



Department of  
**Transport**

APPENDIX 10  
ATTACHMENT 1

# Western Australian Bicycle Network Plan

2012 - 2021  
Draft for consultation





# MINISTER'S FOREWORD

It gives me great pleasure to release this draft Western Australian Bicycle Network Plan 2012 to 2021 which details the continuing development of metropolitan and regional cycling facilities.

The development of this plan started with a review of the 1996 Perth Bicycle Network (PBN) Plan. Since the release of that Plan, the number of Perth people cycling to work or for leisure has increased more than five-fold and this trend is expected to continue as more Western Australians reap the environmental, social and health benefits offered by choosing bicycles for work or leisure trips. In 2010, the number of cycling trips to and from the Perth CBD increased by 10%.

During the review it was decided that regional cycling requirements should be included in the final plan as there was no strategy for this.

In meeting Western Australia's rising demand for cycle paths and facilities, the 2012 to 2021 Western Australian Bicycle Network Plan will guide the continued delivery of cycling infrastructure to better meet the growing demand for convenient, safe cycling routes and end-of-trip facilities together with alignment with current Government urban planning policy and directions.

The plan includes a number of proposed new initiatives which have been developed from feedback received during the review. Two of the initiatives include a connecting schools program and a connecting rail/bus stations program. Both of these target short trips which have strong community benefits aimed at improving the health of our community while also reducing congestion at key locations during peak drop-off and pick-up periods.

For the Perth area, there will be a focus on building Principal Shared Paths along freeways and railway lines within a 15km radius of the Perth CBD. The aim of these projects is to provide commuters with a viable alternative transport mode which is safe and reduces reliance on motorised transport in areas which carry high volumes of commuters.

For regional cities, there will be a focus on the medium to long term planning for cycling facilities. This is essential to ensure that we do not miss opportunities to provide cycling infrastructure as our key regional cities grow.

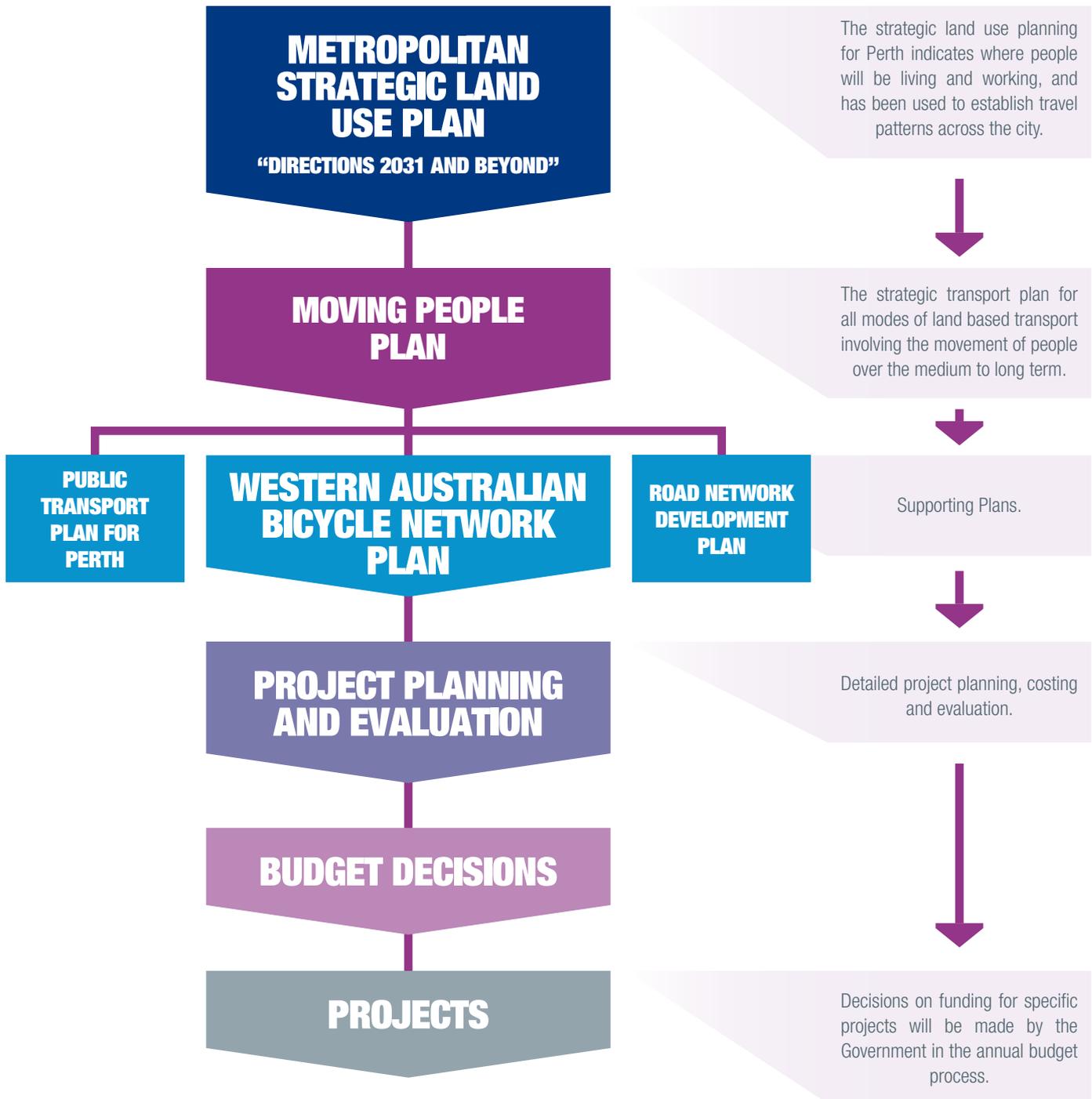
The plan will now be open for feedback over the next three months. I encourage all Western Australians to review it and provide feedback to ensure that we have a plan which is supported by the community and provides high quality facilities for cyclists.



Hon Troy Buswell MLA  
Minister for Transport

# DECISION MAKING FRAMEWORK

For the preparation and implementation of this plan.



# KEY RECOMMENDATIONS

The new Western Australian Bicycle Network Plan (WABN) has been developed to leave a lasting legacy for all cyclists and potential cyclists. It includes new initiatives which cover a range of activities that will greatly assist in providing a safe and sustainable cycling network which ties in with key activity and attraction areas. The plan is a logical progression which links in with the National Cycling Strategy: 'Gearing up for Active and Sustainable Communities'. The key recommendations are listed below.

## Implementation of the Western Australian Bicycle Network Plan

A coordinated approach will be needed to implement the WABN most effectively. Given the range of roles and responsibilities of each organisation involved, a WABN Implementation Reference Group will be established, with representatives from across government and cycling groups, to provide advice and input on behalf of cyclists.

This will provide a forum for government and non-government agencies to share expertise on projects and policies which will impact on cycling. It will enable agencies to combine and identify opportunities for a more integrated delivery of WABN infrastructure.

Initially, the WABN Implementation Reference Group will include representatives from the following core agencies:

- Transport Portfolio
- WA Local Government Association
- RAC
- The Institute of Public Works Engineers Australia
- The Australian Institute of Traffic Planning and Management
- Non-Government Cycling Representative Groups.

The Committee will be coordinated by the Department of Transport and will meet bi-monthly for the first year and quarterly after that.

## Biennial Review of the Plan

The plan should be reviewed on a biennial basis to ensure that influencing factors are taken into account in a timely way. This is critical to ensure that the plan keeps pace with changing travel and recreation patterns, changes in urban planning/development and changes in funding options. The review can be undertaken by the Implementation Reference Group with support from the Transport Portfolio Agencies.





## Expansion of the Principal Shared Path Network

The existing funding allocation for the expansion of the Principal Shared Path network is \$910,000. This allows for the construction of between 500m and 1km of path per year in environments which do not include grade separation or substantial relocation of services. Under this type of allocation, construction is on a km-by-km basis, which leads to higher construction costs through mobilisation and demobilisation charges.

The main demand for commuter cycling is within a 15km radius of the Perth CBD along freeways and railway lines. This plan focusses on links within this radius to obtain maximum benefit for cyclists together with a safe cycling environment. This will involve six links and planning work is needed to define the alignment, concept design, accurate costings and staging options.

The projects should be treated in a similar way to road construction where sizeable lengths are built to maximise economy of scale and reduce overall costs. This approach will have the added benefit of significantly increasing cycling numbers through a longer and better connected network. It is estimated that about \$10m per year (in 2012 dollars) will be needed for constructing and completing these high priority links over the next decade. The existing annual allocation of \$910,000 should be used to undertake detailed design for priority links. It is critical to ensure that detailed design is completed well before actual construction commences to allow for preparatory activities and to avoid building delays which can result in cost over-runs.

The priority links are as per the table below:

LOCATION	EXTENT OF PATH	TYPE OF WORK
Kwinana Freeway	Narrows Bridge to Mount Henry Bridge	Widening of existing path at selected locations
Kwinana Freeway	Cranford Avenue to South Street	New path and grade separation
Mitchell Freeway	Glendalough to Balcatta	New path and grade separation
Perth to Armadale Railway Line	Burswood to Welshpool	New path and grade separation
Perth to Midland Railway Line	Bassendean to Midland	New path
Perth to Fremantle Railway Line	Shenton Park to Loch Street	New path
Perth to Fremantle Railway Line	Grant Street to Fremantle	New path and grade separation

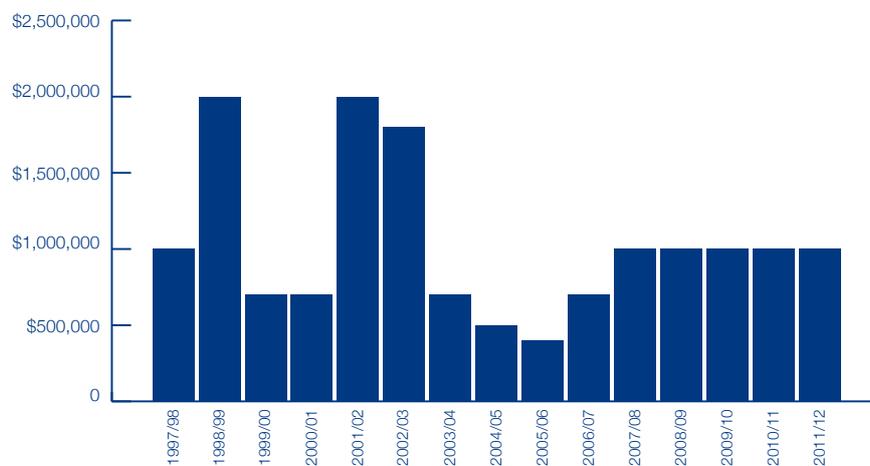
Note: The construction priority of these links will be determined after the planning work has been completed. A summary of each link is in Section 8.



## Perth Bicycle Network Grants

The allocation of grants for facilities on local roads has varied over a number of years with funding peaking at \$2m per year in 1998/99 and 2001/02. Over the past four years, funding has been stable at \$1m per year. Grants are currently allocated via four categories - on-road infrastructure, path infrastructure, network planning and other infrastructure (eg end-of-trip facilities).

PBN Grants Annual Funding Allocation

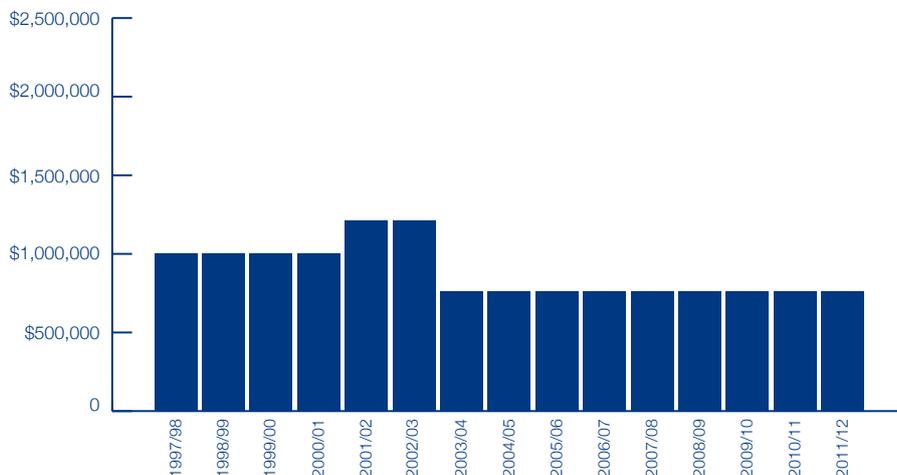


The value of submissions each year runs at approximately double the available funding. Doubling the grants to \$2m per year will allow councils to make more significant submissions and larger projects of strategic network importance to be funded.

## Regional Bicycle Network Grants

As with the allocation of grants to the Perth Bicycle Network, the allocation of Regional Bicycle Network Grants for facilities on local roads has varied over a number of years with funding peaking at \$1.25m per year in 2001/02 and 2002/03. Over the past nine years funding has been stable at \$750,000 per year.

RBN Grants Annual Funding Allocation



The value of submissions for regional cycling facilities each year runs at approximately double the available funding which means that the amount provided to successful projects is usually fairly small, generally between \$10,000 and \$50,000 per project. Increasing the grants to \$2m per year will encourage councils to apply for a higher volume of significant projects and manage these projects in conjunction increasing with State Government and private funding.

## End-of-Trip Facility within Perth CBD

Cycling numbers to and from the CBD are increasing significantly on a year-by-year basis. This increase has been assisted by proactive employers providing end-of-trip facilities which include secure bike storage, lockers and showers. While this is feasible for large employers, there are many smaller organisations which are not able to provide such facilities.

A feasibility study will be undertaken as a partnership between the Department of Transport and the City of Perth for a high quality facility which provides parking for 500 bikes, showers, locker facilities and possibly other services which would operate on a fee-for-service basis. The facility would need to be centrally located to ensure maximum usage and might be achievable by converting existing space in a multi-storey car park. If the feasibility study suggests that such a facility is viable, a budget submission will be made.

Pictured right:  
U-rail parking in the City of Perth.



## Connecting Schools

A significant opportunity exists to increase cycling to school at both primary and secondary levels. Achieving a greater ridership to schools would have many positive benefits including health improvements, reduced congestion at school drop-off/pick-up times and the take-up of cycling as a viable transport option for other short trips.

To assist in fostering improved ridership, a pilot program will be led by the Department of Transport. Both primary and secondary schools will be selected from all six of the Directions 2031 sub-regional planning areas, plus a regional City/Town.

The program's main aim would be to drive behaviour change by informing teachers, parents and students about cycling options. The Department of Education and local government will be key partners in the program to ensure that an infrastructure gap analysis is undertaken to determine any shared path or on-road cycling improvements and end-of-trip requirements. This analysis will form the basis for development of a cycle route map for each school.

An evaluation of the program will be undertaken to determine its benefits and lessons learned. This information would then be used to determine the benefits in rolling out the program to schools across the metropolitan area and in larger regional cities and towns.

## Connecting Rail/Major Bus Stations

Demand for secure bike storage at rail stations has increased in recent years as demand for car parking has outstripped supply and motor vehicle running costs have risen. The cost of providing bike parking is \$40,000 for a shelter which holds 18 bikes, compared to \$125,000 for 18 car bays. This makes the provision of bike parking at rail and bus stations a low-cost, low-space and highly sustainable solution. The provision of secure bike facilities at rail stations has been rolled out for a number of years and will continue to be expanded.

There is a need to look more closely at cycling routes within a 3km radius of stations. A 3km bike ride is very feasible for most people and takes about 10 minutes. To encourage such trips, the quality of cycling facilities needs to be of a standard which riders consider adequate and safe.

Five train stations will be selected for a pilot connection to stations project which will review the cycle routes to the station. The review will be led by the Public Transport Authority and involve a partnership with Main Roads and local government. The review will identify preferable routes to service the 3km radius catchment area and specify any on and off-road cycling facilities which are lacking or require improvement. The improvement measures could then be submitted for funding consideration via the Perth and Regional Bicycle Network Grants.

Following the pilot program, a plan will be developed to review and improve cycling routes to stations where the demand for cycling is expected to be high.

## Review of Traffic Management on Local Roads

In recent years, local government activity in implementing traffic management schemes has increased. The main focus has been to improve road safety by slowing motorised traffic and reducing traffic conflict. In some cases, the treatment has been viewed by cyclists as a safety hazard and increasing the conflict between cyclists and motorised traffic.

A working group will be formed with representatives from the Department of Transport, Main Roads, local government and cyclist advocacy groups to review up to 10 examples of traffic management schemes. 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'.

After each treatment has been reviewed in detail, a lessons-learned document is to be produced highlighting key issues and solutions. Findings should then be discussed to determine if any changes are needed to current standards and guidelines or whether additional training is required for road safety and traffic management practitioners.

## Review of Local Bicycle Routes

Local bicycle routes have been in place since the inception of the Perth Bicycle Network Plan and play a key role in providing facilities for commuter and recreational cyclists. In most cases, their function and design has not been reviewed in detail to determine if they are meeting cyclists' expectations or providing the required level of connectivity.

With an increasing focus on short trips to activity centres, local attractions and connections to major shared paths, local bicycle routes will become increasingly important in future years. The Department of Transport, in partnership with Main Roads and local government, will review the local bicycle network. The review will tie in with the Traffic Management Review to ensure that all factors and their practicality are taken into account.

This review will include routes through the Perth CBD area in conjunction with the City of Perth.

## Development of an Online Journey Planner

Online journey planning has evolved over recent years and is now commonplace for many modes of transport. A good example is Transperth's public transport journey planning application. Access to such applications allows people to make informed choices on their mode of travel and actively encourages non-car trips.

An online cycling journey planner will be developed to assist in providing trip choices and to encourage cycling. The planning application would provide options for on and off-road facilities, trip distance, approximate travel time and details on end-of-trip facilities. The application would also provide options for multi-mode journeys such as cycle/train trips, including a journey plan to the nearest train station, details of its bike storage facilities, time estimates for each trip component and total travel time. The combined application should have a link to the Transperth Journey Planner for maximum benefit.

The journey planner will include a complementary online planning application for smart phones. This tool could be utilised along the actual journey and would have great application for tourism and recreational cycling as well as commuting.

A reference group will be formed to investigate possible options and plan the development and implementation of the journey planner.

## Planning for Cycling Facilities in Large Regional Cities

The populations in large regional cities such as Bunbury and Geraldton have been expanding rapidly in recent years. With this expansion comes residents' expectations of a high level of connectivity for cycling routes which in many instances can also form key pedestrian routes. These facilities should ideally provide for commuting, short and recreation trips to key areas within the cities.

The Department of Transport, Main Roads and the relevant local authority will review cycling facilities in the larger regional cities and identify any gaps in existing networks and in planning for future growth corridors. A strategic and operational development plan will then be produced.



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# 01 INTRODUCTION

The Western Australian Bicycle Network Plan 2012 to 2021 incorporates a review of its predecessor, the 1996 Perth Bicycle Network Plan, while also taking in regional cycling. It maps the way ahead to service Western Australia's expanding cycling needs - particularly those of riders commuting to work - for the decade to 2021.

The new plan builds on the network's development over the past 15 years as well as incorporating updated community expectations.

This plan sets revised aims based on more recent data, particularly in the area of cycling to work. All the benefits obtained for this group of cyclists also directly accrue to recreational riders so there is a secondary - but just as significant - advantage to the community in all projects identified.

The 2012 to 2021 plan covers the rising importance and benefit of cycling to community health and its potential in combating the heightening problem of such broad-ranging health issues as obesity and diabetes which impact all socio-economic groups. The plan directs attention to the increasing relevance of cycling promotion to the student population, initially for its health benefits but also for its potential whole-of-life contribution to physical well-being.

It highlights the numerous social, environmental, economic, traffic and health issues which would benefit from an enhanced level of community participation in cycling and specifies the whole-of-government, integrated approach necessary to achieve this.

The plan covers the total bicycle network as it currently stands together with its planned expansion over the next decade and points to the establishment of a representative committee to guide its implementation to achieve the long-term objectives required by the community and approved by the State Government for both work and recreational riders.



# 02 POLICY CONTEXT

Cycling promotion is endorsed by key government legislation, policy and strategy with the WABN plan linked to these at Federal, State and local level.

## 2.1 Key Federal Government Policies

### 2.1.1 Council of Australian Governments

The Council of Australian Governments (COAG) is Australia's peak intergovernmental forum comprising the Prime Minister, State Premiers, Territory Chief Ministers and the President of the Australian Local Government Association (ALGA).

In 2009, COAG released the National Objective and Criteria for Future Strategic Planning of Capital Cities, to ensure Australian cities are globally competitive, productive, sustainable, liveable, socially inclusive and well placed to meet future challenges and growth.

Criteria for capital city strategic planning include:

- Integrated planning encompassing land use and transport design;
- Addressing climate change mitigation and adaptation issues; and
- Connectivity of people to jobs, social inclusion, health, liveability and community wellbeing.

The WABN plan addresses these and other criteria by guiding the provision of bicycle infrastructure in existing and new urban areas to enhance options for people to cycle to work and services. Many facilities also meet the needs of other users, including people with a disability.

### 2.1.2 National Cycling Strategy (NCS)

The National Cycling Strategy 2011–2016 represents a significant step forward in setting out a coordinated framework for development of cycling in Australia and reaffirming Governments' commitment to cycling for work, transport and recreation. This has resulted in six clear 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 and continuous network of safe and attractive cycle routes and end-of-trip facilities.
- **Integrated Planning** – Consider and address cycling needs in all relevant transport and land-use planning activities.
- **Safety** – Encourage 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.
- **Guidance and Best Practice** – Development of nationally consistent guidance for stakeholders to use and share best practice across jurisdictions.

This strategy's overarching vision is to bring about changes in attitudes to cycling and numbers of riders in Australia.



## 2.2 Key State Government Policies

### 2.2.1 Directions 2031

The purpose of *Directions 2031 Spatial Framework for Perth and Peel* is to:

- Define spatially how Perth should grow.
- Identify structural changes to support that growth.
- Identify implementation planning and policy priorities.

*Directions 2031* details the metropolitan area structure, determining local population, housing and job targets, as well as managing growth. Three integrated layers will form the city's key structural elements:

1. Activity Centres Network
2. Movement Network
3. Green Network

The Framework supports a more compact and environmentally sustainable city with a Movement Network which includes strategies to address continued private transport demand while simultaneously encouraging a shift towards active transport.

*Directions 2031* recognises the importance of active transport as not only the most sustainable form of transport, but also a major contributor to community health and to the overall travel picture as other parts of the network become increasingly congested.

It supports promotion of sustainable transport options including:

- Planning and design of activity centres around transit-oriented development principles to promote public transport, walking and cycling as alternatives to private car use.
- Continued reinforcement of Liveable Neighbourhood design principles in new urban growth areas.
- Implementing the Perth Bicycle Network to build on cycling infrastructure and policy development to support State and local government initiatives to increase cycling activity.

### 2.2.2 Liveable Neighbourhoods

Liveable Neighbourhoods (Western Australian Planning Commission 2009) is a planning framework for development control of structure plans and the subdivision and development of new urban areas. It applies to all residential development and outlines preferred neighbourhood design approaches to achieve compact, well-defined and more sustainable urban communities. Liveable Neighbourhoods has 12 aims including:

- To provide for access generally via an interconnected network of streets giving safe, efficient and pleasant walking, cycling and driving.
- To provide for clusters of walkable neighbourhoods to reduce car dependence for travel to employment, retail and community facilities.

A January 2009 update increases support for cycling, walking and public transport with recognition that cycling is a critical part of the movement network. Measures can include end-of-trip facilities, slower vehicle speeds, lower traffic volumes, appropriate lane widths, on-road facilities, shared paths and routes parallel to arterial roads with less traffic.

Efficient on and off-road routes should be identified to serve key arterial routes and destinations such as schools, sports areas and public transport stations. The updated Perth Bicycle Network (PBN) will provide a blueprint to guide planning.

### 2.2.3 Regional Centres Development Plan (SuperTowns)

The Regional Centres Development Plan (SuperTowns) is a Royalties for Regions initiative to encourage regional communities in the southern half of the state to plan and prepare for the future so they can take advantage of opportunities created by Western Australia's population growth to 2050. WA's population is predicted to more than double over the next 40 years to 4.9 million people.

The SuperTowns vision is to have balanced communities, with lifestyle options and access to services. They will have affordable, quality housing and a diverse range of job opportunities. The towns will offer more choices for people to live in regional areas and an attractive alternative to living in the metropolitan area.

For 2011 - 2012, the nine towns selected to participate in SuperTowns are Esperance, Northam, Collie, Katanning, Morawa, Jurien Bay, Boddington, Manjimup and Margaret River.





#### 2.2.4 Pilbara Cities Initiative

Western Australia's Pilbara region is home to some of the world's oldest communities and hosts a thriving resource industry, which has the potential to drive the Australian economy for decades to come. This in turn will generate jobs, prosperity and numerous opportunities for the State.

In recent years, the Pilbara region has experienced a record population growth along with higher costs of living which placed extreme pressure on services and infrastructure in the region. The vision for Pilbara Cities is for modern vibrant cities and regional centres that can support and deliver a skilled workforce for major economic projects in the Pilbara.

Funded through Royalties for Regions, Pilbara Cities is focused on key delivery initiatives involving health, energy, water, housing and community development and supports initiatives including industry diversification, Aboriginal participation, cultural enhancement and infrastructure development.

#### 2.2.5 Other State Government Strategies and Policies

Other strategies and policies which support cycling include:

- Policy for Cycling Infrastructure (Main Roads WA, 2000);
- Accessibility Policy (Public Transport Authority, 2007);
- Towards Zero Road Safety Strategy (Office of Road Safety, 2009);
- DC Policy 1.5 Bicycle Planning (WA Planning Commission, 1998); and;
- Implementation Plan (Premier's Physical Activity Task Force, 2009).

#### 2.2.6 Future State Government Policies

The Department of Transport is developing a Moving People Network Plan to replace the Metropolitan Transport Strategy 1995-2029 as the strategic transport planning and policy document. This will give a context for the Metropolitan Perth and Peel Region passenger transport system and guide transport infrastructure and services for the next 20 years.

This plan puts active transport needs in a regional movement and local accessibility context with the Western Australian Bicycle Network Plan, 20 Year Public Transport Plan and other active transport options being key "building blocks" for moving people.

# 03 CYCLING'S INCREASING COMMUNITY BENEFITS

Cycling has numerous transport benefits for individuals and communities which fall broadly into three categories:

## Economic Benefits

Cycling's economic benefits accrue most readily when users substitute car for bicycle and include:

- **Reduced Congestion Costs** – Cycling is a cost-effective response to traffic congestion which will cost Australia's capital cities \$20.4 billion annually by 2020 according to Bureau of Transport and Regional Economics estimates.
- **Reduced Infrastructure Costs** – Savings in shifting travel to active transport include reduced road and parking facility costs and shared paths meeting the needs of people with disabilities.
- **Reduced Health Costs** – Cycling combats physical inactivity, a major contributor to ill-health, and is also effective in reducing depression and anxiety. A daily 30-minute cycle halves an individual's chance of becoming obese or diabetic.
- **Affordable** - Cycling is inexpensive, equipment is both modestly priced and readily available with more than half of Perth's population owning or having the use of a bicycle.

## Environmental Benefits

Cycling is a pollution-free, energy-efficient transport mode whose environmental benefits include:

- **Reduced Air and Noise Pollution** – The impact of air and noise pollution is greatest in dense urban centres with cycling offering significant potential to reduce this.
- **Greenhouse Gas Abatement** – As a zero-emission transport, cycling can lower passenger transport emissions. Each kilometre of car travel avoided saves up to half-a-kilogram of greenhouse gases which means that a 5km, 15-minute cycle commute each working day saves 1.2 tonnes of greenhouse gases annually.
- **Land Use Efficiency** – Where cycling is a significant transport mode, less land is needed for vehicle infrastructure including roads and car parks and such space savings can be used to increase community public spaces.

## Social Benefits

Cycling is very social, allowing riders to interact with each other and the environment with such benefits as:

- **Time Saving** - Cycling is often faster than driving in urban areas. For example, during peak hours for distances up to 10km, riding a bicycle is often faster than taking a car.
- **Access for All** - Cycling facilities, particularly shared use paths, meet the requirements of people with disabilities and, consequently, their construction improves accessibility for everyone including the elderly and children.
- **Safety** - More cycling improves rider safety through conditioning vehicle drivers to expect and watch out for bicycle riders on the transport network and this enhanced awareness improves road sharing with riders.

# THE BENEFITS OF INCREASING CYCLING IN THE COMMUNITY

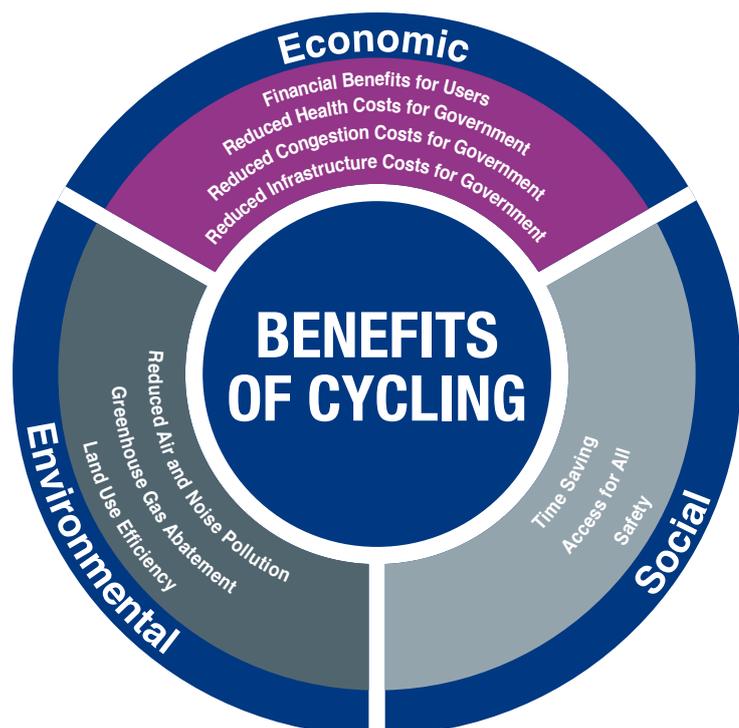


Figure 3.1 – Benefits of Cycling

# 04 CYCLING DEMAND AND TRENDS

Since the introduction of the Perth Bicycle Network Plan in 1996, cycling's popularity has risen significantly. The reasons for this strong increase include reduced travel times, health advantages, environmental benefits, lower travel costs and lifestyle improvements. Perth's cycling facilities and network are also a major factor.

As congestion increases due to a growing population, the participation rate for cycling will continue to escalate, particularly for cycling to work. Cycling in regional areas has also increased, mainly through the provision of cycling paths in towns.

## Daily Cycling Numbers to and from CBD Since 1998

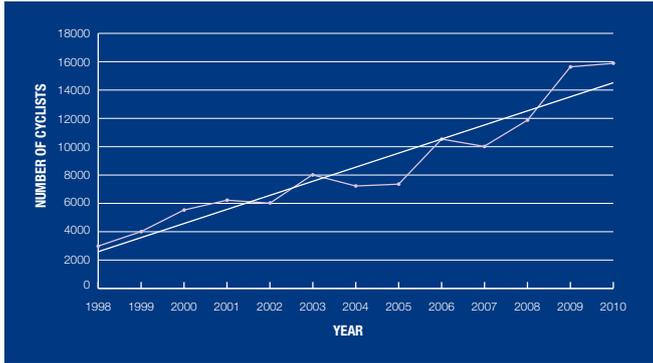


Figure 4.1 – Cycling Numbers Since 1998

The table and graphs on this page clearly indicate the large growth in the number of workers commuting to and from the Perth CBD. It is clear that where high quality grade-separated facilities are provided, such as Kwinana Freeway, cycling numbers are very high. Where facilities are substandard, such as the Mitchell Freeway with poor paths and multiple traffic signal crossings, the numbers are considerably less.

## 4.1 Snapshot of Demand for Cycling

### 4.1.1 Cycling to Work - Trips Per Day:

	2001	2006	% Change
Melbourne	14,443	20,592	42.57
Adelaide	5,101	6,695	31.25
Hobart	707	886	25.32
Perth	6,218	7,240	16.44
Canberra	3,505	4,062	15.89
Brisbane	7,890	8,889	12.66
Sydney	11,131	12,132	8.99
Darwin	1,653	1,536	-7.08

Table 4.1 – Cycling to work in Australian Capital Cities (ABS)

### 4.1.2 Cycling Participation

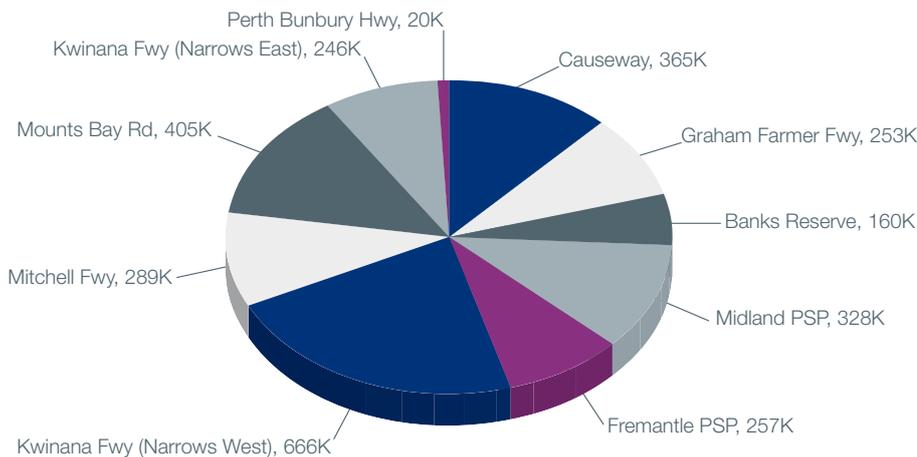
The Perth Bicycle Network Monitoring project shows a substantial increase in cyclists on key routes since 1998.

While the number of riders has increased substantially there is significant untapped growth potential. Furthermore, there is strong evidence that bicycle network implementation encourages cycling. This is supported by bicycle count data showing significantly more riders on routes with good facilities than on those with poor, disjointed facilities.

Australian Bureau of Statistics data shows an increasing proportion of work commuting by bicycle with Table 4.1 showing a 16% increase in Perth work trips between the 2001 and 2006 censuses.

This increase places Perth in the mid range of Australian cities and suggests significant untapped potential when compared to Melbourne and Adelaide which have been very proactive in developing their cycling infrastructure over the last 10 years.

### TOTAL NUMBER OF CYCLISTS IN 2010



## 4.2 Current Trends

### 4.2.1 Bicycle Sales on the Increase

The Australian Bicycle Council states sales data show a very strong preference for buying bicycles over motor vehicles. As environmental concerns, and petrol prices and cost of living increase, cycling becomes a more attractive option. The table right shows bicycle purchases substantially exceeding sales of motor vehicles since 2001.

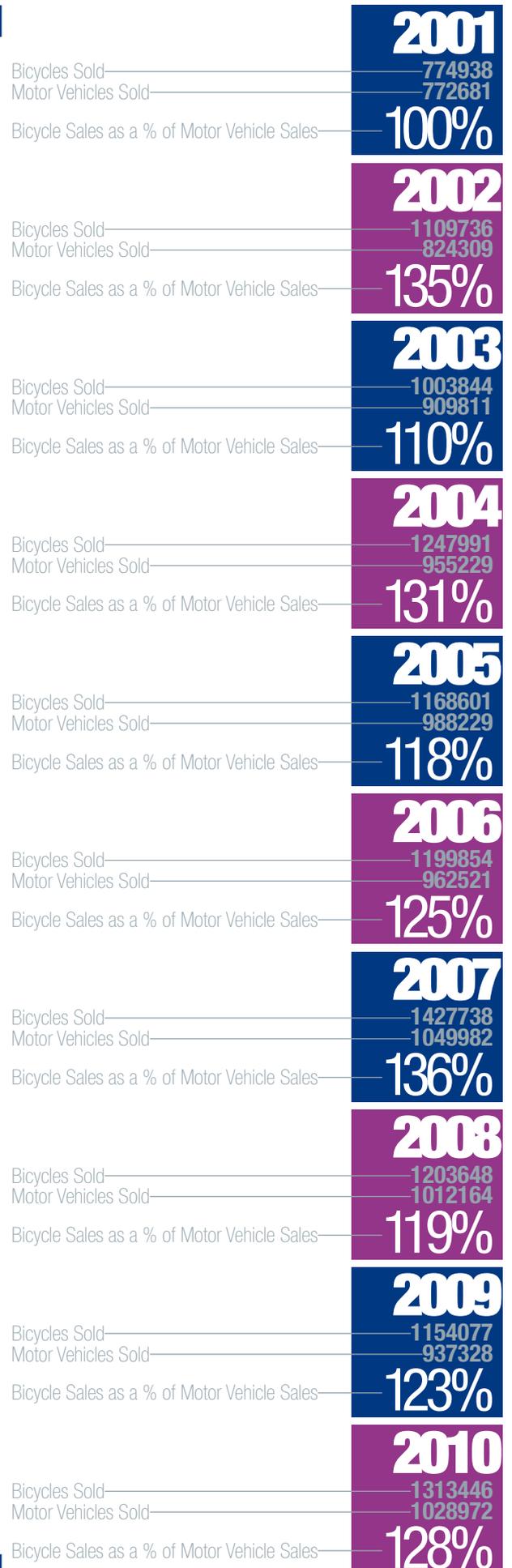
TABLE 4.2

# RATIO OF BIKES TO CARS SOLD

Source: Cycling Promotion Fund (2011) VFACTS (2011)

Note: \*Figures are based on bicycle import data.

\*\*Figures are based on motor vehicles sold, excluding heavy vehicles.





### 4.3 Potential for Change

#### 4.3.1 Environmental Considerations

Perth's flat topography and Mediterranean climate, characterised by moderate rainfall and lengthy summers, makes it ideal for cycling. Figure 4.3 shows the number of bicycle riders per month tallied at the nine bicycle traffic count stations on the Principal Shared Path (PSP) and Recreational Shared Path (RSP) networks leading into the Perth CBD and illustrates that, contrary to popular belief, cyclists are more likely to ride in the hotter, drier conditions prevalent for eight months annually than in the remaining cooler part of the year.

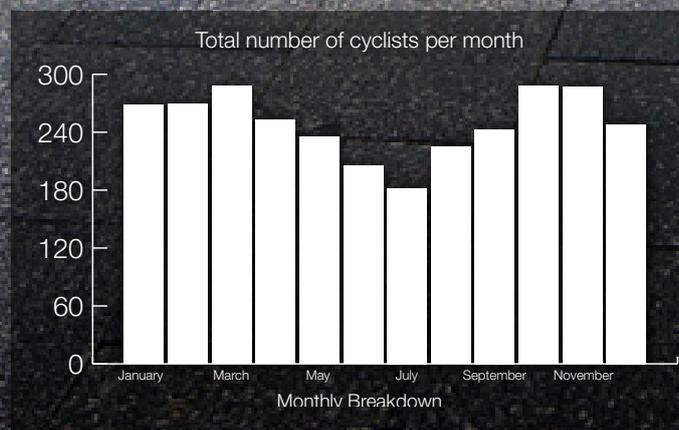


Figure 4.3 - Perth Bicycle Network Traffic Counts 2010



#### **4.3.2 Growing Transport Pressure**

Perth is undergoing unprecedented growth with its population doubling in the past 30 years and forecast to reach more than 2.2 million by 2031. This growth and consequent housing development is expected to increase pressure on the road network with alternatives to private car use becoming more important to limit congestion and tackle sustainability concerns.

In 2006, active transport represented 15.5% or close to one million of the estimated 5.8 million daily trips throughout the Perth region and if recent trends continue this share will rise to 19% by 2031 - close to 1.5 million of the projected 7.7 million daily trips.

#### **4.3.3 Increased School Education Programs**

With an increased focus on cycling education and promotion in schools, coupled with health campaigns to increase children's physical activity, there is massive potential to raise participation and cycle network use in future generations

#### **4.3.4 Summary**

There are numerous social, environmental and economic reasons for people to embrace cycling. The potential for change is clear and the 2012 Western Australian Bicycle Network Plan is aligned to, and supports, behaviour change through a whole-of-government integrated approach to planning, land use, infrastructure, information and promotion.

# 05 PERTH BICYCLE NETWORK REVIEW PROCESS

Since 1996, successive governments have worked towards completing the bicycle network set out in the 1996 PBN Plan which comprised strategic routes along suburban railways and freeways, recreational routes along the coast and river system, and routes into suburbia.

## 5.1 Review Rationale

Long-term strategies and plans must conform to ever-changing urban environments and since 1996 the social and planning environments have changed considerably, e.g. greatly increased traffic congestion, burgeoning population.

New State Government planning policy (including Directions 2031 and Liveable Neighbourhoods) recognises that active transport (cycling and walking) forms an essential part of the 'movement networks' and provision must be made for cycling between and through activity centres such as shopping precincts, universities and tourism areas. More intense land uses, particularly around activity centres and transit nodes, will result in many shorter trips and increase cycling's attractiveness.

## 5.2 The Review Process

The plan's review was guided by a steering committee of representatives from Department of Transport (DoT), Main Roads WA (MRWA), the cycling community, the Public Transport Authority (PTA) and the Department of Planning (DoP).

The review was conducted in the following stages:

1. Gap analysis.
2. Review of world's best practice.
3. Public consultation.

Public consultation was extensive and involved the following:

- A questionnaire was developed, promoted and posted online to enable cyclists to express their views on the revised PBN plan including gaps, priorities, strategies and cycling in general.
- It was directed towards Bicycle User Groups (BUGs) and advertised to all metropolitan BUGs via email.
- Three community workshops were advertised and held in Mount Hawthorn, Melville and Perth City, and emails were received from people unable to attend.
- Written submissions were sought from nine cycling interest groups.
- A local government questionnaire designed for the metropolitan area was posted online.
- A stakeholder workshop was held in Perth city and attended by representatives from local and State government, the health sector, private land developers, road safety groups and people with disabilities organisations.

The information gathered has been evaluated and used to guide preparation of this report.

## 5.3 Review Results

### 5.3.1 Gap Analysis

The gap analysis of the cycling network was produced from a desktop study of information held by the Department of Transport.

Table 5.1 shows the current constructed status of the eight PSP routes in the metropolitan area and table 5.2 shows the status of the RSP routes.

PRINCIPAL SHARED PATH ROUTE	DISTANCE COMPLETED (KM)	DISTANCE OUTSTANDING (KM)	ROUTE DISTANCE (KM)
<b>PSP 1:</b> Fremantle Line PSP Route	9.2	9.9	19.1
<b>PSP 2:</b> Midland Line PSP Route	8.9	8.2	17.1
<b>PSP 3:</b> Armadale Line PSP Route	12.3	16.4	28.7
<b>PSP 4:</b> Mitchell PSP Route	16.7	15.8	32.5
<b>PSP 5:</b> Kwinana PSP Route	64.6	8.1	72.7
<b>PSP 6:</b> Roe PSP Route	25.4	18.2	43.6
<b>PSP 7:</b> Tonkin PSP Route	18.1	28	46.1
<b>PSP 8:</b> Reid PSP Route	3.4	25.6	29
<b>Total</b>	<b>154.1</b>	<b>134.7</b>	<b>288.8</b>

Table 5.1 - Distance of PSP Routes Constructed



RSP Section	Status
City to Sea	Complete
City Beach to Trigg	Complete
Bayswater Foreshore	Complete
Maylands Peninsula	Complete
Waterford	Partially Complete
St Anne's Hospital	Complete
North Fremantle – Cottesloe	Complete
Leach Highway – Fremantle Road	Partially Complete
South Perth Foreshore	Complete
Matilda Bay Foreshore	Incomplete
Claremont Foreshore to Dalkeith	Incomplete
Woodman Point – Rockingham	Partially Complete

Table 5.2 shows the sections and status of the Recreational Shared Paths

Priority Spot Improvements (PSIs) are locations requiring localised improvement. The PSIs were identified in the 1996 PBN Plan and many were aimed at improving safety or removing barriers to cycling access. The PSIs on the network have been largely completed, with improvements at 18 of the 20 identified locations being concluded. These are also detailed in Appendix 1.

### 5.3.2 Best Practice

The best practice review produced 23 findings which are listed in Appendix 2. The key conclusions are:

- To achieve cycling growth, its promotion must be integral to wider policy, be supported at all levels and be sufficiently prioritised.
- Successful cycling promotion requires a mix of strategies including behavioural measures, enforcement, marketing, collaboration and education, as well as linkages to complementary sectors such as business, land use, health, environment and tourism.
- Transport authorities should view cyclists as full participants in traffic matters and accorded equal status.
- Implementation should be strategic, i.e. route by route rather than kilometre by kilometre with processes to support this.
- Prioritisation of a few routes or facilities would showcase and disseminate good practice.
- New traffic management schemes should include plans for cyclists.
- The outcomes of cycling schemes should be monitored to help inform decisions about funding allocations and to understand the implications from and quality of implemented schemes.
- Detailed network planning guidelines or design guidelines (additional to national standards) are key components of network implementation in other cities.
- More difficult projects should be started early to account for long lead times and to avoid delay to network completion.



### 5.3.3 Public Consultation

Key perceived problems and barriers to cycling encompass:

- Cycle facilities are not being included in all new developments and road projects.
- Some cycle facilities are not of requisite standard.
- Some constructions, e.g. traffic calming, worsen cycling conditions.
- Inadequate maintenance of some facilities and designated cycle routes.

Community cycling facility preferences include:

- Underpasses or overpasses preferred for busy crossings where cycling numbers are very high.
- Riders prefer cycle paths on very busy roads but cycle lanes on moderately busy or local roads.
- The overwhelming majority of cyclists prefer separation from pedestrians on paths.
- Cyclists prefer easy-access compounds at train stations for bike parking.

In identifying strategies for operating and managing the PBN in terms of funding, maintenance, monitoring, implementation, communication, roles and responsibilities and other governance issues, stakeholders indicated:

- The PBN is under-resourced and DoT requires more funding.
- Consideration be given to DoT providing more guidance on priorities or undertaking pre-submission assessment of funding applications and furnishing feedback.
- Clarification of monitoring roles and responsibilities is needed, particularly for quality, compliance and progress.
- Multi-year certainty of funding is necessary to respond to longer lead times for large or complex schemes.

Cycling safety and continuity of good on-road facilities (particularly at intersections), segregation from traffic and pedestrians, and ongoing maintenance were identified as key issues.

The Perth central area was nominated as needing better cycling facilities including safe on-road lanes and off-road paths. It was considered that the Principal Shared Path Network delivered riders to the city periphery but reaching destinations within the CBD was difficult as few of its roads cater for cyclists.

### 5.3.4 State Government Cycling Funding History and Cost Pressures

While construction of Principal Shared Paths is now a standard feature of major road and rail projects, the investment in retrofitting shared paths in Perth and regional areas has declined. Funding for retrofitting peaked between 1997/98 and 2000/01 with an annual allocation of \$6.5m. Since that time (with the exception of top-up funds in 2004/05) funding has declined to the current level of \$2.75m per year. Over this period there has been significant cost escalation. Projects delivered in 1997/98 for \$6m would now cost over \$12m. Given the current funding of \$2.75m the investment in retrofitting cycling facilities has declined by 74% since 1997/98.

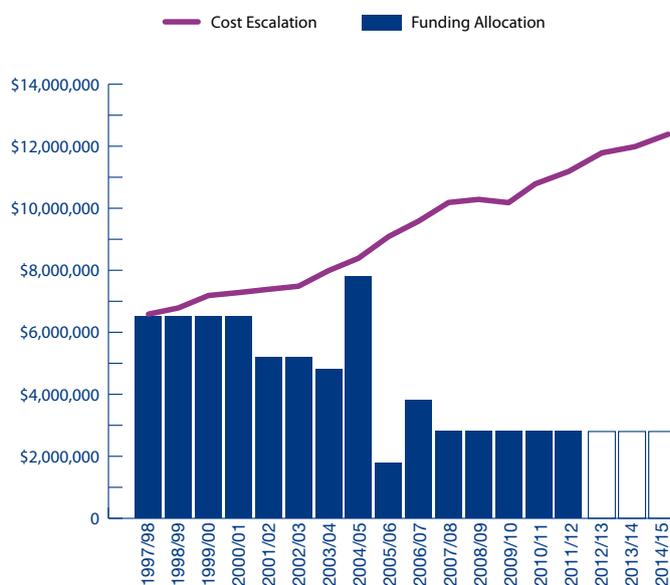


Figure 5.1 - Comparison of Funding History and Cost Escalation



# 06 AIMS AND OBJECTIVES OF THE NEW PLAN

## 6.1 Aims

The Western Australian Bicycle Network Plan (WABN) provides a blueprint for metropolitan and regional cycle facilities which encourages and supports bicycle trips and identifies appropriate routes and supporting facilities which protect existing routes.

The intention is to increase cycle trips for 'transport purposes' i.e. to work, shops and to school and the plan focuses on a network of routes to facilitate this. While it does not specifically seek to develop recreational cycling, many such riders will benefit from it.

## 6.2 Objectives

The revised WABN plan's objectives were developed by the project steering committee and derived from both community and stakeholder consultation and are complementary to the recently released National Cycling Strategy 2011-2016 (Austroads 2011).

### **Objective 1: Provide a coordinated approach to implement a high-quality and connected bicycle network**

People's mobility is mainly served by roads, which perform an important social and cultural function in helping people interact, live and work. A key aim is to provide an environment which is attractive for cycling rather than driving.

Many experienced riders prefer to cycle on-road as this often offers a more direct route and the majority will cycle short distances on-road to get to an off-road route. It is neither practical nor necessary to provide segregated facilities on the majority of streets, however, changes to street geometry, traffic speeds and volumes can produce pleasant cycling conditions.

Different agencies will implement different components of the network. Approaches to planning, implementation and management will determine whether routes and complementary infrastructure such as cycle parking meet required standards, connect effectively and are safe and capable of expansion to meet the needs of Perth's suburban growth. Providing routes which are direct, convenient and which minimise delay and effort in reaching destinations is paramount.

Maintenance of routes can greatly affect perceptions with even small, isolated issues such as broken glass leading to adverse views of the entire network. Indeed, maintenance was identified as a key concern during community consultation and while it is the responsibility of the asset owner, in reality it is mostly managed by Main Roads WA or local government.

### **Objective 2: Plan for maintaining and safeguarding the existing and future bicycle network**

Community input indicated that lack of route connectivity and continuity were important. Existing and future bicycle routes need to be safeguarded to ensure that continuous cycling facilities can be constructed and missing links avoided. Cycling facilities should also be considered in the planning and design of projects.

### **Objective 3: Integrate network development in planning strategies with other developments, projects and programs**

Progressing the WABN is a core component of sub-regional growth management strategies, structure plans and local planning strategies and it is essential to integrate cycling infrastructure within new developments from their outset.

For cycling to evolve into an attractive transport option, it needs to become part of everyday life with good cycle parking and other start/end-of-trip facilities essential, particularly in multi-storey apartments, workplaces and at train stations. Safe connections to regional cycling routes are fundamental as well as to local destinations such as schools, shops and jobs.

Contributions from a number of agencies are critical to the WABN's delivery and it is essential that cycling be considered a principal element in all transport projects - public transport, pedestrian and road.



#### **Objective 4: Guide professionals implementing the WABN**

Guidance for promoting cycling draws on a range of best practice and research. Practical local government support for cycling and appropriate resourcing are essential to progress the WABN.

Effective information, training and guidance for transport professionals implementing the WABN will encourage more participation in network evolution and ensure all parties work toward a common WABN vision and how the network should be developed. For example, DoP is working on Integrated Transport Planning Guidelines for local government authorities to assist delivery of balanced transport systems which recognise cyclists' needs.

#### **Objective 5: Encourage and promote cycling as a legitimate transport mode**

The successful promotion of cycling requires a mix of strategies including:

- Behavioural – Tracking bicycle ownership, use and attitudes towards cycling among the general population.
- Enforcement – Reducing unsafe road behaviour via various enforcements.
- Marketing – Behaviour-change strategies to encourage people to cycle and campaigns to promote its benefits.
- Collaboration – A combined Transport portfolio approach combining infrastructure measures with marketing and behaviour-change strategies.
- Enforcement - Informing road users of cycling's benefits and safety issues for vulnerable road users.

#### **Objective 6: Encourage a whole-of-government approach to cycling**

Cycling has shared benefits across many government sectors which can help promote and fund cycling as part of programs to increase physical activity and encourage cycling for both transport and recreation.

There is a broad government responsibility for implementing the network across different sectors and levels of government with the Transport portfolio being well placed to coordinate cycling promotion and infrastructure development.



# 07 THE MAKE-UP OF THE PERTH BICYCLE NETWORK

Several main elements comprise the Perth Bicycle Network whose area of coverage includes the Perth and Mandurah local government areas.

## 7.1 Principal Shared Paths (PSPs)

These high-standard routes are for longer, quicker trips between centres with minimal interruptions from other traffic and are strategic links into urban corridors. A standard PSP is 3m wide, as straight and flat as possible, surfaced with red asphalt with at least 0.5m clearance from obstructions wherever possible and uses underpasses and overpasses to give grade separation at intersections where feasible.

In addition to longer trips, PSPs are suitable for less experienced riders (and pedestrians) on shorter trips. Given that many PSPs run along railway lines, they encourage local residents to ride or walk to train stations.

## 7.2 Recreational Shared Paths (RSPs)

These generally follow river foreshores and beachfronts and are not direct routes to destinations. As such, they are also very popular with pedestrians and other users and, consequently, are not intended for high-speed riders and fast commuters. However, some RSPs function as commuter routes due to their locations and require construction to appropriate standards. A comprehensive river and beach RSP network has been the consistent intention of successive governments.

However, building RSPs along river foreshores and ocean frontages has historically been difficult and has generally been completed by the relevant local authority. Private land ownership, steep terrain, acid sulphate soils, environmental impact and native title are all issues to be resolved before construction.

Additionally, numerous larger parks and reserves have plans which include RSPs (constructed to the same standards as PSPs) within their boundaries.

There is significant community value in completion of the RSP network and the State Government continues to work towards that goal but as these paths generally are not direct work routes the RSP network has a lower priority.

## 7.3 Local Bicycle Routes (LBRs)

Local bicycle routes provide safe riding routes for cyclists of all abilities. They are primarily intended for short trips and, given their often circuitous paths and numerous stops, are generally not suitable for commuters or longer trips. Most local bicycle routes follow quiet suburban access roads and pass shops, schools and other local community facilities. While most riding occurs on roads without specific cycling facilities, these routes often link with the strategic PSP and RSP networks.

Local bicycle routes allow less confident and less experienced riders to cycle in quiet traffic environments where continuity and speed are not as important as safety.

Although not intended for commuter use, local bicycle routes may give access to lanes on main roads or PSPs, but that is not their primary purpose. Additionally, all local roads should be designed to cater for cyclists' needs and because a road is not marked as a local bicycle route it should not be precluded from consideration.

There are currently 656km of signed local bicycle routes.

## 7.4 On-Road via the Distributor Road Network

Bicycle commuters have the same expectations as other work travellers - the shortest possible trip time via the most direct and safe route. However, some riders may be intimidated when sharing road space with dense, fast-moving traffic.

On-road bicycle lanes or sealed shoulders are preferred on urban arterials and Local Distributor/Industrial roads managed by local government. However, shared paths should also be provided for children and less experienced riders.

Many routes linking major trip attractors will use the distributor road network but physical and environmental constraints, particularly in built-up areas, make it difficult or impractical to construct cycling facilities on all roads and routes. Where space is severely limited, wide kerbside lanes may also be appropriate on all distributor roads except controlled access highways.

Cycling facilities should not be precluded from other roads but should be provided as opportunities arise where there are no physical or environmental constraints.

## 7.5 On-Road via Access Roads

Access roads are local streets where traffic volumes and speeds are usually low and will generally not need specific cycling facilities.

In most situations, the riding environment is appropriate without providing specific cycling facilities. However, such streets commonly have traffic management devices to slow traffic or encourage it to other streets and it is important that these do not compromise cyclists' safety.

It is also common for lengthy access roads to be severed by cul de sacs to prevent through traffic but these should only stop motor vehicles and not obstruct riders and force them onto circuitous routes.

# 08 HIGH PRIORITY PSP PROGRAM

There are a number of high-priority PSP network sections but due to their complex nature they will need detailed planning and design work to determine alignment options, staging and accurate costings. Business cases will then be lodged for funding consideration. A summary of the top seven projects is below.

## 8.1 Narrows Bridge to Mount Henry Bridge along the Kwinana Freeway (upgrade to existing path)

An existing PSP has been in place along this section of Kwinana Freeway for a number of decades. Since construction of the path, the number of cyclists and pedestrians using it has increased considerably. The number of bicycle movements on the PSP on the west side of the Narrows Bridge has been as high as 2,800 per day for a normal work day, with approximately 1,850 riders on an average work day in 2010. This very high usage results in conflict between opposing flows of cyclists and also with pedestrians.

This improvement project will involve the selective widening of the path at available locations and resealing. There is insufficient width to construct separate pedestrian and cycling facilities due to the need to retain remnant native vegetation, preserve the river line and the proximity of the Freeway. The widening will need to take into account these issues and, consequently, this work will not be possible over the full length. At pinch points, innovative treatments may be needed to slow cyclists for safety.

## 8.2 Cranford Avenue to South Street along Kwinana Freeway

The existing PSP along Kwinana Freeway crosses Cranford Avenue at grade. This is the only at-grade (where there is a clash between cycling and other forms of transport) road crossing for the entire Kwinana Freeway PSP and presents a safety concern. There is a missing section of PSP between Cranford Avenue and Leach Highway and a further two missing sections between Parry Avenue and South Street where the route currently uses quiet local roads.

This improvement project involves construction of a grade separated PSP from the north side of Cranford Avenue to the existing PSP connection on Selway Road and construction of the missing sections of PSP beside Scandrett Way and London Way.

## 8.3 Glendalough to Balcatta along the Mitchell Freeway

The existing PSP along Mitchell Freeway is located on the eastern side of the Freeway from Perth to Glendalough Railway Station. From this point up to Reid Highway, the existing shared path crosses the Freeway at Glendalough Railway Station, Hutton Street and the Hertha Road Overpass. The route also requires a number of busy at-grade road crossings to be negotiated including Hutton Street, Cedric Street and Karrinyup Road which lead to significant delays due to wait times at traffic signals and uncontrolled crossings. Several sections of the existing path are constructed from concrete and are in poor condition. Consequently, cycling numbers on this section of path are less than half those for a comparable PSP section on Kwinana Freeway, despite a larger residential catchment surrounding the Mitchell Freeway.

The intention is to extend the PSP from Glendalough Station on the eastern side of the Freeway through to the existing Hertha Road overpass. The PSP will then cross to the western side of the Freeway where the existing path will be upgraded to PSP standards and a missing section between Erindale Road and Reid Highway will be built.

The improvements will involve grade separation works to provide a safe, efficient, uninterrupted PSP to be delivered in stages. This will require several new structures between Glendalough Station, Hutton Street and an underpass at Karrinyup Road. Additionally, extensive retaining walls will be needed at a number of locations.

A new path will be constructed between Glendalough Railway Station and Hutton Street. The section of path between the Hertha Road Overpass and Karrinyup Road will be replaced and a new PSP section will be built to fill the missing link between Erindale Road and Reid Highway.

No provision has been made for structures in the Stirling area due to infrastructure timeframe requirements for the Stirling Regional Centre being unclear at this stage. This situation will be reviewed as planning for the area evolves. However, a grade-separated facility at Cedric Street will be required in the future.

## 8.4 Burswood to Welshpool along the Perth-Armadale Railway

The existing PSP runs along Graham Farmer Freeway and terminates at Great Eastern Highway. From this point eastwards, the most direct route south-eastwards is Orrong Road which is not considered to be a safe cycling route due to high traffic volumes. An existing broken route on local roads is available parallel to the railway line, but this is not of sufficient quality to generate high cycling numbers. A recently constructed PSP runs along the Armadale railway line from Welshpool Road to Lacey Street.

This improvement project involves the planning and construction of a PSP from Riversdale Road in Burswood through to Welshpool Road. This corridor is particularly challenging due to the railway being in cut and the reserve being relatively narrow. The initial phase will involve development of planning options to determine the most cost-effective option.

## 8.5 Bassendean to Midland along the Perth-Midland Railway

The existing PSP finishes at Tonkin Highway. Design work for the PSP section between Tonkin Highway and the Bassendean Railway Station has been completed and construction is expected to be completed by June 2012. A missing section of PSP through the Bayswater Train Station will also be built in 2011 - 2012.

From Bassendean Train Station to Midland, riders currently have limited options. They must either use a mixture of local roads or poor quality paths.

This improvement project will involve extension of the PSP from Bassendean Train Station on the northern side of the railway line through to Midland Train Station. Options to extend the PSP through to Roe Highway to tie in with the PSP network being built as part of the Roe Highway/Great Eastern Highway grade-separation project (currently under construction) will also be explored.

The project will involve a grade-separated facility under Lord Street, extensive retaining walls between Lord Street and the river and a structure over the Swan River. From the Swan River to Midland, the area required for the PSP is relatively flat with minimal complications.

## 8.6 Shenton Park to Loch Street along the Perth-Fremantle Railway

The existing PSP along the Perth-Fremantle railway runs continuously from Perth through to Shenton Park Station. There is then a gap between Shenton Park Station and the Karrakatta Underpass, and another from the Karrakatta Underpass to Loch Street Station. These missing sections require cyclists to ride on roads with reasonably high traffic volumes. There are also significant conflict points, e.g. adjacent to Shenton Park Station.

The improvement project would involve building the two missing PSP sections and would utilise an existing underpass beneath the bus-only bridge across the rail line. The design would include measures to reduce potential conflict between riders and pedestrians accessing Shenton Park, Karrakatta and Loch Street stations.

## 8.7 Grant Street to Fremantle along the Perth-Fremantle Railway

The existing PSP from Perth finishes at the Grant Street Station in Cottesloe. From this point to Fremantle cyclists are required to travel on-road in sealed shoulders and through signalised intersections that do not have provisions for cyclists.

The first stage of the PSP extension will continue through to the Beehive Montessori School. The path will then terminate at this point with a road crossing to join the existing coastal Recreational Shared Path. The current planning for the ultimate upgrade of Curtin Avenue will need to be taken into account during the assessment of alignment options.

The full completion of the PSP south of this point is unlikely to be achieved within the 10 year timeframe for the plan. However, opportunities will be taken to include PSPs in the planning for other projects such as the replacement of the Fremantle Traffic bridge. The construction timing of such projects will then influence further stages of the PSP extension.



# MAPS OF THE PERTH BICYCLE NETWORK



Figure 8.1





# The Perth Bicycle Network

## Recreational Shared Path Network - Long Term Vision



# 09 THE MAKE-UP OF THE REGIONAL BICYCLE NETWORK

Several main elements comprise the Regional Bicycle Network and should be identified in all Regional Local Government Bicycle Plans and funded through the RBN Local Government Grants program.

## 9.1 Major Shared Paths

These routes are for longer, direct trips between significant trip attractors in the major regional town centres. These are:

- South West – Bunbury
- Great Southern – Albany
- Goldfields/Esperance – Kalgoorlie
- Midwest – Geraldton

These paths should be 3m wide, surfaced with red asphalt with at least 0.5m clearance from obstructions and include grade separation at major intersections where feasible.

## 9.2 Recreational Shared Paths

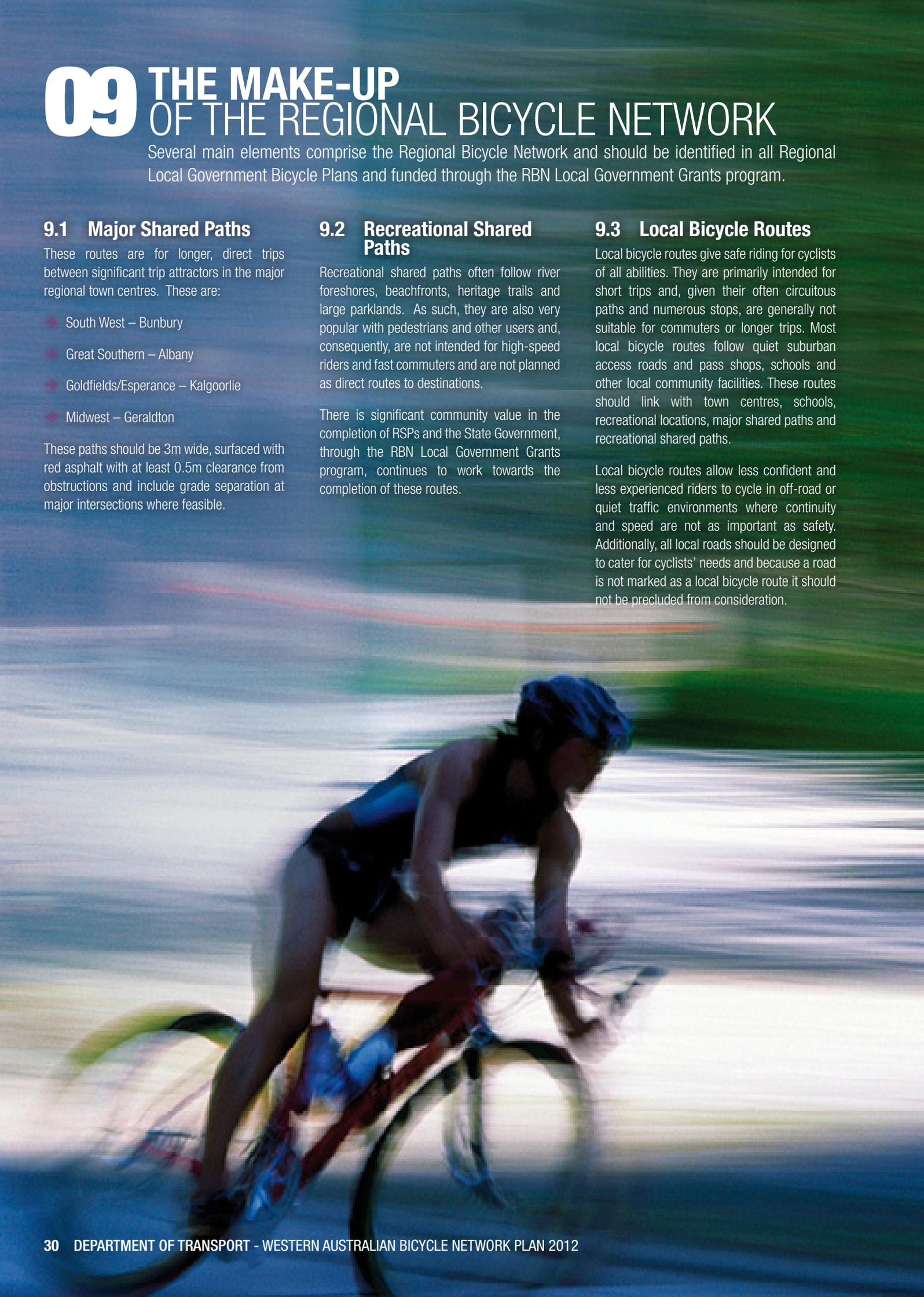
Recreational shared paths often follow river foreshores, beachfronts, heritage trails and large parklands. As such, they are also very popular with pedestrians and other users and, consequently, are not intended for high-speed riders and fast commuters and are not planned as direct routes to destinations.

There is significant community value in the completion of RSPs and the State Government, through the RBN Local Government Grants program, continues to work towards the completion of these routes.

## 9.3 Local Bicycle Routes

Local bicycle routes give safe riding for cyclists of all abilities. They are primarily intended for short trips and, given their often circuitous paths and numerous stops, are generally not suitable for commuters or longer trips. Most local bicycle routes follow quiet suburban access roads and pass shops, schools and other local community facilities. These routes should link with town centres, schools, recreational locations, major shared paths and recreational shared paths.

Local bicycle routes allow less confident and less experienced riders to cycle in off-road or quiet traffic environments where continuity and speed are not as important as safety. Additionally, all local roads should be designed to cater for cyclists' needs and because a road is not marked as a local bicycle route it should not be precluded from consideration.



## 9.4 Cycle Touring Routes

Western Australia is a great place for touring cyclists who enjoy the mild climate and generally flat terrain. Touring cyclists are comfortable in almost all on-road situations and need limited dedicated facilities. These routes should be considered for facilities in and out of town centres, end-of-trip facilities for these types of cyclists in centres as well as options for transporting bicycles to and from route locations.

## 9.5 On-Road via the Distributor Road Network

Bicycle commuters have the same expectations as other work travellers - the shortest possible trip time via the most direct and safe route. However, some riders may be intimidated when sharing road space with dense, fast-moving traffic.

On-road bicycle lanes or sealed shoulders are preferred on urban arterials and Local Distributor/Industrial roads managed by local government. However, shared paths should also be provided for children and less experienced riders.

Many routes linking major trip attractors will use the distributor road network but physical and environmental constraints, particularly in built-up areas, make it difficult or impractical to construct cycling facilities on all roads and routes. Where space is severely limited, wide kerbside lanes may also be appropriate on all distributor roads except controlled access highways.

Cycling facilities should not be precluded from other roads but should be provided as opportunities arise where there are no physical or environmental constraints.

## 9.6 On-Road via Access Roads

Access roads are local streets where traffic volumes and speeds are usually low and will generally not need specific cycling facilities.

In most situations, the riding environment is appropriate without providing specific cycling facilities. However, such streets commonly have traffic management devices to slow traffic or divert it to other streets. It is important that these do not compromise cyclists' safety.

It is also common for lengthy access roads to be severed by cul de sacs to prevent through traffic but these should only stop motor vehicles and not obstruct riders and force them onto circuitous routes.

# 10 GRANTS TO LOCAL GOVERNMENT

## 10.1 Local Government Grants Program

Network implementation is primarily via partnerships between State and local government. The backbone is the Perth Bicycle Network and Regional Bicycle Network Local Government Grants Programs administered by the Department of Transport. Local government matches the grants dollar for dollar with past focus areas being the development of Local Bicycle Routes and Recreational Shared Paths.

The grants program has played an essential role in raising cycling's profile and importance as a legitimate transport option in the minds of local government administrators.

The focus of the Local Government Grants Program was changed in 2011/12 to address the gaps, barriers and issues identified in the review and shown in section 5.3.1.

Project categories have been amalgamated with the new categories being paths, on-road facilities (e.g. bicycle lanes), local bicycle plans and other infrastructure. In another change, the metropolitan program now focuses on larger scale projects of greater strategic significance. Consequently, the funding cap has been removed and allocations can now be distributed over more than one financial year. A summary of the categories follows.

### 10.1.1 Category 1 – On-Road Facilities

On-road infrastructure such as bicycle lanes provide affordable facilities that increase cyclists' safety through making motorists aware of sharing the road with riders and reduces vehicle operating speeds. Public consultation shows such lanes are the preferred facility for low and medium traffic density streets. Consequently, grant funding for bicycle lanes will be assessed in this context.

### 10.1.2 Category 2 – Paths

In Perth and Mandurah Metropolitan areas, fewer path projects are to be funded but those that are will be of significant strategic importance. The grants program will address deficiencies in the PSP network as the design and construction of PSP sections are incorporated into the process. Additionally, significant RSP projects and those which improve students' trips to schools will be considered.

In regional areas, the grants program mainly funds paths that connect local amenities such as schools and recreation facilities and paths that support tourism cycling activities.



### 10.1.3 Category 3 – Local Bike Plans

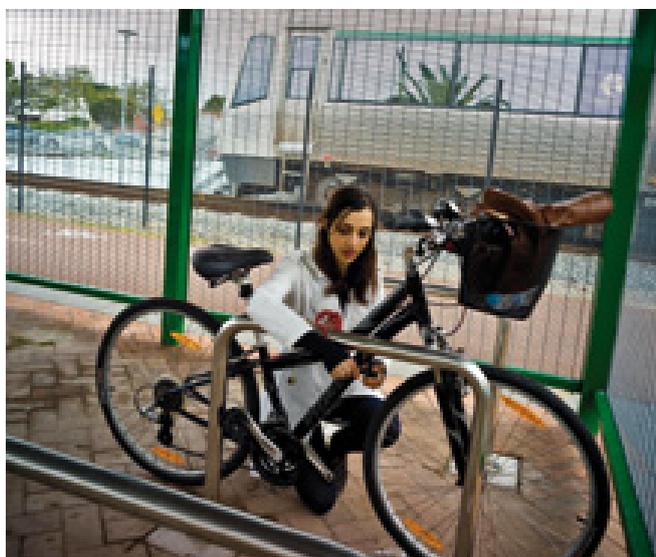
The key components of a local bicycle plan include:

- **Route Plan** – These routes should give specific consideration to the WABN plan, connections with neighbouring local authorities, trip attractors and end-of-trip facilities.
- **Connecting Rail/Bus Stations** - A renewed focus of the grants program is partnering with local government to develop a safe network of bike routes to public transport and these shared path projects will also be prioritised.
- **Connecting Schools** - A renewed focus of the grants program is partnering with local government to develop a safe network of bike routes to schools and these shared path projects will also be prioritised.
- **Design and Standards** – The design of all bicycle facilities should be to Austroads standards and where projects form part of a PBN route they should meet necessary standards.
- **Schedule of Works** – Established priorities for network implementation.
- **Maintenance Schedule** – A plan and budget estimate to ensure that all facilities are satisfactorily maintained.
- **Ongoing Process to Ensure a Cycle-Friendly Road Network** – Protection of PBN routes, provision for cycling in Town Planning Schemes and new developments, and consideration for cyclists in traffic calming and management projects.

Local Bicycle Plans are developed with extensive stakeholder consultation involving community workshops, Bicycle User Groups (BUGs) and DoT representatives with completed plans being put to councils for adoption and funding.

### 10.1.4 Category 4 – Other Infrastructure

This category includes funding for end-of-trip facilities as well as other creative cycling infrastructure initiatives. Funding should focus on increasing bicycle parking across municipal areas rather than at specific sites. Improving intersection treatments can also be considered in this category.



# 11 GOVERNANCE

The infrastructure and routes forming the Western Australian Bicycle Network are owned and controlled by a number of different organisations. A collaborative approach between State Government departments, local government and the private sector is essential to achieve the plan’s aims and objectives. Success will depend on developing positive partnerships, communication and cooperation around shared objectives.

As mentioned in the key finding, implementation of the plan will be managed by a steering group. The key to the plan’s success will be the roles, responsibilities and tasks of key agencies as set out below.

## 11.1 Department of Transport (DoT)

### Role

DoT will continue as strategic lead and coordinate all agencies in delivering cycling facilities, distributing grant funding and evaluating its effectiveness in achieving the State Government’s cycling objectives.

### Task

- Provide an electronic hazard reporting system for the public

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- Support and advise all organisations involved in implementing and maintaining the Western Australian Bicycle Network and encouraging cycling as a mode of transport

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- Define a network of Strategic Bicycle Routes in consultation with Department of Planning, MRWA, PTA and local governments

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- Identify opportunities to better link schools and other education facilities

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- Monitor and report on cycle use

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- Provide maps and information for the public

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- Encourage cycling through annual campaigns such as “Bikeweek” and “Cycle Instead in Spring”, and integrate promotion with related health campaigns (e.g. Find 30) as well as targeted TravelSmart programs and a focus on active transport options for students

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- Fund infrastructure construction to fill selected gaps in the Western Australian Bicycle Network

Table 11.1 – Department of Transport tasks

## 11.2 Main Roads WA (MRWA)

### Role

MRWA is responsible for the construction, care and maintenance of the Principal Shared Path network, all signalised intersections and approving line marking plans for all roads.

It will continue to be primarily responsible for PSP network expansion into developing areas as part of highway and freeway extension works. It will also retrofit cycling facilities to existing MRWA controlled roads as part of upgrades.

### Task

- Maintain and manage cycling facilities under MRWA control to appropriate standards

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- Ensure cycling facilities are included in planning for all MRWA major projects

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- Construct PSPs on at least one side of all new and upgraded freeways and urban controlled access highways as a component of the works

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- Construct appropriate on-road facilities in all new road and road upgrade projects on main roads wherever space is available. This will include dedicated bicycle facilities along all strategic bicycle routes in metropolitan areas.

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- Upgrade PSP network where required

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- In association with Department of Transport provide training to practitioners involved in implementing the Western Australian Bicycle Network

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- Promote the inclusion of cycling facilities in local government road upgrade projects

Table 11.2 – Main Roads WA tasks

### 11.3 Public Transport Authority (PTA)

#### Role

The PTA is primarily responsible for bus and train services and associated infrastructure. Also, it builds and maintains sections of PSP through train station precincts when these are constructed or upgraded and provides secure bicycle parking and supports improved train station accessibility. Integrating cycling with public transport offers significant opportunities for improving passenger access and responding to increased public transport demand.

#### Task

Maintain Principal Shared Paths through station precincts
Relocate PTA facilities, such as fences and communications equipment in advance of PSP construction projects
Ensure cycling facilities are included in planning for all Public Transport Authority major projects
Install and promote secure bicycle parking facilities at suburban train stations and monitor their use
Construct Principal Shared Paths through station precincts as part of station upgrades (including the Better Transport System and Carpark Upgrade Program), and through new train stations in accordance with PTA's Station Design Manual
Include Principal Shared Path construction on railway extensions
Ensure the safety and use of bicycles is not compromised by vehicle access to car parks, bus lanes and bus priority measures
Facilitate planning for cycling routes within a 3km radius of train stations
Integrate cycling into PTA journey planning publicity material
Include and address cycling issues in PTA strategic plans

Table 11.3 – Public Transport Authority tasks

### 11.4 Department of Planning (DoP)

#### Role

The DoP, through the Western Australian Planning Commission (WAPC), is the authority responsible for subdivision planning approval and for significant development proposals throughout WA. It is responsible for land use planning which considers bicycle facilities in road reserves and elsewhere such as river foreshores.

#### Task

In consultation with Department of Transport, ensure that a network of Strategic Bicycle Routes is incorporated into sub-regional growth management strategies, structure plans and local planning strategies
Refer planning strategies, plans, studies and development proposals to Department of Transport for comment
Apply designs of the Movement Network element of Liveable Neighbourhoods in the development and assessment of all new urban developments
Support Department of Transport in development of policy requiring inclusion of end-of-trip facilities in all significant developments
Ensure Western Australian Bicycle Network's existing and future routes and facilities are included in growth management strategies, structure plans and local planning strategies

Table 11.4 – Department of Planning tasks

## 11.5 Local Governments

### Role

Local governments are vital in network delivery, ensuring accessibility and responding to local needs and will continue, with State Government support, to be responsible for providing and maintaining local bicycle facilities.

DoT will continue to work with local government to complete the Local Bicycle Route Network through the Perth Bicycle Network Local Government Grants program. Priority will go to projects identified in accordance with local government bicycle network plans which complement, and are integrated with, PBN routes.

DoT will continue to work with local government to expand the local bicycle route network into newly developed areas which do not have such routes. Additionally, DoT will utilise local government expertise to design and deliver regional facilities such as bike lanes, PSPs and RSPs.

### Task

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Manage and maintain local cycling facilities to appropriate standards

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Complete and maintain local bicycle plans and ensure that they integrate with the WABN plan and neighbouring local government plans

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Ensure that the design of all roads, parks and other council facilities includes adequate consideration of cyclists

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Ensure land is set aside along river foreshores for completion of the Recreational Shared Path Network

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Incorporate end-of-trip facilities for buildings in local government town planning schemes

Table 11.5 – Local Government Authority tasks

## 11.6 Other Agencies

Other specific infrastructure on private or publicly owned land may be the responsibility of the asset owner. This may include park agencies as well as the Department of Environment and Conservation and where this occurs, DoT will work with the asset owners and any support agencies to advance route planning projects.



# 12 FUNDING

The new WABN includes a mix of existing activities which will continue and are already funded. In addition there will be a number of new or expanded activities which will form an integral part of the plan. The table below outlines the key new or expanded initiatives and the funding requirements.

KEY RECOMMENDATION	FUNDING SOURCE	EXISTING FUNDING	ADDITIONAL FUNDING REQUIRED	TOTAL FUNDING
Implementation of the Plan	Existing Agency Funding		Nil	Nil
Biennial Review of the Plan	Existing Agency Funding		Nil	Nil
Principal Shared Paths	State Government	\$0.91m per year	\$10m per year from 2013/14	\$10.91m per year from 2013/14
Perth Bicycle Network	State Government	\$1m per year	\$1m per year ongoing	\$2m per year ongoing
Regional Bicycle Network	State Government	\$0.75m per year	\$0.75m per year from 2012/13 \$1.25m per year from 2013/14	\$1.5m per year from 2012/13 \$2m per year from 2013/14
End-of-Trip Facility Feasibility Study	State Government		\$50,000	\$50,000
Connecting Schools	Existing Agency Funding		Nil	Nil
Connecting Rail/Bus Stations	Existing Agency Funding		Nil	Nil
Review of Traffic Management on Local Roads	Existing Agency Funding		Nil	Nil
Review of Local Bike Routes	Existing Agency Funding		Nil	Nil
Planning for Cycling Facilities in Large Regional Cities	Existing Agency Funding		Nil	Nil
Development of an online Journey Planner	State Government		\$200,000	\$200,000





# APPENDIX 1

## GAP ANALYSIS

### Priority Spot Improvement details and status:

PSIs	Treatment	Status
<b>Narrows Bridge</b>	Remove 'mazes' at bridge ends and upgrade shared paths on approach	Complete
<b>Mounts Bay Road</b>	Upgrade shared path and widen to 3m between Narrows Bridge and Hackett Drive	Complete
<b>Canning Bridge</b>	Widen shared paths on northern side of Canning Bridge and upgrade connections at each end	Complete
<b>St Anne's Wetlands</b>	Provide shared path along foreshore between Banks Reserve and Bardon Park	Complete
<b>Kwinana Freeway Shared Path (Como Overpasses)</b>	Re-align shared path at Preston Street and Thelma Street overpasses	Complete
<b>Access to Port Beach</b>	Provide a 3m shared path between Fremantle Traffic Bridge and the coastal greenway at Port Beach	Complete
<b>Parliament House</b>	Provide shared path along freeway between Mount Street and Hay Street down to Narrows interchange	Complete
<b>Mitchell Freeway / Vincent Street</b>	Provide a grade-separated crossing for path along the freeway	Complete
<b>Mitchell Freeway/ Powis Street</b>	Provide new overpass for path along the freeway	Complete
<b>Heirisson Island</b>	Upgrade and widen shared path to 3m	Complete
<b>Kwinana Freeway/ Leach Highway</b>	Provide a grade-separated crossing for path along freeway	Complete

PSIs	Treatment	Status
<b>Shelley Bridge</b>	Provide a 3m shared path on Shelley Bridge and provide connections to existing path	Riverton Bridge provides parallel route
<b>Goongoonup Bridge/ Goodwood Parade Link</b>	Construct a 3m shared path as part of Graham Farmer Freeway	Complete
<b>Tonkin Highway</b>	Widen sealed road shoulders	Complete
<b>Loftus Street</b>	Provide underpass to connect Subiaco Road and Arthur Street (as part of Graham Farmer Freeway)	Complete
<b>Kwinana Freeway Shared Path (Cloisters Avenue)</b>	Re-align path in vicinity of Cloisters Avenue	Complete
<b>Mitchell Freeway Shared Path (Beach Road – Warwick Road)</b>	Re-align and widen path	Complete
<b>Albany Highway/ Armagh Street Connections</b>	Construct contra-flow bicycle lane along one-way section connecting new Canning Highway underpass at end of Horden Street	Complete
<b>Curtis Street Shared Path Mount Lawley</b>	Construct shared path to bypass traffic calming and provide crossing	Complete
<b>Walcott Street/ Learoyd Street Underpass</b>	Construct underpass	Unfeasible

# APPENDIX 2

## BEST PRACTICE FINDINGS:

1. In order to achieve growth of cycling for transport, its promotion must be locked in and integral to wider policy, be supported at all levels and be sufficiently prioritised among competing transport infrastructure demands.
2. Cycling is well supported and mandated in Western Australian transport, land use, environment, health policies and strategies at Federal, State and local government levels. However, this report does not assess the extent to which cycling policy and strategy is upheld and implemented.
3. Successful promotion of cycling requires a mix of strategies including behavioural measures, enforcement, marketing, collaboration and education, as well as linkages to complementary sectors such as business, land use, health, environment and tourism.
4. Cyclists and cycling promotion have benefited in other cities from restricting car access to inner city areas and bringing such areas under a paid parking regime.
5. Cyclists should be viewed by transport authorities as full participants in traffic policy and given equal status.
6. Considerably lower speed limits have been successfully applied in residential areas and 'home zones' in Europe and application of these locally should be investigated.
7. The coordination and development of cycling benefits by being overseen by one department but there should be a cross-departmental, joint responsibility.
8. In addition to providing cycle routes, the following are key policies in many of the cities reviewed for this report and relevant to the new WABN Plan:
  - Giving cyclists priority, particularly at intersections.
  - Defining approaches to, and processes for, maintenance and sweeping.
  - Integrating cycling with public transport, particularly through provision of end-of-trip facilities.
  - Formulating strategies to reduce bicycle theft
  - Promoting safety and awareness
  - Communicating processes to disseminate information and guidance to and from stakeholders and practitioners.
9. Demand monitoring is based on data from various sources and there may be benefit in publicising favourable results.
10. The outcomes of cycling schemes should be monitored to help inform decisions about funding allocations and to understand the implications from, and quality of, implemented schemes.
11. Cycle tourism, developed in partnership with the tourism industry, is a proven opportunity to promote cycling.
12. Network implementation should not be measured by kilometres implemented but by how easily cyclists can ride from one place to another on 'completed' routes i.e. route level of service.
13. Implementation should be strategic (route by route rather than kilometre by kilometre) with requisite processes to support this.
14. 'Completed' routes should be checked and signed off to ensure they have been implemented to network standards.
15. More difficult projects should be started early to account for long lead times and to avoid delay to network completion.
16. Transport authorities should be able to bring forward future expenditure to fund more local government bids in order to progress network implementation.
17. A lack of local government support for cycle networks and staff shortages can be barriers to implementation.
18. Prioritisation of a small number of routes or facilities provide an opportunity to showcase and disseminate good practice.
19. All new traffic management schemes should be checked to ensure they include plans for cyclists.
20. The level of satisfaction with current guidelines, particularly by local government, should be considered during review consultation.
21. Detailed network planning guidelines or design guidance (additional to national standards) are key components of network implementation in other cities. Such documents account for local conditions, enable control of network quality and aim to increase implementation consistency.
22. The application of detailed network planning guidelines or design guidance should be monitored.
23. Most cities have set cycling mode share targets, usually against a short/medium term horizon (5-10 years) and commonly based on percentage increase in total modal share rather than a proportionate increase on a specified baseline.

# ACRONYMS

<b>ALGA</b>	<b>Australian Local Government Association</b>
<b>BUG</b>	<b>Bicycle User Group</b>
<b>COAG</b>	<b>Council of Australian Governments</b>
<b>DoP</b>	<b>Department of Planning</b>
<b>DoT</b>	<b>Department of Transport</b>
<b>LBR</b>	<b>Local Bicycle Route</b>
<b>MPNP</b>	<b>Moving People Network Plan</b>
<b>MRWA</b>	<b>Main Roads WA</b>
<b>NCS</b>	<b>National Cycle Strategy</b>
<b>PTA</b>	<b>Public Transport Authority</b>
<b>PBN</b>	<b>Perth Bicycle Network</b>
<b>PSI</b>	<b>Priority Spot Improvement</b>
<b>PSP</b>	<b>Principal Shared Path</b>
<b>RSP</b>	<b>Recreational Shared Path</b>
<b>SBR</b>	<b>Strategic Bicycle Route</b>
<b>WAPC</b>	<b>WA Planning Commission</b>
<b>WABN</b>	<b>Western Australian Bicycle Network</b>
<b>RBN</b>	<b>Regional Bicycle Network</b>



## Department of Transport

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**City of Joondalup Submission-  
Draft Western Australian Bicycle Network Plan 2012-2021**

**Key Focus Areas of the Draft Plan:**

The City supports the overall intent of the Draft *Western Australian Bicycle Network Plan*, particularly the well planned approach to the review of the Shared Path Network and the planned integration of paths for ease of use by cyclists.

It is however disappointing that the Draft Plan's key focus is on cycling facilities and infrastructure within 15km of the Perth Central Business District. The Northern Corridor is experiencing significant population growth and with little focus on cycling facilities north of Balcatta, within the Draft Plan, the opportunity to promote positive cycling behaviours for people in the Northern Corridor has not been considered.

Whilst the Draft Plan indicates on page 27 a long term vision for the Principal Shared Path that does extend to the Northern Corridor, no timeframe for the implementation of this vision is specified.

Due to the lack of detail regarding the long term vision of the Principal Shared Path within the Draft Plan, it is assumed that these works will be after the life of the *Western Australian Bicycle Network Plan*, meaning timeframes of at least 15 years before the extension of the Principal Shared Path to the Northern Corridor is considered. The lengthy time period in implementing this proposal, coupled with increased population within the region will result in a significant gap in the Perth Cycle Network and will lead to greater reliance on motor vehicles as the main mode of transport.

It is suggested that the Draft *Western Australian Bicycle Network Plan* indicates the delivery timeframe for key projects within the Northern Corridor in order to ensure adequate cycling infrastructure is available to support the region's growing population.

**Draft Western Australian Bicycle Network Plan Objectives:**

The City supports the objectives of the Draft *Western Australian Bicycle Network Plan*. It is noted that for Objective 5, there is no indication of training for adult cyclists. It is recommended that adult cyclist training is also considered as an initiative within the Draft Plan.

**Connecting Schools Program:**

The Draft Plan proposes a Connecting Schools Program to be implemented to achieve greater ridership to schools. Additional information regarding the components of the proposed program would be beneficial in order to ensure alignment with programs being undertaken at the local government level. Information relating to how the proposed program differs from current Travelsmart initiatives should also be included.

It is recommended that more detailed information relating to the program, roles of partners and timing is included in the *Western Australian Bicycle Network Plan* along with information regarding the local government areas where the pilot Connecting Schools Program will be delivered.

It is recommended that consultation with the local government sector be undertaken to inform the design of the Connecting Schools Program as many local government authorities have experience in implementing school based alternative travel programs.

It is also suggested that the Department of Transport consult with relevant local governments regarding infrastructure improvements around schools and the Capital Works Programs which are currently scheduled or planned for the future.

### **Connecting Rail and Bus Program:**

The City supports the integration of cycling facilities with the bus and rail system within 3km of stations and the inclusion of additional infrastructure such as bike shelters. It is suggested that cycling to and from stations is not considered as a standalone solution to encouraging active transport but should also be considered in conjunction with improvements to walking facilities. It is recommended that detailed audits of walking and cycling facilities are undertaken within 3km of stations to ensure maximum benefit for all users accessing rail and bus stations.

It is also suggested that the local governments that will be piloting the Connecting Rail and Bus Program in the Plan be detailed within the Draft Plan and that consultation is undertaken with the relevant local government authorities regarding the design and implementation of the Program.

As a Local Government that has a number of rail and bus stations located within its boundaries, including the Joondalup Station, located within the Joondalup City Centre, the City would welcome the opportunity to participate in the pilot Connecting Rail and Bus Program.

### **Local Government Grants Program:**

The City welcomes the proposed increase in funding allocated to the Local Government Grants Program and supports the focus of the Program being large scale projects for both on road cycling facilities and paths.

Although the City supports the intent of the Program, an issue for the City is that on-road facilities are not significantly represented in the City's *Bike Plan 2009 – 2015*. In addition, projects listed in the *Bike Plan 2009 – 2015* are not necessarily Principal Shared Path or Recreational Shared Path focused and nor do they focus on routes to schools. The lack of alignment with the proposed *Western Australian Bicycle Network Plan* and endorsed local government Bike Plans may make it difficult for the City (and other local government authorities) to be successful in applications for funding under the Perth Bicycle Network Program for projects listed within Bike Plans.

Clarification is required regarding whether local government authorities would be eligible to apply for funding for projects that aren't included within an endorsed Bike Plan but fit the criteria of the Local Government Grants Program?

It is suggested that the *Western Australian Bicycle Network Plan* includes the opportunity for local government authorities to review endorsed Bike Plans with funding being provided under the Local Government Grants Program where significant review and investigation is required to complete new Bike Plans to align with the *Western Australian Bicycle Network Plan*.

### **Principal Shared Path Priorities:**

It is recommended that an additional Principal Shared Path along the Mitchell Freeway north of Balcatta is considered in the *Western Australian Bicycle Network Plan*. This section of the path has been shown as a long term priority within the map on page 27, however if this project remains a long term priority, this would create a significant gap in the network. The Principal

Shared Path north of Joondalup is of sufficient standard due to the Mitchell Freeway extension however, the pathway south of Joondalup to Balcatta requires upgrading.

It is also recommended that the *Western Australian Bicycle Network Plan* indicates timeframes for the implementation of 'long term' projects.

### **General comments**

To support the intent and background of the Draft *Western Australian Bicycle Network Plan* it is proposed that the Department of Transport considers the ratio of vehicles to bicycles on the road and the key routes to the Perth Central Business District in order to analyse the funds spent per user for roads and cycling facilities. This would be an interesting comparison to include within the Plan.

With regard to the ratio of bikes to cars sold, provided on Page 15 of the Draft *Western Australian Bicycle Network Plan*, it is suggested that a more appropriate comparison is the ratio of adult bikes to cars sold. The current figures do not differentiate between adult cyclists, who are the major users of the bicycle network, and children cyclists. Inclusion of information regarding the age of cyclists is therefore recommended as it would support the key projects being proposed.

In order to guide effective implementation of the *Western Australian Bicycle Network Plan* it is recommended that the Plan provides prioritised actions with specific timeframes for implementation with allocated responsibility for the implementation of projects and initiatives to an individual agency or organisation.

It is also recommended that the Draft *Western Australian Bicycle Network Plan* considers pedestrians and the protection of pedestrians from cyclists. This would include the review of current roads, road reserves, pathway use and other laws related to the protection of all users, the adoption of construction standards and intersection design for pathways and cycle lanes to be adopted state wide.