



Swan and Helena Rivers Regional Recreational Path Development Plan

Prepared for



On behalf of



February 2009

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CONTENTS

| | |
|---|-----------|
| EXECUTIVE SUMMARY AND RECOMMENDATIONS | 5 |
| EXECUTIVE SUMMARY | 5 |
| RECOMMENDATIONS | 8 |
| 1.0 - BACKGROUND TO THIS PROJECT | 10 |
| 2.0 - PROJECT OBJECTIVES | 12 |
| 3.0 - METHODOLOGY | 14 |
| 4.0 – THE EXISTING TRAIL/PATHWAY NETWORK | 15 |
| 5.0 - PATH LOCATION DESIGN GUIDELINES | 16 |
| 5.1 GENERAL CONSIDERATIONS FOR SUSTAINABLE TRAILS | 16 |
| 5.2 ROUTE ALIGNMENT GUIDELINES – BOTANY BAY TRAIL | 17 |
| 5.3 EVALUATION CRITERIA FOR PROPOSED ALTERNATIVE GREENWAY TRAIL ALIGNMENTS - WILLAMETTE (RIVER) GREENWAY TRAIL | 19 |
| 5.4 ENVIRONMENTAL GUIDELINES FOR DUAL-USE PATHS | 20 |
| 5.5 PHYSICAL AND ENVIRONMENTAL CONSTRAINTS | 20 |
| 5.6 HERITAGE AUDIT AND STATEMENT OF SIGNIFICANCE | 23 |
| 6.0 – THE MISSING LINKS IN THE PATHWAY NETWORK | 25 |
| 6.1 TOWN OF BASSENDEAN | 25 |
| 6.2 CITY OF BAYSWATER | 25 |
| 6.3 CITY OF BELMONT | 26 |
| 6.4 CITY OF SWAN | 26 |
| 7.0 - UPGRADING OF EXISTING PATHWAYS | 28 |
| 7.1 TOWN OF BASSENDEAN | 28 |
| 7.2 CITY OF BAYSWATER | 28 |
| 7.3 CITY OF BELMONT | 28 |
| 7.4 CITY OF SWAN | 29 |
| 8.0 – DETERMINING PRIORITIES | 30 |
| 9.0 - TRAIL WORKS LISTS AND INDICATIVE COST ESTIMATES | 32 |
| 9.1 TOWN OF BASSENDEAN | 32 |
| 9.2 CITY OF BAYSWATER | 33 |
| 9.3 CITY OF BELMONT | 33 |
| 9.4 CITY OF SWAN | 35 |
| 9.5 SIGNAGE COSTS | 36 |
| 9.6 TOTAL COSTS | 37 |
| 10.0 - PATH DESIGN AND DEVELOPMENT CONSIDERATIONS | 38 |
| 10.1 GENERAL DESIGN CONSIDERATIONS | 38 |
| 10.2 SIGNAGE | 40 |
| 10.3 SAFETY CONSIDERATIONS | 41 |
| 10.4 TRAILHEADS AND PARKING | 44 |
| 11.0 – THE ACTION PLAN | 45 |

| | |
|---|----|
| APPENDIX 1 – DESTINATIONS, DIRECTIONS AND DISTANCES | 47 |
| APPENDIX 2 - SUGGESTED SIGN STYLE | 56 |
| APPENDIX 3 - SIGN LOG | 61 |
| APPENDIX 4 - HERITAGE AUDIT AND STATEMENT OF SIGNIFICANCE – SITES OF RELEVANCE TO SWAN AND HELENA RIVERS REGIONAL RECREATIONAL PATH | 87 |
| APPENDIX 5 - PLANS | 99 |

EXECUTIVE SUMMARY AND RECOMMENDATIONS

Executive Summary

Background

The Eastern Metropolitan Regional Council has commissioned this *Swan and Helena Rivers Regional Recreational Path Development Plan* (SHRRRP) – a blueprint for the progressive completion of the path network along both sides of the Swan River between the Windan Bridge in East Perth and the Guildford Road Bridge in Guildford. This project is a direct follow-up to actions recommended in the 2007 *Swan and Helena River Management Framework* (SHRMF) which provided a strategic framework to guide the ongoing management and development of the eastern reaches of the Swan River and its major tributary, the Helena River. In particular, this report has been prepared as an outcome of the more recently completed *Perth's Eastern Region Swan River Trails Project*.

The tasks required by the SHRRRP Project are a direct result of the recently concluded *Perth's Eastern Region Swan River Trails Project*. That project report, prepared by Transplan Pty Ltd and Kulbardi Hill Consulting for the EMRC and its member local governments, recommended the preparation of a comprehensive pathway development plan that would prioritise all missing links in the network in order to establish a complete pathway system. The report indicated the need for establishing path development priorities to guide implementation of the remaining 'missing links'. The report also highlighted the need for a thorough and comprehensive distance and directional signage plan.

The recommendations were:

5. Prepare an overall directional and distance signage plan that establishes a consistent method of signposting the Swan River Trails network, specifies where signage should be installed on all existing and proposed paths, that enables path users to navigate their way around the path network.

6. Prepare an overall trail development plan and construction program that reviews the entire pathway development program between the Causeway and Guildford, establishes a complete set of path development priorities and therefore provides guidance to each of the four councils (and the EMRC) on the progressive implementation of the remaining 'missing links'.

The objectives of this project, as specified in the Consultant's Brief, are to:

1. Identify physical and environmental constraints relevant to path development along foreshores within the Swan and Helena Rivers Management Framework study area.
2. Identify a route envelope for path development.
3. Develop a design standard for shared paths, footpaths, boardwalks, directional signage and supporting facilities, taking into account relevant standards and universal access requirements.
4. Identify infrastructure requirements and indicative costings for upgrade of existing or construction of new shared paths to complete the SHRRRP.

In order to arrive at the set of projects outlined in this development plan, several steps were taken:

- Review of the earlier report commissioned by the EMRC: *Perth's Eastern Region Swan Rivers Trails Project* and the 4 priority trail projects identified in that report;
- Fieldwork along the entire foreshore on both sides of the river (assessing the extent of existing trails / pathways, and determining opportunities for new paths);
- Research into land tenure;
- Review of the plans and projects of key stakeholders and member Councils;
- Input received from the consultant team preparing the Heritage Audit;
- Research into environmental conditions along the Swan River;
- Review/research of innovative solutions to the provision of paths/boardwalks in environmentally sensitive areas or where land ownership and land use precludes or makes difficult path development;
- Review of various principles determining path/trail location; and
- Determination of the suite of projects that will achieve a continuous, uninterrupted pathway system along both sides of the Swan River.



The floating boardwalk on the Brisbane River in Brisbane is an excellent example of what could be achieved in difficult situations along the Swan River, given the will, the funds and the necessary approvals of all concerned.

This project is about determining pathway 'envelopes' – for the **ideal** alignment or most desirable location (from a users' perspective).

In some cases it may be many years before all the privately owned land along the river foreshore is acquired by the Western Australian Planning Commission.

Until such time as all land (in the various project areas) is in public ownership, detours will be necessary which, in some cases, will/are quite circuitous.

The table on the next page summarises the expected costs within each local government and the expected signage costs, to give a total for the completion of the Regional Recreational Path network between Windan Bridge and the Guildford Road Bridge. These totals do not include any costs associated with purchasing of riverfront land reserved for Parks and Recreation in the Metropolitan Region Scheme. The anticipated total cost for path and boardwalk development, as well as directional/distance signage, is approximately **\$7,185,650** (plus GST).

This development plan should be considered a 'master plan' – a program for the progressive development and eventual completion of the regional recreational path along the Swan River between the Windan Bridge and the Guildford Road Bridge. It does not provide detailed designs of boardwalks in locations where they are recommended, for example, between Hay Road and Hilton Close in the City of Belmont.

Detailed negotiations and consultation will be required, as well as the necessary approvals of the Swan River Trust, and the Aboriginal Cultural Materials Committee under Section 18 of the Aboriginal Heritage Act 1972 where necessary.

Detailed engineering designs and specifications will be required for each boardwalk.

Table: Summary of Expected Costs

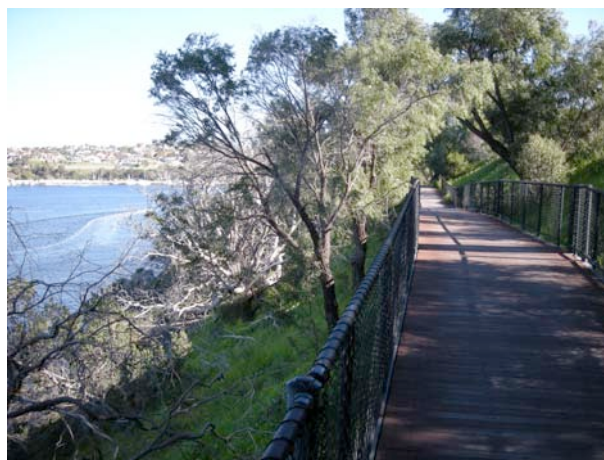
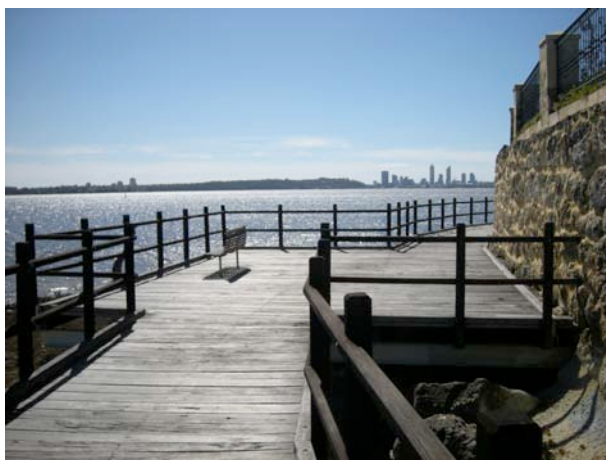
| Local Government / Element | Expected Cost |
|-----------------------------------|----------------------|
| Town of Bassendean | \$1,999,000 |
| City of Bayswater | \$1,057,000 |
| City of Belmont | \$2,993,600 |
| City of Swan | \$711,250 |
| Signage | \$424,800 |
| Total (not including GST) | \$7,185,650 |

The priorities for the progressive completion of the regional recreational pathway network are suggestions only. The land acquisition program of the Department for Planning and Infrastructure (on behalf of the Western Australian Planning Commission) will largely determine the ability of each local government to proceed with implementation.

Section 9 of this report breaks up the works program by individual local government – on the assumption that each local government will proceed independently of the others (at its own pace).

Ideally, the project to complete the missing segments of regional recreational paths would be a holistic and coordinated program, there being no substantive reason why the project could not be considered as a major piece of public infrastructure – much like a major road project, a railway or a harbour (only much cheaper).

Funding programs such as Infrastructure Australia would enable the entire suite of projects to be completed as a whole (in a matter of a few years), rather than piecemeal over the next 10 – 20 – 30 years.



We have in Perth already established a willingness to develop regional recreational paths in difficult environmental and geographic conditions, as illustrated in these photographs. Above left: boardwalk around the cliff at Point Dundas (former Hotel Majestic site) in Applecross. Above right: suspended boardwalk on steeply sloping foreshore in Mosman Park. Similar commitment will be required to achieve a continuous regional recreational path along the Swan River throughout the study area.

Should the project not proceed as a whole, and an uncoordinated, ad hoc approach ensue, decisions would need to be taken by each local government individually on what they consider their highest priority projects to be. This Development Plan has suggested an orderly approach – ranking order of projects by priority in each local government.

From a regional perspective, given current land ownership and likely acquisition delays, the 5 highest priority projects would be:

- 1. Claughton Reserve (between Moojebing Street – boundary with Town of Bassendean – and the Redcliffe Bridge). (City of Bayswater)*
- 2. Development of a pathway along the southern side of the 'antenna site' west of Garratt Road Bridge, between Samphire Street and Resolution Drive. (City of Belmont)*
- 3. In front of Water's Edge Winery (City of Swan)*
- 4. Upgrading (widening) of the narrow boardwalk over the wetland south-west of the southern end of Beverley Terrace (City of Swan)*
- 5. Sandy Beach Reserve to Ashfield Flats (connecting with existing path). (Town of Bassendean)*

A first stage in the development programme could be that of installing directional and distance (and other) signage.

Ideally, the directional signposting would be installed at the time of the completion of the riverside pathway network. However, recognising that it may take many years for the entire network to be completed, the directional signposting could be installed at any time – even before any additional (missing) sections are constructed. The detailed sign plan that accompanies this development plan has been prepared to enable directional signage to be installed now – without any addition to the path network.

Recommendations

It is recommended that the Eastern Metropolitan Regional Council:

1. Endorse this report which provides the basis and rationale for the progressive and ongoing development of the Swan and Helena Rivers Regional Recreational Path.
2. Refer this report to each of the local governments within the study area, in particular the Town of Bassendean, the City of Bayswater, the City of Belmont and the City of Swan. The EMRC should ask member Councils to endorse the report and to consider inclusion of funds in their future budgets for implementation of the projects within their municipalities, and inclusion of relevant projects in their works programmes. [Note: the draft report has been considered by staff at each of the member Councils. Further consultation and consideration of the report will be required by each local government as each determines its own priority actions for works and funding applications].
3. Refer this report to the Town of Victoria Park and the Town of Vincent for review of projects and signage that have implications for these two municipalities.
4. Refer this report to the Department for Planning and Infrastructure with a request that it take into account the findings of this report in its ongoing acquisition program and proceed with negotiations to acquire those sections of the Swan River foreshore (reserved for Parks and Recreation in the Metropolitan Region Scheme) that currently preclude the development of the priority trail projects recommended in this report by acquiring land when the opportunity arises as/when the affected properties are offered for sale.
5. Refer this report to the maritime/marine division of the Department for Planning and Infrastructure with a request that it comment specifically on the navigation and boating issues relevant to the proposed future installation of floating boardwalks within the study area.
6. Refer this report to the Swan River Trust with a request that it comment specifically on the possibility of floating boardwalks at several locations within the study area.
7. Refer this report to key indigenous groups and engage with key indigenous stakeholders in the ongoing implementation of the proposed riverside path network and the ongoing development of the interpretation plan.
8. Consider the recommendations of the *Heritage Audit and Statement of Significance (January 2009)* when implementing this report in relation to Aboriginal consultation and the development of an interpretation plan.
9. Commission an industrial designer to prepare the detailed design of the recommended signage structure and modules, so that an immediate start can be made to the signing of the existing paths along the river.
10. Proceed, in collaboration with member Councils, with seeking funding for the development of the path network and signage.

1.0 - BACKGROUND TO THIS PROJECT

The Eastern Metropolitan Regional Council (EMRC) has commissioned this project report which sets out a program for the progressive development and completion of the riverside pathways along the Swan River between the Windan Bridge in East Perth and the Guildford Road Bridge in Guildford.

Covering 2,100 square kilometres, about one third of the Perth metropolitan area, the EMRC and member Councils service approximately 310,000 residents. The EMRC, by partnering with member Councils and other stakeholders, facilitates strategies and provides services for the benefit and sustainability of the region.

The approach of EMRC's Regional Development Service is based on collaboration and the sharing of ideas and resources to:

- Encourage economic development in the region;
- Create new investment opportunities, sustainable economic growth and employment opportunities;
- Facilitate growth and promotion of tourism development in the region; and
- Increase community participation in arts, culture and recreation opportunities.

This *Swan and Helena Rivers Regional Recreational Path Development Plan* project is a further stage in a regional approach to the development and promotion of trails and tourism for the enjoyment of residents and the attraction of visitors to the region.

This report has been prepared as an outcome of the *Swan and Helena River Management Framework* and a follow-up to the more recently completed *Perth's Eastern Region Swan River Trails Project*.

The 2007 *Swan and Helena River Management Framework* (SHRMF) provided a strategic framework to guide the ongoing management and development of the eastern reaches of the Swan River and its major tributary, the Helena River. The SHRMF report divides the study area into a number of precincts and describes a series of issues and actions for each precinct. Among the recommend actions is the development of a series of pathway and heritage trail projects.

The SHRMF identified a lack of continuous public access to the river foreshore in the form of heritage and recreation trails. The SHRMF discusses the process of foreshore land acquisition by the Western Australian Planning Commission (a process that can be slow and uncoordinated) and recommended a more active program of targeted acquisitions in priority areas identified in strategic plans to be prepared for the river.

The SHRMF adds further support to the need for trails planning at a local area or precinct level and for trails to connect into an integrated regional trail network along both sides of the river.

Perth's Eastern Region Swan River Trails Project identified priority areas where targeted acquisition of land (reserved for Parks and Recreation in the Metropolitan Region Scheme) will be necessary for the successful implementation of the recommended trail projects.

To enable a continuous, high quality and well used path network to be developed, some tough decisions (and funding) will be needed. Generally speaking, the 'easy' segments of the foreshore path along the Swan River have already been put in place – *because they*

were easy. The difficult sections remain to be done – because they have been difficult for a number of reasons. Solutions are available. Reserved land can be acquired. Innovative solutions such as floating boardwalks can be built. The Bardon Park to Banks Reserve path/boardwalk – some 25 years in the planning – was finally put in place in recent years, completing one of the major missing links in the network. Several other significant missing links remain. With political will and sufficient funding, these missing links can soon be overcome.

Perth's Eastern Region Swan River Trails Project focused on detailed planning of trails along the Swan River foreshores managed by the Town of Bassendean and the Cities of Belmont, Bayswater and Swan.

The priority projects recommended in *Perth's Eastern Region Swan River Trails Project* were:

Town of Bassendean: the construction of a pathway north from Moojebing Street (common boundary with City of Bayswater) through the Ashfield Parade foreshore reserve to French Street. (Note: this project has recently been completed).

City of Bayswater: the construction of a pathway south from Moojebing Street (common boundary with Town of Bassendean), through Claughton Reserve to the Redcliffe Bridge.

City of Belmont: the construction of a pathway east from the eastern end of the concrete path at Ascot Racecourse, through Gould Reserve, past the Ascot Inn to the eastern end of The Esplanade.

City of Swan: the construction of a pathway north from the Johnson Street Bridge (Great Eastern Highway), along the northern bank of the Helena River, around the southern and western edge of the King's Meadow Oval and along the eastern bank of the Swan River to the Guildford Road Bridge. In addition, the construction of a path across the land managed by the City in front of the Water's Edge Winery (building on the asphalt path recently constructed by DPI) was recommended as a Priority 1 project.

Perth's Eastern Region Swan River Trails Project observed that there are still a number of 'missing links' in the round-the-river path network, and recommended:

"The EMRC commission the preparation of an overall trail development plan and construction program that reviews the entire pathway development program between the Causeway and Guildford, establishes a complete set of path development priorities and therefore provides guidance to each of the four councils (and the EMRC) on the progressive implementation of the remaining 'missing links'." (Recommendation 6)

Perth's Eastern Region Swan River Trails Project also recommended that the EMRC:

"Prepare an overall directional and distance signage plan that establishes a consistent method of signposting the Swan River Trails network, specifies where signage should be installed on all existing and proposed paths, that enables path users to navigate their way around the path network." (Recommendation 5)

This *Swan and Helena Rivers Regional Recreational Path Development Plan* has been commissioned to give effect to both of these recommendations.

2.0 - PROJECT OBJECTIVES

The overall aim of this project is prepare a detailed development plan for the Swan and Helena Rivers Regional Recreational Path (SHRRP).

Completion of the SHRRP will provide an integrated trail network along both sides of the Swan River foreshore from Windan Bridge to Guildford, thereby providing public access to social, cultural and natural heritage experiences along the Swan River.

The findings of this project will culminate in the production of an overall Path Development Plan to guide future infrastructure works. The Path Development Plan will incorporate a distance and directional signage plan. The Path Development Plan will need to determine priorities, detail and provide indicative costs for the works required to complete the SHRRP.

The objectives of this project, as specified in the Consultant's Brief, are to:

- Identify physical and environmental constraints relevant to path development along foreshores within the Swan and Helena Rivers Management Framework study area.
- Identify a route envelope for path development.
- Develop a design standard for shared paths, footpaths, boardwalks, directional signage and supporting facilities, taking into account relevant standards and universal access requirements.
- Identify infrastructure requirements and indicative costings for upgrade of existing or construction of new shared paths to complete the SHRRP.

As specified in the Consultant's Brief this project WILL include:

- A literature review, desktop assessment and site reconnaissance identifying environmental, physical, land tenure, and other relevant characteristics and constraints of foreshores pertaining to paths development within the study area.
- Development of path route envelopes and recommendations based on identified constraints and characteristics.
- Community consultation to explore ideas and issues regarding location of new and existing paths within the study area.
- Application of recognised design guidelines to recommendations for construction of new and upgrading of existing paths, including shared paths, footpaths and boardwalks within the study area.
- Development of design guidelines for distance and directional signage within the study area.
- Identification of infrastructure, works, and indicative costs required to facilitate future upgrade of existing and construction of new paths within the study area.
- Linkages to existing and potential paths identified within the Swan River Trails Project Report.

As specified in the Consultant's Brief this project WILL NOT include:

- Development of interpretation themes or interpretation signage.
- Development of detailed path plans beyond depiction of preliminary path construction route envelopes.
- Provision of detailed costing information for works required to facilitate construction of paths.
- Obtaining any required approvals for the construction of paths.

In preparing this document, due cognisance was given to the definition of a Regional Recreational Path, as this will determine the quality and standard of path/trail to be constructed.

As defined in the key document *The Perth Bicycle Network Plan (October 1996)*, a Regional Recreational Path is defined as:

"A regional recreational path is a high standard dual use path along the coastline, a river foreshore, or a linear public open space corridor. These locations attract recreational users due to their scenic nature and the flat grades found along the waterfront. Although provided mainly for recreational use, regional paths which provide direct links to employment destinations will attract commuters during the week.

Much of the regional recreational path network is already in place although a large portion is in need of upgrading. Missing links will be constructed where possible to provide connectivity, although there are issues regarding land use and appropriate zoning of riverfront land which will have to be resolved prior to construction of some sections of path. Alternative on-road routes will be provided in these circumstances until the issues are resolved.

Priority will be given to upgrading sections which currently have high levels of use and a resulting conflict between users. Priority will also be given to existing sections which were constructed many years ago and as a result are narrow and in many cases deteriorating with age".

3.0 - METHODOLOGY

The first task of this project was to identify the extent of the existing pathways along the Swan River between the Windan Bridge in East Perth and the Guilford Road Bridge in Guildford.

In so doing, it was then possible to determine the 'missing links' in the network. Missing links are those sections of path that do not currently exist that, when constructed, would enable path users to travel unimpeded along the foreshore of the Swan River (from one end of the study area to the other end).

Another facet of this project was to assess the condition of existing paths and determine whether any/all of the paths that exist need to be upgraded (eg. widened; replaced; re-sealed, etc).

In order to arrive at the set of projects outlined in this development plan, several steps were taken:

- Review of the earlier report commissioned by the EMRC: *Perth's Eastern Region Swan Rivers Trails Project* and the 4 priority trail projects identified in that report;
- Fieldwork along the entire foreshore on both sides of the river (assessing the extent of existing trails / pathways, and determining opportunities for new paths);
- Research into land tenure;
- Review of the plans and projects of key stakeholders and member Councils;
- Input received from the consultant team preparing the Heritage Audit;
- Research into environmental conditions along the Swan River;
- Consultation with key stakeholders;
- Review of innovative approaches to path/boardwalk developments elsewhere in Perth and other cities;
- Review of various principles determining path/trail location; and
- Determination of the suite of projects that will achieve a continuous, uninterrupted pathway system along both sides of the Swan River.

Fieldwork was the principal activity undertaken in the preparation of this report. The fieldwork, undertaken over the lengthy duration of this project, revealed the location and extent of already existing paths and their condition, the locations where new paths or boardwalks are needed and, because of the lengthy project period, the details of newly developed segments of the river foreshore path network.

Since the preparation of *Perth's Eastern Region Swan Rivers Trails Project*, some developments in the pathway network have occurred. For example, the trails on Black Swan Island in Ascot Waters have been sealed as a result of expenditure by the Department for Planning and Infrastructure.

In addition, the path on the riverside of the new high rise apartments between Hardey Park and Brighton Street in Belmont has now been completed.

Major redevelopment of the Adachi Park site has resulted in an overall improvement to the cycling and walking environment in that location.

Work continues along Ashfield Parade foreshore reserve in the Town of Bassendean and the development of a roadside path in that location has recently been completed.

4.0 – THE EXISTING TRAIL/PATHWAY NETWORK

As set out in the *Perth's Eastern Region Swan Rivers Trails Project*, over the last 20 to 30 years an extensive network of shared paths has been constructed along the foreshores of the Swan River between the Causeway and Guildford.

Despite the ongoing concerted effort to complete the path network, and the progressive development of the system, there are still some major missing links. It is fair to say that the easy sections of the network have been completed – leaving the more difficult sections to be completed in the coming years.

Fieldwork was undertaken to ascertain the extent of the existing network of paths and trails, their location and condition (width; construction material; interpretive and other signage; etc).

The plans that accompany this report illustrate the existing sections of pathway along both sides of the Swan River between the Windan Bridge and the Guildford Road Bridge.

Plan 1 depicts the entire study area between the Windan Bridge and Guildford Road Bridge, and generally illustrates the existing paths along the river and the missing links.

Plan 2 depicts the existing shared pathways, and missing links, in the riverside network in the City of Swan. The plan also illustrates upgrading projects (of existing paths/boardwalks) proposed in this development plan.



The high quality shared path past the Mercy Hospital in Maylands, between Bardon Park and Banks Reserve, was finally constructed in recent years, after having first been proposed in the early 1980's.

Plan 3 depicts the existing shared pathways, and missing links, in the riverside network in the City of Belmont (and into the Town of Victoria Park). The plan also illustrates upgrading projects (of existing paths/boardwalks) proposed in this development plan.

Plan 4 depicts the existing shared pathways, and missing links, in the riverside network in the Town of Bassendean. The plan also illustrates upgrading projects (of existing paths) proposed in this development plan.

Plan 5 depicts the existing shared pathways, and missing links, in the riverside network in the City of Bayswater (and into the Town of Vincent). The plan also illustrates upgrading projects (of existing paths) proposed in this development plan.

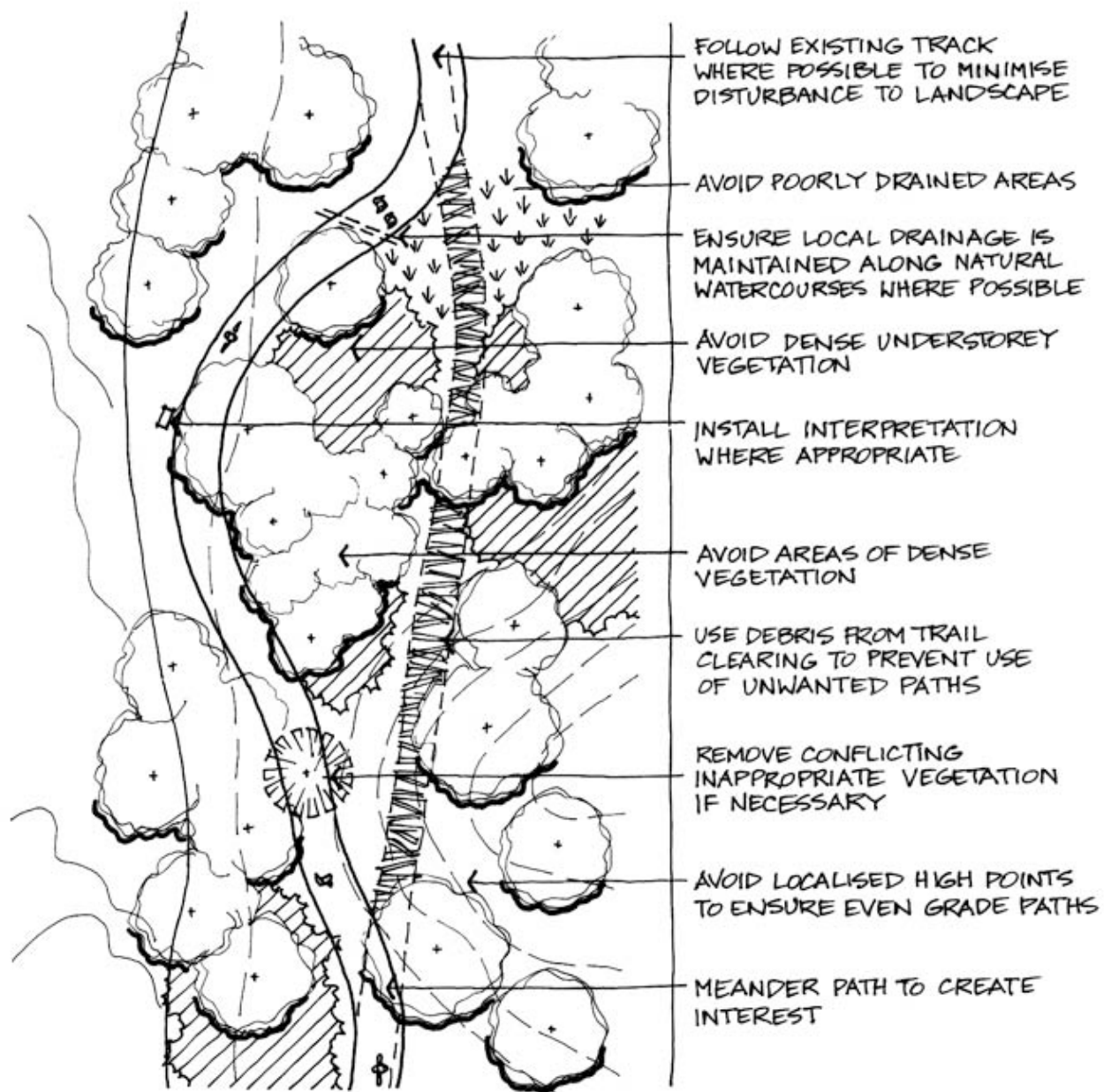
Knowing where paths already exist enables the determination of the 'missing links' in the overall path network. Various factors will influence where the proposed new paths can be developed, as set out in the following section

5.0 - PATH LOCATION DESIGN GUIDELINES

This section of the Report addresses a series of matters relating to trail/pathway design and development – to achieve trails that are constructed with minimal disturbance to the natural environment, are sustainable and that require minimal maintenance.

5.1 General Considerations for Sustainable Trails

This section describes some of the general considerations that are to be observed when locating and building trails, especially in sensitive environmental and river foreshore locations.



TRAIL ALIGNMENT GUIDELINES

In determining the most appropriate alignment for the proposed trails/pathways along the Swan River, the following general design and location considerations have been taken into account:

- Following existing tracks/trails where possible to minimise disturbance to the landscape.
- Avoiding poorly drained areas.
- Ensuring local drainage is maintained along natural watercourses where possible.
- Avoiding dense understorey where possible.
- Avoiding areas of vegetation that require clearing or minimise the need for clearing of vegetation.
- Avoiding environmentally sensitive areas (eg. areas of endangered flora).
- Removing conflicting inappropriate vegetation if necessary and as approved.
- Avoiding localised high points to ensure even path grades.
- Avoiding long straight sections with long steady grades. Trail to meander to take advantage of natural and man made features and to create interest.
- Avoiding areas with high erosion potential.
- Locating path near to points of interest.
- Taking note of safety hazards and avoiding where possible.

Much of the proposed (recommended) path envelopes are within already-cleared corridors – often an existing management track or parkland cleared areas.

The intention is to construct the pathways on already disturbed land – along old tracks such as that which exists along the north bank of the Helena River, and the vehicle tracks though the South Guildford locality. Careful and extensive on-the-ground examination of the proposed trail routes has enabled the best possible route envelopes to be selected that maximise use of already-disturbed locations and that minimise the need for clearing of vegetation.

The Consultant's Brief for this project required a literature review ... *"identifying environmental, physical, land tenure, and other relevant characteristics and constraints of foreshores pertaining to paths development within the study area"*.

5.2 Route Alignment Guidelines – Botany Bay Trail

In determining the feasibility and preferred route of the proposed Botany Bay Trail, the Consultant's involved in that task identified a number of guiding principles that are relevant to the Swan and Helena Rivers Regional Recreation Path project. The principles are:

1. The trail should be continuous around the length of the Bay.

Ensure a continuous trail around the Bay with a route that is feasible and realistic (with few barriers to on-ground implementation) and balances the constraints of both the natural and built environment.

2. The trail should provide for a variety of users.

The trail is intended to provide primarily for recreational and commuter pedestrians and cyclists, as well as people that are mobility impaired. It is recognised the trail will also attract use by joggers and roller bladders. However, the trail is not intended to provide for individuals or groups of cyclists travelling at speed.

3. The trail should be of a standard that provides for shared use.

The trail should be located to enable the construction of a shared use path, with a minimum width, as far as possible, of 2.5 – 3 metres.

4. The trail should be close to the shoreline of Botany Bay.

A range of constraints (such as existing land use and environmental values) will prevent the route being located exclusively along the Bay shoreline. However, the intent is for the route to be as close to the Botany Bay shoreline or related landscape features (such as rivers, creeks and floodplains) as possible.

5. The trail should minimise impacts on and conflicts with sensitive environments.

The route should take account of sites with significant natural and cultural values as well as other sensitive sites such as landfill and areas of heavy industry and associated traffic.

6. The trail should recognise the varied landscapes around the Bay.

There is a wide variety of landscapes and associated views around Botany Bay and the route should provide opportunities for users to experience a range of views and landscape settings. The Bay offers opportunities to enjoy expansive water views, experience fringing mangrove environments or observe a functioning city airport and port.

7. The trail should incorporate existing approved and established alignments.

In some areas, there are sections of existing trails that satisfy these principles for the Botany Bay Trail. In other areas, local Councils or other land management agencies may have existing plans for the establishment of sections of trail along the Botany Bay shoreline. Where such alignments exist or are planned, and they satisfy the guiding principles for the Botany Bay Trail, they will be incorporated into the route.

8. Take advantage of available public transport options, including rail and bus services.

The reliance of trail users on motor vehicles to access sections of the trail may be reduced if consideration is given to access to public transport options when planning the trail route. However, in most situations it may not be possible to locate the trail immediately adjacent to public transport nodes although convenient accesses could be highlighted to users.

9. Connections to other local and regional trail and bikeway systems should be provided.

Connections to other local and regional trail and bikeway systems should be actively sought. This will provide increased opportunities for users to access the Botany Bay Trail and ensure the trail is an integral part of the regional network. This will also have the added advantage of reducing the reliance of users on motor vehicles to access the Botany Bay Trail.

(Source: Botany Bay Trail Feasibility Study - August 2006 Prepared by Gondwana Consulting Pty Ltd for the Southern Sydney Regional Organisation of Councils)

5.3 Evaluation Criteria for Proposed Alternative Greenway Trail Alignments - Willamette (River) Greenway Trail

In its determination of the preferred alignment for the Willamette (River) Greenway Trail in Portland, the staff of the City of Portland (Oregon, USA) adopted a set of principles and guidelines that are also relevant to the Swan and Helena Rivers Regional Recreation Path project. The guidelines are:

Safety:

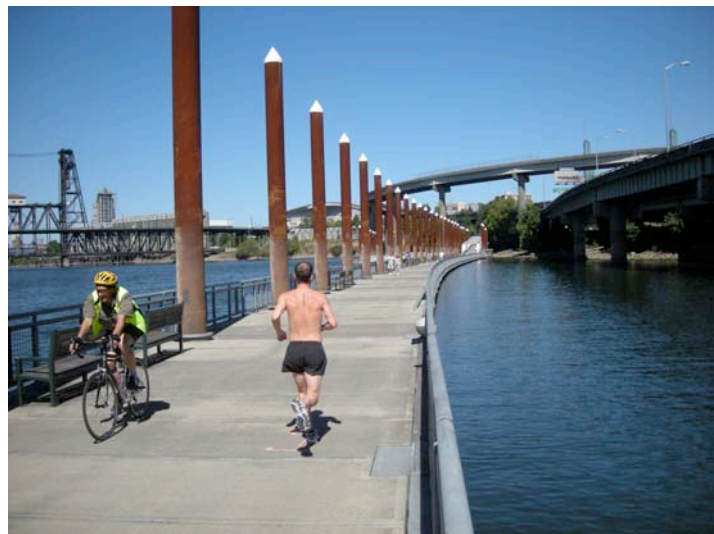
- Consider the number of collector or arterial road crossings.
- Consider the number of railroad crossings.
- Consider proximity to industrial uses that may create hazardous conditions for trail users.
- Consider on-road distance, where trail is located adjacent to roadways with no separation between trail users and motor vehicles.

Environmental:

- Habitat fragmentation, including the need to cut through and divide important natural habitats.
- Loss of riparian area, including estimated direct loss of native riparian vegetation.
- Proximity to known naturally significant areas that may be impacted by a trail.

Cost Considerations:

- Amount for railroad crossings (underpass and overpass) and special design features such as cantilevering.
- Amount of fencing need to protect facilities or users.
- Amount of grading required to meet accessibility requirements.
- Acquisition needs for private land easement or purchase.
- Need for new pedestrian road crossings.
- Estimated cost of maintaining trail.
- Eligibility of route for grants and other funding.
- Costs associated with mitigation required for permits.



The Willamette River Greenway floating boardwalk (in Portland, Oregon, USA) is another excellent example of an innovative approach to establishing a high quality facility in difficult circumstances.

Multi-Use Potential:

- Opportunity for locating an 8' wide paved multi-use path – dependent on size of area, topography.

User Experience:

- Proximity to river.
- Naturalness of foreground views (within 1/8 mile) such as the river.
- Opportunities for distant views, including Portland, west hills, Cascade Mountains.
- Sounds, including positive (birdsong) and negative (highway, industry).
- Opportunities for wildlife viewing.
- Opportunities for interpretive signage; educational purpose (industrial history).
- Potential for trail closures due to flooding, areas expected to be under water for part of year.
- Extent that trail user shares space with automobiles and trucks.
- Number of groups expected to use trail? Recreational, commuting, access to services, public facilities or institutions.

Greenway Trail Connectivity:

- Linkage neighbourhoods and parks in the vicinity.
- Linkage to existing local and regional trails in the vicinity.

(Source: The River Plan – North Reach - Staff Proposed Greenway Trail Alignment, City of Portland, Oregon, Bureau of Planning, July 3, 2006)

5.4 Environmental Guidelines for Dual-Use Paths

In 1989 the (then) State Planning Commission, in conjunction with Bikewest, the (then) Waterways Commission and the Environmental Protection Authority, released a booklet that sets out a range of matters that should be considered when planning and designing paths, particularly in the riverside environment.

The environmental guidelines included information on:

- Slope;
- Drainage and hydrology;
- Erosion and accretion;
- Materials and construction;
- Landscape and vegetation;
- People pressure;
- Controlling access; and
- Ongoing maintenance.

These guidelines have been observed in the determination of the proposed envelopes for the missing segments of regional recreational path along the Swan River.

(Source: Environmental Guidelines for Dual-Use Paths, State Planning Commission, the Waterways Commission and the Environmental Protection Authority, 1989)

5.5 Physical and Environmental Constraints

In determining the optimum and ideal location for new paths alongside the Swan River within the study area, cognisance was paid to the range of physical and environmental constraints.

5.5.1 Physical Constraints

Private ownership of river foreshore – despite the efforts of the Western Australian Planning Commission since 1963 to acquire foreshore land reserved for Parks and Recreation in the Metropolitan Region Scheme, substantial lengths of the Swan River foreshore within the study area remain in private ownership. It is unclear how long it may take for the remainder of the foreshore to become publicly owned, and this has been a major factor in determining optimum path route, timing of construction and, importantly, directional signposting for the path network.

Location of indigenous sites – the Heritage Audit has identified a number of sites of significance to the indigenous population. These sites have both a positive and negative influence on the location of the (proposed new) path envelopes. Some of the indigenous sites are 'restricted' and visitation is not welcomed. New paths will need to avoid these sites. However, other sites are 'open', visitation is welcome and some of these sites will be the subject of interpretation. Where possible, future new paths should be developed to take people to these locations – if there isn't already a path in the area.

Location of European history sites - the Heritage Audit has also identified a number of European history sites. Some of these sites will be the subject of interpretation. Where possible, future new paths should be developed to take people to these locations – if there isn't already a path in the area.

Width of foreshore reserve – the foreshore reserve along the river is not a consistent width. Many factors have determined the width of the Parks and Recreation Reserve, such as steepness of embankment, vegetation, flood levels, location of private residences, location of recreation and sporting fields, etc. Where possible, the optimum (and most desirable) location for the riverside path is beside the river, where views of the river are maximised. This is not always possible. However, it is preferable to locate the proposed new paths as close as practical to the water's edge to maximise enjoyment of the river amenity. That is where people want to be. In some locations it is not yet possible to locate a path within the foreshore 'reserve' as the land is not yet in public ownership.

Existence of riverside facilities (buildings such as kiosks, toilets, clubrooms, etc) – most path users will need to take advantage of toilets and kiosks at some time. Locating the path, or at least a spur path, to these amenities is important. In some instances, the existence of a clubroom or some other structure will preclude the possibility of locating the path continuously along the foreshore.

5.5.2 Environmental Constraints

Steepness of river embankment (foreshore erosion and instability) – some parts of the embankment of the Swan River have eroded and are collapsing into the river. This indicates the fragility and instability of the embankment. In places such as along the Ashfield Parade foreshore, massive efforts are being made to stabilise the foreshore to prevent further erosion and collapses. Near Garvey Park, a significant land slip has occurred again indicating the fragility of parts of the foreshore, especially the steeper sloping foreshore. While paths and boardwalks can (and have) been constructed along steeply sided foreshore areas of the Swan River, it is not always the most desirable technique to use. This plan proposes the use of floating boardwalks as a means of avoiding sensitive foreshore areas (and obviating land ownership issues).

Riverside vegetation – clearing of riverside vegetation along sections of the river has occurred over many decades, sometimes resulting in riverbank erosion and collapse of the embankment. The location of any new paths must be carefully determined to minimise, or avoid entirely, any additional clearing of riverside vegetation. The path envelopes recommended for the kissing links in the regional recreational path network utilise existing management tracks where they exist. For example, along the north bank of the Helena River (near Kings Meadow Oval), and the vehicle tracks through the South Guildford locality (south side of Helena River near its confluence with the Swan River).

Wetland areas, creeks and billabongs – throughout the study area there are numerous wet areas, and potentially wet areas. While most of these can be avoided, it is not always possible. Boardwalks are a proven technique for traversing wetlands and bridges can be used to cross tributaries and small creeks. Boardwalks are a well-accepted trail construction technique in areas of environmental susceptibility, and can often replace conventional trail and path construction resulting in:

- less damage during the construction;
- no erosion problems caused by construction processes;
- trail surface does not wash away at times of higher water levels;
- no revegetation needed because of minimal construction disturbance;
- no change in drainage patterns (and subsequent effects on flora and fauna) caused by the damming effect of pavement construction or concentration of water by use of stormwater pipes; and
- constraining the users to the defined pathways and minimising damage to flora.

Impacts of Climate Change – recent studies by consultants to several Perth metropolitan local governments have (somewhat controversially) warned that there will in the future be increased frequency of inundation of low-lying features such as paths and roads.

A recent study (*Potential Impacts of Climate Change on the Swan and Canning rivers - Prepared for the Swan River Trust by the Technical Advisory Panel - December 2007*) is particularly relevant. It states (pp 8-9 in Executive Summary):

Climate change is evident as an influence on the Swan Canning river system and has already produced irreversible change. The rate of change is increasing relative to the past century and changes to the familiar river regime will become increasingly evident and significant as the century progresses. Tidal and non-tidal sections of the rivers will be altered by significantly diminished stream-flow with warming of the water bodies and surrounding environment. There will be changes in the seasonal timing of flows with smaller and later autumn/winter flows. Tidal reaches will also be affected by sea level rise and by superimposed storm surges.

... Banks, foreshores and low-lying riverside infrastructure developments in tidal reaches will be altered or suffer from the impact of inundation from sea level rise and by flooding from storm surge associated with sea level rise of at least 0.5 metres, and possibly a metre or more, in this century.

... The social values of the system are likely to be threatened by a reduction in passive recreational facilities through loss of beaches, wetlands and associated vegetation throughout the lower, middle and upper estuary.

... Increased development of infrastructure to mitigate sea level rise, including seawalls, revetments and barrages will alter the current iconic Western Australian landscape to produce a more 'European' or 'artificial' landscape.

One of the key adaptation strategies for the Swan Canning river system includes:

Protecting infrastructure by incorporating sea level rises of 0.1 – 0.3 m into the design, maintenance or replacement of roads, river jetties, boat pens and ramps, sea walls and groynes.

However, given the long term (50 years +/-) nature of predicted sea-level rises, and the expected typical life-span of concrete paths and asphalt paths (15-20 years), the concern over placement of paths in areas likely to be frequently inundated in future decades is perhaps over-stated.

Flood levels – much of the land alongside the Swan River is low-lying, flat and therefore flood-prone. Ideally, it would be preferable if the proposed new paths were never inundated by floodwaters. However, given the infrequency with which the Swan River now floods, and the fact that much of the existing path network along the Swan (and Canning) Rivers is susceptible to inundation, there seems no reason to locate future paths well away from the water's edge to avoid flood-prone land. Roads and paths around Perth already flood from time to time and, although a nuisance, has become accepted. To avoid all but the highest floods, future paths should be constructed on a raised embankment with careful design of culverts under the path to ensure floodwaters can easily drain away. There does not appear to be an overwhelming need to have paths situated well above future flood levels now.

5.6 Heritage Audit and Statement of Significance

The recently prepared *Heritage Audit and Statement of Significance* (2009) identifies more than 140 important natural, Nyoongar and Historic places of the Swan and Helena Rivers. (Note: not all of these 140+ sites are within the study area of the Swan and Helena Rivers Regional Recreational Path project. Of those that are, many of the sites are located away from the existing and proposed path network). Appendix 4 sets out the sites of relevance to the Swan and Helena Rivers Regional Recreational Path project. The table in Appendix 4 compiles the sites thought to be of direct bearing on the location of the Swan and Helena Rivers Regional Recreational Path. The table answers two main questions:

Is there an existing shared path already in place in the vicinity of the site recorded in the Heritage Audit?

Will the existing or proposed shared path need to deviate closer to, or deviate away from, the site recorded in the Heritage Audit?

The sites identified in the *Heritage Audit and Statement of Significance* have been taken into account when mapping path envelopes for the proposed new paths in the Swan and Helena Rivers Regional Recreational Path network.

These sites can be regarded in either of two ways: (1) places where proposed new paths should be constructed to enable users to travel close to the place to enable them to appreciate the place – especially if interpretation is to be placed at the site, or (2) places where paths/trails should deliberately not be constructed, in due respect to the significance of the site.

The *Heritage Audit* identified sixty Aboriginal sites, of which 21 are 'closed' sites and 39 are 'open' sites. Closed sites are considered to be of particular significance and information regarding these sites, including location, is restricted in recognition of their culturally sensitive nature.

In the course of preparing the *Heritage Audit and Statement of Significance* Nyoongar Elders were invited to respond to the 'priority trails' proposed in the Transplan Pty Ltd and Kulbardi Hill Consulting document *Perth's Eastern Region Swan River Trails Project*.

The *Heritage Audit and Statement of Significance* (p.47) records the following comments:

While encouraging greater understanding and appreciation of the river and its foreshores, the Elders highlighted some culturally sensitive locations to avoid and emphasised adherence to due process regarding the protection of Aboriginal sites.

Recommendations included avoiding culturally sensitive locations south west of Garrett Road bridge, at AP Hinds Reserve and particularly south east of Guildford Road Bridge as well as in the vicinity of Helena River.

In addition, the close proximity of trails to the rivers edge raised concerns. It was indicated that the waterways should not be disturbed in any way out of respect for Creative Being, Waugyl.

It was also indicated that before any development of proposed trails could be undertaken, that full consultation with Aboriginal informants would be required in accordance with Section 18 of the Aboriginal Heritage Act 1972 to consider whether consent should be given to the use of the land for the purpose sought. While this level of consultation is outside the scope of this project, it was specifically indicated for the proposed trail near the confluence of the Swan and Helena Rivers.

As this development plan for the Swan and Helena Rivers Regional Recreational Path only identifies path 'envelopes', each individual local government (when progressing the future development of sections of the pathway network) will need to undertake detailed investigations of suitable routes, and obtain the necessary approvals.

Several recommendations of the *Heritage Audit and Statement of Significance* (pp 6-7) are particularly relevant to this Development Plan. These are:

Recommendation 11: Development of trail interpretation of various kinds should be approached as part of a coherent interpretation program, communicating River themes as well as identifying places of local interest, their relationship to and impact on the Rivers.

Recommendation 14: It is important that the integrity of significant bushland is not compromised through intersection by active dual-use paths and trails. Proposed trails should have hard boundaries, and need to be directed towards the land side of the bushland, not the foreshore, to ensure that habitats and refuges are not disaggregated.

Recommendation 15: Trails involving any form of infrastructure (eg signage, pathways) must be environmentally friendly and sensitive to Indigenous cultural issues understood through consultation and research.

Recommendation 16: Any infrastructure or physical works for trails and other interpretation purposed should be the subject of Section 18 applications under the Aboriginal Heritage Act (1972) in order to minimise risk of cultural conflict or legal action during or after construction.

(Source: Swan and Helena Rivers Management Framework - Heritage Audit and Statement of Significance – Final Report - 27 January 2009 by Latitude Creative Services, Heritage and Conservation Professionals and The National Trust of Australia (WA) - Prepared for Eastern Metropolitan Regional Council)

6.0 – THE MISSING LINKS IN THE PATHWAY NETWORK

6.1 Town of Bassendean

Of the local governments within the study area, the Town of Bassendean has the least amount of pathway along the foreshore of the Swan River.

Some of the recommended Regional Recreational Path projects are possible to build immediately, while others will require the ongoing acquisition of foreshore land (reserved for Parks and Recreation in the Metropolitan Region Scheme) – or the use of an innovative solution such as floating boardwalks.

The still-missing sections of pathway within the Town of Bassendean (as recommended in this development plan) are as follows:

- Guildford Road Bridge to Point Reserve. (Note: a pathway exists along parallel road North Road);
- Point Reserve to Anstey Road. (Note: a pathway exists along parallel road North Road). Shared path facility could involve a substantial section of boardwalk over the river;
- Anstey Road to Pickering Park. (Note: a pathway exists along parallel roads North Road and Bassendean Parade);
- Pickering Park to Deakin Street. (Note: a pathway exists along parallel road Bassendean Parade);
- Deakin Street to Villiers Street. (Note: a pathway exists along parallel roads Bassendean Parade and West Road). Shared path facility could involve a substantial section of boardwalk over the river;
- Villiers Street to Sandy Beach Reserve. (Note: a pathway exists along parallel road West Road);
- Sandy Beach Reserve to Ashfield Flats (connecting with existing path); and
- Ashfield Parade (between French Street and Moojebing Street). (Note: this was the Town of Bassendean's priority trail project, as set out in *Perth's Eastern Region Swan Rivers Trails Project*). [Note: this path has recently been completed].

6.2 City of Bayswater

The City of Bayswater has the greatest length of riverfront and has the greatest amount of existing pathway in foreshore locations. Only several segments remain to be completed.

Some of the recommended Regional Recreational Path projects are possible to build immediately, while others will require the ongoing acquisition of foreshore land (reserved for Parks and Recreation in the Metropolitan Region Scheme).

The still-missing sections of pathway within the City of Bayswater (as recommended in this development plan) are as follows:

- Cloughton Reserve (between Moojebing Street – boundary with Town of Bassendean – and the Redcliffe Bridge). [Note: this was the City of Bayswater's priority trail project, as set out in *Perth's Eastern Region Swan Rivers Trails Project*];

- Riverside Gardens (connection between Slade Street and car park at river); and
- Between Kelvin Street and Bath Street. (Note: a pathway exists along parallel road Swan View Terrace). Shared path facility could involve a substantial section of boardwalk over the river.

6.3 City of Belmont

There are some significant missing sections of Regional Recreational Path along the eastern/southern bank of the Swan River in the City of Belmont.

The still-missing sections of pathway within the City of Belmont are as follows:

- Between Hay Road and Hilton Grove. (Note: a pathway exists along parallel road Fautleroy Ave). Shared path facility could involve a substantial section of boardwalk over the river. [Note: liability for structure, ongoing maintenance and obtaining relevant approvals are considerations];
- Connection between foreshore path and ramp to Redcliffe Bridge (near Roebourne Place) to replace existing, circuitous route using Roebourne Place and Locock St;
- Between The Esplanade (near the former Ascot Water Playground) and Ford Street, and between Ford Street and Ascot Place (Gould Reserve). [Note: this was part of the City of Belmont's priority trail project, as set out in *Perth's Eastern Region Swan Rivers Trails Project*]. Project can only proceed when foreshore reserve is in public ownership. In the interim, and until redevelopment of Ascot Inn site is completed, signage indicating detour using local streets will be required;
- Development of a pathway along the southern side of the 'antenna site' west of Garratt Road Bridge, between Samphire Street and Resolution Drive. [Note: this was part of the alternative project recommended in *Perth's Eastern Region Swan Rivers Trails Project*, should a decision be made to NOT proceed with the project between Ascot Inn and Ford Street]. By utilising high ground at southern end of site, alongside residences, no vegetation clearing will be required through this Bush Forever site. Consultation with adjoining residents will be required;
- Completion of the 'promenade' around the new Ascot Waters residential/marina complex (south of Tidewater Parade). [Note: path is to be completed during 2009 by developer]; and
- A short piece of path near the toilet block at the water ski parking area (near the boundary with the Town of Victoria Park).

6.4 City of Swan

There are some significant missing sections of Regional Recreational Path along the Swan and Helena Rivers in the City of Swan. The Department for Planning and Infrastructure has in recent years constructed a major section of pathway in the South Guildford locality, enabling (bicycle) users to access previously inaccessible sections of the river foreshore.

The still-missing sections of Regional Recreational Path within the City of Swan are as follows:

- Guildford Road Bridge to Johnson Street Bridge (along the eastern bank of the Swan River, past Kings Meadow Oval) and along the northern bank of the Helena River (utilising existing management tracks). [Note: this was part of the City of Swan's priority trail project, as set out in *Perth's Eastern Region Swan Rivers Trails Project*];
- Johnson Street Bridge to south-west end of Wilkie Street (utilising existing management tracks through the flood plain of the foreshore, including along the southern bank of the Helena River at Bridge Street);
- South-west end of Wilkie Street to northern end of Riverside Drive (utilising existing management tracks);
- Along Riverside Drive in South Guildford;
- Water's Edge Winery (this also was part of the City of Swan's priority trail project, as set out in *Perth's Eastern Region Swan Rivers Trails Project*); and
- Continuation of the foreshore pathway north of the Guildford Road Bridge (and under the railway bridge) to Fishmarket Reserve and on to Barkers Bridge (to link with the pathway along West Swan Road and the Guildford Heritage Trails Network). [Note: this section of proposed path is outside of study area].

7.0 - UPGRADING OF EXISTING PATHWAYS

Though there are numerous segments of path along both sides of the river, many of these paths have been in place for decades and have become inadequate for current and future use.

Some of these projects are possible immediately, while others will require the ongoing acquisition of foreshore land (reserved for Parks and Recreation in the Metropolitan Region Scheme).

7.1 *Town of Bassendean*

- Upgrading of path between existing boardwalk in Ashfield Flats to bottom of steps that lead up to Ashfield Parade.

7.2 *City of Bayswater*

- Widening of the relatively narrow concrete paths through Riverside Gardens (between Slade Street and Milne Street) from their current width of 2.0 metres to 3.0 metres.
- Widening of path over Garratt Road Bridge, from current width of 1.3 metres to at least 2.0m, with a desirable width of 3.0 metres. Cantilevering of proposed new pedestrian/cyclist bridge may be best option. (Note: Project lies between City of Bayswater and City of Belmont). [Note: Main Roads WA funding and approval would be required].

7.3 *City of Belmont*

- Upgrading of the existing boardwalk at the western end of Garvey Park. This boardwalk is 157 metres long, and is 1.6m wide. At 1.6m wide, this boardwalk is insufficient for shared use and must be widened to at least 2.5m (preferably 3.0m) wide to accommodate cyclists and pedestrians. [Note that this area is being upgraded over the next four years by the City of Belmont].
- Widening (replacement) of the narrow, broken paths alongside the river at the eastern end of Garvey Park. Some 302m of path requires upgrading and widening to 3.0m (176m of old concrete path and 126m old bitumen). This project would include upgrading (widening) of the existing 21m long boardwalk. [Note that this area is being upgraded over the next four years by the City of Belmont].
- Replace existing narrow (1.8m) asphalt path between Redcliffe Bridge and boardwalk with 3.0m wide path. [Note: Asphalt is recommended, and preferred by cyclists and pedestrians, though Council may prefer concrete].
- Replacement fencing of path alongside Ascot Racecourse to provide more effective width on this relatively narrow path. 'Re-configuring' the fence away from path edge will provide a seemingly wider path. In the long term, the widening of the path to 3.0m will be required, possibly by cantilevering the path out over the slope where possible (and avoiding/minimising removal of foreshore vegetation), or by relocation of the racecourse fence). An upgraded/wider path could be constructed during any future foreshore bank stabilisation project.

- Upgrading (replacement) of approximately 50m of broken/damaged sections of concrete path (through the grassed area) at the western end of Ascot Racecourse (towards Grandstand Road). [Note: 50m needing replacement is not continuous].
- Widen existing path (route shared with horses) where possible between The Esplanade and Forbes Street, and construct separate path alongside The Esplanade (road itself is currently used as the path route).
- Re-surfacing of 410m existing asphalt path (along Hay Rd alignment) will be required in the medium term. Path is deteriorating. (Note: this path segment is within both City of Swan and City of Belmont). [Note: Asphalt is recommended, and preferred by cyclists and pedestrians, though Councils may prefer concrete].
- Widening of path over Garratt Road Bridge, from current width of 1.3 metres to at least 2.0m, with a desirable width of 3.0 metres. Cantilevering of proposed new pedestrian/cyclist bridge may be best option. (Note: Project lies between City of Bayswater and City of Belmont). [Note: Main Roads WA funding and approval would be required].

7.4 City of Swan

- Install sealed (asphalt) surface on 150m limestone trail (2.5m wide) between Loder Way and existing bridge/path (in South Guildford locality).
- Connection between South Guildford path (constructed by DPI) and path between Hay Road and Great Eastern Highway. This project includes upgrading (widening) of the narrow boardwalk over the wetland south-west of the southern end of Beverley Terrace and sealing of the limestone trail between the asphalt path (north of Hay Rd) and the narrow boardwalk.
- Re-surfacing of 410m existing asphalt path (along Hay Rd alignment) will be required in the medium term. Path is deteriorating. (Note: this path segment is within both City of Swan and City of Belmont).
- Development of a trail system along the southern side of the Helena River, east of the Johnson Street Bridge, linking to Midland. [Note: this is outside of study area].
- Development of a trail system along the northern bank of the Helena River, east of the Johnson Street Bridge, linking to Helena Street and East Street. [Note: this is outside of study area].

Further detailed planning studies and design will be required to establish the exact route and alignment of these paths. As with many of the other proposed paths, development will be dependent on land being publicly owned and the ongoing acquisition of foreshore land (reserved for Parks and Recreation in the Metropolitan Region Scheme).

8.0 – DETERMINING PRIORITIES

Decisions need to be made regarding the order in which to develop this extensive (and relatively expensive) set of projects.

The principal aim should be to complete the network of riverside paths in as short a time as possible. This will involve the progressive, ongoing and constant implementation of the program. Depending on availability of funding, all missing sections of path could be constructed at the same time – or over a number of years.

An overall guiding principle in this development plan has been to complete, where possible, the missing links in the pathways network first before re-building, upgrading or widening old, substandard segments of path.

A first stage in the development program may be that of installing directional and distance (and other) signage.

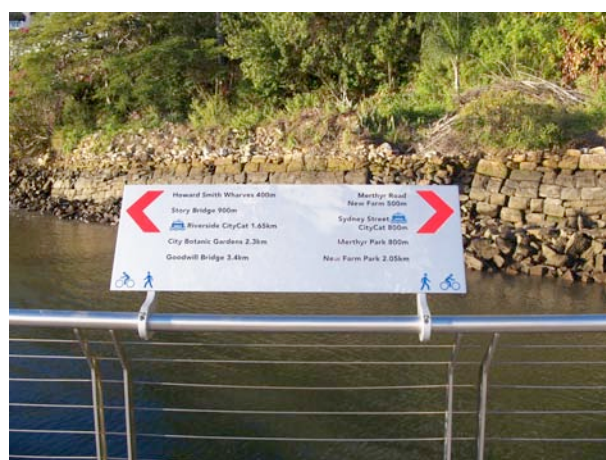
Ideally, the directional signposting would be installed at the time of the completion of the riverside pathway network. However, recognising that it may take many years for the entire network to be completed, the directional signposting could be installed at any time – even before any additional (missing) sections are constructed.

The sign plan that accompanies this report is, by necessity, very complicated and difficult to comprehend. It was exceptionally difficult to prepare. It has needed to take into account the need for a coherent sign plan for the network of paths (and sometimes circuitous detours) that currently exist, in the event that a decision is made to proceed with installation of signage now. It has also needed to take into account a variety of stages of development of the path network, recognising that some segments will proceed at different timeframes over the next 5 – 10 years, and the possibility that some segments may never be constructed.

In time, sections of pathway that exist now will need to be replaced and/or upgraded. As the network of existing paths has been progressively built over the last 20 – 30 years, the standard to which they were built and their condition varies considerably from today's standard of design and construction.

There are a number of factors that have influenced the determination of priorities for the ongoing development and upgrading of the path network along the Swan River:

- The location and extent of existing foreshore pathways/trails (i.e. what paths are already in place, how continuous and uninterrupted are they and where are the 'missing links' in the network?);



Directional signage is a key element of the high quality floating boardwalk on the Brisbane River. An innovative signage system is recommended for the Swan and Helena Rivers Regional Recreational Path.

- Strategic importance of the selected path segment (i.e. the degree to which the path segment completes a significant 'missing link' in the riverside pathway network);
- Relationship to the river (i.e. is the project close to or alongside the river, or will it be set back some distance from the river?);
- Potential for interpretation along the path (i.e. are there good opportunities for telling stories about the natural qualities of the river and/or the foreshore, or about indigenous life on and alongside the river, or stories of European exploration and settlement, and how might these stories enrich the experience of path users?);
- Community support (i.e. what does the community think is the highest priority path or trail?);
- Local government support (i.e. what are the views and opinions of the local government staff and elected officials, and what relevant projects are planned and how might these impact on the selection of priority path projects?);
- Ability of local governments to meet ongoing maintenance costs of any new path, facility or structure, and willingness of various organisations to accept the legal liability for any new structure or facility;
- The sustainability of paths and structures. For example, the impact of acid sulphate soils on paths and the impact of paths on the wetland areas and their drainage;
- Tenure of land (i.e. is the land over which the path project will pass in public or private ownership; and if in private ownership, what is the likelihood of it being acquired for public use and enjoyment?);
- Opportunities for, and willingness of, the Western Australian Planning Commission to purchase foreshore land reserved in the Metropolitan Region Scheme for Parks and Recreation (to enable development of the path); and
- Cost of the project (i.e. will the cost of construction of the path, or some element of it such as a bridge or boardwalk, make it financially unviable and cost prohibitive?).

Implementation of projects will also be impacted by the sometimes lengthy process for obtaining approvals. Various organisations will be involved in the approval process, including the Western Australian Planning Commission, the Swan River trust, each individual Council and the Aboriginal Cultural Materials Committee.

Of particular importance for any infrastructure or physical works proposed alongside or in the river (such as trails, pathways, boardwalks and/or interpretation) is the need for approvals under Section 18 of the Aboriginal Heritage Act (1972).

9.0 - TRAIL WORKS LISTS AND INDICATIVE COST ESTIMATES

The tables below set out the estimated costs for all works required to complete each of the recommended new paths and path/boardwalk upgrading projects.

These are only indicative costs. The brief for this project specifically excluded the need for detailed path plans and detailed costing information for works required to facilitate construction of the paths. (See notes at end of tables).

9.1 Town of Bassendean

| Project | Status | Indicative Cost | Priority |
|--|-----------|--------------------|----------|
| Ashfield Parade (between French Street and Moojebing Street). (Note: this was the Town of Bassendean's priority trail project, as set out in <i>Perth's Eastern Region Swan Rivers Trails Project</i>). | Completed | n/a | 1 |
| Sandy Beach Reserve to Ashfield Flats (connecting with existing path). [240 metres path] | Missing | \$43,200 | 2 |
| Guildford Road Bridge to Point Reserve. (Note: pathway exists along parallel road North Road). [500 metres path] | Missing | \$90,000 | 3 |
| Villiers Street to Sandy Beach Reserve. (Note: pathway exists along parallel road West Road). [400 metres path] | Missing | \$72,000 | 4 |
| Anstey Road to Pickering Park. (Note: pathway exists along parallel roads North Road and Bassendean Parade). [240 metres path; 200 metres boardwalk] | Missing | \$443,200 | 5 |
| Path between boardwalk in Ashfield Flats to bottom of steps that lead up to Ashfield Parade. [220 metres path] | Upgrading | \$39,600 | 6 |
| Pickering Park to Deakin Street. (Note: pathway exists along parallel road Bassendean Parade). [320 metres path] | Missing | \$57,600 | 7 |
| Deakin Street to Villiers Street. (Note: pathway exists along parallel roads Bassendean Parade and West Road). [330 metres path; 320 metres boardwalk] | Missing | \$699,400 | 8 |
| Point Reserve to Anstey Road. (Note: pathway exists along parallel road North Road). [300 metres path; 250 metres boardwalk] | Missing | \$554,000 | 9 |
| Total (not including GST) | | \$1,999,000 | |

9.2 City of Bayswater

| | | | |
|---|-----------|--------------------|---|
| Claughton Reserve (between Moojebing Street – boundary with Town of Bassendean – and the Redcliffe Bridge). (Note: this was the City of Bayswater's priority trail project, as set out in <i>Perth's Eastern Region Swan Rivers Trails Project</i>). [480 metres path] | Missing | \$96,000 | 1 |
| Riverside Gardens (connection between Slade Street and car park at river). [160 metres path] | Missing | \$28,800 | 2 |
| Between Kelvin Street and Bath Street. (Note: pathway exists along parallel road Swan View Terrace). [390 metres path; 140 metres boardwalk] | Missing | \$350,200 | 3 |
| Widening of path over Garratt Road Bridge, from current width of 1.3 metres to a desirable width of 3.0 metres. (Project lies between City of Bayswater and City of Belmont). | Upgrading | \$480,000 | 4 |
| Widening of the relatively narrow concrete paths through Riverside Gardens (between Slade Street and Milne Street) from their current width of 2.0 metres to 3.0 metres. [1,020 metres] | Upgrading | \$102,000 | 5 |
| Total (not including GST) | | \$1,057,000 | |

9.3 City of Belmont

| | | | |
|--|---------|----------------------|---|
| Development of a pathway along the southern side of the 'antenna site' west of Garratt Road Bridge, between Samphire Street and Resolution Drive. (Note: this was part of the alternative project recommended in <i>Perth's Eastern Region Swan Rivers Trails Project</i> , should a decision be made to NOT proceed with the project between Ascot Inn and Ford Street). [630 metres path – includes widening of 100 metres of existing 1.5m wide path] | Missing | \$136,000 | 1 |
| Between The Esplanade (near the former Ascot Water Playground) and Ford Street, and between Ford Street and Ascot Place (Gould Reserve). (Note: this was part of the City of Belmont's priority trail project, as set out in <i>Perth's Eastern Region Swan Rivers Trails Project</i>). [595 metres path] | Missing | \$107,100 | 2 |
| Completion of the 'promenade' around the new Ascot Waters residential / marina complex | Missing | Developer to provide | 3 |

| | | | |
|---|-----------|--------------------|----|
| (south of Tidewater Parade). [220 metres, plus ramp to Tidewater Parade] | | | |
| Short piece of path near the toilet block at the water ski parking area. [25 metres path] | Missing | \$4,500 | 4 |
| Between Hay Road and Hilton Grove. (Note: pathway exists along parallel road Fauntleroy Ave). [580 metres boardwalk] | Missing | \$1,160,000 | 5 |
| Widening (replacement) of the narrow, broken paths alongside the river at the eastern end of Garvey Park. Some 302m require upgrading (176m of old concrete path and 126m old bitumen). This project would include upgrading of the 21m long boardwalk. [300 metres path] | Upgrading | \$69,000 | 6 |
| Upgrading (or replacement) of the existing boardwalk at the western end of Garvey Park. This boardwalk is 157 metres long, and is 1.6m wide. At 1.6m wide, this boardwalk is insufficient for shared use and must be widened to accommodate cyclists and pedestrians – needs to be at least 2.5m wide. [160 metres boardwalk] | Upgrading | \$192,000 | 7 |
| Connection between foreshore path and ramp to Redcliffe Bridge (near Roebourne Place). [120 metres path] | Missing | \$21,600 | 8 |
| Replacement fencing of path alongside Ascot Racecourse to provide more effective width on this relatively narrow path. [620 metres] | Upgrading | \$31,000 | 9 |
| Widen existing path (route shared with horses) between The Esplanade and Forbes Street, and construct separate path alongside The Esplanade (currently used as path route). [130 metres path] | Upgrading | \$23,400 | 10 |
| Replacement of 50 metres concrete path at western end of Ascot Racecourse, through grassed area (towards Grandstand Road). [50 metres path] | Upgrading | \$9,000 | 11 |
| Widening of the path alongside Ascot Racecourse, possibly by cantilevering the path out over the slope, or by relocation of the racecourse fence). | Upgrading | \$1,240,000 | 12 |
| Total (not including GST) | | \$2,993,600 | |

9.4 City of Swan

| | | | |
|---|-----------|------------------|----|
| Guildford Road Bridge to Johnson Street bridge (along the eastern bank of the Swan River, past Kings Meadow Oval) and along the northern bank of the Helena River. Path to follow existing vehicle (management) track along northern side of Helena River – no vegetation clearing required. (Note: this was part of the City of Swan's priority trail project, as set out in <i>Perth's Eastern Region Swan Rivers Trails Project</i>). [1,030 metres path] | Missing | \$203,350 | 1 |
| Water's Edge Winery (this also was part of the City of Swan's priority trail project, as set out in <i>Perth's Eastern Region Swan Rivers Trails Project</i>). [150 metres path] | Missing | \$28,500 | 2 |
| Upgrading (widening) of the narrow boardwalk over the wetland south-west of the southern end of Beverley Terrace. [40m boardwalk] | Upgrading | \$40,000 | 3 |
| South-west end of Wilkie Street to Riverside Drive – no vegetation clearing required. [560 metres path] [See note ** below] | Missing | \$107,200 | 4 |
| Connection between South Guildford path (constructed by DPI) and path between Hay Road and Great Eastern Highway (includes sealing of the limestone trail between the asphalt path (north of Hay Rd) and the narrow boardwalk). [170 metres path] | Missing | \$30,600 | 5 |
| Johnson Street Bridge to south-west end of Wilkie Street. Path to follow existing vehicle (management) tracks through this area – no vegetation clearing required. [1,080 m path] | Missing | \$194,400 | 6 |
| Along Riverside Drive – no vegetation clearing required. [320 metres path] [See note ** below] | Missing | \$51,200 | 7 |
| Construct 150m asphalt path (2.5m wide) between Loder Way and existing bridge/path. [150 metres path] | Upgrading | \$15,000 | 8 |
| Continuation of the foreshore pathway north of the Guildford Road Bridge (and under the railway bridge) to Fishmarket Reserve and on to Barkers Bridge (to link with the pathway along West Swan Road and the Guildford Trails Network). | Missing | n/a | 9 |
| Re-surfacing existing asphalt path (along Hay Rd alignment) will be required in the medium term. [410 metres path] | Upgrading | \$41,000 | 10 |
| Total (not including GST) | | \$711,250 | |

Notes:

1. The cost estimates above are based on recent relevant construction costs from other trail, pathway and boardwalk projects around Australia (as obtained by Transplan Pty Ltd). Real-life costs will depend on a number of factors, including the state of the economy, the extent of 'advertising' of construction tenders, the availability and competitiveness of contractors, the rise and fall in materials costs, the choice of materials used in construction and final design details. Tenders submitted by construction contractors may vary significantly from the estimated costs in the tables contained within this report.
2. Considerable savings can be made by Council's undertaking the construction work 'in-house' rather than using contractors.
3. A rate of \$180-\$190/metre (for a 3m wide asphalt path) has been used (will vary depending on local situation).
4. A rate of \$2,000/metre (for a 3m wide boardwalk) has been used.
5. A rate of \$100/metre has been used where upgrading/widening of a path is required.

*** The City of Swan has advised of its preference for the alignment north of Water's Edge Winery to be on-road, following Riverside Drive, Kingsley Drive and Riverview Avenue and thence to the foreshore via a City of Swan drain reserve. The stated reasons are that the area is a regionally environmentally sensitive area (being part of Bush Forever Site #491 and System 6 area M4 South Guildford Backwater). The City has also advised of likely opposition from local residents to a path being constructed between their residences and the river, and the occasional inundation of the area. It is also likely that, as well as the need for the path to be built on fill, there may be a need for sections of boardwalk to be constructed. Fire is also a threat. The City sees no harm to the overall Regional Recreational Path for there to be a relatively short on-road section. The City advises that these local roads carry low volumes of traffic. The City has also advised of the need for various approvals (DEC, Swan River Trust, Aboriginal Cultural Materials Committee). Further detailed analysis of the impacts of the path alignment recommended in this Trail Development Plan (and the on-road route suggested by the City of Swan) will be required as/when this section is due for construction/implementation.*

The alternative (on-road) route suggested by the City of Swan has been shown on Plan 5.

9.5 Signage Costs

A significant component of the project will be the design, manufacturing and installation of signage along the Regional Recreational Path.

Signage of the existing pathway network (although it is not continuous, and has several major detours) can be undertaken immediately, prior to any additional path segments being constructed. The signage plan makes allowance for the installation of signage now, as well as at various intervals in the future as/when additional paths are completed.

The costs below make no allowance for the various elements of the interpretation which may be installed in the future. (The various elements of the interpretation project would include: review of existing interpretation along the paths, research, writing, sourcing of graphics, graphic design, manufacturing, transport and installation). Sign styles 1 and 2 make allowance for the installation of an interpretive panel (module) in the future.

| Task/Element | Number Required | Unit Cost* | Estimated Costs* |
|--|------------------------|-------------------|-------------------------|
| Contract industrial designer to design signage structure and modules | | | \$10,000 |
| Sign style 1 | 17 | \$4,800* | \$81,600 |
| Sign style 2 | 74 | \$3,800* | \$281,200 |
| Sign style 3 | 65 | \$800* | \$52,000 |
| Total (not including GST) | | | \$424,800 |

** Note: costs per sign are estimates only. Accurate costs can only be determined once the sign style has been designed and quotes obtained from sign manufacturers in a competitive tendering situation. These estimates take into account economies of scale, assuming that a bulk order is made for the signs – rather than a series of smaller orders for individual signs.*

9.6 Total Costs

The table below summarises the expected costs within each local government and the expected signage costs, to give a total for the completion of the Regional Recreational Path network between Windan Bridge and the Guildford Road Bridge. These totals do not include any costs associated with purchasing of riverfront land reserved for Parks and Recreation in the Metropolitan Region Scheme.

| Local Government / Element | Expected Cost |
|-----------------------------------|----------------------|
| Town of Bassendean | \$1,999,000 |
| City of Bayswater | \$1,057,000 |
| City of Belmont | \$2,993,600 |
| City of Swan | \$711,250 |
| Signage | \$424,800 |
| Total (not including GST) | \$7,185,650 |

10.0 - PATH DESIGN AND DEVELOPMENT CONSIDERATIONS

10.1 General Design Considerations

This section of the Report addresses a series of matters relating to path design and development – to achieve trails/paths that are constructed with minimal disturbance to the natural environment, are sustainable and that require minimal maintenance.

10.1.2 Trail Width and Height

To function effectively the proposed Regional Recreational Paths must have a minimum width of 2.5 metres – to cater for existing and future usage levels. It may even be appropriate to construct the paths at a width of 3.0 metres – as is commonly the case for recreational paths in locations of high usage. It is highly inappropriate to construct new paths below the recommended 2.5 metres. Doing so will render the paths immediately inadequate. These widths comply with the Shared-Use Path dimensions (Table 6-3) of *Austrroads' Guide*

to Traffic Engineering Practice – Pt 14 – Bicycles (1999).

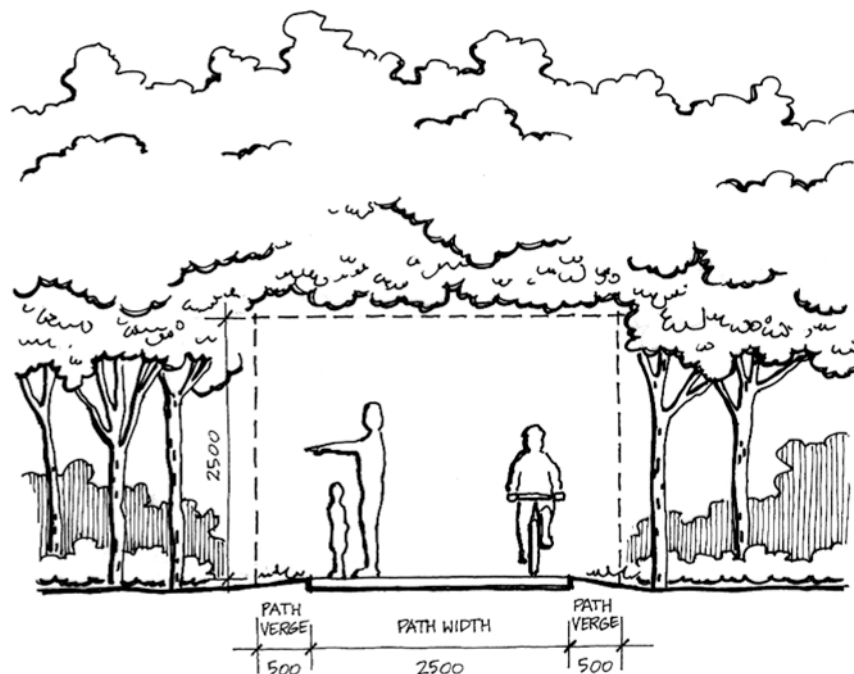
The expected usage levels will mean fewer opportunities for conflicts to occur between users on paths in excess of 2.5 metres wide.

As the intention is to create a continuous pathway network, maintaining consistency of width is important – particularly as cyclists are likely to be the main

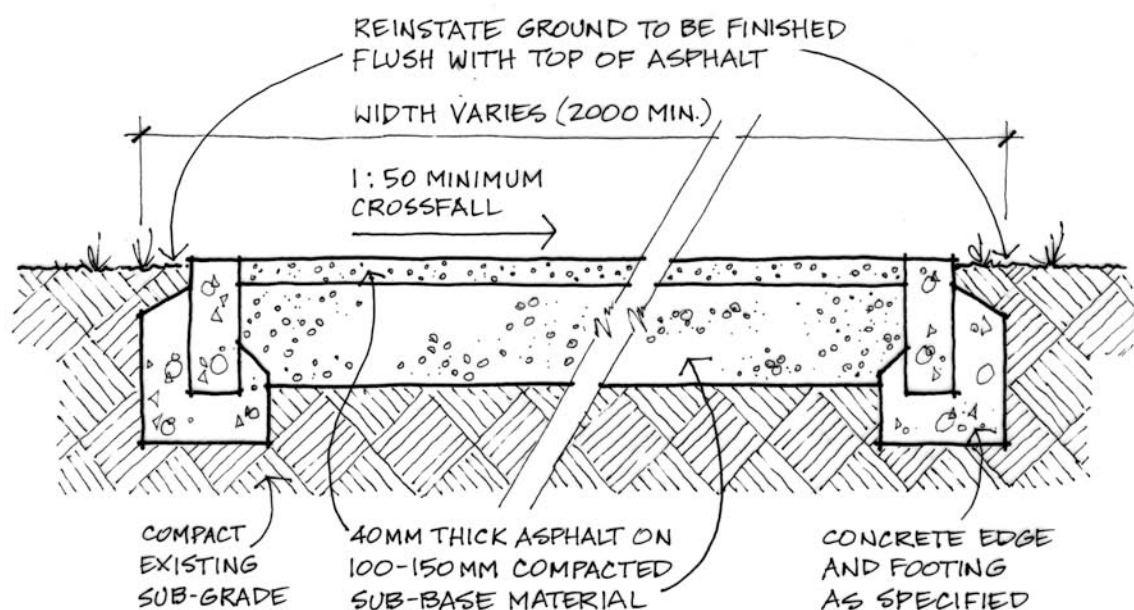
user group undertaking the entire pathway network. As it is important to ensure that the entire pathway is available for a wide range of users (including people with disabilities, parents with prams, etc) rather than having the paths solely for able-bodied walkers, the path should have a minimum width of 2.5m.

People in wheelchairs, and cyclists, need ample space to pass each other without having to divert off a path or trail.

As the pathways are to be used for walking and cycling, height clearance should be around 2.5 metres. Pruning of overhanging branches should occur where necessary to enable safe passage without the need for stooping under branches.



SHARED USE PATH - GENERAL CHARACTERISTICS



ASPHALT PATH : CROSS-SECTION

10.1.3 Path Surface Material

The recommended path material is asphalt. A red oxide can be added to hot mix to produce an aesthetically pleasing colour – but at a cost. If desired, concrete can be used though is not the preferred choice by cyclists and pedestrians. Concrete can be coloured and can have an attractive textured surface. It can also be laid in a manner that minimises the need for expansion joints. The recommended pathways will add significantly to the Swan River Trails network, which will become a high profile trail, attracting thousands of users including international tourists. Choice of an attractive material and surface is critical.

10.1.4 Erosion Control

Proper drainage is of considerable importance in constructing a lasting, maintenance-free facility. The recommended paths are along river foreshores and accordingly will in some cases be in relatively low-lying, flat locations prone to flooding. It may be necessary in some locations to construct the pathways on raised embankments, with ample culverts underneath to allow stormwater to disperse.

10.1.5 Trail Furniture

The proposed paths, being alongside the picturesque Swan River, are located in areas with scenic viewpoints and interesting outlooks, and already there are numerous locations where trailside furniture has already been placed, which will benefit all path users. The detailed design of each new section of path should give consideration to the installation of additional seats, benches, picnic tables and shelters.

Rubbish bins, seating and doggy bags could be placed near informative signage (style 1 and 2).

10.2 Signage

Signage is another important facet of the proposed Swan and Helena Rivers Regional Recreational Paths network where improvements could occur. During fieldwork it was noted that few directional markers exist along the existing pathways, and trailhead signage was basic – if present at all. Few, if any, 'promotional' signs exist. To successfully navigate along the entire length of the pathway network, given the current discontinuous nature of the network, users must carry good mapping or have a good knowledge of where they are going. Most path users would not be equipped with maps. Being able to follow the route therefore is a major issue.

Several kinds of signage are required along the path network including distance, directional, warning, promotional, etiquette and interpretive signs. Signage should be standardised across the entire Swan River Trails network, regardless of management agency or local government.

It is recommended that the "Swan River Trail" have a consistent colour scheme and consistent and uniform logo throughout its length, regardless of management agency or local government. The use of distinctive path signage with a distinguishing symbol or logo and colour scheme is important throughout the "Swan River Trail". Doing so will engender a sense of uniqueness.



High profile trails and pathways are beginning to exhibit 'up-market' directional and distance signposting. The above example, from the Gold Coast Oceanway, is one such example.

It is noted that local governments in the study area have their own signage styles (for trailheads, directional marking and/or interpretation). The emphasis of the approach outlined in this report is to create a unique signage style for the "Swan River Trail" across the local governments in the study area – regardless of their pre-existing signage styles and standards. The experience gained in the region in the design of appropriate signage can be drawn upon.

Directional signage along the entire length of the "Swan River Trail" needs to be more evident, to enable inexperienced trail users to feel confident and comfortable.

Appendix 3 provides a comprehensive and detailed sign log for both sides of the river. As indicated earlier, the sign plan that accompanies this report is, by necessity, very complicated and difficult to comprehend. It has needed to take into account the need for a coherent sign plan for the network of paths (and circuitous detours) that currently exist, in the event that a decision is made to proceed with installation of signage now. It has also needed to take into account a variety of stages of development of the path network, recognising that some segments will proceed at different timeframes over the next 5 – 10 years, and the possibility that some segments may never be constructed.

10.2.1 Directional and Distance Signage

Signs need to be placed at regular intervals along all trails – particularly at corners and junctions. The proposed Swan River Trail network will attract novice (inexperienced) walkers and cyclists, and tourists and it is considered appropriate to install markers at closer intervals than would normally be the case. Consultation with each local government over the precise location of each individual sign and the content of each sign is recommended. This task would need to be coordinated by a project manager.

The accompanying designs are indicative only but represent one way of signposting a facility that is set to become a major drawcard, one that will attract significant usage both from local people and interstate and international visitors.

As the intent is to create an iconic attraction, the emphasis should be to create a sign style that is unique, high quality, durable, vandal/graffiti resistant, functional and attractive.

The sign style (structure) recommended is indicative only. It is recommended that the EMRC specifically commission an industrial designer (specialising in signage) to design a signage system that fulfils all of the requirements for this project including a logo module, a map module, a destinations/distances/directional arrows module, an interpretation module, an etiquette module and a regulatory module (Give Way, Stop, Shared Path), attractions module (toilets, kiosks, etc). (See Appendix 2 for suggested sign styles).

10.2.2 Interpretive Signage

The sign style (structure) recommended in this project makes allowance for interpretive panels to be included as one of the 'modules' on the structure – or even on a stand-alone structure.

10.2.3 Other Attractions and Facilities Signage

Signs should be installed along the trail clearly directing visitors and trail users to other attractions which may be located nearby (such as Water's Edge Winery), as well as to facilities such as toilets and water fountains.

The sign style (structure) recommended in this project makes allowance for 'attractions' and 'facilities' panels to be included as one of the 'modules' on the structure.

10.3 Safety Considerations

10.3.1 User Etiquette Signage (Code of Conduct)

One of the most significant safety issues is that which relates to possible conflicts between different types of path users - for example, between cyclists and walkers. Effective 'etiquette' signage, as used elsewhere on the shared path network around Perth, will greatly limit this potential problem. The location of this type of signage should be considered as part of the recommended directional/distance sign plan.

User etiquette signage should be installed at trailheads, and at regular intervals along the path network, in recognition of the expected pattern of use by walkers, cyclists and people with disabilities. These signs should inform all groups about their rights and responsibilities.

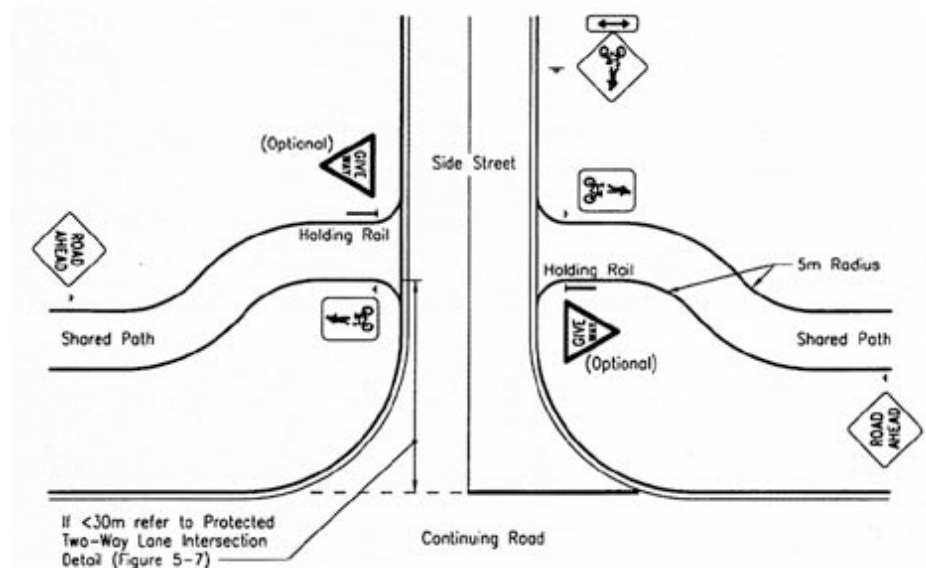
The sign style (structure) recommended in this project makes allowance for 'user etiquette' panels to be included as one of the 'modules' on the structure.

10.3.2 Road Crossing Signage

Road crossings present one of the other significant safety issues.

To facilitate a high level of information - and therefore a high level of safety and amenity - standard signs (as set out in *Austrroads Guide to Traffic Engineering Practice – Pt 14 – Bicycles*) should be used along the paths. Each style of sign serves a distinct and different purpose, and each has a specific location at which it will best serve its intended purpose, as illustrated on the Road Crossing drawings.

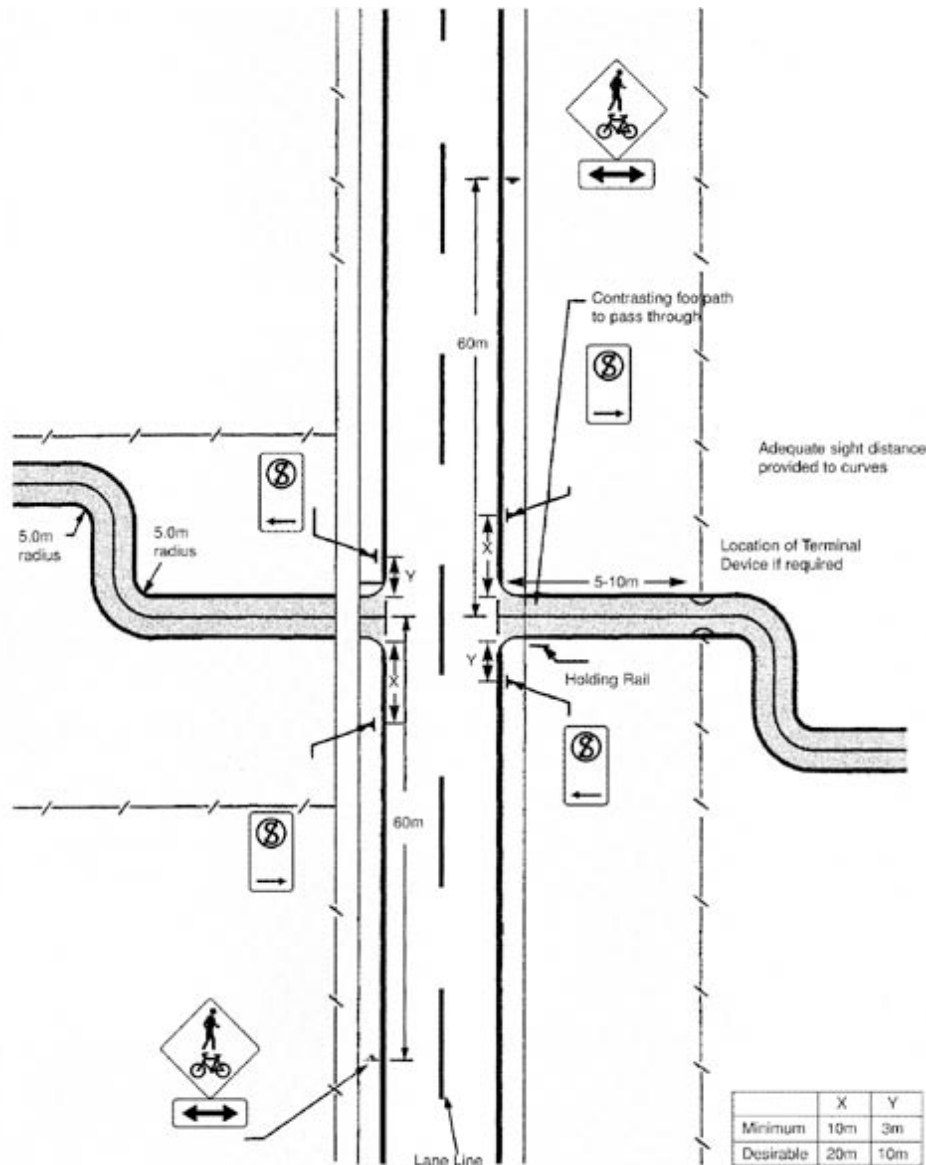
In most cases, a crossing of a minor road will necessitate the use of a standard "Give Way" symbol. The sign style (structure) recommended in this project makes allowance for "Give Way" symbols to be included as one of the 'modules' on the structure.



Intersection of Shared Path at Side Street – Preferred Treatment (*Minor Crossing*)

Source: *Austrroads Guide to Traffic Engineering Practice – Pt 14 – Bicycles* (1999): Figure 6-35 Page 97

In a few instances, a "Stop" sign and "Road Ahead" sign will be required where the path crosses a major road. Again, the sign style (structure) recommended in this project makes allowance for "Stop" and "Road Ahead" symbols to be included as one of the 'modules' on the structure.



Preferred Treatment of Road/Path Intersection (**Major Crossing**)

Source: Austroads Guide to Traffic Engineering Practice – Pt 14 – Bicycles (1999): Figure 6-29 Page 93

The drawings (from *Austroads Pt 14*) illustrate typical minor and major road crossing treatments, and set out the ideal placement of signs at a minor road crossing and a major road crossing.

10.4 Trailheads and Parking

Given that the much of the usage of the Regional Recreational Path is likely to come from local people and visitors to the river from other areas of Perth, formal 'trailheads' are not as critical to the success of the path network as they are on other trails.

However, trailheads do serve a useful purpose, and designated sites will need to be identified along the entire Regional Recreational Path network and they will need to be clearly marked on maps and promotional material.

It is valuable to have a defined location for a large interpretive/information/mapping display, from which all directions and distances are taken, and to which users from further away can be directed.

As is the case for the other sign styles to be installed along the pathways, the sign style (structure) recommended in this project will enable the placement of trail maps and other trailhead information as a 'module'.

11.0 – THE ACTION PLAN

In view of the EMRC's primary role to date in the preparation of both the Swan and Helena River Management Framework (SHRMF) and this project, and its responsibility and commitment to working collaboratively to achieve the vision to "make the eastern metropolitan region a great place to live, work, play and do business", it is suggested that the EMRC continue to be the lead agency in coordinating the implementation phase.

The following table encapsulates the necessary stages to move this project towards implementation:

| Action | By Whom |
|--|---|
| Refer this report to: <ul style="list-style-type: none"> Each of the 4 member Councils. Ask members Councils to endorse the report and to consider inclusion of funds in their future budgets for implementation of the projects within their municipalities, and inclusion of relevant projects in their works programmes. Department for Planning and Infrastructure with request to proceed with negotiations regarding acquisition of foreshore reserved land where appropriate. | EMRC |
| Refer this report to key indigenous groups and engage with key indigenous stakeholders in the ongoing implementation of the proposed riverside path network and the ongoing development of the interpretation plan. | EMRC |
| Refer this report to the Town of Victoria Park and the Town of Vincent for review of projects and signage that have implications for these two municipalities. | EMRC |
| Refer this report to the Swan River Trust with a request that it comment specifically on the possibility of floating boardwalks at several locations within the study area. | EMRC |
| Commission an industrial designer to design the suggested signage structure. | EMRC |
| Seek funding for the manufacturing and installation of distance, directional, interpretive and other signage for the regional recreational path (as it currently exists). | EMRC |
| Prepare funding applications to relevant organisations for construction of the pathways and/or boardwalks. | EMRC in conjunction with local governments and other project partners |
| Consider the recommendations of the <i>Heritage Audit and Statement of Significance (January 2009)</i> when implementing this report in relation to Aboriginal consultation and the development of an interpretation plan. | EMRC in conjunction with local governments and other project partners |
| Western Australian Planning Commission to take action to acquire those portions of the privately owned foreshore (reserved for Parks and Recreation in the Metropolitan Region Scheme) necessary for successful implementation of the Swan and Helena Rivers Regional Recreational Path. | Department for Planning and Infrastructure |

Prepare and submit development applications to the Swan River Trust and the Aboriginal Cultural Materials Committee under Section 18 of the Aboriginal Heritage Act 1972 where necessary, for each trail construction project when appropriate (or for the entire Swan and Helena Rivers Regional Recreational Path).

Local governments

APPENDIX 1 – DESTINATIONS, DIRECTIONS AND DISTANCES

North Side of River

| <i>Sign Location</i> | <i>Face</i> | <i>Destinations</i> | <i>Arrow</i> | <i>Distance</i> |
|-----------------------------|--------------------|-----------------------------|---------------------|------------------------|
| N5 | West | Success Hill | ← | 0.7 |
| | | Point Reserve | → | 0.4 |
| | | Garratt Road Bridge | → | 8.3 |
| | | Barrack Street Jetty | → | 21.3 |
| N5 | South | Success Hill | ↑ | 0.7 |
| | | Guildford Road Bridge | ← | 0.1 |
| | | Bassendean | ← | 1.2 |
| | | Stirling Square - Guildford | ← | 1.4 |
| N5 | North | Guildford Road Bridge | → | 0.1 |
| | | Bassendean | → | 1.2 |
| | | Stirling Square - Guildford | → | 1.4 |
| | | Point Reserve | ↑ | 0.4 |
| N8 | North | Bassendean | → | 1.1 |
| | | Redcliffe Bridge | ↑ | 5.7 |
| | | Garratt Road Bridge | ↑ | 7.9 |
| | | Barrack Street Jetty | ↑ | 20.9 |
| N8 | South | Bassendean | ← | 1.1 |
| | | Guildford Road Bridge | ↑ | 0.5 |
| | | Success Hill | ↑ | 1.1 |
| | | Stirling Square - Guildford | ↑ | 1.8 |
| N8 | West | Success Hill | ← | 1.1 |
| | | Stirling Square - Guildford | ← | 1.8 |
| | | Garratt Road Bridge | → | 7.9 |
| | | Barrack Street jetty | → | 20.9 |
| N14 | South West | Point Reserve | ↑ | 1.5 |
| | | Guildford Road Bridge | ↑ | 2.1 |
| | | Success Hill | ↑ | 2.8 |
| | | Stirling Square - Guildford | ↑ | 3.4 |
| N15 | North East | Sandy Beach Reserve | ↑ | 1.6 |
| | | Redcliffe Bridge | ↑ | 4.3 |
| | | Garratt Road Bridge | ↑ | 6.4 |
| | | Barrack Street Jetty | ↑ | 19.4 |
| N27 | North West | Point Reserve | ← | 3.2 |
| | | Guildford Road Bridge | ← | 3.7 |
| | | Redcliffe Bridge | → | 2.6 |
| | | Barrack Street Jetty | → | 17.7 |

| | | | | |
|-----|------------|-----------------------------|---|------|
| N27 | North East | Claughton Reserve | ↑ | 1.9 |
| | | Redcliffe Bridge | ↑ | 2.6 |
| | | Garratt Road Bridge | ↑ | 4.8 |
| | | Barrack Street Jetty | ↑ | 17.7 |
| N27 | South West | Pickering Park | ↑ | 1.6 |
| | | Point Reserve | ↑ | 3.2 |
| | | Guildford Road Bridge | ↑ | 3.7 |
| | | Stirling Square - Guildford | ↑ | 5.0 |
| N29 | East | Hardy Street | → | 0.3 |
| | | Claughton Reserve | ↑ | 1.0 |
| | | Redcliffe Bridge | ↑ | 1.7 |
| | | Barrack Street Jetty | ↑ | 16.9 |
| N29 | West | Hardy Street | ← | 0.3 |
| | | Sandy Beach Reserve | ↑ | 0.9 |
| | | Guildford Road Bridge | ↑ | 4.6 |
| | | Stirling Square - Guildford | ↑ | 5.0 |
| N29 | North | Claughton Reserve | → | 1.0 |
| | | Barrack Street Jetty | → | 16.9 |
| | | Sandy Beach Reserve | ← | 0.9 |
| | | Stirling Square - Guildford | ← | 5.0 |
| N36 | West | Riverside Gardens | → | 2.2 |
| | | Barrack Street Jetty | → | 15.8 |
| | | Sandy Beach Reserve | ← | 1.9 |
| | | Stirling Square - Guildford | ← | 6.9 |
| N36 | North | Redcliffe Bridge | ↑ | 0.7 |
| | | Riverside Gardens | ↑ | 2.2 |
| | | Garratt Road Bridge | ↑ | 2.9 |
| | | Barrack Street Jetty | ↑ | 15.8 |
| N36 | South | Sandy Beach Reserve | ↑ | 1.9 |
| | | Point Reserve | ↑ | 5.0 |
| | | Guildford Road Bridge | ↑ | 5.6 |
| | | Stirling Square | ↑ | 6.9 |
| N45 | North | Garratt Road Bridge | → | 1.3 |
| | | Barrack Street Jetty | → | 14.2 |
| | | Redcliffe Bridge | ← | 0.9 |
| | | Stirling Square - Guildford | ← | 8.5 |
| N49 | East | Garratt Road Bridge | ↑ | 0.7 |
| | | Bardon Park | ↑ | 7.0 |
| | | Windan Bridge | ↑ | 8.9 |
| | | Barrack Street Jetty | ↑ | 13.6 |

| | | | | |
|-----|-------|-----------------------------|---|------|
| N49 | West | Redcliffe Bridge | ↑ | 1.5 |
| | | Sandy Beach Reserve | ↑ | 4.1 |
| | | Guildford Road Bridge | ↑ | 7.8 |
| | | Stirling Square - Guildford | ↑ | 9.1 |
| N49 | North | Garratt Road Bridge | → | 0.7 |
| | | Barrack Street Jetty | → | 13.6 |
| | | Redcliffe Bridge | ← | 1.5 |
| | | Stirling Square - Guildford | ← | 9.1 |
| N56 | East | Garratt Road Bridge | → | 0.1 |
| | | Bardon Park | ↑ | 6.4 |
| | | Windan Bridge | ↑ | 8.2 |
| | | Barrack Street Jetty | ↑ | 12.9 |
| N56 | West | Garratt Road Bridge | ← | 0.1 |
| | | Riverside Gardens | ↑ | 0.7 |
| | | Redcliffe Bridge | ↑ | 2.2 |
| | | Stirling Square - Guildford | ↑ | 9.8 |
| N56 | North | Riverside Gardens | ← | 0.7 |
| | | Redcliffe Bridge | ← | 2.2 |
| | | Windan Bridge | → | 8.2 |
| | | Barrack Street Jetty | → | 12.9 |
| N69 | North | Bardon Park | ↑ | 3.8 |
| | | Banks Reserve | ↑ | 5.1 |
| | | Windan Bridge | ↑ | 5.7 |
| | | Barrack Street Jetty | ↑ | 10.4 |
| N69 | South | Tranby House | ↑ | 0.8 |
| | | Garratt Road Bridge | ↑ | 2.8 |
| | | Redcliffe Bridge | ↑ | 5.0 |
| | | Stirling Square - Guildford | ↑ | 12.7 |
| N71 | East | Bardon Park | ↑ | 2.7 |
| | | Banks Reserve | ↑ | 4.0 |
| | | Windan Bridge | ↑ | 4.5 |
| | | Barrack Street Jetty | ↑ | 9.3 |
| N71 | West | Tranby House | ↑ | 1.6 |
| | | Garratt Road Bridge | ↑ | 3.6 |
| | | Redcliffe Bridge | ↑ | 5.9 |
| | | Stirling Square - Guildford | ↑ | 13.5 |
| N79 | East | Banks Reserve | ↑ | 1.3 |
| | | Windan Bridge | ↑ | 1.8 |
| | | Claisebrook | ↑ | 2.5 |
| | | Barrack Street Jetty | ↑ | 6.6 |

| | | | | |
|-----|-------|-----------------------------|---|------|
| N79 | West | Tranby House | ↑ | 4.3 |
| | | Garratt Road Bridge | ↑ | 6.4 |
| | | Redcliffe Bridge | ↑ | 8.5 |
| | | Stirling Square - Guildford | ↑ | 16.2 |
| N80 | North | Windan Bridge | ↑ | 0.6 |
| | | Claisebrook | ↑ | 1.2 |
| | | Causeway | ↑ | 2.9 |
| | | Barrack Street Jetty | ↑ | 5.3 |
| N80 | South | Bardon Park | ↑ | 1.3 |
| | | Garratt Road bridge | ↑ | 7.6 |
| | | Redcliffe Bridge | ↑ | 9.8 |
| | | Stirling Square - Guildford | ↑ | 17.4 |
| N81 | North | City | → | |
| | | Windan Bridge | → | 0.2 |
| | | Claisebrook | ↑ | 0.7 |
| | | Barrack Street Jetty | ↑ | 4.7 |
| N81 | South | City | ← | |
| | | Windan Bridge | ← | 0.2 |
| | | Garratt Road Bridge | ↑ | 8.2 |
| | | Stirling Square - Guildford | ↑ | 18.0 |
| N81 | West | Garratt Road Bridge | ← | 8.2 |
| | | Stirling Square - Guildford | ← | 18.0 |
| | | Claisebrook | → | 0.7 |
| | | Barrack Street Jetty | → | 4.7 |
| N82 | North | City | → | |
| | | Windan Bridge | ← | 0.1 |
| | | Belmont Park Racecourse | ← | 1.2 |
| | | Burswood Park | ← | 2.8 |
| N82 | West | Banks Reserve | ← | 0.7 |
| | | Claisebrook | ← | 0.8 |
| | | Windan Bridge | ↑ | 0.1 |
| | | Belmont Park Racecourse | ↑ | 1.2 |
| N82 | East | City | ↑ | |
| | | Banks Reserve | → | 0.7 |
| | | Claisebrook | → | 0.8 |
| | | Barrack Street Jetty | → | 4.8 |
| N83 | North | Windan Bridge | → | 0.1 |
| | | Burswood Park | → | 2.7 |
| | | Claisebrook | ↑ | 0.6 |
| | | Barrack Street Jetty | ↑ | 4.6 |

| | | | | |
|-----|-------|-------------------------|---|------|
| N83 | South | Windan Bridge | ← | 0.1 |
| | | Burswood Park | ← | 2.7 |
| | | Banks Reserve | ↑ | 0.8 |
| | | Garratt Road Bridge | ↑ | 8.3 |
| N83 | West | Banks Reserve | ← | 0.8 |
| | | Garratt Road Bridge | ← | 8.3 |
| | | Claisebrook | → | 0.6 |
| | | Barrack Street Jetty | → | 4.6 |
| N84 | North | Claisebrook | → | 0.7 |
| | | City | → | |
| | | Banks Reserve | ← | 0.9 |
| | | Barrack Street Jetty | ← | 4.7 |
| N84 | West | Windan Bridge | ← | 0.05 |
| | | Belmont Park Racecourse | ← | 1.3 |
| | | Banks Reserve | ↑ | 0.9 |
| | | Causeway | ↑ | 2.3 |
| N84 | East | Windan Bridge | → | 0.05 |
| | | Belmont Park Racecourse | → | 1.3 |
| | | Burswood Park | → | 2.6 |
| | | City | ↑ | |
| N84 | South | Windan Bridge | ↑ | 0.05 |
| | | Belmont Park Racecourse | ↑ | 1.3 |
| | | Banks Reserve | → | 0.9 |
| | | Garratt Road Bridge | → | 8.4 |

South Side of River

| Sign Location | Face | Destinations | Arrow | Distance |
|----------------------|-------------|-----------------------------|--------------|-----------------|
| S2 | South | Fishmarket Reserve | ↑ | 0.5 |
| | | Stirling Square - Guildford | ↑ | 1.2 |
| | | Success Hill | → | 1.0 |
| | | Bassendean | → | 1.2 |
| S2 | East | Fishmarket Reserve | → | 0.5 |
| | | Stirling Square - Guildford | → | 1.2 |
| | | King's Meadow Oval | ← | 0.5 |
| | | Barrack Street Jetty | ← | 20.7 |
| S2 | North | Success Hill | ← | 1.0 |
| | | Bassendean | ← | 1.2 |
| | | King's Meadow Oval | ↑ | 0.5 |
| | | Barrack Street Jetty | ↑ | 20.7 |
| S3 | East | Stirling Square - Guildford | → | 1.6 |
| | | Bassendean | → | 1.7 |
| | | Garratt Road Bridge | ← | 8.3 |
| | | Barrack Street Jetty | ← | 20.5 |
| S13 | North East | Garvey Park | ↑ | 2.6 |
| | | Redcliffe Bridge | ↑ | 3.8 |
| | | Garratt Road Bridge | ↑ | 5.8 |
| | | Barrack Street Jetty | ↑ | 12.2 |
| S13 | South West | King's Meadow Oval | ↑ | 2.5 |
| | | Guildford Road Bridge | ↑ | 2.7 |
| | | Stirling Square - Guildford | ↑ | 4.1 |
| | | Bassendean | ↑ | 4.2 |
| S15 | South East | Stirling Square - Guildford | → | 4.4 |
| | | Bassendean | → | 4.5 |
| | | Garvey Park | ← | 2.3 |
| | | Barrack Street Jetty | ← | 17.7 |
| S25 | North East | Redcliffe Bridge | ↑ | 1.2 |
| | | Garratt Road Bridge | ↑ | 3.3 |
| | | Windan Bridge | ↑ | 10.1 |
| | | Barrack Street Jetty | ↑ | 15.4 |
| S25 | South West | King's Meadow Oval | ↑ | 5.0 |
| | | Guildford Road Bridge | ↑ | 5.3 |
| | | Stirling Square - Guildford | ↑ | 6.6 |
| | | Bassendean | ↑ | 6.7 |

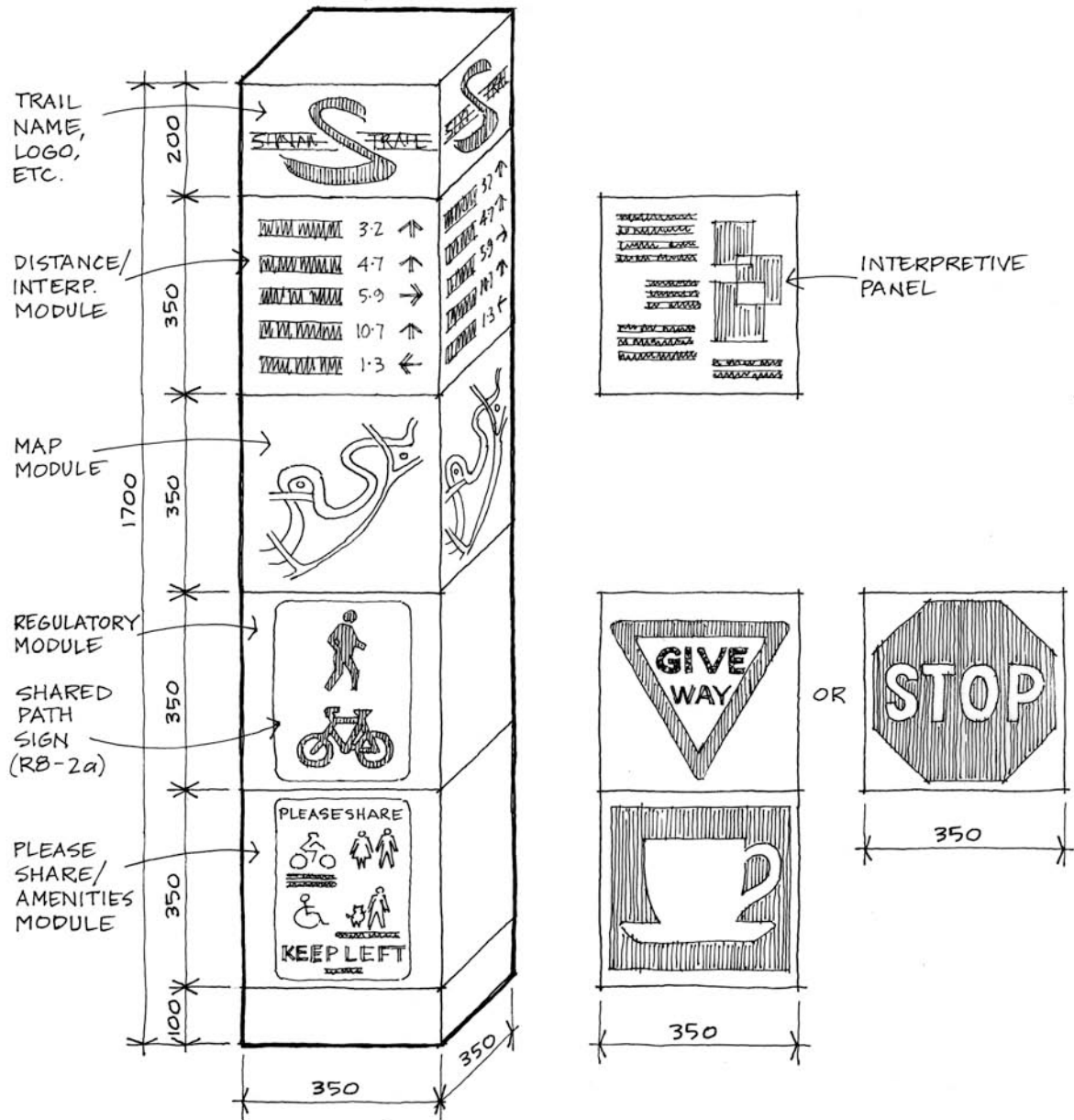
| | | | | |
|-----|------------|---|------------------|----------------------------|
| S28 | North East | Redcliffe Bridge Garratt Road Bridge Windan Bridge Barrack Street Jetty | ← ↑ ↑ ↑ | 0.3 2.0 8.9 14.2 |
| S28 | South West | Redcliffe bridge Garvey Park Stirling Square - Guildford Bassendean | → ↑ ↑ ↑ | 0.3 1.2 7.9 8.0 |
| S30 | East | Redcliffe bridge Garratt Road Bridge Windan Bridge Barrack Street Jetty | ← ↑ ↑ ↑ | 0.2 1.9 8.8 14.1 |
| S31 | West | Redcliffe Bridge Garvey Park Stirling Square - Guildford Bassendean | → ↑ ↑ ↑ | 0.2 1.3 8.0 8.1 |
| S42 | East | Garratt Road Bridge Ascot Waters Windan Bridge Barrack Street Jetty | → ← ← ← | 0.1 1.6 6.9 12.2 |
| S42 | South | Garratt Road Bridge Redcliffe Bridge Garvey Park Stirling Square - Guildford | ↑ → → → | 0.1 2.0 3.3 9.9 |
| S42 | North | Redcliffe Bridge Garvey Park Windan Bridge Barrack Street jetty | ← ← ↑ ↑ | 2.0 3.3 6.9 12.2 |
| S52 | North West | Adachi Park Cracknell Park Windan Bridge Barrack Street Jetty | → → → → | 1.5 3.2 5.3 10.6 |
| S52 | South West | Garratt Road Bridge Redcliffe Bridge Guildford Road Bridge Stirling Square - Guildford | ← ← ← ← | 1.6 3.6 10.1 11.5 |
| S52 | South East | Garratt Road Bridge Stirling Square - Guildford Windan Bridge Barrack Street Jetty | ↑ ↑ ← ← | 1.6 11.5 5.3 10.6 |

| | | | | |
|-----|------------|-----------------------------|---|-------|
| S52 | North East | Garratt Road Bridge | → | 1.6 |
| | | Stirling Square - Guildford | → | 11.5 |
| | | Windan Bridge | ↑ | 5.3 |
| | | Barrack Street Jetty | ↑ | 10.6 |
| S54 | North | Cracknell Park | ↑ | 1.7 |
| | | Belmont Park Racecourse | ↑ | 3.3 |
| | | Windan Bridge | ↑ | 3.7 |
| | | Barrack Street jetty | ↑ | 9.1 |
| S54 | South | Garratt Road Bridge | ↑ | 3.1 |
| | | Redcliffe Bridge | ↑ | 5.1 |
| | | Guildford Road Bridge | ↑ | 11.63 |
| | | Stirling Square - Guildford | ↑ | 13.00 |
| S54 | East | Garratt Road Bridge | → | 3.1 |
| | | Stirling Square - Guildford | → | 13.0 |
| | | Windan Bridge | ← | 3.7 |
| | | Barrack Street Jetty | ← | 9.1 |
| S58 | East | Belmont Park Racecourse | ↑ | 1.6 |
| | | Windan Bridge | ↑ | 2.1 |
| | | Barrack Street jetty | ↑ | 7.4 |
| S58 | West | Adachi Park | ↑ | 1.7 |
| | | Redcliffe Bridge | ↑ | 6.8 |
| | | Guildford Road Bridge | ↑ | 13.3 |
| | | Stirling Square - Guildford | ↑ | 14.7 |
| S61 | South East | Garratt Road Bridge | → | 5.3 |
| | | Stirling Square - Guildford | → | 15.7 |
| | | Windan Bridge | ↑ | 1.6 |
| | | Barrack Street Jetty | ↑ | 6.9 |
| S61 | North West | Adachi Park | ← | 2.2 |
| | | Garratt Road Bridge | ← | 5.3 |
| | | Redcliffe Bridge | ← | 7.3 |
| | | Stirling Square - Guildford | ← | 15.7 |
| S61 | North East | Belmont Park Racecourse | → | 1.1 |
| | | Windan Bridge | → | 1.6 |
| | | Barrack Street Jetty | → | 6.9 |
| S67 | East | Burswood Park | → | 2.2 |
| | | Claisebrook | ↑ | 1.2 |
| | | Banks Reserve | ↑ | 1.2 |
| | | Barrack Street Jetty | ↑ | 5.3 |

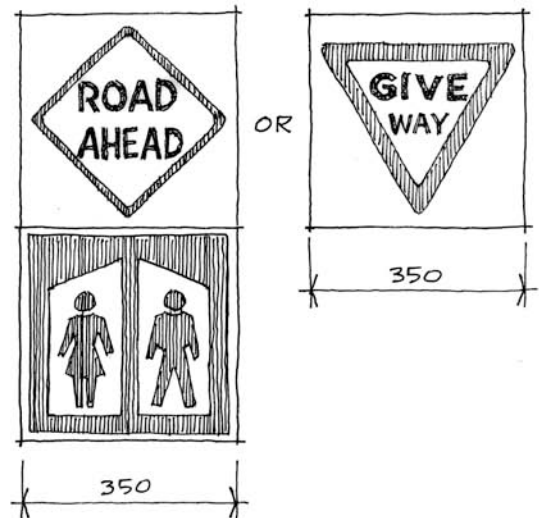
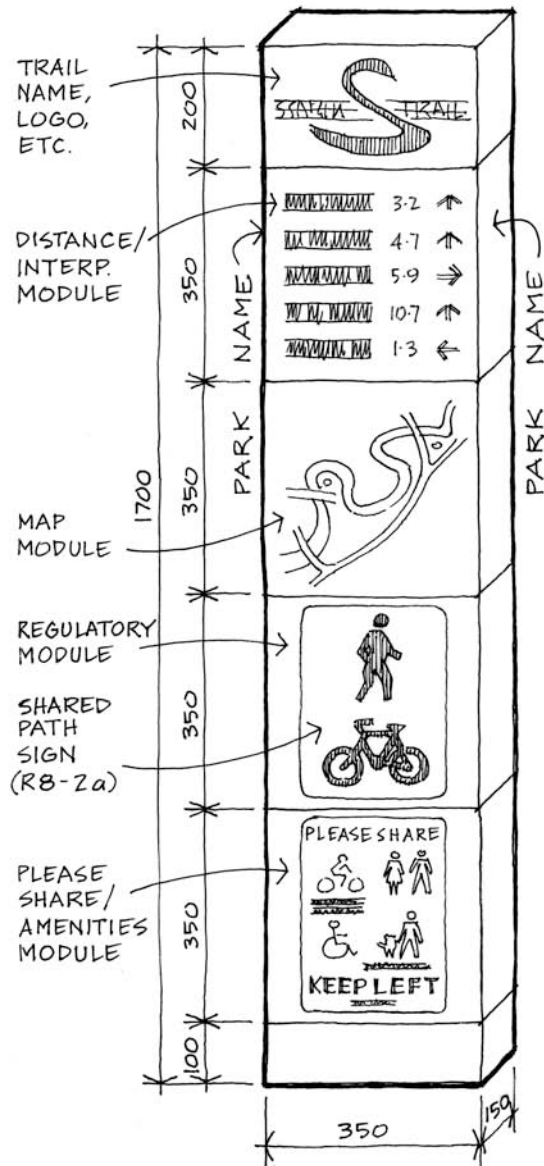
| | | | | |
|-----|-------|-----------------------------|---|------|
| S67 | North | Garratt Road Bridge | ← | 6.9 |
| | | Redcliffe Bridge | ← | 8.9 |
| | | Stirling Square - Guildford | ← | 16.8 |
| | | Claisebrook | → | 1.2 |
| S67 | West | Burswood Park | ← | 2.2 |
| | | Garratt Road Bridge | ↑ | 6.9 |
| | | Redcliffe Bridge | ↑ | 8.9 |
| | | Stirling Square - Guildford | ↑ | 16.8 |
| S68 | East | Burswood Park | ← | 2.0 |
| | | Garratt Road Bridge | → | 7.1 |
| | | Redcliffe Bridge | → | 9.1 |
| | | Stirling Square | → | 17.0 |
| S68 | North | Burswood Park | ↑ | 2.0 |
| | | Claisebrook | → | 1.0 |
| | | Banks Reserve | → | 1.2 |
| | | Barrack Street jetty | → | 5.1 |
| S68 | South | Claisebrook | → | 1.0 |
| | | Banks Reserve | → | 1.2 |
| | | Garratt Road Bridge | ↑ | 7.1 |
| | | Stirling Square - Guildford | ↑ | 17.0 |

APPENDIX 2

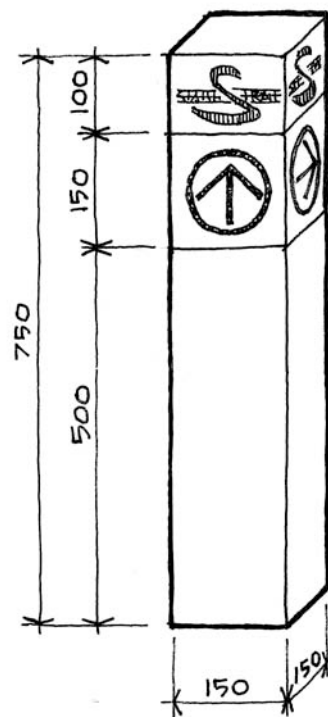
Suggested Sign Style for Swan and Helena Rivers Regional Recreational Path



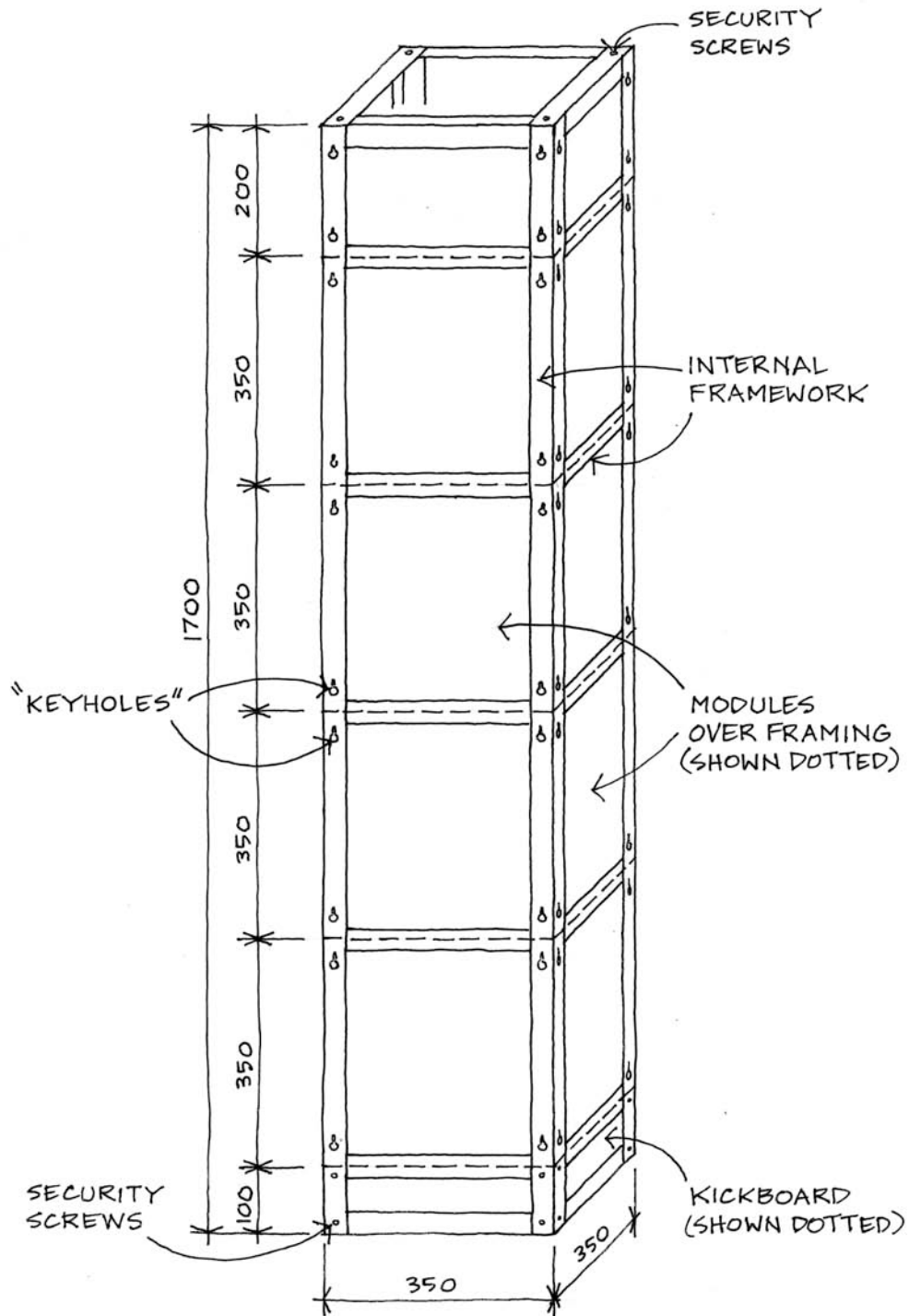
SIGN STYLE 1
SCALE 1:10



SIGN STYLE 2
SCALE 1:10



SIGN STYLE 3
SCALE 1:10



SIGN POST – INTERNAL FRAMING
SCALE 1:10

APPENDIX 3 – SIGN LOG

The following pages set out the locations for, and styles of, directional/distance signage along both sides of the Swan River between Windan Bridge in East Perth and the Guildford Road Bridge in Guildford.

The tables provide detail on:

- Local Government
- Location number of sign (number refers to site on accompanying sign location plans)
- Description of Location
- Sign Style (see Appendix 2)
- Information to include on sign (ie. the various 'modules')
- Comment (if any)

Swan River Regional Recreational Path – Sign Log – South Side of River

| Local Government | Location # | Description of Location | Sign Style | Information to Include | Comment |
|-------------------------|-------------------|---|-------------------|---|---|
| City of Swan | S1 | East side – Guildford Road Bridge (on Bridge St) | 3 | W face of post: Right arrow. S face of post: Left arrow. | |
| | S2 | Path junction – near Bridge St | 1 | S face of post: Map panel; distances, R8-2a; Etiquette panel. E face of post: Map panel; distances, R8-2a; Etiquette panel. N face of post: Map panel; distances, R8-2a; Etiquette panel. | |
| | S3 | Kings Meadow | 2 | E face of post: Map panel; distances; Etiquette panel. Both sides of post: Kings Meadow Oval. | |
| | S4 | Johnston St – North side of bridge | 3 | W face of post: Right arrow. S face of post: Left arrow. | |
| | S5 | Johnston St – South side of bridge | 3 | N face of post: Right arrow. W face of post: Left arrow. | To be installed when path along southern bank of Helena River is constructed. |
| | S6 | Path junction – Helena River (near Bridge Street) | 3 | W face of post: Straight Ahead arrow. E face of post: Straight Ahead arrow. | To be installed when path along southern bank of Helena River is constructed. |
| | S7 | NW Cnr Great Eastern Hwy and Bridge St | 3 | N face of post: Right arrow. W face of post: Left arrow. | To be removed when path along southern bank of Helena River is constructed. |

| | | | | | |
|--|-----|----------------------------------|---|--|---|
| | S8 | SE Cnr Bridge St and Wilkie St | 3 | SE face of post: Left arrow. SW face of post: Right arrow. | To be removed when path along southern bank of Helena River is constructed. |
| | S9 | SE Cnr Wilkie St and Kidman Ave | 3 | NE face of post: Straight Ahead arrow. SW face of post: Straight Ahead arrow. | To be removed when path along southern bank of Helena River is constructed. |
| | S10 | Southern end of Wilkie St | 3 | NE face of post: Straight Ahead arrow. SW face of post: Straight Ahead arrow. | To be relocated and modified when path along southern bank of Helena River and Swan River is constructed. |
| | S11 | Cnr Kingsley Dr and Riverside Dr | 3 | NE face of post: Straight Ahead arrow. SW face of post: Straight Ahead arrow. | To be relocated when path along foreshore parkland (alongside Riverside Dr) is constructed. |
| | S12 | Southern end of Riverside Dr | 3 | NE face of post: Straight Ahead arrow. SW face of post: Straight Ahead arrow. | To be relocated when path along foreshore parkland (alongside Riverside Dr) is constructed. |
| | S13 | Water's Edge Winery | 2 | NE face of post: Map panel; distances; coffee cup symbol with Left arrow; Etiquette panel. SW face of post: Distances; coffee cup symbol with Right arrow; Etiquette panel. Both sides of post: Water's Edge Winery. | |
| | S14 | Southern end of Loder Way | 2 | SE face of post: Dap panel; R8-2a; Etiquette panel. NW face of post: Road Ahead panel. | |

| | | | | | |
|-----------------|-----|---|---|---|---|
| | S15 | Path junction – spur to Loder Way | 2 | SE face of post: Map panel; distances; Etiquette panel. | |
| | S16 | Path junction – spur to Beverley Tce (south side of proposed new boardwalk) | 3 | W face of post: Straight Ahead arrow. E face of post: Straight Ahead arrow. | (Depends of location/orientation of proposed new boardwalk). |
| | S17 | Path junction – between Hay Rd and Great Eastern Hwy | 3 | NW face of post: Right arrow. SW face of post: Left arrow. | |
| City of Belmont | S18 | Hay Rd – NW end | 2 | NE face of post: Road Ahead panel. SW face of post: R8-2a; Etiquette panel. | (Can be relocated and modified if/when foreshore pathway is developed). |
| | S19 | NW cnr Hay Rd and Fauntleroy Ave | 3 | NE face of post: Right arrow. NW face of post: Left arrow. | (To be removed if/when foreshore pathway is developed). |
| | S20 | NW cnr Fauntleroy Ave and Hilton Gr | 3 | SE face of post: Right arrow. NE face of post: Left arrow. | (To be removed if/when foreshore pathway is developed). |
| | S21 | Foreshore near Hilton Grove | 3 | SW face of post: Left arrow. NW face of post: Right arrow. | (Can be relocated and modified if/when foreshore pathway is developed). |
| | S22 | Path junction – east of Garvey Park kiosk | 3 | SE face of post: Left arrow. SW face of post: Right arrow. | Can be modified depending on how new path is developed. |
| | S23 | Road crossing – Garvey Park (east side) | 2 | E face of post: Give Way panel; toilet symbol with Right arrow; Coffee cup symbol with Right arrow. W face of post: Map panel; R8-2a; Etiquette panel. | |

| | | | | | |
|--|-----|--|---|---|--|
| | S24 | Road crossing – Garvey Park (west side) | 2 | W face of post: Give Way panel; toilet symbol with Left arrow; Coffee cup symbol with Left arrow. E face of post: Map panel; R8-2a; Etiquette panel. | |
| | S25 | Next to information shelter – Garvey Park | 2 | N face of post: Map panel; distances; Etiquette panel. Both sides of post: Garvey Park. | To be located on South side of junction. |
| | S26 | Path junction – west of Garvey Park kiosk | 3 | W face of post: Straight Ahead arrow. E face of post: Straight Ahead arrow. | |
| | S27 | Western end of Boardwalk – near Kanowna Ave West | 3 | SW face of post: Straight Ahead arrow. NE face of post: Straight Ahead arrow. | |
| | S28 | Path junction – east side of Redcliffe Bridge | 2 | NE face of post: Map panel; loops information; distances; Etiquette panel. SW face of post: Map panel; loops information; distances; Etiquette panel. Both sides of post: Redcliffe Bridge. | |
| | S29 | Path junction – ramp at east side of Redcliffe Bridge | 3 | SW face of post: Left arrow. NW face of post: Right arrow. | |
| | S30 | Path junction – west side of Redcliffe Bridge (in most eastern fork) | 2 | E face of post: Map panel; loops information; distances; Etiquette panel. | |
| | S31 | Path junction – west side of Redcliffe Bridge (in most western fork) | 2 | W face of post: Map panel; loops information; distances; Etiquette panel. | |

| | | | | | |
|--|-----|---|---|--|--|
| | S32 | Path junction – west side of Redcliffe Bridge (in most southern fork) | 2 | S face of post: Map panel; loops information; distances; Etiquette panel. | |
| | S33 | Path junction – ramp at west side of Redcliffe Bridge | 3 | NW face of post: Left arrow. NE face of post: Right arrow. | |
| | S34 | Path junction with The Esplanade (west side of Forbes St) | 3 | SW face of post: Straight Ahead arrow. NE face of post: Straight Ahead arrow. | |
| | S35 | Path junction with The Esplanade | 3 | W face of post: Straight Ahead arrow. E face of post: Straight Ahead arrow. | (Location of post depends on configuration of proposed redevelopment of area). |
| | S36 | NW Cnr The Esplanade and Ford St | 3 | E face of post: Left arrow. S face of post: Right arrow. | (Can be relocated and modified if/when foreshore pathway is developed). |
| | S37 | NW Cnr Ford St and Thompson St | 3 | N face of post: Right arrow. W face of post: Left arrow. | (Can be removed if/when foreshore pathway is developed). |
| | S38 | NW Cnr Nisbett St and Mathieson Rd | 3 | N face of post: Right arrow. W face of post: Left arrow. | (Can be removed if/when foreshore pathway is developed). |
| | S39 | NW Cnr Mathieson Rd and Epsom Ave | 3 | E face of post: Right arrow. N face of post: Left arrow. | (Can be removed if/when foreshore pathway is developed). |
| | S40 | Gould Reserve (NE corner of Ascot Place and Epsom Ave) | 3 | S face of post: Left arrow. W face of post: Right arrow. | (Can be relocated and modified if/when foreshore pathway is developed). |

| | | | | | |
|--|------|---|---|---|--|
| | S41 | Path junction – Gould Reserve | 3 | E face of post: Right arrow. S face of post: Straight Ahead arrow. N face of post: Left arrow. | Install Sign Style 2 when path constructed through foreshore reserve (Gould Reserve) – include Map Panel; distances. |
| | S42 | Path junction – Grandstand Rd | 1 | E face of post: Map Panel; distances; loops information; Etiquette panel. S face of post: Map Panel; distances; loops information; Etiquette panel. N face of post: Map Panel; distances; loops information; Etiquette panel. | |
| | S43A | 30m North of path crossing of Grandstand Rd – east side | 2 | NW face of post: Road Ahead panel. | |
| | S43B | Path crossing of Grandstand Rd – east side | 2 | NE face of post: Give Way panel. SW face of post: R8-2a; Etiquette panel. | |
| | S44A | Path crossing of Grandstand Rd – West side | 2 | SW face of post: Give Way panel. NE face of post: R8-2a; Etiquette panel. | |
| | S44B | 30m West of path crossing of Grandstand Rd – West side | 2 | SW face of post: Road Ahead panel. | |
| | S45 | Path junction – near footbridge to Black Swan Island | 2 | NW face of post: Map Panel; loop information; Etiquette panel. SE face of post: Map Panel; loop information; Etiquette panel. | Assume missing link from Black Swan Island to Grandstand Rd is constructed within 18 months. |

| | | | | | |
|--|-----|---|---|--|-------------------------------------|
| | S46 | Path junction – in parkland near Waterway Cr | 3 | NW face of post: Straight Ahead arrow. SE face of post: Straight Ahead arrow. | |
| | S47 | Tidewater Way – NW side | 2 | NW face of post: Map panel; Give Way panel; loop information; Etiquette panel. SE face of post: R8-2a; Etiquette panel. | |
| | S48 | Tidewater Way – SE side | 2 | NW face of post: R8-2a; Etiquette panel. SE face of post: Map panel; Give Way panel; loop information; Etiquette panel. | |
| | S49 | Promenade corner | 3 | SW face of post: Right arrow. SE face of post: Left arrow. | |
| | S50 | Top of ramp on promenade | 3 | NW face of post: Left arrow. NE face of post: Right arrow. | |
| | S51 | Junction of Marina Dr and promenade | 3 | NW face of post: Right arrow. SE face of post: Left arrow. | Depending on where post is located. |
| | S52 | Path junction – Southern side of Ascot Waters (Near car park) | 1 | NW face of post: Map Panel; distances; R8-2a; Etiquette panel. SW face of post: Map Panel; distances; R8-2a; Etiquette panel. SE face of post: Map Panel; distances; R8-2a; Etiquette panel. NE face of post: Map Panel; distances; R8-2a; Etiquette panel. | |
| | S53 | Outside 150 East Riverside Bar in Belmont | 2 | NE face of post: Coffee cup symbol with Left arrow; Etiquette panel. SW face of post: Coffee cup symbol with Right arrow; Etiquette panel. | |

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|--|-----|--|---|---|-------------------------|
| | S54 | Adachi Park (opposite Abernethy Rd near boat ramp) | 1 | N face of post: Map Panel; distances; toilet symbol with Left arrow; Etiquette panel. S face of post: Map panel; distances; toilet symbol with R arrow; Etiquette panel. E face of post: Map panel; distances; Etiquette panel. | |
| | S55 | Path junction – Adachi Park (where concrete path intersects with red asphalt path) | 3 | N face of post: Right arrow. W face of post: Left arrow. | |
| | S56 | Path junction (near Tanunda Dr) | 2 | E face of post: Map Panel; Etiquette panel. W face of post: Map Panel; Etiquette panel. | |
| | S57 | Path junction – North of Brighton Rd | 2 | E face of post: Map Panel; Etiquette panel. W face of post: Map Panel; Etiquette panel. Both sides of post: Brighton Rd. | |
| | S58 | Path junction – Cracknell Park | 2 | E face of post: Map Panel; distances; toilet symbol with Left arrow; Etiquette panel. W face of post: Map Panel; distances; toilet symbol with Right arrow; Etiquette panel. S side of post: Cracknell Park. | |
| | S59 | Car park at Cracknell Park | 2 | S face of post: Map Panel; R8-2a; Etiquette panel. N face of post: Give Way panel. | North side of car park. |
| | S60 | Path (current) end – car park at water-ski boat ramp (SE side) | 2 | SE face of post: Road Ahead panel; Left arrow; toilet symbol. NW face of post: Map panel; R8-2a; Etiquette panel. | |

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|-----------------------|------|---|---|--|--|
| | S61 | Path junction (West end of proposed new path) | 1 | SE face of post: Map panel; distances; toilet symbol; Etiquette panel. NW face of post: Map panel; distances; toilet symbol; Etiquette panel. NE face of post: Distances; Etiquette panel. | |
| | S62 | Path junction – existing narrow path to car park | 3 | NW face of post: Straight Ahead arrow. SE face of post: Straight Ahead arrow. | |
| Town of Victoria Park | S63 | Road crossing at Balbuk Way – South side | 2 | SE face of post: Give Way panel. NW face of post: R8-2a; Etiquette panel. | |
| | S64 | Road crossing at Balbuk Way – North side | 2 | SE face of post: R8-2a; Etiquette panel. NW face of post: Give Way panel. | |
| | S65A | 30m east of path crossing of entrance into Belmont Park racecourse | 2 | SE face of post: Road Ahead panel. | |
| | S65B | Path crossing of entrance into Belmont Park racecourse – South side | 2 | SE face of post: Give Way panel. NW face of post: R8-2a; Etiquette panel. | |
| | S66A | Path crossing of entrance into Belmont Park racecourse – North side | 2 | W face of post: Give Way panel. E face of post: R8-2a; Etiquette panel. | |

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|--|------|--|---|--|--|
| | S66B | 30m West of path crossing of entrance into Belmont Park racecourse | 2 | W face of post: Road Ahead panel. | |
| | S67 | Path junction – east side of Windan Bridge (North side) | 1 | E face of post: Map panel; distances; loop information; Etiquette panel. N face of post: Map panel; distances; loop information; Etiquette panel. W face of post: Map panel; distances; loop information; Etiquette panel. | |
| | S68 | Path junction – east side of Windan Bridge (South side) | 1 | E face of post: Map panel; distances; loop information; Etiquette panel. N face of post: Map panel; distances; loop information; Etiquette panel. S face of post: Map panel; distances; loop information; Etiquette panel. | |

Swan River Regional Recreational Path – Sign Log – North Side of River

| Local government | Location # | Description of Location | Sign Style | Information to Include | Comment |
|-------------------------|-------------------|--|-------------------|---|---|
| Town of Bassendean | N1 | West side of Guildford Road Bridge (on Guildford Rd) | 3 | E face of post: Straight Ahead arrow. W face of post: Straight Ahead arrow. | To be modified if/when path along western bank of Swan River between Guildford Rd Bridge and Point Reserve is constructed. |
| | N2 | SE cnr Guilford Rd and North Rd | 3 | E face of post: Left arrow. S face of post: Right arrow. | To be removed if/when path along western bank of Swan River between Guildford Rd Bridge and Point Reserve is constructed. |
| | N3 | North side – access road in to Point Reserve | 2 | N face of post: Give Way panel; Toilet symbol with Left arrow; Etiquette panel. S face of post: R8-2a; Etiquette panel. | To be removed if/when path along western bank of Swan River between Guildford Rd Bridge and Point Reserve is constructed. |
| | N4 | South side – access road in to Point Reserve | 2 | N face of post: R8-2a; Etiquette panel. S face of post: Give Way panel; toilet symbol with Right arrow; Etiquette panel. (Future sign style 3 with: E face of post: Left arrow. S face of post: Right arrow.) | To be removed if/when path along western bank of Swan River between Guildford Rd Bridge and Point Reserve is constructed, and replaced with sign Style 3. |

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| | N5 | Path junction – ramp from Guildford Road Bridge and path under bridge | 1 | W face of post: Map panel; distances; Etiquette panel. S face of post: Map panel; distances; Etiquette panel. N face of post: Map panel; distances; Etiquette panel. | To be installed if/when path along western bank of Swan River between Guildford Rd Bridge and Point Reserve is constructed. |
| | N6 | West side of car park at Point Reserve | 2 | W face of post: Give Way panel. E face of post: Map panel; R8-2a; Etiquette panel. | To be installed if/when path along western bank of Swan River between Guildford Rd Bridge and Point Reserve is constructed (and removed if/when path between Point Reserve and Anstey Rd is constructed). |
| | N7 | East side of car park at Point Reserve | 2 | W face of post: Map panel; R8-2a; Etiquette panel. E face of post: Give Way panel. Both sides of post: Point Reserve. | To be installed if/when path along western bank of Swan River between Guildford Rd Bridge and Point Reserve is constructed (and removed if/when path between Point Reserve and Anstey Rd is constructed). |
| | N8 | Junction of (future) paths in Point Reserve | 1 | N face of post: Map panel; distances; R8-2a; toilet symbol with Right arrow; Etiquette panel. S face of post: Map panel; distances; R8-2a; toilet symbol with Left arrow; Etiquette panel. W face of post: Map panel; distances; Etiquette panel. | To be modified if/when path along western bank of Swan River Point Reserve and Anstey Rd is constructed. |

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| | N9 | NE cnr Anstey Rd and North Road | 2 | N face of post: Give Way panel. S face of post: R8-2a; Etiquette panel. | To be replaced with sign style 3, if/when path along western bank of Swan River between Anstey Rd and Pickering Park is constructed. |
| | N10 | SE cnr Anstey Rd and North Road | 2 | N face of post: R8-2a; Etiquette panel. S face of post: Give Way panel. | To be removed if/when path along western bank of Swan River between Anstey Rd and Pickering Park is constructed. |
| | N11 | NE side – access road in to Pickering Park | 2 | NE face of post: Give Way panel. SW face of post: R8-2a; Etiquette panel. Both sides of post: Pickering Park. | To be relocated to location 14, if/when path along western bank of Swan River between Anstey Rd and Pickering Park is constructed. |
| | N12 | SW side – access road in to Pickering Park | 2 | NE face of post: R8-2a; Etiquette panel. SW face of post: Give Way panel. Both sides of post: Pickering Park. | To be relocated to location 15, if/when path along western bank of Swan River between Anstey Rd and Pickering Park is constructed. |
| | N13 | Eastern end of Anstey Rd | 3 | W face of post: Right arrow. S face of post: Left arrow. (Future modification to be; N face of post: Straight ahead arrow. S face of post: Straight ahead arrow.) | To be installed if/when path along western bank of Swan River between Anstey Rd and Pickering Park is constructed, and then modified if/when path between Anstey Rd and Point Reserve is constructed. |

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| | N14 | NE side of car park in Pickering Park | 2 | NE face of post: Give Way panel. SW face of post: Distances; R8-2a; Etiquette panel. Both sides of post: Pickering Park. | To be relocated from location 11, if/when path along western bank of Swan River between Anstey Rd and Pickering Park is constructed. |
| | N15 | SW side of car park in Pickering Park | 2 | NE face of post: R8-2a; distances; Etiquette panel. SW face of post: Give Way panel. Both sides of post: Pickering Park. | To be relocated from location 12, if/when path along western bank of Swan River between Anstey Rd and Pickering Park is constructed. |
| | N16 | Southern end of Deakin St (road reserve at foreshore) | 3 | NE face of post: Right arrow. NW face of post: Left arrow. (Future modification to be: NE face of post: Straight arrow. SW face of post: Straight arrow.) | To be installed if/when path along western bank of Swan River between Pickering Park and Deakin St is constructed (and modified if/when path between Deakin St and Villiers St is constructed. |
| | N17 | NE cnr Bassendean Pde and Deakin St | 2 | NE face of post: Give Way panel. SW face of post: R8-2a; Etiquette panel. | To be removed if/when path along western bank of Swan River between Pickering Park and Deakin St is constructed. |
| | N18 | SW cnr Bassendean Pde and Deakin St | 2 | NE face of post: R8-2a; Etiquette panel. SW face of post: Give Way panel. (New sign Style 3 to be: SW face of post: Right arrow. SE face of post: Left arrow.) | To be replaced with sign style 3, if/when path along western bank of Swan River between Pickering Park and Deakin St is constructed, or removed if/when path between |

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| | | | | | Deakin St and Villiers St is constructed. |
| | N19 | South cnr Bassendean Pde and Reid St | 3 | NE face of post: Right arrow. NW face of post: Left arrow. | To be removed if/when path between Deakin St and Villiers St is constructed. |
| | N20 | SE cnr West Rd and Reid St | 3 | SE face of post: Left arrow. SW face of post: Right arrow. | To be removed if/when path between Deakin St and Villiers St is constructed. |
| | N21 | NE cnr West Rd and Villiers St | 2 | NE face of post: Give Way panel. SW face of post: R8-2a; Etiquette panel. (New sign Style 3 to be: SE face of post: Right arrow. NE face of post: Left arrow.) | To be replaced with sign Style 3, if/when path along western bank of Swan River between Villiers St and Sandy Beach Reserve is constructed. |
| | N22 | SE cnr West Rd and Villiers St | 2 | NE face of post: R8-2a; Etiquette panel. SW face of post: Give Way panel. | To be removed if/when path along western bank of Swan River between Villiers St and Sandy Beach Reserve is constructed. |
| | N23 | NE cnr Villiers St and Broun Wy | 3 | NW face of post: Straight Ahead arrow. SE face of post: Straight Ahead arrow. | To be installed if/when path along western bank of Swan River between Villiers St and Sandy Beach Reserve is constructed and removed if/when path between Deakin St and Villiers St is constructed. |

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| | N24 | Eastern end Villiers St (at foreshore) | 3 | NW face of post: Right arrow. SW face of post: Left arrow. (Future modification to be: SW face of post: Straight arrow. NE face of post: Straight arrow.) | To be installed if/when path along western bank of Swan River between Villiers St and Sandy Beach Reserve is constructed (and modified if/when path between Deakin St and Villiers St is constructed). |
| | N25 | East side West Rd | 2 | SE face of post: Give Way panel. NW face of post: R8-2a; Etiquette panel. | To be removed if/when path along western bank of Swan River between Villiers St and Sandy Beach Reserve is constructed. |
| | N26 | West side West Rd | 2 | SE face of post: R8-2a; Etiquette panel. NW face of post: Give Way panel. | To be removed if/when path along western bank of Swan River between Villiers St and Sandy Beach Reserve is constructed. |
| | N27 | Sandy Beach Reserve | 1 | NW face of post: Map panel; distances; Etiquette panel. NE face of post: Map panel; distances; toilet with Right arrow; Etiquette panel. SW face of post: Map panel; distances; toilet with Left arrow; Etiquette panel. | To be installed if/when path along western bank of Swan River between Villiers St and Sandy Beach Reserve is constructed. |
| | N28 | Path junction (Sandy Beach Reserve) | 3 | N face of post: Right arrow. W face of post: Left arrow. | To be modified if/when path along western bank of Swan River between Villiers St and Sandy |

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| | | | | (Future modification to be: W face of post: Straight ahead arrow. E face of post: Straight ahead arrow.) | Beach Reserve is constructed, and link to car park is constructed. |
| | N29 | Path junction, W side of boardwalk | 1 | E face of post: Map panel; distances; Etiquette panel. W face of post: Map panel; distances; Etiquette panel. N face of post: Map panel; distances; Etiquette panel. | |
| | N30 | Parking area on Hardy St | 2 | N face of post: Map panel; R8-2a; Etiquette panel. | |
| | N31 | Bottom of steps/ramp (near French St) | 3 | NE face of post: Right arrow. NW face of post: Left arrow. | |
| | N32 | Top of steps/ramp (near French St) | 3 | SE face of post: Left arrow. SW face of post: Right arrow. | |
| | N33 | South cnr Moojebing St and Ashfield Pde | 3 | N face of post: Right arrow. W face of post: Left arrow. (Future modification to be: N face of post: Straight ahead arrow. S face of post: Straight ahead arrow.) | To be modified if/when path along western bank of Swan River between Ashfield Pde and Claughton Reserve is constructed. |

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| City of Bayswater | N34 | SE cnr Moojebing St and Kenmure Ave | 3 | SE face of post: Left arrow. SW face of post: Right arrow. | To be removed if/when path along western bank of Swan River between Ashfield Pde and Claughton Reserve is constructed. |
| | N35 | NE cnr Kenmure Ave and Katanning St | 3 | NE face of post: Left arrow. SE face of post: Right arrow. | To be removed if/when path along western bank of Swan River between Ashfield Pde and Claughton Reserve is constructed. |
| | N36 | Claughton Reserve | 3 | NW face of post: Right arrow. SW face of post: Left arrow. (In future: Sign Style 1: NW face of post: Map panel; distances; Etiquette panel. NE face of post: Map panel; distances; toilet symbol with Right arrow; Etiquette panel. SW face of post: Map panel; distances; toilet symbol with Left arrow; Etiquette panel.) | Change later to sign Style 1 (if/when path along western bank of Swan River between Ashfield Pde and Claughton Reserve is constructed). |
| | N37 | North side of boat ramp at Claughton Reserve | 2 | NE face of post: Give Way panel. SW face of post: R8-2a; Etiquette panel. Both sides of post: Claughton Reserve. | To be installed when path through Claughton Reserve is constructed. |
| | N38 | South side of boat ramp at Claughton Reserve | 2 | E face: R8-2a; Etiquette panel. W face of post: Give Way panel. | To be installed when path through Claughton Reserve is constructed. |
| | N39 | Path junction – east side of Tonkin Hwy Bridge | 3 | E face of post: Straight Ahead arrow. W face of post: Straight Ahead arrow. | |

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| | N40 | Path junction – west side of Tonkin Hwy Bridge | 3 | SE face of post: Straight Ahead arrow. NW face of post: Straight Ahead arrow. | |
| | N41 | Path junction – northwest side of Tonkin Hwy Bridge | 3 | SE face of post: Left arrow. SW face of post: Right arrow. | |
| | N42 | Path junction – west side of Tonkin Hwy Bridge (near Morley Cr) | 2 | N face of post: Map panel; R8-2a; Etiquette panel. | Installed on South side of path junction. |
| | N43 | East side Slade St (road crossing) | 2 | NE face of post: Give Way panel. SW face of post: R8-2a; Etiquette panel. | To be installed when (proposed) new path is constructed between road and car park. |
| | N44 | West side Slade St (road crossing) | 2 | NE face of post: R8-2a; Etiquette panel. SW face of post: Give Way panel. | To be installed when (proposed) new path is constructed between road and car park. |
| | N45 | Car park at Slade St boat ramp | 2 | N face of post: Map panel; distances; R8-2a; Etiquette panel. | To be installed on South side of path junction. |
| | N46 | Path junction – east side of bridge over drain | 3 | SE face of post: Left arrow. SW face of post: Right arrow. | |
| | N47 | Path junction – west side of bridge over drain | 3 | NE face of post: Left arrow. SE face of post: Right arrow. | |
| | N48 | Car park – Eric Singleton Bird Sanctuary | 2 | NW face of post: Map panel; R8-2a; Etiquette panel. | |

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| | N49 | Path junction (Riverside Gardens) | 1 | E face of post: Map panel; distances; toilet symbol with Right arrow; Etiquette panel. (In future: coffee cup symbol with Right arrow). W face of post: Map panel; distances; toilet symbol with Left arrow; Etiquette panel. (In future: coffee cup symbol with Left arrow). N face of post: Map panel; distances; Etiquette panel. | On South side of path junction. |
| | N50 | Car park – Bellevue St | 2 | N face of post: Map panel; R8-2a; Etiquette panel. | South side of carpark. |
| | N51 | South side – access road in to Riverside Gardens | 2 | S face of post: Give Way panel. N face of post: R8-2a; Etiquette panel. | |
| | N52 | North side – access road in to Riverside Gardens | 2 | S face of post: R8-2a; distances; Etiquette panel. N face of post: Give Way panel. | |
| | N53 | East side – Milne St | 2 | E face of post: Give Way panel. W face of post: R8-2a; Etiquette panel. | |
| | N54 | West side – Milne St | 2 | E face of post: R8-2a; Etiquette panel. W face of post: Give Way panel. | |
| | N55 | A.P. Hinds Reserve (between Milne St and Garratt Rd) | 2 | E face of post: toilet symbol with Left arrow. W face of post: toilet symbol with Right arrow. A.P. Hinds Reserve on both sides of post. | |

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|--|-----|--|---|--|---|
| | N56 | Path junction – east side of Garratt Road Bridge | 1 | E face of post: Map panel; distances; loop information; Etiquette panel. W face of post: Map panel; distances; loop information; Etiquette panel. N face of post: Map panel; distances; loop information; Etiquette panel. | South side of path junction. |
| | N57 | Path junction – north-east side of Garratt Road Bridge | 3 | S face of post: Left arrow. W face of post: Right arrow. | To be installed 5m south of path junction. |
| | N58 | Path junction – west side of Garratt Road Bridge | 3 | S face of post: Left arrow. W face of post: Right arrow. | |
| | N59 | (Future) path junction – near Kelvin St | 3 | NE face of post: Left arrow. SE face of post: Right arrow. | To be installed if/when path along western bank of Swan River between Kelvin St and Wall St is constructed. |
| | N60 | Path junction (cnr Kelvin St and Swan View Tce) | 3 | E face of post: Left arrow. S face of post: Right arrow. (Future sign Style 2: E face of post: Map panel; Etiquette panel. S face of post: Map panel; Etiquette panel.) | To be removed if/when path along western bank of Swan River between Kelvin St and Wall St is constructed and replaced by sign Style 2 (with map and distance panels). |
| | N61 | Bath St car park | 2 | N face of post: Map panel; toilet symbol with Left arrow; Etiquette panel. S face of post: toilet symbol with Right arrow. | To be removed if/when path along western bank of Swan River between Kelvin St and Wall St is constructed. |
| | N62 | SE cnr Swan View | 3 | N face of post: Left arrow. | To be removed if/when |

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| | | Tce and Wall St | | E face of post: Right arrow. | path along western bank of Swan River between Kelvin St and Wall St is constructed (and replaced by sign style 2). |
| | N63 | (Future) path junction – east of Wall St | 3 | W face of post: Right arrow. S face of post: Left arrow. (Future modification to be: N face of post: Straight ahead arrow. S face of post: Straight ahead arrow.) | To be modified if/when path along western bank of Swan River between Kelvin St and Wall St is constructed. |
| | N64 | Tranby House | 2 | N face of post: Map panel; coffee cup symbol with Left arrow. S face of post: Map panel; coffee cup symbol with Right arrow. Both sides of post: Tranby House. | |
| | N65 | North side – access road in to Tranby House | 2 | N face of post: Give Way panel. S face of post: R8-2a; Etiquette panel. | |
| | N66 | South side – access road in to Tranby House | 2 | N face of post: R8-2a; Etiquette panel. S face of post: Give Way panel. | |
| | N67 | SW cnr Johnson Rd and Hardey Rd | 3 | NE face of post: Left arrow. SE face of post: Right arrow. | |
| | N68 | Path junction – Hardey Rd | 3 | N face of post: Left arrow. S face of post: Straight Ahead arrow. | Sign to be placed so that arrows point correctly. |

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| | N69 | Car park at Clarkson Reserve | 2 | N face of post: Map panel; distances; R8-2a; toilet symbol with Right arrow; Etiquette panel. S face of panel: Map panel; distances; R8-2a; toilet symbol with Left arrow; Etiquette panel. Both sides of post: Clarkson Reserve. | East side of path junction. |
| | N70 | Path junction – Clarkson Rd (East of Waterland) | 3 | S face of post: Left arrow. W face of post: Right arrow. | |
| | N71 | Maylands Aerodrome Commemorative Park | 2 | E face of post: Map panel; distances; Etiquette panel. W face of post: Distances; Straight Ahead arrow; Etiquette panel. Both sides of post: Maylands Aerodrome Commemorative Park. | |
| | N72 | South side – Clarkson Rd | 2 | S face of post: Give Way panel. N face of post: R8-2a; Etiquette panel. | |
| | N73 | North side – Clarkson Rd | 2 | S face of post: R8-2a; Etiquette panel. N face of post: Give Way panel. | |
| | N74 | Along path – southern end of golf course car park | 3 | S face of post: Straight Ahead arrow. N face of post: Straight Ahead arrow. | |
| | N75 | Outside Golf Club | 2 | S face of post: Map panel; coffee cup symbol with Left arrow; Etiquette panel. N face of post: Map panel; coffee cup symbol with Right arrow; Etiquette panel. | |
| | N76 | SW cnr Swan Bank Rd and Mary St | 3 | S face of post: Left arrow. W face of post: Right arrow. | |

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| | N77 | SE side East St | 2 | SE face of post: Give Way panel. NW face of post: R8-2a; Etiquette panel. | |
| | N78 | NW side East St | 2 | SE face of post: R8-2a; Etiquette panel. NW face of post: Give Way panel. | |
| | N79 | Bardon Park | 2 | E face of post: Map panel; distances; R8-2a, toilet symbol with Right arrow; Etiquette panel. W face of post: Map panel; distances; R8-2a; toilet symbol with Left arrow; Etiquette panel. Both sides of post: Bardon Park. | |
| Town of Vincent | N80 | Banks Reserve | 2 | N face of post: Map panel; distances; R8-2a; toilet symbol with Right arrow; Etiquette panel. S side of post: Map panel; distances; R8-2a; toilet symbol with Left arrow; Etiquette panel. Both sides of post: Banks Reserve. | |
| | N81 | Path junction – west side of Windan Bridge (north east side) | 1 | N face of post: Map panel; distances; Etiquette panel. S face of post: Map panel; distances; Etiquette panel. W face of post: Map panel; distances; Etiquette panel. | East side of path junction. |
| | N82 | Path junction – west side of Windan Bridge (north west side) | 1 | N face of post: Map panel; distances; Etiquette panel. W face of post: Map panel; distances; Etiquette panel. E face of post: Map panel; distances; Etiquette panel. S face of post: Map panel; Etiquette panel. | |

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| City of Perth | N83 | Path junction – west side of Windan Bridge (south east side) | 1 | N face of post: Map panel; distances; Etiquette panel. S face of post: Map panel; distances; Etiquette panel. W face of post: Map panel; distances; Etiquette panel. | East side of path junction. |
| | N84 | Path junction – west side of Windan Bridge (south west side) | 1 | N face of post: Map panel; distances; Etiquette panel. W face of post: Map panel; distances; Etiquette panel. E face of post: Map panel; distances; Etiquette panel. S face of post: Map panel; distances; Etiquette panel. | |

APPENDIX 4

Heritage Audit and Statement of Significance

Sites of Relevance to the Swan and Helena Rivers Regional Recreational Path Project

North Side of River - Precinct 1

| Site of Significance | Classification | Description | Is an existing path in place? | Will path need to deviate closer to/away from site? |
|---|--|---|--------------------------------------|--|
| East Bridge Precinct | Nyoongar (17) | Campsite | Yes | No |
| East Perth Power Station | Historic (19) HCWA Register of Heritage Places National Trust Classified Town of Vincent MI Nyoongar (8) | East Perth Power Station remains one of the few large-scale utilities from pre-World War one period still in existence in Australia. Meeting Place, Camp | Yes | No |
| Mercy Hospital (Killowen; St Anne's Hospital) | Historic (20) | The large house known as 'Killowen' was built on Maylands Heights overlooking the peninsular by the Mount Lawley developer Robert T. Robinson in the 1890s. | Yes | No |
| Thirlmere Road Group | Historic (21) | Group of houses built in the Inter-War period located opposite Mercy Hospital. | Yes | No |
| Albany Bell Castle | Historic (22) | The Albany Bell Castle factory was built on the site in two stages in 1914 and 1919. | Yes | No |
| Bardon Park | Nyoongar (4) | Artefacts, Camp, Hunting Place | Yes | No |
| Bardon & Berringa Pks | Historic (23) | Exploration, Aboriginal contact and early settlement. Recreation | Yes | No |
| Foggerthorpe Cres | Nyoongar (16) | Artefacts | Yes | No |

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| Maylands Brickworks | Historic (24) HCWA Register of Heritage Places NT Classified City of Bayswater MI | The site comprises the Hoffman Kiln (only remaining in WA) with brick chimney stack, timber and iron drying sheds, steel framed pug mill, gate house, change rooms and workshop. | Yes | No |
| Wall St | Nyoongar (14) | Artefacts, Archaeological Deposit, Ochre | No | Depends on precise location of site |
| Beringa Park | Natural (1) | Natural woodland area | Yes | No |
| Maylands Aerodrome | Historical (25) HCWA Register of Heritage Places NT Classified City of Bayswater MI | Maylands Aerodrome, established in 1924, was the first permanent airport in Perth. | Yes | No |
| Maylands Foreshore Reserve | Historical (26) | (Clarkson or Foggerthorpe Farm and Rowlands Farm) Clarkson Rd, Maylands | Yes | No |
| Clarkson Reserve | Natural (3) | Wetlands and natural vegetation | Yes | No |
| Hutton Farm Site | Historical (28) <i>(Interpretation panels on site prepared by Heritage and Conservation Professionals for the City of Bayswater)</i> | This site, known as Chase Farm, is linked historically to Peninsula Farm (Tranby House). | Yes | No |

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| Maylands Boatyard | Historical (27) | Last functioning boat maintenance facility on the Swan River. | Yes | No |
| Tranby House | Historical (29) HCWA Register of Heritage Places NT Classified City of Bayswater MI | The house is vested in the National Trust and open to the public. | Yes | No |

North Side of River - Precinct 2

| <i>Site of Significance</i> | <i>Classification</i> | <i>Description</i> | <i>Is an existing path in place?</i> | <i>Will path need to deviate closer to/away from site?</i> |
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| Baigup Wetlands | Natural (3) | Good fringing vegetation and extensive area of native vegetation in apparently good condition. | Yes | No |
| Stone Street Houses Group 78, 80 Stone St, Bayswater | Historic (27) City of Bayswater MI | The street was formerly known as Mary Street and was one of the first graveled roads in the district. | Yes | No |
| Garratt Road Bridge | Historic (28) NT Classified City of Bayswater MI | Garratt Road was widened and Garratt Road bridge was opened on New Year's Day 1935. | Yes | No |
| Ellis House | Historic (29) City of Bayswater MI | Ellis House, the homestead of one of the early farms in the Bayswater district. | Yes | No |
| Hinds Reserve | Historic (30) | Used for recreation. | Yes | No |
| Eric Singleton Bird Sanctuary | Natural (4) | Wetlands and linkages. Good area for revegetation as seen from the river. | Yes | No |

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| Wyatt Road Flats | Natural (5) | Biodiversity, excellent habitat, landscape | Yes | No |
| Wyatt Rd, Bayswater | Nyoongar (21) | Artefacts. A single quartz piece and a shell piece were identified at this site. | Yes | No |
| Kenmure Ave, Bayswater | Nyoongar (24) | The Lockridge Camp Aboriginal Group have identified this place as a site in which Aboriginal people would formerly camp. | No | Depends on precise location of site |
| Claughton Reserve | Historic (34) City of Bayswater MI | Land here was granted to Dr. J. Whatley in 1829, and hence was known as Whatley Cove. | No | No |
| Maylands Scarred Tree | Nyoongar (13) | A modified tree with a single scar with moderate regrowth, located 400m from Kenmure Ave and nearby the river. | No | Depends on precise location of site |
| Ashfield Parade | Nyoongar (25) | Artefacts | Yes | No |
| Ashfield Flats | Natural (9) | Expansive mixed vegetation. | Yes | No |
| Ashfield Flats | Historic (35) | Land around Ashfield Flats was subdivided in 1905. Some blocks were retained for market gardens. | Yes | No |
| West Road Houses Group | Historic (36) Various individual houses are included on the City of Bassendean MI | A remnant area of small farms and market gardens. | Yes | No |
| Pickering Park | Historic (37) City of Bassendean MI | Bassendean Recreation Reserve was developed in the early 1900s, on an area comprising 5.5 acres of riverfront land. | Yes | No |

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| Daylesford House (Cyril Jackson's House) 7 Daylesford Road, Bassendean | Historic (38) NT Classified City of Bassendean MI | Home built by builder Louis Henry Duvall in 1898, for Cyril Jackson. | No | No |
| West Guildford Residential Area | Historic (39) Various individual houses are included on the City of Bassendean MI | The area is bounded by North Road, Watson Street, West Road, Old Perth Road and Guildford Road. | Yes | No |
| Pensioner Guard Cottage | Historic (40) HCWA Register of Heritage Places NT Classified City of Bassendean MI | Four cottages were built at West Guildford near the Guildford ticket-of-leave depot. | No | No |

North Side of River - Precinct 3

| <i>Site of Significance</i> | <i>Classification</i> | <i>Description</i> | <i>Is an existing path in place?</i> | <i>Will path need to deviate closer to/away from site?</i> |
|------------------------------------|---|---|---|---|
| Guildford Road Bridge | Nyoongar (17) | In 1933 Hammond described this as a place where "various tribes" came together in large numbers. | No | Depends on precise location of site |
| Guildford Road Bridge | Historic (27) HCWA Register of Heritage Places NT Classified | The current Guildford Road Bridge was constructed in 1937. The bridge was the third constructed in this location after the first two fell into disrepair. | Yes | No |

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|-------------------|---|---|-----|----|
| Earlsferry | Historic (28) HCWA Register of Heritage Places NT Classified City of Bassendean MI | Two storey Federation Queen Anne style residence built for John Tregerthen Short in 1902. | Yes | No |
|-------------------|---|---|-----|----|

South Side of River - Precinct 1

| <i>Site of Significance</i> | <i>Classification</i> | <i>Description</i> | <i>Is an existing path in place?</i> | <i>Will path need to deviate closer to/away from site?</i> |
|---|--|--|---|---|
| Burswood Island Camp | Nyoongar (10) | This place is the site of a former camp. | Yes | No |
| Burswood Island Burial | Nyoongar (9) | The area near Windan Bridge (formerly Bunbury Bridge) river crossing is reported to be the burial place of Windan, the wife of Yellagonga. | Yes | No |
| Swan River | Nyoongar (5) | Mythological | Yes & No | Depends on precise location of sites |
| Burswood Island | Nyoongar (6) | The entire area of Burswood Island has been the site of occasional camps | Yes | No |
| Belmont Park Racecourse | Historic (30) | The WATC operates Belmont Park as Perth's winter racecourse and Ascot as the summer racecourse. | Yes | No |
| Old Burswood Canal Near Goodwood Pde, Burswood | Historic (31) HCWA Register of Heritage Places | There is little physical evidence remaining of the canal. | Yes | No |

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|---|---|---|-----|----|
| Burswood Island | Nyoongar (11) | Campsite | Yes | No |
| Riversdale Road Site | Nyoongar (12) | A number of stone artefacts types and lithologies have been identified at this site. | Yes | No |
| Cracknell Park - Hardy Park | Natural (2) | Corridor of vegetation. | Yes | No |
| Old Campsite | Nyoongar (13) | An old campsite located on the river foreshore. | Yes | No |
| Hill 60 (Tanunda. St John of God Hospital) | Historic (32) HCWA Register of Heritage Places NT Classified | Federation Queen Anne style residence constructed for Robert and Elizabeth Bechtel in c.1902. | Yes | No |
| Belmont Farm Tanunda Dr, Rivervale | Historic (34) | In 1854, John Wall Hardey purchased 'Belmont Farm' comprising 2,300 acres with a two mile river frontage. 'Belmont House' became the Sandringham Hotel. | Yes | No |
| Belmont Ave/Great Eastern Hwy | Nyoongar (15) | A number of stone artefacts, including utilised pieces, were identified at this site. | Yes | No |
| Cob/01 Sandringham Freshwater Spring | Nyoongar (18) | The site is associated with the Waugyl mythology. | Yes | No |
| Brick Display Building | Historic (33) | The miniature house was built in 1937, to display local brick manufacturing. | Yes | No |

South Side of River - Precinct 2

| Site of Significance | Classification | Description | Is an existing path in place? | Will path need to deviate closer to/away from site? |
|-------------------------------|---|---|--------------------------------------|--|
| Abernethy Rd NW A-C | Nyoongar (23) | An almost exclusively quartz artefact scatter was identified at the site. | Yes | No |
| Ascot Waters Island | Natural (1) (island) | Biodiversity, habitat, landscape Fringing vegetation. | Yes | No |
| Ascot Wetlands | Natural (2) | Biodiversity, habitat, landscape | No | Depends on precise location of sites |
| Perth | Nyoongar (16) | This is a Closed site. Mythological, Historical, Hunting Place, Named Place, Natural Feature | Don't know | Depends on precise location of sites |
| Ascot Racecourse Swamp | Nyoongar (26) | A hunting place. It was identified as a known source of turtle and gilgies. | Yes | No |
| Swan River | Nyoongar (14) | Mythological: The Waugyl, a snake-like animal is described as "the Dreamtime creator of all waterways in the Perth Area". | Yes & No | Depends on precise location of sites |
| Old Bristle Kilns | Historic (46) HCWA Register of Heritage Places NT Classified City of Belmont MI | The site comprises Beehive Kilns, Tunnel Kilns and five associated chimneys. | Yes | No |
| Ascot Racecourse | Historic (45) City of Belmont MI | The first horse race was held here in 1848, on the flats that were part of John Hardey's original landholding. | Yes | No |

| | | | | |
|---|---|---|-------------------|----|
| Ascot Inn | Historic (43) City of Belmont MI | Built next to Ascot Racecourse in c.1896, on land originally granted to botanist James Drummond, who arrived on the Parmelia in 1829. | No | No |
| Mathieson Road (Railway alignment) 97 Mathieson Road, Ascot | Historic (44) City of Belmont MI | In October 1897, the so-called Racecourse Line was opened. The railway bridge was a major landmark on the river. | No | No |
| Sugars Brickworks Under Redcliffe Bridge near Wickham Street | Historic (47) City of Belmont MI | William Sugars established a brickworks on this site in the 1880s, making flat pavers suitable for flooring. | Yes | No |
| Mathieson Rd, Redcliffe | Nyoongar (20) | A number of quartz artefacts were identified at this site. | No | No |
| Waterview Parade | Natural (6) | Biodiversity, habitat, landscape | Yes (along river) | No |
| Edward Street | Nyoongar (19) | 38 artefacts were identified at this site. | Yes (along river) | No |
| Garvey Park | Historic (48) | Two early brickworks established by Mr. Marr and Mr. Millard were located in the Garvey Park area. A narrow gauge tramway ran underground to transport the clay, which was then winched to the surface. | Yes | No |
| Garvey Park | Natural (7) | Biodiversity, habitat, landscape | Yes | No |
| Invercloy (Nulsen Haven, Wedderburn) | Historic (41) HCWA Register of Heritage Places NT Classified City of Belmont MI | Two storey Federation Queen Anne style villa named 'Invercloy' built for railway engineer John Wilkie in 1904. | No | No |

| | | | | |
|---------------------------------|--|--|-----|---|
| Tampina (Dear Brutus) | Historic (42) HCWA Register of Heritage Places City of Belmont MI | Single storey Federation Queen Anne style residence built c. 1906, as the home of prominent retired pastoralist and racing identity J.F.G. Robinson, who lived there until 1944. | No | No |
| Riverside | Natural (10) | Biodiversity, habitat, landscape | Yes | No |
| Kidman Avenue Flats | Natural (11) | Biodiversity, habitat, landscape | No | Path to follow existing management vehicle tracks |

South Side of River - Precinct 3

| <i>Site of Significance</i> | <i>Classification</i> | <i>Description</i> | <i>Is an existing path in place?</i> | <i>Will path need to deviate closer to/away from site?</i> |
|--|------------------------------|---|---|---|
| King's Meadow Hill Street, Guildford | Historic (47) | This area is one of three areas designated King's Meadow on the original town plan for Guildford prepared by H.C. Sutherland in 1829. King's Meadow abuts the confluence of the Swan and Helena Rivers. | No | Path to follow existing management vehicle tracks |

Closed Sites - Precinct 1

| Site of Significance | Classification | Description |
|-----------------------------|-----------------------|---|
| Perth | Nyoongar | This is a Closed Site. Information regarding the nature and location of this site is only available through direct consultation with the relevant Aboriginal informants. |

Closed Sites - Precinct 2

| Site of Significance | Classification | Description |
|------------------------------------|-----------------------|------------------------|
| Bennett Brook, Eden Hill Rd | Nyoongar | This is a Closed Site. |
| Bridge Camps | Nyoongar | This is a Closed Site. |
| Perth | Nyoongar | This is a Closed Site. |
| Helena River | Nyoongar | This is a Closed Site. |
| Bennett Brook/Camp Area | Nyoongar | This is a Closed Site. |

Closed Sites - Precinct 3

| Site of Significance | Classification | Description |
|---------------------------------------|-----------------------|--|
| Turtle Swamp | Nyoongar | This is a Closed Site. May not be in study area. |
| Blackadder and Woodbridge Camp | Nyoongar | This is a Closed Site. May not be in study area. |

Note: each individual local government (when progressing the future development of sections of the pathway network) will need to undertake detailed investigations of suitable path routes, determine of sites of Nyoongar significance, undertake extensive consultation and obtain the necessary approvals.

APPENDIX 5

Plans

1. Regional Recreational Path Projects – Entire Study Area
2. Regional Recreational Path Projects - Town of Bassendean
3. Regional Recreational Path Projects City of Bayswater
4. Regional Recreational Path Projects City of Belmont
5. Regional Recreational Path Projects City of Swan
6. Signage Locations - Town of Bassendean
7. Signage Locations - City of Bayswater
8. Signage Locations - City of Belmont
9. Signage Locations - City of Swan