

Town of Bassendean

Local Bike Plan 2012

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1 Introduction

Cardno was commissioned by the Town of Bassendean to prepare a Local Bike Plan for the Bassendean local government area (LGA).

The previous Local Bike Plan for the Town of Bassendean was prepared in 1996 and many of the projects within it had been completed. Furthermore, the cycling environment in Perth and across the nation has changed significantly during the intervening 15 years. As an example, between 2001 and 2006, the number of commuter cycling trips in Perth increased by 16%. A new Local Bike Plan is needed to adequately address these changes and set out the way forward for cycling in the Town.

1.1 Study Area and Geographical Context

The Town of Bassendean LGA is located in Perth's eastern suburbs, generally including the land east of Tonkin Highway, south of Morley Drive and west/north of the Swan River, as shown in Figure 1-1.

Figure 1-1 Study Area



Bassendean is located approximately 10km from Perth CBD, making it ideal commuting distance for cyclists working within the City of Perth. Other large employment centres, such as the Airport, Welshpool/Kewdale, Malaga and Midland/Hazelmere are also located within 15km of Bassendean.

Within Bassendean LGA, development is mainly residential on both sides of the railway line. However in the western part of the LGA lies the sizeable Ashfield industrial area, extending into the City of Bayswater.

Recreational riders are well catered for with easy access to paths along the Swan River foreshore and West Swan Road.

1.2 Vision and Objectives

The vision of the Local Bike Plan is to *“promote, encourage and facilitate the greater use of a cycling as a mode of transport in the Town of Bassendean”*.

Specifically, the Local Bike Plan aims to:

1. Provide a co-ordinated approach to implement a high-quality and connected bicycle network.
2. Plan for maintaining and safeguarding the existing and future bicycle network.
3. Integrate cycling network development with other developments and projects.
4. Guide professionals implementing the projects identified in the Local Bike Plan.
5. Encourage and promote cycling as a legitimate transport mode.

1.3 Structure of the Plan

The Plan is set out as follows:

- > A review of relevant policy and the context of the Plan;
- > A summary of the community consultation process;
- > An summary of design guidance relevant to facilities in Bassendean;
- > An analysis of the existing and future cycling network;
- > An outline of behaviour change strategies to encourage cycling; and
- > A series of recommendations, including ultimate network plans and a schedule of capital works.

2 Policy and Context

2.1 National Policies

2.1.1 National Cycling Strategy

The Australian National Cycling Strategy 2011-2016 (NCS) was prepared by Austroads and the Australian Bicycle Council in September 2010. The purpose of this strategy is to double the existing rates of cycling in a holistic manner by supporting its myriad of benefits through promotion, infrastructure provision, integrated planning and safety improvements.

Benefits identified in the NCS include:

- > Societal Benefits - reduced traffic congestion as a result of commuters shifting to cycling modes, as well as increasing the land area available for urban activity.
- > Environmental Benefits - reduced carbon footprint as a result of a transition to active, zero-carbon transport.
- > Health Benefits - increased fitness has both a social and economic benefit to the community by encouraging interaction, improving quality of life and reducing health care costs arising from a sedentary lifestyle.
- > Equity Benefits - a comprehensive cycling network reduces the proportion of household income necessary to provide mobility. This is particularly beneficial for low income families and households located near the urban fringe, where public transport may be lacking.
- > Convenience - where cycling infrastructure provides a safe, comprehensive network for access to education, employment and entertainment precincts, cycling presents an efficient travel mode. Short trips are most affected by good cycling facilities.

A series of actions have been identified to achieve the goal of doubling cycling mode share. This implementation framework focuses on the following priorities and objectives:

- > Cycling Promotion - Promote cycling as both a viable and safe mode of transport and an enjoyable recreational activity
- > Infrastructure and Facilities - Create a comprehensive network of safe and attractive routes to cycle and end-of-trip facilities
- > Integrated Planning - Consider and address cycling needs in all relevant transport and land use planning activities
- > Safety - Enable people to cycle safely
- > Monitoring and Evaluation - Improve monitoring and evaluation of cycling programs and develop a national decision-making process for investment in cycling and
- > Guidance and Best Practice - Develop nationally consistent technical guidance for stakeholders to use and share best practice across jurisdictions

2.2 State Policies

2.2.1 Western Australia Bicycle Network (WABN) Plan

The *Western Australian Bicycle Network Plan (WABN)* has recently been released by the Department of Transport. This plan provides a framework for infrastructure improvements across Western Australia, including both Metropolitan and regional areas.

The WABN focuses on network improvements as a way of creating attractive and safe cycling corridors. The key aspects of this plan are as follows:

- > Implementation - Coordination between Government and non-Government Groups to ensure that the proposed infrastructure is delivered in an effective manner and to identify opportunities to integrate delivery across jurisdictions.

- > Principal Share Path Network Expansion - The Principal Shared Path network forms the backbone of the cycle network through Perth. The WABN focuses on funding improvements within 15km of the CBD to create safe and efficient links along major cycling routes to maximise the benefit of infrastructure funding.
- > Perth and Regional Bicycle Network Grants - Additional funding to Local Government Agencies to plan and provide cycling infrastructure within their jurisdictions. This includes funding of Local Bike Plans, path infrastructure, signage and linemarking.
- > Network Focus - Improvements to the network will be prioritised to promote strategic connections to schools, major rail/bus stations and activity centres. To assist this process, Department of Transport is undertaking studies in consultation with Local Government to identify gaps and potential route alignments which would tend to attract funding.
- > Review of Traffic Management - Local Government has a role in undertaking road works to reduce vehicle volumes and speeds through built-up areas. Some of the measures implemented through these programs have resulted in a reduction of on-road cyclist safety and an increase in conflict. The review will include a mix of what is seen as best practice and situations of reduced cycling safety, and consider safety aspects for all roads users, in keeping with the state road safety strategy 'Towards Zero'.

To complement the WABN Plan, a list of PSP projects was developed, identifying the priorities for completion of each link. The Midland Train Line PSP, from Bassendean to Midland, was listed as the highest priority for completion. This project will significantly improve accessibility between Bassendean and Guildford/Midland, however the location of the PSP on the northern side of the train line will restrict connectivity with the southern part of the LGA.

2.3 Local Policies

2.3.1 Town of Bassendean Local Planning Strategy (LPS) No. 10

LPS No. 10 sets out a vision for the Town and establishes short, medium and long term directions for sustainable land use and development.

LPS No. 10 sets out the following objectives for the Town's future population:

- > Maintaining the existing character and attraction of Bassendean;
- > Identifying suitable residential areas and housing stock for infill and redevelopment to provide for a variety of house types; and
- > Continue to provide for families in terms of maintaining single residential areas and promoting single lot subdivisions.

LPS No. 10 incorporates an industrial strategy, which seeks to:

- > Maintain and improve the existing industrial land uses in Ashfield;
- > Further develop Collier Road as the central spine road in terms of traffic function and commercial exposure; and
- > Facilitate the remediation and development of the vacant industrial land planned at 'Tonkin Park Stage 2'

LPS No. 10 also incorporates a commercial strategy which seeks to:

- > Maintain the existing hierarchy of commercial centres in the Town; and
- > Improve the 'main street' pedestrian retail area along Old Perth Road

2.3.2 Eastern Metropolitan Regional Council (EMRC) Regional Cycle Network Masterplan

The EMRC Regional Cycle Network Masterplan was developed in 2011 as an outcome of the Regional Integrated Transport Strategy 2010-2013 which recognised the need for increasing accessibility for walking and cycling.

The Masterplan takes a higher-level, regional view of the cycle network and, from the perspective of Bassendean, focuses mainly on the following areas:

- > Cross-boundary linkages between LGAs, particularly where bridges over the Swan River are required
- > Joining up the present disconnected lengths of path along both banks of the Swan River to create a single, easily navigable recreational route catering for many trip lengths.

The key projects recommended in the Masterplan include:

- > Extend PSP between Tonkin Highway and Bassendean (completed June 2012);
- > Extend PSP between Bassendean and Guildford;
- > Improve cycle facilities and visibility at the Midland Railway crossing of Guildford Road and Railway Parade;
- > Improve cycle facilities on Midland Railway overpass of Lord Street and at the crossing with Railway Parade;
- > Improve cycle facilities on Collier Road at crossing of the Midland Railway (completed as part of the PSP extension in June 2012);
- > Complete Swan River foreshore path at Ashfield;
- > Additional river crossing at Success Hill Reserve; and
- > Construct additional cycle bridge, inclusive of approaches, between Ascot and Ashfield.

The Masterplan provides a prioritised 20-year program for each LGA but does not provide an indication of the cost of the projects. The highest priority projects for Bassendean all involve improvements to the PSP which have either been completed or will be completed in the near future. The remaining projects are listed as lower priorities (2016 and beyond) and have been prioritised accordingly as part of this Local Bike Plan.

2.3.3 Town of Bassendean Local Area Traffic Management (LATM) Plan

The LATM plan was prepared in 2011/12 to consider a number of local traffic issues which had been raised by residents and members of the Council, and to develop a conceptual plan which addresses these concerns.

Where the LATM plan overlaps with proposals for the cycle network, these have been discussed in Chapter 5.

2.3.4 Town of Bassendean Physical Activity Strategic Plan 2010-2013

The Physical Activity Strategic Plan aims to provide a framework and a set of objectives to assist the Town of Bassendean to plan, develop, implement, evaluate and sustain physical activity programs, opportunities and services into the future. The Plan focuses on encouraging members of the community to be active and healthy, no matter what their age or physical capacity.

The Plan notes that Council has been supporting the encouragement of physical activity through the provision of footpaths and walking and cycling tracks.

The key objectives of the Plan include:

- > Increasing the number and range of physical activity opportunities for everyone;
- > Raising the profile of the benefits of physical activity;
- > Creating local environments that support physical activity.

The Local Bike Plan supports these objectives by recommending the provision of cycling facilities which not only make it easier and more enjoyable to cycle, but also improve access to other physical activity facilities such as parks and incorporating physical activity into everyday life – e.g. cycling to school, the shops or the train station.

2.3.5 Coordination with neighbouring Local Governments

Connections to, and coordination with, neighbouring LGAs is an important part of ensuring an integrated cycle network. Cross boundary links were generally covered in the EMRC Masterplan however they have also been considered as part of this Plan.

City of Bayswater

The City of Bayswater does not have an official strategy and vision regarding cycling; however their intention is to provide a safe and effective cycle friendly city. Connections to/from Bayswater have been considered as part of the network analysis in Chapter 5.

City of Belmont

The City of Belmont has recently appointed Cardno to advise in the process of revising and updating their 2009 Bike Plan. Connections to/from Bassendean rely on the future construction of bridges over the Swan River as outlined in the EMRC Masterplan.

City of Swan

The City of Swan endorsed a new Local Bike Plan in 2011. The plan is focused on Midland, however the vision of the network as a whole is outlined and 37 'spot' improvements proposed. Linkages across Bassendean's eastern boundary remain unchanged, other than the proposed PSP along the Midland Train Line. In addition to PBN Route NE14, entering Bassendean via Korbosky Road, Altone Road and Lord Street are both listed as part of the "proposed cycle network". No information is given in the Plan as to whether any improvements projects will be carried out on these routes.

3 Consultation

Consultation is an important part of the Local Bike Plan process. Input was sought from interested parties, including key stakeholders and the wider community of both cyclists and non-cyclists.

3.1 Stakeholder Consultation

The initial phase of consultation involved meetings or teleconferences with the following stakeholders:

- > Town of Bassendean officers;
- > Department of Transport;
- > Main Roads WA;
- > Public Transport Authority;
- > City of Swan;
- > City of Bayswater.

Many of the issues raised were also identified during the infrastructure audit and network planning stage, as well as through the community survey. All issues and ideas raised have been considered as part of the plan.

3.2 Community Consultation

The opinions and personal experience of cyclists is considered fundamental to understanding the operating condition of the existing system. For this reason, garnering the local knowledge and opinions of the community was a key precursor to preparing the network plan.

3.2.1 Methodology

The philosophy of the initial community consultation phase was to present a 'blank slate' to the community; that is to seek feedback on the issues and gaps in the existing network. A survey questionnaire was developed in conjunction with the Town and placed on the Town's website. The survey included a map to allow respondents to highlight their favourite cycling routes and/or specific issues. A copy of the survey is appended in Appendix A.

To complement the survey, a community forum was held at Bassendean Council Offices on Wednesday, 30th of May 2012. The forum and the survey were advertised on the Town's website and in the Town's newsletter. In addition, known cycling groups in and around Bassendean were contacted by phone and email and encouraged to participate in the consultation process.

3.2.2 Survey Results

A total of 14 responses were received to the survey, with all respondents typically cycling at least 2-3 times per week, mostly to and from work. The survey respondents were mostly over 35 years old. Whilst the small sample size means the results may not be typical of all cyclists in Bassendean, the anecdotal evidence below is valuable input to the Plan.

What do you like about your chosen routes?

The majority of survey respondents praised the existing cycle facilities, particularly the PSP connection to Perth CBD and the riverside path/quiet streets route through the southern part of the LGA.

What do you dislike about your chosen route(s)?

The main issue identified by respondents to this question were unsafe or difficult road crossings, e.g. across Guildford and Collier Roads, and the absence of cycle lanes or sealed shoulders along the major roads.

What improvements could be made to make your cycling trip better?

Two main themes were represented in the majority of responses to this question:

- > Increasing the coverage of shared paths throughout the LGA and
- > Including bicycle signage and/or symbols along on-street routes to warn drivers of the presence of cyclists.

Do you have any other comments or suggestions concerning bicycle infrastructure in the Town of Bassendean?

Most respondents praised the extension of the PSP from Katanning Street to Bassendean Train Station (opened 29 June 2012) but wished to see:

- > Improved safety for on-street cyclists;
- > Greater use of cycling as a mode of travel for schoolkids; and
- > Secure bicycle parking facilities.

3.2.3 Community Forum

Key themes raised in the discussion included:

- > The need for better access to the industrial area at Ashfield;
- > The need for safer crossing facilities along Guildford Road; and
- > The need for a change in thinking for local routes within the LGA towards a 'greenway' style of safer, low speed, mixed traffic environment.

3.3 Further Consultation

It is expected that further public and stakeholder consultation will be undertaken following the completion of this report. This will give cyclists and other interested parties the opportunity to comment on the network as well as the priorities for capital works.

4 Design Guidelines

There are a number of guidelines available to refer to when planning and designing facilities for cyclists. The key reference documents are listed below.

- > Guide to Road Design Part 6A: Pedestrian and Cyclist Paths (Austroads, 2009)
- > Guidelines for Traffic Engineering Practice: Part 14 - Cycling (1999)

Austroads' Guide has been adopted as fundamental design criteria for the provision of on and off-street paths, signage, grab rails and other bicycle infrastructure. Through this document an acceptable minimum standard can be maintained, to ensure safe operation for cyclists, pedestrians and vehicular traffic. This chapter is designed as an overview of key design considerations and not as a substitute for referring to these guidance documents.

4.1 On-Street Facilities

Table 4-1 provides a summary of key design considerations when planning typical on-street facilities, excluding 'greenway' facilities. It is recognised that due to the constraints of a built-up environment some of the objectives may be impossible to achieve in certain locations, and a slightly lower quality facility may be suitable. The designer will need to consider whether the proposed lower standard facility actually achieves an improvement in safety or riding conditions for the cyclists, or whether it is safer to omit the facility altogether if the appropriate standard cannot be reached.

Table 4-1 Design considerations for on-street facilities

Issue	Considerations
Traffic speed	<p><50km/h – sealed shoulders or cycle lanes may be desirable, depending on road layout (e.g. if continuous median islands are used) and traffic volumes, however these are generally not required. On-street cyclists can be expected to ride in mixed traffic when traffic speeds are <40km/h.</p> <p>50km/h – sealed shoulders or cycle lanes may be desirable, depending on the volume of cyclists, volume of vehicles and whether vehicles can overtake easily. On quiet streets with low traffic volumes or undivided carriageways wider than 7m these are generally not required.</p> <p>60km/h-70km/h – sealed shoulders or cycle lanes should be provided with a minimum width of 1.5m.</p> <p>80km/h+ - sealed shoulders or cycle lanes should be provided with a minimum width of 2.0m. This provides an additional buffer for cyclists alongside fast and heavy traffic</p>
Continuous median islands	Wherever continuous median islands are used to separate traffic flows, 1.5m wide sealed shoulders should be provided to ensure that cyclists are not squeezed by vehicles.
Single-lane roundabouts	Single lane roundabouts should be designed to reduce, as far as possible, the approach speed of vehicles on all legs. Sealed shoulders or cycle lanes should be ended on approach to the intersection, with clearly defined merge areas, to encourage cyclists to 'claim the lane' through the intersection. Under no circumstance should cycle lanes be painted on the circulating roadway.
Multi-lane roundabouts	Multi-lane roundabouts should be avoided on on-street cycle routes wherever possible. If a roundabout is required, cyclists should be given the option of 'claiming the lane' through the intersection or exiting onto the path network. Under no circumstance should cycle lanes be painted on the circulating roadway.
Priority-control intersections	Sealed shoulders or cycle lanes should be provided on the through route. Deceleration lanes should be separate to cycle lanes, as per Main Roads WA standard design. If a slip lane is provided for left turning traffic on the terminating leg, a cycle lane should be provided adjacent to the right turn lane to assist cyclists in turning right.

Issue	Consideration
Traffic calming devices	<p>On cycle routes with sealed shoulders or cycle lanes these should be continued through the traffic calming device, e.g. by providing a bypass around a slow point. The bypass can be either at road level or path level. If the bypass is at path level, care needs to be taken to ensure suitable vertical transitions at either end.</p> <p>On cycle routes where cyclists are expected to ride with mixed traffic, it is expected that cyclists would 'claim the lane' through any traffic calming devices and therefore bypasses are not required. If bypasses are provided, e.g. around a single-lane slow point, the design needs to be aware of potential conflicts where cyclists will merge with vehicles after passing through the device.</p>
Sealed shoulders or cycle lanes?	Sealed shoulders are generally adequate in most locations as Western Australian drivers do not tend to park on the carriageway. Formal cycle lanes, signposted with regulatory signage as required under the <i>Road Traffic Code 2000</i> , should be used where it is likely that vehicles will park in the sealed shoulders and create an unsafe conflict between cyclists and vehicles.

4.2 Off-Street Facilities

Table 4-2 provides a summary of key considerations when planning typical off-street facilities, i.e. shared paths.

Table 4-2 Design considerations for off-street facilities

Issue	Considerations
Path Location	Shared paths within road reserves should be located as far from the property boundary as possible to maximise the sight distance at driveway crossings. A 0.5m buffer should be provided between the road carriageway and the dual use path where feasible.
Path Width	All new paths constructed in the Town should be a minimum of 2.5m wide. Additional width should be provided where the volume of pedestrian and cyclist traffic is likely to result in a greater frequency of passing manoeuvres, using Austroads as a guide.
Signage	Regulatory 'shared path' and 'end shared path' signs should not be installed. 'Shared path' symbolic stencils should be used instead, as a reminder to pedestrians to be aware that they are sharing the path with cyclists. Stencils should be placed in conformity with Austroads guidelines.
Linemarking	Line marking should be used on paths wider than 2.5m if the volume of cyclist and pedestrian traffic is significant or if there is a history of conflicts.
Speed or access control devices	<p>These should be avoided as far as possible. If there is a definite need to prevent unauthorised vehicle access to the paths, a single bollard placed in the middle of the path is recommended, with the path widened to 3.0m. The bollard should be covered with retro-reflective material and supported by a widened centre line on the approaches, to ensure adequate visibility at night.</p> <p>Where a definite need exists to reduce cyclist speeds approaching a road crossing, due to poor cyclist behaviour, gates should be used. Gates should be separated by a minimum of 3.0m to allow a cyclist to weave through them at about walking pace. In a town centre environment, cleverly placed street furniture is preferred to achieve the same aims. Bollards should not be used to reduce cyclist speeds.</p>
Grab Rails	Grab rails should be placed according to Austroads Guidelines and used sparingly along cycle routes. Grab rails can be used as a passive wayfinding technique to delineate the route of local bicycle routes. Grab rails should always be located on the left side of the path approaching a road crossing and never in the centre of the path.
Passive Wayfinding	Passive wayfinding should be incorporated into the design of shared path networks. Strategic placement of grab rails, linemarking and coloured asphalt can illustrate the route of the main shared path without the need for signs.
Connectivity	All new shared paths should be implemented with maximum connectivity, including kerb ramps and crossings to facilitate movement between paths. Ensure that new developments do not introduce missing links in their path networks.
Controlled Access Point (CAP) Roads/Service Roads	CAP roads/Service roads should not be used as substitute for shared paths under any circumstances.

4.3 Neighbourhood Greenways

Neighbourhood greenways, alternatively known as 'bicycle boulevards', is the name given to a range of treatments to quiet suburban streets in order to create a safe, low speed and low vehicular traffic environment for on-street cycling. The concept is used extensively in The Netherlands, as well as Portland, USA. As a number of neighbourhood greenways (hereafter referred to simply as greenways) are proposed as part of this Local Bike Plan, the following section is designed to provide an overview of their purpose and key features, in order to inform detailed design considerations.

The main purpose of a greenway is to create a safe, low speed and low vehicular traffic environment that encourages on-street cycling among cyclists of all confidence levels. With a safer, friendly environment for cyclists, it is expected that greenways will encourage greater take up and utilisation of cycling as a transport mode for students, commuters and discretionary travel.

The key features of a greenway include:

- > Road closures and traffic calming devices to reduce traffic volumes and speeds;
- > High quality shared paths between road sections to create seamless linkages along a route;
- > Pavement markings, such as bicycle symbols, which guide cyclists on their positioning and remind motorists of the presence of cyclists;
- > Reversal of priorities at minor intersections to give the greenway priority; and
- > Improved crossings at busy roads where the greenway cannot be given priority – e.g. large refuge islands, wombat crossings.

The proposals recommended for Bassendean are outlined in Section 5.4.

4.4 End of Trip Facilities

End of trip facilities are a critical, but often forgotten, component of the cycling network. The presence and/or quality of end of trip facilities can often make or break the decision to cycle for many trips.

Different trip purposes will have different needs when it comes to end of trip facilities. For example:

- > A commuter may want a secure place to park their bicycle inside their workplace, along with showers, lockers and ironing facilities to enable them to freshen up before commencing work for the day;
- > A commuter may instead want a secure long term place to park their bicycle at the train station or bus interchange, allowing them to complete a portion of the trip via bicycle;
- > A shopper may only want a secure short term place to park their bicycle, conveniently located to their destination (e.g. close to the entrance of a shopping centre, or on the footpath in a 'main street' environment) which is ideally protected from wet weather;
- > A recreational rider generally has end of trip facilities at their own home but may require a secure place to park their bicycle at an intermediate destination, such as a cafe or a park.

Long term end of trip facilities for commuters should generally be provided by the employer. Council's involvement in the provision of end of trip facilities should be in the form of:

- > Requiring, through its Town Planning Scheme, new developments to provide a certain standard of end of trip facilities for both employees and visitors; and
- > Providing suitable end of trip facilities for employees and visitors at its offices, depots, library etc.

Short term end of trip facilities should generally be in the form of simple u-rails or other design which facilitates the secure parking of a bicycle. In accordance with Austroads guidelines, these should be located approximately every 30 metres along 'main street' type shopping strips and in small clusters at the entrances to shopping centres and other significant destinations. At present, there are very few u-rails located in the town centre - it is recommended that the provision of u-rails be incorporated in the proposed redevelopment of Old Perth Road (outlined in Section 5.4.3).

End of trip facilities at train stations are the responsibility of the PTA. Existing facilities are considered to be generally adequate, with minimal evidence of latent demand (e.g. bicycles being tied to trees, fences etc.). With future growth in cycling, it is expected that demand for these facilities will increase. It is recommended that Council monitor the situation and liaise with the PTA to ensure that supply continues to exceed demand.

Figure 4-1 Bicycle Lockers at Ashfield Station, north side



Bicycle parking at school is important to encourage students to ride to/from school. All schools within Bassendean presently have some form of bicycle parking facility, ranging from simple u-rails to secure cages. The key considerations for bicycle parking at schools include:

- > Convenience – the parking should be located close to the classrooms and not at the far end of the playing fields. Easy access from the approach routes is also important;
- > Security – the student, and their parents, need to be confident that their bicycle will not be vandalised or stolen at school and therefore the parking needs to be secure with passive surveillance. The ultimate solution to this is a lockable bicycle cage, controlled by staff.

Whilst parking at schools is primarily the responsibility of the school itself, Council should encourage schools to get involved in improving their cycling facilities.

Any moves by Council to upgrade bicycle parking at schools should be coordinated with the further development of the cycle network in the area – e.g. parking at Bassendean Primary School could be improved at the same time as the Whitfield Street greenway is implemented – to provide a greater incentive for students to try cycling to school.

Figure 4-2 Bicycle parking at Bassendean Primary School

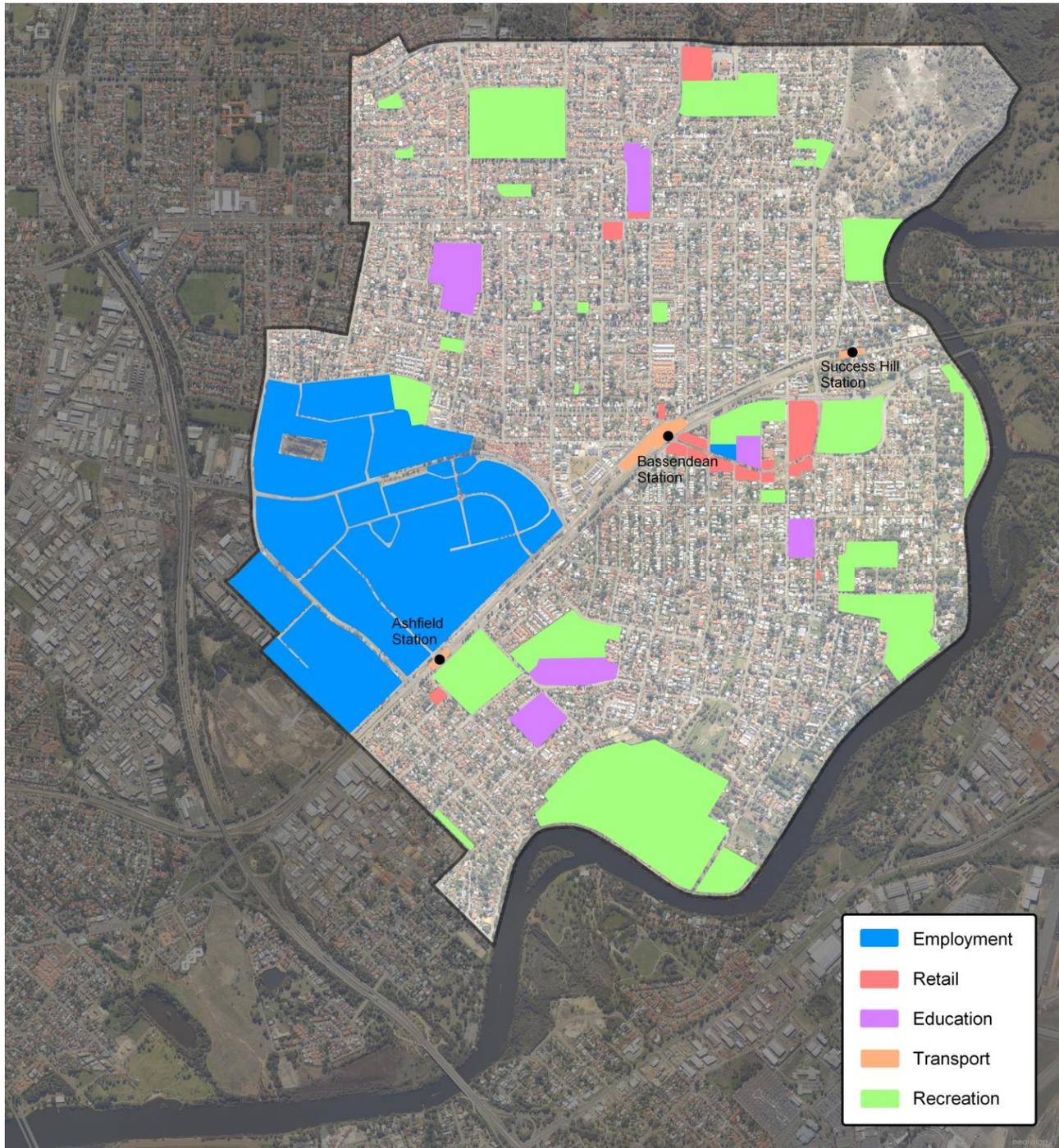


5 Network Analysis

5.1 Land Use and Attractors

The main land uses and attractors are shown in Figure 5-1.

Figure 5-1 Land Use & Attractors



Bassendean is primarily a low density residential LGA, with the associated small neighbourhood centres supporting the main town centre at Bassendean. The strategic regional centres of Midland and Morley are located in close proximity – approximately 4km and 3km from the LGA boundary respectively.

Within the LGA, Bassendean town centre is the primary focal point for cyclists. Aside from providing typical town centre services – i.e. shopping, banking, eating and employment – it is also the main access point for rail services and also a key access point to the PSP. Other significant attractors include:

- > Ashfield industrial area – large employment area but not readily accessed by less confident cyclists;
- > Swan River foreshore and associated parkland – very popular with recreational riders of all ages;
- > Schools, including Ashfield, Anzac Terrace, Bassendean and Eden Hill Primary Schools, as well as Cyril Jackson, Governor Stirling (Midland) and Hampton (Morley) High Schools.

The focus of the Local Bike Plan is to improve access to as many of these attractors as possible, providing linkages which facilitate trips which are likely to be done on bicycle as well as allow multi-purpose trips (e.g. work – shops – home).

5.2 Strategic Regional Links

The strategic regional cycle links passing through Bassendean are illustrated in Figure 5-2 and described below.

Figure 5-2 Strategic Regional Cycling Links



5.2.2 Perth to Midland

The Perth to Midland strategic link is served by Guildford Road and the Midland Train Line PSP. Generally speaking, Guildford Road is a hostile environment even for experienced cyclists due to the relatively high traffic volumes, narrow carriageway and numerous uncontrolled turning movements. The PSP provides a high quality cycling facility with some grade separation where terrain permits, however it currently stops outside Bassendean Train Station and cyclists are required to continue on-street or along lower standard paths to reach Midland.

The gaps and deficiencies of this route are further discussed in Section 5.3.1.

5.2.3 Midland to Morley

This route links two activity centres – Midland and Morley – via the Guildford Road bridge and Walter Road East. There are currently no cycle facilities along this route and proposed improvements are discussed in Section 5.3.2.

5.2.4 Swan River Foreshore

The Swan River foreshore is a popular recreational facility and attracts recreational cyclists in large numbers. The more developed sections of the foreshore path – e.g. in the East Perth and Maylands areas – are heavily used, however the route through Bassendean is presently discontinuous which limits its attractiveness. The long term aim for the foreshore route is to provide a continuous off-street route from Perth to Success Hill Reserve and the required improvements are discussed in Section 5.3.5.

5.2.5 Swan River Crossings

Presently the only Swan River crossing within the LGA is via the Guildford Road bridge. The Redcliffe (Tonkin Highway) Bridge, in the City of Bayswater, provides the only other nearby crossing of the river. As part of its Regional Cycle Masterplan, EMRC proposed two additional bridge crossings – one connecting the Ashfield Flats to Fauntleroy Avenue at Redcliffe and the other connecting Success Hill Reserve with Guildford.

5.3 Network Gaps and Deficiencies

5.3.1 Guildford Road/PSP Corridor

The Guildford Road/PSP corridor is the main east-west spine through Bassendean, segregating the LGA into northern and southern portions. Extension of the PSP from Katanning Street, Bayswater, to Bassendean Train Station was completed in June 2012 and now provides a continuous link from Bassendean all the way to Perth CBD.

The major outstanding issues with this corridor in Bassendean are as follows:

- > Guildford Road is a hostile environment for cyclists of all confidence levels – heavy traffic at relatively high speeds (60km/h +) with lots of weaving traffic and no shoulders, combined with narrow footpaths (1.5m wide or less in many sections) and numerous driveway crossings;
- > Few crossing facilities on Guildford Road, with those that do exist (e.g. Collier Road signals) being of poor quality and linked by the aforementioned narrow paths;
- > East of Collier Road, the PSP is located on the northern side of the railway line which cuts it off from Bassendean Town Centre and the southern part of the LGA. Access across the rail line in this area is limited to the station footbridge with lifts, the pedestrian-only subway and the Lord Street overbridge. All of these facilities are well below suitable standard for cyclists and reduce the utility of the PSP for Bassendean residents and visitors;
- > The PSP presently ends at Bassendean Train Station and the present connections to Guildford are substandard. It is understood that the WABN Plan includes an interim PSP alignment via Railway Parade, Lord Street and Guildford Road to be constructed in the next few years. The ultimate planned alignment, wholly on the northern side of the rail line, is unlikely to be constructed for at least 10 years.

Improvement of facilities for cyclists on Guildford Road (western section) is made difficult by the constraints of a narrow verge, narrow carriageway and the presence of utilities, such as electricity poles. The recent completion of the PSP extension to Bassendean Train Station eliminates the need for the majority of cyclists to use this section of Guildford Road, although the footpath on the southern side will still be required for local connections. It is recommended that when sections of Guildford Road are to be reconstructed, the opportunity should be taken to improve cycle facilities, however until that time the matter should be held in abeyance.

Preliminary discussions were held with Main Roads regarding the possibility of installing new crossing facilities on Guildford Road (western section) at key locations in the form of refuge islands. However, it is understood that the cost of relocating services to facilitate the required road widening is prohibitive for such projects on their own. Accordingly, this report has only recommended the provision of one new crossing facility, at Chapman Street, to be provided as part of the Chapman Street greenway project. Whilst this is likely to be expensive, the provision of safe and convenient access from Chapman Street to the PSP is critical to the success of that project.

Figure 5-3 Guildford Road



Whilst it is too late to alter the route of the PSP east of Collier Road, access could be improved to Bassendean town centre by the construction of a PSP quality path along the northern verge of Guildford Road from Collier Road to Old Perth Road, linking directly into the proposed Old Perth Road greenway.

Reconstruction of the pedestrian underpass east of Bassendean Station to cater adequately for pedestrians and cyclists, as well as to improve personal safety, is a highly desirable, albeit expensive project. It is likely to be outside the funding ability of Local Government and therefore it is recommended that Council actively seek funding from other bodies (e.g. DoT grants, PTA) to construct the project. In the interim, it is recommended that minor improvements be implemented such as widening the approaches to allow cyclists to easily walk their bicycles into the underpass.

It is understood that the extension of the PSP from Bassendean Train Station to Midland has been given a high priority in the WABN Plan. The interim alignment, via Railway Parade, Lord Street and Guildford Road will suffice for a number of years. The ultimate alignment, wholly along the northern side of the railway line and including a new bridge over the Swan River, is unlikely to be constructed for many years. It is recommended that Council ensure that the corridor for the future be protected from development.

Figure 5-4 Midland Train Line PSP under construction in Bassendean (May 2012)



5.3.2 Walter Road

Walter Road forms part of the strategic link from Midland to Morley, serving the northern part of Bassendean. At present, the road mainly consists of a four-lane undivided carriageway with relatively high vehicle speeds and traffic volumes around 10,000 vehicles per day. Although there is a shared path along the verge, it is not a particularly friendly environment for cyclists.

Several years ago, the Town of Bassendean constructed a roundabout at Iolanthe Street, reducing the road to a single lane in each direction. This has resulted in a capacity constraint which means that the four-lane sections on either side are now unnecessarily wide and therefore the opportunity exists to reallocate road space in favour of other road users, e.g. cyclists.

Figure 5-5 Walter Road



As part of the LATM Plan, a concept plan for Walter Road has been prepared, with the following characteristics:

- > A single traffic lane in each direction;
- > A painted median with traffic islands on approach to intersections, catering for pedestrians and cyclists who wish to cross the road;
- > Sealed shoulders or cycle lanes along both sides, except at the Iolanthe Street roundabout.

This concept is generally considered adequate; however it needs to be considered within the context of the strategic route as a whole. Facilities which terminate at Lord Street do not offer significant benefits, as Lord Street is a hostile environment for cyclists, particularly on-street cyclists at the railway overbridge. The natural continuation of the cycle route is across Lord Street, into Seventh Avenue and then along Seventh Avenue, Eighth Avenue and then following existing paths underneath the rail bridge to link with the Guildford Road bridge. To bring this route up to a suitable standard, the following works would be required:

- > Minor alterations to the Lord Street/Walter Road intersection to allow cyclists to safely proceed east-west through the intersection;
- > Appropriate delineation along Seventh Avenue, Eighth Avenue and the paths to Guildford Road bridge;
- > Improvements to the path linking the Guildford Road bridge (northern side) with the path along the western bank of the Swan River.

These works would provide a relatively easy link between Guildford Road bridge and Walter Road along lightly trafficked roads. Unfortunately the grades required to get underneath the rail bridge are unavoidable in the absence of any other suitable grade separated crossing.

The LATM Plan has also examined the possibility of alterations to the Lord Street/Walter Road intersection, with the objective of allowing traffic to exit from Seventh Avenue. This is supported, providing adequate provision for cyclists is made. This would include:

- > Cycle lane for eastbound cyclists proceeding from Walter Road into Seventh Avenue (this would also allow right turns for cyclists as no through traffic would be permitted from Walter Road into Seventh Avenue);
- > Cycle lane for westbound cyclists proceeding from Seventh Avenue into Walter Road;
- > Cycle lanes on Lord Street wherever possible.

It is not considered that this move would appreciably increase traffic on Seventh and Eighth Avenues as it still only services existing residences to the east of Lord Street. Therefore, the quiet streets route will remain quiet.

Walter Road is not considered to be the highest priority from the perspective of this Bike Plan. However, if the modifications to Walter Road are to be undertaken earlier for traffic management reasons, then the opportunity should be taken to implement the cycle facilities at the same time.

5.3.3 North Road/Bassendean Parade

North Road and Bassendean Parade, along with a section of West Road, provide a quiet streets cycling route from the Guildford Road bridge into the southern part of Bassendean and to the riverside path network at the Ashfield Flats. In the absence of a shared path along the foreshore (see Section 5.3.5) it fulfils an important link in the recreational route along the Swan River.

The route generally carries relatively low traffic volumes, however the community has identified issues with vehicle speeds and peak period traffic volumes at the north end. It is understood that vehicles on North Road engage in speeding and hooning, as well as 'rat running' to avoid congestion on North Road.

Proposals discussed at the stakeholder workshop included:

- > Full or partial road closures at various locations;
- > Traffic calming devices and road narrowing with cycle lanes;
- > Alterations to the carriageway to create a road environment with a design speed of 30km/h, with cyclists riding in the traffic lanes.

Changes to North Road from a traffic management perspective were also considered as part of the LATM Plan. The key recommendations from the LATM Plan include:

- > Gateway feature at Guildford Road;
- > Edge and centre line markings on the existing carriageway;
- > Horizontal deflection traffic calming devices (e.g. slow points).

This report makes no firm recommendation on the ultimate layout for North Road, except that it must be constructed in a way which is friendly to less confident cyclists and maintains the integrity of the route as a quiet street.

Figure 5-6 Bassendean Parade



Options could include:

- > Partial or full road closures which eliminates through traffic from the route, slows traffic and allows cyclists to bypass the road closures;
- > Narrowing of the road environment and the provision of 1.5m wide cycle lanes on each side of the carriageway;
- > Narrowing of the road environment to a design speed of 30km/h with cyclists expected to ride in the lane. Note that this option only works if vehicle speeds are low and cyclists therefore do not function as 'speed control devices';
- > Narrowing of the road environment to create a two-way, 3.0m wide protected cycle lane along the eastern side of the carriageway, separated from general traffic by a kerb. This facility would only be required north of Deakin Street.

The chosen solution will be dependent on traffic management outcomes as well as cyclist considerations.

As part of any changes to North Road, careful consideration must also be given to the connection to the interim PSP alignment at Guildford Road bridge. This may involve upgrading the path connection underneath the bridge or, if the intersection is signalised, providing an appropriate safe crossing facility to allow cyclists to reach the northern verge.

5.3.4 Ashfield Industrial Area

The Ashfield industrial area is a major destination for commuters, however currently has relatively poor cycling facilities. Cyclists are required to share the street with general traffic, including large trucks. Community feedback identified poor driver behaviour in this area which is not atypical of industrial areas in general.

The most suitable solution is the construction of a shared path along Jackson and Grey Streets, from Railway Parade to Broadway. Either verge is considered suitable, and a decision on this should be made at the detailed design stage. Some parking enforcement will be required to prevent illegal parking on the path, at least in the early months following construction.

As part of the path construction, improvements to crossing facilities at Collier Road will be required. At present, it is very difficult for cyclists to cross Collier Road at most times of the day, more so during commuting peak periods. The safest solution for cyclists would be the installation of traffic signals with dedicated pedestrian/cyclist phasing, allowing less confident cyclists to use the path and more confident cyclists to share the road with general traffic. In the LATM Plan, a roundabout is proposed at this location. This would provide a small improvement for off-street cyclists as they could cross Collier Road in two stages with a safer holding area in the median, however multi-lane roundabouts tend to reduce the available gaps for crossing on the approaches and thus it will become more difficult to select safe gaps. For on-street cyclists, the roundabout is a much more dangerous intersection as it is difficult for cyclists to select adequate gaps in periods of heavy traffic. Accordingly, a signalised intersection is recommended in the medium to long term.

In the interim, it is recommended that improvements be carried out to the median islands to improve the safety and visibility of the crossing for off-street cyclists. This work would involve widening the median, installing formal islands with grab rails, narrowing of the left turn slip lane and appropriate linemarking and pavement colouring to clearly denote the crossing. This should be done in conjunction with the shared path.

Figure 5-7 Jackson Street



5.3.5 Riverside Path Network

Completion of the riverside path network through Bassendean LGA was listed as a key project in the EMRC Masterplan. However, the main difficulty in achieving this is the issue of private property along the river bank, particularly between the Ashfield Flats and the Guildford Road bridge. The Town has implemented a

pragmatic, long term approach to this issue which involves resuming land along the river bank as properties are redeveloped and/or subdivided. As the project cannot be constructed until the private property issues have been finalised, this project has been listed as a low priority in the schedule of works. In the interim, cyclists will be directed to use the 'cycle-friendly street' route along Bassendean Parade and North Road.

The western end of the path across Ashfield Flats is currently on Hardy Road at Maley Street – the section connecting to Ashfield Parade not being particularly cycle friendly as it requires ascending a set of stairs (shown in Figure 5-8). This is unavoidable due to the change in grade at this location; and the long term solution is to provide a path at river level alongside Ashfield Parade to the City of Bayswater boundary. For the time being, an alternative route, without stairs, is available via a path connection to Hardy Road, or cyclists are able to wheel their bike up the stairs using the ramp provided.

Figure 5-8 Stairs connecting the riverside path to Ashfield Parade



5.3.6 Swan River bridges

As part of its Regional Cycle Masterplan, EMRC proposed two additional bridge crossings – one connecting the Ashfield Flats to Fauntleroy Avenue at Redcliffe and the other connecting Success Hill Reserve with Guildford.

Both proposals will be expensive to construct and at present neither Local nor State Governments have committed funding to them.

A new bridge over the Swan River adjacent but on the northern side of the existing rail bridges is proposed as part of the ultimate development of the Midland Train Line PSP. However, it is expected that it will be many years before this is constructed as it is not included in the 10 year WABN Plan. This bridge, if constructed, will likely eliminate the need for any bridge crossing at Success Hill Reserve.

The bridge connecting the Ashfield Flats with Fauntleroy Avenue, Redcliffe, would provide a number of benefits including:

- > Greater flexibility for recreational loop routes along the Swan River, shortening the distance between existing bridge crossings;
- > Savings of 2-3km for commuters travelling from Bassendean and points further north to the industrial areas at Redcliffe and the Perth Airport Domestic Terminal;
- > Easier access for Redcliffe residents to Bassendean LGA, including the Ashfield Flats and Bassendean town centre.

However, a comparison of these benefits with the cost of construction, and the relative merits of other projects, indicates that the project should have a low priority within the Local Bike Plan. Accordingly, the project has been listed as beyond the 10 years timeframe of the plan.

5.4 Greenways

Many of the local cycling routes within Bassendean are not suitable for traditional Australian treatments, i.e. shared paths or sealed shoulders. For many quiet streets, shared paths provide an interrupted journey requiring frequent stops and contain the inherent risk of conflicts at driveways. It is arguable whether this provides a safer environment with an appropriate level of service, compared to riding on the street. However, less confident cyclists, including school students, will not be comfortable riding on a normal street with vehicle speeds in the vicinity of 50km/h or higher. There is therefore a need to develop a middle solution suitable for both less confident and more confident cyclists.

Through discussions with several key stakeholders, a concept called 'Greenways' has been developed as a way of providing for safer and more efficient local cycling routes within Bassendean. The idea is not a new one – the concept has been used extensively in places like The Netherlands and Portland, USA, and an overview of the design of greenways is given in Section 4.3. The following sections describe the routes which have been selected to be greenways in this Local Bike Plan.

5.4.1 Whitfield Street

Whitfield Street has been identified as a key link in Bassendean which is suitable for the 'greenway' treatment. Whitfield Street runs north-south through the southern half of the LGA, linking together:

- > Ashfield Flats;
- > Bassendean Primary School;
- > Bassendean town centre; and
- > Bassendean Train Station (via the shared path along the southern side of Guildford Road).

Furthermore, the grades are relatively flat, especially compared to neighbouring streets such as Wilson Street (part of Local Bicycle Route NE14).

Figure 5-9 Whitfield Street current configuration



An indicative example of how a Whitfield Street greenway might look is shown in Figure 5-10 and a higher resolution version is provided in Appendix B. The key features include:

- > Shared path or protected, two-way cycle (Copenhagen) lane along the western verge, north of Old Perth Road;
- > A wombat (raised zebra) crossing at Old Perth Road to give cyclists priority over vehicles at this location. Whitfield Street north leg will probably need to be restricted to left-out-only to maximise safety at this location;
- > A cul-de-sac with shared pedestrian/cycle connection on Whitfield Street (south) at Old Perth Road. This is necessary to reduce traffic volumes on Whitfield Street and maximise safety at the crossing location;
- > A reversal of priorities at Palmerston Street to give the greenway priority;
- > A raised platform immediately south of Harcourt Street to slow traffic down in the vicinity of the school and break up an otherwise long, straight section of the street;
- > Reversal of priorities at Bridson Street;
- > Construction of a shared path connection between Bridson and Watson Streets; and
- > Reversal of priorities at Watson Street.

Further measures, including creating a cul-de-sac on Whitfield Street immediately south of Harcourt Street were considered but ultimately rejected. The physical infrastructure outlined above should also be complemented with softer measures to improve the road environment, such as bicycle symbols, and kerb extensions with tree plantings.

Figure 5-10 Greenway Concept as applied to Whitfield Street



It is recommended that Whitfield Street be trialled as the first greenway in Bassendean for a period of between 12 and 24 months. The potential exists for Council to gain some State Government funding from Main Roads and/or Department of Transport as a trial or 'flagship' cycling project, particularly as it links with the WABN infrastructure, train stations and creates a safer route to school. Marketing the project as a trial will enable resident concerns to be dealt with during the trial period and appropriate amendments made to the final design, if it is decided to retain the greenway beyond the end of the trial period.

5.4.2 Second Avenue

Second Avenue runs north-south through the northern half of the LGA, leading from Bassendean Train Station to link with the City of Swan cycle network at Morley Drive. Combined with the pedestrian underpass beneath the train line, east of the station, it forms an important access route to the PSP, town centre and southern part of the LGA.

The key issues with the street are, at present:

- > Poor wayfinding for unfamiliar users;
- > Difficult crossing of Walter Road, particularly during peak periods;
- > Wayfinding and physical connections at Railway Parade.

As part of the greenway project, it is proposed to:

- > Improve wayfinding through the use of bicycle symbols (and accompanying legend, such as 'NE14') on the street;
- > Provide a safer crossing of Walter Road, most likely a large traffic island;
- > Improve connections to Railway Parade at the southern end, e.g. extending the PSP to Second Avenue and providing a wombat crossing at this location.

Whilst Second Avenue currently carries low volumes of traffic, the intersections with Walter Road and Railway Parade pose some difficulties for cyclists. Accordingly, it may be desirable to close at least one leg of Second Avenue at Walter Road and also close Second Avenue at Railway Parade, providing appropriate shared pedestrian/cyclist path access at these locations, similar to that proposed for Whitfield Street.

It is recommended that Second Avenue be treated as the second priority for greenways, following Whitfield Street by 6 to 12 months. As with Whitfield Street, it could be initially implemented on a trial basis for a period of 12-24 months to gauge the improvement for cyclists and the impacts on local residents.

Once both Whitfield Street and Second Avenue greenways are completed, a high quality north-south route serving both halves of Bassendean LGA will be provided, with the exception of the expensive underpass reconstruction at the railway line.

Figure 5-11 Second Avenue current configuration



5.4.3 Old Perth Road/Surrey Street

Old Perth Road and Surrey Street are listed as the third priority greenway in Bassendean. Together they form an important east-west route for cyclists, linking the Guildford Road bridge, the riverside route, Bassendean town centre and Bassendean Train Station. To encourage cycling in and around Bassendean it is critical that the town centre be a safe and friendly place to cycle.

Presently, Old Perth Road is a relatively hostile environment for cyclists of all confidence levels. On-street cyclists are essentially used as speed control devices as, due to the median island, vehicles are unable to pass cyclists while leaving a safe 1m distance. Despite attempts to slow traffic, the road environment still encourages speeds greater than 30km/h which means that cyclists are travelling significantly slower than general traffic, particularly as they ascend the hill from Hamilton Street westward. Off-street cyclists are not well accommodated either as the paths are blocked by advertising signs, street furniture etc.; there are numerous driveway crossings and also heavy pedestrian traffic during peak periods. Community concern has also been expressed about cyclist behaviour on the paths in front of certain shops.

Figure 5-12 Old Perth Road current configuration



The appropriate solution to these issues is a complete redesign of the street to create a safe on-street cycling environment in mixed, slow-speed traffic.

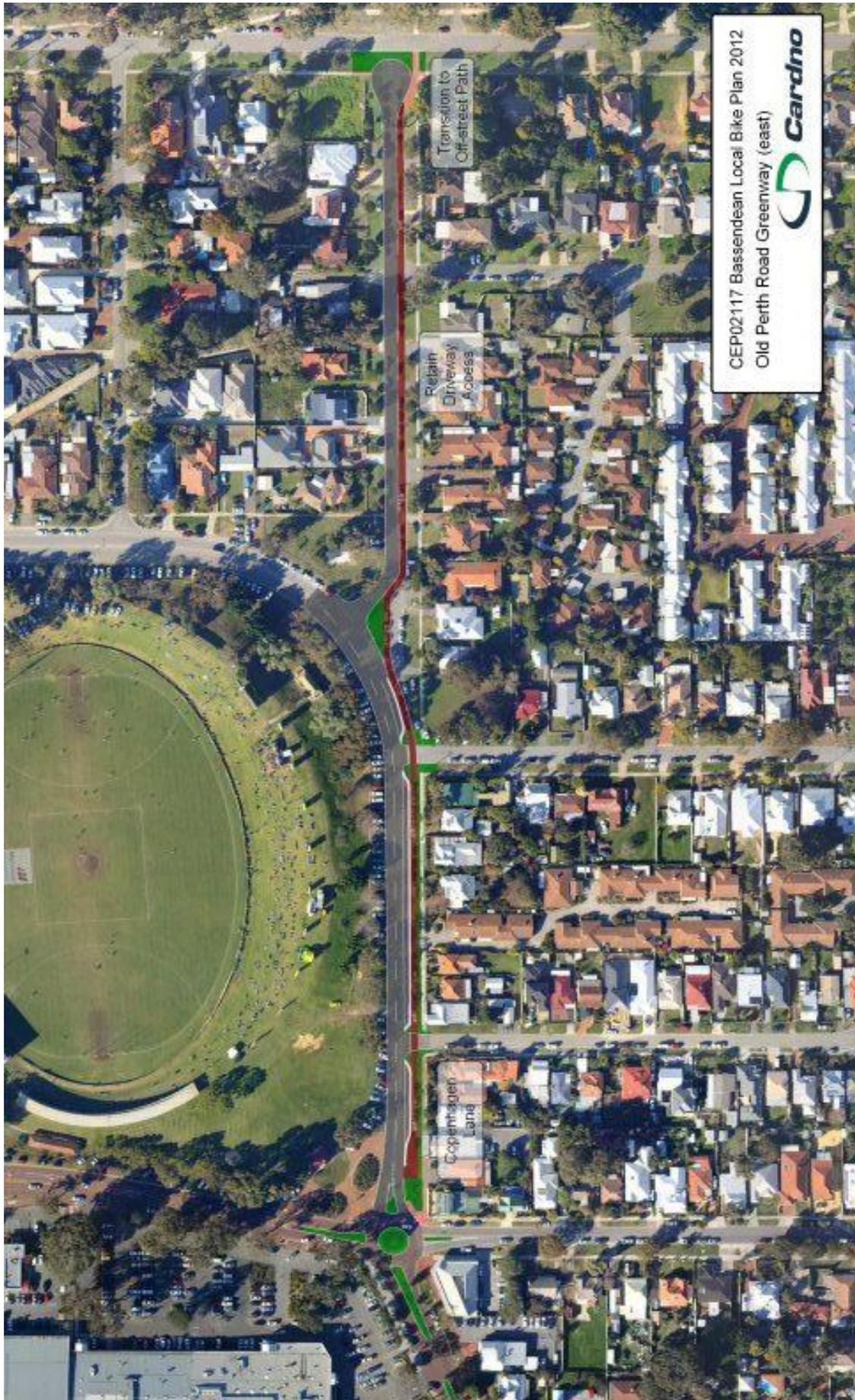
Due to the different traffic environment compared to Whitfield Street or Second Avenue, a different design approach is required. The general features of the redesigned street should include:

- > A low speed environment that discourages speeds above 30km/h;
- > Measures to discourage through traffic, such as a partial road closure at Wilson Street (see below);
- > Improvements to the Old Perth Road/West Road roundabout;
- > Significant narrowing of the road pavement east of the West Road roundabout and changes in priority at the Surrey Street intersection; and
- > Retention of the trees in the median strip.

An indicative concept has been developed which is shown in Figure 5-13 and a higher resolution version is appended in Appendix C. The concept attempts to balance the needs of vehicular access to the town centre and the needs of cyclists for a low speed and low traffic environment.

Figure 5-13 Old Perth Road greenway concept





Changes to Old Perth Road were also considered, from a traffic and parking management perspective, in the LATM Plan. The LATM Plan recommended only minor changes to the road environment, generally consisting of improving pedestrian crossings and parking time limits. These minor changes are unlikely to improve conditions for cyclists. Therefore, it is recommended that the greenway be implemented instead.

5.4.4 Chapman Street

The final link in the recommended greenway network is Chapman Street, providing access to the southern part of the LGA from the Guildford Road/PSP corridor. Chapman Street was selected because:

- > It carries low volumes of traffic due to the cul-de-sac at its western end;
- > It has the easiest grades of any route in this part of Bassendean, avoiding the ridges to the north and south;
- > It is reasonably centrally located to serve the southern part of Bassendean as well as link to Collier Road.

The works required generally include:

- > Refuge island and path connection to PSP at Guildford Road. This will include some road widening on Guildford Road and possibly the removal/relocation of several trees on the northern verge of Guildford Road;
- > Reversal of priorities at key intersections to give the greenway priority;
- > Bicycle symbols painted on the road, as well as kerb extensions to soften the road environment and slow traffic;
- > Changes to priorities at the Chapman Street/Elder Parade and Elder Parade/Watson Street intersections, along with minor changes to kerbs etc.

The most significant piece of infrastructure required for the Chapman Street greenway is a safe crossing of Guildford Road at the end of Chapman Street. This is likely to be an expensive item, however it is critical to the success of the greenway – without it, cyclists are unable to safely and conveniently access to PSP and the route will be much less attractive.

The Elder Parade works are required to provide a clearly delineated connection to the Whitfield Street greenway, allowing access with easy grades to the town centre and also the Ashfield Flats.

Figure 5-14 Chapman Street current configuration



6 Encouraging Behaviour Change

6.1 Cycling in Bassendean

From studies carried out by the Australian Bicycle Council, approximately 30% of West Australian's living in the metropolitan area has cycled in the last month, 45% in the last year. Of these, 77% cycle for recreational, rather than transport, reasons.

Within Bassendean, figures from the 2006 Census show that the Town has a higher proportion of residents cycling to work than Greater Perth – 1.3% compared with 1%. This figure also grew slightly (by 0.1%), in line with the growth seen across Greater Perth between 2001 and 2006.

Table 6-1 Journey to Work data – 2006 Census

Method of Travel to Work	2006		2001		Change		
	Number	%	Greater Perth	Number	%	Greater Perth	2001 to 2006
Train	600	9.3	4.1	467	8.0	3.7	+133
Bus	129	2.0	4.1	80	1.4	3.7	+49
Tram or Ferry	0	0.0	0.0	0	0.0	0.0	0
Taxi	13	0.2	0.2	7	0.1	0.2	+6
Car - as driver	3,964	61.5	63.0	3,635	61.9	63.1	+329
Car - as passenger	350	5.4	5.8	331	5.6	5.7	+19
Truck	76	1.2	1.0	69	1.2	1.2	+7
Motorbike	35	0.5	0.6	38	0.6	0.5	-3
Bicycle	85	1.3	1.0	72	1.2	0.9	+13
Walked only	110	1.7	2.0	79	1.3	1.8	+31
Other	58	0.9	1.1	77	1.3	1.4	-19
Worked at home	198	3.1	3.6	211	3.6	4.1	-13
Did not go to work	715	11.1	11.6	720	12.3	12.2	-5
Not stated	112	1.7	1.7	86	1.5	1.5	+26
Total employed persons aged 15+	6,445	100.0	100.0	5,872	100.0	100.0	+573

6.2 Target Audience

To achieve Bassendean's strategic target to increase cycling activity within the LGA, segments of the population should be identified that may be more likely to cycle, cycle more often or to take up cycling for specific trips (to work, school or for recreation). When reviewing information regarding Bassendean residents' or visitors' likely mode choices and travel behaviour, consideration should be made of those:

- > travelling distances or journeys that could be made by bike,
- > that own a bicycle (or have access to one); and
- > that have a willingness to cycle.

Table 6-2 Residential Location of workers

Residential location of workers (Bassendean)	2006	
	Number	%
Swan (C)	930	17.8
Bassendean (T)	923	17.6
Bayswater (C)	579	11.1
Stirling (C) - Central	337	6.4

Table 6-2 sets out the residential location of those who work in Bassendean as recorded via 2006 Census data. Close to 20% of those working in Bassendean, also live in Bassendean, with a similar number living nearby in Swan. Bayswater also represents a significant number of workers. These three LGAs represent almost 50% of the workers in Bassendean. These workers are within a cycling catchment of approximately 5-10kms, a distance which is easy to cycle in 15 – 30 minutes. While these figures are for employment based trips, similar figures could be estimated for education, social and recreational based trips.

The National Cycling Participation Survey suggests that approximately two thirds of households in Western Australia have access to a bicycle. In 2011, this equates to approximately 4,000 bicycles within Bassendean households.

From the Town of Bassendean’s *Physical Activity Strategic Plan (2010-2013)*, cycling is highlighted as one of the preferred method of vigorous activity via the community consultation feedback.

This evidence suggests that there are a range of trips that could be undertaken by bicycle by Bassendean residents, workers, students or visitors, it is likely that the majority of residents have access to a bike and that there is a willingness to travel by bike. Therefore, it is reasonable to conclude that cycling has considerable potential to increase its mode share in Bassendean.

However, in order to achieve this potential, a range of barriers to cycling should be addressed and overcome via targeted methods, including activities related to cycling segmentation.

6.3 Cycling Segmentation

Roger Geller’s cycling segmentation (as illustrated in Figure 6-1 below with the segments described in Table 6-3) is a best practice model for identifying the type and needs of existing and potential cyclists. Geller proposed this cycling segmentation during his work with the City of Portland in Oregon, which has since been supported through surveys and adopted as a schematic model for the purposes of cycling development.

Figure 6-1 Geller’s Cycling Segmentation



Table 6-3 Geller's Cycling Segmentation – Descriptions

Type	Approximate Proportion	Description
Strong and Fearless	1%	Will ride anywhere and in any weather conditions.
Enthused and Confident	6%	Relatively comfortable on busy roads with bike lanes
Interested but Concerned	60%	Uncomfortable around traffic, feel unsafe.
No way, no how	33%	Not interested in cycling for transport

From the ABS 2006 data (shown in Table 6-1), it is likely that the majority of those cycling regularly or for transport (such as to work) in Bassendean at present fall into the Strong and Fearless or Enthused and Confident categories.

As it is recognised that the 'Strong and Fearless' group will likely cycle with or without specific behaviour change activities or infrastructure, and represent only a small proportion of the population of Bassendean, emphasis for activities has therefore been placed on encouraging the remaining portion of the population that may cycle occasionally or for recreation (an estimated 77% of the population in accordance with WA's cycling participation survey results). This proportion is likely to make up the Interested but Concerned segment.

This segment will require the implementation of cycling infrastructure to start cycling, but holds the most potential for increasing cycling mode share. The purpose of behaviour change activities for this group is therefore to encourage the development of an appreciation of the benefits, provision of the tools and culture of support for cycling while the network develops.

This research and methodology has informed the proposed approach and activities for Bassendean.

6.4 Recommended Behaviour Change Approach and Activities

There are many models for using promotion to encourage behaviour change. Table 6-4 provides an overview of the considerations based on Prochaska's model of the Stages of Change. This model is considered appropriate for Bassendean, and provides a clear framework for identifying suitable promotional activities for the Town in order to increase the uptake of cycling for transport purposes. Specifically for the "Enthused and Confident" and "Interested but Concerned" segments it provides focus on activities that promote 'everyday' cycling in a positive manner and focuses on tools to overcome identified barriers to cycling.

Table 6-4 Behaviour Change Approach

Stage of Change	Individuals Perception	Potential Activities and Interventions
Pre-contemplation	Not considering bike riding	Raising the awareness of cycling Introduce messages that portray riding as an activity that individuals associate with in a positive manner.
Contemplation	Aware of bike riding, the benefits and interested in finding out more	Ensure that tools and resources are available to support potential riders seeking information.
Preparing	Would like to give riding a go	To be able to ride appropriately , have access to a bicycle, to know how to ride it and have the relevant resources and facilities provided.
Action	Riding for the first time	Ensure infrastructure and supporting facilities are well maintained, safe, legible and convenient so that the new rider has a positive initial experience.
Maintaining	Riding again	Positive reinforcement – or the rider may not choose to ride again and relapse into their old behaviour (non-bike riding).
Relapse	Stopping riding	The rider may re-enter the stages of change at any of the above steps.

6.4.2 Raising the awareness of cycling

These activities ensure that positive messages regarding cycling are included wherever possible in order to raise awareness of cycling throughout the Bassendean community. Particularly for Bassendean, celebrating the introduction of new infrastructure should provide an important opportunity to raise awareness of cycling and encourage the wider public to give the new infrastructure a go.

Examples: Information regarding cycling related activities being included on the Council website, newsletters and community events. Opportunities to capture and promote feedback from riders regarding why they enjoy riding to Bassendean could also be included within this material. Positive imagery of cycling, and local infrastructure where possible, should be included in Council publications, plans and reports whenever appropriate.

6.4.3 Tools and Resources

In order to support those who may be considering cycling, knowledge of the provision of infrastructure through route maps, visible bicycle parking in convenient locations, guidance on cycling etiquette, road rules and cycling safely is recommended to help encourage and equip them to take action.

Examples: Relevant information could be supplied electronically in downloadable format from the Council's website, made available in printed format from the Library and Community Centre. As the Council will be looking to introduce new types of cycling and road user infrastructure through the 'Greenways' project, it is recommended additional education and promotion is associated with these changes to ensure all users are informed and advised of appropriate use of the new facilities.

6.4.4 To be able to ride appropriately

In order to ride a bike, you must have access to a bike to ride, and know how to ride it appropriately. Several local authorities within Western Australia work to address this barrier through providing cycle training courses, in order to introduce new riders or increase confidence for the inexperienced rider. This could be an option for the Bassendean community.

Examples: Cycling education courses and lead rides could be provided.

6.4.5 Infrastructure and supporting facilities

This Bike Plan provides a detailed list of recommendations regarding potential cycling infrastructure requirements, supporting facilities (such as bike racks) and the importance of maintenance. Cycling and other community events could be associated with the opening of specific bicycle routes and facilities as completion of the recommended infrastructure programs occur, alongside ensuring appropriate promotion and education regarding the new facilities. Other supporting infrastructure could include signage and wayfinding tools, bicycle maintenance facilities such as air pumps and so on.

6.4.6 Positive Reinforcement

To encourage those who start riding, to continue riding, infrastructure must continue to meet users' needs and provide for a positive experience. To further reinforce this behaviour, opportunities to recognise and/or reward bike riders should be considered.

Examples: Cycling surveys and counts to demonstrate and promote improvements to the wider public, alongside using community events to recognise bike riders. Several authorities also participate in Super Tuesdays, which is a national annual bike count event. Others use Bike Week to provide an opportunity to both promote cycling and recognise existing riders, often through Cycling Breakfasts.

Alongside the above examples, and number of specific activities for consideration are included in Table 6-5.

Table 6-5 Proposed Actions and Suggested Activities

Proposed Actions	Criteria Addressed					Suggested Activities
	A Raising awareness of cycling	B Tools and Resources	C To be able to ride appropriately	D Infrastructure and supporting facilities	E Positive Reinforcement	
Including cycling as part of existing Bassendean Community events	✓		✓		✓	<p>The Bassendean community currently participates in a range of community events, including NAIDOC Day, Australia Day, Anzac Day and the Art Awards. These events could have cycling initiatives integrated with them, either to encourage cycling to the event or within the event itself. Information regarding bicycle routes and parking should be provided for community events.</p> <p>Utilising the Bassendean Movies by Burswood initiative, group rides in summer evenings could be held, using traffic free or low traffic routes.</p>
Bassendean actively participating in existing cycling programs	✓		✓		✓	<p>Participation in Bikewest's Cycle Instead in Spring Cycle Challenge (an example of the promotional resources for this programme is included in Appendix D).</p> <p>Glamour Push is also a Bikewest initiative, with a focus on encouraging females to engage with the Cycle in Spring event.</p> <p>Bike to Work Day is a nation event, held annually in March alongside the freeway Bike Hike</p>
Including cycling within existing community communication tools	✓	✓				<p>Bassendean briefings newsletters are already used to promote infrastructure however, the newsletter could also include information on the benefits of cycling, upcoming cycling events and promotions and where to find more information.</p> <p>Active engagement with the Bassendean BUG to understand their communication processes and membership. Organised rides, maintenance classes and so on could be promoted within Bassendean Briefings much like the Walking for Pleasure Group.</p>
Council website to include cycling information and advice	✓	✓				<p>At present, cycling information on the Bassendean website is difficult to locate, this could be improved to ensure easier wayfinding within the site.</p> <p>Bikewest provides significant amount of information regarding cycling, which could be utilised by Bassendean through weblinks or copies can be ordered through forms provided on the Department of Transport website.</p>

Proposed Actions	Criteria Addressed			Suggested Activities	
Maintain a current map of bike routes and supporting infrastructure for Bassendean	✓	✓	✓	<p>While maps exist for cycling infrastructure for Bassendean (developed via the TravelSmart programme and included in Appendix D), this information is not easy to locate and was last updated in 2010. The maps should be updated to reflect infrastructure as it is implemented, with an accurate electronic version available online.</p> <p>Additional promotion of the Swan Heritage Trail could also be considered (Appendix D) or a cycling version of the Walking Trails brochure (Appendix D). These maps could incorporate local sites of interest including the Old Perth Markets.</p> <p>The Physical Activity Strategic Plan for Bassendean included development of 'best of' series of brochures, including one for the 'best of cycling'. This idea could be developed in order to provide information on the Bassendean website.</p>	
Practical support to remove barriers such as the required skills and costs associated with bicycle maintenance		✓	✓	✓	<p>Provide bicycle air pumps (as seen in place outside the Centro in Victoria Park, 'LifeCycle Pumps') and cycle maintenance facilities (Bicycle Repair Stands) at key points within Bassendean – particularly at train stations. This could be pursued in partnership with PTA.</p>
Monitoring of the levels of cycling trips and attitudes towards cycling	✓			✓	<p>It is recommended that Bassendean engage in yearly or bi-yearly cycling counts. This work could potentially be undertaken in partnership with a variety of other stakeholders – particularly adjacent local authorities. Examples include Super Tuesday counts.</p> <p>Results could build on the National Cycling Participation Survey findings, providing evidence of the value of investment in cycling promotion and progress towards the goals included in the Bassendean Bike Plan.</p>

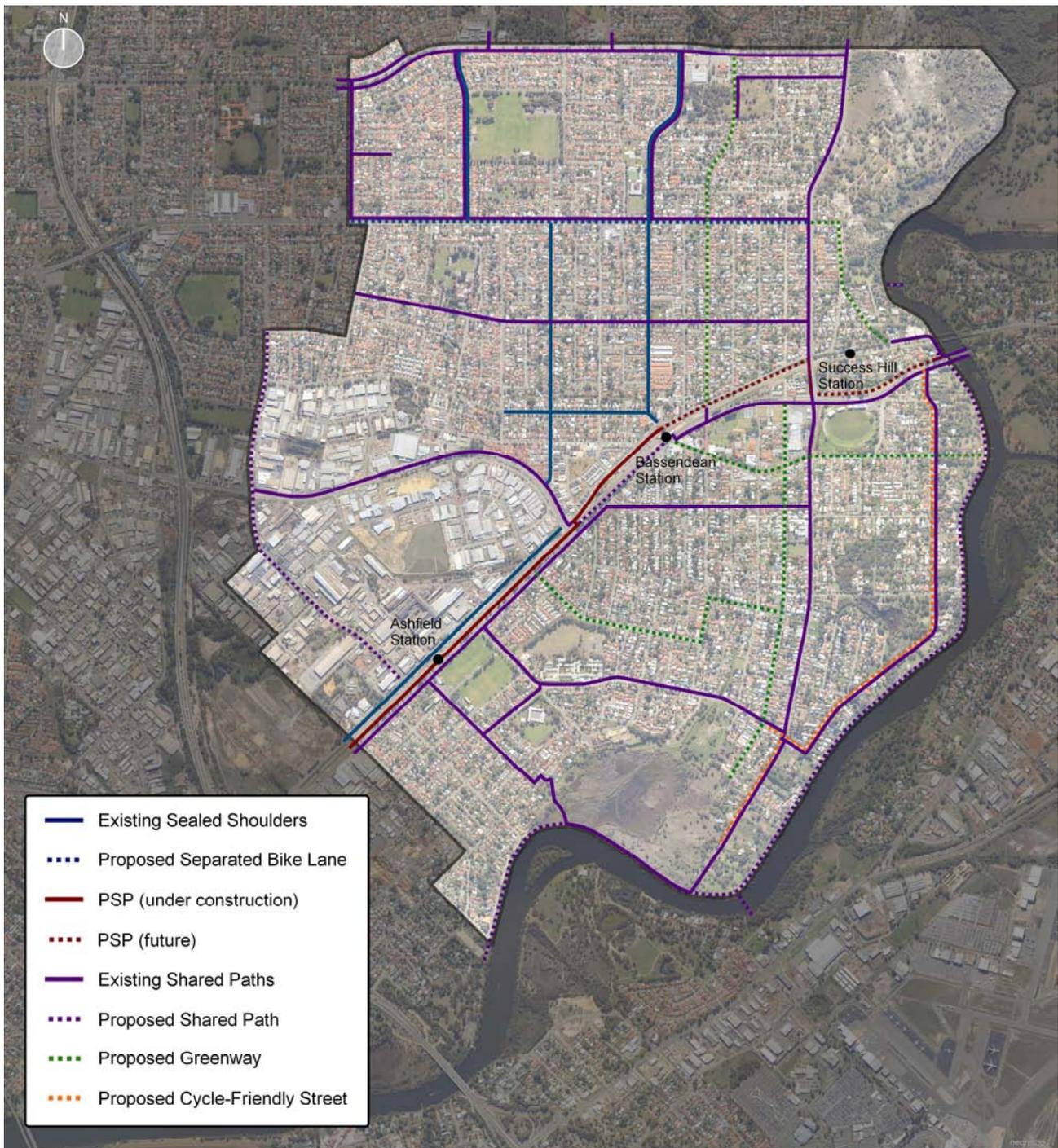
It has been identified through the Bike Plan development process that Bassendean provides a number of opportunities for incorporation of cycling into events and programs already being offered by the Council. Maximising external support and provision of events provides a range of 'quick wins' for the Council to raise the profile of cycling within the community while the cycling network and associated infrastructure is implemented. However, it should be noted that alongside encouragement of cycling, education and activities regarding improving road user behaviour for riders and other motorists should be undertaken to ensure that the cycling culture of Bassendean develops in an integrated and positive manner. This is a particular focus for the implementation of new infrastructure ('greenways') to ensure that all users are aware of the appropriate behaviour within these routes.

7 Implementation

7.1 Network Plan

The outcomes of the gaps and opportunities analysis, discussed in Chapter 5, have been developed into a coherent cycling network plan, bringing together local destinations and the higher order PSP network. This is shown in Figure 7-1 below. A high resolution version of the network plan is appended to this report in Appendix E.

Figure 7-1 Cycling Network Plan



The network plans represent an 'ultimate network' for a planning horizon of 10+ years and accordingly many of the proposals on the plan will not be constructed for a number of years. However, the ultimate network plan is presented as a guide to enable Council to take full advantage of any opportunities which may arise to develop parts of the network through other projects – e.g. streetscape improvements, road upgrades or land redevelopment.

Not all paths are illustrated on this map – only the significant links in the network, however there are many other paths in the LGA which are suitable for use by cyclists. All new paths should be constructed with use by cyclists as a key element of their design.

7.2 Schedule of Works

Table 7-1 presents the schedule of works, indicative cost estimates and the priority order which it is recommended they be undertaken in. The details of each project are further described in Chapter 5. The greenway projects will require further detailed design investigations to determine the optimum layout.

Table 7-1 Schedule of Works

Priority	Project Location	Details	Indicative Order of Cost Estimate
1	Whitfield Street	Greenway	\$250,000
2	North Road/Bassendean Parade	Cycle-friendly street treatment – includes selective dead ends for vehicle traffic	\$250,000
3	Second Avenue	Greenway	\$150,000
4	Old Perth Road/Surrey Street	Modified greenway – includes extensive traffic management treatments to combine cycle facilities with main street environment and improvements to streetscape. Also includes PSP standard connection along northern side of Guildford Road from Collier Road to Old Perth Road.	\$800,000
5	Chapman Street	Greenway and crossing improvement at Guildford Road (cost estimate excludes Guildford Road crossing)	\$100,000
6	Walter Road/Seventh Avenue/Eighth Avenue	Development of strategic Midland-Morley connection. Includes protected cycle lanes on Walter Road, greenway environment along Seventh Avenue and Eighth Avenue, connection to traffic bridge via existing paths.	\$300,000
7	Grey Street/Jackson Street	Shared path along western verge. Crossing improvement at Collier Road – either signalisation or significant upgrades to crossing points (cost estimate excludes signalisation)	\$350,000
8	Railway underpass east of Bassendean Station	Feasibility study to reconstruct underpass to cater for cyclists and extend eastwards under Guildford Road to BIC Reserve.	\$100,000
9	Ashfield Flats to Guildford Traffic Bridge	New shared path along river foreshore (path cost only, excludes significant earthworks)	\$600,000
10	Ashfield Flats to Moojebing Street	New shared path along river foreshore (path cost only, excludes bridge works)	\$70,000
11	Ashfield Flats to Hay Road (Redcliffe)	Feasibility study to construct new bridge over Swan River and approaches	\$100,000
12	Midland Train Line PSP, Lord Street to Meadow Street	Feasibility study to construct new bridge over Swan River and approaches	\$200,000

7.3 Maintenance Programmes

Regular maintenance is required to keep cycling facilities in a reasonable condition. Cyclists are particularly vulnerable to punctures and crashes caused by broken glass, loose gravel and vegetation. Regular maintenance activities should include the following:

- > Regular sweeping of paths to remove gravel, sand/earth, broken glass and vegetation;
- > Targeted sweeping of known problem areas – e.g. paths through parks after a Saturday night;
- > Prompt cleanup from storms, fires and other one-off events which cause damage to paths;
- > Regular pruning of vegetation to ensure the full path width is available; and
- > A regular, documented system of visual path inspections to identify surface or structural defects. An allocation should be made in each financial year for preventative or remedial maintenance to address this type of issue.

7.4 End of Trip Facilities

Recommendations for additional end of trip facilities have been provided in Section 4.4.

7.5 Feedback Register

Feedback is received from time-to-time from residents and visitors about the cycling network. If this feedback is not addressed immediately, it should be kept on a feedback register to ensure that when the next bike plan is being prepared, the feedback can be incorporated in the new plan.

7.6 Promotion

Chapter 6 provides an outline of suitable strategies for encouraging cycling in the Town of Bassendean. Council should incorporate these strategies into its operational practices.

7.7 Review

This plan should be reviewed during the 2017/18 financial year to re-evaluate the progress of the capital works plan and review project priorities. It is recommended that the Town allocate sufficient funding to allow comprehensive consultation and project scoping as part of the updated Local Bike Plan.

8 Conclusion

Cardno was commissioned by the Town of Bassendean to prepare a Local Bike Plan for the Bassendean LGA.

The previous Local Bike Plan for the Town of Bassendean was prepared in 1996 and many of the projects within it had been completed. Furthermore, the cycling environment in Perth and across the nation has changed significantly during the intervening 15 years. A new Local Bike Plan is needed to adequately address these changes and set out the way forward for cycling in the Town.

The Plan aims to promote, encourage and facilitate the greater use of cycling as a mode of transport in the Town of Bassendean. To achieve this, the Plan brings together design guidelines, a prioritised schedule of works and recommendations for maintenance, promotional and behaviour change strategies.

The basis of the trunk network in Bassendean is well provided for, particularly through the recently completed PSP extension from Bayswater to Bassendean, and the forthcoming extension to Midland. However at the local cycling level, significant investment is required in order to provide a network which is safe, friendly and convenient cyclists of all confidence levels.

For some key routes, linking residential areas to the town centre, the PSP network, schools and parks, a traditional Australian approach of either shared paths or sealed shoulders is not likely to be effective in increasing the attractiveness of cycling. Accordingly, a network of greenways, based upon a north-south spine included Whitfield Street and Second Avenue is proposed to link the key local attractors. The greenways include alterations to the road environment to reduce traffic speeds and volumes, e.g. road closures and traffic calming devices, as well as softer measures such as pavement markings, to create a low speed, low traffic on-street cycling environment for all ages.

North-south connectivity across the railway line remains a significant issue for cyclists in Bassendean. Construction of a PSP quality path along the northern verge of Guildford Road from Collier Road to Old Perth Road, along with the proposed Old Perth Road greenway, will significantly improve access between the PSP and southern Bassendean. It is proposed to reconstruct the existing railway underpass east of Bassendean Train Station, however this project will be very expensive and accordingly it can only be viewed as a long term proposition.

The Swan River foreshore is a significant attraction for recreational cyclists, however the existing foreshore route through Bassendean is discontinuous, comprising a mix of on-street/footpath riding and good quality shared path across the Ashfield Flats. Completing the link from Redcliffe Bridge to the Guildford Road bridge to riverside shared path stage is a high priority, however there are numerous private property issues which prevent its immediate construction. This work has therefore been retained as a long term proposition.

To complement the significant infrastructure investment that is required, a range of behaviour change strategies have also been recommended.

Local Bike Plan 2012

APPENDIX A
COMMUNITY
CONSULTATION
SURVEY



Town of Bassendean Local Bike Plan



How often do you ride a bicycle?

- Never
- Once a fortnight
- 2-3 times per week
- Once a month
- Once a week
- Practically every day

What is the principal purpose of your bicycle trip(s)?

(Please check one)

- Education
- Recreation
- Other _____
- Work
- Shopping

How old are you?

- 0-12 years
- 13-17 years
- 18-24 years
- 25-34 years
- 35-44 years
- 45-54 years
- 55+ years

What do you like about your chosen route(s)?

What do you dislike about your chosen route(s)?

Why do you prefer this route over other alternatives?

What improvements could be made to make your cycling trip better?

Do you have any other comments or suggestions concerning bicycle infrastructure in the Town of Bassendean?

A map of Bassendean has been included on the back of this survey. Please take this opportunity to **mark** your primary cycling route(s) (e.g. home to work, home to school, recreational riding route etc).

Completed surveys can be deposited at the Town of Bassendean offices, mailed to Cardno Eppell Olsen, PO Box 447, West Perth 6005, or emailed to Sam.Laybutt@cardno.com.au.

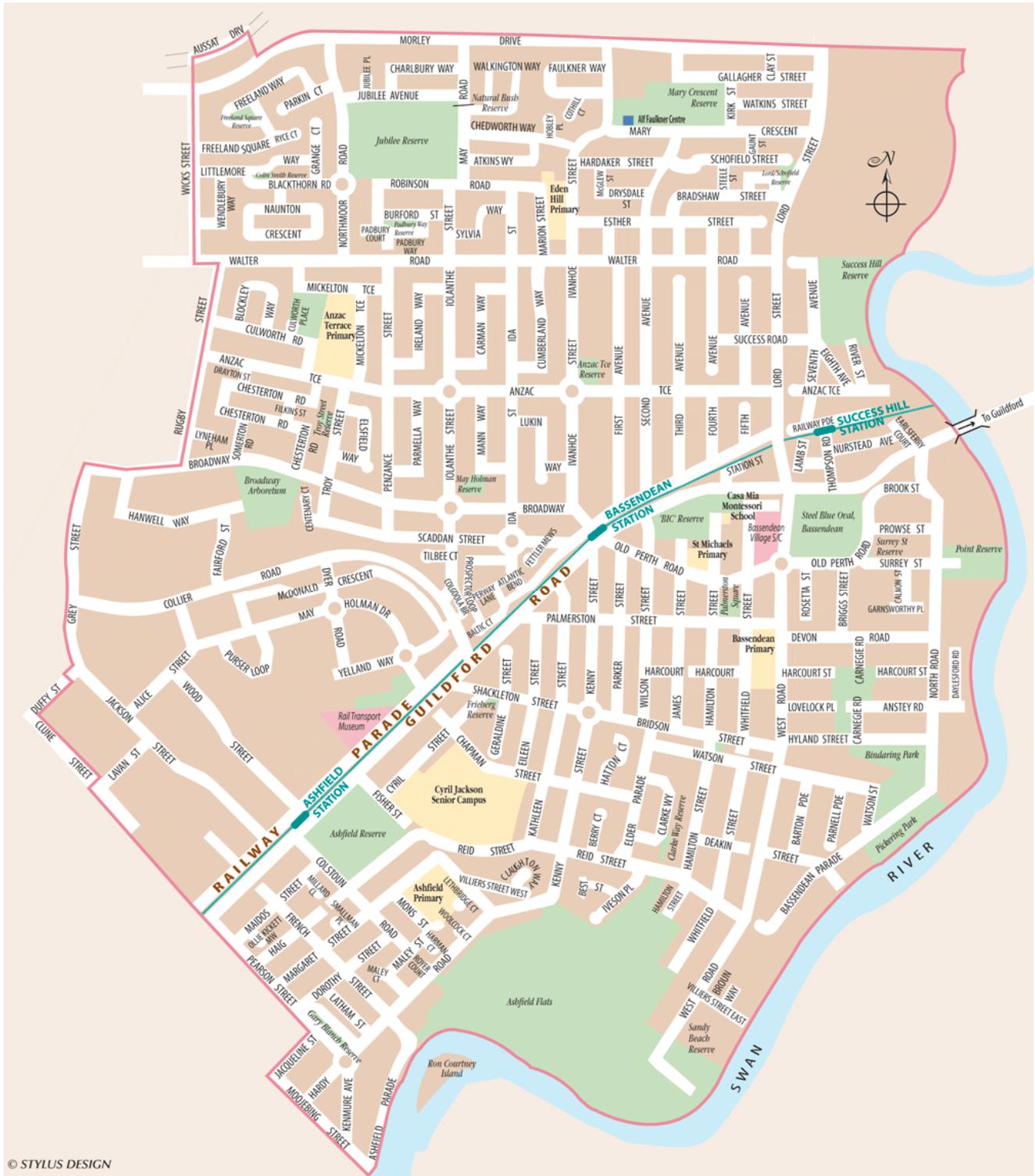
Please submit your surveys by 1 June 2012

A community forum will be held to discuss cycling in the Town of Bassendean. Please feel free to attend and provide input into shaping the draft cycling network. You will also have the opportunity to comment when the Draft Local Bike Plan is placed on public exhibition.

Town of Bassendean Community Cycling Forum

LOCATION Committee Room, Town of Bassendean
ADDRESS 48 Old Perth Road, Bassendean
Date: 30 May 2012
Time: 6.30pm

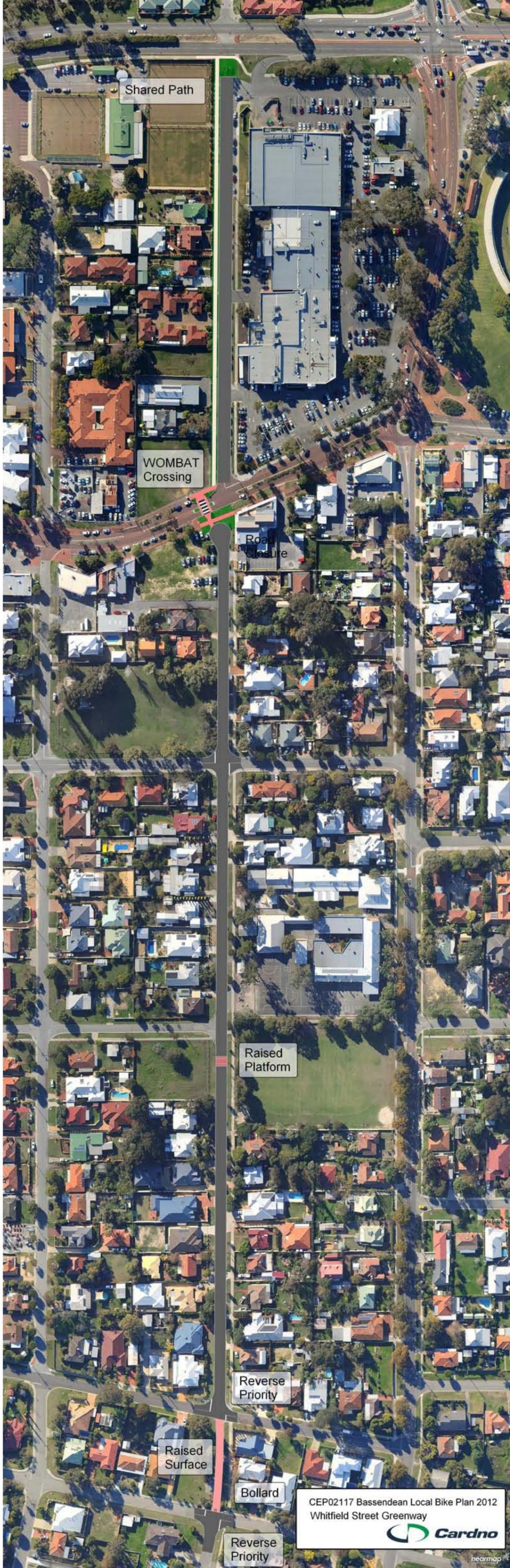
Please mark your **primary** cycling route(s) on the provided map. You may wish to **circle** road crossing points or put an **X** at the location of existing issues. Feel free to label the map in any way you wish. This information will assist us in improving service along your preferred route.



Local Bike Plan 2012

APPENDIX B
WHITFIELD STREET
GREENWAY
CONCEPT





Shared Path

WOMBAT Crossing

Road Closure

Raised Platform

Reverse Priority

Raised Surface

Bollard

Reverse Priority

CEP02117 Bassendean Local Bike Plan 2012
Whitfield Street Greenway



nearmap

Local Bike Plan 2012

APPENDIX C
OLD PERTH ROAD
GREENWAY
CONCEPT





One-way Street with
Contra-flow Bike Lane

Raised
Platform

Raised
Platform

One-way Street with
Contra-flow Bike Lane

Raised
Platform

As per
Whitfield
Street



Copenhagen Lane

Retain Driveway Access

Transition to Off-street Path

CEP02117 Bassendean Local Bike Plan 2012
Old Perth Road Greenway (east)



Local Bike Plan 2012

APPENDIX D
EXAMPLES OF
BEHAVIOUR
CHANGE
STRATEGIES





Summary sheet | 2011 National
Cycling Participation Survey

Western Australian Cycling Participation



Western Australia has cycling participation rates significantly higher than the national average.

Around 22% of WA residents ride in a typical week, increasing to 30% over a month and 45% over a year.

WA has one of the highest levels of participation in children with about 57% of children aged under 10 and 45% of children aged 10-17 riding each week.

Participation of adults decreases to about 15% of 18-39 year olds and 12% of those aged 40 and over.

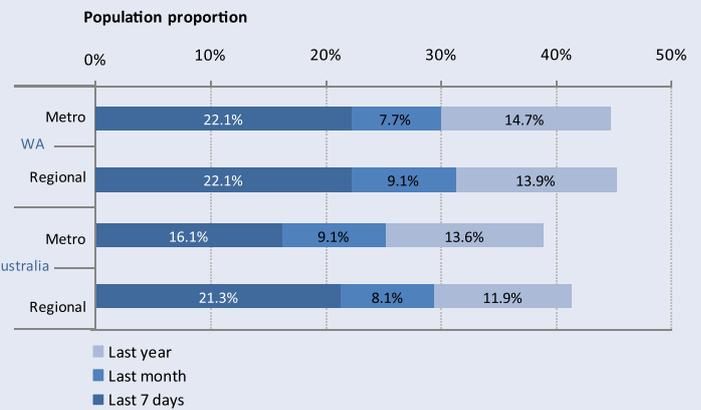
Men and boys are more likely than women and girls to ride. About 27% of males and 17% of females ride in a typical week. The lowest rate of participation is by older women with 8% of women aged 40 and over cycling in a typical week.

WA has a significantly higher rate of recreational riders than the national average - 77% of people who ride in a typical week do so for recreation.

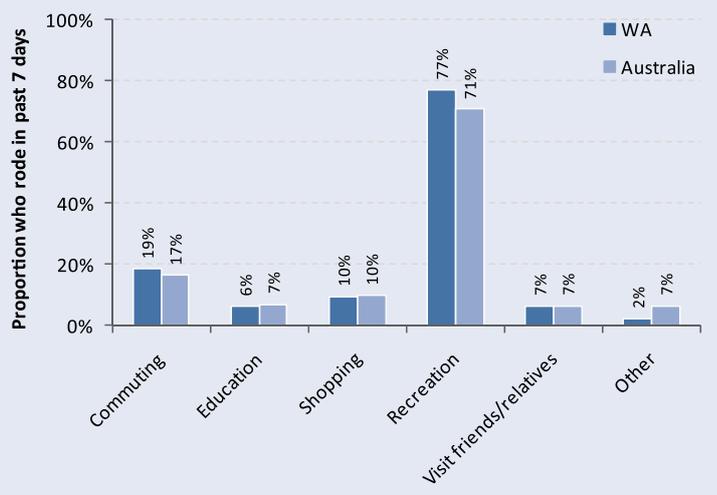
About 159,000 people make at least one trip for transport in a typical week. Transport trips include riding to work, education, shopping or visiting friends or family.

Nearly two thirds of households in WA have access to a bicycle.

Cycling participation as a proportion of resident population



Purpose for cycling travel by West Australian residents who rode in the past 7 days

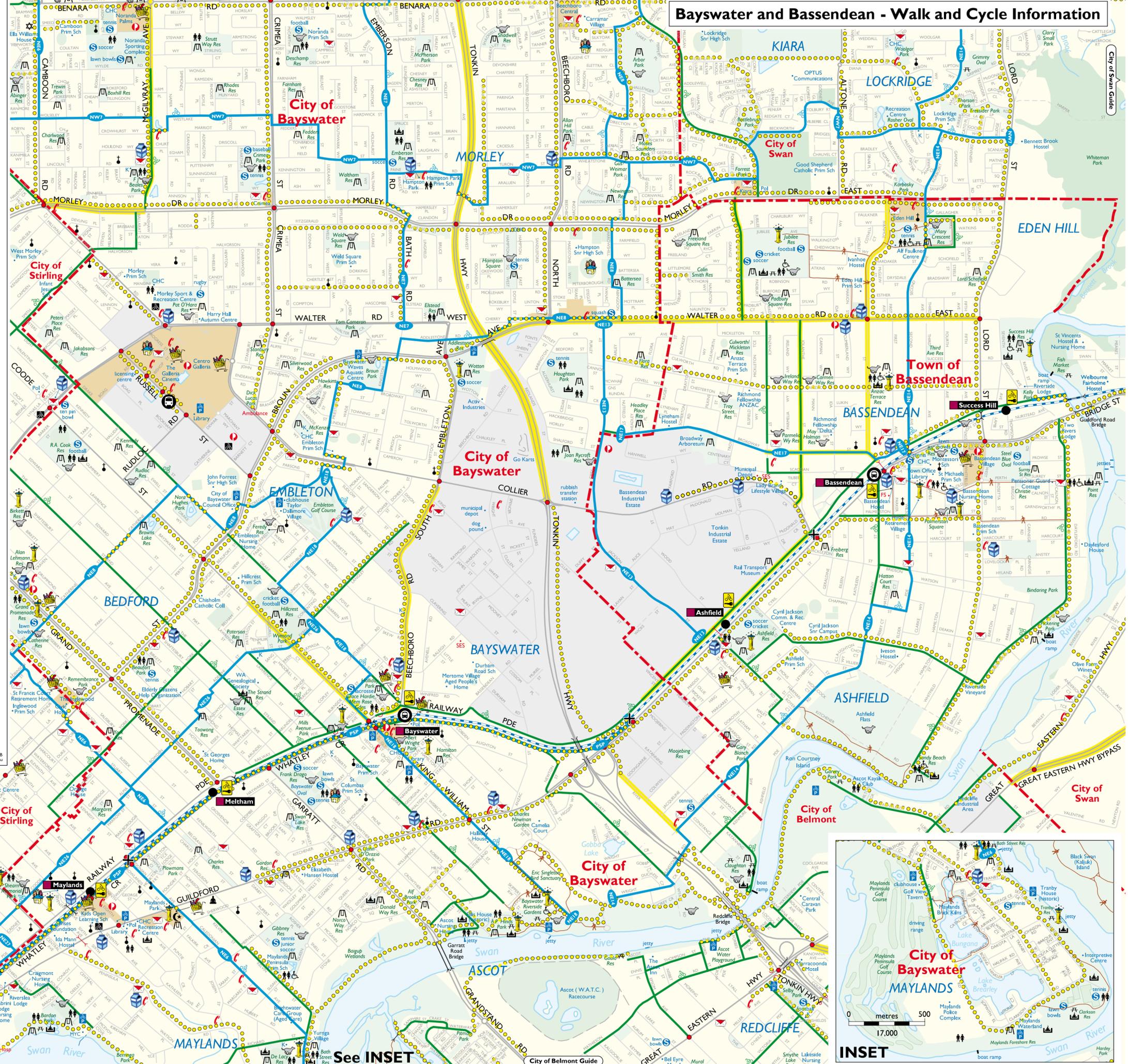


Bayswater and Bassendean - Walk and Cycle Information

Legend

- Perth Bicycle Network (PBN) - Continuous Signed Routes
- NE27 PBN Route Number
- PSP Principal Shared Path
- Local Bicycle Friendly Street
- Path (shared by cyclists and pedestrians)
- Bicycle Lanes or Sealed Shoulders either side
- Bus Transfer
- Train Station
- Bus Station
- Railway Crossing
- Major Road, Traffic Light
- Minor Road, Proposed Road
- Road Bridges, Footbridges and Underpasses
- Walk Trail
- Local Government Authority Boundary
- Shopping Area
- Parks and Recreation
- Ovals, Prepared Ground
- Bushland
- Industrial Area
- Bicycle Lockers
- Bicycle Shop, Bicycle Parking
- Supermarket
- Cultural Community Centre
- Dog Exercise Area
- Skate Park
- Tertiary Education
- Drinking Fountain
- Barbecue
- Delicatessen
- Post Office, Post Box
- Public Toilet, Accessible Toilet
- Telephone
- Sporting Facility
- Place of Worship
- Picnic Area
- Police
- Kindergarten
- CHC Child Health Centre
- Playground
- Fire Station
- SES State Emergency Service

Scale: 0 to 500 metres. 17,000 scale. Effective: 7 September 2010. Dat: 9/25/2010. projectmap@transperth.wa.gov.au



How do you get around?

A travel survey of residents in the Perth metropolitan area found that 80% of trips were made by car, and most were by the driver on their own. There are travel alternatives available in your local area. By walking, cycling or using public transport you can reduce your car trips and help to:

- reduce local traffic
- reduce air pollution and greenhouse gas emissions
- improve your health through physical activity
- reduce your travel costs

Wherever you are going, consider your options - that's what being TravelSmart is all about.

Public Transport

Public Transport is a quick and convenient option for many trips. When travelling on public transport, you can sit back and relax, saving on car running and parking costs. Try catching public transport to shops, sport events, concerts or other attractions.

SmartRider Information:

SmartRider is Transperth's electronic ticketing system. It's a more convenient and secure way to pay for your travel on Transperth services. Your SmartRider records your journey details (when you tag on and tag off all Transperth buses, trains and ferries) and the appropriate fare is deducted from the stored value on your SmartRider. When you travel using SmartRider you save 15% to 25% off cash fares every time you use public transport. You can add value to your SmartRider via; Autoload (direct debit), BPay, at Transperth InfoCentres and selected SmartRider Retail Sales Outlets, Add-Value Machines at train and bus stations, and on board buses and ferries. Cash tickets are also available. To find out more about the benefits of SmartRider or to find where your nearest SmartRider Retail Sales Outlet is located, visit the Transperth website at www.transperth.wa.gov.au or call the Transperth InfoLine on 13 62 13.

Train frequencies: Midland Train Line

Time	Frequency
Weekdays - Peak periods	8/12 mins*
- Off peak	15 mins
- Evening (7.30pm onwards)	30 mins
Weekends - Day	15 mins
- Morning/Evening	30 mins

*Peak periods are 7:00am to 8:30am and 4:00pm to 6:00pm. In peak periods trains stop at Maylands, Bayswater and Bassendean stations every 9 minutes and at Mt Lawley, Meltham, Ashfield and Success Hill stations every 17 minutes.

Trains travelling to Perth between 7:00am and 8:30am stop at Maylands, Bayswater and Bassendean stations every 6 to 14 minutes whilst trains travelling from Perth between 4:00pm to 6:00pm stop at these stations every 7 to 13 minutes. Trains travelling to Perth between 7:00am and 8:30am and trains travelling from Perth between 4:00pm and 6:00pm stop at Mt Lawley, Meltham, Ashfield and Success Hill train stations every 20 minutes.

Public Transport hints:

- Timetables and guides for Transperth services are available at Transperth InfoCentres, Council offices and libraries. For information on wheelchair accessible Public Transport services call 13 62 13.
- To view bus, train or ferry times on your WAP enabled mobile - simply enter 136213.mobi into the browser, then follow the links. (For buses, enter the 5 digit stop number found on the timetable information unit or the orange bus stop pole.)
- To download timetables to your PDA or iPod, go to the website, www.transperth.wa.gov.au and follow the links to 'timetables' and 'services 4 mobiles'.

TravelSmart Workplace:

TravelSmart Workplace assists businesses, government agencies and local councils to promote travel alternatives to employees and visitors. Cycling, walking, public transport, carpooling and teleworking are all TravelSmart options. Your workplace can be part of the transport solution through TravelSmart Workplace - find out how at www.transport.wa.gov.au/travelsmart.

Walk or Cycle

There are many short trips where travelling on foot or bicycle is a good alternative to driving. A recent travel survey found that almost half of the car trips made by residents are 5km or less, 30% are 3km or less and some are just a few hundred metres.

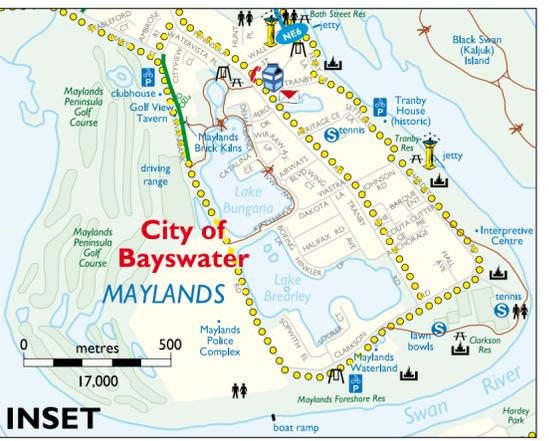
This shows that walking or cycling is possible for many trips - such as going to the local shop or getting the kids to school. And it is a way of fitting healthy physical activity into your everyday life.

Walking hints:

- Two trips a day will go a long way to help you 'find 30' minutes of exercise.
- Be courteous to cyclists on shared paths by keeping left.
- For more information on great Perth walks and other useful walking information go to: www.transport.wa.gov.au/walking

Cycling hints:

- Find a convenient cycle route. Use this map or one of the Perth Bike Map Series (more comprehensive cycling maps) that can be purchased from bike shops.
- Wear a helmet and bright clothing.
- At night, use front and rear lights.
- Talk to regular cyclists for advice on local cycling conditions.
- Be courteous to walkers who use shared paths and always give way to pedestrians.
- Information about taking bikes on Perth public transport can be found on the Transperth website: www.transperth.wa.gov.au.
- For further cycling information visit: www.transport.wa.gov.au/cycling.



ECU Mt Lawley Guide

Includes a scale of 0 to 500 metres and a 17,000 scale. Effective: 7 September 2010. Dat: 9/25/2010. projectmap@transperth.wa.gov.au

Town of Vincent Guide

See INSET

City of Belmont Guide

*H*ERITAGE
*T*RAIL



— SWAN RIVER —



108 Adelaide Tce East Perth Western Australia 6004
Tel (08) 9221 4177 Freecall 1800 644 177 Fax (08) 9221 4151

Swan River Heritage Trail

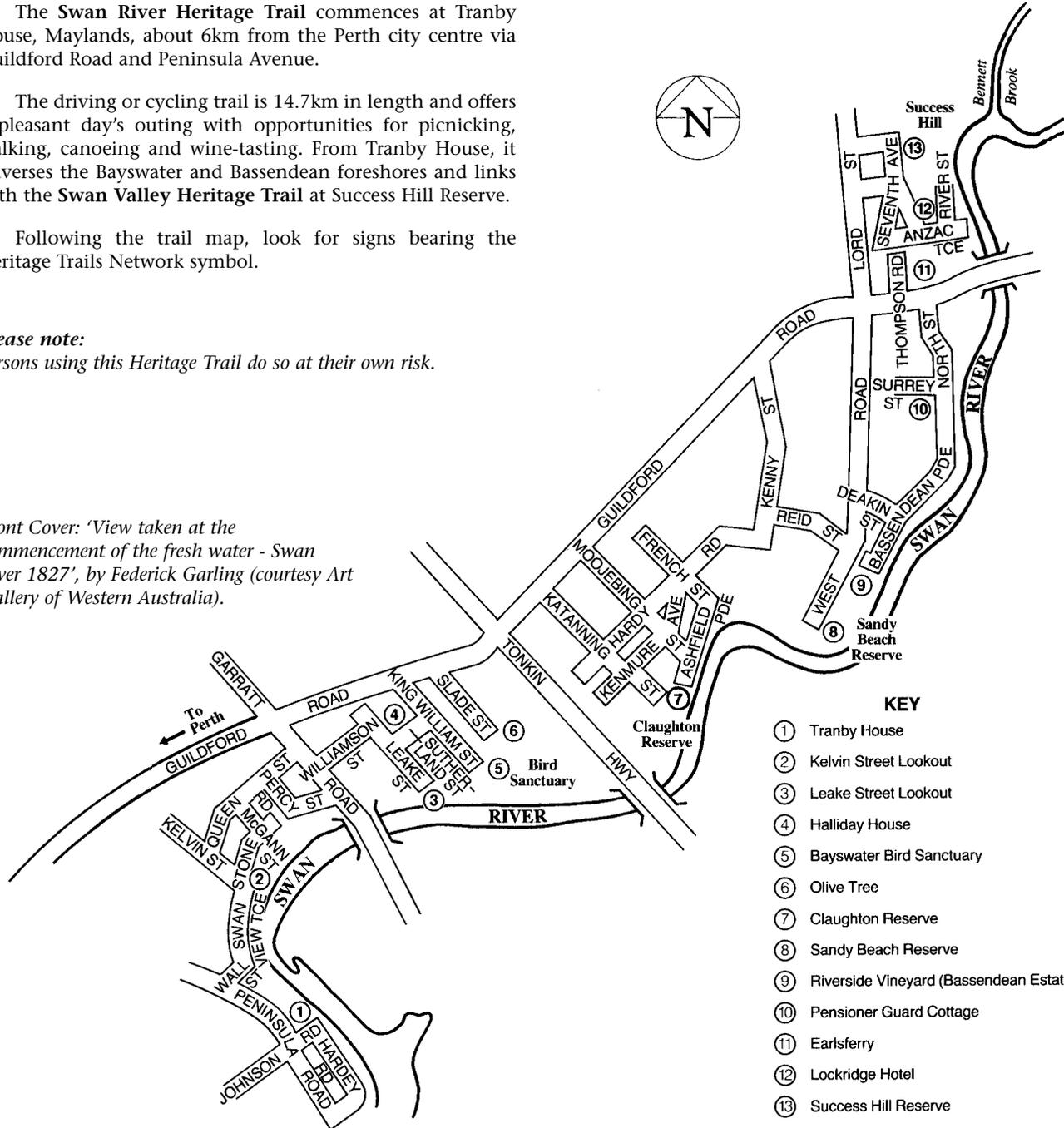
The **Swan River Heritage Trail** commences at Tranby House, Maylands, about 6km from the Perth city centre via Guildford Road and Peninsula Avenue.

The driving or cycling trail is 14.7km in length and offers a pleasant day's outing with opportunities for picnicking, walking, canoeing and wine-tasting. From Tranby House, it traverses the Bayswater and Bassendean foreshores and links with the **Swan Valley Heritage Trail** at Success Hill Reserve.

Following the trail map, look for signs bearing the Heritage Trails Network symbol.

Please note:
Persons using this Heritage Trail do so at their own risk.

Front Cover: 'View taken at the commencement of the fresh water - Swan River 1827', by Federick Garling (courtesy Art Gallery of Western Australia).

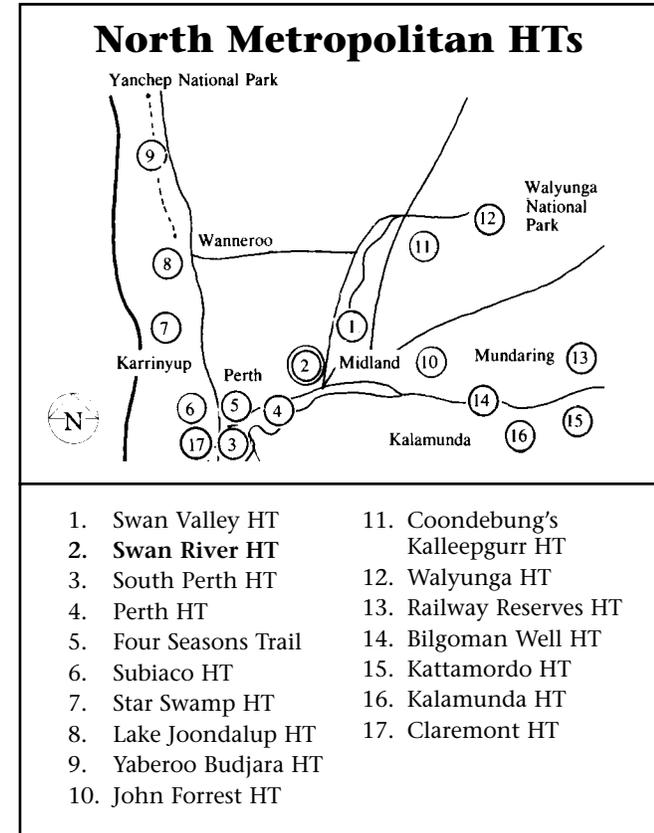


- KEY**
- ① Tranby House
 - ② Kelvin Street Lookout
 - ③ Leake Street Lookout
 - ④ Halliday House
 - ⑤ Bayswater Bird Sanctuary
 - ⑥ Olive Tree
 - ⑦ Cloughton Reserve
 - ⑧ Sandy Beach Reserve
 - ⑨ Riverside Vineyard (Bassendean Estate)
 - ⑩ Pensioner Guard Cottage
 - ⑪ Earlsferry
 - ⑫ Lockridge Hotel
 - ⑬ Success Hill Reserve

The **Swan River Heritage Trail** is part of the Heritage Trails Network, a project for community participation originally devised by the Western Australian Heritage Committee (now known as the Heritage Council of Western Australia) in commemoration of the 1988 Bicentenary.

The Heritage Trails Network which was jointly funded by the Commonwealth and Western Australian governments under the Commonwealth/State Bicentennial Commemorative Program was established to provide the Community with a Statewide network of "Heritage Trails" - routes designed to enhance awareness and enjoyment of Western Australia's natural and cultural heritage.

The map below indicates Heritage Trails in the North Metropolitan region of Western Australia



When the Dutch commander Willem de Vlamingh sailed to the western coast of 'New Holland' in 1697, he formed an unfavourable opinion of the land. Walking across the coastal sand dunes with limestone outcrops and grey-green scrub, de Vlamingh arrived at what he initially thought was a salt-lake. He later named it the Black Swan River, struck by the contrast between its swans and the white swans in Europe.

Over 100 years later, in March 1827, a young English naval captain named James Stirling led an expedition up the Swan River in search of a possible site for a new British colony. Stirling's enthusiasm led him to report on a land which appeared to "hold out every attraction that a Country in a State of Nature can possess". After noting that "the best anchorage on this coast is in Cockburn Sound (with) a channel into it from the sea with not less than 5 fathoms of water" and believing he had found fertile land in the Swan Valley, Stirling was convinced that here lay the ideal site for settlement.

Stirling was particularly enthusiastic about the land around the Helena River and Ellen's Brook regions and the area later to encompass most of the river land at Bassendean.



*Captain James Stirling
(courtesy Mitchell Library, State Library of New South Wales).*

After submitting his report to Governor Darling at Port Jackson in New South Wales, Stirling returned to England in 1828 and set about actively promoting his idea of establishing a colony at the Swan River. After considerable debate the British Government agreed to Stirling's proposal, although lending little financial support. In June 1829 Stirling returned to the Swan River to establish Australia's first free settlement.

1. Tranby House

*Johnson Road
Open: Monday to Saturday 2pm to 5pm,
Sunday 11am to 5pm*



Tranby House (courtesy National trust)

Completed in 1839 by Joseph Hardey, an early settler and farmer, Tranby House was the third built on the property. It was essentially a farmhouse, both family residence and centre of farm activities. It also served as a meeting place for religious gatherings in the early years of settlement.

The house was restored and refurbished in 1975 by the National Trust of Australia (W.A.). The name 'Tranby' is derived from the brig 'Tranby' which brought the Hardey family to the Swan River Colony.

To proceed to Site 2 turn right into Peninsula Road, right again into Wall Street and left into Swan View Terrace.

2. Kelvin Street Lookout

Corner of Swan View Terrace and Kelvin Street

From this vantage point are excellent views of the Swan River. For those interested in walking or cycling, this is also the entry point for the recently completed foreshore cycle and walk path.

During James Stirling's 1827 expedition of the Swan River, the botanist Charles Fraser wrote in glowing terms of land along the river's banks:

In giving my opinion of the Land seen of the Banks of Swan River, I hesitate not in pronouncing it superior to any I ever saw in New South Wales east of the Blue Mountains, not only in its local character but in the many existing advantages, which it holds out to Settlers . . .

Turn right into Stone Street, left into McGann Street then right into Queen Street. Turn right again into Percy Street, left into Stone Street, left again into Garratt Road, right into Williamson Street and right into Leake Street.

3. Leake Street Lookout

Leake Street

This is another excellent vantage point of the Swan River looking east and west. Also to be seen, directly across the river, is the Ascot Race Course.

It was near this point in 1827 that Stirling's party was followed by a group of Aborigines as they sailed upriver:



*Jabaitch, an Aboriginal of the Guildford area, c.1900
(courtesy Town of Bassendean).*

... as we made no Attempt to approach them, the Warriors followed us along the bank, the Women and Children retiring out of sight. The Woods now resounded with their Shouts, to which replied our Bugle with equal loudness and with more than equal melody. At this point, appearances wore a threatening aspect, for the Natives seemed much enraged, and I judged, from their violent gestures and the great noise they made, that we should shortly have a shower of spears. The River was here only 60 Yards across, and as they had the advantage of a bank 20 feet high, our situation put us much within reach of annoyance; we, however, pursued our course until the bank became nearly level with the Water, by which time they had assumed more confidence and began to mimic our Various expressions of 'How do you do?'

4. Halliday House

Corner of King William and Sutherland streets Private property: please view from the street.

Probably built in the 1890s, this home was originally the residence of Henry Thomas Halliday, an early Bayswater settler. Halliday was also the first Chairman of the Bayswater Road Board, elected by residents on March 5th, 1897. Early meetings of the Board were held in this home.

5. Bayswater Bird Sanctuary

King William Street

Pamphlets listing the variety of birds sighted in the Sanctuary are available from the City of Bayswater Council offices.



A Yellow-billed Spoonbill at the Bayswater Bird Sanctuary (courtesy City of Bayswater)

Also known as the Eric Singleton Bird Sanctuary, this four hectare site was set aside in 1976 as a haven for waterbirds exposed to the disruptions of recreational activities on the river, such as speedboats and water skiing. The Sanctuary is recognised by the Royal Australian Ornithological Union and some 85 species of birds have been recorded here. Much success has also been achieved with the use of artificial nesting boxes.

Return along King William Street, turn right into Guildford Road then right again into Slade Street.

6. Olive Tree

Slade Street (300m from Guildford Road, on the left)

This tree was planted about 1850 and is the official emblem of the City of Bayswater. Prior to construction of the first church in Bayswater, open air services were held under the shade of its branches.

Return to Guildford Road and turn right, then right again into Katanning Street. Proceed to Kenmure Avenue where a small deviation (sharp left then right) is necessary to continue along Katanning Street.

7. Claughton Reserve

Katanning Street

Originally known as Whatley Cove after Dr J. Whatley, who was granted land here in 1829, this area offered good landing facilities for goods and stock transported upriver from Fremantle. In the Swan River Colony's early years the river provided the most convenient means of transport, especially after a canal was dug through Burswood in 1831, alleviating the problem of hauling boats over the shallow flats at that point. The canal was filled in during the early 1900s.

Return to Kenmure Avenue and turn right, then right again into Moojebing Street. Follow the signs from Ashfield Parade to Sandy Beach Reserve.

8. Sandy Beach Reserve

West Road



Sandy Beach Reserve, c.1919 (courtesy Town of Basendean).

This excellent habitat for birds is home to Sacred Kingfishers, Striated Pardalotes, Tree Martins, Port Lincoln Ringnecks, Black-shouldered Kites, White-faced Herons, Laughing Kookaburras and Galahs, which nest in the mature Flooded Gums. Also to be seen are Yellow-rumped Thornbills, which prefer to nest in Marri trees.

In the Colony's early years, the foreshore at Sandy Beach was probably lined with many fine Swamp Sheoaks and Lake Club Rushes.

Return along West Road Just before Reid Street, on the right, is Riverside Vineyard.

9. Riverside Vineyard

Bassendean Estate

West Road

Open Saturdays 9am to 5pm

Only 2.12 hectares in area, this winery fronting onto the Swan River is one of the smallest in the State and is situated next to the property where entertainer Rolf Harris spent his childhood years. It is also the nearest winery to the Perth city centre.

The vineyard was first planted by Luigi Nicoletto in the 1940s to supply table grapes but he later changed to winemaking concentrating on the bulk wine trade. The present owners, Laurie and Moira Nicoletto, produce premium table wines and Bassendean Estate red wines have won awards in all Australian capital cities.

Continue north along West Road, turn right into Deakin Street and then left into Bassendean Parade, which becomes North Street. Turn left into Surrey Street. On the corner of Surrey and North streets note the **old red post box**, installed in 1876.

10. Pensioner Guard Cottage

1 Surrey Street

Private property: please view from the street.

Classified by the National Trust of Australia (W.A.), this simple brick cottage is believed to be the only remaining structure of its kind in the State. Built c.1857 or earlier, it was originally one of a number of allotments that were provided for Pensioner Guards and their families in Surrey Street. Its brick walls are now rendered, but the original shingle roof is still intact under the corrugated iron.

This cottage was the home of John Law Davis (or Davies), an Enroled Pensioner Force Guard who came out to the Colony aboard the 'Dudbrook' in 1856. He was granted lot P.114 on November 28th, 1864 and lived here until his death on June 7th, 1870.

Between 1850 and 1868 1,191 Pensioner Guards came to Western Australia, where they were used as cheap substitutes for regular soldiers for garrison and police duties. Before 1857 the Guards were mainly veterans of colonial wars in Africa, Afghanistan and the Punjab. After 1857 they were mainly soldiers honourably discharged from service in the British Army in Crimea and India. The Pensioner Guards were disbanded in 1887.

The cottage was purchased by the Town of Bassendean in 1988 and renovated. It is open for public visits on the last Sunday of every month from 2pm to 4pm.

The Barrack's Arch at the western end of St Georges Terrace is all that remains of the 120-room Pensioner Barracks built, in 1863 to accommodate Pensioner Guards, and features in the North Heritage Trails. Trail brochures are available from the Heritage Council of Western Australia, the Old Perth Boys' School ('The National Trust on the Terrace') and the City of Perth. Return to North Street and turn left. At the end of North Street on the opposite side of Guildford Road is Earlsferry.

11. Earlsferry

Guildford Road, at the end of North Street.

Private property: please view from the street

This large residence was built in the late 1890s for John T. Short, Chief Engineer of Railways. In 1907 he was appointed Commissioner of Railways and was later elected Chairman of the West Guildford Municipality (now the Town of Bassendean). Mr Short made the home's drawing room available to the Board to conduct its meetings.



Earlsferry (Courtesy The West Australian).

A typical grand home of the period, it remains substantially unaltered apart from the removal of its original decorated wooden valances (curtain-like structures above windows) and balustrade along the verandahs and the wrought iron finials (ornaments) on the roof and tower.

In 1952 Nathaniel Harper, a well known Goldfields identity, purchased the property and converted it into a house for mentally retarded girls, under the supervision of the Mental Health Services Board. In 1988 the property was being used by the Health Department of Western Australia as a residential unit. The building is classified by the National Trust of Australia (W.A.). It is now privately owned.

*Proceed west along Guildford Road. On the right note the **Moreton Bay Fig Tree** (*Ficus macrophylla*) at 2 Thompson Road. It was planted some time in the 19th century on land originally cultivated by the Dodd family, who arrived in the Swan River Colony aboard the ship 'Rockingham' in May 1830. The tree is included in the National Trust's register of significant trees.*

Continue along Guildford Road then right into Lord Street. Turn right into Success Road, right again into Seventh Avenue and then left into Anzac Terrace.

12. Lockridge Hotel

Corner of Anzac Terrace and River Street.

Private property: please view from the street



Lockridge Hotel in 1907, then the Guildford Girls' High School (courtesy Town of Bassendean).

Opened in October 1896 by Mr C. Pressentin, this hotel was a popular resort for holiday excursion parties that cruised up and down the river from Perth. In the early 1900s it gained a reputation amongst locals as a favoured venue for honeymoons and 'naughty weekends'.

The hotel's proprietor had an arrangement with the railways whereby Sunday trains from Perth stopped near the hotel to allow passengers to disembark, rather than make the journey from the Guildford station. This custom became entrenched in advertisements for land in West Guildford which assumed that it was an official railway station.

Over the years the property has operated as a hospital, Salvation Army old people's hostel (run at one time by the parents of former Governor General, Sir Paul Hasluck, and the Guildford Girls' High School, which provided chiefly for the daughters of pastoralists, farmers and the affluent middle class of Guildford. It accommodated up to 30 boarders and an equal number of day students, before closing in 1910.

It is now an old age people's home.

Return along Anzac Terrace, turn right into Eighth Avenue and then into Seventh Avenue to Success Hill Reserve.

13. Success Hill Reserve

Seventh Avenue.

Facilities include barbecues and toilets with access for the disabled, and a short nature walk.

Success Hill was an important Aboriginal meeting place, ancient camping ground and home of their ancestors' spirits. It is also significant because the Waugul, a giant snake-like spirit of the Dreaming, is believed to live in an underwater cave where Bennett Brook meets the Swan.



The Devil's Elbow, where the Waugul sleeps beneath the Swan River. View from Success Hill in the early 1900s (courtesy Battye Library, 25043).

The relationship of Aborigines to the land and their notions of land ownership are very different to those of most Europeans. Aborigines consider themselves guardians of the land, and custodians of its stories, songs, rituals and ceremonies, sacred objects and religious associations. Calling a place home means that they belong to the land and their commitment to it, developed and passed down over thousands of years, encompasses far more than the European concept of property ownership.

Success Hill Reserve is the starting point for the Swan Valley Heritage Trail, which retraces the latter part of Stirling's expedition and looks at the development and settlement of the Swan Valley. Trail brochures are available from the Heritage Council of Western Australia, Town of Bassendean and the Shire of Swan.

The **Swan River Heritage Trail** was developed by the Town of Bassendean, City of Bayswater and Shire of Swan, which would like to thank the following:

- Mrs H.G. Hamersley, and the Swan Guildford Historical Society
- Fringedwellers of the Swan Valley
- National Trust of Australia (W.A.)
- City of Stirling
- Main Roads Department

Photographs

The photographs in this brochure are courtesy of:

- Town of Bassendean
- The West Australian
- Battye Library
- National Trust of Australia (W.A.)
- Art Gallery of Western Australia
- City of Bayswater
- Mitchell Library, State Library of N.S.W.



West Guildford Gala Day at Pickering Park (off Bassendean Parade) in 1913 (courtesy Town of Bassendean).

- Appleyard, R.T. & T. Manfold **The Beginning**
(U.W.A. Press, 1979)
- Berndt, R.M. & C.H. (eds.) **Aborigines of the West**
(U.W.A. Press, 1979)
- Hasluk, A. **Unwilling Emigrants**
(Oxford University Press, 1959)
- Hunt, L. (ed.) **Westralian Portraits**
(U.W.A. Press, 1979)
- Carter, J. **Bassendean: A Social History 1829-1979**
(Town of Bassendean, 1986)
- Bourke, M. **On the Swan**
(U.W.A. Press, 1987)
- Uren, M. **Land looking West**
(Oxford University Press, 1948)



TIPS FOR SAFE WALKING

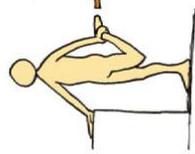
- Remember to warm up, stretch & cool down
- Drink plenty of water before, during and after walking
- Walk within your own capabilities and at a comfortable pace
- Walk in the cooler part of the day
- If you are unwell or have an injury, don't walk - wait until you have fully recovered
- Dress appropriately - wear comfortable footwear and clothing, sunscreen and a hat
- If you have chest pain or discomfort while exercising, STOP immediately and seek medical advice

Pre & Post Walking Stretches

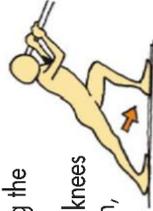
Hamstring Stretch - Extend one leg forward keeping it straight with toes pointing upwards, slowly bend forward at the hips keeping it straight. Hold for 20 seconds and repeat with other leg.



Quad Stretch - Stand on one leg and hold onto a support for balance, bend up one knee. Keep thigh straight in line with body, do not bend hip. Hold it with the same side hand and gently pull up towards buttocks. Hold for 20 seconds and repeat with other leg.



Calf Stretch - Stand with one leg in front of the other leg with both feet facing the same way, place your hands on something for support, slowly bend knees keeping heels on the floor, as shown, until stretch is felt. Hold for 20 seconds and repeat with other leg.



KEY

-  Bassendeau Walking Trail
-  Eden Hill Walking Trail
-  Ashfield Walking Trail
-  Public Toilets
-  Car Park
-  Picnic Area



For more information:

log onto www.bassendeau.wa.gov.au
or contact **Leisure Services on 9377 8000**

be active wa



"Wicked Walks"



- BASSENDEAN TRAIL



- EDEN HILL TRAIL

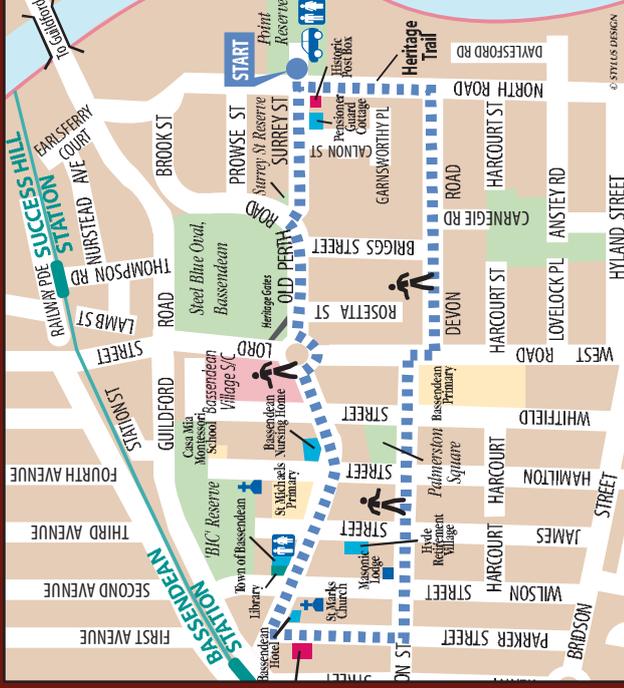


- ASHFIELD TRAIL



WALKING

BASSENDEAN



Take a walk through the heart of Bassendean, this historical town is full of rich history and picturesque parklands. Starting at Point Reserve, by the Swan this walk will immerse you in the local charm of Bassendean.

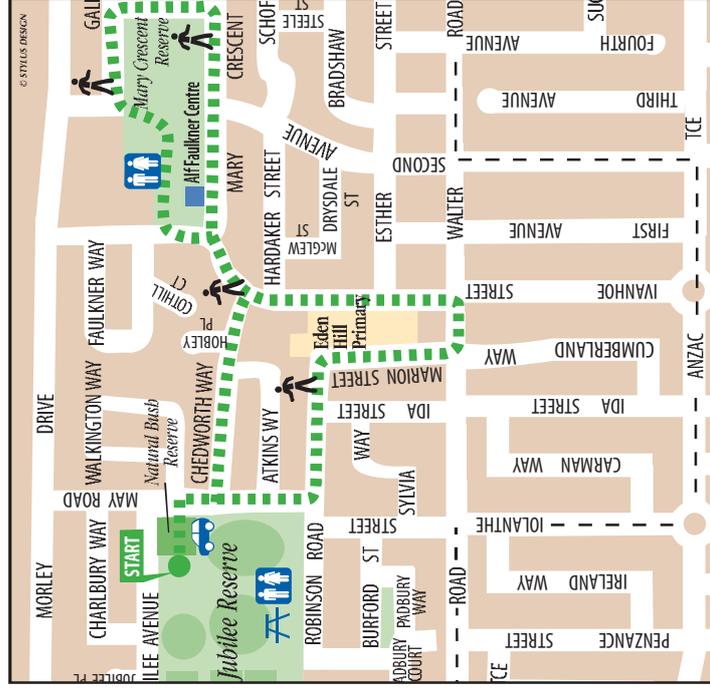
Time: 30 min
Length: 2.6 Km

TRAILS

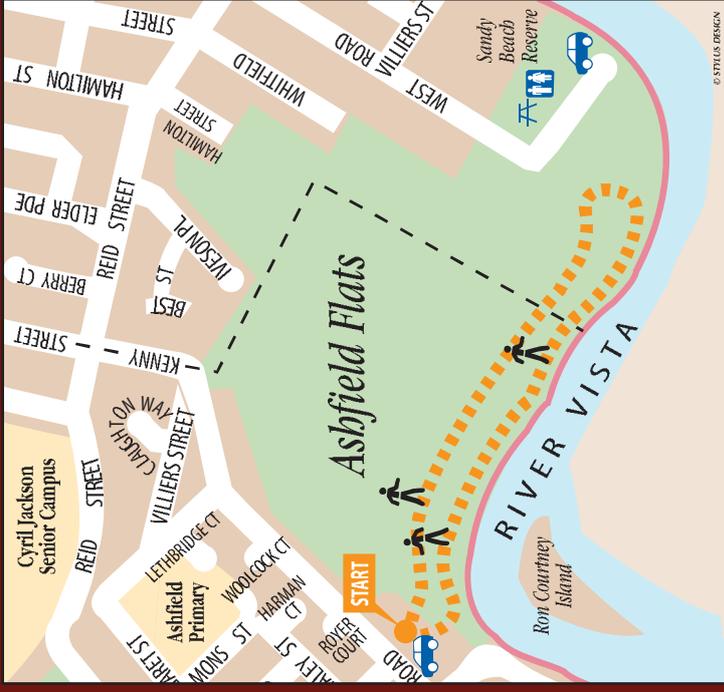
EDEN HILL

Eden Hill situated in the northern ward of the Town, contains natural bushland making it a great area to take a stroll. The walking trail connects two of the Town's parklands: Jubilee Reserve and Mary Crescent Reserve, which are significant meeting places.

Time: 30 min
Length: 3 Km



ASHFIELD



Ashfield Flats is a significant wetland sanctuary for wildlife on the Swan River. Walk along the banks and watch the peaceful flow, as it meanders its way along the flats of Ashfield. This walk stretches from the Boardwalk to Sandy Beach Reserve.

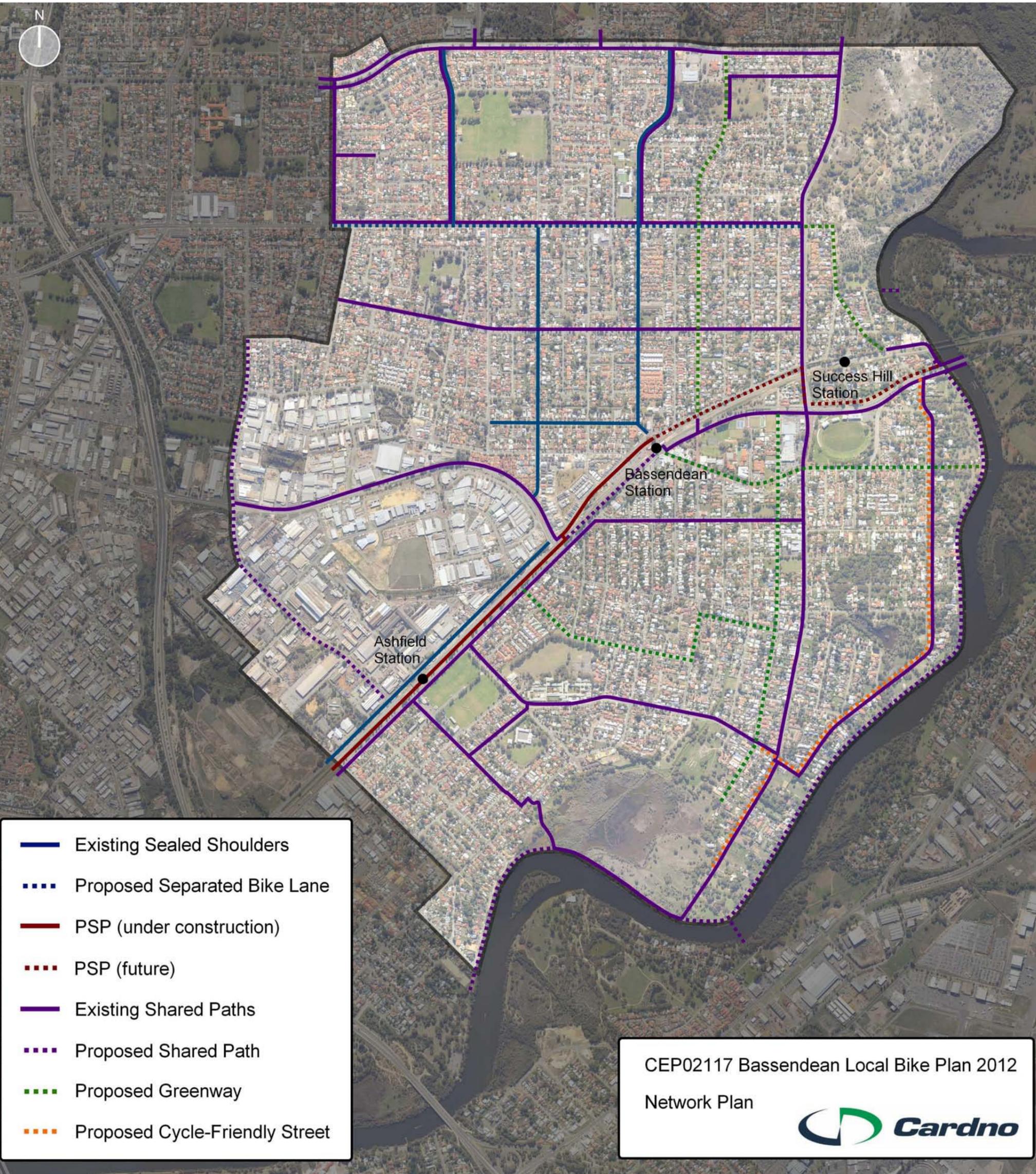
Time: 30 min
Length: 2.6 Km



Local Bike Plan 2012

APPENDIX E
NETWORK PLAN





- Existing Sealed Shoulders
- Proposed Separated Bike Lane
- PSP (under construction)
- PSP (future)
- Existing Shared Paths
- Proposed Shared Path
- Proposed Greenway
- Proposed Cycle-Friendly Street

CEP02117 Bassendean Local Bike Plan 2012
Network Plan

