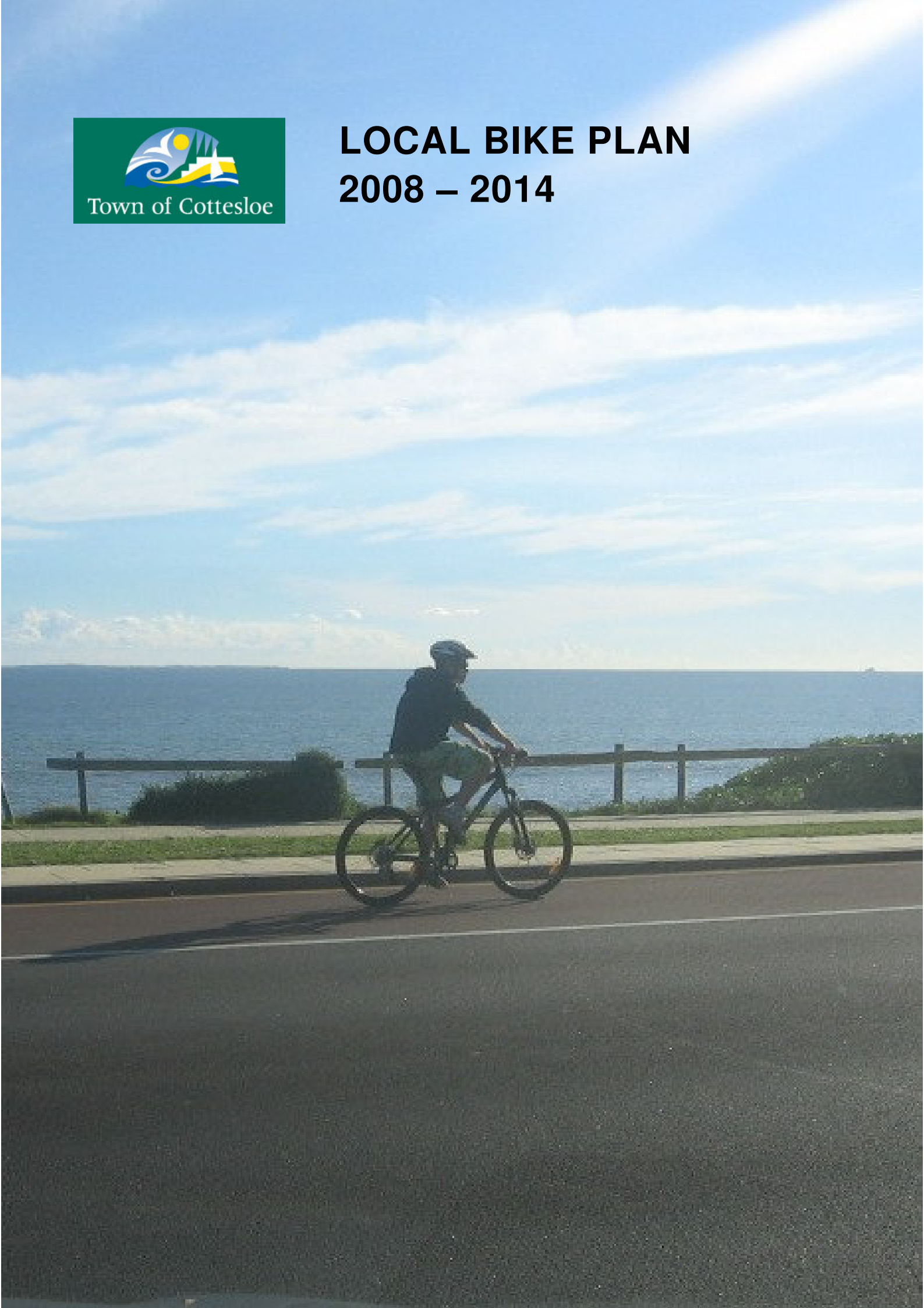
Town of Cottesloe

LOCAL BIKE PLAN 2008 – 2014



TOWN OF COTTESLOE

LOCAL BIKE PLAN
2008 - 2014

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Contents

1 Introduction

1.1 Background

The Western Suburbs Bike Plan for the City of Nedlands, Town of Cottesloe and Town of Claremont was produced in 1999. The Bike Plan aimed to:

- establish a safe and convenient network of on-road bicycle facilities throughout the Western Suburbs, with complementary off-road links;
- provide a range of facilities to cater for all existing cyclists and to encourage additional cyclists; and
- make bicycle use more convenient and popular, reducing the need for car use and thereby reducing traffic congestion.

The previous plan sought to provide a coordinated approach to the on-going provision of cycle facilities in the area that it was prepared for. Since its endorsement by the Town of Cottesloe, a number of cycle facilities have been installed throughout the Town which have met the broad intention of the original plan. Opportunity now exists to build upon the previous work by reviewing and updating the previous objectives in light of current national, state and local strategies and developing a Plan to achieve the revised goals.

1.2 Purpose and Scope

This Bike Plan sets out the new strategic direction for cycling in Cottesloe for the next five years between 2008 and 2014 and identifies a range of measures to help meet the needs of cyclists in and through the Town.

The encouragement and provision for cycling should be seen with the context of travel demand management. As the number of trips that people make each day is fixed, the only way to increase the amount of cycling undertaken is to decrease the number of trips by other modes of transport – usually the car. Therefore, in order to achieve the objectives of this Bike Plan, motor vehicle restraint and reduction measures will be necessary.

Specifically, this Bike Plan identifies:

- A proposed cycle network within the Town of Cottesloe.
- Associated engineering measures to reinforce the cycle network and overcome actual and perceived safety concerns along with an implementation programme.
- The need to assist with educating cyclists in road rules, safety precautions and practical skills in relation to other vehicles and pedestrians.
- Opportunities to educate motorists and pedestrians on cyclists' needs and behaviours.
- Opportunities to educate cyclist and pedestrians on safe path sharing.

- Recommended actions by non Town of Cottesloe organisations recognising that the Council must work with a range of agencies such as neighbouring local authorities, schools, employers, Department of Planning and Infrastructure (DPI), Main Roads WA and Police to achieve its objectives.

- Measures to help encourage cycling for a range of potential users and overcome any perceived negative aspects of cycling.

- The need to enforce regulations that reduce risk to cyclists.

It should be noted the Bike Plan has taken a 'whole of journey' approach when considering cyclists' transport needs. Cycle trips may either be the main transport mode of a particular journey, or may only form part of a longer chain of modes such as cycling to the train station. As such, the cycle network needs to cater for a range of journey purposes and the requirements of specific types of cyclists as well as the provision of 'trip-end' facilities such as cycle parking.

Furthermore, whilst specific facilities aimed to solely benefit cyclists may be provided, general traffic management techniques aimed at all road users can also assist cyclists when correctly and thoughtfully planned, designed and installed. Cycle network infrastructure provision should therefore be considered in conjunction with future traffic management schemes planned for the Town, and vice versa.

1.3 Regional Cycle Network

Whilst aimed directly at the Town of Cottesloe, it is recognised and accepted that cyclists from neighbouring local authorities will cycle through Cottesloe just as local residents will ride through other local authority areas. Accordingly, it is important to remember that this local bike plan cannot and has not been developed in isolation, with local cycle routes being integrated with the wider cycle route network – existing or currently being planned and developed.

A map showing the existing wider cycle network around Cottesloe is included in Appendix A.

The Bike Plan has also been mindful of proposed routes and paths being planned as part of the Perth Bicycle Network (see Section 2.4).

1.4 Bike Plan Development

This Bike Plan for the Town of Cottesloe has been developed by reviewing the current cycle facilities, existing levels of usage and known safety concerns – including those raised by local cyclists.

Having collated background data to understand current trends (see Appendix B), the local community was invited to provide comment on existing facilities, problems and to make suggests on improvements through a resident's survey and a feedback presentation/workshop.

On the basis of the collated qualitative and quantitative data, basic travel desire lines and movement patterns were identified allowing routes to be developed and planned for over the life of this document. In addition to providing physical infrastructure to assist cyclist movements in and through the Town, the successful and safe uptake of cycling by residents of the Town of Cottesloe needs to consider and include education, encouragement and enforcement initiatives as part of a wider strategic approach to travel demand management.

1.5 Context

Cycling is a legitimate mode of transport for many people in the Town of Cottesloe with 6% of occupied private dwellings in Cottesloe not having a motor vehicle (excluding motorbikes and scooters).

The number and percentage of people cycling to work from Cottesloe has increased over the last few years with over 3% of employed residents cycling to work in 2006 – more than double the 2001 figure. With respect to safety, incidents involving cyclists made up 2% of all reported accidents to the Police over the past five years.

A range of data relating to cycling in Cottesloe is set out in Appendix B.

1.6 Framing the Issues

Feedback from residents obtained during the consultation process has helped identify current views and concerns with respect to cycling in Cottesloe. Results from the residents' survey can be found in Appendix C. The high level issues associated with cycling in Cottesloe that need to be considered are set out below.

Infrastructure

A primary desire noted in the residents' survey was to improve north-south connections through Cottesloe with the provision of appropriate facilities, followed by the need to cater for east-west movements between the town centre/residential areas and the beach.

Whilst a number of common topics and themes were identified in the resident's survey, the extension of the principal shared path south of Grant Street station and concerns about the route along Curtin Avenue were uniformly raised. Potential improvements for cycling along Marine Parade were mixed between on road opportunities and the enhancements to the existing shared facility.

New and better/wider off-road paths as well as on-road cycle lanes were suggested by many respondents.

Maintenance issues were also raised and it is noted that cycle facilities need to be maintained as well as, if not in a better condition than the general road network if cycle facilities are to encourage more users.

Road User Behaviour

In addition to infrastructure issues identified in the residents' survey, the behaviour of both motor vehicle drivers and cyclists was noted as an issue.

The behaviour of cyclists travelling together in groups (adult sport cyclists) on the road was a concern for some respondents'. Similarly, the behaviour of some recreational cyclists using shared paths was also criticised by some pedestrians in terms of cyclists not using their bell or travelling too quickly. As part of this, the width of the shared paths such as the Raia Roberts Dual Use Path was identified as a concern.

A number of respondents also complained about the behaviour of inconsiderate and dangerous drivers overtaking at narrow points on the road (caused by traffic islands, parked vehicles and roundabouts) resulting in the safety of the cyclist being threatened.

Types of Cyclists and their Requirements

Satisfying the needs of cyclists' and providing quality routes has to take account of cyclists' skills and trip purpose. Accordingly, the Bike Plan has considered a range of cyclist trip types with respect to the cycle route network and the associated infrastructure that seeks to meet the specific requirements of:

- Neighbourhood Cycling (including trips to local schools, shops, riding near home)
- Commuter Cycling (including trips to work, tertiary education and high schools and any longer distance utility trip)
- Recreational Cycling (including leisure trips and exercise)
- Sports Adults

Appendix D sets out the general infrastructure requirements for each of the above types of cyclists.

1.7 Bike Plan Implementation

Responsibility for the implementation of this Bike Plan rests with the Town of Cottesloe. However, many of the proposed actions set down within the document requires input and commitment from other organisations including the Department for Infrastructure and Planning, TravelSmart officers, Main Roads WA and the Police. In addition, local schools and the Department for Education and Training also need to be involved given the potential to enhance cycling to school in the wider area and develop cycling skills.

2 Policy Context

Planning for cycling in the Town of Cottesloe takes place within the context of a number of national, state and local strategies and policies aimed at encouraging cycling as set out below.

2.1 The Australian National Cycling Strategy 2005-2010

The Australian National Cycling strategy seeks to enhance the well-being of Australians through increasing the number of people of cycling and enhancing safety for cyclists. It sets out six main priorities, some of which have a direct impact on local authorities such as the Town of Cottesloe:

- Improving the coordination of activities aimed at increasing cycling in Australian, state, territory and local governments.
- Including cycling as an essential component in integrated transport and land use planning in all spheres of government.
- Creating infrastructure and facilities to support increased cycling.
- Enabling and encouraging safe cycling.
- Providing leadership and developing partnerships to support and promote cycling.
- Developing the skills needed to implement actions aimed at increasing cycling.

2.2 Perth Metropolitan Transport Strategy 1995-2029

The Perth Metropolitan Transport Strategy sets out the direction for moving Perth from a low vehicle occupant car orientated society to one which allows a more balanced mix of transport modes - including making public transport, walking and cycling as much more viable options. Its vision is that:

> *"Perth will be a place of vitality and well-being. There will be a sharing of spaces for living, work and leisure activities, which can be reached easily and safely by all members of the community"*

The strategy sets out a number of initiatives to achieve the objective of providing acceptable levels of accessibility on an affordable and sustainable basis. Such initiatives include the provision of good cycle routes to local urban centres and destinations such as schools, along with a wider regional network of routes and improved information.

Whilst the Strategy sets targets for the whole of the metropolitan area, a number of general targets are relevant to this Bike Plan:

- An increase in the percentage of personal cycle trips from 5.7% in 1991 to 11.5% in 2029. This represents an increase in over three times the number of cycle trips currently made, and a doubling of the percentage of cycle trips in the mode share.

- A reduction in the incidence and severity of traffic injuries and fatalities for all transport modes, including cycling.

Strategic actions aimed at achieving the above objectives and targets that are applicable to local government authorities include:

- Identifying, developing and signposting safe routes to defined local destinations including schools and commuter routes.
- Integrating bicycle use with public transport.
- Promoting urban design standards which encourage cycling without the need for totally separate facilities.
- Defining, establishing and maintaining continuous local cycle routes.
- Defining, protecting and implementing a regional cycle network.
- Introducing cycle requirements to local government planning schemes and policies.
- Ensuring cycle facilities serve the needs of all cycle users.

In addition to the above, a number of other actions for organisations such as the Main Roads WA, the Department of Transport/Ministry for Planning, and the WA Police are identified.

2.3 Bike Ahead – Government of Western Australia Bicycle Strategy for the 21st Century

The Bike Ahead Strategy was developed by the Government of Western Australia in 1996 and sets out the actions that are necessary in order to meet the targets set within the Perth Metropolitan Transport Strategy. The Strategy emphasises the development of a network of cycle facilities that:

- is convenient, accessible and safe;
- is comprehensive, providing access to most destinations for most cyclists;
- establishes connectivity; and
- has regional coverage.

In addition to the key actions identified in the Metropolitan Transport Strategy, it also notes the need to:

- encourage bicycle friendly local area traffic management,
- establish more effective links with road safety programs; and
- continue to implement the Perth Bike Plan.

2.4 The Perth Bicycle Network Plan

The Perth Bicycle Network Plan (1996) is based on recognising the following issues:

- Cycling is primarily a transport mode, serving major trip attractors and generators, rather than purely a recreational activity (but can still be a recreational/leisure activity).
- It is neither practical nor necessary to provide segregated cycling facilities on each and every street, or even on the majority of streets.
- The majority of cycling is, and will continue to be on the road/street system, and cycling must be actively incorporated into the planning and design of streets.
- The majority of cyclists have never been taught to ride a bicycle as a vehicle.
- The majority of non-cyclists have never been taught to regard the cyclist as a legitimate road user nor how to share the road with cyclists.
- The majority of bicycle/motor vehicle accidents have, as one contributory factor, poor cyclist behaviour or, in the case of adult cyclists' accidents, poor motorist behaviour.
- Bicycle/motor vehicle accidents represent 1 in 5 serious injury accidents and 1 in 30 injury accidents for cyclists.

The Plan sets out a comprehensive list of projects for implementation as part of the wider cycle network. Appendix E shows the proposed routes through Cottesloe.

2.5 Town of Cottesloe Local Planning Strategy

The background and technical information relating to transport issues in the Town of Cottesloe are set down in the Local Planning Strategy (LPS). Based on the Metropolitan Transport Strategy (1995) which seeks to promote pedestrian and cycle access, the LPS notes the need to implement a number of proposals to assist cycling in the Town. These include:

- Pedestrian and cycle crossing of the railway at 500m spacings and a principle shared path (PSP) adjacent to the railway between Freemantle and Cottesloe (based on the Fremantle to Cottesloe Transport Plan 2001).
- Improved pedestrian and cyclist links for east-west movements across the railway between Stirling Highway and the beach (based on the Town Centre Study 2005).
- The need to consider traffic speed, pedestrian and cyclist safety, access and overall urban design issues along Marine Parade given its role as a 'coastal access road.'
- The provision of end-of-cycle-trip facilities for applicable land uses, including development sites, key activity centres and recreational areas.

- Increased opportunities for residents, workers and visitors to use public transport, cycling and walking as alternative modes to private vehicles.

2.6 Town of Cottesloe Future Plan 2006-2010

The Future Plan sets out the framework for long terms decision making by the Council and provides a direction for the Town by identifying broad objectives that the Council wishes to achieve.

A number of objectives and the resulting identified strategies are of particular relevance to cycling:

- Objective 1: Protect and enhance the lifestyle of residents and visitors
  - Develop an 'integrated transport strategy' that includes park and ride, Cott Cat, TravelSmart, limited parking and meets the needs of pedestrians, cyclists and other non-vehicular traffic.
- Objective 2: To achieve connectivity between east and west Cottesloe
  - Stirling Highway and Curtin Avenue, along with the Perth-Fremantle railway corridor provides a high level of accessibility but also causes physical divisions and barriers. Limiting the impact of these barriers can improve transport links.
- Objective 3: Enhance beach access and the foreshore
  - Improve cycle and disabled access to beach facilities.

2.7 Town of Cottesloe Policy – Traffic Management

Traffic Management policies adopted by the Town seek to provide for pedestrians and cyclists. In particular, the document notes that the

> *"The Council wishes to encourage pedestrian and cycle use within the Town of Cottesloe. Therefore, Council will include usage surveys, community consultation and liaison with Transport to fulfil this objective"*

This Bike Plan has also noted and taken account of the draft Town of Cottesloe Traffic Management Study (May 2008) prepared by Porter Consulting Engineers and the recommended treatments resulting from the study. Comment on the development of the Traffic Management Study and the draft report is contained in Appendix B7.

3 Vision and Cycling Policy Objectives

3.1 Vision

Based on the Council's vision for Cottesloe as "an iconic coastal community with a relaxed lifestyle," and the objectives set down in the Town of Cottesloe Future Plan 2006-2010, the vision for cycling in the Town of Cottesloe is:

> *"A safe and accessible town where people from all sectors of the community cycle for transport and enjoyment."*

Cycling in Cottesloe needs to be recognised and valued as a viable form of transport that complements other modes of transport and forms part of an integrated approach to meeting the communities transport requirements. Cyclists are legitimate road users and their needs and requirements with respect to planning, road/path design and transport management should be understood and provided for along with those of other road users.

The benefits of cycling to the individual, community, environment, economy as well as to the general transportation system are set down in Appendix F.

3.2 Objectives

In order to work towards the above Vision, the following objectives have been developed with the intention of helping to achieve the vision in the short to medium term:

- To continue to increase the number of people cycling in the Town of Cottesloe.
- To improve the actual and perceived safety of cyclists.
- To ensure the Town's strategies, policies, planning and practices fully take into account in the needs of cyclists.
- The development of a network of connected and accessible cycle routes.

Specific targets for each of the above objectives are identified in Section 5 whilst an overview of polices and actions to help meet the targets are set down in Section 4.

4 Policies and Actions

High level policies and actions associated with achieving the identified objectives are set out below. Specific infrastructure improvements, along with complimentary encouragement, education and enforcement initiatives are set down in Sections 6 and 7 respectively.

4.1 Objective 1

To continue to increase the number of people cycling in the Town of Cottesloe.

Outcomes include more new cyclists as well as existing cyclists riding more frequently. This will be achieved by:

- Providing information to the community and visitors about cycling opportunities in Cottesloe.
- Implementing, maintaining and updating the Bike Plan.
- Encouraging people to cycle instead of using private motor vehicles for a range of trips.
- Making new and existing routes compatible with cyclists' needs.
- In conjunction with the TravelSmart officer, market and promote to residents and visitors opportunities for cycling in Cottesloe and its benefits.
- Encouraging and supporting the delivery of a bicycle safety and riding skills course for school children (to replace the discontinued Bike Ed program)
- Encouraging and supporting the promotion and delivery of an adult's safety and riding skills course for new and novice cyclists.
- Considering working with neighbouring local authorities and schools within the wider area to determine travel mode, routes and safety concerns associated with school journeys and the implementation of the TravelSmart to School programme. (Note: children living in Cottesloe may study at schools outside of the Town – but have to use local roads to get there. School cycle traffic issues can best be understood through working with the schools directly.)
- Maintain the Level of Service (LoS) along by designated cycle routes (with facilities provided) to not less than LoS C[1].

[1] See Appendix B4

4.2 Objective 2

To improve the actual and perceived safety of cyclists.

Outcomes include:

- Developing and maintaining the cycling network to maximise cycle safety.
- Improved and consistent levels of service i.e. where road and path surface issues are identified as a hazard, these will be rectified within a specified period.
- Educated road users, including cyclists and pedestrians, who are aware of road rules, shared path rules and shared path courtesy.

This will be achieved by:

- Reviewing and updating as appropriate maintenance procedures for cycle related issues including pavements (potholes, drainage grates, sand, broken glass) and cycle parking facilities.
- Undertaking formal cycle audits of hazardous locations identified from police reported crashes, DPI Hazard Report forms and through existing consultation. Sites include all roundabouts in the Town of Cottesloe such as Eric Street/Railway Street, Eric Street/Broome Street, Marine Parade/Curtin Avenue, as well as traffic calming features.
- Ensuring all future transport studies and road upgrades specifically consider the needs of cyclists. In particular, recommended treatments set out in the Cottesloe Traffic Management Study 2008 need to be assessed from a cyclist's perspective given the number of proposed traffic management and traffic calming measures and existing cyclist concerns with respect to these facilities.
- Investigate widening sections of the Raia Roberts Dual Use Path along Marine Parade to a minimum 3m along its length (and wider at localised conflict points). Investigate the potential improvements for cyclists along Marine Parade itself.
- Working alongside the TravelSmart officer to provide information, education and promotion to cyclists and pedestrians regarding shared path courtesy.
- Installing appropriate signs and markings along the Raia Roberts Dual Use Path and all other shared paths.
- Working alongside the TravelSmart officer to provide information, education and promotion to cyclists and motorists regarding appropriate behaviours.
- Supporting and liaising with WA Police to encourage compliance with existing Road Traffic Code, Road Traffic Act 1974 and Road Traffic (Bicycles) Regulations 2000.
- Encouraging cyclists to report car drivers to the Police that act inappropriately towards cyclists.

4.3 Objective 3

To ensure the Town's strategies, policies, planning and practices fully take into account the needs of cyclists.

Outcomes include the incorporation of cyclists requirements within the Town Planning Scheme and when approving developments within the town.

This will be achieved by:

- Taking account of the views of cyclists travelling within and through the Town.
- Supporting planning and development initiatives that encourages and provides for cycling.
- Reviewing and incorporating cycle parking standards for new/proposed developments as part of the Town Planning Scheme.
- Requiring transport assessments for new developments to consider cycling needs and routes.
- Changing the Town Planning Scheme to require developers to install trip end facilities such as cycle parks, lockers/changing rooms and showers where appropriate.
- Seeking development contributions to help develop cycle route connectivity and accessibility.
- Supporting local, regional and national efforts to improve cycling.

4.4 Objective 4

The development of a network of connected and accessible cycle routes.

Outcomes include that the network of cycle routes and facilities will:

- Connect important local destinations and have adequate secure cycle parking at those locations.
- Be designed to compliment and be integrated with other transport modes, as well as with other cycle facilities in neighbouring local authorities.
- Meet the needs of current and future cyclists.

This will be achieved by:

- Implementing the cycle network plan (infrastructure) as set down in the Bike Plan.
- Providing appropriate cycle parking facilities at Grant Street Station (in conjunction with Westrail) and within the Jarrad Street car parking area.

- Reviewing relevant external documents in order to identify best practice cycle facility provision and to amend relevant internal documents where appropriate to reflect best practice.
- Encouraging and supporting the DPI to progress with the Principal Shared Path south of Grant Street Station to connect through to Freemantle.
- Encouraging suitable local businesses and workplaces to provide end of trip facilities.

5 Targets

Targets allow progress towards achieving the vision and objectives of the Bike Plan to be measured and monitored. Specific trend targets have therefore been set for each objective, as shown below.

Objective	Target
To continue increasing the number of people cycling in the Town of Cottesloe.	1. Upward trend in the number of people and percentage of people cycling to work as shown in the census data for 2011. 2. Increase in the number of respondents indicating daily and weekly cycle use across all age ranges during biennial survey. 3. Level of Service of all identified cycle routes (with facilities provided) rated as 'C' or above. 4. Following assessment of school travel mode share, an upward trend in the number of children riding to school
To improve the actual and perceived safety of cyclists.	1. Downward five year trend in the number of reported cycle crashes. 2. An increase in the proportion of residents that rank cycle safety as 'good' or 'excellent' during biennial survey.
To ensure the needs of cyclists are always taken fully into account in the Town's strategies, policies, planning and practices.	1. All new cycle facilities meet cycle design standards set down in Appendix D. 2. All development applications are assessed for their compliance with the Bike Plan. 3. All transport infrastructure improvements consider cycling as an integral part of the planning and design process.
Ongoing development of cycle route connectivity and accessibility.	1. Implementation of cycle schemes in accordance with the programme as identified in the Bike Plan. 2. An increase in the proportion of residents that rank the level of cycle facilities as 'good' or 'excellent' during biennial survey. 3. Annual increase in the number of people cycling to train stations, as measured by the number of parked cycles.

6 Cycle Network Plan - Infrastructure

6.1 Existing Facilities

A plan showing the existing cycle facilities (on-road, off-road and cycle parking) provided in Cottesloe is shown in Figure 6.1. In addition to those facilities shown in Figure 6.1, a number of 'local bicycle friendly streets' are highlighted on maps and plans developed by the DPI; these local bicycle friendly streets are shown on Figure 6.2.

As can be seen in Figures 6.1 and 6.2, a number of different types of facilities exist. These are discussed in detail below. Guidance on cycle engineering standards can be found in Appendix G.

Shared Paths

Marine Parade (Raia Roberts Dual Use Path)
The Raia Roberts Dual Use Path runs along the western side of Marine Parade. Typically, it is separated from the road by a grass verge although on a number of occasions, the route meanders away from the road to follow the coast line/foreshore. The route typically varies in width between 2 metres and 3 metres with occasional broader sections.

Warning sign on Raia Roberts Dual Use Path

A survey of pedestrian and cycle flows along Raia Roberts Dual Use Path on a section south of Eric Street (see Appendix B1) indicated that 23 cyclists were recorded using the dual use path compared to 289 pedestrians/joggers. This survey suggested that approximately 10% of dual path users were cyclists. The survey also noted 35 cyclists using Marine Parade itself rather than the off-road facility.

Regular markings indicating that the route is a shared path and centre lines on some sections highlighting the need for pedestrians and cyclist to keep left have been provided.

Path markings on Raia Roberts Dual Use Path encouraging users to 'keep left'

Bryan Way
This path runs between Broome Street and Marine Parade/Bryan Way – with the western end comprising a section of an 'on-road' access road. The path width is 1.8m. The route is not signed or marked as a shared path and requires maintenance along its length. Maintenance issues include the poor surface condition and encroaching vegetation that narrows its effective width further.

Figure 6.1 Existing Cycle Facilities

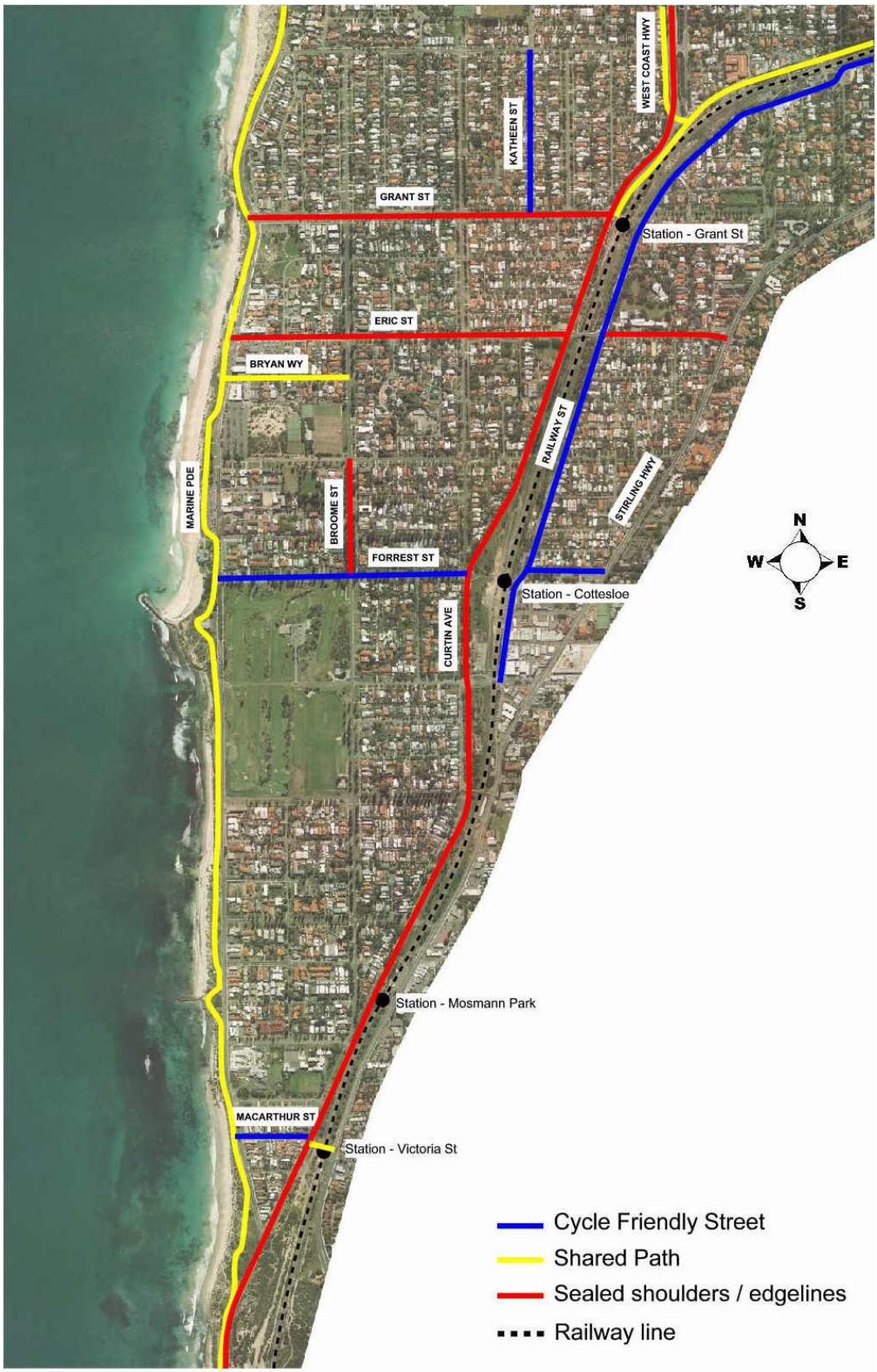

Figure 6.2 Existing Cycle Facilities and DPI Identified Cycle Friendly Streets

Curtin Avenue

The principal shared path (PSP) on the eastern side of Curtin Avenue runs north-eastwards along the railway corridor as far south as Grant Street Station. Beyond Grant Street Station, the route connects with a sealed shoulder with edge lines along Curtin Avenue. As part of this, northbound cyclists need to cross at the signalised pedestrian 'pelican' crossing at Grant Street in order to access the PSP.

PSP at Grant Street Station

West Coast Highway

The shared path heads up the western side of the West Coast Highway connecting with the PSP at the traffic signal controlled intersection of Curtin Avenue and West Coast Highway using the pedestrian crossing facilities.

Sealed Shoulders with edge lines

Curtin Avenue

Curtin Avenue is classified as District Distributor (A) in the Perth Metropolitan Area Functional Road Hierarchy and has a 60km/h speed limit.

Average weekday traffic flows typically increase northwards along its length from its intersection with Marine Parade with traffic flows in the order of 12,000-13,000 vehicles per day (vpd) at the southern end increasing to approximately 20,000 vpd north of Jarrad Street and 26,000 vpd north of Grant Street on the approach to the West Coast Highway.

Edge lines and widened sealed shoulders at new central traffic islands on Curtin Avenue

85th percentile traffic speeds are typically 65-68km/h between Marine Parade and Jarrad Street reducing to 60-63km/h further north as traffic volumes increase.

Curtin Avenue has recently been resealed and is in the process of having edge lines added to provide a 1.2m shoulder.

Broome Street (Forrest Street to Napier Street)

Broome Street is classified as a Local Distributor in the Perth Metropolitan Area Functional Road Hierarchy and has a 50km/h speed limit.

Average weekday traffic flows are in the order of 3,200 – 3,500 vpd over this section of Broome Street. 85th percentile traffic speeds are typically 55-60km/h. Lower traffic flows with higher speeds exist at the northern end of Broome Street, beyond the sealed shoulder/edge line section.

Broome Street between Forrest Street and Napier Street has 3.5m wide traffic lanes plus 1.2m sealed shoulders marked in each direction. North of Napier Street and south of Forrest Street, Broome Street is typically 7.3m wide. Parking is permitted along its length although many residents can park their vehicle off the road.

Grant Street (Marine Parade to Curtin Avenue)

Grant Street is classified as a Local Distributor in the Perth Metropolitan Area Functional Road Hierarchy and has a 50km/h speed limit.

Average weekday traffic flows are in the order of 2,000 vpd with 85th percentile traffic speeds typically 50-55km/h.

Grant Street is a single lane dual carriageway road with 1.4m to 1.5m sealed shoulders and 4m traffic lanes. Parking is permitted along its length although many residential properties can park their vehicle off the road – for instance in the central median or in driveways.

Eric Street

Eric Street between Marine Parade and Curtin Avenue is classified as a District Distributor (B) in the Perth Metropolitan Area Functional Road Hierarchy and has a 50km/h speed limit. East of Curtin Avenue, Eric Street is classed as a District Distributor (A). Eric Street is also part of the Perth Bicycle Network (PBN), signed as route NW16.

Average weekday traffic flows are in the order of 4,600 vpd at the western end of Eric Street with 85th percentile traffic speeds being 46km/h. Between Marmion Street and Curtin Avenue, traffic flow decreases to 2,700vpd with a corresponding increase in vehicle speeds to 61km/h. To the east of Curtin Avenue, traffic flows are much higher with 11,600vpd recorded between Railway Street and Curtin Avenue, and 9,000vpd between Railway Street and Gordon Street.

Between Marine Parade and Curtin Avenue, and Railway Street and Stirling Highway, Eric Street is a two lane single carriageway road with 1.2m sealed shoulders and 3.6m traffic lanes. In addition, the section of road between Railway Street and Curtin Avenue over the railway line is narrow with no cycling facilities provided and a single 1.2m wide footpath on the northern side.

Edge lines along Eric Street

Two 'slow points' have been installed along Eric Street – between Hamersley Street and Broome Street and between Broome Street and Marmion Street. Unmarked/unsigned ramps for cyclists to bypass the slow point have been provided. An additional slow point with edge lines around the outside of the carriageway has also been provided outside North Cottesloe Primary School.

Edge lines at slow point on Eric Street

Cycle Friendly Street

Forrest Street
Forrest Street is classified as a local access road in the Perth Metropolitan Area Functional Road Hierarchy and has a 50km/h speed limit.

Average weekday flows in 2007 were 2,100vpd between Marine Parade and Broom Street with an 85th percentile speed of 46km/h. Traffic counts from 2006 indicate a slightly lower traffic volume (1,600vpd) and higher 85th percentile speed (52km/h).

Forrest Street is typically 7.3m wide with a 1.8m wide footpath located on the southern side of the road between Curtin Avenue and Broome Street. The footpath width reduces to approximately 1m between Broome Street and Marine Parade. Parking is not permitted along the northern side of the street between Marine Parade and Broome Street.

Kathleen Street
Kathleen Street is classified as a local access road in the Perth Metropolitan Area Functional Road Hierarchy and has a 50km/h speed limit.

No traffic flow or speed data is available, however, it is expected that volumes will be low given that Kathleen Street is a 'no through' road and has the northern end closed off to through traffic. However, an unsigned narrow path at the northern end provides pedestrian and cycle access through to North Street and beyond. Parking is permitted along the length of the road on both sides.


Narrow path at end of cul-de-sac at Kathleen Street

Railway Street
Railway Street is classified as a Local Distributor in the Perth Metropolitan Area Functional Road Hierarchy and has a 50km/h speed limit.

Average weekday flows in 2007 between Forrest Street and Eric Street were 4,800 – 5,000vpd with 85th percentile speeds of 56 – 59km/h. Between Eric Street and Grant Street, flows ranged between 3,700 – 3,900vpd with speeds ranging between 51-59km/h. Further north, near Congdon Street, traffic flows are between 4,600 and 5,000vpd with 85th percentile speeds between 40-51km/h.

Road widths are typically in the order to 6.8m to 7.3m wide with a section of the route between Greenham Street and Mann Street having both a raised and painted central median (3.6-3.7m lane widths).

Perth Bicycle Network – Continuous Signed Route

Macarthur Street
Macarthur Street forms part of the Perth Bicycle Network NW18 route, providing access to the shared path along Marine Parade. No traffic flow volumes or speeds are available.

However given its local residential nature and indirect access off Curtin Avenue, flows are expected to be low.

General/other

Marine Parade

In addition to the above, it should be noted that Marine Parade between Forrest Street and Curtin Avenue has narrow 1m edge strips adjacent to the car parking bays (2.4m) on both sides of the road. These help to separate the traffic lane from the parking bay although the edge strip is narrower than recommended for a cycle lane. To the north of Forrest Street, this narrow strip reduces to less than a metre.

Parking bay and edge line adjacent to shared path

Marine Parade is classified as a Local Distributor in the Perth Metropolitan Area Functional Road Hierarchy. A 40km/h speed limit extends from Grant Street through to a point mid-way between Forrest Street and Pearse Street – supported by traffic calming (see below). A 50km/h speed limit extends beyond the 40km/h zone in each direction.

Signed bypass around slow point

It can be expected that traffic flows along Marine Parade will be seasonal, with much heavier flows in summer than in winter given the attraction and nature of the area. Summer average daily traffic flows between Grant Street and Forrest Street are typically 8,000vpd – 8,500vpd with lower flows to the north and south.

85th percentile traffic speeds in the 40km/h zone range between 42km/h to 47km/h with higher speeds (59km/h) to the south. 85th percentile speeds of 52km/h have been recorded north of Grant Street.

Marine Parade has a marked and raised median along its length with a number of slow points and kerb build-outs also provided. The slow point adjacent to the Golf Course has a signed ramp around the traffic calming facility to avoid the facility. Three slow points also exist further north – north of Napier Street, south of Grant Street and south of North Street. However, no facilities for cyclists to avoid the traffic calming features have been provided at these locations.

Cycle Parking

The locations of cycle parking facilities in the Town are shown on Figure 6.3.

Railway Stations
Cycle lockers and U-stands are provided at Victoria Street, Mosman Park and Cottesloe Stations. No cycle parking facilities however are provided at Grant Street Station. Details setting out the number of stands/lockers and utilisation information are contained in Appendix B3.

Cycles locked up against fence at Grant Street Station

Beach
A number of U-stands are provided at a range of locations along Marine Parade and the Raia Roberts Shared Use Path.

Shopping Area/Napoleon Street
A number of U-stands are provided at the southern end of Napoleon Street as well as along its length. In addition, four stands have been provided outside the Cott Centre.

U-stands on Napoleon Street

6.2 Potential Improvements to Existing Facilities

A number of minor 'spot' improvements to existing facilities have been identified as part of the review of the previous Bike Plan. These typically relate to formalising, simplifying and clarifying cycle movements to maximise the integration of the existing cycle route network and to make it more visible. A list of identified locations and recommended improvements are shown in Table 6.1 and Figure 6.4.

Figure 6.3 Existing Cycle Parking Locations

Ref No.	Location	Description
1	Kathleen Street/ North Street	Existing path connecting the two be widened and re-designed to provide a smooth path and permit full cycle movements.
2	North Street/ West Coast H'way	Provide cycle crossing symbols to match existing pedestrian crossing symbols across North Street approach. Install shared path sign on northern corner of intersection. Consider providing a cut through at the south-western island.
3	Curtin Avenue/ Claremont Crescent	Relocate shared path sign closer to path. Provide cycle crossing symbols to match existing pedestrian crossing symbols across Curtin Avenue (south) approach.
4	Curtin Avenue/ Grant Street	Provide cycle crossing symbols to match existing pedestrian crossing symbols across Curtin Avenue at pelican crossing. Provide a northbound cycle lane in the verge on approach to pedestrian pelican crossing to allow cyclists to gain access to crossing point.
5	Forrest Street/ Marine Parade	Connect 'pram' crossing providing access to Marine Parade to Raia Roberts Dual Use Path across narrow verge area.
6	Eric Street – Blister island	Install shared path signs/pavement markings. Rectify ramps on eastern side of blister island to allow 1 in 15 slopes.
7	Eric Street – Blister island	Install shared path signs/pavement markings.
8	Eric Street – Blister island	Following a cycle audit, consider providing a cycle bypass around the blister island outside School.
9-11	Marine Parade – Blister island	Following a cycle audit, consider providing cycle bypass of blister island.
12	Broome Street	Assess on-street parking demand and consider installing pavement markings.
13	Eric Street	Assess on-street parking demand and consider installing pavement markings.
14	Grant Street	Assess on-street parking demand and consider installing pavement markings.
15	Jarrad Street/Stirling Highway	Provide pedestrian and cycle shared crossing facility on Stirling Highway (southern approach). Requires modification of existing traffic signal phasing. Convert eastern footpath of Stirling Highway between Jarrad Street and Irvine Street to a shared path and mark/sign as such.
16	Jarrad Street	Upgrade existing path to 2-3m wide shared facility between station parking access road and pedestrian crossing of railway. Convert to shared path and mark/sign as such along with southern footpath between Stirling Highway and Railway Street.
17	Cottesloe Station parking access road	Resurface access road to provide a smooth road surface from Forrest Street path to Jarrad Street.
18	Stirling Highway/ Irvine Street	Investigate potential to provide a central splitter island on Irvine Street approach to Stirling Highway at intersection.
19	Pearse Street footbridge	Install a 'wheeling ramp' on the steps of the footbridge. Requires agreement by owners/managers of the bridge.
20	Various	Undertake cycle audit of existing roundabout facilities from a cyclist perspective as well as a footpath/pram ramp audit given usage by children under 12 years of age.
21	Bryan Way	Widen to 2-3m and sign as a shared path.

Table 6.1 Recommended 'Spot' and Minor Route Improvements

Figure 6.4 Recommended 'Spot' and Minor Route Improvements

6.3 New Routes/Additions to the Cycle Network – Connecting the Network

General

The December 2007 Review of the Perth Bicycle Network – Stage 3: Community and Stakeholder Consultation report for the DPI noted the following missing link from the PBN plan:

> *Curtin Avenue at Grant Street through to Fremantle along Curtin Avenue, for the Principal Shared Path (PSP). This was committed to by DPI in 2001 for completion in 2005. Project is years behind the commitment.*

In addition, the following problems and proposed treatments were identified in the DPI report:

- PSP Connection – Curtin Avenue at Eric Street. Proposed treatment: underpass.
- PSP Connection – Curtin Avenue at Jarrad Street. Proposed treatment: under or overpass.
- Bike crossings for Curtin Avenue – Jarrad Street, Eric Street, Salvado Street. Proposed treatment: overpass.
- Bike access on Eric Street – railway bridge crossing. Proposed treatment: new bridge with cycle lanes.

North – South Movements

Extension of the PSP

This Bike Plan reiterates the need to extend the existing PSP from Grant Street through Cottesloe in order to provide a safe, coherent, direct and comfortable north-south route, with appropriate grade separated treatments (with connections) at:

- Eric Street
- Jarrad Street
- Salvado Street
- MacArthur Street.

Raia Roberts Dual Use Path

The consultation process raised a number of issues surrounding the dual use path width and the behaviour of people on the path along Marine Parade as well as cyclist usage of Marine Parade itself.

As noted in Section 6.1, parts of the Raia Roberts Dual Path are less than 3m wide – which is the minimum acceptable width set out in Austroads for recreational paths. In addition, Austroads suggests that 3m is required where two-way cyclists and pedestrians are

common with 3.5m being the desirable width of recreational paths. Insufficient space exists to provide a separated path along the foreshore, and it is suggested that pedestrians and cyclist would still mix and use both paths if separation did occur. It should be noted that a small increase in width can reduce pedestrians' fear of being run into and improve path efficiencies and the enjoyment of users.[2] As such, it is recommended that consideration be given to widening the path to 3m along its length.

In the most highly utilised areas, widening beyond 3m may be required. It is recommended that surveys of use be undertaken along the length of Raia Roberts Dual Use Path to best determine localised conflict points to enable widening beyond 3m to be prioritised.

Feedback from the residents' survey responses also suggested additional signs to remind users to keep left and show courtesy to other users. Whilst signs asking cyclists to slow down are often ineffective, additional reminders regarding the correct use of bells and to keep left[3] may help alleviate some pedestrian concerns in conjunction with widening the path.

Marine Parade

Whilst the above recommended improvements satisfies recreational users' demands as well as providing some assistance to other users such as pedestrians, surveys have indicated that Marine Parade itself is well used by cyclists. The current cross-section of two lanes of traffic, parked vehicles on either side of the road and a narrow central median prevents cycle lanes from being installed. Whilst some additional width for cyclists could be achieved by removing the central median – except where pedestrian refuges are provided - a radical approach would be to remove on-street parking from one side of Marine Parade. This would allow the reallocation of road space to provide a car parking lane and adjacent cycle lane (meeting minimum width standards) on one side of the road, two lanes of traffic and a cycle lane in the other direction (to the one adjacent to the parking). In addition, this reallocation of road space creates an opportunity to provide 2m wide pedestrian refuges – thereby increasing pedestrian access and safety across Marine Parade.

It is recommended that the impact on parking caused by a reduction in available spaces be investigated as part of a viability study investigating the potential to more adequately cater for cycling along Marine Parade. Available parking capacity within the Town of Cottesloe in the vicinity of the beach will need to be examined on a seasonal basis. This approach ties in with Objective 1 of the Town of Cottesloe Future Plan 2006-2010.

East-West Movements

Two routes with sealed shoulders and edge lines currently provide east-west access between the beach and Curtin Avenue.

Current guidelines prevent roads less than 7.4m from being marked with cycle pavement symbols. In addition, Austroads indicates that road widths need to be a minimum of 8m in order to allow edge lines to be installed to act as a cycle lane on roads with a speed

[2] Austroads. Minimising Pedestrian-Cyclist Conflict on Paths. Information Note No. 5 – Infrastructure Design. January 2006.
[3] Austroads. Minimising Pedestrian-Cyclist Conflict on Paths. Information Note No. 7 - Information. January 2006.

environment of less than 60km/h. The majority of roads within the residential area of Cottesloe are currently 7.2-7.3m wide, thereby limiting the installation of pavement markings without extensive road widening. In addition, many local roads within Cottesloe have relatively low traffic flows permitting many cyclists to mix with on-road traffic.

The draft Traffic Management Study for Cottesloe recommends providing a 3m wide path along the south side of Forrest Street between Marine Parade and Broome Street. It is noted that to be effective, the shared path would need to extend beyond Broome Street to Curtin Avenue and utilise the 2.5m wide pedestrian refuges on Curtin Avenue to connect to the path leading to Cottesloe Station.

Such a measure will require the existing 1.8m to 2m footpath on the south side of Forrest Street to be widened otherwise conflicts between pedestrians and cyclists will occur, particularly in the busier summer months. Austroads suggests that 3m is required where two-way cyclists and pedestrians are common and 2.5m with minimal pedestrians. Given the potential attraction of this route to novice and young cyclists as the only off-road facility linking the station and shopping centre with the beach, it is recommended that a 3m wide shared path be considered along the length of Forrest Avenue. It is noted that no driveways exist along the southern side of Forrest Street between Marine Parade and Broome Street, whilst between Broome Street and Curtin Avenue houses are well set back from the road with a wide verge area allowing goof inter-visibility between driveways and the path.

Summary

A summary of the proposed additional cycle routes for the local network are shown in Figure 6.5.

Location	Description
PSP along railway reserve	Extend PSP with grade separated intersections and connections at Eric Street, Jarrad Street, Salvado Street and MacArthur Street.
Eric Street Railway Bridge	New, wider bridge catering for cyclists
Raia Roberts Dual Use Path	Widen path to 3m along entire length and investigate conflict points with a view to additional localised widening. Provide additional signage as appropriate.
Marine Parade	Investigate potential to reallocate road space by removing a lane of parking and providing for pedestrians and cyclists.
Forrest Street	Widen existing footpath and provide a 3m wide shared path along southern side of road between Curtin Avenue and Marine Parade to provide an off-road east-west path.

Table 6.2 Proposed 'Major' Improvements/Studies

Figure 6.5 Proposed Major Improvements

6.4 Cycle Parking

As discussed in Section 6.1, cycle parking is already provided at a range of locations around the town. As such, additional requirements are limited to specific needs as listed below and shown in Figure 6.6:

- Grant Street Station
- Within the Jarrad Street car park

In addition to the above, consideration should be given to the provision of a lockable cage enclosing cycle stands at the west side of the Pearse Street footbridge, administered and managed by Cottesloe Primary School to allow school children to park their bikes with additional security.

It is noted that cycle lockers at the stations are not used and it is recommended that cyclists preferring to use U-stands are consulted before further lockers are introduced.

6.5 Cycle Network

Subject to the introduction of the proposed measures, an integrated cycle network should be developed as shown in Figure 6.7. The network consists of routes with various cycling facilities provided (including sealed shoulders with edge lines) plus a short section of a 'cycle-friendly' on-road route along Broome Street between Napier Street and Bryan Way and provides an integrated local cycle network.

The section of cycle friendly road along Broome Street is approximately 180m long with summer time traffic flows of 3,300vpd. A raised traffic island at the Bryan Way path entrance will assist with maintaining low speeds along this section of the road between the Napier Street roundabout and Bryan Way - thus making a mixed traffic environment acceptable over this short length.

Alternative treatments would be to widen the road or provide an off road facility on the western side of Broome Avenue adjacent to the tennis courts (where no driveways exist) given that the existing road width prevents on-road markings from being applied.

Figure 6.6 Proposed Additional Cycle Parking

Figure 6.7 Proposed Cycle Network

7 Non-Infrastructure/Complimentary Initiatives

As identified in the residents' survey and the subsequent workshop, the vision and objectives set for cycling in Cottesloe cannot be met solely by the provision of cycling infrastructure. As such, the Town of Cottesloe has a responsibility to work with others, for example the TravelSmart Officer to help encourage cycling, promote education campaigns and undertake appropriate forms of enforcement.

7.1 Encouragement/Promotion

The encouragement and promotion of cycling should seek to appeal to all members of the community with non-cyclists encouraged to consider cycling for leisure/recreational trips as well as everyday trips; whilst existing leisure/recreational cyclists should be encouraged to cycle more often for everyday trips – such as commuting and accessing local facilities.

Programs aimed at encouraging cycling need to promote the benefits and enjoyment of cycling, and provide a positive image of cycling. Encouragement and promotion programmes that the Council, in conjunction with other organisations may wish to consider include:

- Marketing the benefits of cycling in conjunction with the TravelSmart officer
- Working with neighbouring local authorities, schools, the Department for Education and Training, DPI and TravelSmart to determine school children travel patterns and concerns with travelling to school on foot and by bike and to better help target infrastructure initiatives across a wider area aimed at school children as part of the TravelSmart to School programme.
- Work with DPI to ensure cycle maps are up to date.
- Ensure the Bike Plan is made available on-line and easily found on the Council website along with cycle route plans and links to relevant parts of the DPI and Main Roads WA website.
- Include articles on cycling in the Cottesloe Council News
- Make cycle routes maps widely available through the Council, the library and other appropriate locations such as café's.
- Support development that encourages and/or caters for cycling within its plan and design.
- Develop cycle parking standards/end of trip facility requirements that need to be adhered for planning consent.
- Support and help coordinate in conjunction with the TravelSmart officer local community events aimed at promoting cycling during the 'Cycle Instead' week – for instance encouraging courtesy on shared use paths (e.g. City of Stirling Courtesy Zone event), and Rider Reviver events for those passing through Cottesloe.

- Provide information on the safe shared use of paths through signs and brochures

7.2 Education/Cycle Skills

Education of users in respect to cycle skills and traffic rules and responsibilities is necessary in order to provide safer and courteous behaviour. At present, no cycle training is currently being organised or undertaken by schools/Department of Education and Training.

Accordingly, Council should seek to work with TravelSmart, DPI and the Department of Education and Training to try and identify suitable children's riding skills courses and potential funding mechanism to deliver the training.

In addition, Council should also seek to work with TravelSmart, DPI, the Australian Bicycle Council and the Department of Environment, Water, Heritage and the Arts with respect to adult cycle proficiency training. As part of this, the Amy Gillet Foundation, the Bicycle Federation of Australia and Cycling Australia have recently come together to create AusCycle to provide train-the-trainer and accreditation systems for adult cycle training through a commercially viable cycling training sector.

Given the concerns raised in the residents' survey about behaviour on shared use paths, such as the Raia Roberts Dual Use Path, education on appropriate behaviour and responsibilities may need to be undertaken. Conflicts for instance may sometimes occur because users are not aware of what is expected of them, or conflicts made worse by a lack of tolerance of other shared path users. Information on users' rights provided through adequate signage, leaflets and events (see 7.1) may improve behaviour and interactions.

7.3 Enforcement

The Police Service enforces the Road Traffic Act and Codes that relate to cycling. The Police also help educate cyclists and motorists about the rights and responsibilities of all road users[4].

Whilst enforcement by police patrols may enhance user security – for instance on shared paths, such measures are often expensive to undertake unless dedicated bike mounted patrols exist. Education and encouragement of desired behaviours may often be a more appropriate way of addressing conflicts between cyclists and other users.

[4] DPI website – Cycling for All Ages. http://www.dpi.wa.gov.au/cycling/1973.asp

8 Implementation Programme and Costs

8.1 Prioritisation

Prioritisation of the cycle network implementation can be undertaken in a number of ways:

- Existing usage numbers – based on existing peak time counts, but doesn't take account of suppressed demand.
- Crash records – activities aimed at high risk sites/routes, but technique suffers from under-reporting.
- Blockage removal – blockages may be a hazardous location or missing link in the network. Priority given to projects that would potentially achieve the greatest increase in cycle numbers/benefits.
- Demonstrable achievement – low cost and/or simple improvements given priority, but such facilities may not always be the most needed.
- Level of Service (LoS) – priority given to those routes with the worst LoS.

A combination of the above methods including cost has been used to develop the prioritisation process taking priority and funding into account.

8.2 Indicative Costs

Indicative Costs to undertake the various elements of the identified actions are set out in Table 8.1. The costs include all elements of work that Council may be responsible for including:

- Surveys and monitoring
- Further studies and investigations
- Changes to local planning documents
- Infrastructure Provision
- Cycle parking
- Education/Encouragement
- Enforcement

Costs associated with implementing some of the identified works/actions may be incorporated within Council's existing maintenance and capital works programme. For others, primary funding may come through supporting/leading organisations working in partnership with Council. Some elements, such as the widening of the Raia Roberts dual use path or improvements following cycle audits, will be unknown until further investigation work has been undertaken as part of the study/investigation element of cycle plan

implementation. Where possible however, in such circumstances, estimated costs have been provided.

Table 8.1 Cycle Plan Indicative Implementation Costs (5 years)

Work Element	Action	Total Cost ($)
Surveys and Monitoring	Biennial Residents Cycle Survey ($6000 per survey – assumes 2 over a 5 year period)	12,000
	6 monthly cycle counts	7,500
	Cycle parking survey at train stations/schools	2,500
Studies/ Investigations	School travel pattern assessment studies	DPI
	Undertake cycle audits ($1,500 per audit – assumes 5 specialist audits)	7,500
	Investigation of widening sections of Raia Roberts Dual Use Path	15,000
	Investigation into lockage cycle parking cage at Pearse St footbridge	Staff time
	Assess on-street parking demand: Broome St, Eric St and Grant St	5,000
	Study into the impact of the removal of parking along Marine Parade	20,000
Plan changes	Amend Town Planning Scheme – cycle parking/trip end facilities	Staff time
Infrastructure provision	Kathleen Street/ North Street improvements	5,200
	North Street/ West Coast Highway improvements	9,000
	Curtin Avenue/ Claremont Crescent improvements	5,500
	Curtin Avenue/ Grant Street crossing improvements	9,300
	Forrest Street/Marine Parade path connect improvement	1,200
	Eric Street – Blister islands: bypass plus signing/marking (3 sites)	16,200
	Marine Parade – Blister islands: bypass plus signing/marking	22,400
	Broome St/Eric St/Grant St – cycle symbol pavement markings	5,000
	Jarrad Street/Stirling Highway improvements	15,100
	Cottesloe Station parking access road resurfacing	DPI/PTA
	Stirling Highway/ Irvine Street improvement	5,200
	Pearse Street footbridge wheeling ramp	Shared cost
	Bryan Way widening	25,100
	Provide PSP along railway reserve	Main Roads
	Reconstruct Eric Street Railway Bridge	Main Roads
	Widen Raia Roberts dual use path	132,000
	Reallocate road space/car parking along Marine Parade	19,100
	Forrest Street off-road dual use path	63,000
Cycle parking	Grant Street Railway Station	DPI/PTA
	Jarrad Street car park (3 U rails at $400 per bike rail)	1,200
Promotion	Supporting and assisting TravelSmart officer	Staff time
Education	Supporting and assisting TravelSmart officer	Staff time
Enforcement	Supporting and coordinating activities with the Police	Staff time
TOTAL IDENTIFIED COSTS		404,000

Where no costs are shown, these are deemed to be the prime responsibility of other partners, although some inputs from the Town may be required e.g. school travel patterns and any subsequent infrastructure improvements.

8.3 Implementation Programme

Table 8.3 overleaf sets out the complete list of identified actions along with the timing and cost of the proposed measures over the next five years. Maintenance activities have not been included within the implementation plan as such.

Table 8.2 Implementation Programme

No.	Activity	Priority	Lead Agency	Implementation Costs ($)				
				2009/10	2010/11	2011/12	2012/13	2013/14
A	***Surveys and Monitoring***							
A1	Biennial Residents Cycle Survey	Medium	Cottesloe	0	0	6,000	0	6,000
A2	6 monthly cycle counts	Medium	Cottesloe	1,500	1,500	1,500	1,500	1,500
A3	Cycle parking survey at train stations/schools	Medium	Cottesloe	500	500	500	500	500
B	***Studies/Investigations***							
B1	School travel pattern assessment studies	High	TravelSmart	-	-	-	-	-
B2	Undertake cycle audits	High	Cottesloe	1,500	1,500	1,500	1,500	1,500
B3	Investigation of widening sections of Raia Roberts Dual Use Path and design (see also D13)	High	Cottesloe	15,000	0	0	0	0
B4	Investigation into lockage cycle parking cage at Pearse Street footbridge	Medium	Cottesloe	-	-	-	-	-
B5	Assessment of on-street parking demand: Broome Street, Eric Street and Grant Street (see D6)	High	Cottesloe	5,000	0	0	0	0
B6	Study into the impact of the removal of parking on one side of Marine Parade and design	High	Cottesloe	0	20,000	0	0	0
C	***Plan Changes***							
C1	Amendments to Town Planning Scheme – cycle parking/trip end facilities	High	Cottesloe	-	-	-	-	-
D	***Infrastructure Provision***							
D1	Kathleen Street/North Street path improvement	Medium	Cottesloe	5,200	0	0	0	0
D2	West Coast Highway/North Street/Curtin Avenue/Claremont Crescent/Grant Street traffic signal crossing improvements	Medium	Cottesloe/ Main Roads	0	0	0	23,800	0
D3	Forrest Street/Marine Parade	Medium	Cottesloe	1,200	0	0	0	0
D4	Eric Street blister island treatments	Medium	Cottesloe	0	0	16,200	0	0
D5	Marine Parade blister island treatments	High	Cottesloe	0	22,400	0	0	0

D6	Broome Street, Eric Street and Grant Street pavement cycle symbol markings (seeB5)	Medium	Cottesloe	5,000	0	0	0	0
D7	Jarrad Street/Stirling Highway//Irvine Street route improvement	Medium	Cottesloe	0	0	20,300	0	0
D8	Station access road – Forrest Street to Jarrad Street	Medium	DPI/PTA	-	-	-	-	-
D9	Pearse Street footbridge	Low	Cottesloe	-	-	-	-	-
D10	Bryan Way	Low	Cottesloe	0	0	0	0	25,100
D11	Provide PSP along railway reserve	High	Main Roads	-	-	-	-	-
D12	Reconstruct Eric Street Railway Bridge	High	Main Roads	-	-	-	-	-
D13	Widen Raia Roberts dual use path (see also B3)	High	Cottesloe	26,400	26,400	26,400	26,400	26,400
D14	Forrest Street off-road dual use path	Medium	Cottesloe	0	19,100	0	0	0
E	***Cycle Parking***							
E1	Grant Street Railway Station	High	DPI/PTA	-	-	-	-	-
E2	Jarrad Street car park	Medium	Cottesloe	1,200	0	0	0	0
F	***Promotion***							
F1	Supporting and assisting TravelSmart officer	High	TravelSmart	-	-	-	-	-
G	***Education***							
G1	Supporting and assisting TravelSmart officer	High	TravelSmart	-	-	-	-	-
H	***Enforcement***							
H1	Supporting and coordinating activities with Police	High	Police	-	-	-	-	-
TOTAL				62,500	91,400	80,300	85,200	92,500

Note: Annual DPI Cycling Grant funds to be sought to cover at least 50% of improvements.

9 Performance Monitoring

Section 5 of this Bike Plan sets out a number of targets for each of the identified objectives. In order to demonstrate performance against these targets, monitoring of a number of key issues is required. In particular, the following features need to be monitored on a regular basis as set out below:

- Physical works programme:
  - Monthly monitoring of planned general or reactive maintenance.
  - Annual review of progress on implementing the infrastructure works programme.
- Cycle use:
  - Census data assessment of number/percentage of people cycling to work (2011).
  - Biennial survey of residents' cycle usage (2010, 2012).
  - 6 monthly cycle counts at selected sites on cycle routes to establish seasonal variations.
  - Annual assessment of cycles parked at train stations.
  - Assessment in 2009 and 2014 of cycles parked at schools.
- Cycle crashes/safety:
  - Annual review of Police reported cycle crashes (5 year trend).
  - Biennial survey of residents rating of level of safety for cycling.
- Satisfaction levels:
  - Bi-annual survey of residents rating of cycle facilities.
- Cycle facilities:
  - Audit each infrastructure project for compliance with design standards.
- Cycle network implementation:
  - Annual review of implemented schemes to ensure fitness for purpose of facilities.
  - Ongoing assessment of development applications with respect to cycling impact.
  - Ongoing assessment of traffic/transport projects from a cycling perspective.

Appendix A Wider Cycle Network

Western Suburbs - Walk and Cycle Information

Legend

- Perth Bicycle Network (PBN) - Continuous Signed Routes
- NW22 PBN Route Number
- PSP Principal Shared Path
- Local Bicycle Friendly Street
- Shared Path
- Bicycle Lanes or Sealed Shoulders Either Side
- Train Station
- Railway, Crossing
- Major Road, Traffic Light
- Minor Road, Proposed Road
- Road Bridges, Footbridges and Underpasses
- Local Government Authority Boundary
- Major Destination
- Shopping Area
- Parks and Recreation
- Ovals, Prepared Ground
- Bushland
- Industrial Area
- Supermarket
- Tertiary Education
- Dog Exercise Area
- Bicycle Locker
- Bicycle Shop
- Bicycle Parking
- Skate Park
- Lookout Point
- Barbeque
- Delicatessen
- Drinking Fountain
- Post Office
- Post Box
- Public Toilet
- Accessible Toilet
- Telephone
- Sporting Facility
- Hospital
- Place of Worship
- Picnic Area
- Playground
- Pol Police
- CHC Child Health Centre
- K Kindergarten

Effective: 21 June 2005
DPI 9002900A

Numerous Lookout Points along Cottesloe Foreshore

0 metres 500
1:17,000

To Scarborough

To Perth

To Fremantle

Town of Cambridge
City of Nedlands
SWANBOURNE
Town of Claremont
CLAREMONT
COTTESLOE
Town of Cottesloe
PEPPERMINT GROVE
Shire of Peppermint Grove
MOSMAN PARK
Town of Mosman Park
City of Fremantle
NORTH FREMANTLE
City of Melville
BICTON

INDIAN OCEAN
Swan River
Freshwater Bay
Mosman Bay
Blackwall Reach
Pt Roe
Pt Walter
Chidley Pt
Keanes Pt
Pt Resolution
Mudurup Rocks
Rocky Bay
Preston Pt
Leighton Beach

Loch Street
Showgrounds
Claremont
Swanbourne
Grant Street
Cottesloe
Victoria Street
Mosman Park
North Fremantle

WEST COAST HWY
ROCHDALE RD
ALFRED RD
BROCKWAY RD
ASHTON AVE
LOCH ST
GUGERI ST
STIRLING HWY
CURTIN AVE
QUEENSLEA DR
BAY VIEW TCE
VICTORIA AVE
ERIC ST
SHENTON AVE
LEURA AVE
JOHN ST
MARMION AVE

Appendix B Base Cycling Data

The 2006 Census data indicates that 6% of occupied private dwellings in Cottesloe did not own a motor vehicle (excluding motorbikes and scooters). The data also shows that 79 Cottesloe residents rode their bicycle to work as their only mode of transport. A further five residents noted that they rode their bicycle and caught the train to work. Accordingly, of the 2743 employed people over 15 years of age (that responded, went to work, and worked away from home on the day of the census), 3.1% used their cycle as a means of travelling to/from work.

Compared to 2001 census data, both the number and percentage of people living in Cottesloe travelling to work by bicycle (as their sole mode of transport) more than doubled in 2006.

Base data setting out surveyed cycle numbers, cycle parking and road safety is set out below.

B1 Cycle Flows and Usage

Cycle counts have been undertaken along Marine Parade, Eric Street and Curtin Street to establish some base cycling data. The locations were used based on local knowledge and in some cases, the provision of cycle facilities. It is noted that seasonal counts should be recorded as part of the future survey programme.

Table B1 Marine Parade (south of Eric Street)

Date	Time	Cycle Numbers by Location		
		Dual Use Path	Road	Eastern footpath
Sat 24/5/08	9am-10am	2	13	2
	10am-11am[1]	2	4	0
	11am-12noon	6	5	0
Wed 28/5/08	7am-8am	11	21	0
	8am-9am	12	15	0
	12noon-1pm	1	2	0
	1pm-2pm	0	5	0
	3pm-4pm	3	2	0
	4pm-5pm	1	4	0

Note1: Heavy rain occurred between 10am-11am

Table B2 Eric Street

Date	Time	Cycle Numbers by Location		
		East of Marine Pde	West of Curtin St (eastbound)	East of Curtin St (westbound)
Sat 24/5/08	9am-10am	5	-	-
	10am-11am[1]	3	-	-
	11am-12noon	2	-	-
Thu 29/5/08	7am-8am	-	7	3
	8am-9am	-	5	1
	3pm-4pm	-	1	2
	4pm-5pm	-	1	1
	5pm-6pm	-	1	5

Table B3 Curtin Street

Date	Time	Cycle Numbers by Location	
		North of Eric Street (southbound)	South of Eric Street (northbound)
Thu 29/5/08	7am-8am	8	15
	8am-9am	3	10
	3pm-4pm	4	1
	4pm-5pm	9	7
	5pm-6pm	17	1

As part of the above surveys, a tally of cyclists without cycle helmets was kept. The following compliance levels were observed.

Table B4 Cycle Helmet Wearing Compliance

Location	Date	% Compliance
Marine Parade	Sat 24/5/08	85%
	Wed 28/5/08	90%

B2 Road Safety

Crash data reported to the Police involving cyclists for the five year period between 2002 and 2006 in Cottesloe has been examined. The number of reported accidents involving cyclists is relatively low with cycle crashes making up 2% of all reported accidents.

In total, there were 25 accidents reported involving cyclists:

- 7 involved hospitalisations (12% of all reported vehicle crashes involving hospitalisation)
- 10 required medical treatment (6% of all reported vehicle crashes involving medical treatment)
- 8 involved minor property damage (4% of all reported vehicle crashes involving minor property damage).

Given the vulnerable nature of cyclists with little protection in the event of a collision, more than two out of every three cyclists that are involved in a reported cycle accident will require some form of medical attention.

Table B5 shows the number of crashes by severity and year.

Table B5 Reported Cycle Crash Severity by Year

Year	Severity			Total
	Hospital	Medical	PDO - Minor	
2002	3	0	1	4
2003	1	2	3	6
2004	3	3	0	6
2005	0	0	1	1
2006	0	5	3	8
Total	7	10	8	25

A review of the reported crashes provides the following key comments:

- 12 crashes were reported as occurring at intersections and 13 at mid-block locations.
  - Of the 12 intersection crashes, 5 were at T-junctions (give way, stop or no control), 5 at crossroads (give way, stop or no control) and 2 at roundabouts.
  - Of the 13 mid-block crashes, 4 occurred in the vicinity of a driveway. Three crashes occurred on the footpath rather than on the road itself.
- Approximately three quarters (18 crashes) of the reported cycle crashes occurred in the five month period between December and April when temperatures are usually warmer and when there is less rain. Crash numbers may be a result of cycle numbers and hence, exposure.
- Reported cycle crashes typically occurred during the weekday (23 out of 25 cycle crashes) with 10 occurring during the morning peak period (6am-9am), 4 during the lunchtime period (11am-12am) and 6 in the afternoon/evening period (3pm-6pm).
- Figure B1 shows the locations of the reported cycle related crashes.
  - 10 cycle crashes occurred along Marine Parade, 8 of which were at mid-block locations. Two crashes involved hitting pedestrians (1 on the path, 1 on the road), and three involved a cyclist 'losing control' of their bike.
  - Three cycle crashes occurred at the Eric Street/Railway Street intersection (prior to it being converted to a roundabout); two cycle crashes occurred at the Eric Street/Broome Street roundabout.

It should be noted that cycle accidents reported to the police do not fully reflect the scale and size of the cyclist safety problem. Research analysing police and hospital data relating to cycle crashes in Western Australia between 1987 and 1996 indicated that the number of cyclists recorded as being hospitalised in the police data was only 23% of the actual number admitted to hospital. Most cycle crashes (81%) in the hospital admission data occurred as a result of a non-motor vehicle collision with 51% of cycle crashes occurring

on-road and 46% off road (3% unknown). Differences between the police and hospital data included that cyclists in the hospital data were considerably younger than the Police data.

In addition to the above, further research[5] from hospital admissions in Western Australia has confirmed the under-representation of children aged 0-16 years in the Police reported accident data compared to hospital admission data. Whilst child cyclists are recorded in the hospital data as forming 60-65% of 'road accident' statistics for the 0-16 years age range, a large proportion of these accidents actually do not involve another vehicle, and do not occur on the road/footpath/cycle path. The research notes that a large proportion of injured children in the hospital statistics should more correctly be classified as 'falls'.

Notwithstanding the under-reporting problems, the Police reported crash data indicates that safety problems exist along Marine Parade, both mid-block and intersection locations need improvement for cycle safety, and campaigns aimed at improving cycle safety should be focussed during the summer period.

B3 Cycle Parking

Cycle lockers and stands at the train stations were surveyed during the weekday to capture commuter cyclists (Monday 19 May 2008, 2.30pm-2.45pm, weather conditions: fine).

Table B6 Cycle Parking Provision and Usage – Train Stations

Location	Type	Capacity	Occupancy	% Occupancy
Grant Street Station	No formal facilities	-	6	-
Cottesloe Station	Lockers Stands*	8 20	0 3	0 15%
Mosman Park Station	Lockers Stands*	2 0?	0 -	0 -
Victoria Street Station	Lockers Stands*	4 8	0 5	0 63%

Note: A stand is assumed to be able to hold two cycles – therefore capacity is twice the number of stands provided.

It was noted that not one of the cycle lockers provided was in use during the survey, with cyclists preferring to chain their bicycle up to traditional cycle U-stands. A survey of existing users may be able to help determine the reason for this prior to the installation of any further cycle lockers.

[5] Elliot B. Review of Good Practice: Children and Road Safety Education. Prepared for WA Department of Transport – Office of Road Safety. November 2000.

Figure B1 Reported Cycle Crash Locations

B4 Level of Service

Main Roads WA have prepared a set of guidelines to help measure the level of service that paths and roads in Western Australia provide for cycling. The Guidelines notes that in the context of cycling, Level of Service (LoS) means:

> *An overall measure of cycling conditions on a road or path. This is linked directly to factors that affect rider comfort and safety including traffic volumes, mix of passing vehicles, operating space and pavement condition. Another way to look at cycling level of service is 'bicycle friendliness'.*

The assessment procedure considers a number of traffic–related, design, intersection and pavement factors in order to help determine the LoS. Using these factors, the guideline utilises a LoS scale with different grades describing riding conditions:

LoS A - Ideal cycling conditions

LoS B - Reasonable cycling conditions

LoS C - Basic cycling conditions

LoS D - Poor cycling conditions

LoS E - Unsuitable for cycling

Figure B2 shows the calculated LoS for those routes identified as having specific cycle facilities provided (shoulders with edge lines, and shared paths) or being cycle friendly (see Section 6) in Cottesloe[6] as denoted on DPI plans.

B5 Town of Cottesloe Residents Satisfaction Survey 2005

The 2005 Services Survey sought to establish resident's satisfaction with a number of service areas delivered by the Town of Cottesloe. Within the Engineering Services section, specific questions relating to dual use paths and cycle lanes were asked.

Of the respondents, over 60% claimed that they used cycle facilities either one or more times every two weeks. Just under 20% noted that they never used the cycle lanes or dual use paths.

Approximately 70% of respondents were satisfied or very satisfied with the provision of dual use paths with 50% indicating good or satisfactory value for money (over 40% 'did not know' or express an opinion on whether the dual use paths were value for money). Overall however, respondents were unwilling to pay for further improvements to dual use paths. While the vast majority of respondents wished to maintain the current level of service for dual use paths, 16% wished to see an increase in such the level of services – one of the services that the largest percentage of respondents wished to see improved.

[6] Due to limited operational data on some routes (e.g. vehicle speeds, % trucks, measured lighting levels), a number of factors that impact on the assessment grade have been estimated.

Figure B2 Cycle Route Level of Service

B6 Town of Cottesloe – Traffic Management Study

The Town of Cottesloe Traffic Study that is currently being undertaken identified a number of locations of concern with respect to cycling. The following list sets out those locations and issues identified during the October 2007 community workshop with respect to cycling:

- Marine Parade: 'pedestrian issues and cyclist safety, especially roundabouts'.
- Railway Street: 'make provision for cyclists, reduce speeds; sign posted'.
- Napoleon Street: 'make way for cyclists'.

In particular, cyclist/pedestrian conflicts on the dual use path along Marine Parade around North Cottesloe were noted as a particular concern.

The draft Traffic Management Study prepared in May 2008 acknowledges the existing facilities provided for cyclists based on the DPI maps as well as the need to extend the Principal Share Path south of Grant Street Station; problems with crossing Curtin Avenue; and the narrow width of the Eric Street railway bridge.

The draft report recommends the introduction and installation of a large number of traffic islands, low rise speed plateaus and roundabouts to help address vehicle speed issues throughout the Town. In addition, a shared path is proposed along the length of Forrest Street between Marine Parade and Broome Street to denote its purpose as a major connection between Cottesloe Rail Station and the beach as well as the widening of Raia Roberts Dual Use Path to 3m along its length.

Appendix C Consultation

The inclusion of community consultation within the development of the Bike Plan has been highly important in order to better understand local cycling issues – both from the perspective of cyclists as well as non-cyclists. Consultation provides an opportunity to access cyclists' extensive local knowledge and experiences as well as to identify local attitudes.

Consultation took the form of a local residents' survey with a questionnaire distributed to all of the households (approx 3,000 occupied private dwellings according to the 2006 census) in the Town of Cottesloe in June 2008. In addition, a Community Workshop/Presentation was held in which the responses from the residents' survey was fed back and additional information sought and obtained from attendees.

C1 Residents' Survey

The Residents' Survey consisted of 12 questions and a map on which respondents could routes commonly used by cyclists within the households. A copy of the Residents' Survey can be found overleaf.

In total, 264 survey responses were returned before the closing data with a further 36 received afterwards. Although received too late for inclusion in the detailed analysis, the late responses were reviewed and checked for any additional information not identified in the accepted responses. The survey asked about household members and obtained data on a total of 618 people (7,256 people living in Cottesloe - 2006 census).

Age and Gender Split

The proportion of household respondents by age is shown in Figure D1. Compared to Cottesloe as a whole, the breakdown of household respondents' ages is quite similar - although the survey had a slight under-representation of 21-30 years olds (13% of Cottesloe as a whole) and over-representation of 61-70 year olds (10% of population of Cottesloe).

The gender split for the household respondents was 54/46 male/female respectively; this compares with Cottesloe as a whole which as a 49/51 male/female split.

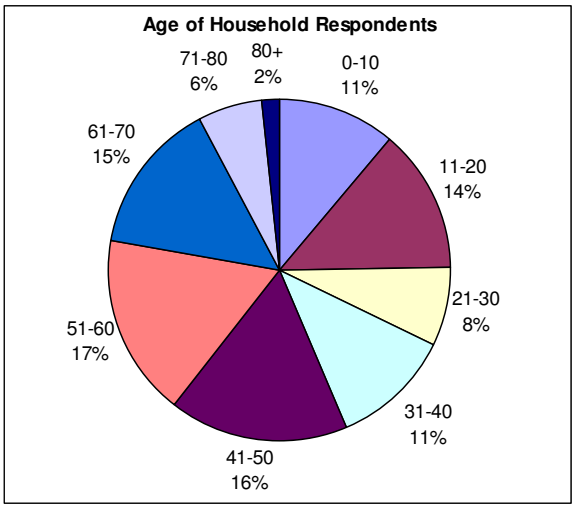

Figure C1

Bike Ownership, Frequency of Cycling and Purpose

Eighty seven percent of 'household respondents' indicated that they owned a bicycle.

Fourteen percent indicated that they never rode their bicycle. Very few (1%) claimed to own a bike but to never ride it. 6% reported that they owned a bike but only rode annually.

Delivery Address:
PO Box 174
OSBORNE PARK WA 6917

No stamp required
if posted in Australia

OPUS CONSULTANTS
Reply Paid 174
OSBORNE PARK WA 6917

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Town of Cottesloe

Town of Cottesloe

Local Bike Plan – Resident Survey

The Town of Cottesloe is currently in the process of updating its Bike Plan that it previously shared with the City of Nedlands and Town of Claremont.

The bike plan aims to result in a safer and more accessible environment for cycling in Cottesloe.

By completing and returning this survey form, you will be making a contribution towards improved cycling conditions in the Town.

Completed questionnaires should be returned to the above address by 1 July 2008.

Please fold along edge lines with reply paid label out, and seal with sticky tape along the edges.

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1. ***For each person in your household, please complete the following:***

	AGE	MALE/FEMALE (M/F)	OWNS A BIKE (Yes/No)	TYPICALLY HOW OFTEN CYCLES (Daily/Weekly/Monthly/Annually/Never)	PURPOSE (Work/shop/leisure/other)
i.	.....	.....	.....	.....	.....
ii.	.....	.....	.....	.....	.....
iii.	.....	.....	.....	.....	.....
iv.	.....	.....	.....	.....	.....
v.	.....	.....	.....	.....	.....

2. ***A map of the roads around the town has been provided (see reverse). Please draw in coloured pen the most common routes of travel used by cyclists in your household.***
3. ***If people in your house commute to work by bike, do they:***
   CYCLE TO THE TRAIN STATION AND CATCH THE TRAIN? ☐
   CYCLE DIRECTLY TO WORK? ☐ APPROX DISTANCE/TIME .....
4. ***If people in your household don't ride to work (either part of the way or all of the way), what are the main reasons?***
   .....

5. ***Do you support the encouragement of cycling by the council?*** YES ☐ NO ☐

6. ***What suggestions do you have to help encourage more cycling in and around the Town of Cottesloe?***
   .....
   .....

7. ***Do you think that the Town needs additional cycling paths/facilities?*** YES ☐ NO ☐
   IF YES, WHERE?.....

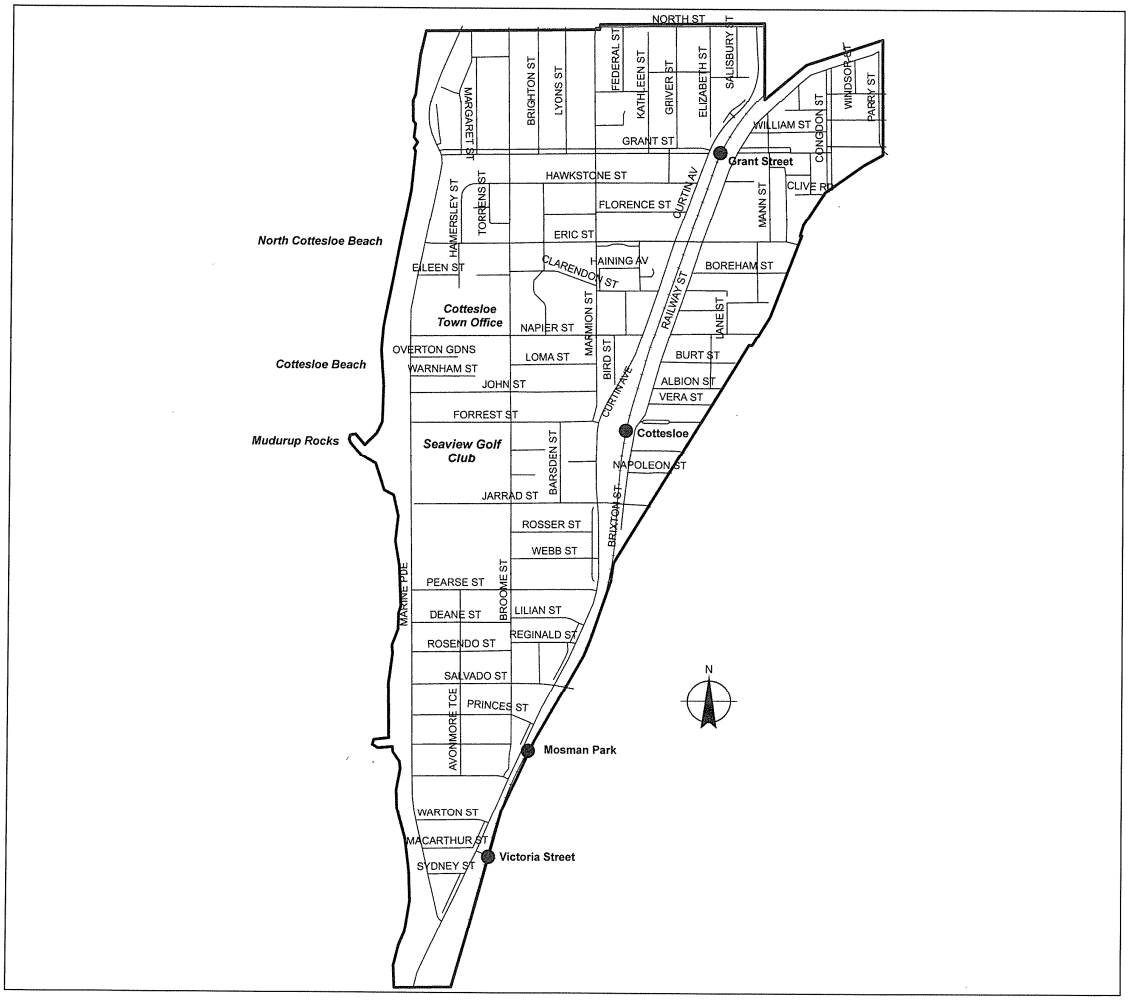
8. ***Are additional secure cycling parking facilities needed in and around the town & train stations?***
   YES ☐ NO ☐ IF YES, WHERE?.....

9. ***How would you rate the level of existing cycling facilities in the Town of Cottesloe?***
   POOR ☐ FAIR ☐ GOOD ☐ EXCELLENT ☐

10. ***How would you rate the level of safety for cycling in the Town of Cottesloe?***
    POOR ☐ FAIR ☐ GOOD ☐ EXCELLENT ☐

11. ***If you have any suggestions for cycle facility improvements, please describe them below, or mark them on the map.***
    .....
    .....

12. ***If you are aware of any specific problems relating to cycling in the town, please describe them below, or mark them on the map.***
    .....
    .....



Whilst 26% of all respondents claimed to ride on a daily basis, this figure increases to 32% for young children aged up to 10 years of age.

Leisure was noted as the main purpose for cycling by local residents with commuting to work and shopping having an equal proportion of responses. It should be noted that the survey allowed for multiple answers to this question with a number of respondents noting that they cycle to work also indicating 'leisure' as a reason for cycling. 'Other' types of cycling noted on the survey included 'fitness' and 'exercise' as well as travelling to school or tertiary education.

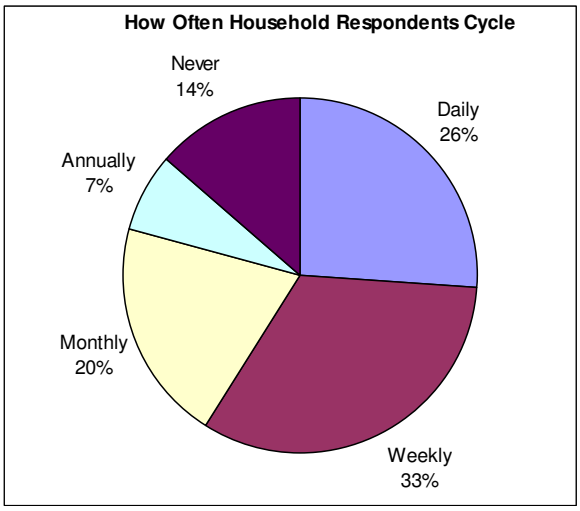


Figure C2

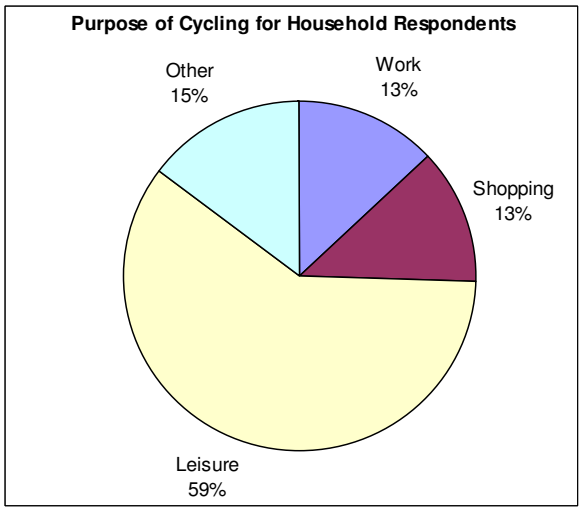


Figure C3

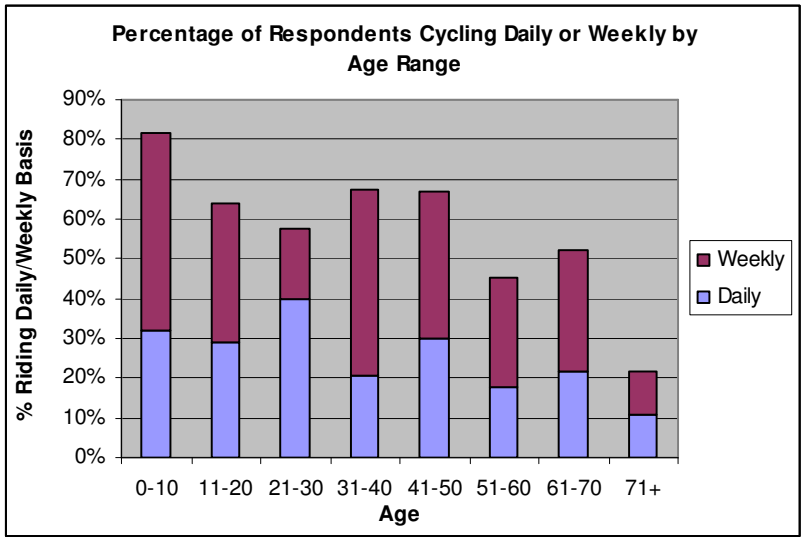


Figure C4

Commuting to Work

For those that commute to work by bike and provided comment on their trip, 81% indicated that they cycled directly to work rather than cycling to a station and catching the train into work. As part of this, a number of comments were made that respondents sometimes caught the train rather than cycle directly to work depending upon the weather.

In terms of distances ridden to work, 79% of trips denoted were up to 40 minutes in length with the majority (56% of trips) being between a 20 and 40 minute travel journey. For those that gave journey distance information, 80% of trips were between 6 and 15km in length reflecting the distance of Cottesloe from the Perth city centre.

Reasons why non-commuting cyclists didn't use their bike to get to work, in rank order (from most frequent to least frequent response), included:

- distance;
- safety; and
- people needing their vehicle for work.

Other reasons given why people didn't cycle to work included lack of time and a lack of facilities at work to enable them to store their bike and change/shower.

Existing Usage/Facilities

The survey found that nearly all the roads and paths in Cottesloe were used by cyclists as part of their cycling trips, reinforcing the fact that 'every street is a cycling street' regardless of some of the perceived dangers.

Twenty two percent of respondents indicated that they believed existing cycle facilities provided in the Town of Cottesloe were 'poor'. Twenty seven percent thought that existing cycle facilities were either 'good' or 'excellent'. This compares with 31% who rated the level of safety for cycling to be 'poor' and 20% as either 'good' or 'excellent'.

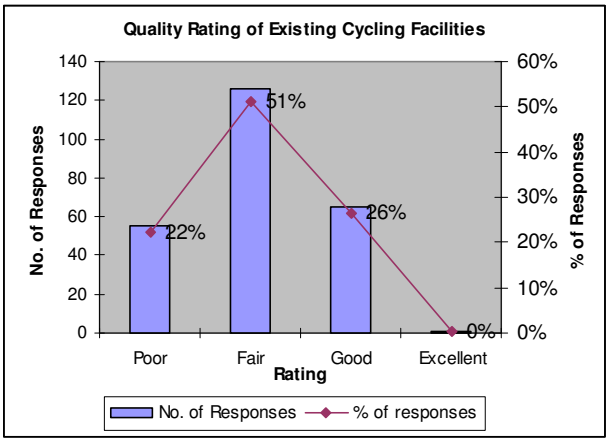


Figure C5

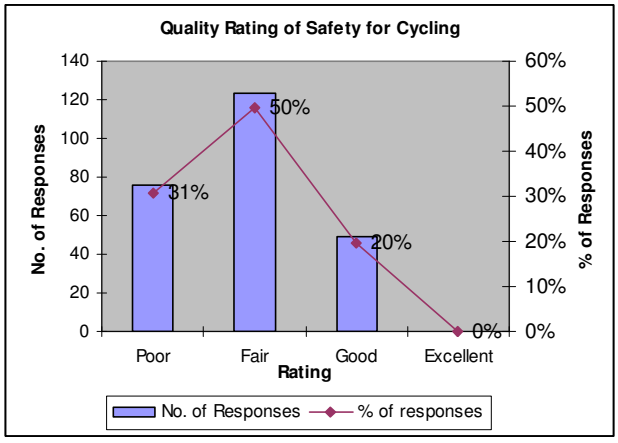


Figure C6

Encouragement of Cycling

As indicated in Figure C7, nearly all respondents to the questionnaire indicated that they supported the encouragement of cycling by the Council.

A range of measures were suggested that were considered to help encourage more cycling; these included:

- More cycle paths and/or cycle lanes in general including connecting gaps in the network (31% of all responses).
- Separate and/or wider shared paths (17%).
- Extend the PSP 'south' from Grant Street Station (14%).
- Promotional events and driver/cycle education including encouragement of respect for each mode type (12%).

Other identified suggestions included additional and more secure cycle parking, cycle path/lane maintenance.

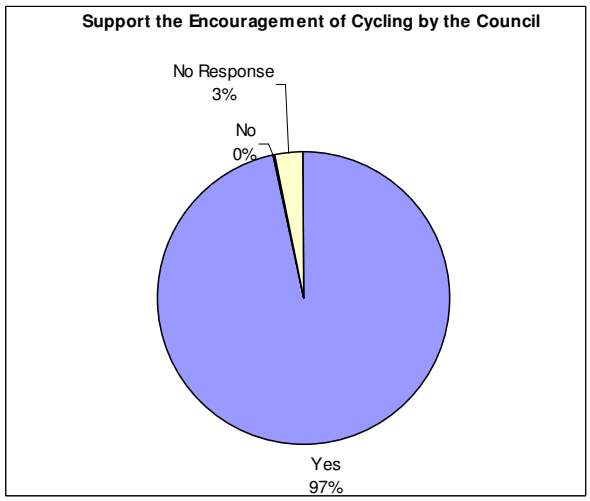


Figure C7

Additional Facilities

Of those providing a response, 91% of people indicated that they believed that additional cycle paths and facilities were required. 73% of all responses considered more secure cycle parking facilities are required.

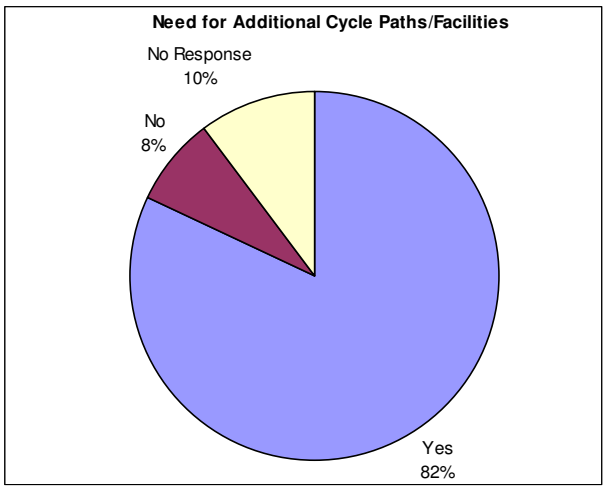


Figure C8

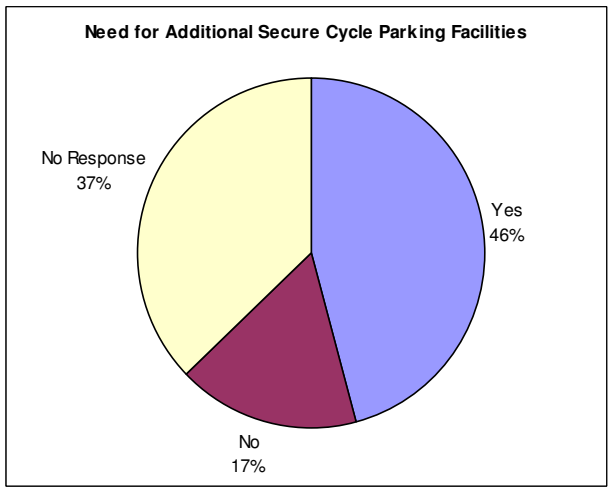


Figure C9

Suggestions for locations of additional facilities typically focussed on north-south routes through the town rather than east-west routes, and included:

- Extending the PSP south from Grant Street Station (25% of all responses)
- Everywhere/no specific location identified (14%)
- Marine Parade and along Raia Roberts Dual Use Path (12%)
- Curtin Avenue (9%)

- North Street (5%)
- Eric Street (5%)
- Broome Street (5%)

Suggested locations for secure cycle parking facilities included:

- Train Stations (41% of all responses) – of which Grant Street Station in particular was identified the most as requiring cycle parking.
- Napoleon Street/shopping centre (26%)
- Beach (18%)

Specific Problems and Potential Improvements

Although half of the respondents did not provide any response to the question identifying specific problems relating to cycling in Cottesloe, of those that did respond, the following issues were raised:

- Marine Parade and Raia Roberts Dual Use Path (26% of responses) – with concerns about the width of the shared path, traffic calming along the road reducing lane widths and the speed of cyclists on the shared path.
- East-west movements across the railway and Curtin Avenue (10%) - for instance along Eric Street
- Cyclist behaviour (10%) – with respect to cyclists travelling in large packs and travelling at high speeds.
- Curtin Avenue (8%) – with concerns about travelling along its length such as lane widths and the mix of traffic.
- Driver behaviour (6%)
- Roundabouts (6%) – with the Eric Street/Railway Street and Marine Parade/Curtin Avenue intersections highlighted.
- Width of shared paths in general and the mix of pedestrians and cyclists (6%)
- Lack of an off-road facility south of Grant Street Station (6%)
- Maintenance of paths/side of the road (4%) – road surface (potholes, glass), vegetation and lighting.

As with the question about specific problems, approximately half of the respondents made no suggestion about possible improvements. However, in total, one hundred and sixty three cycle facility improvements were suggested, including:

- Extending the PSP south from Grant Street Station (16% of responses)

- Improving Marine Parade/Raia Roberts Dual Use Path (14%) – either by widening and/or separating the shared path, providing warnings/slowing cyclists down and on-road improvements.
- Providing cycle paths and lanes in general (9%)
- Providing facilities along Curtin Avenue (7%)
- Improved facilities to cross Curtin Avenue (5%)

C2 Workshop/Presentation

A presentation setting out the results from the residents' survey was held on 11 July 2008. Eleven participants attended the workshop with the resulting discussion emphasising the need for the Bike Plan to consider the following key elements:

- Routes to schools inside and outside of Cottesloe.
- Incorporation of DPI Hazard Report forms identifying problem locations and consideration of non-Police report hospitalisation data.
- Poorly designed traffic calming measures that can make the situation worse for cyclists.
- Maintenance issues - sand/debris at the side of the road caused by the construction of new developments needs to be prevented from building up; and drainage grate design/alignment including drop-offs between the grate and road surface.
- A desire to extend the high quality PSP south of Grant Street Station. This facility would greatly assist north-south movements (cyclists would no longer need to use Curtin Avenue) subject to adequate connections onto the PSP being provided.
- The need to plan for the future and increasing cycle demand/usage.
- Crossing Stirling Highway at Jarrad Street/Irvine Street was commented as being dangerous for novice/basic cyclists.
- There was a desire for all cyclists to be permitted to ride on the footpath, not just children under 12. Street furniture such as bus shelters/stops also blocked some footpaths presenting a hazard to both pedestrians and cyclists.
- Road safety audits were noted as not necessarily always picking up the needs of cyclists.
- The existing pedestrian footbridge at Pearse Street provided an east-west connection across the railway and Curtin Avenue to allow access to Cottesloe Primary School. However, no 'wheeling' ramp to allow bikes to be pushed across has been provided. In addition, the lack of secure cycle parking on the western side of the footbridge prevents/discourages children from leaving their bikes locked up on that side of the footbridge.

- Necessary to encourage cycling to and from school and help provide training to children (and adults new to cycling).
- Greater education was required with respect to the use of shared facilities rather than some unnecessary widening – which would typically be at the expense of the foreshore area.
- Some cycle lockers weren't large enough to accommodate larger bicycles.

Appendix D Types of Cyclists and their Requirements

Satisfying the needs of cyclists' and providing quality routes has to take account of cyclists' skills and trip purpose. Accordingly, the Bike Plan has considered a range of cyclist trip types[7] with respect to the cycle route network and the associated infrastructure that seeks to meet their specific requirements:

Neighbourhood Cycling (including trips to local schools, shops, riding near home)

The provision of facilities for neighbourhood cycling is primarily based around the needs of novices on local streets around their homes, shops and schools. However, given the existing layout of Cottesloe, destinations such as the town centre or schools in adjacent local authorities require major roads to be crossed or heavily trafficked roads to be cycled along. Neighbourhood cyclists typically prefer:

- The highest degree of safety.
- Comfort and personal security.
- Low traffic speeds and volumes.
- Good separation from traffic when busy roads (such as Curtin Avenue) are to be cycled along.
- Minimum gradients.
- Facilities for crossing busy roads (such as Curtin Avenue).
- Secure cycle parking at destinations.
- Good lighting for evening trips.

Commuter Cycling (including trips to work, tertiary education, high schools and any longer distance utility trip)

Commuter cycling trips are usually along arterial roads or other primary cycle routes such as the Principal Shared Path (PSP) to the north of Grant Street Station running adjacent to the railway. Many commuter cyclists choose a fast, direct route at the expense of higher perceived safety, comfort or attractive routes. As far as practical however, it is necessary to provide cycle facilities for cyclists with a basic competence, rather than simply cater for experienced cyclists, given the need to try and attract newer users with less confidence.

Commuter cyclists typically prefer:

- High quality road surfaces.
- Direct and coherent routes.

[7] LTSA. Cycle Network and Route Planning Guide. New Zealand. 2004.

- Minimal delays.
- Facilities that give them their own space
- Intersections that minimise conflicts with other traffic
- Good lighting for evening trips.
- Secure parking at or very close to their destination.
- Trip end facilities for changing clothes, lockers and showers at work.

Recreational Cycling (including leisure trips and exercise)

Recreational cyclists ride mainly for leisure and seek to enjoy the experience, being usually less constrained by time. Their skills can vary widely. The shared path along Marine Parade is an attractive recreational cycling route. Recreational cyclists typically prefer:

- Comfort
- Good surfaces.
- Minimal gradients
- High degree of safety and personal security.
- Attractive, pleasant and interesting routes.
- Parking facilities if they dismount to use facilities or visit attractions along the route.

Sports Adults

Adult sports cyclists tend to travel at higher speeds, being confident and willing to claim their own road space. They typically travel over long distances using major roads and may travel in groups of two or more and may seek to ride two abreast. Such cyclists typically prefer:

- High quality road surfaces.
- Minimal delays.
- Physically challenging routes and demanding terrain.
- Generous road widths.

Appendix E Perth Bicycle Network – Planned Routes

Perth Bicycle Network - Works Plans (Stage 1)

Town of Cottesloe

Transport 901-13-17 July 2000

Appendix F Benefits of Cycling[8]

Individual Benefits

Individuals derive benefits from cycling in many ways:

- Convenient door to door access without parking hassles in busy urban areas,
- Improved mental and physical health and fitness – evidence suggests that the health benefits of cycling outweigh the associated risks;
- Increased independence, particularly for school children;
- Access to a vehicle which is much cheaper to own and operate than a car; and
- Increased opportunities to observe, experience and enjoy the scenery and environment.

Transportation System Benefits

Cycling has many advantages for our transportation system:

- Cycling can reduce the number of trips made by cars, thereby reducing congestion and freeing up road space for essential motor vehicle trips;
- Cycling can reduce costs for construction and maintenance of roads;
- Cycling can reduce costs for provision of parking facilities;
- Cycles can move large numbers of people relatively quickly and conveniently over moderate distances; and
- Cycling can be combined with public transport, making both cycling and public transport more accessible.

Economic Benefits

Cycling contributes to the local economy in a number of ways. In particular, recreational cycling attracts both Cottesloe residents and others from elsewhere in Perth and Western Australia with money to spend on food, refreshments, entertainment and accommodation. Bicycle and clothing retailers are also likely to benefit from the presence of cyclists.

Tourists have even more to offer, typically spending more per person per day than local people. Cycle tourists (who often travel only as far in a day as motorists do in an hour) are simply around longer and have more time to spend their money in our community.

[8] Adapted from Model Cycling Strategy – Environment Canterbury. May 2003

Community Benefits

The presence of cyclists within an area can contribute to community well-being in a number of ways:

- Greater social interaction amongst neighbours is likely to occur;
- Personal security and crime prevention are enhanced with more “eyes on the street”;
- Provision of improved facilities for cyclists can also improve the amenities available to local residents for walking (such as paths through parks);
- Provision of cycling facilities can reduce traffic speeds and volumes in urban areas, improving the quality of life in our town;
- Cycling can reduce the amount of space we devote to roads and car parking thereby enabling the enhancement of the urban amenity; and
- Provision of cycling facilities promotes civic pride.

Environmental Benefits

Cycling improves the quality of our natural environment and minimises environmental impacts:

- Cycles are the most energy efficient land transport vehicles;
- Up to 100 times less material is needed to manufacture a cycle than a car;
- Cycles have a minuscule effect on our fossil fuels reserves;
- Cycles emit no air pollution, noise pollution or greenhouse gases; and

Promoting cycling as a means of travel helps to achieve Australia’s Kyoto Protocol obligations as well as helping meet targets for Greenhouse gas emissions set down in the Cities for Climate Protection programme.

Appendix G Cycling Engineering Standards

Bike Ahead: Bicycle Strategy for the 21st Century notes that 'every street is a bicycle street.' As indicated in the residents' survey, cyclists travel on practically every road in the Town. Consequently, an important aspect of this Bike Plan is that the basic road network (as well as shared paths) is safe for cycling. Improvements to the road network to be 'cycle friendly' will facilitate cycling – this can be achieved through a range of engineering measures, including reducing vehicle speeds.

The main reference documents for cycling engineering standards, such as bicycle lane and path widths are set out in a range of documents:

- Austroads. Guide to Traffic Engineering Practice - Part 14: Bicycles.
- Main Roads WA. Policy for Cycling Infrastructure.
- Main Roads WA. Policy for the Installation of Bicycle Pavement Symbols on Carriageways.
- Main Roads WA. Technical Guideline – Bicycle Directional Signs.

On-road cycling facilities include:

- Exclusive bicycle lanes – signed and marked as such; cyclists must use if provided.
- Bicycle/car parking lanes – signed and marked as such. 'Car door open' type crashes are a risk if a gap between the parking bay and cycle lane doesn't exist.
- Contra-flow bicycle lanes[9]
- Sealed shoulders/edge lines – if intended as a cycle facility, widths should be the same as for exclusive bicycle lanes. Considered to be an 'advisory' treatment, cycle logo's can be used to highlight cycle routes (without the signs required to denote exclusive bicycle lanes).
- Wide kerbside lanes – as with sealed shoulders, cycle logo's can be used to highlight cycle routes (without the signs required to denote exclusive bicycle lanes).
- Advanced stop lines - at traffic signal controlled intersections
- Bus/bicycle lanes[7]

Local area traffic management treatments are often used to help reduce vehicle speeds and/or traffic volumes. However, when incorrectly designed and installed, these can often inadvertently impact negatively on the safety and convenience of cycling. Concerns raised as part of the residents' survey has already identified concerns relating to 'squeeze points' on the road network where motorists attempt to overtake cyclists are narrow points caused by traffic islands. Some measures aimed to address such cycle problems – such as cycle bypasses can experience maintenance problems.

[9] Not applicable at present in Cottesloe given the lack of one-way roads and bus lanes.

Roundabouts were also raised as an issue for cyclists in the residents' survey. Single lane roundabouts with adequate deflection aimed at reducing vehicle speeds on the approach to the intersection typically pose few problems for experienced cyclists; however, novice and child cyclists may find them difficult to manoeuvre around. Multi-lane roundabouts (not currently found in Cottesloe) are much more difficult to navigate and alternative measures to assist cyclists may be necessary.

Other elements for consideration on the road network include drainage grates and road surfaces – smooth and kept clear of debris.

Local roads without sealed shoulders and edge lines are permitted to have cycle pavement symbols installed where car parking is minimal and the minimum width of the traffic lane is 3.7m (i.e. a 7.4m wide two lane single carriageway road). Where sealed shoulders and edge lines exist with shoulder and traffic lanes meeting Austroads standards, cycle pavement symbols may be installed where car parking demand is minimal.

Off-road facilities include:

- shared paths – as provided along Marine Parade signed with both bicycle and pedestrian symbols.
- cycle only exclusive paths
- divided/separated paths.

It should be noted that only children under the age of 12 years can ride on a footpath.

Off-road paths need to be well maintained (as a separate exercise from that for the road network) and should be connected by smooth ramps. Appropriately designed bollards may need to be used to help discourage their use by unauthorised motor vehicles. As highlighted in the residents' survey, path widths should take account of likely usage with an acceptable range for recreational paths being between 3 metres and 4 metres. Principal shared paths are typically 3 metres wide.

Shared path rules include the need to keep left unless overtaking, riding in single file and giving way to pedestrians. Under the Road Traffic Code, it is an offence to put other path users at risk. Shared path courtesy suggests ringing a bike bell when approaching pedestrians or other cyclists from behind well in advance of reaching them. Guidance on the use of shared paths and sharing the road can be found on the Main Roads WA website and through the DPI website.

The December 2007 Review of the Perth Bicycle Network – Stage 3: Community and Stakeholder Consultation report for the DPI sets out the results of community consultation on cycle facilities in general and user preferences. The results indicated that almost 70% preferred to ride on cycle paths rather than on-road due to safety concerns. Notwithstanding this, workshop participants as part of the DPI review indicated a preference for cycle lanes on moderately busy roads and quiet local roads compared to shared paths or divided/separated paths or nothing at all. On busy roads, the majority of the participants preferred a divided/separate path or a bike lane. In terms of crossing a busy road, 73% of participants preferred access to an underpass, followed by an overpass and then controlled at-grade crossings. U-rails were the preferred form of cycle parking facility compared to bike lockers.