

Bike Plan 2016 – 2021

People | Pathways | Places | Promotions





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Acronyms

Acronym/Abbreviation	Definition
ABC	Australian Bicycle Council
CBD	Central Business District
DoT	Department of Transport
DPaW	Department of Parks and Wildlife
EEP	Environmental Education Program
MRWA	Main Roads Western Australia
PBN	Perth Bicycle Network
PSP	Principal Shared Path
PTA	Public Transport Authority
WABN	Western Australian Bicycle Network
YRP	Yellagonga Regional Park



Introduction

The bike as a form of transport or recreation provides many benefits for both individuals and the community. Riding a bike is environmentally friendly, improves the health of those who ride and contributes to safer and more liveable streets and suburbs.

Given the benefits offered by the bike, it is an often under-utilised, under-promoted and under-supported form of transport. Increasing bike riding in the City and making it a central part of how people move around has the potential to transform the City of Joondalup to a place that is greener, safer, less congested, more socially connected and more liveable.

The City's previous Bike Plan, *Bike Plan 2009*, expired in 2015. *Bike Plan 2009* has undergone a major review and a new bike plan has been developed to support bike riding within the City. The *Bike Plan 2016 – 2021* (the Plan), takes a more strategic and holistic approach to promoting and supporting bike riding and places less emphasis on specific infrastructure improvements.

The Plan recognises that creating the right social environment to support bike riding is equally important as creating the right physical environment. Creating positive outcomes for bike riding and maximising the number of people riding requires the coupling of strategic infrastructure improvements (including bike paths, bike lanes, signage, lighting and end-of-trip facilities) with promotion and education that gets people excited and motivated about riding.

A Bike Friendly City

The Plan identifies a vision for the City of Joondalup to be recognised as the bike friendly city. Where riding a bike is considered an easy and convenient way to get around, part of a normal everyday healthy lifestyle and where all types and abilities of riders are catered for.

The overarching aim of the Plan is to make bike riding a part of everyday life in the City of Joondalup. Every objective and project identified within the Plan, whether it is related to connectivity, safety, infrastructure, promotion or education contributes to this aim.

The Plan provides the long term vision, strategic framework and projects the City will implement over the next five years to make bike riding a part of everyday life and move towards becoming a bike friendly city.

Figure 1: Framework for a Bike Friendly City



The Four P's for a Bike Friendly City

The 'Four P's' – people, pathways, places and promotions – represent the four approaches the City will take to increase bike riding within the City. Each of the Four P's is an essential, integrated and equally important component of creating a bike friendly city.

The Four P's recognise that the City needs to improve its understanding of people who currently ride or are potential riders and establish programs to change behaviour and get people riding. The City needs to improve bike pathways, lanes and infrastructure so people can easily, safely and conveniently ride to the places they want to go and these places should support people who ride, by providing easy and safe access and end-of-trip facilities. This all needs to be underpinned by promotions that celebrate, support and create an environment that gets people excited and motivated about riding.

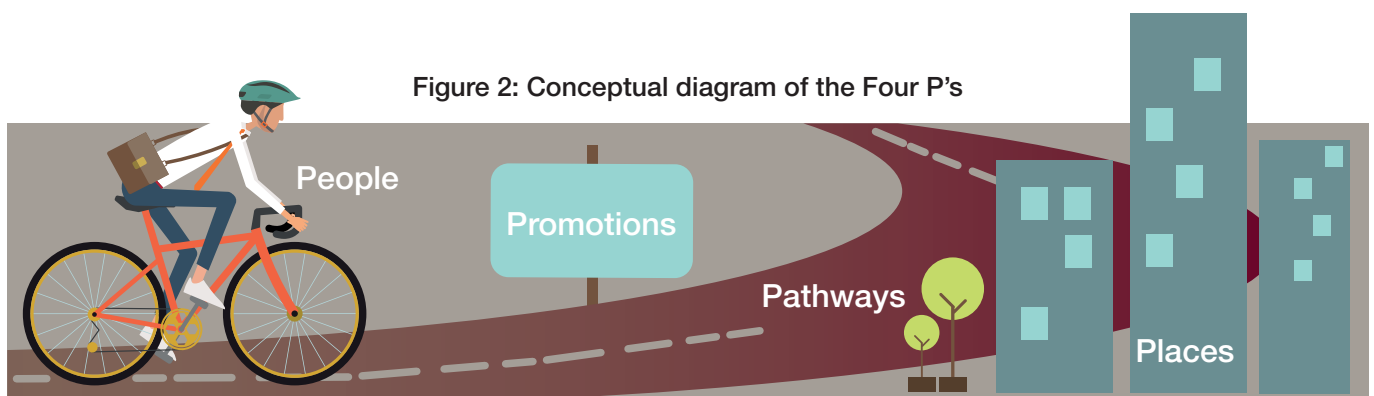


Figure 2: Conceptual diagram of the Four P's

Benefits of a Bike Friendly City

The bike as a form of transport provides many benefits for individuals, the community, the economy, and the environment. Bike riders can be any age and any fitness level. Bikes are more affordable than a car to purchase and maintain. Bike riding is 100% greenhouse friendly and emits no noxious fumes or particulate matter.

Bike riding improves the health of those who ride and will make local streets and suburbs safer and more liveable.

By creating a bike friendly city, the City of Joondalup can create a healthier, safer and more liveable environment for everyone. Benefits are outlined in Table 1.

Table 1: Benefits of a Bike Friendly City

For the...	Benefits
Individual	<ul style="list-style-type: none"> • Improved health including increased cardiovascular fitness, increased muscle strength and bone strength, improved joint mobility, and prevention of disease. • Improved wellbeing including decreased stress levels. • Opportunity to save money through reduced transport costs.
Local Community	<ul style="list-style-type: none"> • Reduce traffic congestion and pressure on car parking. • Improve safety of streets particularly around schools and other local destinations. • Increase passive surveillance and improve community safety. • Shared paths are accessible for all and provide benefits for those with disabilities and mobility impairments. • Create greater social cohesion through greater interaction in local streets and at local destinations.
Economy	<ul style="list-style-type: none"> • The upfront cost of bike infrastructure can be cheaper than road infrastructure. • By reducing traffic congestion, infrastructure costs can be reduced if new or expanded road infrastructure can be delayed. • Through increased physical activity, bike riding can help to reduce pressure on health services and reduce health costs. • Local businesses such as cafés and bike shops can also benefit from increased numbers of customers who are bike riding in the City.
Environment	<ul style="list-style-type: none"> • Bike riding is carbon neutral and will reduce greenhouse gases. Each kilometre of car travel avoided saves 0.5kg of greenhouse gases. • Reduced air pollutants and noise pollutants compared to vehicles. • Bike infrastructure and bike parking takes less space than roads and car parking spaces leaving more room in the urban environment for public open space.

Measuring a Bike Friendly City

A bike friendly city is a long term vision for the City of Joondalup and one that will extend beyond the life of this Plan. Measuring the City's progress towards a bike friendly city, while important, is also complex. There is no single, easily measurable indicator that can represent a bike friendly city. In addition the City has limited existing data that can be used as a baseline.

Both the *National Cycling Strategy 2011 - 2016* and the *Western Australia Bicycle Network Plan 2014 – 2031* have targets to increase bike riding (see Table 2). The *National Cycling Strategy* target measures the “number of people cycling” and the *Western Australian Bicycle Network Plan* target measures “number of cycling trips”. These two measures are different; measuring the number of people relates to participation and encouraging more people to ride while measuring the number of trips is related to frequency of riding.

The Plan does not set a target for increasing bike riding within the City. The number of people currently riding is unknown and there are limited existing data sources which the City could use to comprehensively measure progress towards such a target.

A key element of the Plan is to improve the City's understanding and knowledge of bike riders; who they are, where they ride, and how often. This will help the City to establish a baseline picture of bike riding in the City. The City will attempt to measure not just the number of trips taken by bike on a particular path or route but also the number of people within the City who ride and their perceptions and attitudes towards bike riding. The City will use a number of methods to capture a variety of riders.

The City's approach as outlined in the Plan will include:

- installing counters at strategic locations.
- measuring the number of bike trips pre and post bike infrastructure projects to assess if trips have increased as a result of the works.
- using data available through new online sharing platforms.
- using a community survey to gauge the numbers of people bike riding and perceptions and attitudes towards bike riding.

Using this data, key performance indicators will be identified within the Plan, to measure the City's progress towards becoming a bike friendly city. The development of a target or targets will be considered in future versions of the Plan.

Table 2: State and Federal Targets

Publications	Target
<i>National Cycling Strategy 2011 – 2016</i>	To double the number of people cycling in Australia by 2016.
<i>Western Australian Bicycle Network Plan 2014 – 2031</i>	To double the number of cycling trips in WA within five years.

Aligning a Bike Friendly City

If the City is to progress towards becoming a bike friendly city, promotion and support of bike riding needs to be embedded across the City’s range of responsibilities and activities. Ensuring the alignment of the Plan with the City’s broad range of strategic planning documents can facilitate this. Figure 3 outlines the relationship of the Plan with the City’s other strategic planning documents.

The City’s *Joondalup 2022: Strategic Community Plan 2012 – 2022* is a long-term strategic plan outlining the City’s commitment to achieving the vision and aspirations of the community and regional stakeholders. *Joondalup 2022* is the overarching document for all of the City’s strategic planning documents and has six key themes. The Plan sits under the Quality Urban Environment theme but is also informed by strategic planning documents that sit under the Natural Environment and Community Wellbeing.

The *Environment Plan 2014 – 2019* provides strategic direction for broad environmental management across the City. The Plan is identified within the *Environment Plan* as one of the City’s climate change mitigation responses. The City’s *Climate Change Strategy 2014 – 2019* also identifies completing the implementation of *Bike Plan 2009* and the development of an updated plan as a project.

The Plan complements the City’s existing *Walkability Plan 2013 – 2018* with many of the bike infrastructure upgrades also benefiting pedestrians and walkability within the City. In addition, the Plan needs to recognise and support the City’s commitment to improving access and inclusion as identified in the City’s *Access and Inclusion Plan 2015 – 2017*.

To ensure the Plan is delivering outcomes aligned with the City’s broader strategic planning, its aim, objectives and key focus areas have been reviewed against the City’s relevant strategic planning documents (see Table 3).

Figure 3: Relationship of the Bike Plan with other City of Joondalup strategic planning documents

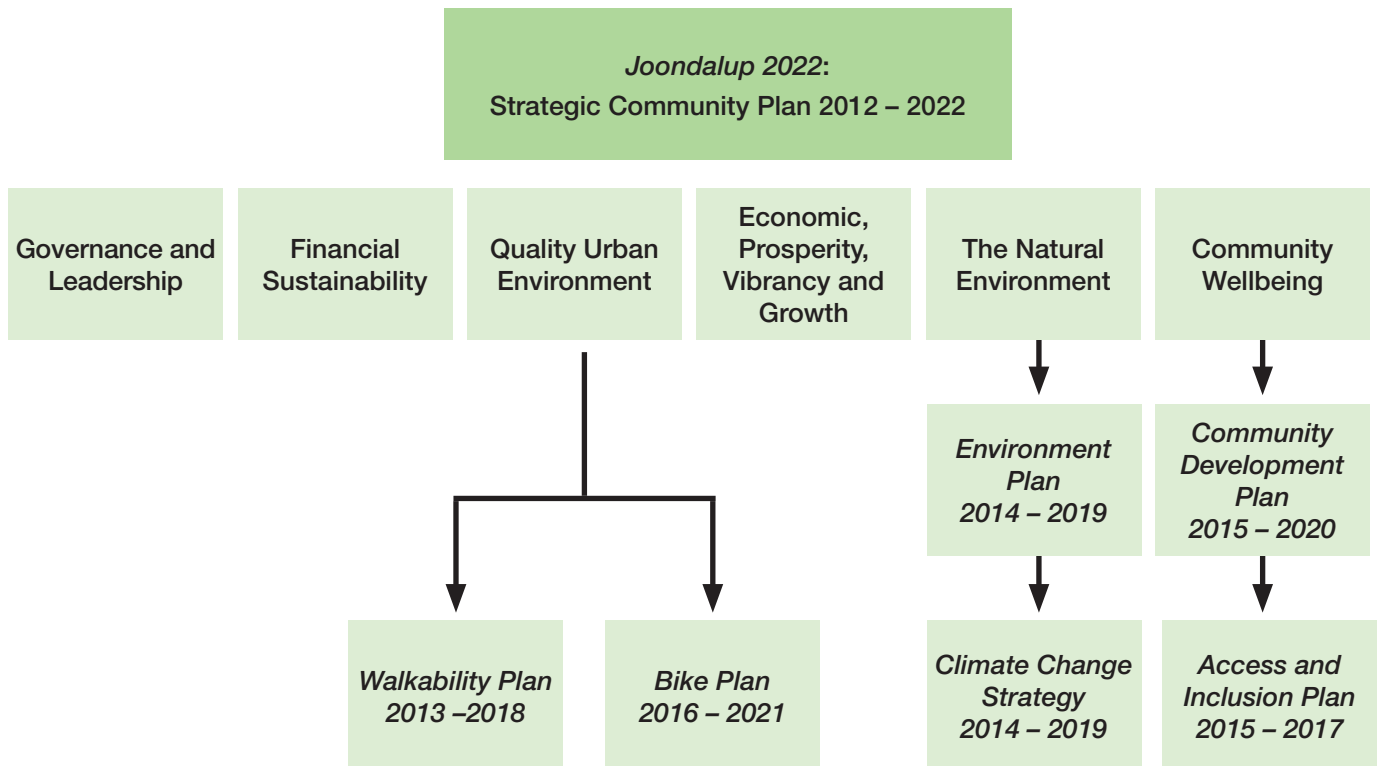


Table 3: Alignment of *The Plan* with the City's strategic planning documents

Plan/Strategy	Overall Purpose/Aim	Relevant Key Focus Area (KFA)/Theme	Relevant Objectives/Outcomes
<i>Bike Plan</i> 2016 – 2021	To make bike riding a part of everyday life in the City of Joondalup.	KFA 1: People KFA 2: Pathways KFA 3: Places KFA 4: Promotions	<ul style="list-style-type: none"> All outcomes identified in Table 12.
<i>Joondalup</i> <i>2022: Strategic</i> <i>Community Plan</i> 2012 – 2022	City of Joondalup's long-term strategic planning document that outlines its commitment to achieving the vision and aspirations of its community and regional stakeholders.	Theme 3: Quality Urban Environment	<ul style="list-style-type: none"> Integrated Spaces – to have integrated land use and transport planning that provides convenient and efficient movement across the City.
<i>Environment</i> <i>Plan</i> 2014 – 2019	To ensure that the City's operations are delivered in an environmentally sustainable manner and that the City takes measures to effectively influence positive environmental behaviours within the community.	Theme 3: Climate Change Mitigation	<ul style="list-style-type: none"> To reduce energy consumption and greenhouse gas emissions by the City and the community to mitigate the effects of climate change.
<i>Climate Change</i> <i>Strategy</i> 2014 – 2019	Provide guidance to the City's climate change activities over the next five years. The Strategy has a dual purpose of both mitigation and adaptation.	KFA 1: Infrastructure and Assets KFA 6: Community Wellbeing	<ul style="list-style-type: none"> To reduce the City's greenhouse emissions through effective energy management and improved energy efficiency. To support and encourage the community to reduce their greenhouse emissions.
<i>Walkability Plan</i> 2013 – 2018	A five-year plan designed to encourage and enable safe and accessible environments within the City of Joondalup for all users.	Five Key Walking Areas: <ul style="list-style-type: none"> Joondalup City Centre Suburban Shopping Precincts Natural Bushland Areas Yellagonga Regional Park Sunset Coast 	<ul style="list-style-type: none"> Identify opportunities to improve walkability within the Joondalup City Centre and major suburban shopping districts. Develop a planned and consistent approach to the establishment and maintenance of trails within natural bushland, wetland and coastal areas. Promote pathways and trails to the community and ensure they are accessible to residents and visitors.
<i>Access and</i> <i>Inclusion Plan</i> 2015 – 2017	To guide the actions that the City of Joondalup will undertake from 2015 to 2017 to improve access to services, facilities and information.	Strategies to improve access and inclusion.	<ul style="list-style-type: none"> People with disability and from culturally and linguistically diverse backgrounds have the same opportunities as other people to access the services of, and any events organised by the City of Joondalup. People with disability have the same opportunities as other people to access the buildings and other facilities of the City of Joondalup.

Understanding Bike Riding

The *Bike Plan 2016-2021* has been informed by an understanding of the Federal and State policy context, best practice for bike infrastructure, research on bike riders and identification of the key challenges for increasing bike riding.

Bike Policy

The City of Joondalup acknowledges that the Plan needs to operate within the State and Federal policy planning framework including transport related policy and urban land use planning. The Federal and State policy planning framework and its relevance to bike planning is outlined in Appendix 1.

Bike Riders

Bike riders are an integral component of the bike network. Construction of bike infrastructure without consideration of bike riders, their needs and abilities and where they travel can mean significant resources are invested without achieving the intended outcomes.

Types of Bike Riders

When undertaking bike planning it is useful to consider the different types of bike riders to ensure that infrastructure, programs and promotions cater for riders of all abilities. Recent research suggests that bike riders can be broadly classified based on their confidence and capability as either 'confident', 'cautious' or 'novice riders'.¹

Generally, more confident riders ride faster over longer distances and will have a preference to ride on roads where journey interruptions are minimal. The less confident and capable a rider, the more they prefer dedicated bike infrastructure such as bike paths or lanes. Confident, cautious and novice riders may ride for different reasons: to get somewhere (commuting or local trips) or for the enjoyment of riding (recreation or sport) (see Table 4).

Potential riders should also be considered. Potential riders are those who don't currently ride (although they may have done previously) but have the potential, given sufficient encouragement and support, to take up bike riding. A high level of separation from vehicle traffic is important in attracting potential riders to start riding. Once riding, potential riders are likely to become cautious or novice riders, depending on their previous riding experience.



¹ Department of Transport (2015)

Table 4: Types of Bike Riders and their Characteristics

Type of Bike Rider	Typical Reason for Riding	Usual Distance Covered	Level of Separation Required	
				Commuting
<p>Confident</p> <p>Confident bike riders are experienced riders who interact assertively with traffic. They do not require specific bike infrastructure, just adequate space on faster and busier roads.</p> <p>Confident bike riders will not usually ride on a bike path unless it provides a higher level of service than riding on-road.</p>		Up to and greater than 30km		
	●			
<p>Cautious</p> <p>Cautious bike riders include those with basic competence and more experienced bike riders who are risk averse.</p> <p>Cautious bike riders prefer separated bike routes but are able to ride on quieter roads and through simple intersections and roundabouts.</p> <p>Cautious bike riders may use longer alternative routes in order to avoid riding on busy roads.</p>		Less than 30km		
	●	●		●
<p>Novice</p> <p>Novice bike riders include beginner riders and young children.</p> <p>Novice riders prefer full separation from vehicle traffic.</p>		Less than 5km		
		●		●

Barriers to Bike Riding

Barriers are factors that discourage people from taking an action which they otherwise might have been willing to do, i.e. what prevents them from riding their bike. Understanding the barriers to bike riding will assist the City in tailoring its programs to help people overcome these barriers (see Table 5).

Some barriers may be more easily overcome with information, encouragement and incentives, whilst other barriers may need greater investment such as infrastructure, programs and education. For some people, certain barriers may not be able to be overcome, regardless of the action taken.

Table 5: Barriers to Bike Riding

Barriers to Cycling	Potential Ways to Overcome Barriers
The distance is too far.	<ul style="list-style-type: none"> Ensure route information and maps provide an estimated time to travel as well as distances. Encourage people to take shorter local rides to build up their confidence and endurance. Distance may be too far and barrier may not be able to be overcome.
I don't own a bicycle.	<ul style="list-style-type: none"> Provide information on bike purchasing and contacts for local bike shops. Consider using 'win a bike' prize for programs targeting potential riders. Organise discounts at local bike shops. Encourage people to borrow a bike if they want try riding before they commit to buying a bike.
I don't feel safe.	<ul style="list-style-type: none"> Implement bike infrastructure upgrades that improve safety and reduces potential conflict between cars, bike riders and pedestrians. Provide separation from vehicles by providing a network of off-road bike paths. Promote share the path messages and encourage courteous behaviour by all path and road users.
I'm not a bike rider – that's just not me.	<ul style="list-style-type: none"> Promote that there are many different people, of all abilities who bike ride for different reasons. Consider developing bike rider profiles highlighting the variety of bike riders. There will always be a proportion of the community who will not ride a bike, for some this barrier may not be able to be overcome.
There is no direct or convenient route.	<ul style="list-style-type: none"> Provide information, maps and route planning options to help people identify suitable bike routes. Continue to improve the bike network so that it provides connected and convenient routes.
I don't like riding on the road.	<ul style="list-style-type: none"> Provide separation from vehicles by providing a network of off-road bike paths. Provide bike education classes or group bike rides to develop experience and confidence in riding on the roads. Provide information on how to ride safely on the road and on-road rules and etiquette.
I'm not fit enough.	<ul style="list-style-type: none"> Promote that there are many different people, of all abilities, who bike ride for different reasons. Consider developing bike rider profiles highlighting the variety of bike riders. Encourage people to start with shorter trips and recreational rides to build their fitness and endurance.
I don't know how to ride a bike.	<ul style="list-style-type: none"> Provide information on how to ride safely and on bike riding etiquette. Provide bike education classes or group bike rides to develop experience and confidence in riding a bike.
I have to make other stops on the way, i.e. to drop kids at school.	<ul style="list-style-type: none"> Encourage people to bike ride for other trips or for recreation, not just commuting. May be a real barrier and may be difficult to overcome.
No end-of-trip facilities at my destination.	<ul style="list-style-type: none"> Put programs in place to encourage or require end-of-trip facilities in new developments. If sufficient demand, consider the feasibility of developing central, shared end-of-trip facilities.

Bike Infrastructure

Creating the right physical environment for bike riding through a well-designed bike network and adequate supporting infrastructure is a key element to increasing both the opportunity for bike riding and overcoming some of the barriers to bike riding.

The Perth Bicycle Network

The Perth Bicycle Network (PBN) is made up of principal shared paths, recreational shared paths, local bicycle routes (can include bike paths, bike lanes and local roads) and end-of-trip facilities. While the Department of Transport has responsibility for the strategic planning of the PBN, responsibility for construction and maintenance of the PBN is shared amongst a number of organisations (see Table 6).



Table 6: Components of the Perth Bicycle Network²

Component	Description	Responsibility
Principal Shared Path (PSP)	PSPs are high-standard bicycle routes for longer, more direct bike trips with minimal interruption. They are usually located adjacent to freeways and major highways linking into local government path networks.	Main Roads WA is responsible for the construction and maintenance of the PSP. The Public Transport Authority is responsible for construction and maintenance of the PSP through railway precincts.
Recreational Shared Path	Recreational Shared Paths are recreational routes along the coastal and river foreshores and regional parks. These routes are popular with both walkers and bike riders and have high usage rates.	Generally the responsibility of Local Government although if within regional parks it may be the responsibility of Department of Parks and Wildlife.
Local Bicycle Routes	Local Bicycle Routes provide connections to activity centres, local attractors and major shared paths and are composed of: <ul style="list-style-type: none"> • Shared use paths (off-road). • Bicycle lanes (on-road). • Local bike friendly roads (on-road). Local Bicycle Routes can form part of the Principal Shared Path route where there are gaps in the connectivity of the PSP.	The responsibility of Local Government and private landholders.
End-of-trip Facilities	End-of-trip facilities support riding by providing facilities such as bike parking, showers and lockers.	Depending on the location of end-of-trip facilities, responsibility could lie with Local Government, Department of Education, Public Transport Authority, private landholders or commercial/business.

² Compiled from Department of Transport (2014)

People commonly associate the Bike Network with the high quality, red asphalt principal shared paths used to connect people to the CBD and other key destinations. While the PSP is an important and popular part of the network, local bicycle routes which form the larger part of the network, are the responsibility of local government, and are equally important.

Local bicycle routes help riders travel within and between suburbs, rather than just north – south towards the Perth CBD. Local bicycle routes can include shared use paths, on-road bicycle lanes and local bike friendly roads. Bicycle lanes are identified on busier roads through line markings to delineate a dedicated space for bike riders on the road. Local bike friendly roads are quieter roads with adequate width considered safe for bike riding and require no line markings; they connect riders to neighbourhood destinations or to the path network.

Design of Bike Infrastructure

Effective design of bike infrastructure projects (both on and off road) will encourage bike riding, and ensure it is safe, convenient, accessible and integrated into the wider bike network. The design and construction of bike infrastructure must be done in accordance with methods published in Austroads including *Cycling Aspects of Austroads Guides*³ which is a guide for engineers, planners and designers involved in the planning, design and construction of bike facilities and infrastructure. Local Government is also guided by the Department of Transport's *Guideline for Developing a Bicycle Plan*⁴.

Good design of bike infrastructure is imperative for minimising conflict between users and reducing the incidence of accidents. It will also assist in attracting bike riders and help them feel safer when riding. General principles that should be considered in the design of all bike infrastructure projects are described in Table 7.

Table 7: Principles for designing bike infrastructure projects

Principle	Description
Connected	The bike network needs to have good connections, i.e. it needs to go where people want to go (shops, schools, places of work, public transport and recreation areas).
Convenient	The bike network must be convenient for bike riders to access, provide a direct route and the need for bike riders to stop should be minimised.
Accessible	The bike network needs to be accessible for all types of bike riders (and other users). This will increase bike riding and use by the wider community.
Legible	Routes where possible should be continuous, easy to follow and have good signage.
Safe	The bike network should be designed to minimise the risk of accidents, i.e. providing sufficient width in paths and lanes for the level of use and to minimise conflict with cars and pedestrians.

Supporting Infrastructure

The provision of supporting infrastructure when designing and constructing bike infrastructure projects contributes to a more convenient and more enjoyable experience for bike riders. This can include:

- Signage: both on-ground and upright signage to provide direction and legibility.
- Lighting: to improve the safety of people riding in the early morning, evening or night, and improve the usage of the path.
- Drink fountains: are convenient for bike riders on their journey or when they reach their destination.
- Bike parking: bike racks where riders can lock their bike or secure biking, such as bike compounds or lockers for when riders reach their destination.

- End-of-trip facilities: showers, change rooms and lockers for storing clothes and personal items at the end-destination can also support and overcome some of the barriers to bike riding, particularly for commuters.

Ongoing maintenance and monitoring of bike infrastructure and the bike network is also important to ensure that hazards are identified, repairs completed in a timely manner, and the network remains safe, clean, and useable.

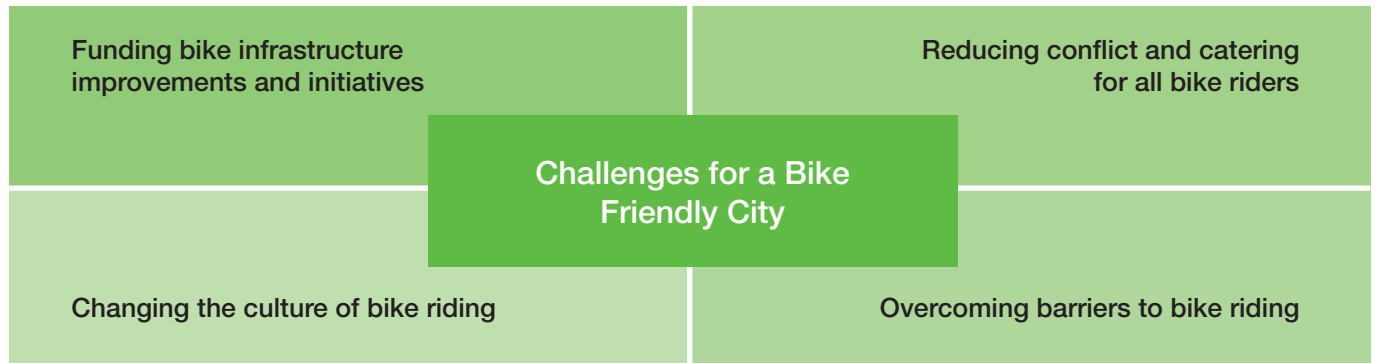
³ Austroads (2014)

⁴ Department of Transport (2015)

Challenges for a Bike Friendly City

Creating a bike friendly city is a long term vision and will require significant changes. Four key challenges have been identified for achieving a bike friendly city and increasing bike riding in the City of Joondalup (see Figure 4).

Figure 4: Challenges for a Bike Friendly City



Funding Bike Infrastructure Improvements and Initiatives

The design and construction of bike infrastructure requires significant resources. The cost of a new or upgraded path includes not only the laying of asphalt but also earthworks, removal and disposal of old path, line markings, lighting installations, signage, kerbs, grab rails, ramps, etc. Higher costs are often encountered when having to retrofit the path into an area with limited space, which can require the relocation of bus stops, light poles and/or power poles.

On-road bike infrastructure such as bike lanes is also expensive and the engineering treatment of intersections or roundabouts to improve safety and connectivity for bike riders will involve significant costs.

The City also has an extensive existing network of bike infrastructure that it needs to maintain and repair as required.

There is a limited amount of funding available annually for bike infrastructure improvements (see Table 8). It is important that the City is both strategic and realistic when identifying and planning bike infrastructure improvements. It is also important that the City is able to be flexible in its bike planning and take advantage of funding opportunities as they arise.

There are also a number of funding sources available that could be used for bike promotion and education activities (see Table 8).

Table 8: Funding Sources for Bike Infrastructure Improvements and Initiatives

Funding Source	Description
City of Joondalup Annual Budget	The City allocates an annual budget in its Capital Works Program for bike infrastructure improvements. The City maximises the value it gets from this budget by applying for matching funding under the Perth Bicycle Network Grants Program.
Department of Transport	Provides local government grants to support the Perth Bicycle Network. Funding is provided for Local Bicycle Plans, path and on-road projects, and end-of-trip and innovative projects. The majority of funding is for path and on-road projects, with priority placed on connections to train stations, schools, activity centres, principal shared paths and regional shared paths.
Main Roads Western Australia	Provides funding and construction of bike infrastructure as part of major road construction projects.
Commercial Developers	Bike infrastructure can also be funded as a component of development applications in particular the development of major institutions (e.g. universities, hospitals), urban renewal areas and greenfield-development.
Healthway	The Health Promotion Projects Program provides grants to organisations engaged in health promotion campaigns and projects in Western Australia.
Department of Sport and Recreation/ Lotterywest	The Department of Sport and Recreation and Lotterywest partner to deliver trails grants to assist in developing trails in Western Australia including planning a trail, constructing or upgrading a trail and promoting a trail.

Changing the Culture of Bike Riding

Within the City (and metropolitan Perth) bike riding is often seen as a secondary and inconvenient form of transport. Bike riders, particularly confident bike riders are often viewed negatively by non-bike riders.

An improvement in the perception of bike riding will mean it is seen as fun, easy and convenient. Choosing the bike over the car will become a normal part of an everyday healthy lifestyle, and bike riders won't be viewed as a nuisance on the road but rather as simply other road users with equal rights and responsibilities.

Changing the culture around bike riding so that bike riders and bike riding are viewed more positively will be a significant challenge for the City and a key component to achieving a bike friendly city. Changing the culture around bike riding will not be straight forward, and will require long term incremental change across a variety of areas. This responsibility is not isolated to the City of Joondalup, but is shared with the State Government and other local governments.

Reducing Conflict and Catering for All Bike Riders

The City's bike infrastructure, promotions and programs cannot be designed with a 'one size fits all' approach. Bike riders have varying levels of bike riding experience and skills, have different reasons for riding, and want to go to different places at different speeds. To be a bike friendly city, it is important that the needs of all bike riders are met, and that all bike riders feel safe and comfortable riding in the City.

An important challenge to achieving a bike friendly city is reducing conflict between bike riders and other path and road users. This includes between bike riders and pedestrians, bike riders and vehicles, and between different types of bike riders. When assessing conflict along a route it is important to understand the number of bike riders and other users utilising the route, the type of bike riders and their speeds, width of the path, and where different users are converging and there is potential for conflict.

Bike infrastructure improvements along with education and promotional messages are necessary to reduce conflict. Physical separation might need to be considered if conflict between different users is too high. Reducing conflict will create a more enjoyable experience, reduce accidents and injury and encourage more people to ride. Catering for all types of riders will get as many people riding as possible.

Overcoming Barriers to Bike Riding

Increasing the number of people bike riding in the City involves changing people's behaviour, i.e. replacing trips by car with trips by bike. One of the key ways to change behaviour is to identify the barriers to performing the behaviour and establish programs to help people overcome those behaviours.

Understanding barriers to riding within the City of Joondalup and helping people to overcome them will be a challenge for the City. Not all barriers will be able to be overcome and not everyone will start riding their bike. However some barriers can be overcome by providing information, encouragement and incentives. Good design of infrastructure can also help to overcome barriers particularly those related to perceptions of safety and connectivity.



Bike Riding in the City of Joondalup

The current status of bike riding, bike infrastructure and bike promotions in the City of Joondalup has been reviewed to identify opportunities for creating a bike friendly city and inform the development of the *Bike Plan 2016-2021*.

Bike Plan 2009

The City's previous strategic planning document for bike infrastructure was the *Bike Plan 2009*. The purpose of the *Bike Plan 2009* was to set the strategic direction for bike riding in the City. It recognised that a number of short-term and long-term strategies for infrastructure, education and encouragement were required to meet the needs of bike riders as well as to increase riding in the City.

The *Bike Plan 2016-2021* builds upon the key achievements of the *Bike Plan 2009* which are summarised in Figure 5.



Figure 5: Key Achievements of the *Bike Plan 2009*

- Over the life of the *Bike Plan 2009*, the City has installed a total of 7.65km of new shared path at various locations around the City. The City received joint funding for the majority of these projects through the Perth Network Grant funding rounds.
- Installation of three new permanent bike counters located on City shared paths in Joondalup, Mullaloo and Burns Beach.
- Installation of bicycle parking at various locations within the City including the Joondalup City Centre, Heathridge Leisure Centre, Duncraig Library, Duncraig Leisure Centre, Joondalup Courthouse, Sorrento Beach, Mullaloo Beach, Tom Simpson Park and the Joondalup office of the Department of Transport.
- Line marking of shared paths, bicycle symbols on roads, and directional and regulatory signage on local PBN routes NW1, NW2, NW4, NE2, the coastal shared path, and Joondalup Drive.
- Road widening including the provision of bicycle lanes along Connolly Drive, Moore Drive and Hodges Drive.
- Traffic calming measures have been undertaken in accordance with Main Roads WA and AUSTRROAD guidelines to ensure they are convenient and safe for usage by cyclists. Examples include Cook Avenue, Meridian Drive, Timbercrest Rise, Castlegate Way, and the roundabout at the intersection of Ocean Reef Road and Craigie Drive.
- Annual community Bike Week events and promotion and distribution of TravelSmart Maps and brochures and Share the Path messages.

The City's Urban Profile

An understanding of the City's urban profile, in particular activity centres, public transport centres, schools and local attractors within the City, is important for effective planning of the City's bike network.

Activity Centres

Directions 2031 defines activity centres as hubs that attract people for a variety of activities, such as shopping, working, studying and living. These areas consist of a concentration of commercial uses, combined with a varying proportion of other land uses⁵.

The City of Joondalup contains a number of activity centres including one strategic metropolitan centre and one metropolitan attractor (see Table 9). Opportunities for supporting connections to these activity centres should be considered.



Table 9: Activity Centres within the City of Joondalup as defined by Directions 2031

Type of Activity Centre	Within the City of Joondalup	Description
Strategic Metropolitan Centre	Joondalup Central Business District (CBD)	Provide a mix of retail, office, community, entertainment, residential, and employment activities, and are well serviced by high frequency public transport.
Secondary Centres	Warwick Whitford	Secondary centres share similar characteristics with strategic metropolitan centres but generally serve smaller catchments and offer a more limited range of services, facilities and employment opportunities.
District Centres	Currabine Greenwood Sorrento Woodvale	District town centres generally serve the main weekly household shopping, service and community needs of the district. They are predominantly retail focused but many also include a limited mix of other uses.
Neighbourhood Centres	The City has a high number of neighbourhood centres with at least one in each suburb.	Neighbourhood centres provide for the main daily shopping needs of the community and typically include a supermarket grouped together with a small range of other uses and occasionally community facilities.
Local Centres	There are local centres located within each City of Joondalup suburb.	Local centres are small and usually consist of a corner deli and a newsagent. These centres provide for the incidental shopping needs of people within a walkable catchment area.
Metropolitan Attractor	Hillarys Boat Harbour	Metropolitan attractors are generally places or tourist destinations that are highly valued and visited by local and regional residents alike. They are often key centres of employment, serving to stimulate the local economy.

⁵ Department of Planning (2010)

Local Attractors

As well as activity centres identified in *Directions 2031*, the City also needs to consider connectivity to local attractors. Local attractors are local destinations which residents travel to frequently including train stations, schools, shops, community facilities and recreational areas. Safe and convenient connections to these attractors will encourage local residents to undertake short trips by bike.

Train Stations

The Joondalup Train Line has six train stations located within the City's boundaries: Warwick, Greenwood, Whitford, Edgewater, Joondalup, and Currambine. The Joondalup Line is popular with the City's residents who commute to the Perth CBD for work. In 2014/2015 there were 17,105,797 boardings on the Joondalup Line⁶. Train station parking is generally at capacity on weekdays (see Table 10).



Table 10: Car Park Full Times Survey, 26-27 March 2014⁷

Joondalup Line Train Station	Type of Car Parking Facility*	Current Capacity
Currambine	Free Area	Full by 8.00am
Joondalup	Free Area	Full by 5.40am
Edgewater	Free Area Pay and Display	Full by 7.00am Full by 7.45am
Whitford	Free Area North of Whitfords Ave Free Area South of Whitfords Ave Pay and Display	Full by 7.20am Full by 7.10am Full by 7.30am
Greenwood	Free Area Pay and Display	Full by 7.40am Full by 7.50am
Warwick	Free Area Pay and Display	Full by 7.30am Full by 7.50am

* Note: on 1 July 2014 all parking at train stations became paid parking⁸.

⁶ Public Transport Authority (2015)a

⁷ Public Transport Authority (2014)

⁸ Transperth (2015)

Every train station in the City, except Joondalup Station, has a secure bike shelter that can be accessed with a SmartRider. All stations have bike lockers and bike racks available. A survey of bike parking at train stations demonstrates there is significant potential to increase the number of commuters accessing the train line by bike (see Table 11). This would relieve pressure on car parking at train stations, congestion on major arteries, and increase the use of public transport.

Table 11: Bike Parking at City of Joondalup Train Stations (daily average)⁹

Train Station	Bike Parking Capacity	% of Bike Parking being used	Number of Passengers Using a Bike*	% of Passengers Using a Bike
Warwick	68	60%	41	0.71%
Greenwood	134	54%	76	3.55%
Whitford	88	45%	40	0.91%
Edgewater	82	38%	32	1.67%
Joondalup	36	17%	6	0.11%
Currambine	108	54%	58	2.62%
TOTAL	516	48%	253	1.19%

* Includes bikes parked in bike parking facilities and elsewhere (i.e. chained to a pole).

Schools

The City of Joondalup contains 16 secondary schools and 47 primary schools. Safe bike routes to schools are essential for encouraging school children to ride to school. Increasing the number of students riding to school reduces congestion around the school, improves student health, encourages confidence and enjoyment in riding, and creates a generation of future bike riders.

Recreational Areas

The City's beaches and foreshore areas are popular with local residents and visitors to the City. Good local bicycle routes to the coast and appropriate end-of-trip facilities will encourage residents to ride to the beach. This will reduce congestion in beach car parks and on local roads.

Yellagonga Regional Park (YRP) is also popular with residents and visitors. YRP has a number of shared paths for riding and walking. Bicycle routes that connect safely and conveniently to YRP will encourage local residents to access the area by bike.

The City's Bike Network

The City's bike network is part of the wider Perth Bicycle Network (PBN). It includes the Principal Shared Path travelling north to south alongside the Mitchell Freeway, providing the main commuting route for bike riders travelling into the Perth CBD from the northern suburbs or for bike riders accessing the Joondalup CBD.

The City has two recreational shared paths. The coastal path travels north to south along the coastline and continues into adjoining local government areas. This path is one of the most popular bicycle (and walking) routes in Perth. Ensuring the coastal path is maintained, has adequate supporting infrastructure and conflict between bike riders and pedestrians is minimised will encourage continued use of this path by bike riders.

There is also a shared path around Lake Joondalup in Yellagonga Regional Park which travels through both the City of Joondalup and City of Wanneroo, and provides good opportunities for recreational bike riding.

The City has an extensive network of shared use paths, on-road bike lanes and local bicycle friendly roads.

Bike Path Network Technical Review

As part of developing the Plan the City undertook a Technical Review and on-ground assessment of the City's bike path network to inform and guide future infrastructure upgrades. The Technical Review focused on connectivity to activity centres such as train stations, community facilities, schools, shopping centres, and commercial precincts within the City.

The Technical Review was partly funded by the Department of Transport and included:

- identifying and auditing suitable bike routes to service a 3km radius of train stations.
- identifying and auditing suitable bike routes to service a 1km radius of activity centres such as schools and shopping centres.
- identifying and prioritising major strategic bike routes for upgrades to improve connectivity.
- multicriteria analysis for each identified route using six key values: strategic, connectivity, economic, safety, people and community, and funding.
- prioritisation of potential bike infrastructure improvement projects based on the multi-criteria analysis.
- further investigation of key potential projects including: current usage, current and recommended infrastructure, site conditions and constraints, and value for money.



The Technical Review identified an extensive list of potential bike infrastructure upgrades. From this list, 13 upgrades were identified for further assessment including costings and concept design (see Appendix 2).

The priority upgrades provide a coordinated, flexible and strategic approach to improving the City's bike network ensuring value for money and the greatest impact on the bike network. Upgrades can be implemented in a way that is responsive to funding opportunities as they arise. Each prioritised upgrade addresses appropriate lighting, signage, line markings, accessibility, minimising conflict, connectivity, etc.

It should be noted that given existing funding arrangements, implementation of these upgrades will take considerably longer than the five year timeframe of the Plan. These 13 upgrades provide a strategic and flexible framework that will guide bike infrastructure improvements within the City over the long-term.

The City’s Encouragement of Bike Riding

The City implements a number of educational and promotional activities to encourage bike riding, including:

- An annual community Bike Week event. In 2014 and 2015 the City hosted The Bike Doctor in Tom Simpson Park with free bike health checks for the public.
- A Share the Path Campaign was conducted to raise awareness of the safe use of the City’s dual use paths. The campaign included posters which were provided to local businesses, information published on the City’s website, and advertising at key coastal locations including the installation of on-ground signage along the City’s dual use coastal pathways, to raise awareness of safe riding.
- Providing the location of bike racks on the Joondalup Festival Map each year to encourage people to access the event by bike.
- Developing (in partnership with the Department of Transport) and distributing TravelSmart maps which provide information on walking and bicycle routes and public transport:
 - City of Joondalup (North) Local TravelSmart Guide
 - City of Joondalup (South) Local TravelSmart Guide
 - The TravelSmart Guide to Yellagonga Regional Park.
- The Department of Transport provides a variety of bike information, maps, and guides which the City distributes through the City’s libraries, customer service centres and at relevant City events.

The City’s Bike Riders

The City has improved its understanding of bike riders through analysis of bike count data, bike participation Census data, and engagement with the community.

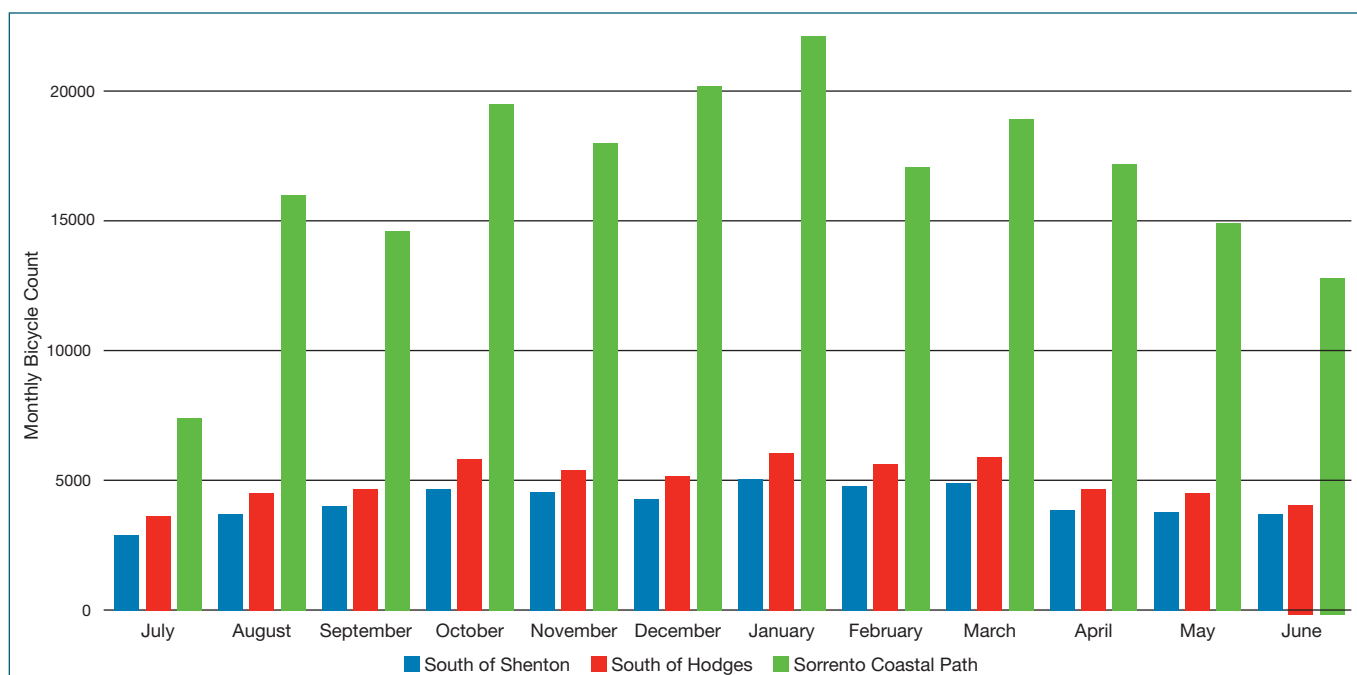
Counting Bike Riders

The Department of Transport undertakes trip monitoring, using fixed counters to provide daily counts along the principal and recreational shared paths. There are three permanent bike count locations within the City: two on the Principle Shared Path (one south of Shenton Avenue and one south of Hodges Drive) and one located in Sorrento on the coastal path. These count locations have only recently been installed so there is limited long term data. Monthly data for these sites is shown in Figure 6.

In addition the City recently installed three new bike counters – one in Neil Hawkins Park and two on the coastal shared path (Burns Beach and Mullaloo). Currently there is no data available for these bike counters but data from these counters will be used as part of future analysis and monitoring.

The City has also analysed usage rates for different routes within the City from data obtained through Strava. Strava is an application which enables riders to record their rides using a GPS mobile device and then upload to a website. The website aims to provide a social connection and motivate riders. Data uploaded by riders can give an indication of the number of trips on different routes. It can also give an indication of the number of riders, point of origin and end destinations, the time of day trips are being undertaken and basic rider demographics. However as it only includes Strava users it can’t be considered a complete data set. Strava users are most likely to be indicative of confident bike riders.

Figure 6: 2014 - 2015 Monthly Bicycle Count Data for the City of Joondalup





Participating in Bike Riding

Analysis of bike riding participation involves looking at the number (or percentage) of people who ride, rather than the number of bikes which pass on a particular bike path. This can give a better understanding of how popular bike riding is within the community.

Based on 2011 Census data, only 443 (0.5%) City of Joondalup residents rode their bike to work. This is compared to 1.1% of people in the Greater Perth area. Analysis of car ownership indicates 67% of households in the City of Joondalup had access to two or more motor vehicles, compared to 55% in Greater Perth¹⁰. This indicates a reliance on the use of vehicles to travel to work by the City's residents.

There is significant potential to increase the number of City residents who ride to work. In 2011, 22,186 (26.7%) of the City's working residents also worked within the City¹⁰. Bike promotion and education programs could target those residents who both live and work in the City of Joondalup as they are likely to have a shorter commute to work.

There is no current data available to indicate how many of the City's residents participate in bike riding for short trips or for recreation.

Engaging with the Bike Riding Community

Engagement with the community and relevant stakeholders has informed the development of the Plan including:

- Meetings with the Department of Transport to develop the City's approach for the Plan and to provide information on the progress of the Plan and Technical Review.
- Joint meetings held with the Cities of Wanneroo and Stirling to discuss the Cities respective Bike Plans, and to share ideas and approaches.
- Meetings or informal discussions with Bike Groups such as Bicycling WA, the Transport Bicycle Alliance, Over 55's, and the Northern Beaches Cycling Club, to obtain their input and understand their priorities and needs.
- Presentation of an initial framework to the City's Strategic Community Reference Group (SCRG) for feedback and discussion. The SCRG included representatives from Elected Members, State Government, bike user groups and the general community. The SCRG provided a strong indication of a preferred approach and from this the vision, aim and Four P's of this Plan were developed.

Opportunities For A Bike Friendly City

An overview of the current status of bike riding, bike infrastructure and promotions within the City has been presented. From this four key opportunities have been identified for moving towards a bike friendly city and increasing bike riding in the City of Joondalup (see Figure 7).

Promoting and Celebrating Bike Riding

The City undertakes a number of activities to promote bike riding within the City, however there is opportunity for the City to improve and expand its promotion of bike riding. Incorporating positive bike messages and bike information into the City's broad range of communications and promotions (not just environmental communications) will strengthen the message that the City is a bike friendly city.

For example communications about City facilities and events should also provide information on bike parking and how to get there by bike. New bike infrastructure improvements should be promoted in the local media, the City's website and other publications. State and Federal bike events and days (such as Ride to Work Day) should be promoted.

The City could also investigate ways to move beyond bike riding promotions to celebrating bike riding. Celebrating bike riding would involve significant events and promotions that generate excitement and motivation around bike riding, inspiring potential bike riders to give it a go, and rewarding current bike riders. Participating in a celebration would also create a feeling of community between participating bike riders and make them feel like together they are making a positive contribution.

More Short Trips by Bike

There is significant opportunity to increase the number of short trips made by bike within the City. This includes local neighbourhood trips to the shops, park or when visiting friends and trips to access school or public transport. Increasing the number of short bike trips being taken within the City has many benefits including reducing traffic and improving safety on local streets and at local destinations (i.e. shops and schools).

Short bike trips can improve the health of individuals and become a part of an everyday healthy lifestyle. Families and children can participate in short bike trips encouraging the next generation of riders. Short bike trips require less infrastructure investment as they can largely take place on quiet local roads. Short bike trips can build up the confidence of novice riders encouraging them to take more and longer trips by bike.

Having more people visibly riding bikes on local streets will contribute towards the perception of a bike friendly city and encourage more people to take up riding.

¹⁰ Australian Bureau of Statistics (2011)

Increasing the number of short trips taken by bike is a significant opportunity for the City and will make a strong contribution towards the City of Joondalup becoming a bike friendly city.

Improving Strategic Routes

When making significant investments in the construction and maintenance of bike paths and bike lanes it is important that a strategic approach is taken. Improving strategic routes will improve bike connectivity in the City and will increase the number of people who are able to connect to regional destinations within the City, such as the Joondalup CBD, Yellagonga Regional Park, Hillarys Boat Harbour, major shopping centres or centres of employment.

Strategic bike routes need to connect a large number of people to the places they want to go. There is significant opportunity to improve connectivity in the City by improving strategic bike routes, particularly east-west routes that connect to the north-south principal shared path along the freeway and recreational shared path along the coast.

Improving strategic routes will facilitate a higher number of people bike riding particularly for longer commuter trips, contributing significantly to the City becoming a bike friendly city.

Improving the City’s Knowledge of Bike Riders

The City’s current data and knowledge of bike riders is limited and there are significant opportunities for improvement. There is opportunity to expand monitoring of bike trips on key bike routes to determine popular routes and identify areas for improvement. There is also a strong need to gain a better understanding of bike riders, including how, why and where they ride and their perceptions and attitudes towards riding.

Improving the City’s knowledge of bike riders will help the City to improve its bike infrastructure, programs and promotions to encourage people to ride their bikes. It will also enable the City to monitor its progress towards achieving the aim and vision of the Plan.

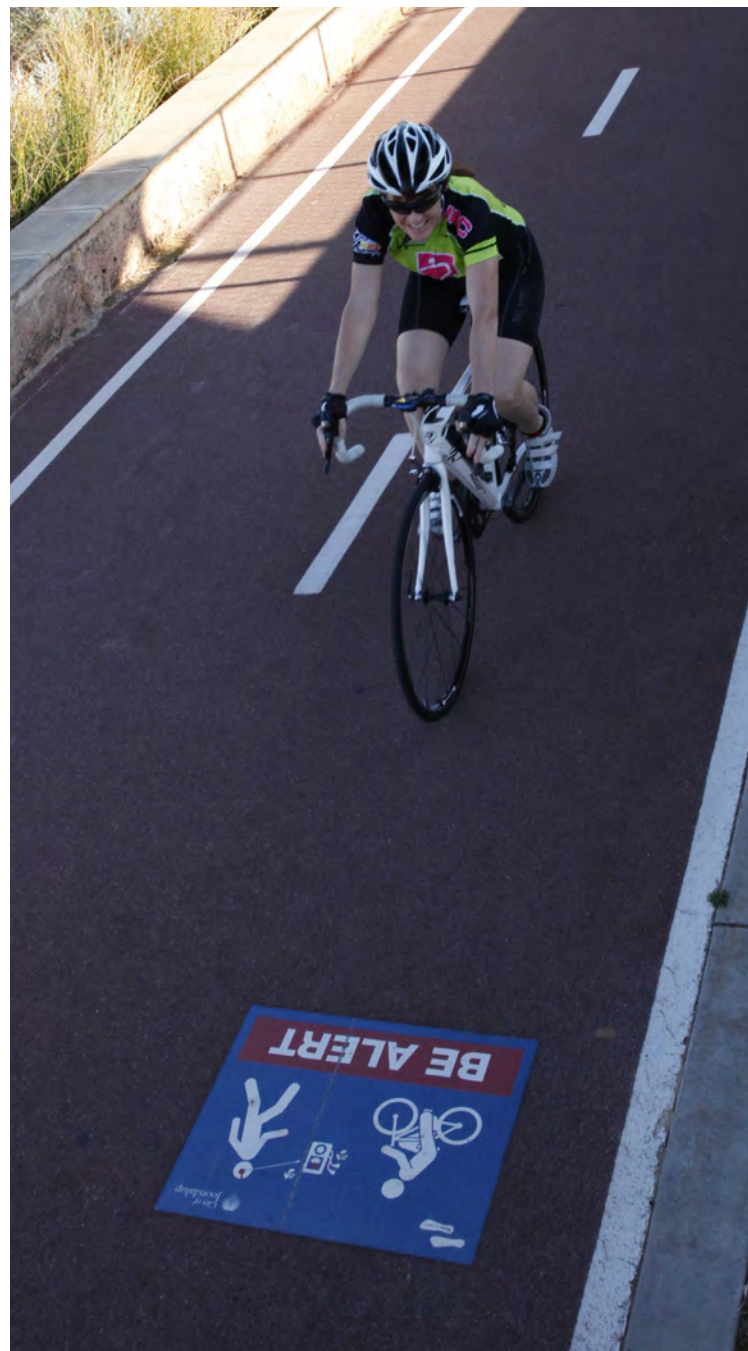


Figure 7: Key Opportunities for a Bike Friendly City



Bike Plan

Bike Plan Focus Areas and Outcomes

Achieving the vision of a bike friendly city will require multi-faceted improvements not only in the infrastructure that supports bike riding but also to the culture and perceptions that surround bike riding.

To ensure a strategic, comprehensive and holistic approach to increasing bike riding in the City the Four P's have been used as the key focus areas of the Plan. Expected outcomes for each key focus area are provided in Table 12.

Table 12: Bike Plan Focus Areas and Outcomes

People	<ul style="list-style-type: none"> The who, where, why and how of bike riders is understood Attitudes, behaviours and perceptions towards bike riding are positive All types and abilities of bike riders are catered for Bike riding is a part of an everyday, healthy lifestyle in the City of Joondalup
Pathways	<ul style="list-style-type: none"> Bike paths and bike lanes within the City are expanded, improved and maintained Safety of City bike paths and bike lanes are improved Local bicycle routes for riding within the City Innovative design for bike paths, bike lanes and supporting infrastructure is applied
Places	<ul style="list-style-type: none"> Local destinations (Joondalup City centre, shops, schools, work, transport hubs and recreation sites) can be accessed easily and safely by bike Local destinations cater for bike riders and provide end-of-trip facilities Regional destinations can be connected to easily by bike
Promotions	<ul style="list-style-type: none"> City of Joondalup is known as a bike friendly city Key City events can be accessed by bike The City advocates for bike riding and bike riders The community is aware of the City's bike network

Bike Plan Improvement Projects

In order to achieve the outcomes, 12 projects have been identified across the four key focus areas. Projects will be implemented over the life of the Plan and will be subject to regular monitoring and review. A list of the projects is provided in Table 13.

Table 13: List of Bike Plan Improvement Projects

People	Project 1	Counting Bike Riders
	Project 2	Understanding Bike Riders
	Project 3	Changing Behaviour
Pathways	Project 4	Bike Infrastructure
	Project 5	Innovative Design
	Project 6	Local Bike Friendly Routes
Places	Project 7	Bike Friendly Planning Developments
	Project 8	A Bike Friendly Joondalup City Centre
	Project 9	Strategic Partnerships
Promotions	Project 10	Promoting a Bike Friendly City
	Project 11	Bike Friendly City Events
	Project 12	Advocating for Bike Riding

Project Descriptions

A summary of each project follows including project descriptions, project objectives and deliverables.

People

Project 1
Counting Bike Riders
<p>Project Status</p> <p>New Project</p>
<p>Project Description</p> <p>Increasing bike counting locations around the City can provide baseline and ongoing data to indicate points of increased usage and assist in identifying locations to improve bike infrastructure and upgrade road design.</p> <p>New technologies and crowd source data can enable the City to improve its knowledge of popular bike routes with websites such as Strava, Map My Ride, Rider Log and Endomondo, potentially providing information on high usage routes etc.</p> <p>The City will liaise with other organisations, such as the Main Roads Western Australia and Department of Transport, for the exchange of bike monitoring data.</p> <p>Other methods for consideration that could provide supplementary data include intercept surveys and/or video surveys. These surveys could also provide information on bike rider demographics, motivations, destinations and behaviours. Video surveys could provide useful information on the nature and frequency of conflict between bike riders and pedestrians in problem locations.</p> <p>A program will be developed to implement and guide how the City's monitoring of bike trips and popular bike routes and ongoing data analysis. The Framework will need to consider what information is currently available, how the information will be used, suitable methodologies, strategic locations for surveys and budget constraints.</p>
<p>Project Objectives</p> <ul style="list-style-type: none"> • To improve the City's knowledge and understanding of popular bike routes within the City • To understand if and how bike trips are increasing in the City
<p>Deliverables</p> <ul style="list-style-type: none"> • A program for improving the City's knowledge of bike travel within the City • Data on usage patterns along key bike routes

Project 2

Understanding Bike Riders

Project Status

New Project

Project Description

The City has limited knowledge and understanding of City of Joondalup bike riders including how many residents ride bikes, how frequently, where they ride, their reason for riding and their confidence and abilities.

A variety of barriers can prevent an individual from riding their bike, including perceptions around safety. An understanding of the barriers and the motivators that exist for residents starting or continuing riding will assist the City in tailoring its bike infrastructure, programs and promotions.

A community bicycle survey will be conducted through the City's website, email and social media networks to obtain information on bike riders and non-bike riders within the City, their levels of participation, barriers and motivators in order to identify ways to increase riding in the City.

The community bicycle survey will be conducted annually with a number of key questions replicated to provide an ongoing indication of participation levels and changing perceptions.

The City will also consider surveying other organisations and destinations within the City such as schools to determine benefits and barriers to bike riding.

Project Objectives

- Increase knowledge of bike riding participation levels in the City
- Increase knowledge of the barriers and motivators for riding a bike

Deliverables

- Annual survey data on participation levels, barriers, motivators and perceptions around bike riding
- Analysis of how participation and perceptions around bike riding are changing over the life of the Plan

Project 3

Changing Behaviour

Project Status

Existing Project

Project Description

The City has developed a coordinated program of environmental education activities through its Environmental Education Program (EEP). Community education is vital in influencing behaviour change and better environmental practices by the community. As part of the Environmental Education Program the City promotes the use of alternative transport such as walking, riding and public transport.

The provision of information is an important behaviour change tool. Specific information related to performing the behaviour such as providing bike maps and safe bike routes is particularly important. The City will continue its existing education, information and promotional activities to increase bike riding including distribution of bike maps and TravelSmart maps, annual bike week community events and promotions, and share the path messages.

The City will investigate ways to improve its education program to create further behaviour change including information provision, incentives, modelling, feedback and other ways to overcome identified barriers.

Project Objectives

- To increase community knowledge of opportunities for bike riding in the City
- To increase participation in bike riding by the community

Deliverables

- Inclusion and delivery of messages to encourage bike riding and share the path principles within the City's Environmental Education Program
- Distribution of Local TravelSmart Guides and other Department of Transport bike information, maps and guides
- Delivery of one community bike event per year

Pathways

Project 4
Bike Infrastructure
Project Status
New Project
Project Description
<p>The City engaged a consultant to undertake a technical review of the current bike path infrastructure within the City. Using the WABN Plan's focus areas for PBN grants, the consultant reviewed connectivity to activity centres, train stations, community facilities, and shopping centres and commercial precincts.</p> <p>As a result of the analysis, a number of projects were identified and the consultant outlined the likelihood of the City obtaining PBN funding for these upgrades. From this list, 13 upgrades were identified for further assessment including financial costings and concept design. These 13 priority upgrades will form the basis of the City's bike infrastructure improvements over the next five years and beyond.</p> <p>The City undertakes an annual program of bike infrastructure upgrades. The priority upgrades identified will be assessed and considered for inclusion in the Capital Works Program on an annual basis. Having a pool of priority upgrades to choose from will give the City flexibility to respond to relevant funding opportunities as they arise.</p> <p>The Technical Review and the identified priority upgrades provide a coordinated, flexible and strategic approach to improving the bike network and supporting infrastructure.</p>
Project Objectives
<ul style="list-style-type: none"> • To improve the connectivity of the bike network and linkages to Joondalup City Centre, activity centres and local attractors • To implement upgrades to the bike network and supporting infrastructure through a coordinated, flexible and strategic approach to better provide for bike riders • To improve connections and legibility from within suburbs to the bike network
Deliverables
<ul style="list-style-type: none"> • Annual inclusion of bike infrastructure upgrades within the Capital Works Program

Project 5
Innovative design
Project Status
New Project
Project Description
<p>Innovations in bike infrastructure and design have the potential to improve safety and connectivity, minimise conflict, encourage bike riding and highlight and promote riding to the wider community. This can include innovation in design of intersections, shared zones, on and off road bicycle treatments, lighting, bicycle parking and end-of-trip facilities.</p> <p>Examples of innovative design from overseas and within Australia will be reviewed for their benefits and potential for use within the City. Use of these innovative designs will be considered for use in the City's future bike planning and in the City's priority infrastructure upgrades.</p>
Project Objectives
<ul style="list-style-type: none"> • Improve the City's knowledge of innovation in bike infrastructure
Deliverables
<ul style="list-style-type: none"> • Examples of innovative design for future use • Use of innovative design in priority upgrades

Project 6
Local Bike Friendly Routes
<p>Project Status</p> <p>New Project</p>
<p>Project Description</p> <p>The Perth Bicycle Network often concentrates on the larger volume shared used paths that transport bike riders to and from the Perth CBD or other regional connections. Local bicycle routes however form the larger part of the network and help riders travel within and between suburbs rather than just north-south towards the CBD.</p> <p>Local bicycle routes include shared use paths, on-road bicycle lanes and local bike friendly roads. Identifying and promoting local bike friendly routes will contribute to making bike riding a part of a normal everyday lifestyle within the City of Joondalup.</p> <p>To encourage people to ride locally whether for short trips or for recreation, local bike friendly routes that are accessible for bike riders of all abilities will be identified. Mechanisms for promoting these routes will be investigated with consideration given to mobile or online platforms rather than traditional printed forms. Use of on-ground bike signage to raise awareness of shared zones and improve wayfinding along local bike friendly routes will be considered where appropriate.</p>
<p>Project Objectives</p> <ul style="list-style-type: none"> • To encourage the number of people riding locally • Promote local bike friendly routes to less confident riders
<p>Deliverables</p> <ul style="list-style-type: none"> • Identified local bike friendly routes that are accessible for bike riders of all abilities • New platforms for promoting local bike friendly routes



Places

Project 7
Bike Friendly Planning Developments
<p>Project Status</p> <p>New Project</p>
<p>Project Description</p> <p>Local Government has scope to include provisions relating to bike access, bike parking and end-of-trip facilities within its local planning documents. Such provisions encourage the inclusion of bike facilities in new and redeveloped buildings and therefore facilitate increased riding to those destinations.</p> <p>The City is currently preparing a new planning scheme to replace District Planning Scheme No.2 (DPS2). This provides an opportunity to include provisions relating to bike access, bike parking and end-of-trip facilities within the new scheme and/or related new local planning policies. This would provide requirements for new and redeveloped buildings to consider bike access, bike parking and end-of-trip facilities as part of a development application.</p> <p>There is also the potential to include provisions relating to bike access, bike parking and end-of-trip facilities within relevant new Structure Plans. This includes the Joondalup Activity Centre Structure Plan as well as future Activity Centre Structure Plans for centres such as Whitford and Warwick.</p>
<p>Project Objectives</p> <ul style="list-style-type: none"> • Encourage consideration of bike access, bike parking and end-of-trip facilities in new and redeveloped buildings within the City
<p>Deliverables</p> <ul style="list-style-type: none"> • Identify and consider the inclusion of provisions to facilitate bike access, bike parking and end-of-trip facilities for new or redeveloped buildings as part of relevant new City planning documents • Increased inclusion of bike access, bike parking and end-of-trip facilities in new and redeveloped buildings within the City

Project 8

A Bike Friendly Joondalup City Centre

Project Status

New Project

Project Description

Background research undertaken in developing the draft Joondalup City Centre Structure Plan has identified that there are numerous areas of activity dispersed throughout the City Centre and beyond, but that few of these are connected or integrated with one another. In particular there is an opportunity to create better linkages between these areas of key activity or opportunity by strengthening existing east-west connections.

Five existing areas of activity that are close together and provide an opportunity to create distinct, connected nodes within the Joondalup City Centre, have been identified:

- Health and Wellness
- City Centre
- Learning and Innovation
- Eddystone Link
- Southgate.

Given the close proximity of these five nodes there is significant potential to use on and off road bike infrastructure to improve connectivity. A detailed bicycle technical review will be undertaken for the Joondalup City Centre to identify potential bike infrastructure improvements that will improve connectivity and attract bike riders to the City Centre. This will not only have benefits for connectivity, but will also reduce congestion in the Joondalup City Centre and demands for parking. It will also contribute to the aim of a more activated City Centre.

Project Objectives

- Improve bike connectivity and bike infrastructure within the Joondalup City Centre

Deliverables

- Incorporation of bike connectivity in the Joondalup City Centre Structure Plan

Project 9

Strategic Partnerships

Project Status

New Project

Project Description

The bike network and provision of bike infrastructure is not just the responsibility of local government but also State government departments such as the Department of Transport, Public Transport Authority and Main Roads WA. To ensure a legible and connected bike network the City needs to work with these stakeholders as well as neighbouring local governments and other landholders.

Likewise activity centres within the City may be privately owned or owned by State government departments and the City will need to liaise with these stakeholders to support linkages and accessibility of the activity centres.

This project will investigate opportunities to partner with State government departments, landholders and other stakeholders to improve connectivity, increase bike riding and create better outcomes. This includes liaising with the Department of Transport on their review of local bicycle routes surrounding activity centres within the City.

Project Objectives

- Developing partnerships to improve connectivity and create better outcomes that support bike riding

Deliverables

- Maintain relationships and communication with State and local government and other landholders regarding bike infrastructure and promotions
- Delivery of joint bike-related projects with State and local governments, landholders and other stakeholders

Promotions

Project 10
Promoting a Bike Friendly City
<p>Project Status</p> <p>New Project</p>
<p>Project Description</p> <p>The City promotes bike riding through a range of environmental activities and distribution of bike-related publications such as brochures and maps. This project will promote the City as a bike friendly city and destination within the City's marketing and promotions, local media and through relevant bike forums and networks. The social cohesion and wellbeing aspects of bike riding will also be incorporated in the City's promotions.</p> <p>Through this project the City will incorporate bike riding promotions into a greater range of the City's communications and publications, not just environmental communications. This could include communications relating to City event, facility and service information. The City will also ensure it promotes the City's achievements such as completion of new bike infrastructure or increases in bike riding numbers in the local media, City's website and other forums. The social cohesion and wellbeing aspects of bike riding will also be incorporated in the City's promotions.</p>
<p>Project Objectives</p> <ul style="list-style-type: none"> • Promote the City of Joondalup as a bike friendly city
<p>Deliverables</p> <ul style="list-style-type: none"> • Bike friendly city promotions included in the City's marketing and communications

Project 11
Bike Friendly City Events
<p>Project Status</p> <p>New Project</p>
<p>Project Description</p> <p>The City delivers a number of City events each year including the Joondalup Festival, Music in the Park and the Little Feet Festival. Providing opportunity for people to access City events by bike will reduce traffic and parking congestion around City events, reduce the environmental impact of City events and will also demonstrate the City's commitment to becoming a bike friendly city.</p> <p>The City will continue to provide bike parking at the Joondalup Festival and will continue to include bike parking on the Joondalup Festival Map. The City will also investigate the potential to provide bike parking at other City events where relevant with an aim to increasing the amount of bike parking provided at City events over the life of the Plan. Other ways to make City events more bike friendly will also be investigated.</p> <p>The City will also investigate options for implementing or hosting a significant bike friendly city event that celebrates bike riding within the City. This event would aim to generate excitement and motivation around bike riding; inspiring potential bike riders to give it a go and rewarding current bike riders.</p> <p>Examples of significant bike celebration events that have been held in Australia and overseas will be investigated. These examples will be assessed for their potential implementation within the City. The City will also consider offering the Joondalup City Centre as a potential venue for a significant bike event organised by other key bike stakeholders.</p> <p>It is proposed that within the life of the Plan a significant bike celebration event that showcases the City of Joondalup as a bike friendly city will be held.</p>
<p>Project Objectives</p> <ul style="list-style-type: none"> • To increase the number of people accessing the City's events by bike • To celebrate the City of Joondalup as a bike friendly city
<p>Deliverables</p> <ul style="list-style-type: none"> • Provide bike parking at key City events (where appropriate) • Include bike access and bike parking information in promotions of key City events (where appropriate) • The implementation or hosting of a bike friendly city celebration event within the life of the Plan.

Project 12

Advocating for Bike Riding

Project Status

New Project

Project Description

The physical, social and legal context that surrounds bike riding is influenced by the State and Federal Government as well as Local Government.

Local Government can play an advocacy role in supporting, or calling for, changes at a State or Federal level that promote or enable increased adoption and support for bike riding, and improved safety and convenience for bike riders. This could include policy, administrative or legislative changes and changes to current standards and guidelines.

Through this project the City will advocate to State Government, Federal Government and other stakeholders for policy, funding and legislative changes that support bike riding. The City of Joondalup will work in partnership with other local governments and the Western Australian Local Government Association to strengthen its advocacy message.

Project Objectives

- Improve the current funding and policy arrangements that support bike riding

Deliverables

- Submissions to State Government and Federal Government discussion papers, draft policies, legislative changes etc.



Implementation

Effective and coordinated implementation of the Plan is critical to achieving its objectives. Implementation will be coordinated by identifying key performance indicators and establishing appropriate processes for monitoring and review.

Key Performance Indicators

Key performance indicators have been developed to monitor progress towards the vision and aim of the Plan (see Table 14). Key performance indicators will be reported on during the annual review process. No targets have been set for the Plan as many of these data sets are new. Instead aspirational trends have been identified and targets will be considered in the future once a baseline data set has been established and is better understood.



Table 14: Key Performance Indicators for the *Bike Plan 2016-2021*

Indicator	Purpose	Source	Aspirational Trend
Corporate			
Amount of external funding secured (\$)	To assess the City's effectiveness in obtaining funding for bike infrastructure, programs and promotions	Successful grant applications	Increase
Bike Counters			
Number of bike trips on monitored locations	To provide an indication of bike usage on key bike routes	Department of Transport count data City of Joondalup count data	Increase
Percentage increase in number of bike trips on key bike infrastructure upgrades	To determine whether bike infrastructure improvements have increased the number of trips taken on the route	Monitoring before and after bike infrastructure improvement projects	Increase
Bike Participation			
Percentage of City residents who ride a bike	To provide an indication of the number of residents who ride bikes	Annual community bike survey	Increase
Percentage of people who feel safe riding on the road	To give an indication of people's perceptions of safety when riding	Annual community bike survey	Increase
Percentage of people who feel safe riding on the bike paths	To give an indication of people's perceptions of safety when riding	Annual community bike survey	Increase

Monitoring And Review

In accordance with the City's *Project Management Framework*, the Plan will be reviewed on an annual basis. The review will include:

- an assessment of the progress and status of each project
- an assessment of progress towards the City's key performance indicators
- identification of any implementation issues or significant lack in progress.

In addition a major review will be conducted at the end of the third year of implementation. This will align with the completion of the *Walkability Plan* and the proposed development of an Integrated Transport Strategy and inform the City's future transport planning.

References

- Australian Bicycle Council (2010) *National Cycling Strategy 2011 – 2016: Gearing Up for Active and Sustainable Communities*. Austroads, Sydney NSW.
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- Australian Bureau of Statistics (2011) *Census of Population and Housing*. Compiled and presented in profile.id by .id, the population experts. profile.id.com.au/joondalup. Accessed on 20/01/2015.
- Austroads (2014) *Cycling Aspects of Austroads Guides*. Austroads, Sydney NSW.
- Department of Infrastructure and Transport (2011) *Our Cities, Our Future: A National Urban Policy for a Productive, Sustainable and Liveable Future*. Commonwealth of Australia, Canberra.
- Department of Planning (2010) *Directions 2031 and Beyond: Metropolitan Planning Beyond the Horizon*. Western Australian Planning Commission, Perth.
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- Department of Transport (2014) *Western Australian Bicycle Network Plan 2014 – 2031*. Government of Western Australia.
- Department of Transport (2015) *Guideline for Developing a Bicycle Plan*. Government of Western Australia.
- Public Transport Authority (2014) *Survey Results Undertaken by the Public Transport Authority of Car Park Full Times Across the Network*. Tabled in Western Australian Parliament, Legislative Council on 2 April 2014. parliament.wa.gov.au/publications
- Public Transport Authority (2015) *a Transperth Patronage – Joondalup Line*. pta.wa.gov.au
- Public Transport Authority (2015) *Whole System Bicycle Parking Survey March 2014*. Government of Western Australia.
- Transperth (2015) *Paid Parking*. transperth.wa.gov.au/parking
- Western Australian Planning Commission (2007) *Liveable Neighbourhoods: A Western Australian Government Sustainable Cities Initiative*. Government of Western Australia.

Appendix 1

Federal And State Policy Framework

Plan/Strategy	Description	Relevance for Bike Planning
Federal Policy		
<i>National Cycling Strategy 2011 – 2016</i>	<p>Published every five years by the Australian Bicycle Council (ABC) which is made up of representatives from the Commonwealth Government, state and territory governments, and the cycling industry and cyclist user groups.</p> <p>The vision for the Strategy is to double the number of people cycling in Australia by 2016¹¹.</p>	<p>Coordinates the activities of various agencies across federal, state and local levels to deliver agreed-upon goals for cycling in Australia.</p> <p>Can be used to align the aims and objectives of local bike plans with bike planning at a Federal level.</p>
<i>Our Cities, Our Future: A National Urban Policy For a Productive, Sustainable and Liveable Future (2011)</i>	<p>A long term, national framework to guide policy development and public and private investment in cities through articulating a set of goals, objectives and principles. The goals of the National Urban Policy are productivity, sustainability, and liveability¹².</p>	<p>Articulates how the Australian Government will coordinate its own policies, investment and activities in cities, in partnership with State, Territory and local governments, the private sector and communities.</p> <p>Includes objectives to reduce dependence on cars and improve transport options; and to improve public health outcomes through the built environment.</p>
<i>Walking, Riding and Access to Public Transport: Supporting Active Travel in Australian Communities, Ministerial Statement (2013)</i>	<p>Sets out how the Australian Government will work to increase the proportion of people walking and riding for short trips, and accessing public transport, in communities.</p>	<p>Articulates how the Federal Government can support walking, cycling and public transport through its policy, funding programs and information provision.</p> <p>These resources may be able to be accessed by local government in their bike planning.</p>
State Policy		
<i>Western Australian Bicycle Network Plan 2014 – 2031</i>	<p>Aims to make Western Australia a place where cycling is safe, connected, and convenient and widely accepted as a form of transport. It caters for the expansion of Western Australia's cycling facilities and growing cycling requirements over the next two decades and will provide a blueprint for metropolitan and regional cycling facilities to encourage and support bicycle trips¹³.</p> <p>Focuses on 12 key initiatives with the aim of doubling cycling in Western Australia within the next five years.</p>	<p>Funding opportunities through the Department of Transport's Perth Bicycle Network (PBN) Grants Program are linked to the delivery of Local Bike Plans which meet the specifications outlined in the <i>Western Australian Bicycle Network Plan</i>. The PBN Grants program provides matching funding for the development and construction of cycling infrastructure.</p> <p>The Plan has been developed to align with the State Government's Western Australian Bicycle Network Plan this will assist in maximising funding opportunities for bike infrastructure within the City.</p>

¹¹ Australian Bicycle Council (2010)

¹² Department of Infrastructure and Transport (2011)

¹³ Department of Transport (2014)a

Plan/Strategy	Description	Relevance for Bike Planning
State Policy		
<i>Public Transport Plan for Perth in 2031 (2011)</i>	Provides an overview of Perth's current public transport, identifies the strengths and weaknesses of the system as well as opportunities to develop and enhance the network ¹⁴ . Includes a long term vision for a public transport network to support a population of 3.5million which provides clear guidance for the medium term network (to 2031). Short term priorities, along with current commitments are identified.	Recognises that facilitating access to public transport services is an important part of a viable transport network. Identifies the rail infrastructure at 2031 and future potential rapid transport infrastructure beyond 2031 that will service the City of Joondalup. The Plan will need to facilitate access for bike riders to the current and future public transport network.
<i>Directions 2031 and Beyond: Metropolitan Planning Beyond the Horizon</i>	A high level spatial framework and strategic plan that establishes a vision for future growth of the metropolitan Perth and Peel region. Provides a framework to guide the detailed planning and delivery of housing, infrastructure and services necessary to accommodate a range of growth scenarios.	Identifies the activity centres including one strategic metropolitan centre and one metropolitan attractor as well as secondary centres, district centres, neighbourhood centres and local centres within the City of Joondalup. The Plan will need to facilitate access for bike riders to these activity centres.
<i>Liveable Neighbourhoods (2007)</i>	Developed in 2007 in response to objectives in the State Planning Strategy to facilitate the development of sustainable communities. Liveable Neighbourhoods is an operational policy to be followed in the design and approval of urban development. Liveable Neighbourhoods applies to structure planning and subdivision for greenfield sites and for the redevelopment of large brownfield and urban infill sites ¹⁵ .	Provides increased support for walking, cycling and public transport including the objective: to provide a safe, convenient and legible bike movement network to meet the needs of both experienced and less experienced cyclists, including on-road and off-road routes. Structure plans and subdivision applications must consider Liveable Neighbourhoods and provide information as outlined in Liveable Neighbourhoods. The City needs to ensure structure plans and subdivision applications meet the objectives and requirements of Liveable Neighbourhoods.

¹⁴ Department of Transport (2011)¹⁵ Western Australian Planning Commission (2007)

Appendix 2

Priority Bike Infrastructure Upgrades

Thirteen priority bike infrastructure upgrades have been identified through the City's Technical Review providing a strategic approach to the City's bike infrastructure improvements, during and beyond the life of this Plan. Note these 13 priority projects may change in the future as priorities, funding opportunities and circumstance change.

Name	Site	Location	
		From	To
Beach Road Shared Path Upgrade	Beach Road	Erindale Road	Mitchell Freeway
Beach Road Shared Path	Beach Road	Mitchell Freeway	Sycamore Drive
Davallia Road Upgrade	Davallia Road	Beach Road	Warwick Road
Warwick Road Shared Path	Warwick Road	Mitchell Freeway	Marmion Avenue
Glengarry Drive Upgrade	Glengarry Drive	Warwick Road	Hepburn Avenue
Padbury Heights Link	Padbury Heights	Holleton Terrace	Walter Padbury Boulevard
Gibson Avenue Shared Path	Gibson Avenue	Hepburn Avenue	Whitfords Avenue
Eddystone Avenue Upgrade	Eddystone Avenue	Whitfords Avenue	Ocean Reef Road
Venturi Drive Shared Path	Venturi Drive	Ocean Reef Road	Hodges Drive
Hodges Drive Shared Path	Hodges Drive	Marmion Avenue	Mitchell Freeway
Trappers Drive Shared Path	Trappers Drive	Whitfords Avenue	Ocean Reef Road
Trailwood Drive Shared Path	Trailwood Drive	Timbercrest Rise	Underpass
Robinson Cycleway	Robinson Cycleway	PSP	Goollelal Drive





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