also noted that above this 5 knot speed most vessels produce greater than the extreme wind wave energy. Any future strategies to mitigate erosion and enhance revegetation efforts will need to consider the impact of both current, and any expected increase in motor vessel use on the Swan River in the immediate vicinity of the study area.

Whilst recreational fishing is an extremely popular choice of recreational activities in WA, the impacts of this activity on the Swan river ecosystem is yet to be formally examined.

SOURCES:

Swan River Trust (SRT) Boat Wake and Wind Wave Trials 2010. [http://www.swanrivertrust.wa.gov.au/Stage 2 Report](http://www.swanrivertrust.wa.gov.au/Stage%20Report) Full Scale Boat Wake and Wind Wave Trials 2010



IMAGE 6. RIVER EDGE BALBUK WAY

2.5 PLANNING FRAMEWORK

This section outlines the policy and planning framework in which the Plan has been prepared with reference to the significant Council and State strategies and policies. Comprehensive details of these and other strategies and policies are examined as part of the Foreshore Background Review.

2.5.1 STATE PLANNING POLICY 2.10 SWAN-CANNING RIVER SYSTEM

The Western Australian Planning Commission (WAPC) and the Swan River Trust jointly commissioned studies to create a context of guidelines in order to guide future decision making where the Swan and Canning Rivers are concerned. State Planning Policy (SPP) 2.10 identifies the key issues that should be considered when planning for future land use and development in this context. The implementation of the policy is intended to be undertaken on a collaborative basis, by the Swan River Trust, WAPC and relevant local governments.

The policy places the majority of the Burswood peninsula within the Lower Swan Precinct, for which planning decisions should fulfil the following:

- establish protection measures for riparian vegetation on foreshores;
- promote an aesthetic environment for new riverside development appropriate to its surroundings, and establish a sense of place by the river;
- recognise the importance of the river for transport, commerce, tourism and leisure as well as its conservation value;

- enhance the appearance and function of existing recreation, tourism and commercial nodes and of proposed nodes identified in an adopted Swan- Canning precinct plan;
- protect places of cultural significance, in particular places on the Register of Heritage Places and the Department of Indigenous Affairs register of significant places; and
- ensure that subdivisions incorporate adequate foreshore reserves and building setbacks.

McCallum Park and Taylor Reserve are included in the Perth Water Precinct. According to the policy, planning decisions are similar, with more focus on:

- the maintenance of views both across, and from the water;
- public access;
- and promoted riverside development for the benefit of the public.

THE OBJECTIVES OF THE POLICY ARE TO:

- provide a regional framework for the preparation of precinct plans based on the precincts identified in the Swan River System Landscape Description;
- provide a context for consistent and integrated planning and decision making in relation to the river; and
- ensure that activities, land use and development maintain and enhance the health, amenity and landscape values of the river, including its recreational and scenic values.

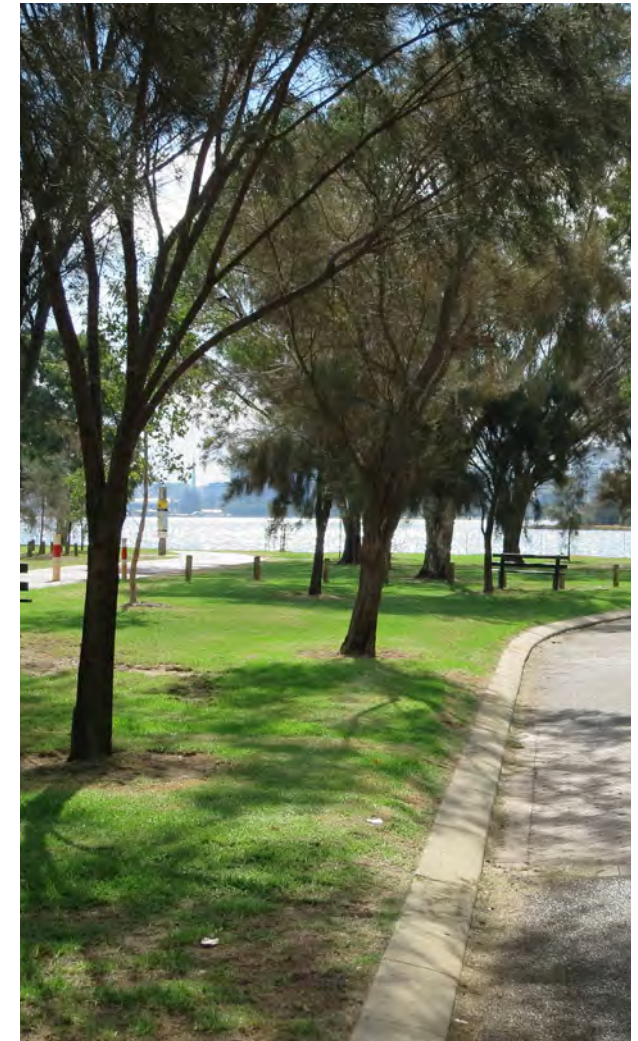


IMAGE 7. SHADE TREES TAYLOR MCCALLUM

2.5.2 SWAN AND HELENA RIVERS MANAGEMENT FRAMEWORK REPORT (2007)

The Swan and Helena Rivers Management Framework Report was prepared for the ERM by Hassell (2007). This document was designed to provide a strategic framework to guide the ongoing management and development of the eastern reaches of the Swan River and the Helena River.

The FAMP site falls partially within Precinct 1 (Windan Bridge to Black Swan Island) of the report. This site is identified within the SRT boundary and is shown to include:

- Indicative recreational trails
- Swan River floodway and flood fringe
- Riverbank stabilisation

The report described the foreshore zone comprising the Belmont Park and Balbuk Way foreshore precincts as follows:

The precinct is well used for boat activities with a water skiing area located between the Maylands Golf Course and Balbuk Way, Rivervale. Discussions with Local Government officers, and review of literature, indicates that boating activity in this part of the river is having a significant impact on the river banks with major bank erosion being caused on the Rivervale foreshore.

The report highlights the key issues for this precinct:

- As this precinct is the closest part of the study area to the CBD it is receiving the greatest development pressure.

Controls and rehabilitation measures are required to ensure a riverine character is maintained as viewed from the waterway and adjacent visual catchment.

- Current use has degraded natural vegetation and has resulted in bank erosion and instability in several locations including Balbuk Way, Sandringham Hotel Precinct, Clarkson Reserve and an area between Tranby House and Bath Street Reserve in Maylands.
- Private land ownership creates a barrier to developing a continuous recreation trail network. This occurs on the Maylands Peninsula containing the golf course, and north of Bath Street Reserve.

2.5.3 SWAN RIVER TRUST (2008) SWAN AND CANNING RIVERS FORESHORE ASSESSMENT AND MANAGEMENT STRATEGY - RIVERBANKS AND SHORELINES (FAMS)

In 2008, the SRT completed the Swan and Canning Rivers Foreshore Assessment in which divided river into three zones. The zones are:

- Estuary: Perth and Melville Waters downstream of the Causeway and Mount Henry Bridges (Zone 1);
- Swan: Swan, Helena and Lower Avon rivers upstream of the Causeway and within the SRT Management Area (Zone 2); and
- Canning: Canning and Southern rivers upstream of Mount Henry Bridge within the SRT Development Control Area (Zone 3).



IMAGE 8. UNDERMINED TREES, BALBUK WAY

In each zone, the condition and pressures of the shoreline (both built and non-built) and vegetation were documented. Information compiled as part of the Foreshore Assessment was then used as the basis for developing a management strategy.

The strategy makes recommendations for management response within two overarching objectives, which are:

- To protect and enhance riverbanks and shorelines to mitigate threats to foreshore values; and
- To protect, enhance and manage fringing indigenous vegetation and habitat.

Precinct 1: McCallum Park / Taylor Reserve is situated within Zone 1 (Estuary) while Precinct 2: Burswood Park, Precinct 3: Burswood Park and Golf Course Foreshore, Precinct 4: Belmont Foreshore and Precinct 5: Balbuk Way are within Zone 2 (Swan).

2.5.4 SWAN RIVER TRUST DEVELOPMENT CONTROL AREA

Most of the FAMP area (particularly McCallum Park / Taylor Reserve and Balbuk Way) lie within the Swan River Trust Development Control Area (Figure 5). Provisions for this area are outlined within the Swan and Canning Rivers Management Act 2006. This Act replaces the Swan River Trust Act 1988 and the Environmental Protection (Swan and Canning Rivers) Policy 1997.

The functions of the trust under the Act include: to protect and enhance the ecological and community benefits and amenity of the development control area and to control activities and development in that area.

SWAN RIVER TRUST POLICIES:

The following SRT Policies include information relevant to the design and management of the foreshore reserve:

- SRT/D2 - Access Pathways and Cycle Access
- SRT/D4 - Stormwater Management
- SRT/D18 - Signage
- SRT/D25 - Boardwalks
- SRT/D27 - Car parking and access
- SRT/E3 - Flood Prone Land
- SRT/E5 - Heritage
- SRT/EA2 - Foreshore Reserves

Relevant policy content is discussed throughout this FAMP

Development proposals within this area must be referred to and approved by the Swan River Trust. Input is also to be sought from the relevant local government on these matters. The Swan River Trust must publish all development applications it receives on its public website.

2.5.5 SWAN CANNING RIVERPARK AQUATIC USE REVIEW AND MANAGEMENT FRAMEWORK

The Swan River Trust completed a review of aquatic activities in the Swan and Canning rivers jointly with the Department of Transport – Marine Safety (Transport) in response to the

increasing level of use in the rivers. The aim is to ensure the safe, equitable, sustainable use of the waterways with minimal conflicts into the future. The review is focused on balancing the fundamental ecological needs of the rivers with maximising community benefit and amenity. The report includes an assessment of the scope and benefits of different activities, any conflicts or risks arising between activities, and various issues and identified opportunities.

2.5.6 GUIDELINES FOR DEVELOPING FORESHORE MANAGEMENT PLANS IN THE SWAN CANNING RIVERPARK (2012)

This document developed by the SRT provides a proforma to guide the writing of foreshore management plans in the Swan Canning Riverpark.

This FAMP has been written under the guidance of this document.



IMAGE 9. SWAN RIVER, BALBUK WAY

2.5.7 ASSESSMENT OF SWAN AND CANNING RIVER TIDAL AND STORM SURGE WATER LEVELS DOW2711 (PREPARED BY URS FOR DEPARTMENT OF WATER, JANUARY 2013)

The URS undertook a detailed strategic-level study of the Swan and Canning Rivers to assess the current and projected flood risk in areas surrounding the rivers and estuary. The main objective of the project was to provide information to assist the DoW in evaluating the current water level used in their planning policies and to advise future policy. The study also recognises projected sea level rise as a result of climate change as an issue for future planning and a separate study is being undertaken in this regard. For the sake of this study, mean sea level rises of 0.4 m (to project to 2025), 0.9 m (to project to 2110) and 1.2 m (beyond 2110) were used to model the predicted changes to river levels.

A data review of previous studies, numerical analysis and numerical modelling were undertaken to provide an estimate of flood levels for a range of river and marine events. The report provides discussion on the results, limitations and recommendations for future development and flood risk management.

2.5.8 LOCAL GOVERNMENT - MCCALLUM PARK / TAYLOR RESERVE LANDSCAPE CONCEPT PLAN REPORT

In 2002, Blackwell & Associates developed a Landscape Concept Plan for the McCallum Park / Taylor Reserve. One of the aims of the plan was to develop a reserve as a family destination and a place to recreate for both the local and regional community by identifying a number of appropriate

uses, increase the sense of security for uses of the area but not detract from the conservation values.

The Plan proposed major planning and design options for the site, including:

- Artificial Lake.
- Restaurant/Kiosk.
- Modifications to the Rivers edge.
- Boat Access.
- Playground and Recreation facilities.
- River Edge Treatments.
- Time-link Art Walk.
- Multi-purpose Courts.
- Access and Car Parking.

The report also presented an Initial Concept Plan and a Reserve Master Plan. Many of the elements highlighted within these plans have yet to be implemented however some are incorporated within the Foreshore Access and Management Plan.

2.5.9 BALBUK WAY MANAGEMENT PLAN

The Balbuk Way Management Plan was written for the Town and City of Belmont, by Ecologia in January 2004. This management plan provides an overview of the environment of the foreshore area, and identifies the public recreation activities for which the foreshore is utilised. Management solutions are provided in the management plan to reduce user conflict and enhance the recreational and conservation

values of the foreshore area. Some of these management actions have been implemented (such as the stabilisation of the boat ramp), however many of the issues identified in the plan are still evident in the current environment.

This FAMP aims to fill 'the gaps' where management actions have been suggested in the previous Balbuk Way Management Plan but have not been implemented, and where further management areas have been identified since the completion of the previous document.

2.5.10 THE BELMONT FORESHORE PRECINCT PLAN 2014

The Belmont Foreshore Precinct Plan 2014 was developed by the City of Belmont, WA Planning Commission and Swan River Trust and incorporates the Balbuk Way foreshore.



IMAGE 10. UNDERMINED TREES, BALBUK WAY FORESHORE

The plan promotes a clean and healthy river in a setting where activities, buildings and the natural environment are in harmony and will help to ensure that the landscape values of the river system are conserved or enhanced for present and future generations.

2.5.11 TOWN OF VICTORIA PARK STRATEGIC COMMUNITY PLAN 2013 - 2028

The Strategic Community Plan 2013 – 2028 provides direction and an overview of the projects that will affect the Victoria Park community over a 15-year period. There is a focus on changing the profile of the Town in the Perth metropolitan area and enhancing the quality of life experiences of community members and visitors, as well as enhancing the economic vitality of the Town.

The main section of the Burswood Peninsula lies within the designated Banksia Ward, whilst McCallum Park and Taylor Reserve lie within the Jarrah Ward, under this plan.

2.5.12 BELMONT RACECOURSE REDEVELOPMENT LOCAL STRUCTURE PLAN (LSP) 2013

The approved Local Structure Plan (LSP) for the Belmont Racecourse Redevelopment sets out the development intent for the Belmont Racecourse area. The intent of the structure plan is to establish a statutory framework to guide the planning and design of the site, to facilitate development proposals that will comprise a mix of land uses including retention and upgrading of the current racing facility, high and medium density residential, a significant activity centre and riverfront parks and recreation.

The development, Planning and Handover requirements are contained within the LSP and prescribe the land use permissibility, standards, requirements and prerequisites for subdivision and development in the Belmont Racecourse precincts as designated on the Structure Plan Map.

The objectives for the Racecourse Redevelopment foreshore listed within the LSP have been established for four identified Belmont precincts to take into account the different functions of the foreshore for each precinct. Developers should refer to the LSP to identify relevant foreshore objectives. Foreshore objectives listed within the LSP include;

- Optimise public access to the site.
- Encourage accessibility to the race track, the river foreshore and the river.
- Deliver a balance of restored riverine environment and parkland.
- Exercise sensitivity when considering and planning for the riverine environment.
- Retain and enhance vegetation and fauna habitat within an access controlled area
- Manage recreation opportunities and maximise retention of vegetation
- Create functioning and useable open spaces for the enjoyment of the entire community and local residents
- Provide public access through a series of boardwalks
- Allow for passive recreation activities such as recreational canoeing or kayaking along the foreshore.
- Establish activity nodes, comprising boatsheds, swimming beaches and facilities for the local residents and visitors.
- Establish opportunities for recreational fishing in harmony with the natural riverine habitat.

- Acknowledge and celebrate the indigenous connection to the Swan River.
- Create a small public marina providing a focal point, activity hub and high quality amenity area for residents and visitors.
- Focus on public usable spaces incorporating some open space turf areas and formal landscaping.
- Maximise recreation opportunities
- Provide for open spaces for passive and active recreation and revegetation of the fringing vegetation

The LSP contains detailed area plans, guiding design principles, precinct strategies and foreshore handover requirements that are all approved as part of the document. These must be adhered to when developing land within the Belmont Racecourse Precinct and developers should refer to the LSP for detailed development requirements.



IMAGE 11. EUCALYPTUS SPECIES, BALBUK WAY

03 CULTURE AND ENVIRONMENT



3.0 CULTURE AND ENVIRONMENT

3.0 Environment

- 3.1 Cultural & Social Heritage
- 3.2 Existing Natural Environment & Management Issues

3.0 ENVIRONMENT

3.1 CULTURAL & SOCIAL VALUE & USE

Maintaining heritage values and places is essential for a community's sense of place, cultural identity and well-being. The cultural meaning and historical uses of the Town of Victoria Park Foreshore are outlined below.

These include, but are not limited to spiritual meaning, European exploration, agriculture, transport, recreation and industry impacts in and near the management area.

3.1.1 ABORIGINAL HERITAGE

Derbal Yerrigan: The Swan River

The Swan River and its tributaries are woven into the Dreaming stories of the Whadjuk people of the Perth area. The Nyoongar name for the Swan River is Derbal Yerrigan and it is believed to be guarded by the snake like Wagyl "the keeper of fresh water sources" (Thompson, 2012). The river is a focal point for Whadjuk culture and "the intricate and complex network of landmarks, spiritual sites, meeting places, tracks and food sources which had sustained the Aboriginal people for many thousands of years" (Thompson, 2012). The Swan River is also of high importance to women for its association with birthing sites which required close proximity to fresh water.

Beeloo Country: The Town of Victoria Park

The Traditional Owners of the country now known as the Town of Victoria Park were the Beeloo people (Thompson, 2012). At the time of European settlement, Beeloo country was home to 27 adults and five children led by a man known to the settlers as Munday. (Thompson, 2012)

Matta Gerup: Knee Deep

The Town of Victoria Park Foreshore is of particular significance to the greater Whadjuk community of Perth. The Foreshore area was traditionally frequented in the warmer seasons, when water levels were lower and the river easier to cross. Matta Gerup, meaning "knee deep" in the Nyoongar language, was the name for the mud flats where the Causeway now connects Perth to Victoria Park (Hunter, 2007). This was an important crossing point for the Whadjuk and oyster shell deposits around the area indicate its long history as a food source (Thompson, 2012). An early newspaper article also notes that "In the summer time the tribes for sixty miles around assemble...they entertain each other with dances and chants of the corroboree." (Armstrong, 1836).

Yeyi: Now

Today, the Swan River is a registered site under the Aboriginal Heritage Act 1972 and any works on or next to the river may require permission through Aboriginal Heritage Regulations 1974 or the Aboriginal Heritage Act 1972. The Department of Aboriginal Affairs lists a number of Registered Sites within the Town of Victoria Park Foreshore.

Registered Aboriginal Sites:

- ID 3536 Swan River
- ID 15915 Burswood Island Camp
- ID 15916 Burswood Island (Artefacts/scatter)

In addition there is a Registered Aboriginal Site in close proximity to the foreshore within Belmont Park, ID 3701 Burswood Island (Ceremonial Site), and the Swan River



FIGURE 8. ABORIGINAL SITE & HERITAGE MAP (DEPARTMENT OF ABORIGINAL AFFAIRS)

is a Registered Aboriginal Site (ID S02548) of mythological significance.

Balbuk Way also takes its name from an Aboriginal woman named Fanny Balbuk who was reported to have been born on Heirisson Island and whom frequented the Perth area during early settlement (Thompson, 2012).

Marli Riverpark – Interpretation Plan

In February 2013 the Swan River Trust commissioned the National Trust of Australia (WA) to prepare an Interpretation Plan for the Swan and Canning Riverpark to make accessible to residents and visitors the cultural heritage values (natural, Aboriginal and historic/built) of the Derbarl Yerrigan and Djarlgarro Beelie/the Swan and Canning Rivers.

It makes recommendations based on strategies, policies and suggested actions to guide government, industry and the community in the effective management of the cultural heritage values of the riverpark while ensuring those values are accessible to a broad range of audiences.

SOURCES:

Susannah Thompson, *Beyond Matta Gerup : a history of Victoria Park* (Victoria Park, Western Australia : Town of Victoria Park 2012.)

Dr Lindsay Hunter, *Timeline* (Victoria Park, Western Australia : Town of Victoria Park 2007.)

Armstrong, Perth Gazette (Perth, Western Australia). 1836, Batty Library

Swan River Trust, National Trust of Australia, *Marli Riverpark An Interpretation Plan for the Swan and Canning Riverpark* (Perth, Western Australia). 2014

3.1.2 EUROPEAN HERITAGE

Exploration

The European history of the area began in 1697 with the exploration of the Matta Gerup mud flats by the Dutch Willem de Vlamingh expedition (Hunter, 2007). It was more than a hundred years before it was explored again by Europeans, this time a French party led by Commodore Baudin. It was Baudin who named the mud flats and islets after one of the expedition leaders, M. Heirisson (Hunter, 2007). In 1827 the first British explorers passed through the mud flats and along the foreshore when Captain Stirling explored the Swan (Hunter, 2007).

Settlement

The first European settler to be granted land in the area was Henry Camfield in 1829 (Hunter, 2007). His 1000 acre grant covered the Burswood peninsular and the land to its south. Named “Burswood” after an estate in Kent, England, the low lying peninsula led to a “ridge and a steep sandy hill with scrubland” (Chalmers, 1997). Camfield’s homestead was located on the site of the present day Belmont Racecourse. Early attempts by Camfield at bringing the land into cultivation were largely unsuccessful and marred by cropped failures. In following years, the land was subdivided and subsequent owners used it for market gardens and a dairy. In the 1870’s, Burswood Island, the northern area cut off by the canal, was sold to developers. Henry Camfield is memorialized by a bronze statue on the Burswood Heritage trail.

The land adjacent to the mud flats and later the Causeway was granted to the settler John Butler in 1831, the same

year as the construction of the Burswood Canal through Camfield’s property (Thompson, 2012). When Butler died in 1850, his wife Anne became the first woman to own property in the area, however, the land remained largely undeveloped until subdivision in 1884 (Thompson, 2012).

The Bridges

The Causeway is a crossing point deeply rooted in the history of the Town of Victoria Park’s Foreshore. From its importance as a crossing point for the Whadjuk people it developed into a highly important passage for early settlers travelling to and from Perth city. “At first the flats were crossed by a roadway of mud between two rows of wattle stakes” (Munday, 1958).

In 1840 the first timber piles of “Perth Bridge and Causeway” were driven into the mud flats (Hunter, 2007). In 1862, the original Causeway was destroyed by flood. Its replacement was finished in 1870. The bridge was then widened to include a footpath in 1899 and again in 1903 to accommodate the tram before its complete replacement in 1952 (Hunter, 2007).



IMAGE 12. CAUSEWAY BRIDGE BURSWOOD PARK

The Bunbury Railway Bridge was opened in 1892 in conjunction with the running of the first passenger train over the new South-Western Railway (The West Australian, 1892). By 1932, the deteriorating timber bridge had been replaced by another timber bridge (Hunter, 2007).

The concrete Goongoonup railway bridge replaced the timber structure of the Bunbury Bridge in 1995 and in 2000 the adjacent Windan traffic bridge was opened in conjunction with the Graham Farmer Freeway (Hunter, 2007).

Golf & Racing

Western Australia's first golf course was established on Burswood Island in 1895 and the Burswood Racecourse opened adjacent to it 4 years later (Swan River Trust). In 1902 the racecourse was renamed Belmont Park and in 1908 the golf course shifted to South Perth (Hunter, 2007). A second racecourse, the Goodwood, was opened in 1912 between Belmont Park and the old canal where it remained until both racecourses were bought by the WA Turf Club in 1943. It was closed shortly after (Hunter, 2007).

Waste, Dredge & Industry

Burswood Island was previously the site of sewerage treatment ponds (1906-1934), the Swan Portland Cement Works (1919-1996) and a domestic landfill (1940s-1972) (Chalmers, 1997). James Hardie Industries also operated alongside the cement works from the 1920s till 1981 (EPA). The legacy of these industries was a highly contaminated site that was to hinder the development of the area.

From 1933, the river was subject to large amounts of dredging with initial dredging taking place around the Causeway to reduce the mud flats and form the central island (Hunter,

2007). Then, from 1946 to 1964 the river was continuously dredged from the Causeway to the Bunbury Railway Bridge in order to reduce flooding. This sediment was dumped on Heirisson Island and Burswood Island. Later, between 1973 and 1976, Swan Portland Cement and the Blizzard Sand Company dredged over 1.5 million cubic meters of sediment from up and down stream of the Causeway (Chalmers, 1997). After remediation, the Burswood Island Resort and Casino were built over the landfill site between 1984 and 1987.

State Heritage Register

The Old Burswood Canal is registered under Place number 03570 on the Heritage Council State Heritage Register. The original path of the canal would have exited near the boat ramp at Balbuk Way.

In addition the Register lists the demolished Bunbury Railway Bridge, Heritage Place No. 3345, and Burswood Resort and Casino, Heritage Place No. 1699, now the Crown Casino.

Heritage Interpretation

Presently the Town of Victoria Park Foreshore has little heritage interpretation. A heritage trail exists in Burswood Park with a connection to the foreshore and consists of a series of interlinking paths connecting sculptures memorialising the European heritage of the area. In addition, a memorial stone near Balbuk Way commemorates the Burswood Canal.

There is currently no interpretation of the Aboriginal heritage of the area. Design and interpretation of Aboriginal heritage should be undertaken in consultation and collaboration with the relevant community.

Sources:

Susannah Thompson, *Beyond Matta Gerup : a history of Victoria Park* (Victoria Park, Western Australia : Town of Victoria Park 2012)

Dr Lindsay Hunter, *Timeline* (Victoria Park, Western Australia : Town of Victoria Park 2007.)

Lisa Chalmers, *Swan River System Landscape Description: Report to the Swan River Trust* (East Perth, Western Australia 1997)

P.A Munday, *The History of Victoria Park* (1958)

"The South-Western Railway: Mr Neil McNeil's Picnic". The West Australian (Perth, Western Australia 1892)

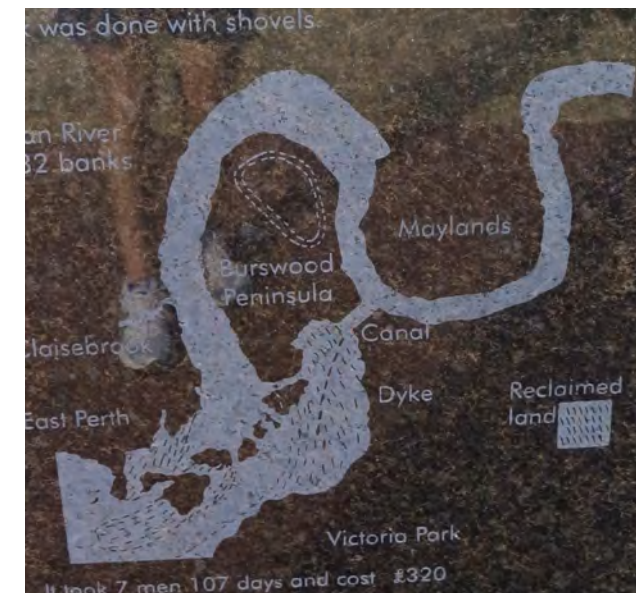


IMAGE 13. BURSWOOD CANAL MEMORIAL STONE

3.2 EXISTING NATURAL ENVIRONMENT & MANAGEMENT ISSUES

3.2.1 METEOROLOGICAL CONDITIONS

The study area is reasonably protected from the prevailing south west winds and associated wave action of the central Perth area, however some precincts (based on their location) are more sheltered from the effects associated with prevailing winds. These varying conditions play a role in determining the particular water and land based activities undertaken within the five precincts.

It is anticipated that sea levels will rise due to Climate Change over the course of this century and beyond, and for the purposes of this study, mean sea level rises of 0.4 m (to project to 2025), 0.9 m (to project to 2110) and 1.2 m (beyond 2110) are used to model the predicted changes to river levels (URS 2013). Coupled with an anticipated increase in sea levels is a predicted drying climate and declining rainfall, which will reduce freshwater inflows to both the Avon, Canning, and Swan River.

3.2.2 LANDFORM AND TOPOGRAPHY

The topography and landform of the study area has been highly modified since the 1800's, with many areas across the Burswood Peninsula now existing as a result of land reclamation.

Much of the study area is described as low-lying, and aside from a few areas, mostly ranges from around 2m AHD (Australian Height Datum) at the precinct boundaries to 0m AHD closer to the water's edge.

Natural riverine processes and the continuing erosion at many locations also contributes to an ever-changing topography and landform, and most of the study area is predicted to be partially or totally inundated in the event of a 1 in 100 year flood. As discussed in Section 3.1, climate modelling that shows a predicted sea level rise of 0.9 m by 2100, coupled with a 1 in 100 year flood event would see almost the entire study area inundated. Future development should consider the low-lying topography and predicted extents of flood events, coupled with rises in sea level over time.

3.2.3 GEOLOGY AND SOILS

The Burswood Peninsula occurs within the Bassendean Dune System, characterized by Bassendean sands. Soil mapping of the study area indicates the presence of largely clay, clayey silt, silty sand and sand. However, the Peninsula has been highly modified over time, from an isthmus and series of islands to a peninsula, as a result of land reclamation. Previous land uses have also altered the composition of soils, including such activities as land fill, sewerage settling ponds, golf course and cement works. Much of the area has been modified with imported fill, with content that ranges from sand, fly-ash, river spoil and other uncontrolled and unknown fill.

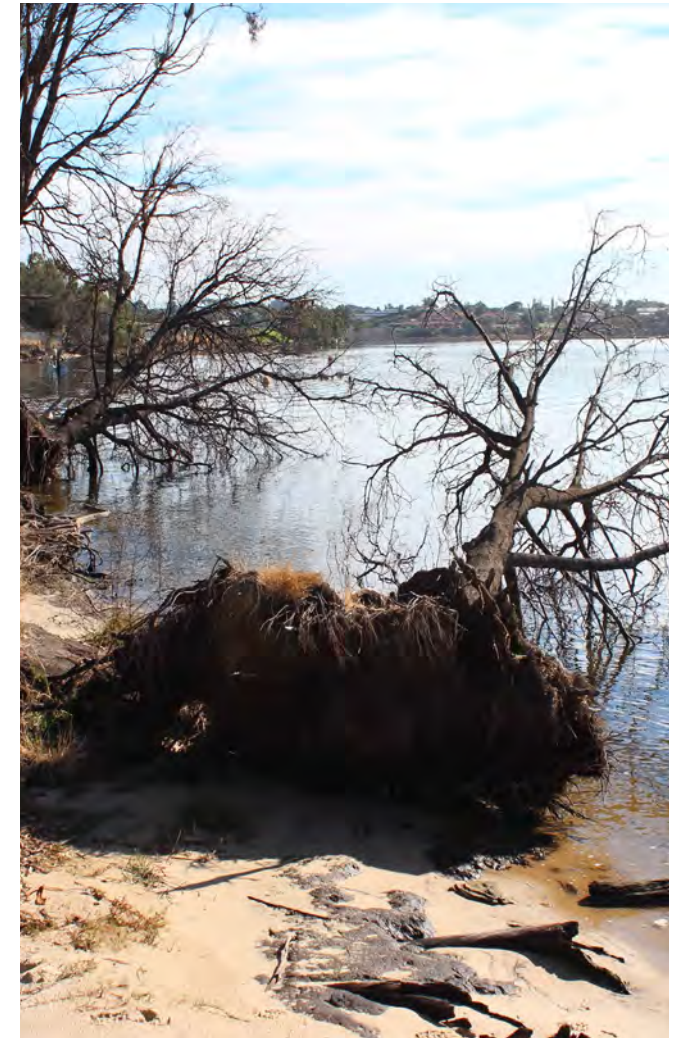


IMAGE 14. UNDERMINED AND COLLAPSED TREE, BALBUK WAY

Western Australia's contaminated sites legislation is administered by the Department of Environmental Regulation (DER), and all land owners, occupiers or polluters are required to report all known or suspected occurrences of environmental contamination. DER assess and classify contaminated sites, and provide this information to the public through the Contaminated Sites Database.

The DER Contaminated Sites Database was searched for registered contaminated sites within the study area. An area previously remediated (classified Remediated for Restricted Use in June 2010) occurs adjacent to Burswood Park, Belmont Park and Balbuk Way Foreshore precincts (DER, 2014). This site is labelled 'Burswood 6100'.

The nature of contamination was soil containing free asbestos fibres, and the asbestos impacted soil remains on the site below a sealed surface or clean fill. The area was historically used as a landfill for waste originating from the former James Hardie asbestos factory and Portland Cement works, which adjoined the contaminated site. There are requirements for site-specific health and safety plans to address the risks to the health of any workers undertaking any intrusive works, until further notice.

Given the previous potentially contaminating land uses within the Burswood Peninsula, there is a risk of contaminated soils and groundwater occurring within the study area. Any proposed works requiring excavation would require further site investigations for contamination.

Acid sulfate soils (ASS) as described as naturally occurring soils that contain iron sulfides, which when oxidised can result in the acidification of soils and groundwater.

All precincts in the study area are characterised as having a

High to Moderate risk of acid sulfate soils occurring within three metres of the natural surface level. The prevalence of the existing soil types, coupled with the various types of fills and dredge material indicate that ASS are likely to be present across the study area.

3.2.5 FLUVIAL PROCESSES

The Swan River is the dominant surface water feature surrounding the study area, from McCallum Park / Taylor Reserve to Balbuk Way Foreshore.

The junction of the Swan-Avon River and the major basin of the Swan River is marked by Heirisson Island, which lies just south of the Burswood Park foreshore area (Syrinx Environmental, 2011).

The areas of the Swan River adjacent to the Taylor Reserve/ McCallum Park, Burswood Park, and Burswood Park Foreshore areas are characterised as a 'drowned river system', which is flooded by a rise in sea level (Syrinx Environmental, 2011). The salt wedge encroaches and retreats throughout the year based on coastal processes and seasonality, causing these areas of the Swan River to be relatively fresh in winter and brackish to saline in summer.

Flows in the river are generally restricted to winter months when heavy rainfall events are more likely to occur, and these flows can lead to flooding when significant. The tidal influence of the ocean also affects the water levels, through diurnal tidal movements and spring and neap tides. The daily range is approximately 0.4 m at spring tide and 0.1 m at neap tide, measured at the Barrack Street Jetty (Emerge Associates, 2011).

3.2.6 GROUNDWATER AND HYDROLOGY

Groundwater

Groundwater levels across the study area occur within 0 to 3 m of the natural surface ground level, and the aquifer underlying the study area is approximately 25 m thick. Groundwater flows outward from the central and south of the peninsula towards the Swan River (Emerge Associates, 2011). Tidal influence of the river on the groundwater underlying the site is relatively minor, only observed in the immediately adjacent shoreline areas, due to the low permeability of soils and the short tidal durations (Emerge Associates, 2012).

It is likely that the groundwater quality across the study area is poor, based on historical land uses in the area. Recent groundwater studies have indicated that there have been elevated nutrients and high heavy metal within the Belmont Park precinct, which may also be a common occurrence within the study area. (Emerge Associates, 2011).

Surface Water

In many areas of the site, such as Balbuk Way, uncontrolled run off of stormwater from several concentrated drainage points from roads and carparks are contributing to localised gully erosion within the foreshore reserve.

The Taylor Reserve and McCallum Park areas are reported to have three existing stormwater outlets which are part of a local network to capture and discharge stormwater into the Swan River. Two artificial drainage outlets connect the Burswood Park foreshore with the Swan River and one known artificial drainage outlet occurs in the Burswood Park foreshore (Syrinx Environmental, 2011).

A number of drains dispose stormwater directly to the Swan River from the Belmont Park precinct, with runoff from the racetrack draining into the unlined irrigation lake in the centre of the course (Emerge Associates, 2011). Most of these outlets are noted to be in need of upgrading.

It is recognised that treatment of stormwater runoff from surrounding areas should be enhanced, to reduce nutrient run off, minimise erosion and limit other non-nutrient contaminants from entering the Swan River. Stormwater treatment opportunities include, but are not limited to:

- Biofilters and drainage swales to strip nutrients prior to stormwater flowing into the river;
- Gross pollutant traps to remove any large particulate matter;
- Implementation of Water Sensitive Urban Design (WSUD) at existing carparks and roads to treat stormwater prior to reaching outlet points.

The stormwater drainage outlets into the Swan River Belmont Park Precinct require upgrade. The responsibility for upgrading this infrastructure currently lies with the land area Managers including the WA Turf Club and Site Developer the Golden Group.

Wetlands

A number of natural and artificial wetlands occur across the study area.

A series of artificial wetlands occur in close proximity to the foreshore area, within the current Burswood Golf Course, one of these is open to the river via an outlet pipe (Bamford Consulting Ecologists, 2012a). There is an unlined artificial

irrigation lake in the centre of the Belmont Park precinct (racetrack), which is thought to be hydraulically connected to the superficial aquifer, forming a localised groundwater mound in this area of the site (Emerge Associates, 2011).

A freshwater surface expression occurs in the southern portion of the Balbuk Way Foreshore area, adjacent to the Graham Farmer Freeway, and is dominated by the sedge *Baumea articulata*. This was converted in 2006/2007 during rehabilitation works implemented by the Town and City of Belmont to create a biofilter for the stripping of nutrients prior to stormwater flow into the river.



IMAGE 15. ERODED GULLY, BELMONT RACECOURSE



IMAGE 16. STORMWATER RUN OFF, BALBUK WAY

3.2.7 FLORA AND VEGETATION

There is limited native remnant vegetation across the study area, as a result of land reclamation forming much of the peninsula, clearing, and other historical modifications of the landscape. The original vegetation across the study area is mapped by Heddle et al. (1980) as Swan complex, which is characterised by "fringing woodland of *Eucalyptus rudis* (flooded gum), *Melaleuca raphiophylla* (swamp paperbark) with localised occurrence of low open forest of *Casuarina obesa* (swamp sheoak) and *Melaleuca cuticularis* (saltwater paperbark)". The original salt marsh vegetation found where the Burswood Peninsula now exists (as a result of successive land reclamation) is no longer present; the sedges and rushes that line the foreshore currently were planted in the 1970s (Thurlow et al., 1986).

The Taylor Reserve and McCallum Park areas have been planted with exotic species since around the 1950s or earlier, with a number of mature *Ficus sp.* trees providing shade opportunities for park users. The western portion of Taylor Reserve contains stands of native vegetation (all planted), including *Agonis flexuosa* (weeping peppermint), *Casuarina obesa* (swamp sheoak), *Eucalyptus rudis* (flooded gum), *Melaleuca raphiophylla* (swamp paperbark), *Melaleuca lanceolata* (Rottneest teatree) and *Melaleuca cuticularis* (saltwater paperbark) (BEC, 2014).

Across Burswood Park and Burswood Park Golf Course Foreshore, the following plant species have been recorded:

- *Casuarina obesa*
- *Melaleuca sp.*
- *Melaleuca cuticularis*

- *Juncus kraussii*
- *Agonis flexuosa*
- *Sarcocornia sp.*

The vegetation in these precincts is fragmented in many parts of the foreshore, with some sections containing less than 20% vegetation cover. The majority of the foreshore is grassed with a narrow line of sedges (such as *Juncus kraussii*) along the interface of the Swan River and scattered tree species (eg. *Casuarina obesa*, *Melaleuca cuticularis*, *Casuarina glauca*, *Eucalyptus sp.*). Many native trees along the water have been compromised due to the effects of erosion processes via the undercutting of soil substrate which has resulted in the exposure of tree roots.

Some of the artificial lakes within the Burswood Golf Course are extensively planted with rushes, sedges and other riparian vegetation.

The vegetation present within the Belmont Park Foreshore precinct is largely degraded and consists mostly of introduced species. The current native vegetation consists of fringing reed beds of *Juncus kraussii* growing within the river itself. Samphire species (*Tecticornia indica subsp. indica* and *Sarcocornia quinqueflora*) were found to grow in association with *Juncus kraussii*, fringing the estuary on the western side of the peninsula and the ponded water in the interior section of the site. Native tree species, namely *Casuarina obesa*, *Melaleuca cuticularis*, *Melaleuca raphiophylla* and *Eucalyptus rudis* fringed the estuary and were also found to be scattered away from the water's edge.

The original shoreline vegetation at Balbuk Way Foreshore would have comprised a mixture of reed species, closed

Melaleuca scrub and fringing woodland of flooded gum (*Eucalyptus rudis*) and *Melaleuca* species. Recent surveys recorded dominant species *Eucalyptus rudis*, *Casuarina obesa*, *Eucalyptus camaldulensis*, *Baumea articulata*, *Ficinia nodosa*, *Juncus pallidus*, *Juncus kraussii*, *Suaeda australis*, *Sarcocornia quinqueflora* and *Atriplex hypoleuca*.

Weed and turf species dominate the majority of the precincts.

3.2.8 ENVIRONMENTAL WEED MANAGEMENT

A recent survey undertaken for Taylor Reserve and McCallum Park and Balbuk Way recorded a total of 15 weeds and 19 weed species respectively (BEC, 2014).

Within the study area introduced grasses mainly consist of couch (**Cynodon dactylon*) and kikuyu (**Cenchrus clandestinum*) and in wetter areas, salt water couch (**Paspalum dilatatum*) is also a common occurrence. Other introduced species include **Typha orientalis*, **Bromus diandrus*, **Ehrharta calycina* and **Avena fatua*. Woody weeds are dominated by the very invasive pampas grass (**Cortaderia selloana*), and other woody weeds include giant cane (**Arundo donax*), castor oil plant (**Ricinus communis*), Brazilian pepper (**Schinus terebinthifolius*), Athel pine (**Tamarix aphylla*) and river red gum (**Eucalyptus camaldulensis*) (Emerge Associates, 2012).

It was noted that across the entire study area, that large areas were covered by couch and kikuyu grass, which although not desirable from an ecological position, is valuable as an aid to bank stabilisation. As part of a rehabilitation program any removal of established planted grasses should be staged over time to allow for the establishment of revegetated areas.



IMAGE 17. EXOTIC GRASSES ALONG FORESHORE, BALBUK WAY

3.2.9 FAUNA EXTENT AND HABITAT

The degraded nature of existing habitats has influenced the ecological value of the study area, which has resulted in the limited availability of diverse fauna habitats in the area.

Mature native and exotic trees, are found in Taylor Reserve / McCallum Park and provide valuable fauna habitat, particularly for birds. This precinct mainly consists of parkland consisting of lawn and landscaped trees. There is little native understorey and groundcover within the study area which severely limits the habitat suitability for mammals and reptiles.

The Burswood Park and Burswood Park Golf Course areas are known to support significant numbers of waterbirds, with records and field evidence showing signs of breeding within these precincts (including the black swan, great crested grebe, purple swamphen, dusky moorhen, Eurasian coot and Australian reed-warbler). Many other waterbirds have also been recorded but in small numbers, possibly due to the lack of tidal mudflats which are often favoured by foraging waterbirds.

The foreshore area of Burswood Parks was also surveyed for other non-avian fauna, and the area was found to be quite depauperate of species, due to its largely cleared nature. Most of the lakes at the golf course were found to contain the introduced mosquito fish (*Gambusia holbrooki*) but native Western Pygmy Perch has also been released into the lakes. The lake that is linked to the Swan River is known to be a nursery and refuge for riverine fish species, such as the black bream and yellowtail grunter. Studies of the lake indicate that this ecosystem is important to many

invertebrates occurring in the river system. The long-necked tortoise (*Chelodina oblonga*) reportedly inhabits some of the lakes of the golf course. The water rat (*rakali*) is the only mammal species of conservation significance likely to occur. It is listed as a Priority 4 species ('Rare, Near Threatened and other species in need of monitoring') by the Department of Parks and Wildlife.

The most significant habitat in the Belmont Park area exists in the fringing riparian vegetation (largely *Juncus kraussii* and samphire) of the foreshore (which also supports the majority of the vegetation in the area). The vegetation may provide habitat for many waterbird species, particularly rails, crakes, waterhens, warblers, grassbirds and other species that nest in dense stands of sedges (Emerge Associates, 2012).

The Balbuk Way foreshore area provides a number of fauna habitats, including fringing riparian vegetation (primarily *Baumea articulata* and *Juncus kraussii*). Areas which are dense with fringing vegetation are of high ecological value as it supports many aquatic invertebrates, fish and waterbirds, by providing a habitat which can be used for feeding, breeding and shelter. Sandy stretches of beach along the foreshore provide foraging habitat to a number of waders, although the habitat areas available along this stretch of foreshore are likely to be too variable and/or small to support large number of waterbirds. The large trees scattered along the water's edge are potentially of value to terrestrial and water birds, for roosting. The area is fairly degraded and is not likely to be of high habitat value to species of conservation significance.

Introduced species such as rabbits, cats and foxes are likely to occur in the study area, and have been recorded within nearby reserves (Bamford Consulting Ecologists, 2012b).

3.2.10 FIRE MANAGEMENT

The objective of fire management is to minimise the risk of accidental fires occurring within the foreshore reserve. Effective fire management practices will enable fires to be quickly suppressed and also to prevent fires from travelling to adjoining lands and further threatening life and property. Fire management within the foreshore area aims to minimise the fire threat to:

- Life and property
- Ecological diversity
- Sustainability of natural systems

There are currently a number of areas of native vegetation, within the study area. As rehabilitation of key areas within the foreshore reserve increases, the risk of fire occurrence particularly during summers months and near recreation areas may increase.

Fire sensitive landscaping and the use of low fire risk plant species within revegetation programs should be applied within the study area, including (but not limited to):

- Ensuring tree crowns do not overlap buildings.
- Ensuring large planted trees are a minimum of 10m apart.
- Using fire-retardant species, where appropriate Fire Hazard Reduction.



IMAGE 18. EUCALYPTUS RUDIS, TAYLOR RESERVE



IMAGE 19. FICUS SPECIES TREES, MCCALLUM PARK

As the number of people using the foreshore increases, the associated risk of accidental fires also increases. Amenities provided within the foreshore should support everyone who wishes to use it and to limit the risk of accidental fires being caused. The management Authorities for each precinct should ensure that:

- Bins/receptacles for cigarette butts and matches will need to be provided.
- Signage to highlight that the lighting of fires on the foreshore is an offence.
- Any barbeques placed on site will need to be either gas or electric.
- Appropriate access will need to be provided for fire services.
- Fire suppression equipment is available.
- Provide access to water for fire-fighting purposes adjacent to the foreshore reserve.
- Provide adequate access for emergency vehicles through the dual-use path network.

Management of Burnt Areas

Following a fire, an initial assessment of bare ground should be undertaken to determine if there is an increased risk of erosion, weed distribution and/or if existing habitats have been impacted. Erosion control measures should be implemented as soon as possible after the fire. Access to any burnt areas should be limited to management purposes only for the first six to twelve months. In areas of high pedestrian use, foot access should be limited to limestone-stabilised tracks or other firm surfaces. Temporary signage may also be appropriate.

Key Direction

Develop a comprehensive Fire Management Plan for the foreshore reserve and review in consultation with the Fire and Emergency Services Authority of Western Australia.

Sources:

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IMAGE 20. EUCALYPTUS SPECIES, BALBUK WAY

04 CONSULTATION



4.0 CONSULTATION

4.0 Consultation

- 4.1 Aim of the Consultation
- 4.2 Stakeholders and Community Members
- 4.3 Foreshore User Findings
- 4.4 Emerging Themes
- 4.5 The Foreshore Vision



4.0 CONSULTATION

4.1 CONSULTATION

The Town of Victoria Park is committed to community consultation as a way of ensuring the Foreshore Access and Management Plan is implemented in line with the needs and preferences of the community. Ensuring people are involved in the decision-making process makes sure people have the opportunity to help shape future outcomes.

The Town of Victoria Park invited key Foreshore stakeholders and members of the community to provide information and give feedback to develop the Foreshore Access and Management Plan. Below are listed the key Aims, Objectives and Issues that were addressed during the consultation workshops.

AIM OF CONSULTATION

- For the Key Stakeholders to identify and address key issues in their locality.
- To develop ideas and strategies for improving foreshore access, appearance and environmental quality
- To build capacity for ongoing discussion and cooperative action on foreshore related issues

CONSULTATION OBJECTIVES

- Identify the natural resources and processes
- Identify the management principles and practices across the foreshore
- Optimise community access and utilisation
- Identify means to mitigate or minimise threatening processes to the foreshore
- Identify recreation and leisure resources and provide for future public use
- Maintain and enhance natural ecosystem processes

KEY ISSUES/CONCERNS

- Development/Integration
- Sustainable Environment
- River edge condition
- Clearing and habitat fragmentation
- Infrastructure failure
- Safety and surveillance
- Sea Level Rise
- Foreshore access
- Sense of Place and Identity
- Recreation options
- Aboriginal Heritage
- Community Expectations
- Maintenance
- Environmental degradation
- Erosion
- Weed invasion

4.2 STAKEHOLDERS AND COMMUNITY MEMBERS

The input of Council staff and foreshore stakeholders was considered essential to building ownership and responsibility to the wide range of foreshore actions identified. Input was sought from a range of stakeholders that can influence the community's foreshore experience.

Table 2. below lists the agencies, community groups, clubs and businesses that are considered to be key community stakeholders in relation to the foreshore. These stakeholders participated in consultation activities to contribute to the development of the Foreshore Management Plan.

The key stakeholders of the foreshore, and community members provided early input into the development of the Foreshore Management Plan through identification of key issues, values and opportunities.

Consultation occurred in June and July 2014. A variety of methods were applied to contact stakeholders and residents to ensuring a range of individuals, groups and opinions were captured.

DEPARTMENT OF ABORIGINAL AFFAIRS

The Department of Aboriginal Affairs provided feedback on the draft Plan in relation to Aboriginal Culture and Heritage aspects of the plan.

The DAA recommends that the Aboriginal heritage knowledge holders for the sites are contacted through the South West Aboriginal Land and Sea Council to ascertain whether the proposed works will have an impact on an area of specific heritage importance, and for the use of Nyungar

cultural motifs and information in interpretive works on the foreshore. Should any party implementing aspects of the Plan wish to pursue some form of approval under the AHA or require more specific advice regarding their activities it is recommended that a meeting is arranged with DAA staff.

DEPARTMENT OF FISHERIES

The Department of Fisheries provided written feedback with regard to there position as the department responsible for the management of freshwater and marine fish resources.

The Department is responsible for all WA waters including natural and artificial water bodies that are connected to the Swan and Canning Rivers.

The Department sustainably manages fish and their habitats for the benefit of both present and future generations, with a focus on the following three areas:

Protection of environmental assets (eg littoral and riparian vegetation and habitats, threatened and endangered species, and other important drivers of ecosystem processes such as water quality)

The Department's current focus is on;

- minimising the risk of invasive species, and protecting key habitats.
- Conservation of economic and social (eg recreational fishing) values.
- Restoring of habitats and fish stocks, through restocking, seasonal closures to support breeding, etc

TABLE 2. KEY STAKEHOLDER WORKSHOP ATTENDEES

REPRESENTATIVE NAME	STAKEHOLDER GROUP
Glen McLeod-Thorpe	Swan River Trust
Brett Wood-Gush	Metropolitan Redevelopment Authority
Trevor Vaughan	Town of Victoria Park Mayor
Helen Mathie	Town of Victoria Park
Andrew Ford	Town of Victoria Park
Brendan Nock	Town of Victoria Park
Gregor Wilson	Town of Victoria Park
Michele Fletcher	Town of Victoria Park
John Pettersson	Burswood Water Sports Centre (President)
Chrystal King	Emerge Landscape Architecture
Ellen Smith	Recfishwest
Leyland Campbell	Recfishwest
Annette Holland	Community Working Environmental Group
Kate Bionodo	Community Working Environmental Group
Theresa Putland	Community Working Environmental Group
Glenn Coles	Speed Boat Association/ Recreation Water Sports WA
Mike Donelly	Fishers with Disabilities
Bruce Hawkins	Burswood Park Board
Representative	City of Belmont

4.3 FORESHORE USER FINDINGS

Questions were put to a variety of foreshore users as part of the consultation. The workshop findings addressed the following topics:

ACCESS CONSIDERATIONS

- Identification of the potential impacts to the foreshore area and current state of environment (through foreshore assessment).
- Identify potential for additional access paths and discussion of path location in relation to flood limits;
- Identify need for fencing and controlling access

RELATION TO PUBLIC TRANSPORT

- Can access to the foreshore be improved by rail and bus connections?
- Identify the need for additional parking – identify suitable locations
- Is way finding an issue? Is there a need for a consolidated signage strategy

MANAGEMENT CONSIDERATIONS

- Identify any areas where erosion stabilisation measures are required if this is appropriate (this may be in relation to construction management regarding the pathway);
- Identify the management actions required in each of the foreshore precincts and discuss the management actions proposed. Management is envisaged to include:
 - Event planning and management
 - Landuse management
 - Landscape management and maintenance (including waste removal, weeding, mowing etc)
- Discuss the pros and cons of a united foreshore management approach

ENVIRONMENTAL CONSIDERATIONS

- Identify areas of degradation requiring rehabilitation
- Identify areas of good quality remnant vegetation that must be protected during future development
- Identify any key existing environmental features of the foreshore area.
- Identification of vegetation management requirements including weed control. Should these be consolidated across the foreshore?

DEVELOPMENT/ FORESHORE INFRASTRUCTURE OPPORTUNITIES

- Identify any proposed public facilities, and landscaping requirements within the foreshore reserve and management requirements/responsibilities .
- What types of development would best benefit the future foreshore ?
- What will bring people and create a community at the foreshore?
- Where should the future nodes be located?



IMAGE 21. COMMUNITY CONSULTATION MEETING

The figures below provide illustrated images of the key feedback recieved from both the stakeholder and community workshops. The 'wordle' pages help to illustrate the range of resposneses and most frequently repeated topics according to text size. Importantly it was clear from both workshops that the provision of improved access to the forshore was considered paramount.



4.4 EMERGING THEMES

A number of major themes were identified during the analysis of the consultation activities and background review. The themes described below incorporate the issues raised during the stakeholder and community workshops.

The major themes identified in the development of the foreshore management plan are:

LIGHTING

- Lighting to particular areas along the foreshore, as a means of increasing safety and amenity.
- Lighting should be located at a sufficient distance (to avoid light spill) from bird breeding areas.

RIVERS EDGE

- Improvement of the river edge condition with controlled access, seating, lookout points and a number of “soft” beach edges.
- Reestablishment of suitable riparian zones.
- River edge access for dogs, paddlers, water taxi/boats and boardwalks/jetties for recreational and disabled fishing.
- Controlled access for viewpoints and spectators for water activities.
- Increase areas shaded by native trees.
- Stabilisation of rivers banks from erosion by re-use of

existing fallen trees and the implementation of hard and soft engineering options.

ACTIVITY & AMENITY

- Create a balance between active and passive recreational pursuits.
- Increase and upgrade amenities, including barbecues, drink fountains, and toilets.
- Restaurant/cafe should be a “low key” style if approved.
- Creation of “nature play” areas.

VEGETATION AND BIODIVERSITY

- Increase native tree plantings to create shade and habitat.
- Improve vegetation and habitat through a reduction in grassed areas and an increase in native underplantings.
- Develop community groups to care for and assist in the protection and enhancement of the significant coastal environment.
- Improve areas of native vegetation and level of public investment on the foreshore.

MAIN EVENTS SPACE ACTIVITIES

- Maintain areas for large events, particularly the “Movies by Burswood” and WASO events.
- Support a wide range of foreshore uses including events hosted by the Town of Victoria Park and leisure, cultural

and sporting activities.

- Balance the differing values of foreshore users.

ENVIRONMENTAL

- Retaining and protection of existing vegetation,
- Increase control of weedy areas.
- Reduce grassed areas by increasing native plantings.
- Create wildlife (snake and birds) sanctuaries at Burswood Lakes and other places.
- Minimise and treat road and car park runoff with WSUD
- Continue to control use of pesticides and fertilizers.

EDUCATIONAL

- Need for educational signage on vegetation, natural systems, hydrology/river systems and indigenous heritage.

EXERCISE

- Maintain and improve facilities for running, walking, cycling, and fitness. Consider combining the fitness equipment into a consolidated area.

ACCESSIBILITY

- Create a clear “wayfinding” strategy across the site.
- Create universal access to rivers edge for people with disabilities.
- Upgrade pathways and create hierarchy/separation to reduce pedestrian and cyclist conflict, with continuous pedestrian access across the site.
- Improve traffic management to and from the foreshore around Burswood park and Burswood Reserve.

SUSTAINABILITY

- Stabilise the foreshore edge to control erosion and mitigate the effects of climate change and sea level rise.

TRANSPORT

- No pedestrian access around the perimeter of Belmont Racecourse
- Inconsistent and degraded pedestrian and cycle paths
- Unclear vehicle access to McCallum/ Taylor Park
- Poor Pedestrian access from CoP to ToVP
- The current foreshore accessibility constraints will improve with developments currently underway along

the foreshore.

- Developments include
- New Pedestrian bridge from East Perth
- New Rail And Bus Stations
- New Pedestrian/Cycle Paths

GATEWAY PLACE / CHARACTER

- Opportunity to create a visual and physical gateway to TOVP incorporating public art.
- Protect and enhance the unique foreshore sense of place.
- Improve the Foreshore’s connection to cultural heritage.
- Increase public art.
- Maintain and enhance public views.
- Ensure future developments are compatible with the surrounding landscape.

MANAGEMENT

- Merge foreshore management for a concise collective appearance.
- Bring all open space up to the standard of Burswood

and Burswood Park.

- Collective litter collection.
- Improve safety through lighting.
- Improve open space and beach maintenance.

INFRASTRUCTURE

- Improve infrastructure along the length of the foreshore including drinking fountains, waste bins, bike rider and pedestrian paths, litter traps, stormwater drainage, lighting, buildings, toilets and playgrounds.

FAUNA HABITAT

- Create habitat through native plantings.
- Protect habitat along the foreshore through controlled access.

ECONOMIC

- Economic development of the foreshore to promote its use including developments by Burswood Stadium and Belmont.
- Development of a shop or café at McCallum Park/Taylor Reserve.

VISION



FORESHORE CONNECTED

4.5 THE FORESHORE VISION

The Victoria Park foreshore today lies at a crossroads.

Whilst previous development has left us with many challenges, there are equally many opportunities that lie ahead.

The development on the foreshore is to be guided by an overarching vision to ensure both a consistent and coherent approach into the future.

In every sense our foreshore is **CONNECTED**.

Our Foreshore is **CONNECTED**.

A **CONNECTED** pathway and circulation network.

Stakeholder decisions **CONNECTED** under one vision.

A site **CONNECTED** to its past, and to its future.

Green spaces **CONNECTED** for amenity and biodiversity.

Activated places and spaces **CONNECTED** to the river's edge.

A site **CONNECTED** to the surrounding urban fabric.

A community **CONNECTED** to place.

05 IMPLEMENTATION



5.0 IMPLEMENTATION

5.0 Implementation

- 5.1 Proposed Management
- 5.2 Value Criteria
- 5.3 Development Principles
- 5.4 Activity Nodes
- 5.5 Access and Recreation
- 5.6 Town Of Victoria Park Foreshore Precincts
- 5.7 Going Forward

5.0 IMPLEMENTATION

5.1 PROPOSED MANAGEMENT

The strategic management direction will guide the future management and use of the Town Of Victoria Park foreshore. It details how the vision for the foreshore and the foreshore principles will be achieved.

To establish this direction the major themes that emerged from the consultation workshops (listed in section 4.0 Consultation above) were refined into issues and actions which can be implemented by the managing authorities.

The key strategies include:

1. Revegetation & Erosion Control
2. Wayfinding
3. Sense of Arrival
4. River Activity & Access
5. Stakeholder Co-operation
6. Activation & Facilities
7. Transit Links
8. Trees & Shade

Each strategy is accompanied by a description of the actions required, the necessary timing for implementation and the priority of the level of implementation value for each issue relative to other foreshore issues.

Actions are also identified on the relevant foreshore area and organisation responsible for implementation. The value level identifies the importance of each action, based on a priority scale and the timing for implementation.

5.2 VALUE CRITERIA

The rationale for the value level assigned to each foreshore action is detailed below:

Priority 1.

Actions to be commenced within 1 to 3 years.

- Actions should be given the first and highest level of value for implementation.
- May carry a high and immediate associated risk with not implementing the action promptly.
- Implementation of the action is likely to be of high value and produce immediate and far reaching net benefit to the community.

Priority 2.

Actions to be commenced within 3 to 6 years.

- Actions should be given a medium level of value for implementation (Business as usual).
- May carry an associated risk with not implementing the action; however the risk is likely to be minimal or can be easily mitigated.
- Implementation of the action is likely to be of average value and benefit to the community.

Priority 3.

Actions should be commenced following the implementation of Priority 1 and 2 actions, 6 to 9 years.

- Actions should be given the least value for implementation.
- May carry an associated risk with not implementing the action; however the risk is likely to be low.
- Implementation of the action is likely to be of some value and benefit to the community, however can be deferred as its impact may be limited to a small audience of foreshore users.



IMAGE 22. VIEW TO THE PERTH CBD, BURSWOOD PARK

KEY FORESHORE STRATEGIES



FIGURE 11. KEY FORESHORE STRATEGIES

5.3 DEVELOPMENT PRINCIPLES

Decision-making for development at the foreshore should be guided by a hierarchy of principles.

The principles aim to ensure that:

- Urban development on the foreshore is directed to appropriate areas
- Development is focused in the location of identified activity nodes.
- Impacts associated with the current or proposed use of the foreshore are identified, addressed and managed.
- Development is directed away from sensitive foreshore areas and significant existing landscapes

The guiding principles for the Town of Victoria Park Foreshore Management Plan are:

PRINCIPLE 1: PUBLIC ACCESS

Ensure that the existing and proposed public access routes make a positive contribution to the foreshore, providing access to desired destinations while helping to direct activity and development away from sensitive foreshore areas.

PRINCIPLE 2: CONNECTIVITY TO ACTIVITY NODES AND PUBLIC TRANSPORT

Promote safe and attractive pedestrian linkages, cycle and disabled access between the foreshore destinations and public transport of Victoria Park.

PRINCIPLE 3: SAFE AND EQUITABLE USE

Provide a safe foreshore environment with a predominance of free and accessible use for all foreshore users.

PRINCIPLE 4: PUBLIC OPEN SPACE, RECREATIONAL ACTIVITIES AND EVENTS

The foreshore open space is managed for a range of public use opportunities. The foreshore should be promoted as an important social and recreational destination with a variety of active and passive recreational uses that attract both residents and visitors.

PRINCIPLE 5: INFRASTRUCTURE AND CAR PARKING

Promote the development of multi-purpose foreshore infrastructure to encourage shared-use and fulfil a range of community uses and needs without compromising existing foreshore open space.

PRINCIPLE 6: SUSTAINABILITY, VEGETATION AND HERITAGE VALUES

Protect and enhance the natural environmental and cultural values of the foreshore and ensure its sustainability.

PRINCIPLE 7: DIVERSITY OF FORESHORE ENVIRONMENTS AND CHARACTER

Manage each of the foreshore precincts with regard to the diversity of landscapes including natural and cultural aspects that contribute to the character of the specific foreshore area.

PRINCIPLE 8: CLIMATE CHANGE

Plan adaptation strategies to deal with impacts associated with climate change including beach erosion, flooding, storm surges and sea level rise.

PRINCIPLE 9: ECONOMIC SUSTAINABILITY

Encourage investment in foreshore activities that will provide long-term economic sustainability, balanced use of the foreshore and community benefit.

PRINCIPLE 10: COMMUNITY PARTICIPATION

Provide opportunities for ongoing community participation and support community initiatives to advance foreshore management issues.



IMAGE 23. VIEW TO MAYLANDS, BELMONT PARK FORESHORE

5.4 ACTIVITY NODES

The purpose of 'activity nodes' are to identify focus areas of activity at the foreshore to allow for the appropriate development of infrastructure, facilities, services, access and amenity.

Activity nodes are located within each of the foreshore precincts and are categorized as major and minor nodes

These nodes correlate with existing foreshore activity centres and future proposed areas of development within the foreshore that are identified as locations expecting high levels of activity.

The activity nodes provide places for social interaction and are located throughout the foreshore to provide entertainment, atmosphere and continuity to the foreshore experience.

The identification of nodes helps to gather focused development in certain areas limiting the scale and intensity of development to that which is appropriate to the area.

MAJOR NODES ARE AREAS THAT:

- Have a high density of development and range of uses.
- Provide appropriate areas for commercial and recreational activities
- Provide community recreation facilities and opportunities which enhance the foreshore experience.
- Provide key tourist destinations along the foreshore
- Key nodes should be located within easy access from public transport

- Exhibit a high level of use and visitation for recreation and water-related activities.
- May contain recreational infrastructure such as piers, fishing platforms, fitness stations, playgrounds, picnic and bbq stations.
- Offer water access, and may contain boat ramps.
- Have identified strategies for the provision of existing recreation facilities
- Provide opportunities for the redevelopment or expansion of facilities for community and public benefit.

MINOR NODES ARE AREAS THAT:

- Have an increased density of development and range of uses.
- Provide appropriate areas for recreational activities
- Provide opportunities which enhance the foreshore experience.
- Provide destinations of interest along the foreshore
- May be separated from access to public transport
- Exhibit an increased level of use and visitation for recreation and water-related activities.
- May Contain recreational infrastructure such as, fishing platforms, fitness stations and picnic areas.
- Offer access to the water

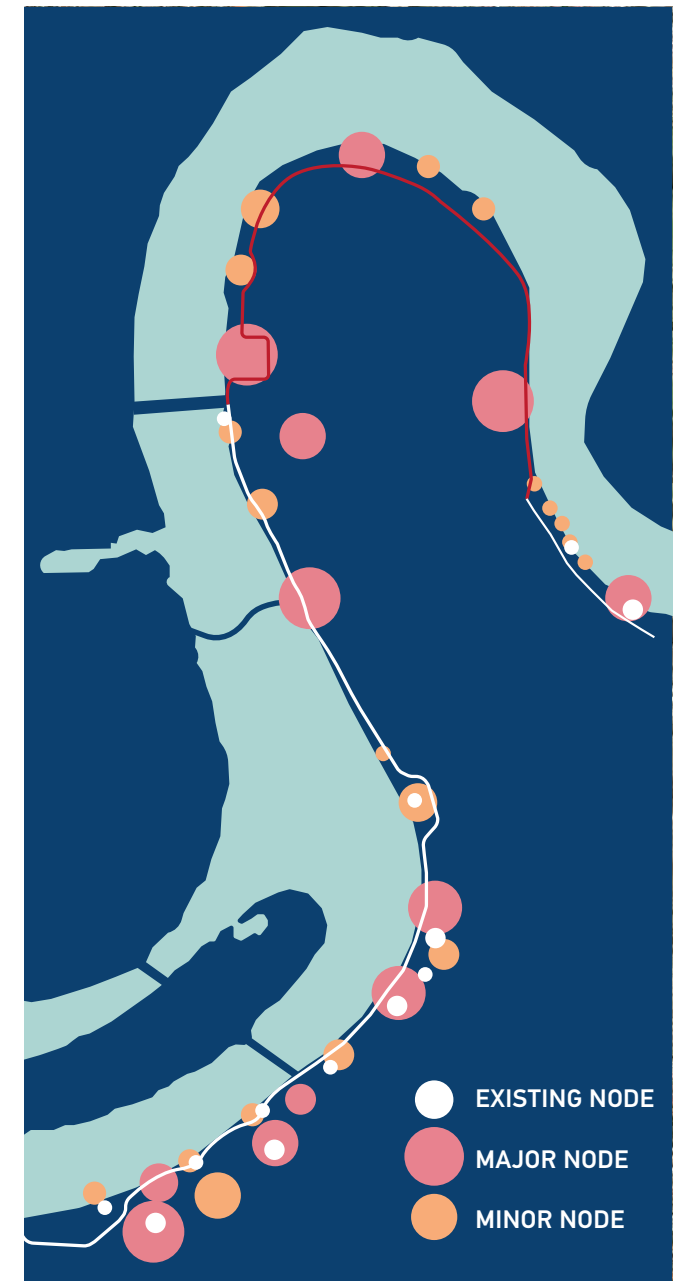


FIGURE 12. VICTORIA PARK FORESHORE - PROPOSED NODES

5.5 ACCESS AND RECREATION

OBJECTIVES

The objectives for access and recreation management in the Town of Victoria Park Foreshore are to:

- provide an appropriate level of access whilst preserving the ecological values of the study area;
- facilitate appropriate recreational activities by providing suitable resources and infrastructure; and
- provide a safe environment for passive recreation.

ACCESS

Access to recreational areas is of high importance to residents and visitors of the foreshore area; however this must be managed in such a way as to preserve the ecological integrity of the area. This will be achieved by facilitating appropriate access to recreational areas and restricting access that results in the degradation of natural areas. Issues and management of access in each sector is explored below (Refer 5.6 IMPLEMENTATION - TOWN OF VICTORIA PARK FORESHORE PRECINCTS). Management requirements for specific paths within the study area are shown in blue map and should comply with Australian Standards.

Disabled access should be provided wherever possible and should facilitate the independent use of people with a range of disabilities including physical disabilities, hearing and vision impairment.

DISABLED ACCESS SHOULD COMPLY WITH THE FOLLOWING AUSTRALIAN STANDARDS:

- AS 1428.1-2001 Design for Access and Mobility – General Requirements for Access – New Building Work;
- AS 1428.2-1992 Design for Access and Mobility – Enhanced and Additional Requirements – Buildings and Facilities;
- AS 1428.3-1992 : Design for access and mobility – Requirements for children and adolescents with physical disabilities; and
- AS NZS 1428.4-2002 Design for Access and Mobility – Tactile Indicators.

PEDESTRIAN/BICYCLE



BUS ROUTE



TRAIN ROUTE



LEGEND - ACCESS ROUTES

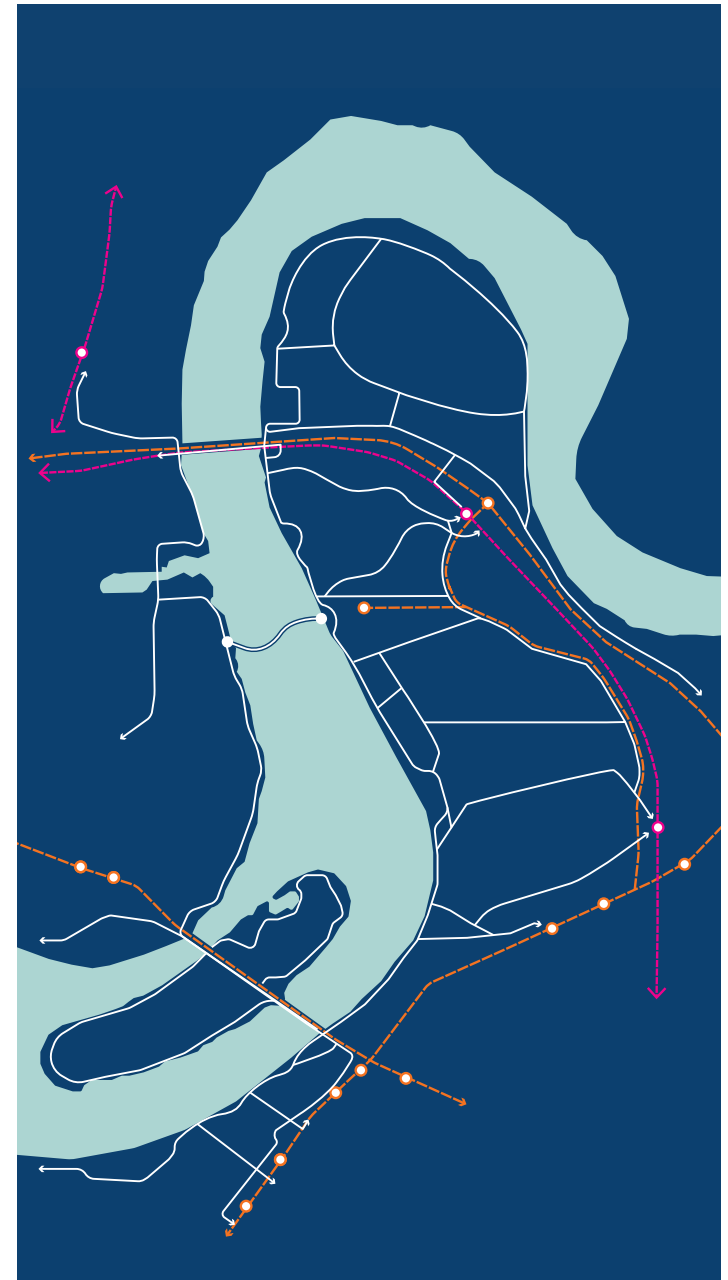


FIGURE 13. VICTORIA PARK FORESHORE - ACCESS ROUTES

RECREATIONAL USE

Local residents and Tourists are attracted to the Victoria Park Foreshore because of the many recreational opportunities and diverse environment within the area.

Proposed development along the foreshore will bring people into the Town particularly in the major tourist seasons, and during foreshore/stadium events. The development will also include proposed residential areas which will increase local resident numbers using the foreshore and its facilities all year round.

There are a number of opportunities for improvement to the existing recreation, tourism and access opportunities within the foreshore, they include:

- legibility and circulation of the area;
- definition of car parking;
- maintain and protect the foreshore /river edge;
- restrict access of vehicles/pedestrians to designated swimming area;
- development of pedestrian connections to improve access throughout the foreshore, and
- improved landscaping including seating and shelter options.

The primary recreation activities within the study include walking, running, riding, picnicking, waterskiing, fishing, and boat launching.

With appropriate management and provision of facilities, these activities are sustainable with minimal impact on the

natural environment and conflict between people engaging in different recreational activities.

There is a potential for conflict with recreational pursuit at the foreshore these include:

- kayaking and boating / fishing /water skiing; and
- walking and cycle activity on the footpaths.

There are several measures which can be applied to reduce conflict, they include:

- informational /regulatory / directional signage;
- physical separation of conflicting activities; and
- prohibiting certain activities in primary nodes;

The Foreshore will become a high intensity recreation zone which will be particularly evident during summer when the peak season occurs and there will be a high demand for access to the area. As a result the area will need to be properly managed to ensure that it can provide facilities and management for high levels of recreational activities, while implementing measures that will reduce the impact of these activities on the surrounding biophysical environment.

Cycling

The Dual Use Pathway (DUP) from South Perth through to Windan Bridge is currently the primary pathway within the Study Area suitable for cycling. Community consultation has indicated a need for an additional section DUP to the north in order to connect the foreshore precincts through to Balbuk way. This should be undertaken as part of the proposed Belmont Park Development.

BICYCLE FACILITIES SHOULD COMPLY WITH THE FOLLOWING AUSTRALIAN STANDARDS:

- AS 1742.9-2000 : Manual of uniform traffic control devices - Bicycle facilities
- AS 2890.3-1993 : Parking facilities - Bicycle parking facilities
- HB 69.14-1999 : Guide to traffic engineering practice Bicycles (handbook)

Fishing, Boating and Water Skiing

Facilities dedicated to shore-based fishing are currently not included in the study area, however there is a demand for fishing activities and access to the water's edge for fishing purposes. Shore-based fishing needs to be more heavily restricted as these activities have the potential to conflict with foreshore activities, increase foreshore erosion and can cause damage to flora and fauna. Purpose-built and controlled fishing platforms are desired including a platform for the disabled. This will help to limit access to desired and serviced locations.

There are limited facilities for boat launching within the study area, currently consisting of a private boat ramp at the Swan River Trust and the Water Skiing Club, a disabled ski access ramp that is currently closed to the public and a public ramp at Balbuk Way. During busy periods there are shortages of parking and ramp access with resulting conflict between users. There is a recognised need for additional public ramps to facilitate fishing, boating and skiing.

An additional boat ramp should not be built within close proximity to the existing public boat ramp at Balbuk Way in order to alleviate pressure on parking issues within the immediate precinct.

Picnic areas and playgrounds

The development of the Stadium site and Belmont Park residential areas will provide additional picnic areas and playground for use by the general public.

There are a number of existing playgrounds within the

study area and there is scope for these to be upgraded and developed with the provision of picnic tables and barbecues to provide for additional public use due to ongoing development.

Additional picnic areas and playground were discussed during consultation with the community and Key Stakeholders. Playground and picnic areas should be located together and adhere to the following guidelines:

- they should be located in view of the water;
- they should be located close to parking areas;
- adequate lighting should be installed;
- shade and shelter from the wind should be provided;
- picnic areas and facilities should be uniform with other seating and sympathetic to the surrounding environment.

Infrastructure required to facilitate the foreshore activity includes:

- clearly defined paths suitable for walking
- seating provided at strategic locations
- car parking
- toilets
- interpretive and regulatory signage

PLAYGROUND EQUIPMENT SHOULD ADHERE TO THE FOLLOWING AUSTRALIAN STANDARDS:

- AS 1924.1-1981 : Playground equipment for parks, schools and domestic use - General requirements
- AS 1924.2-1981 : Playground equipment for parks, schools and domestic use - Design and construction - Safety aspects (incorporating Amdt 1)

THE CONSTRUCTION OF PLAYGROUNDS SHOULD ADHERE TO THE FOLLOWING AUSTRALIAN STANDARDS:

- AS/NZS 4422:1996 : Playground surfacing - Specifications, requirements and test method
- AS/NZS 4486.1:1997 : Playgrounds and playground equipment - Development, installation, inspection, maintenance and operation

5.6 IMPLEMENTATION - TOWN OF VICTORIA PARK FORESHORE PRECINCTS



5.6 TOWN OF VICTORIA PARK FORESHORE PRECINCTS

To assist with identifying and locating specific strategic objectives and actions throughout the Town of Victoria Park foreshore, an separate approach for each of the five foreshore areas was prepared. An area description with existing conditions, values and challenges plus actions for each of these five foreshore areas is provided below.

5.6.1 TAYLOR/MCCALLUM PARK

Area Description, Existing Conditions & Values

The Taylor Reserve and McCallum Park area extends from the Causeway Bridge to the north, Ellam Street to the south, and is bordered by the Swan River to the West, with Canning Highway to the east.

The Taylor and McCallum Parks incorporate large unbroken swathes of turf with several pockets and lines of trees across the site. This area has been highly modified over the last 60 years with little if any remnant vegetation remaining, with a river wall that runs along its length. There are many culturally significant tree species on the site, with a reasonably diverse range of both exotic and native varieties recorded.

The site is orientated to the north and partly protected by Heirisson Island from the south-west winds and associated waves. The foreshore maintains view corridors across to Heirisson Island, the South Perth Foreshore, Narrows Bridge, and also back toward the CBD.

The area is highly valued as a fitness and activity destination with a range of fitness, play and sporting equipment located in different locations across the site, coupled with paths for cycling, running and walking next to the river. A skateboard ramp and bowl, and basketball courts are also very well patronized. The area is also popular as a cycling thoroughfare by commuters from nearby CBD and Victoria Park, however several areas have been identified as potential "conflict points" between pedestrian, vehicle and cyclists.

The open grassed areas are frequently used as spaces for large shows and booked events such as the annual 4WD show. These events help to attract a great range of visitors to the foreshore and additionally the revegetation raised provide an income to support the maintenance of the park and ongoing events on the foreshore. While these events must provide a bond to restore any damage that is caused the long term impacts of major events must also be considered.

Despite being located next to Canning Highway, vehicular access to the site remains problematic with limited access from Canning Highway, coupled with several convoluted routes through adjacent roads to the site. Public transport access to the site is limited to bus stops along Canning Highway.

The built environment includes the recently upgraded Swan River Trust headquarters located at the southern end of the site. A jetty, now condemned, is located next to the Swan River Trust buildings, and a small pontoon for disabled waterskiing, are the only structures that allow direct access to the water. The existing wall that runs the length of the area is recognized as limiting access to the waters edge. A toilet block, and a groundskeeper storage building are the only other buildings on the site.

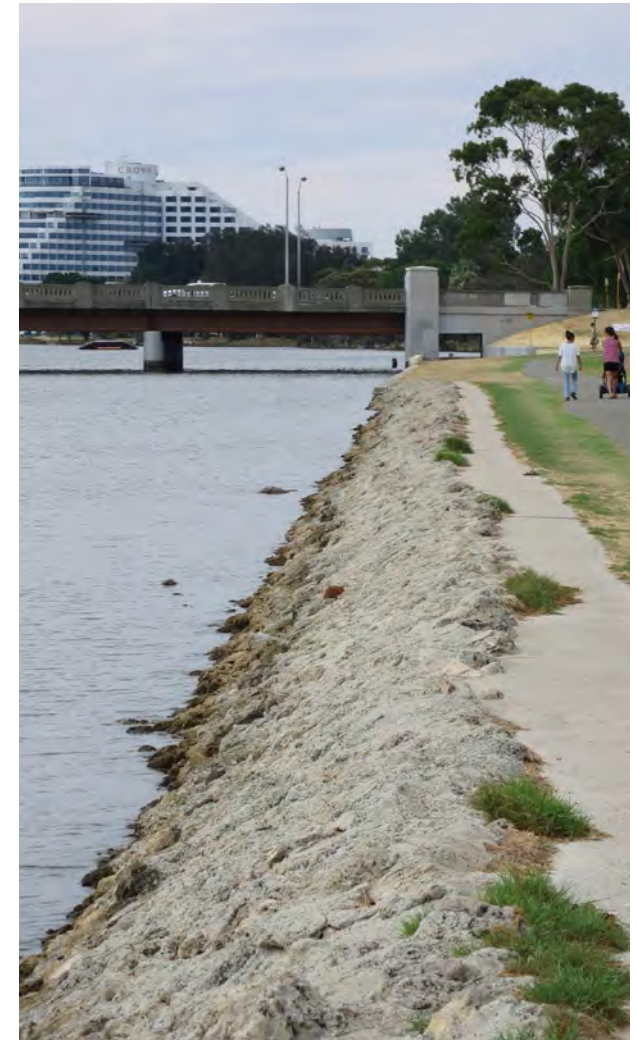


IMAGE 24. RIVER EDGE - TAYLOR MCCALLUM

CHALLENGES

The following challenges have been identified within the Taylor and McCallum Parks area:

1. Access and wayfinding – despite being located next to Canning Highway, access to, and from the site by vehicle is difficult and consideration needs to be given to this in the future. Limited parking and locations of carparks requires further attention. Further thought should be given to several ‘conflict points’ between pedestrian, vehicle, and cyclists that have been identified.
2. The river edge - Accessing the river’s edge for recreation is limited due to the design of the current river wall, with only one area, which is used for disabled waterskiers, that offers direct access via a pontoon to the river’s edge.
3. Achieving a balance between offering large areas of turf for events and recreation activities, and the reduction of underutilised areas of turf must be sought. Replacing some of these turf areas and offering a diversity of aesthetically pleasing and ecologically beneficial low growing native plant species should be considered.
4. Whilst the site offers areas of trees and shade, most of these areas are set well back from the river’s edge. Offering more shaded areas closer to the water’s edge is a recurring theme identified by community and stakeholder groups.
5. Toilets, changerooms, and drink fountains are either not provided or in need of a major upgrade.
6. Recreation and sporting facilities have been placed in an ‘ad hoc’ manner across the site over time, leading to an inefficient use of space, and confusing layout for users.

ACTIONS

The following actions have been identified within the Taylor and McCallum Parks area:

1. Develop vegetation management plan for the area. Provide suitable shade tree species along the foreshore in line with a broader Swan River strategy. Reduce underutilised turf areas and replace with lower maintenance and visually more appealing low growing native plant species and consider the use of planting to provide sheltered areas from the wind. Retaining large areas of turf for events should be considered on the basis of the current vehicle access issues to the site.
2. Develop and implement an upgrade program for high demand recreation and activity facilities in a more consolidated and well positioned area with appropriate amounts of supporting infrastructure (toilets, drink fountains etc) that considers passive surveillance and also viewpoints to the river back to the CBD.
3. Develop a clear wayfinding and access network across the site, with consideration given to the needs of both pedestrian and cyclists. Access by public transport and by vehicle, and parking facilities should form part a co-ordinated access plan.
4. Access to the water and more opportunities for water based activities such as fishing, kayaking, board paddling, with opportunities for craft storage at the site should be considered. River edge treatment should consider the need for access with shoreline stabilization and habitat creation for wildlife.

5. Consider the number and type of events hosted at the foreshore to limit environmental impact and enhance accessibility for more passive use when these events are on.

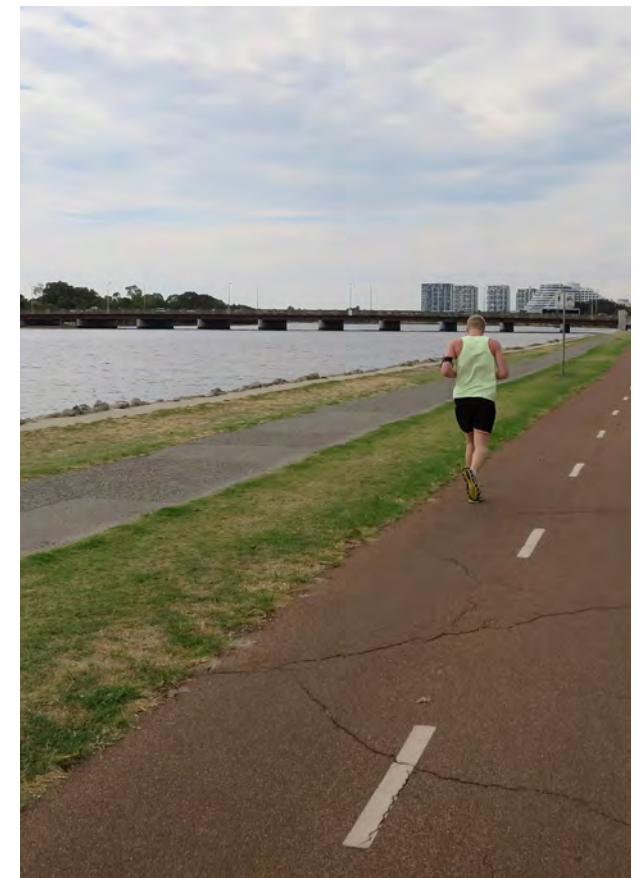


IMAGE 25. RIVER EDGE - TAYLOR MCCALLUM

OPPORTUNITY / ISSUE	No.	ACTION	PRIORITY/ TIMING	PROBABLE COST
REVEGETATION & EROSION CONTROL 	1.1	Repair or replace river walls where erosion has caused damage to the bank and existing infrastructure. Incorporating fringing vegetation including dense sedge plantings where possible in front of walling. Planting local native couch in place of exotic grasses near shoreline, where over-top-ping is resulting in vegetation death and leading to erosion behind / under the walling.	1	Wall/Fencing: \$300 to 1,000 per Lin M
	1.2	Remove plants establishing within cracks in river wall, to ensure stability of the structure. In particular, tree and weed species should be controlled or removed where it has grown next to the existing wall, as the roots are having a destructive effect on the wall.	1	Planting: \$10 to \$20m2 Weed Control: \$1,000 to \$2,000
	1.3	Incorporate buffer vegetation between residential areas and consolidate areas in McCallum Park.	2	Planting: \$10 to \$20m2
TREES & SHADE 	1.4	Integrate nodes of local native understorey vegetation, as appropriate, beneath established overstorey (such as in the south-western corner of McCallum Park and the north-eastern corner of Taylor Park) to rationalise the existing green space, reduce irrigation water usage and provide a habitat for native fauna.	1	Planting: \$10 to \$20m2 or assume \$3.00 per plant (Tubestock)
	1.5	Plantings of suitable larger shade canopy trees the use of planting to provide sheltered areas from the wind and sun in more exposed areas along the foreshore near pathways.	1	500L Tree Stock: \$1,200 per tree
RIVER ACTIVITY & ACCESS 	1.6	The current engineered wall edge restricts access to the river; develop varying edge conditions to engage and provide different opportunities for users including soft 'beach' edges for water play and kayaking, viewing platforms, and vegetated edges.	1	\$600,000 to \$800,000
	1.7	Repair disabled water-ski jetty and surrounding structures for safe universal access to the river.	3	\$10,000 to \$20,000
ACTIVATION AND FACILITIES 	1.8	Consolidate areas within Taylor Reserve to maximise useable and functional space, with upgraded and increased supporting infrastructure such as the existing toilets, plus bins, seating and drink fountains where appropriate.	1	\$40,000 to 100,000
	1.9	Maximise useable space within Taylor Reserve to support event and active recreation opportunities. Rehabilitate sections of turf area that lies between Garland Street and McCullum Lane and provide shade trees to provide a visual buffer and shelter to residents and park users.	3	\$5,000 to \$15,000
	1.10	A consolidated and expanded 'youth' area, with a focus on visually and physically connecting these spaces into a coherent whole.	3	\$250,000 TO \$500,000
	1.11	Restaurant or cafe located near foreshore and the end of Taylor Street. Consideration to be given to consolidating nearby playground.	2	N/A
WAYFINDING 	1.12	Wayfinding to encourage movement across the Parks, with appropriate signage to educate users on the cultural, environmental, and historical significance of the place.	2	\$40,000 TO \$60,000
	1.13	Reduce pedestrian and cyclist conflict areas with improved pathway design to maintain separation, improve access and connectivity to the surrounding area.	1	\$5,000 TO \$15,000
TRANSIT LINKS 	1.14	Improve vehicular and public transport access from Canning Highway to foreshore areas with appropriate levels of car parking located close to key nodes.	2	N/A
SENSE OF ARRIVAL 	1.15	Opportunity to create a gateway to the TOVP in the area to the south of the Causeway Bridge. Utilising stories, heritage and cultural interpretation to provide connection between the Swan River and Foreshore areas.	3	\$80,000 to 130,000
STAKEHOLDER CO-OPERATION 	1.16	Ensure development of the site is co-ordinated with the Department of Water, Swan River Trust and Fisheries Department regard to showcasing best practice river and foreshore management practices.	2	N/A

TABLE 3. OPPORTUNITY / ISSUE TAYLOR RESERVE / MCCALLUM PARK



FIGURE 14. TAYLOR RESERVE / MCCALLUM PARK - INDICATIVE OPPORTUNITIES AND ACTIONS



REVEGETATION & EROSION CONTROL

- 1.1 HARD AND SOFT INFRASTRUCTURE
- 1.2 REMOVAL WEED SPECIES
- 1.3 BUFFER VEGETATION



TREES & SHADE

- 1.4 TREE AND UNDERSTOREY PLANTING
- 1.5 SHADE TREES



RIVER ACTIVITY & ACCESS

- 1.6 BEACH, DECK / PLATFORM
- 1.7 DISABLED WATER SKI



ACTIVATION & FACILITIES

- 1.8 TAYLOR RESERVE AND TOILET BLOCK
- 1.9 MCCALLUM PARK CONSOLIDATED
- 1.10 YOUTH ACTIVITY AREA
- 1.11 RESTAURANT AND PLAYGROUND



WAYFINDING

- 1.12 WAYFINDING SIGNAGE
- 1.13 IMPROVED PATH DESIGN



TRANSIT LINKS

- 1.14 PARKING AND INCREASED ACCESS



SENSE OF ARRIVAL

- 1.15 GATEWAY



STAKEHOLDER CO-OPERATION

- 1.16 SWAN RIVER TRUST

5.6.2 BURSWOOD PARK FORESHORE

Area Description, Existing Conditions & Values

The Burswood Park area extends northward from the Causeway Bridge and between the Swan River to the west and Great Eastern Hwy to the east, with the northern most ends is in line with the Burswood Casino.

Aside from a small walled section that extends approximately for 50m north of the causeway bridge, this area of the foreshore has far more natural edges with a range of endemic species including trees (including *Melaleuca sp.*, *Eucalyptus sp.*, and *Casuarina sp.*) and sedges (predominately *Juncus kraussii*). As this area represents a more 'natural' edge, there are opportunities to display environmental and interpretive signage that describes the cultural, historical, and environmental uses of the Swan River and foreshore edge.

The design style of the park could be described as 'picturesque', a style very familiar within Perth parklands, with clumps and rows of trees arranged around the park, with large swathes of verdant lawn in between. The park is a mixture of both exotic and endemic tree species under planted by grass, with little to no remnant vegetation. Whilst many of tree species provide habitat for bird species, the lack of understory planting, which is limited to several 'parterre' style gardens, holds little to no habitat value for invertebrates and reptiles.

Much of this area is sheltered from the prevailing south west winds by Heirisson Island and the Causeway Bridge and as such provides a pleasant place for water activities and other recreational pursuits. The orientation of the site largely facing west lends itself to sunset watching and capturing views

back toward the CBD. Pockets of parkland are well shaded and protected by trees and provide pleasant surrounds. Importantly, this area has several shaded areas near the water's edge which can accommodate seating, viewpoints, and other similar activities. Opportunities for people to interact with the water's edge, without compromising the native vegetation or fauna habitats, should be explored further.

Access to the area by public transport is limited to the Victoria Park Bus Station interchange at the southeastern corner of the site. Vehicular access to the site is via either Bolton Ave or Resort Drive; however this could be described as problematic depending on the direction users would arrive or depart from. The northern off ramp from the Causeway Bridge splits the park leaving an "island" parcel of parkland (of approximately 1.7ha), which makes it very difficult and potentially dangerous to access on foot and effectively renders this area virtually unusable for recreation purposes. Vehicle parking is located centrally in the park on the eastern edge of the park and is well used particularly during events.

Burswood Park supports a number of leisure activities, with bbq's, playgrounds, fitness equipment, toilets, and seating areas. The "Movies by Burswood" and WASO events are a popular and successful events that show continued strong community support. Public art pieces, including a life sized statue of Willem Vlamingh is located on the foreshore edge.

The area is well used by walkers, runners, and cyclists, and a number of 'conflict' points have been identified previously that should be addressed. The singular dual use path that runs the length of the foreshore is potentially dangerous considering the speed difference between cyclists and walkers, and

separation of these two activities needs attention.

The built environment includes most notably the Causeway Bridge to the south, whilst also includes a toilet block, a pavilion, and bbq/seating shelters which are well patronised.



IMAGE 26. DUAL USE PATH -CHARLES PATTERSON PARK

CHALLENGES

The following challenges have been identified within the Burswood Park Area:

1. The native vegetation within the Burswood foreshore is highly valued, yet the impacts of a drying climate, coupled with nutrient load in the Swan River, and user demands on the site suggest vegetation management plans should be prioritised for the protection and upgrade of the foreshore vegetation.
2. Access to the river's edge, despite being a predominately 'soft' edge, should balance both the needs of recreational activities, with broader environmental with regards to the provision of habitat areas and erosion control.
3. As noted previously, access to the park by vehicle is problematic, with public transport to the site equally challenging.
4. The single dual use path presents some risks due to the speed difference between cyclists and walkers, and separation of these two activities requires further attention.
5. The Causeway Bridge underpass was considered a safety risk and additional lighting, including some feature lighting, should be considered.

ACTIONS

The following actions have been identified within the Burswood Park Area:

1. Develop vegetation management plan for the foreshore reserve to improve the river edge conditions that both supports a restored ecological function with useable open space. Importantly any response should consider the importance of encouraging outdoor activity whilst providing opportunities to interact with nature. Establishing several 'beaches' and seating nodes with small groynes that offer habitat and opportunities for sunset views and water activities such as kayaking and board paddling.
2. Develop and implement an upgrade program for high demand facilities, including drink fountains, bbq areas and toilets.
3. Identify areas of underutilised turf areas with a view to replacing with low growing native understory plantings which are well integrated into the parkland style. The retention and improvement of well used turf areas, such as the Movies by Burswood area, should form part of any future plan.
4. Well positioned feature lighting that considers bird breeding areas and improved safety along the foreshore, along with signage that displays the cultural, historical, and environmental uses of the Swan River and foreshore edge in an interesting and visually appropriate manner for the site.



IMAGE 27. RIVER EDGE - CHARLES PATTERSON PARK








OPPORTUNITY / ISSUE	No.	ACTION	PRIORITY/ TIMING	PROBABLE COST
REVEGETATION & EROSION CONTROL 	2.1	Repair or replace river walls where erosion has caused damage to the bank and existing infrastructure. Incorporate fringing vegetation including dense sedge plantings where possible in front of walling. Additional rock rip-rap with woody debris coupled with opportunistic planting, or the use of log brush mattresses in high impact erosion zones. Plant local native couch in place of exotic grasses near shoreline (on river side of dual use path) to increase shoreline stabilisation. Restoration planting to increase the buffer between the current DUP and the river be established as a means of increasing the resilience of the river on a long term basis.	1	Wall/Fencing: \$300 to 1,000 per Lin M
	2.2	Minimise erosive effects of stormwater outlets by utilising biofilter/wetland or other similar strategies that aim to clean and slow stormwater prior to it reaching the Swan River.	1	\$15 to \$30m2
TREES & SHADE 	2.3	Maintain well utilised turfed areas for high use public activity spaces, with underutilised areas to be planted with aesthetically pleasing and low maintenance endemic groundcover and tree species. Minimise weed species and tree species not suitable the self seeded Phoenix canariensis.	2	\$10,000 to \$20,000
	2.4	Remove underutilised turf, and replace with a mixture of endemic tree and understorey species to minimise maintenance and increase habitat and visual amenity.	2	\$200,000 to \$300,000
RIVER ACTIVITY & ACCESS 	2.5	Develop series of smaller nodes on the rivers edge with small groynes and beaches that combine bird habitat, erosion control, and opportunities for sunset views and water activities such as water play, kayaking and other water activities.	2	\$15,000 to \$40,000
	2.6	Ski ramp area could include stabilisation of the beach , with more formal access paths to minimise trampling of vegetation and shoreline erosion. Access expanded for paddler/kayaking and similar activities to activated the river edge.	3	\$10,000 to \$20,000
ACTIVATION AND FACILITIES 	2.7	Provide drink fountain and an upgrade of facilities to provide for users of the area and to cater for larger events (e.g.. WASO and Movies by Burwood). Lighting improvements along the foreshore and park area (set back a suitable distance from bird breeding areas) to encourage night use.	1	\$5,000 to \$20,000
WAYFINDING 	2.8	Wayfinding to encourage movement across the Parks, with appropriate signage to educate users on the cultural, environmental, and historical significance of the place.	2	\$40,000 to \$60,000
	2.9	Reduce pedestrian and cyclist conflict areas with improved pathway design to maintain separation, improve access, and connectivity to the surrounding area.	2	\$5,000 to \$15,000
TRANSIT LINKS 	2.10	Access via public transport to be improved with bus stops along Canning Hwy, closer to Resort Drive, or along additional stops coupled with a re-routing of the bus route along Resort Drive to arrive within the park area.	3	N/A
STAKEHOLDER CO-OPERATION 	2.11	Consultation with the Marathon Club / Ski Club groups with regard to future development.	2	N/A
	2.12	Co-ordination between the various stakeholders adjoining the site, including the Burwood Casino group, to ensure future development is undertaken in a cohesive manner to maintain and enhance access to the foreshore.	2	N/A

TABLE 4. OPPORTUNITY / ISSUE BURSWOOD PARK



FIGURE 15. BURSWOOD PARK - INDICATIVE OPPORTUNITIES AND ACTIONS

- REVEGETATION & EROSION CONTROL**
 - 2.1 HARD AND SOFT INFRASTRUCTURE
 - 2.2 BIOFILTER STORMWATER TREATMENT
- TREES & SHADE**
 - 2.3 SHADED ACTIVITY SPACE
 - 2.4 TREE AND UNDERSTOREY PLANTING
- RIVER ACTIVITY & ACCESS**
 - 2.5 DECK/PLATFORM
 - 2.6 WATER SKI/ BOAT LAUNCH
- ACTIVATION & FACILITIES**
 - 2.7 ENHANCED FACILITIES
- WAYFINDING**
 - 2.8 CULTURAL AND HISTORICAL SIGNAGE
 - 2.9 IMPROVED PATH DESIGN
- TRANSIT LINKS**
 - 2.10 BUS STOPS AND ACCESS
- STAKEHOLDER CO-OPERATION**
 - 2.11 MARATHON / WATERSKI CLUB
 - 2.12 BURSWOOD CASINO

5.6.3 BURSWOOD PARK GOLF FORESHORE

Area Description, Existing Conditions & Values

The Burswood Park foreshore area extends south from the Bunbury/Windham Bridge to the area just north of Burswood Marathon Club/Water Sports Centre. The area is a long strip that runs roughly north/south between the Swan River to the west and the Burswood Golf Course and the new Perth Stadium site directly to the east.

Much of the foreshore area could be described as very open and exposed to the prevailing winds with limited shade from trees and as such this area is less suitable for some activities than other parts of the foreshore.

Significant features in this area are the riparian vegetation made up of predominately *Melaleuca* species and *Juncus* sedge varieties which form sporadic outcrops along the water's edge. A series of constructed lakes on the eastern side of this area, which are also noted as important habitat, add to the uniqueness of this site with water bodies on both sides of the pathway.

The river edge is noted as requiring erosion control measures which could be achieved from both hard and soft infrastructure, and include the provision of universal access for a range of water activities and viewing points. However it should be noted that any future development should consider both the current access to this area, and the planned development.

Much of this area is open to the prevailing south west winds and as such should consider how any river and foreshore edge treatment will deal with this. The orientation of the site which largely faces west lends itself to sunset watching and

capturing views back across the river toward the Claisebrook Cove and the CBD. Aside from a few areas of trees, much of the parkland is very open and exposed, and importantly due to the sites long and thin form this may preclude some types of activities, whilst also determining specific uses into the future.

Aside from a small car park that services the Burswood Water Sports Centre at the southern end of the site, access to this area is predominately via cycling and walking via a dual use path that runs the length of the area. Whilst it should be noted with the completion of the Perth Stadium in the coming years, the area will need to accommodate significantly more pedestrian and cycle traffic.

The singular dual use path that runs the length of the foreshore is potentially dangerous considering the speed difference between cyclists and walkers, and consideration to how these activities may co-exist within a relatively small scope of area, requires further attention.

Whilst the built form in this area is limited to the Burswood Water Sports Centre, the construction of the Perth Stadium and surrounds will dramatically change the visual amenity of this area.

Facilities such as toilets and barbecues are not offered in this area, and as such tends to be a transitional area with walkers, runners, and cyclists merely passing through.



IMAGE 28. RIVER EDGE VIEW SOUTHWARD BURSWOOD PARK FORESHORE

CHALLENGES

The following challenges have been identified within the Burswood Park Golf Foreshore Area:

1. The native vegetation along the foreshore is highly valued, and as such should continue to be protected and upgraded. Managing erosion and seasonal flooding is an ongoing, and likely to be an increasing priority in the coming years.
2. Universal access to the river's edge, should balance both the needs of recreational activities for all, with broader environmental with regards to the provision of habitat areas and erosion control.
3. The single dual use path presents some risks due to the speed difference between cyclists and walkers, however due to the limitations of space, expanding or separating the dual use path presents challenges. Meeting the needs of a significant increase in foot traffic due to the Perth Stadium requires attention.
4. A lack of facilities, including toilets, seating, and drink fountains requires consideration due to the previously noted increase in foot traffic.

ACTIONS

The following actions have been identified within the Burswood Park Golf Foreshore Area:

1. Develop vegetation management plan for the foreshore reserve to improve the river edge conditions that both supports removal of weed species and a restored ecological function with useable open space. The establishment of several 'beaches' with small groynes for shoreline stabilisation that include seating and shade, as well as offer habitat and opportunities for sunset views and water activities such as kayaking and board paddling.
2. Develop and implement an upgrade program for high demand facilities, including treatment of the current dual use path to accommodate future increased foot traffic.



IMAGE 29. RIVER EDGE VIEW SOUTHWARD BURSWOOD PARK FORESHORE


OPPORTUNITY / ISSUE	No.	ACTION	PRIORITY/ TIMING	PROBABLE COST
REVEGETATION & EROSION CONTROL 	3.1	Incorporate fringing vegetation including dense sedge plantings where possible in front of walling. Additional rock rip-rap with woody debris coupled with opportunistic planting, or the use of log brushmattressing in high impact erosion zones.	1	Planting: \$10 to \$20m2 Brush mattressing \$300 - \$1,000 (linear m)
	3.2	Consideration of the modification and or relocation of the DUP to allow a more significant fringing vegetation alongside the river. Considerations could include replacing sections with an elevated boardwalk as a means of protecting the shoreline. Halt the further undercutting of trees on the rivers edge thorough stabilisation of shoreline edge.	2	\$10,000 to \$50,000
TREES & SHADE 	3.3	Trees to be provided by the river edge and pathways for shade and places for respite and seating, whilst also providing habitat, and erosion control along the shoreline.	1	\$10,000 to \$20,000
RIVER ACTIVITY & ACCESS 	3.4	Development of boardwalks and engineered beaches as a means to formalise access to river edge for water activities. The opportunity to develop viewing nodes in the form of boardwalks and platforms that assist in shoreline stabilisation, coupled with revegetation, that take advantage of the sites orientation across the river to the CBD.	3	\$50,000 to \$150,000
	3.5	Burswood Lakes access to be included as part of the foreshore development	2	N/A
ACTIVATION AND FACILITIES 	3.6	Upgrade and provide additional facilities with regard to drink fountains and toilets with a view to providing suitable amounts for additional use when the Perth Stadium is built.	1	\$10,000 to \$80,000
	3.7	Nature Walk through revegetated areas with boardwalks, interpretive signage and seating areas to enjoy views toward either the Burswood Lakes or Swan River.	2	Stadium Developer Contribution
	3.8	Proposed restaurant / activity site.	3	Stadium Developer Contribution
	3.9	Provision of parklands and bbq's to the north of the Perth Stadium with vistas over the lakes toward the Swan River.	2	Stadium Developer Contribution
WAYFINDING 	3.10	Path upgrade and recommended seperation of cyclist and pedestrians to minimise conflicts. Elevation of the path in low lying areas to mitigate effects of erosion and flooding on access along foreshore. Wayfinding to encourage movement across the Parks, with appropriate signage to educate users on the cultural, environmental, and historical significance of the place.	2	\$15,000 to \$30,000
TRANSIT LINKS 	3.11	Improve vehicular and public transport access to foreshore areas with appropriate levels of bus stops carparking located close to key nodes.	1	Stadium Developer Contribution
SENSE OF ARRIVAL 	3.12	Opportunity to create a gateway and sense of arrival to the foreshore area at the landing site of the proposed pedestrian bridge for the Perth Stadium.	3	Stadium Developer Contribution
STAKEHOLDER CO-OPERATION 	3.13	Stadium development to coincide with development on foreshore area in preperation for increased visitor numbers and use.	-	N/A
	3.14	Burswood development is undertaken in a cohesive manner to maintain and enhance facilities and access to the foreshore.	-	N/A

TABLE 5. OPPORTUNITY / ISSUE BURSWOOD PARK GOLF FORESHORE



FIGURE 16. BURSWOOD PARK GOLF FORESHORE - INDICATIVE OPPORTUNITIES AND ACTIONS



REVEGETATION & EROSION CONTROL

- 3.1 REVEGETATED RIVER EDGE
- 3.2 STABILISATION AND FRINGING VEGETATION



TREES & SHADE

- 3.3 SHADE TREES



RIVER ACTIVITY & ACCESS

- 3.4 DECK/PLATFORM
- 3.5 BURSWOOD LAKES



ACTIVATION & FACILITIES

- 3.6 UPGRADED FACILITIES
- 3.7 NATURE WALK
- 3.8 MICRO BREWERY
- 3.9 PARKLAND AND BBQ'S



WAYFINDING

- 3.10 WAYFINDING SIGNAGE



TRANSIT LINKS

- 3.11 PUBLIC TRANSPORT LINKS



SENSE OF ARRIVAL

- 3.12 LANDMARK BRIDGE AND LANDING POINT



STAKEHOLDER CO-OPERATION

- 3.13 PERTH STADIUM
- 3.14 BURSWOOD CASINO

5.6.4 BELMONT PARK FORESHORE

Area Description, Existing Conditions & Values

Located at the end of the Burswood Peninsula and running northward for the Bunbury/Windham Bridge around to the eastern edge of the Belmont racetrack.

The area very unique as it is both well protected by the prevailing winds, coupled with its varied orientation and views to the west, north, and east.

Access to this area is extremely limited due to the Belmont Park area, with no direct vehicular or pedestrian access through this area. Despite being in a highly prominent position the site has no public access to the water's edge, and it is recognized that any future development should consider continuous pedestrian access, utilizing a mixture of pathways and boardwalks as a means of both accessing the water's edge and the preservation and protection of the existing endemic vegetation. Future residential development may see the need for water taxi/boat access and mooring along the foreshore which needs to be considered within the broader context of the Foreshore Management Plan.

Whilst this area has been cleared many times since the 1800's, the Belmont Park Foreshore presents the most intact and most 'natural' of the Foreshore Management Plan areas. Large areas of extensive fringing vegetation including sedges, mostly *Juncus sp.*, and *Casuarina* and *Melaleuca* tree species are present. Whilst a few areas of the site are listed in good condition, there remain large areas where weed species dominate. Any future development will need to consider the rehabilitation of these weed dominated and potentially contaminated areas, whilst protecting and enhancing the existing vegetation.

Much of the areas on the western side show signs of evidence of the sites previous use as a landfill site. Whilst there are no registered contaminated sites within this area, it is recognised that soil remediation may be required due to perceived human and/or ecological health risks.

Erosion control is required on the eastern side of the area to mitigate boat wash, and suggestions of using fallen trees (appropriately secured) combined with reinstating riparian vegetation as a means of protecting the shoreline whilst providing habitat.

The Belmont Park area has a rich horse racing and training history, and has many built structures adjacent to the study area. With large areas of turf and the requirement for irrigation to this, minimizing potential fertilizer and herbicide run off must be considered.

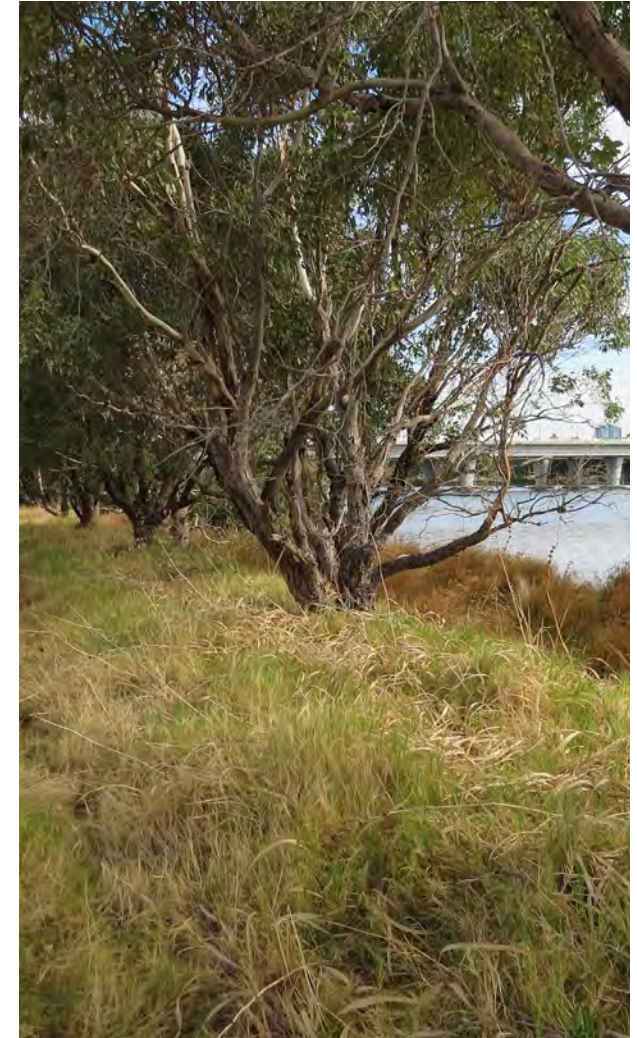


IMAGE 30. VIEW TO WINDAN BRIDGE BELMONT PARK FORESHORE

CHALLENGES

The following challenges have been identified within the Belmont Park Foreshore:

1. Future development should consider providing continuing pedestrian access to the foreshore and water's edge, with restoring riparian vegetation as a means of providing habitat and as shoreline stabilization.
2. Restoration and rehabilitation of potentially contaminated areas on the site need to balance either removing soil or materials with the impacts of leaving these "in situ".
3. The native vegetation within the Belmont Park foreshore is of high ecological value in places which should be identified for protection and retention where possible.
4. Stormwater run off from the future development should be considered with a view to minimizing this as much as possible through water sensitive urban design (WSUD) principles.

ACTIONS

The following actions have been identified within the Belmont Park Foreshore:

1. The native vegetation within the Belmont Park foreshore is of high ecological value in places and the enhancement of this should consider the nearby Berringa Reserve located directly across the Swan River as a means of providing habitats for various flora and fauna.
2. Providing unique pedestrian environments through pathways and boardwalks across the site, coupled with interpretive signage that creates environmental awareness for local residents and visitors.
3. The provision of high demand facilities, and consideration of the need to provide access and path networks for both cyclists and pedestrians where possible.
4. Remediation of potentially contaminated areas in the most environmentally sensitive manner.



IMAGE 31. CASUARINA TREE SPECIES BELMONT PARK FORESHORE









OPPORTUNITY / ISSUE	No.	ACTION	PRIORITY/ TIMING	PROBABLE COST
REVEGETATION & EROSION CONTROL 	4.1	Incorporate fringing vegetation including dense sedge plantings where possible in front of walling. Additional rock rip-rap with woody debris coupled with opportunistic planting, or the use of log brush mattresses in high impact erosion zones.	1	Planting: \$10 to \$20/m ² Brush mattresses \$300 - \$1,000 Lin m
TREES & SHADE 	4.2	Trees to be provided by the river edge and pathways for shade and places for respite and seating, whilst also providing habitat, and erosion control along the shoreline.	1	45L Tree Stock: \$150 per tree Tubestock \$3 per tree
RIVER ACTIVITY & ACCESS 	4.3	Proposed recreation zones including small constructed beaches as a means of accessing and landing for water activities including kayaking etc.	2	\$60,000 to \$80,000
ACTIVATION AND FACILITIES 	4.4	Providing unique pedestrian environments through pathways and boardwalks across the site that allow access to the rivers edge, and minimise uncontrolled access at ecologically sensitive areas.	3	Belmont Park Developer Contribution
	4.5	Proposed marina area which includes mixed food and beverage offerings.	3	Belmont Park Developer Contribution N/A
WAYFINDING 	4.6	Ensure facilities are located back from the rivers edge except for designated areas such as controlled areas which include platforms, jettys and decks.	3	
	4.7	Wayfinding located at major entry and exit points for area to encourage movement across the Parks, with appropriate signage to educate users on the cultural, environmental, and historical significance of the place.	3	\$50,000
TRANSIT LINKS 	4.8	Extension of current path network to allow continuous access around the site and as part of a broader Perth Cycle Network with the DUP set back from the rivers edge with formalised places to access the river edge. Access on the eastern side of Belmont will require a boardwalk coupled with an highly engineered approach for highly eroded areas. Improved access, notably by public transport, and connecting path networks that allow easy access and interaction with the site.	2	Belmont Park Developer Contribution
SENSE OF ARRIVAL 	4.9	Opportunity to create a gateway and 'sense of arrival' to identify entry to the Belmont Racecourse Foreshore precinct to be incorporated near the Windan bridge and proposed marina site for pedestrians and cyclists.	3	\$80,000 to \$130,000
STAKEHOLDER CO-OPERATION 	4.10	Co-ordination between Belmont Racecourse / WATC and Golden Group to ensure future development at and adjacent to the race track is undertaken in a cohesive manner to maintain and enhance facilities and access to the foreshore.	-	N/A
	4.11	The proposed residential development by the Golden Group should allow continuous access around the Burswood Peninsula with development undertaken in a manner that serves to enhance facilities and access to the foreshore.	-	N/A

TABLE 6. OPPORTUNITY / ISSUE BELMONT PARK FORESHORE



REVEGETATION & EROSION CONTROL

4.1 REVEGETATED ZONES



TREES & SHADE

4.2 TREES FOR SHADE, HABITAT, AND SHORELINE STABILISATION



RIVER ACTIVITY & ACCESS

4.3 BEACH

4.4 BOARDWALKS



ACTIVATION & FACILITIES

4.5 PROPOSED MARINA, CAFES AND RESTAURANTS

4.6 JETTY, DECK, PLATFORMS



WAYFINDING

4.7 SIGNAGE LOCATED AT ENTRY AND EXIT POINTS



TRANSIT LINKS

4.8 ACCESS PATHS



SENSE OF ARRIVAL

4.9 WINDAN BRIDGE/MARINA GATEWAY



STAKEHOLDER CO-OPERATION

4.10 BELMONT RACECOURSE/WATC

4.11 GOLDEN GROUP

FIGURE 17. BELMONT PARK FORESHORE - INDICATIVE OPPORTUNITIES AND ACTIONS

5.6.5 BALBUK WAY FORESHORE

Area Description, Existing Conditions & Values

The Balbuk Way foreshore area lies on the eastern side of the Burswood Peninsula and extends as a thin strip between the Graham Farmer Freeway and Swan River northward from the Bushland Reserve in the east to the southern tip of the Belmont Park car park.

The Balbuk foreshore area is in a very sheltered area of the Swan River and well protected by the prevailing winds. Its orientation is north to north east and views can be taken from many places across the Swan River to the Maylands Golf Course.

The sheltered nature of this area makes itself very popular with water skiers who use this area, and access to the water for boats is achieved by a boat ramp located in the southern area of the site. A small beach, only a few meters wide, extends for much of the length of the site, however erosion is prevalent with many fallen trees now lining the shore, with many more being slowly eroded and undercut by the large boat wash generated predominately by water ski boats.

The vegetation includes any large tree species, including both exotic and endemic species, with an understory dominated by grass and weed species, however there are many pleasant places to sit under the shade of trees coupled with picturesque views across the river. As noted above some of the trees are at risk of falling over, and as such should be prioritized in any effort to preserve the shoreline vegetation.

Whilst some efforts have been made to mitigate erosion, namely a series of wooden structures in the northern end, it is well recognized that this area requires significant work to stabilize and revegetate the river's edge. As the area has no formal access, aside from a slip road to the west, concerns regarding controlling access for pedestrians and spectators is recognised. The future residential development presents challenges to the site with an expected increase in use and access to this area, and it has been acknowledged that the area is currently at maximum capacity with regard to usage.

Security and surveillance issues were noted due to the site's location, and the presence of a large retaining wall that runs between Graham Farmer Freeway essentially separating this site visually and physically. A small slip road (Balkbuk Way) runs parallel to the river for boat access, with a cycle path which lies above, at the same level as the Graham Farmer Freeway.

Due to limited access for vehicles, the use of the site tends to be focused around water ski activities, however this is expected to change with increased residential density in the immediate vicinity. It was noted that despite having a dedicated cycle path, many cyclists chose to ride closer to the river along Balbuk Way. Due to the site's lack of passive surveillance it was recognized that rubbish and dumping were issues that needed resolution.

Built form is limited to a pavilion, groyne, toilet block and boat ramp that are all located in the southern end of the site.

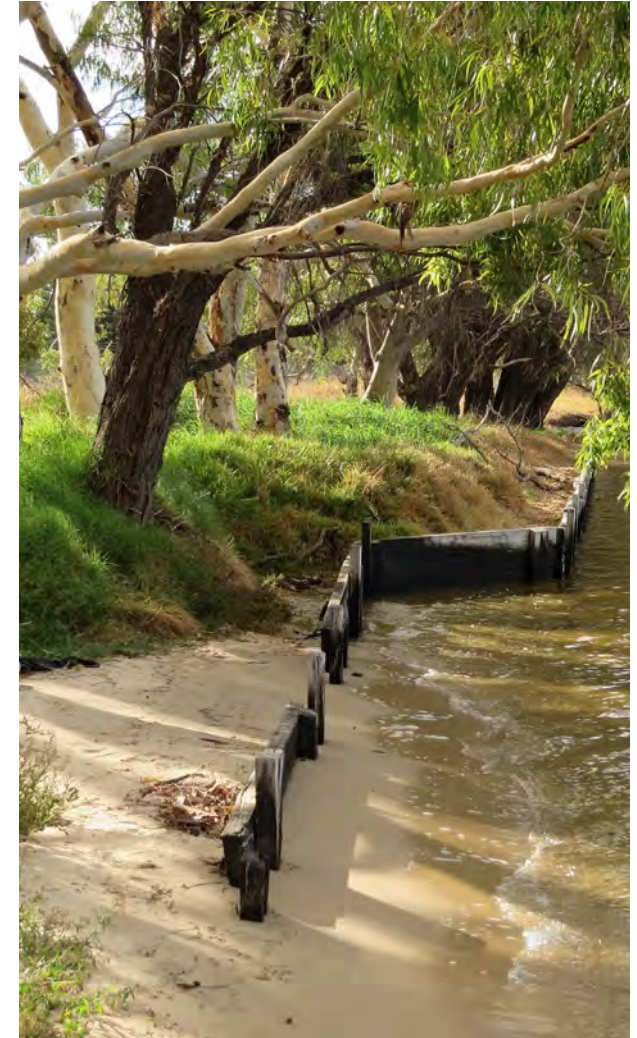


IMAGE 32. WOODEN EROSION CONTROL MEASURES BALBUK WAY

CHALLENGES

The following challenges have been identified within the Balbuk Way Foreshore Area:

1. Minimising erosion of the shoreline, and the further loss of trees which aid in stabilization of the foreshore, should be prioritized in any works on site. The use of both hard and soft infrastructure to mitigate any further loss of shoreline is noted as a potential strategy.
2. Passive surveillance and security for users of the site needs further evaluation, and any actions need to consider associated issues such as rubbish and dumping.
3. Access to the site will continue to be problematic for vehicles with only a single entry and exit point, however it is understood that the site may be more suited for pedestrian and cycle access into the future, particularly with more high density residential development due to take place.
4. Due to future increase in residential development there is likely to be an increased potential for pedestrian/cyclist conflict along the foreshore path east of Balbuk Way, which is relatively narrow, winding with limited visibility. The City of Belmont promotes use of the river path as a recreational ride, with fast commuters encouraged to utilise the PSP on Graham Farmer Freeway/ Orrong Rd and bike lanes on Great Eastern Highway.

ACTIONS

1. Shoreline stabilization to protect the existing trees, with works to further enhance the river's edge with endemic riparian vegetation coupled with hard infrastructure, should be seen as a priority as a means of both protecting and enhancing the area.
2. Controlling access with pathways and look out points for pedestrians and spectators along the shoreline should be conducted with a view to balancing the needs of recreation activities with the enhancement of habitat.
3. The expected increased use of the area due to residential development in the immediate area, should be factored in with regard to encouraging more passive surveillance of the area.
4. Retain the site as a water ski area, however it is noted that further protection of the shoreline and consultation is required to ensure this activity can continue into the future in a way that is in line with broader environmental aims of the Swan River Trust.
5. Consider potential impacts to users of the foreshore path east of Balbuk Way (pedestrians/cyclists), with any changes to the Balbuk Way Foreshore including activities likely to bring an increased use.

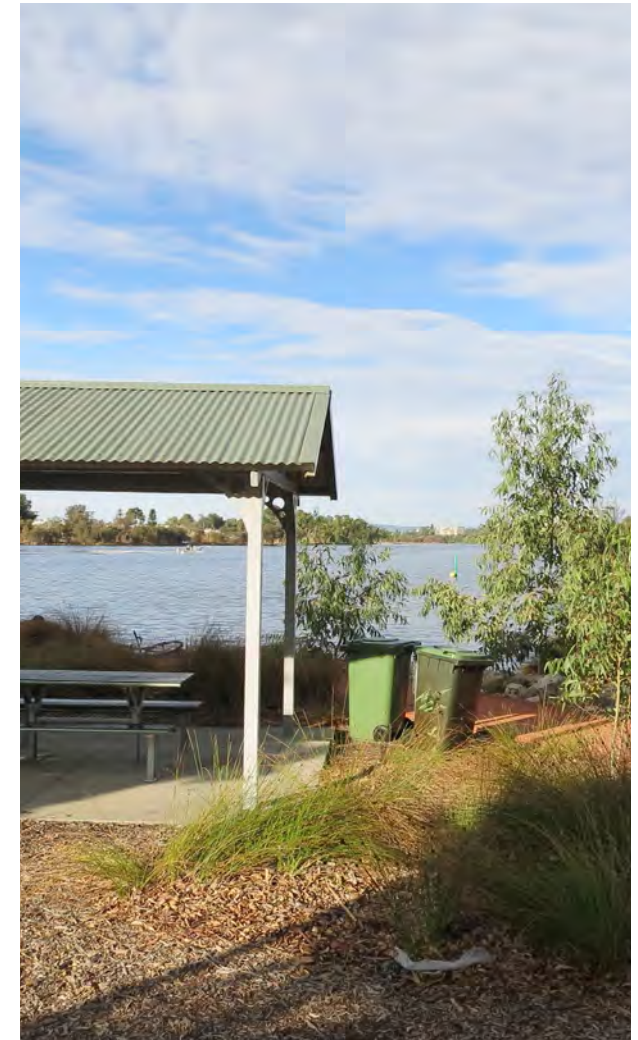


IMAGE 33. SEATING AND SHELTER BALBUK WAY







OPPORTUNITY / ISSUE	No.	ACTION	PRIORITY/ TIMING	PROBABLE COST
REVEGETATION & EROSION CONTROL 	5.1	Erosion control including protection of existing trees on shoreline, coupled with baffle boards and or other hard structures and revegetation utilising approved endemic species as a means of protecting the shoreline.	1	Wall logging: \$300 - \$1,000 Lin m Brush mattresses \$300 - \$1,000 Lin m
	5.2	Incorporate a biofilter bed into the downstream storm water outlet at the two noted areas. Enhance shoreline vegetation to create more habitat for water birds. Retrofit storm water drain with a gross pollutant trap and micro pollutant baffles.	1	Biofilter: \$7,000
	5.3	Renourish soil around roots of undermined and unstable trees and stabilise with rock armour and vegetation or similar and replace wooden boards where they have become degraded. Install wooden bollards in the water in front of the southern beach to prevent boat launching and landing. Remove dead fallen trees from waterline; potentially relocate to conservation area for protection of shoreline.	1	Wooden Boarding: \$300 - \$1,000 Lin m Bollard \$400-\$1,000 Lin m Planting: \$10-\$20 Lin m
TREES & SHADE 	5.4	Prioritising the many mature trees, that are currently undermined by erosion, for protection should be completed before any further planting commences. Future tree planting should focus on species well suited to the needs of erosion control and providing habitat.	1	Tubestock: \$3 per plant
RIVER ACTIVITY & ACCESS 	5.5	Clearly define recreation zones with appropriate signage to control access across the site. Install timber boardwalks decks and which extend over the shoreline to prevent erosion of the substrate and provide controlled access for recreational activities. The location of proposed jetties/decks should consider designated launching/landing areas associated with the ski area and involve consultation with the department of Transport.	2	\$10,000 to \$50,000
	5.6	A range of decks, jetties, and platforms that allow a range of recreational opportunities, and are incorporated into any revegetation and erosion control.	3	\$50,000 to \$125,000
ACTIVATION AND FACILITIES 	5.7	Provide improved facilities, such as bbq's, a drinkning fountain and seating near the boat ramp and beach area to provide increased amenity for users of the area. Improve facilities and the beach at the eastern side of the boat ramp to allow other activities such as wading or passive recreation to take place. Any changes to the use of the beach should consider the designated launching/landing areas associated with the water ski zone and should involve consultation with the Department of Transport.	2	\$15,000 to \$30,000
WAYFINDING 	5.8	Ensure clear signage and pathway networks connect the Belmont Racecourse boardwalk to the Balbuk Way area and extend to the adjacent areas. Upgrading cycle paths through the site and improving vehicle parking and access should be considered to improve access to and from the site.	1	\$40,000 to \$50,000
STAKEHOLDER CO-OPERATION 	5.9	Ensure development is undertaken in close consultation with users of the area, namely the waterski groups, so that whilst works to protect the shore from erosion are commenced, that these works do not significantly inhibit the future activities.	1	N/A
	5.10	Belmont Council to be engaged with regard to improving access path connections, and consulted with regard to revegetation and shoreline erosion control measures immediately adjacent site.	1	N/A
	5.11	Belmont Park/WATC to be engaged to ensure a co-ordinated response to the provision of pathways and access between Balbuk Way and around the Belmont Racecourse.	1	N/A

TABLE 7. OPPORTUNITY / ISSUE / BALBUK WAY FORESHORE



FIGURE 18. BALBUK WAY FORESHORE - INDICATIVE OPPORTUNITIES AND ACTIONS

- REVEGETATION & EROSION CONTROL**
 - 5.1 HARD AND SOFT EROSION CONTROL MEASURES
 - 5.2 BIOFILTER BED
 - 5.3 PROTECT EXISTING TREES
- TREES & SHADE**
 - 5.4 TREES FOR SHADE, HABITAT, AND SHORELINE STABILISATION
- RIVER ACTIVITY & ACCESS**
 - 5.5 BOARDWALK
 - 5.6 DECKS, JETTYS, VIEWING PLATFORMS
- ACTIVATION & FACILITIES**
 - 5.7 BEACH AND BBQ FACILITIES
- WAYFINDING**
 - 5.8 SIGNAGE AT CONNECTION POINTS
- STAKEHOLDER CO-OPERATION**
 - 5.9 WATERSKI GROUP
 - 5.10 BELMONT COUNCIL
 - 5.11 BELMONT PARK / WATC

5.7 GOING FORWARD

The Town of Victoria Park has a responsibility to review the Foreshore Access and Management Plan and will also be responsible for monitoring the implementation phase. The plan should be reviewed once every three years from the beginning of implementation, tracking actions achieved with a focus on priority 1 actions to be complete within the initial 3 year period.

It is expected that the plan will be reviewed in 2018 with and will include an assessment of the current plan to ascertain its effectiveness and identify objectives and actions that need to be updated.

The review should also record the outcomes of the actions already implemented. It is important that the review process will consider any relevant changes in government policy, management changes to the precinct areas as a result of the developments, updates of the specialist reports and public consultation that may have taken affect during this three year period.

It is recommended that ongoing monitoring and review of the plans implementation is undertaken with consideration to changes relating to the identified development sites (New Perth Stadium, Belmont Racecourse Development, Crown Casino development) which are likely to significantly reshape the foreshore area. A review of action priorities should be included, as the priority level may change while developments progress.

In addition, it is recommended that supplementary stakeholder/community consultation is done at the 3 year review stage to assess the response to completed works and identify any additional requirements to provide for the changing desires of the community.

The Towns Environmental officer in consultation with the Parks Department will be responsible for monitoring and delivering the implementation phase of the Foreshore Access and Management Plan. It is recommended that a multidisciplinary team including a qualified Landscape Architect and Environmental consultant is engaged to help assist in delivering the implementation actions across the foreshore precincts.

The implementation phase aims to achieve the implementation of major capital works, including access pathways, signage, plant rehabilitation, foreshore stabilisation, erosion control, and infrastructure projects. At the end of each 3 year review the recommendations should be considered and timings revised for the following three year period.

Rehabilitation Maintenance

Rehabilitated areas should be maintained constantly, as additional damage to the river edge can rapidly develop into a major problem. Once the rehabilitation of areas has commenced, monitoring should occur regularly, preferably on a monthly basis for the first year. Monitoring of rehabilitation areas should be undertaken to:

- check for plant vigour, establishment and survival;
- assess the adequacy of temporary stabilising agents such as brush and mulch;

- ensure that people are using accessways rather than trampling vegetation; and
- ensure that signage has not been vandalised.

Aboriginal Consultation and Approvals

Prior to any implementation it is recommended that the Town of Victoria Park contact the Aboriginal heritage knowledge holders for the sites through the South West Aboriginal Land and Sea Council to ascertain whether the proposed works will have an impact on an area of specific heritage importance.

The proposed use of any Nyungar cultural motifs and information in interpretive works on the foreshore should also be approved through discussion with the South West Aboriginal Land and Sea Council.

Any party implementing aspects of the Plan should contact the Department for Aboriginal Affairs for advice and approvals regarding the implementation activities.

Vision for the foreshore

The vision for the Town of Victoria park foreshore was developed through the community and stakeholder engagement process and the detailed background analysis undertaken. The vision aims to reflect the aspirations of the community, key stakeholders and Council and is intended to help to guide future development. The 'CONNECTED' vision should be used as a touchstone to assess future foreshore development against. It is key that all future proposals achieve the vision, making the Town of Victoria Park foreshore a connected environment and one that is viewed as a high quality, accessible and desirable destination for both the local community and wider Perth population.

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Images and Figures:

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