GREATER GEELONG
CYCLE STRATEGY - VOLUME 1

March 2008

WWW.GEELONGAUSTRALIA.COM.AU

CITY OF GREATER GEELONG

TABLE OF CONTENTS

1 Executive Summary 3
2 Introduction 5
2.1 Background 5
2.2 Aims and Objectives 5
2.3 Methodology 5
2.4 Home for Cycling and Wheeled Sports 6
2.5 Report Structure 6
3 Context 7
3.1 Characteristics of Geelong 7
3.2 Guiding Policy 8
3.3 Why Cycling? 11
3.4 Who Cycles? 13
3.5 Where does Cycling Occur? 14
3.6 International Cycling Trends 14
3.7 Australian Cycle Trends 14
3.8 Victorian Cycle Trends 16
3.9 Geelong Cycle Trends 17
3.10 Latent Demand 19
3.11 Existing Network 19
4 Issue Identification 21
4.1 Public Questionnaire 21
4.2 School Questionnaire 22
4.3 Saddle Surveys 23
4.4 Accident Analysis 23
4.5 Key Findings 24
5 Recommendations 27
5.1 The Vision 27
5.2 Key Strategies 28
5.2.1 Council Commitment 28
5.2.2 Central Geelong 29
5.2.3 Connecting the Network 30
5.2.4 New Developments 32
5.2.5 Promotion and Education 33
5.2.6 Facilities 34
6 Bicycle Works Program 37
6.1 Network Priorities 38
6.2 Maintenance Priorities 46
6.3 Facility Priorities 48
6.4 Coordination, Promotion and Education Priorities 51
7 Conclusion 59
8 Toolkit 60
9 Funding 74
10 Cycle Maps 76
11 Appendix B – A3 Cycle Maps 86
11.1 Greater Geelong Existing Cycle Routes 87
11.2 Greater Geelong Proposed Cycle Routes 88

List of Tables:

Table 1: Australian Motor Vehicle and Bicycle Sales Comparisons. 15
Table 2: Adult Participation in Cycling (% of Population). 16
Table 3: Average Weekday 24 Hour Cyclist Volumes on the Melbourne Metropolitan Off-Road Path Network.....17
Table 4: Common Destinations for Geelong Cyclists.....21
Table 5: Average Number of Children Cycling to Schools that Do and Do Not Encourage Cycling.....23
Table 6: Intersection Toolkit 61
Table 7: Network Toolkit.....65
Table 8: Signage Toolkit.....68
Table 9: Facilities Toolkit.....71
Table 10: Other Programs and Funding Sources. 75

List of Figures:

Figure 1: Geelong Major Suburbs (black) and Urban Growth Areas (green).....8
Figure 2: Participation in Cycling by Age.....15
Figure 3: City of Greater Geelong, Number and Direction of Cycle to Work Trips. 18
Figure 4: City of Greater Geelong, Existing Cycle Network. 20
Figure 5: Average School Roll and Average Number of Children Cycling to School in Geelong. 22
Figure 6: Motor Vehicle and Bicycle Accident Comparison. 24
Figure 7: Copenhagen Lane, Swanston Street, Melbourne City. 30
Figure 8: Possible Geelong Major off Road Cycle Trails Network. 31
Figure 9: Back of Kerb Bicycle lane. 32
Figure 10: Primary Cycle Signage on an Off Road Path Network. 35
Figure 11: Secondary Cycle Signage on an On Road Lane Network. 35
Figure 12: Cycle Parking, Geelong Waterfront.....36
Figure 13: Two Car Parks Converted to Store More Than 15 Bikes.....36

List of Cycle Maps (Section 10) – Existing and Proposed Cycling Routes:

Map 1: Greater Geelong
Map 2: North Geelong
Map 3: South Geelong
Map 4: Lara
Map 5: Leopold
Map 6: Clifton Springs - Drysdale
Map 7: Portalington
Map 8: St Leonards – Indented Heads
Map 9: Barwon Heads – Ocean Grove

1 Executive Summary

The City of Greater Geelong Cycle Strategy has been developed to provide Council with guidance on expanding Geelong's on and off road cycle network, improving bicycle facilities, enhancing cyclist education and delivering promotions that encourage people to cycle as a means of transport, recreation and sport.

Providing for cycling is about connecting key origins such as residential areas with key destinations such as employment, education and sport or recreation areas via quality bicycle lanes and paths. Cycle education and promotion aims to increase the safe use of these facilities.

Providing quality cycle facilities increases bicycle use and leads to many local, state and national benefits including; improving the health and wellbeing of communities, reducing congestion, improving the environment and contributing to the local economy. Cities that provide for cycling have better amenity, are cleaner and are more desirable places to live than cities built around the motor vehicle.

Providing for cycling in Geelong aligns with numerous national, state and local policies including the Geelong Transport Strategy, Municipal Strategic Statement and the Australian National Cycling Strategy.

The Greater Geelong Cycle Strategy has been developed through consultation with the Geelong community and various stakeholders. Consultation included a questionnaire which generated over 650 responses, a public workshop attended by over 70 people, surveys completed by over 50% of Geelong schools, two bike rides undertaken with Councillors, Council officers and cyclists and 15 one on one meetings with numerous agencies and departments.

It is clear that many Geelong residents are passionate about seeing quality cycle infrastructure and increased support for cycling in Geelong.

The cycle strategy recognises that Geelong is well placed to evolve as a cycling City. The strategy's vision for the future of Geelong includes increasing the network of on and off road paths and connecting these paths, creating a cycle friendly Central Geelong and cycle friendly schools and workplaces throughout the municipality as well as maximising opportunities to increase cycle tourism and attract cyclists to the City.

Key recommendations aimed at achieving this vision include:

- Staff Resources

The allocation of resources within Council to ensure the cycle strategy is implemented and to proactively seek sustainable transport outcomes and opportunities. The dedication of resources for sustainable transport, also supported by the Environment Management Strategy, is believed to be critical in delivering the cycle strategy, policy and project implementation and facilitating growth in cycling in Geelong.

- Connecting the Network

Quality cycle networks provide direct links for commuter cyclists and convenient loop circuits for recreational cyclists. The cycle strategy recognises that connecting the existing Geelong cycle network will greatly improve cycling in Geelong. Network recommendations are supported by recommendations to improve facilities such as signage and bicycle parking.

Through the strategy the City of Greater Geelong will look to develop in partnership with other agencies over 130km of on road bicycle lanes and off road cycle paths.

- Education and Promotion

A number of proposals within the implementation plan (page 38) recommend that Council works with Geelong schools both in terms of cycling education and sustainable transport initiatives that will see young people in the City grow up wanting to cycle more and doing so safely.

Promotion strategies aim to encourage more families to cycle together through events such as family fun rides and bike path discovery days.

In all the cycle strategy sets out 68 network priorities and 73 maintenance, facility and coordination/promotion/education strategies.

The cycle strategy is a guide for Council. Over time, priorities may change and new initiatives may become imperative to supporting cycling in Geelong. The cycle strategy sets out a vision for cycling in Geelong, this vision should help the City of Greater Geelong ensure that it develops into one of Australia's premier cycling cities.

2 Introduction

2.1 Background

The City of Greater Geelong Cycle Strategy has been developed to guide cycle related investment, improve safety for cyclists and ultimately support cycling across the entire municipality of Greater Geelong over the next 5 years.

The Cycle Strategy has been developed by the City of Greater Geelong and sustainable transport consultants PBAI Australia, through consultation with residents, the Geelong cycle community and many other stakeholders.

The City of Greater Geelong Cycle Strategy replaces the Barwon Region Strategic Bike Plan developed in 1996.

2.2 Aims and Objectives

The aim of the City of Greater Geelong Cycle Strategy is:

- To make the City of Greater Geelong more cycle friendly by developing a strategic plan for the creation/improvement of cycle networks for recreational, competition and commuter cyclists.

To achieve this aim, the objectives of the Cycle Strategy are:

To create a strategy that,

- Is designed through consultation with the public and key stakeholders;
- Works toward completing the cycle network and associated facilities;
- Improves safety for cyclists;
- Identifies opportunities for improving cycling coordination, education and promotion; and
- Provides feasible proposals and an implementation plan.

The Strategy is a “living document” subject to regular review and updates. This is critical to take into account both its implementation and changes occurring throughout the municipality.

2.3 Methodology

In developing a Strategy that achieves the aim and objectives outlined above, a five stage approach was undertaken.

The project stages were:

- Stage 1 – Project Initiation and Situation Analysis;
- Stage 2 – Initial Consultation;
- Stage 3 – Strategy Development: Network and Facilities;

- Stage 4 – Strategy Development: Policy and Guidelines; and
- Stage 5 – Cycle Strategy Document Development.

2.4 Home for Cycling and Wheeled Sports

A study into the development of a 'Home for Cycling and Wheeled Sports' within the City of Greater Geelong was carried out concurrently with the Cycle Strategy development.

A 'Home for Cycling' could include facilities such as; clubrooms, cycle tracks and courses, bike sheds, lockers, meeting rooms etc for use by the cycling groups and clubs.

The study examined various facility designs, possible locations and the benefits/costs of developing a 'Home for Cycling'.

The Home for Cycling and Wheeled Sports report is contained in Volume 2 of the Cycle Strategy and is titled 'Draft Feasibility Investigation for a Home of Cycling in Geelong, September 2007'.

2.5 Report Structure

This report is presented in the following sections:

- Introduction;
- Context – overview of cycling, national, state and local cycling trends;
- Issue identification – overview of issues identified during the cycle strategy planning process;
- Recommendations – vision and key proposals discussion;
- Bicycle works program;
- Toolkit – guidance to assist the implementation of proposals; and
- Conclusion.

The following background reports are available from the City of Greater Geelong:

- Background document summary;
- Accident analysis; and
- Consultation report.

3 Context

3.1 Characteristics of Geelong

Geelong is Victoria's second largest City with an estimated population of over 208,000 persons in 2006[1]. Geelong has a large land area of 1,245 Square kilometres with numerous towns and activity centres. The suburbs with the highest populations in Geelong are: Corio, Belmont, Grovedale, Highton, Ocean Grove, Newtown, Lara and Norlane.

Geelong's population is increasing. Areas of significant population growth during the lifetime of the cycle strategy are forecast to be: Armstrong Creek, Waurn Ponds, St Leonards – Indented Heads, Corio and North Geelong[2].

The Geelong labour force was estimated to be 100,000 in 2006. The five major employers in Geelong, based on employee numbers, are: Barwon Health, Department of Education, Ford Motor Company, Deakin University and the City of Greater Geelong. Collectively these employers manage over 10,000 people.

Connecting areas of existing population and future growth areas to areas of employment, recreation and services will be key to increasing cycling participation and achieving the benefits this brings.

Figure 1 shows the location of Geelong's major suburbs and growth areas, major suburbs are in black lettering and growth areas are in green lettering.

[1] City of Greater Geelong Population Forecast, www.id.com.au/geelong.
[2] City of Greater Geelong Population Forecast, www.id.com.au/geelong.

Figure 1: Geelong Major Suburbs (black) and Urban Growth Areas (green).

3.2 Guiding Policy

As part of the Cycle Strategy development a background document analysis was carried out. The following 26 local, state and national policy and project documents were reviewed:

- Barwon Regional Strategic Bicycle Plan, 1996;
- A Home for Cycling and Wheeled Sports in Geelong, proposal by the BRBC, 2006;
- Geelong Transport Strategy 2003;
- Notes from VicRoads Advancing Cycling in Western Victoria Workshop, 2006;
- City of Greater Geelong Road Safety Strategy, 2002;
- Walking More: Walking Safely, 2004;
- Bellarine Peninsula Recreation and Leisure Needs Study, 2005;
- Study of Open Space Networks, 2001;
- Greater Geelong Planning Scheme, 2006;

- Geelong Urban Growth Strategy, 1996;
- Barwon River Land Use and Open Space Corridor Plan, 2003;
- Grovedale / Waurn Ponds Open Space and Recreation Needs Study, 2002;
- Round the Head Trail Feasibility Study, 2006;
- G21 Regional Sport and Recreation Infrastructure Plan, 2006;
- East West Traffic Study, 2006;
- Armstrong Creek Urban Growth Plan (DRAFT), 2007;
- Jetty Road Growth Corridor Study (DRAFT), 2006;
- Geelong Major Events Strategy, 2005;
- Geelong Port Structure Plan , 2007;
- G21 Sports Development Plan, 2006;
- Revolutions for Women, 2006;
- Environment Management Strategy 2006 – 2011;
- Geelong Strategic Health Plan, 2006;
- Municipal Early Years Plan, 2006;
- 'Go for your life' Strategic plan, 2006 – 2010;
- Melbourne 2030, Department of Sustainability and Environment, 2002;
- The Australian National Cycling Strategy 2005 – 2010, Australian Bicycle Council; and
- Melbourne Transport Plan, DOI, 2004.

This background document review is available from the City of Greater Geelong.

Key findings from selected strategies are outlined below. The cycle strategy will be guided by these policies and will build on their recommendations by applying them to the local context.

Australian National Cycling Strategy, 2005 – 2010.

The priorities for the Australian National Cycling Strategy are:

- Improving coordination of activities relevant to increased cycling in the appropriate portfolios of 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 that support increased cycling;
- Enabling and encouraging safe cycling;
- Providing leadership and developing partnerships to support and promote cycling in Australia; and
- Developing the skills needed to undertake actions that will increase cycling.

Multiple benefits of cycling including; health, environment, transport and economics, more liveable cities and social equity are promoted as the outcomes sought under the

strategy. The report notes that cycling increases a public transport catchment area to 32 sq km (given a 10 minute cycle time), thereby multiplying a City's access and mobility, economics and social equity profiles.

Geelong Transport Strategy, 2003.

The Geelong Transport Strategy recognises the need to promote alternative forms of transport over private vehicle use, noting that 84% of work journeys in Geelong are by car and that this is not sustainable, environmentally friendly or healthy.

The strategy notes "whilst it will remain important to provide a reasonable level of private motor car accessibility, there is a need for a renewed focus on financing and advocating improved, integrated and accessible public transport, bicycle and pedestrian facilities and intermodal linkages".

Chapter 9, Bicycles, projects a vision of Geelong as a premier provincial cycling City in Australia. The vision states that:

Growth in cycling will reflect annual growth and cycling paths will be major tourist attractions. Bicycle paths will be constructed to national standards and an asset management system will ensure maintenance is done promptly. The bicycle will be used extensively for local trips to school, work, shops, and to other services and all commercial buildings have cycle facilities.

The strategy identifies 25 actions to achieve this vision, these include:

- Develop the bicycle network;
- Provide bicycle parking and storage facilities;
- Sign and mark bicycle routes;
- Maintain the bicycle path network;
- Remove bicycle hazards;
- Provide safer access to schools;
- Integrate bicycles with other modes of transport;
- Plan the provision of bicycle facilities in new development areas;
- Co-ordinate bicycle related programs;
- Monitor development and use of the bicycle network;
- Promote special events; and
- Continue publication of bicycle network maps.

Barwon Regional Strategic Bicycle Plan, 1996

The Barwon Regional Strategic Bicycle Plan (BRSBP) was commissioned following the establishment of the Barwon Regional Bicycle Council (BRBC) in 1994.

Two major issues identified in the planning for the BRSBP were;

- "Numerous sections of bike routes and trails through the region but these are mostly discontinuous…Need to connect the sections to develop a total network and add value to all the parts"

- "There is a need to incorporate bicycle facilities into the general infrastructure development program for the region to ensure that facilities are built as part of other works and more importantly that they are continuously maintained"

As part of consultation for the bike plan a survey was sent to 2,100 residents in the region. This survey found that at the time 4% of all journeys in the region were by bicycle. The share of distance travelled by bicycle was 3.6% with commuting being the main journey purpose (34%) and health the main journey reason (78%).

The strategy set out targets of achieving 8% of all journeys in the region by cycle in the year 2000 and 15% by the year 2005.

Urban Growth Strategies

The City of Greater Geelong has developed a range of Urban Growth Plans and township Structure Plans to accommodate future population growth. These plans identify direction and location of future growth areas and associated infrastructure including bicycle paths, necessary to ensure appropriate integration of new development and broader improvement and linkages in the pedestrian and cycle networks within and between urban areas.

Urban Growth Plans including Armstrong Creek and Jetty Road, and recent Structure Plans including Geelong Port and townships of Lara, Leopold, Ocean Grove, Barwon Heads, Indented Head, St Leonards and Portarlington identify a range of strategic cycle and pedestrian linkage improvements and connection opportunities as well as a range of design and traffic conflict management criteria associated with new development areas.

The Cycle Strategy does not seek to identify these network improvements as part of the current 5 year strategy as the detail in some cases is still broad in terms of location or the planning processes incomplete. Strategy recommendations relating to the design of new or upgraded facilities identify the need to ensure opportunities are maintained to expand linkages to new growth areas and to ensure future reviews of the Strategy respond to opportunities identified within Councils Structure Planning and Urban Growth Plan strategy work.

3.3 Why Cycling?

Increasing participation in cycling brings multiple benefits. These include:

Environmental Benefits

Environmental benefits of cycling are achieved through reduced motor vehicle use leading to reduced congestion and vehicle emissions, improved local air quality and reduced carbon dioxide (a significant greenhouse gas associated with global warming) in the atmosphere.

In Melbourne over 50% of car trips are less than 5km[3]. These trips cause significant pollution as engines do not properly warm up and fuel is not efficiently burnt. Many of these short trips could be made by bicycle and this simple change in routine would provide considerable air quality benefits.

[3] Bicycle Federation of Australia, Cycling Fact Sheet.

Motor vehicles also create rubbish both during their life cycle and afterwards. Cities that attract higher levels of cycling are cleaner, have less pollution, are more liveable and attract more residents than cities that are built around the motor vehicle.

Health Benefits

Health benefits are achieved by the individual who cycles, improving their personal health and reducing their chance of obesity.

In Victoria, obesity is the second highest ranked cause of premature death and disability, contributing 8% to the overall burden of disease[4]. Lack of physical activity is second only to tobacco as the most important health risk in Australia today[5].

30 minutes of moderate activity five times a week can help reduce the risk of cardiovascular diseases, some cancers and heart problems including strokes. Simply cycling to/from work or school each weekday would enable many people to achieve this health goal.

Health benefits are also achieved by the community that promotes cycling as more active residents place less burden on the health system. This burden far outweighs the impact of cycle related accidents[6].

Economic Benefits

Economic benefits are achieved through the savings individuals make by cycling instead of driving. Cycling costs typically equate to 1 per cent of the cost of driving a motor vehicle when purchase price, maintenance, depreciation and fuel costs are considered.

Economic benefits can also be measured through increased land values as a result of connecting people and activity centres, less health care costs as a result of healthier citizens and improved productivity at workplaces due to less sick days being taken.

Furthermore, economic benefits can be achieved through cycle tourism and extra trade for local shops, accommodation and restaurants/cafes/bars. A recent study by La Trobe University found that visitors to the Murray to Mountain Rail Trail in North East Victoria spent on average $258 dollars per day[7].

Social Benefits

Providing quality cycle networks creates more accessible neighbourhoods. In areas with low car ownership bicycles provide cheap alternative access to employment, healthcare and services.

Providing quality bicycle lanes and paths also increases social cohesion and benefits the wellbeing of the whole community. Cycle paths improve neighbourhood amenity

[4] Go for your Life strategic plan.
[5] Bicycle Federation of Australia, Cycling Fact Sheet.
[6] Australian Bicycle Council.
[7] Professor Sue Beeton: Regional Communities and Cycling: The Case of the Murray to the Mountains Rail Trail, Victoria, Australia.

and having more people cycling increases the safety of a neighbourhood by increasing passive surveillance. Safe communities are happier and healthier.

Children choosing active transport (cycling or walking to school), not only report an increase in physical activity, they also improve their road safety skills and get to know more people in their neighbourhood[8].

Cumulative Benefits

Each of the above factors positively reinforce one another i.e. a socially connected community is happier and generally healthier. The true benefit achieved by a community that encourages cycling and provides for cyclists is not any of the above in isolation but instead a combination of them all.

3.4 Who Cycles?

There are a number of different types of bike users which must be considered when planning a network that caters for all. These are[9]:

- Primary School Children: Skills not fully developed, little knowledge of road rules, generally ride with an adult off road or on quiet streets. Can ride on the footpath;
- Secondary School Children: Skills and confidence more developed. Ride on the road choosing most direct route over facility provision;
- Recreational Cyclists: Vary greatly in age, skill and experience. Generally prefer off road paths and quiet local streets. Require on road connections to off road paths and stop off facilities on route;
- Commuter Cyclists: Generally more experienced and prefer the direct road network. Able to handle busy traffic conditions. Require space and smooth even surfaces;
- Utility Cyclists: Ride for various purposes including shopping, visiting, and travelling to community facilities. Prefer less stress routes and require appropriate end of trip facilities;
- Touring Cyclists: Travel solo and in groups on long distance journeys often with a lot of equipment. Require signage providing distance and direction to popular destinations;
- Sporting Cyclists: Travel long distances for training, often in groups and riding two abreast. Routes often include challenging terrain in rural/outer urban areas. Primary requirements are smooth even surfaces and adequate space; and
- Off Road Cyclists: BMX and Mountain Bike users that generally ride off road. Increasingly BMX riders ride on skateboard facilities and require connections to these facilities. Mountain Bike riders use formal and informal generally downhill facilities.

[8] VicHealth, Active Transport Fact Sheet.
[9] Adapted from; Austroads Guide for Traffic Engineering Part 14 Bicycles.

Creating an interlinked network of on road lanes and off road paths with quality and well located facilities is fundamental to catering for all types of cyclist.

3.5 Where does Cycling Occur?

Existing roads provide the greatest opportunity for developing an extensive cycle network as they usually provide the most direct access to destinations and can be retrofitted to incorporate bicycle lanes.

However, Geelong has an extensive network of off-road shared paths, where users are completely separated from road traffic (but must share with pedestrians). These paths are greatly valued in Geelong for their recreational benefits.

In creating a complete network, off road paths and on road lanes must connect with each other and key origins and destinations.

On local streets, where traffic volumes and vehicle speeds are low, it is usually not necessary to provide special cycle facilities. On arterial and collector roads, it is necessary to provide adequate space for cyclists to share the road.

School children (under 12 years) are legally allowed to cycle on the footpath, and adults may accompany them.

3.6 International Cycling Trends

Cycling is currently experiencing somewhat of a resurgence internationally. This is likely to be driven by higher global oil prices and awareness of climate change and the impact of motor vehicles.

Copenhagen is a well known example of this resurgence in cycling. In the 1970s Copenhagen had an all time low in cycling numbers. Through sustained efforts of politicians, planners and traffic engineers Copenhagen is now a bicycle city. 32% of people cycle to work in Copenhagen and over half of these people say they do so because it is fast and easy[10].

In London the number of cyclists within the City has risen by 83 per cent since 2000[11]. The catalyst for this growth has been increased government focus on sustainable transport and a carrot/stick approach to providing for cyclists whilst enforcing user pays policies on motorists. London is now targeting a 200% increase in cycling by 2020.

3.7 Australian Cycle Trends

In a changing global environment cycling is increasingly being seen as a cheap and accessible form of transportation, recreation and sport.

Rising fuel prices have been linked to growth in bicycle sales nationwide, sales that have now surpassed motor vehicle sales for seven consecutive years. Table 1 illustrates the growth in bicycle sales and compares this with motor vehicle sales since the year 2000.

[10] Daily Journal of Commerce, www.i-sustain.com/learningCenter/Publications
[11] Media Release: London's Bike Boom Continues.

Table 1: Australian Motor Vehicle and Bicycle Sales Comparisons.

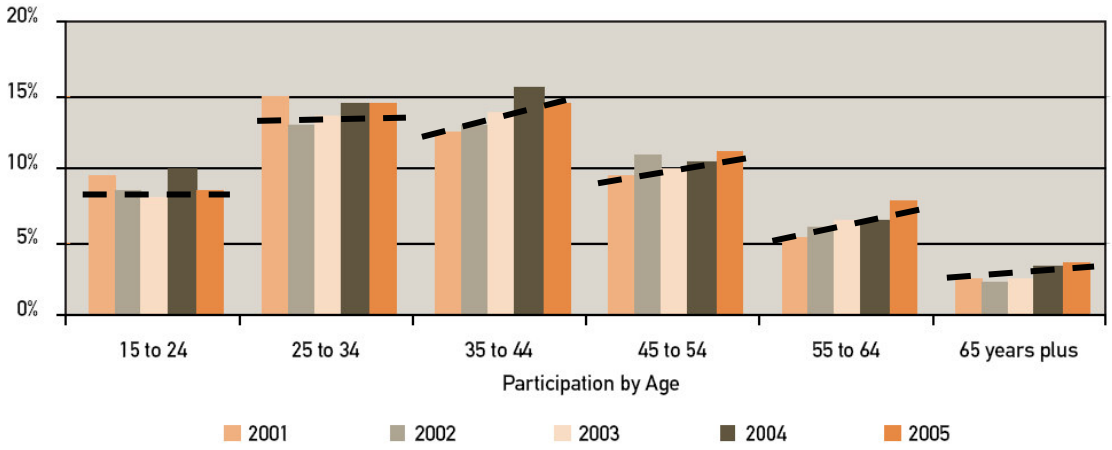
Year	Motor vehicles *	Bicycles **	Bikes' lead
2000	787,100	926,924	+ 17%
2001	772,681	774,938	+0.3 %
2002	824,309	1,109,736	+ 34 %
2003	909,811	1,003,844	+ 10 %
2004	955,229	1,247,991	+ 31 %
2005	988,269	1,168,601	+ 18 %
2006	962,521	1,273,781***	+ 32 %
** VFACTS figures. ** Australian Customs figures. *** End-of-year estimate.*			

Source: Australian Cycling Promotion Fund, Media Release, Bicycles Extend Sales Lead on Cars.

Often it is assumed that the growth in bicycle sales represents only a rise in children cycling. However, the Cycling Promotion Fund notes that for every four bikes sold to children or young people in Australia there are seven bikes sold to adults[12].

Figure 2, from the 3.8% (ERASS), clearly shows that cycling participation is greatest in the 25 to 44 year age groups. Interestingly, the largest increase in cycle participation over the five year period has been within the age groups over 35 years.

Figure 2: Participation in Cycling by Age.



Source: Australian Sports Commission, 2005 Participation in Exercise, Recreation and Sport Survey.

The ERASS data also identifies cycling as the 4th highest ranked paticipation activity in Australia behind; walking, aerobics and swimming. According to the ERASS data, cycling achieved a 14.5% increase in participation between 2001 and 2005.

It is difficult to establish which type of cyclist has become more prevalent over recent years as a lot of available information is not current. At the time of the 2001 census, only 0.9 percent of Australians cycled to work[13], however the largest growth in cycle

[12] Cycling Promotion Fund, Fact Sheet: Bicycle Sales in Australia
[13] Department of Sustainability and Environment, 2003, Melbourne in Fact 2001

sales has occurred from 2002 onwards. It is generally perceived that recreational cyclists are the fastest growing type of cyclist. Convincing this type of rider to cycle to work is a challenge that would bring substantial benefits to individuals and communities.

3.8 Victorian Cycle Trends

Participation in cycling in Victoria was, in 2005, the highest of the mainland states. Table 2 shows levels of participation in cycling for each of these states over a five year period.

Table 2: Adult Participation in Cycling (% of Population).

	Victoria	New South Wales	Queensland	Western Australia	South Australia
2001	12.1%	7.9%	8.4%	10.7%	8.5%
2002	9.6%	8.3%	8.5%	12.1%	8.9%
2003	10.3%	7.7%	9.3%	11%	9.7%
2004	11.6%	9.1%	9.6%	13.8%	9%
2005	11.5%	8.9%	9.9%	10.7%	10.4%

Source: Australian Sports Commission, 2005 Participation in Exercise, Recreation and Sport Survey.

Victoria has achieved steady growth in cycling participation since 2002, closely vying with Western Australia for the highest participation rate of the five states. Although it is positive that Victoria is leading participation it is important to note that 11.5% of the population is still a relatively low percentage. Geelong, as Victoria's second largest City, can play a major role in increasing this proportion.

In Melbourne, VicRoads has installed 17 permanent inductive loop counters on the off-road path network. These counters count bicycle volumes 24 hours per day, every day of the year. All trails surveyed showed an increase in usage for the average 24 hour weekday volume. The largest increase was close to on average an extra 400 people using the Capital City Trail in Footscray each day, a 29% increase in use.

Table *3* compares the results from these counts in February 2006 with those from February 2007.

Table 3: Average Weekday 24 Hour Cyclist Volumes on the Melbourne Metropolitan Off-Road Path Network.

Bike Path Name	Average 24 Hour Weekday Volume		% Increase
	Feb 2006	Feb 2007	
Capital City Trail Footscray	1,379	1,775	29%
St. Georges Road	879	1,128	28%
Yarra North Bank @ Morrell Bridge	2,245	2,865	28%
Capital City Trail Bowen Cres	747	923	24%
Upfield Railway	589	726	23%
Main Yarra Trail - Gardiners Ck Bridge	368	448	22%
Canning St. - Princess St.	1,670	2,016	21%
Bay Trail	1,207	1,405	16%
Gardiners Creek Trail	1,858	2,137	15%
Ann Trail No.1	239	261	9%
Tram 109 Trail	772	831	8%
Koonung Trail	530	570	8%
Yarra South Bank @ Punt Road	1,333	1,406	5%
Totals	**13,815**	**16,490**	**19%**

Source: VicRoads.

It is a recommendation of the cycle strategy that Geelong install similar counters on off road paths to gain comparable data and evidence of cycle trends.

There has also been an increase in on road cycling in Melbourne Bicycle Victoria statistics reveal a 36% growth in cycling in June 2007 compared with the same time last year.

All indications are that cyclist numbers are increasing in Victoria. This is likely driven by rising fuel prices, increased awareness of the health benefits of cycling and improvements in cycling facilities such as paths and lanes.

3.9 Geelong Cycle Trends

The 2001 census revealed that in Geelong 1.1% of the population selected ‘cycle’ as their main mode of transportation to work. However, it is suspected that significantly more cyclists now cycle to work than did so in 2001. The growth in cycle sales and growth in cycling participation identified in the ERASS, discussed in the previous section, support this assumption.

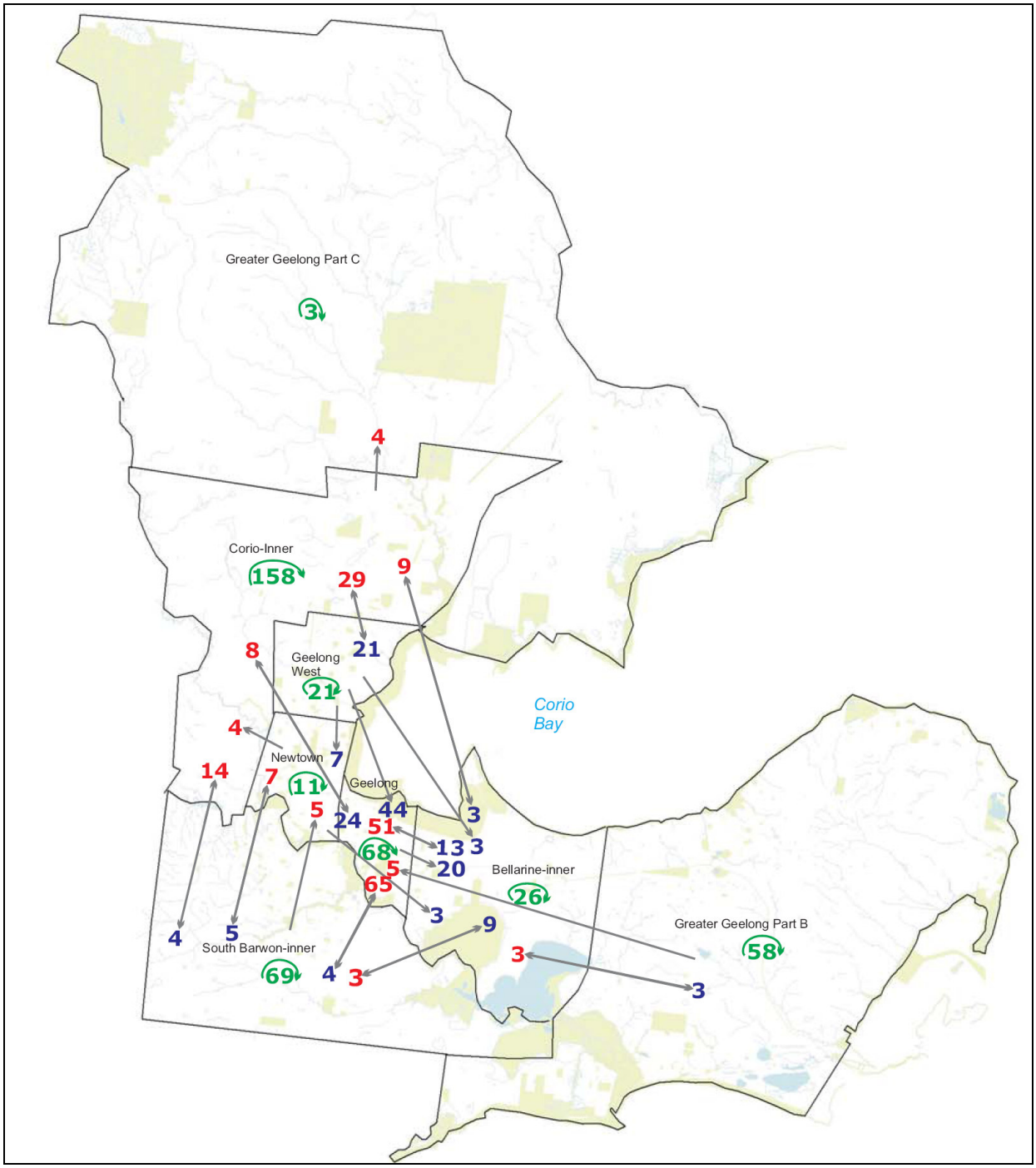
The 2001 census data is useful for analysis of where people cycle as current cycle trips should be proportional to 2001 even with the suspected increases in cyclist numbers.

The 2001 census data can be analysed by statistical divisions, within the City of Greater Geelong there are 8 statistical divisions. These statistical divisions can be used to analyse the origin and destination of people who selected ‘cycle’ as their

main mode of transport to work. This provides an indication of where morning peak cycle journeys are taking place.

Figure 3 shows the Geelong statistical divisions and the direction and number of cycle trips that are taken within and between these divisions. Green numbers represent trips taken within the statistical division, red and blue numbers represent trips taken across statistical divisions.

Figure 3: City of Greater Geelong, Number and Direction of Cycle to Work Trips.



Source: Australian Bureau of Statistics, 2001 Census, Journey to Work Data Set.

The information in Figure 3 shows that there are 209 cyclists cycling into Central Geelong each day and 68 cyclists cycling to work from within the central area, a total of 277 cyclists cycling in the City area each day. Within Corio there are 158 cycle trips each morning. There are surprisingly few cyclists travelling to Newtown. 14 people cycle into Newtown for work and 11 people cycle to work within Newtown.

Anecdotal evidence suggests that many of the rural roads within Greater Geelong support training routes and that a number of cyclists from Geelong and neighbouring municipalities use these routes. Geelong is central to a range of known training routes including routes to; Lara, Barwon Heads, Torquay, and Anglesea. Furthermore Geelong is the gateway for touring cyclists to the Great Ocean Road.

3.10 Latent Demand

Decisions to create or expand cycle networks should not be based entirely on information about the number of existing cyclists in a City, riding a particular route or crossing a particular count point.

Whilst this information provides useful indications on where routes or facilities need to be upgraded there is an apparent build 'it and they will come' rule that applies to cyclists.

Recent improvements to cycle facilities in Melbourne City, including installation of a Copenhagen Lane, a cycle lane that separates cyclists from motor vehicles via concrete barriers, along Swanston Street has led to exponential growth in cyclists entering the City. Melbourne City Council estimates that 4700 cyclists now enter the City each day. This equates to 7.9% of all vehicles and is up from 3.9% in 2006.

A 1996 study by the Barwon Regional Bicycle Council found that there are on average 1.9 bicycles per household in Geelong. In 2006 there were over 74,000 households in Geelong[14] thus equating to over 140,000 bikes in the region. Improving cycle networks will encourage residents to ride these bikes more often.

3.11 Existing Network

Geelong has a significant existing cycle network that has been in development since Geelong's first bike plan was created in 1977.

Geelong's three major off road trails; the Bellarine, Barwon and Bay trails provide good recreational facilities as do the Waurn Ponds, Cowies Creek, Hovells Creek and Tom McKean Liner trails.

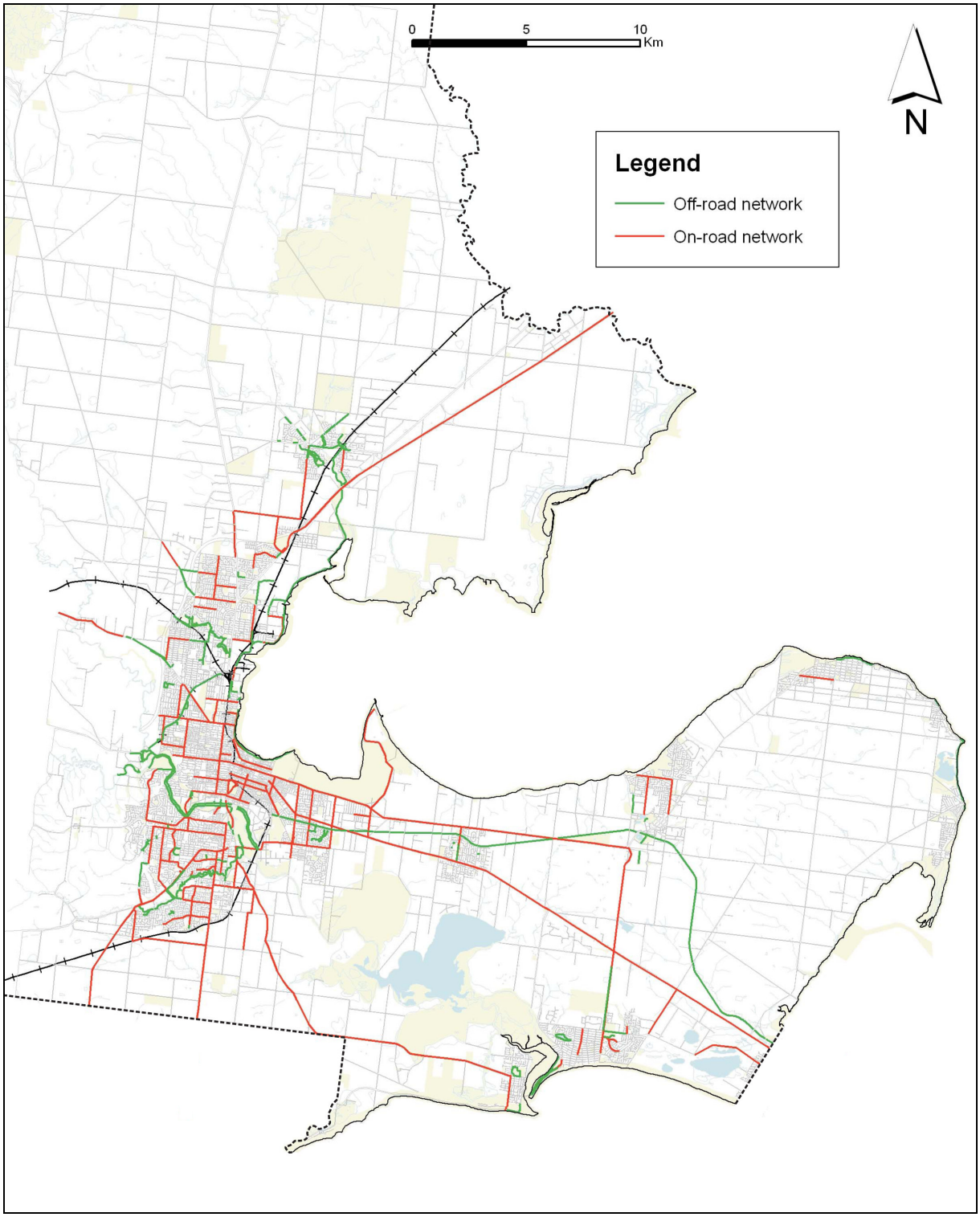
The major on road cycle routes are along Ryrie Street and further on along Geelong Portarlington Road, along the Bellarine Highway to Queenscliff, Barwon Heads Road to Barwon Heads and the Surf Coast Highway to Torquay.

There are significant gaps in the network particularly within North Geelong, Norlane, Corio and Newtown. There are also missing connections with the Bellarine townships of Portarlington and St Leonard's/Indented Heads.

Figure 4 provides a map of the existing Geelong cycle network. This map is also available as A3 size in Appendix B.

[14] Australian Bureau of Statistics, 2006 Census of Population and Housing

Figure 4: City of Greater Geelong, Existing Cycle Network.



4 Issue Identification

A number of approaches to information collection were carried out during the cycle strategy development. These approaches and their key findings are summarised below. Key findings from this section inform the recommendations of the cycle strategy.

4.1 Public Questionnaire

As part of the cycle strategy development a public questionnaire was carried out. Questionnaires were available from the City of Greater Geelong Webpage and through cycle and sports stores around Geelong. There were 653 questionnaires returned.

Information from the questionnaire came mainly from regular cyclists living within the Geelong region. Approximately two thirds of the respondents were male. The main age range of respondents was approximately 31 to 49 years. Couples with two people in the family and families with four members were the most common responders. Accordingly the most common number of bicycles in the family was two or four. Most respondents own a car and drive regularly.

Recreational riders going on fun rides with no fixed destination were the most common types of cycle trips undertaken. A significantly lower number of journeys were to 'work or place of employment'.

Table 4 shows the proportion of cyclists cycling to common destinations around Geelong.

Table 4: Common Destinations for Geelong Cyclists.

	%
Cycle to no destination (fun rides, etc.)	33%
To work or place of employment	17%
To the local shops	14%
To sports/leisure facility or parks	11%
Central Geelong	11%
Other	9%
To local bus or train stops	2%
To school	2%
To university or TAFE	1%

Source: City of Greater Geelong Cycle Strategy Public Questionnaire, February 2007.

The most significant factors encouraging people to cycle more often were the existence of off road and on road paths, which were the highest ranked influences. The provision of safe and secure bicycle parking and slower vehicle speeds were also significant in encouraging people to cycle more often.

Full analysis of the cycle strategy questionnaire is outlined within the cycle strategy consultation report available from the City of Greater Geelong.

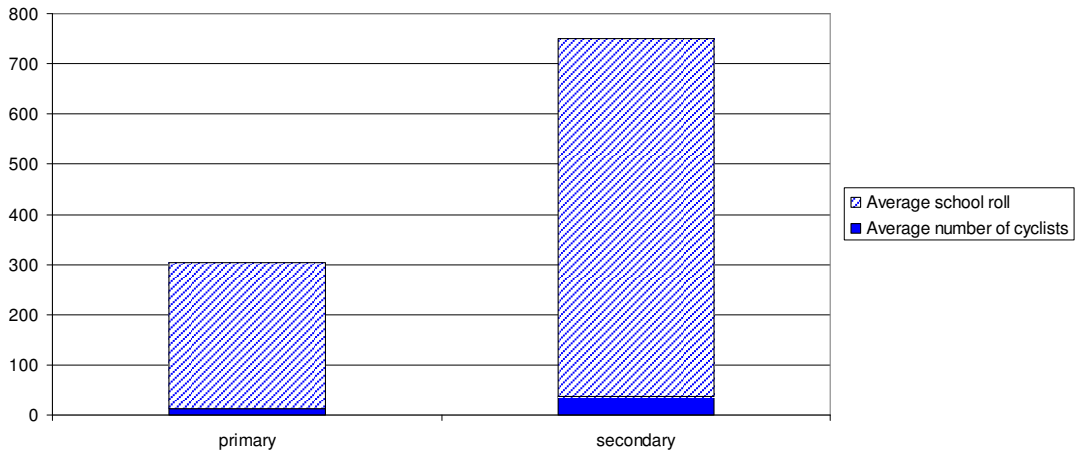
4.2 School Questionnaire

A questionnaire was also sent to every school in Geelong. 40 primary schools (58% of all primary schools) and 10 secondary schools (36% of all secondary schools) returned the survey, a total response rate of 50%.

Of the 50 schools that responded, the average school roll at primary schools was 266, with a range from 15 to 984 pupils. At secondary schools the average school roll was 715 with a range from 203 to 1300 pupils.

Figure 5 shows the proportion of children cycling compared to the average school roll. The average number of children cycling to primary school was 14 (5% of the average school roll). The average number of students cycling to secondary school was 31 (4% of the average school roll).

Figure 5: Average School Roll and Average Number of Children Cycling to School in Geelong.



Source: City of Greater Geelong Cycle Strategy School Questionnaire.

Schools were also asked whether they actively encourage children to cycle to school. 17 out of 37 primary schools and 4 out of 10 secondary schools do encourage children to cycle to school. At both primary and secondary schools, the schools that do encourage children to cycle report more children cycling to school.

Table 5 shows that at primary schools there are on average 12 more students cycling to schools that do encourage cycling. This difference is lower at secondary schools.

Table 5: Average Number of Children Cycling to Schools that Do and Do Not Encourage Cycling.

	Primary Schools		Secondary Schools	
	Encourage cycling	Do not encourage cycling	Encourage cycling	Do not encourage cycling
Average number of children cycling to school:	**22**	**10**	**33**	**29**

Source: City of Greater Geelong Cycle Strategy School Questionnaire.

It is evident that schools are important partners when encouraging children to cycle to school. Schools that are willing to take part in promoting cycling to school are likely to be the best target schools for any cycle to school promotion activities that may be carried out as a result of the cycle strategy.

4.3 Saddle Surveys

A 'Saddle Survey' is a bicycle ride around a set route with a group of cyclists stopping occasionally to discuss examples of good and bad provision for cyclists. Two Saddle Surveys were held as part of the strategy development.

Findings from the Saddle Surveys included:

- Central Geelong is difficult to negotiate by cycle and roundabouts are particularly hazardous for cyclists;
- Geelong lacks a designated north south bicycle route through Central Geelong;
- Signage for key cycle routes and intersections needs to be developed. Signs should be developed as a suite and be easily understood and readily recognised;
- Whilst the shared path network in Geelong is greatly valued there are issues regarding cyclist speed, dogs running free off leads and people riding motorbikes in the trail reserves;
- The need for the trails to link up and connect to the Waterfront is well supported and should include a clearly defined shared path around the bay. Along busy areas there needs to be clear separation of cyclists and pedestrians; and
- The Geelong West shopping strip along Pakington Street is a vibrant place with lots of people and good cycle connections. This strip could be improved by maximising the space allocated to pedestrians and cyclists and increasing facilities such as bicycle parking.

4.4 Accident Analysis

Accident data for all accidents involving and injuring a cyclist for the five year period, from 1st January 2001 to 31st December 2005 inclusive, was analysed. The information was derived from the VicRoads Crashstats database.

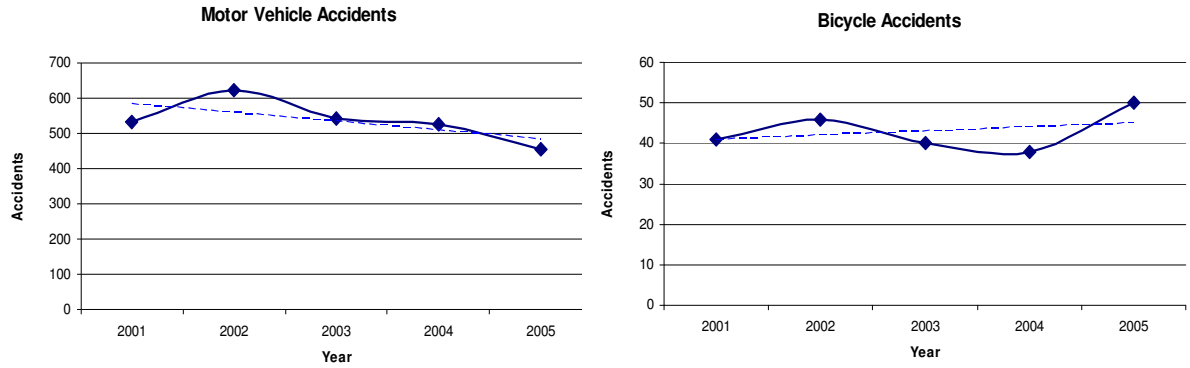
A total of 215 casualty accidents involving cyclists were recorded in the City of Greater Geelong area during the five-year period, this equates to 7.8% of all vehicle accidents. In all accidents cyclist injuries required medical treatment, 3 accidents (1.4%) were fatal, 64 (29.7%) involved serious injury and 148 (68.8%) involved other or a less severe injury. All fatal accidents occurred on state declared/classified roads.

Two cyclist crash blackspots exist within the City of Greater Geelong. In accordance with AustRoads Guidelines a site qualifies as a crash blackspot after three casualty accidents are recorded in a five year period. These two accident blackspots are:

- The intersection of Melbourne Road & Bacchus Marsh Rd; and,
- The intersection of Carr Street & St Albans Rd.

Figure 6 shows the number of bicycle accidents and the number of motor vehicle accidents over time within the City of Greater Geelong. It should be noted that the number of reported bicycle accidents is usually significantly less than the number of actual accidents as many are not reported. Also, the increase in bicycle accidents may relate to an increase in cyclists over the last five years.

Figure 6: Motor Vehicle and Bicycle Accident Comparison.



Whilst there has been a decline in the number of vehicle accidents over the 5 year period the number of cycling accidents has risen slightly, up to 50 reported accidents in 2005.

Further information from the consultation and accident analysis is available in the cycle strategy Consultation and Accident Analysis reports, available from the City of Greater Geelong.

4.5 Key Findings

The main findings of all the cycle strategy consultation are outlined below.

Network and Facilities

Recreational cycling is very popular in Geelong, particularly on the off road trails and paths. The popularity of recreational cycling is not mirrored by on road/commuter cycling. Improving cycling networks to and within Central Geelong is essential to facilitate commuter cycling.

On road bicycle lanes and off road cycle paths are the two favoured facilities that would encourage more people to cycle more often in Geelong. Safe and secure cycle parking is another factor that encourages people to cycle.

Connecting the Bellarine Rail Trail, Barwon River Trail and the Bay Trail is considered by the community and stakeholders as imperative to improving the Geelong cycling network. The State Government has announced funding to make these connections via off road cycle paths.

Whilst off road paths are seen as a great asset by all users there are issues surrounding the shared aspect of off road paths. Pedestrians are concerned about cyclist speed and possible collisions and cyclists are concerned about dogs off leads running on and around the paths.

There is a need for increased signage to compliment the off road trail system and improve the cycling experience, for both residents and visitors to the Region.

There is currently a shortage of safe and secure cycle parking in Geelong. Key places for increased cycle parking are; the city centre, railway stations, shopping centres, sporting facilities, libraries, the Waterfront and at stop off places along the off road trail network.

Coordination, Education and Promotion

There is general consensus that cycling in Geelong has not received the support necessary for it to maintain the position it once held as an internationally recognised model cycling City and destination for cyclists.

The idea of increased allocation of staff resources for sustainable transport within Council is supported by the community, Council departments and external agencies. This allocation would assist the implementation of the cycle strategy, ensure maintenance issues are addressed, develop funding submissions and improve communication between bicycle user groups and Council. Additional functions could include walking and public transport. It should be noted that these further functions could necessitate allocating further staffing and resources.

Cycling to school is minimal. Most schools do not encourage cycling. The majority of schools would like to be involved in an organised cycle to school program. Barwon Heads Primary School has the largest proportion of children cycling to school, they also have a travel strategy to support students that cycle. Cycle programs and promotions that involve familles, such as family fun rides, are desirable and will benefit a whole community of riders.

Some cyclists believe that there doesn't need to be any promotion of cycling in Geelong as a lot of people already cycle. They feel that investment should be made toward completing the cycle network as this is the best way to encourage more people to cycle.

Safety

The various consultation methods revealed that people generally do not feel safe cycling on Geelong roads. High vehicle numbers and lack of space for cyclists were common reasons for this feeling.

Central Geelong was named a number of times as being an unsafe location for cyclists. This is likely influenced by high volumes of motor vehicles and trucks.

Horseshoe Bend Road, Latrobe Terrace, Ryrie St, 13th Beach Road, and Torquay Road were also stated numerous times as dangerous roads for cyclists. Vehicle speed, vehicle volumes and narrow road widths are likely to influence the unsafe feeling on these roads.

Intersections and roundabouts were often raised as being difficult and dangerous for cyclists. This is a common safety complaint as drivers often turn through the path of cyclists at intersections. This is both dangerous for cyclists, and illegal. The Victorian Road Code states that it is illegal to run left or right across the path of another vehicle (including bicycles).

Cycle treatments ending before and starting after intersections was a common safety complaint. Gravel on roads, unsealed roads and poor surfaces were also common safety complaints as all of these can cause a cyclists to loose control.

Most schools feel it is unsafe for students to cycle to school. Common reasons given for this were 'traffic near the school' and 'a lack of safe routes for students to cycle on'.

5 Recommendations

5.1 The Vision

Geelong has the potential to become a world class cycling City with the appeal to attract cyclists of all types. The following vision gives direction to cycle related investment in Geelong over the long term.

Geelong will be recognised as one of Australia's premier cycling Cities with an interconnected on and off road bicycle network that encourages people to cycle more often by providing safe and attractive access to all parts of the region.

The Barwon River Trail and Bellarine Rail Trail will connect to the Geelong Waterfront via an off road connection through Central Geelong. The Bay Trail will provide a continuous connection to Lara with connections to the Cowies Creek Trail and Tom McKean Linear Trail. A new trail along the Barwon River will connect Geelong with Barwon Heads and Ocean Grove.

Central Geelong will be connected to residential areas via quality bicycle lanes on arterial roads. The City centre will be made safer through increased acknowledgement of, and space given to, the City's cyclists. More cyclists in the City will themselves help make Geelong a safer place to cycle.

Schools will be connected with their local neighbourhoods and the wider cycle network via off road connections where possible. School based cycle education and promotion programs will encourage more children to cycle to school, these children will grow up wanting to cycle. Families will enjoy days out cycling in Geelong and they will be encouraged to ride more often via cycle events and promotions.

All major employers in Geelong will provide quality cycle facilities including secure parking, lockers and showers for their employees and visitors. The City of Greater Geelong will monitor and support these facilities and will itself be a model employer both in terms of provision for cyclists and number of employees choosing to cycle.

The City of Greater Geelong will have staff dedicated to cycling and sustainable transport initiatives, all departments will work together cooperatively and efficiently toward achieving Geelong's vision for cycling. Staff will choose to walk, cycle or take public transport to work, aided by quality facilities.

Geelong will become a destination renowned for its tourism assets and tourists will be encouraged to bring their bikes and fully enjoy these assets. Geelong will once again be internationally recognised as a model cycling City and destination for cyclists.

5.2 Key Strategies

The following key strategies are essential elements in achieving this vision.

5.2.1 Council Commitment

Staff Resources

The success of any cycle strategy depends on Council's willingness and ability to deliver proposals and regularly review key issues. To do this in an efficient manner there needs to be staff resources within Council that to ensure implementation is carried out as planned and be responsive to new issues.

The cycle strategy recommends that the City of Greater Geelong allocate staff resources for sustainable transport projects within Council.

This will ensure the actions from the cycle strategy are implemented within the stated timeframes. Other outcomes could include:

- Funding applications to increase funding for cycle infrastructure and coordination;
- A maintenance forum and managing audits of routes and facilities;
- Ensuring that all future developments and retrofitting of existing infrastructure is done in a manner that provides for and encourages bicycle use;
- Creation of a City of Greater Geelong green travel plan and avocation of travel plans to businesses;
- Liaison with bicycle user groups;
- Promotion of school-based bicycle education programs (e.g. Cycle On, Bike Ed and the Bike Ed Challenge) as well as Council promotions (eg ride to work) to increase safe cycling within the City; and
- Various walking and public transport coordination and promotion objectives.

Council will need to determine which department(s) should contribute to increased resourcing. Traffic and Transport, Major Projects and Recreation and Open Space all have roles that require providing for cyclists. It will be necessary to ensure there is sufficient presence of cycle related objectives across departments in order to efficiently proceed projects and implement solutions to issues.

Simply having the cycle strategy process in place has led to a number of projects incorporating design for cyclists. For instance, the redesign of the Mercer, Malop and Gheringhap Street intersection which incorporates bicycle lanes as a result of a meeting between City Engineers and the cycle strategy team. Other initiatives already investigated by the cycle strategy team include discussions with fleet management about a bike fleet and discussions with Barwon Health about a ride to work promotion.

A number of other Councils in Victoria are now recognising that growing cyclist numbers require more dedicated support from Council and subsequently increased dedicated sustainable transport resources. These other Councils include; the City of Whitehorse, Maribyrnong, Bayside and Moonee Valley.

Furthermore it is evident that currently in the City of Greater Geelong not having dedicated resources (human and financial) to address and advocate for cycling, and related active transport issues, cycling provision tends to be overlooked.

Staff Travel

As an employer of over 2,300[15] employees the City of Greater Geelong is one of the top 5 employers in Geelong.

The City is in a good position to become a model employer in terms of providing travel choices for staff and visitors. City of Greater Geelong staff are aware of the City's aims to increase sustainable transport use and should be aware of the health and other benefits that come from increased cycling. Also, the many different Council and customer service office locations should be accessible via a short cycle for many visitors, residents and staff.

In order to become a model for other businesses, the City will need to review end of trip cycle facilities at each office and improve provision where necessary. Cycle parking should be located close to entrances in highly visible areas, parking should have secure bicycle locking facilities and be easily accessed with a bicycle. Staff parking should be located close to shower, locker and changing facilities.

The development of a green travel plan would help the City identify existing travel patterns and issues preventing staff from currently cycling to work. TravelSmart (www.travelsmart.vic.gov.au) offers guidance on the creation of green travel plans for businesses as well as grants for sustainable and accessible travel projects. Once complete the travel plan model and experience can be promoted to other Geelong businesses.

Travel during business hours for work purposes should also be reviewed by Council. Reviewing fleet check policies, having bikes within the vehicle fleet and encouraging staff to use them for trips less than 5km is advised. Other Local Government Authorities in Victoria provide bikes that staff can ride home each day.

All major events promoted or supported by Council should actively promote all sustainable transport options including cycling. Events without Council involvement should also be encouraged to provide for and support cyclists.

5.2.2 Central Geelong

One of the main issues to come out of the consultation for the cycle strategy was the fact that cyclists find Central Geelong difficult to negotiate and dangerous to ride through. This was reflected by the fact that significantly fewer people consulted cycle to work than cycle recreationally.

VicRoads are leading a project to link the Bellarine, Barwon and Bay trails via off road cycle paths through Central Geelong. This will be a significant improvement for recreational and commuter cyclists. The City of Greater Geelong should continue to work closely with VicRoads to ensure this initiative is achieved.

Creating an off road connection through Central Geelong could be achieved by installing a Copenhagen Lane style path along one of the north – south streets.

[15] Refers to the number of employees, not full time equivalent

Copenhagen Lanes are increasingly being installed in Victoria, particularly around Melbourne, as a result of a successful trial along Swanston Street in Melbourne City.

Figure 7 provides an example of a Copenhagen Lane currently installed along Swanston Street in Melbourne City.

Figure 7: Copenhagen Lane, Swanston Street, Melbourne City.

Further to supporting VicRoads with the above project, a priority for the cycle strategy is that Council formalise a number bicycle routes through Central Geelong and commit to implementing best practice bicycle design on these routes. Best practice design will improve cyclist safety and make Central Geelong an attractive place to ride.

Best practise design includes:

- 1.5m wide bicycle lanes on both sides of the road;
- Green cycle treatment on bicycle lanes at conflict points, i.e. where traffic must turn through the bicycle lane to enter the left hand turning lane at intersections;
- Bicycle priority green lights at intersections to give the cyclist a head start on motor vehicles and increase the presence of the cyclist; and
- In areas of high bus use, bus/bike only lanes that exclude private motor vehicles.

Suggested priority bicycle routes within Geelong Central are, (east – west); Malop Street, Ryrie Street, Myers Street, Kilgour Street and (north south); Garden Street, Yarra Street, Fenwick Street plus the additional off road connection being investigated by VicRoads.

5.2.3 Connecting the Network

Off Road

Making the link from the Waurn Ponds Trail to the Barwon River Trail more obvious by defining a path through South Barwon Reserve is an easy win. A further connection to the Bellarine Rail Trail between the railway line and Breakwater Road is desirable. This connection could also be continued south after the establishment of Armstrong Creek residential areas.

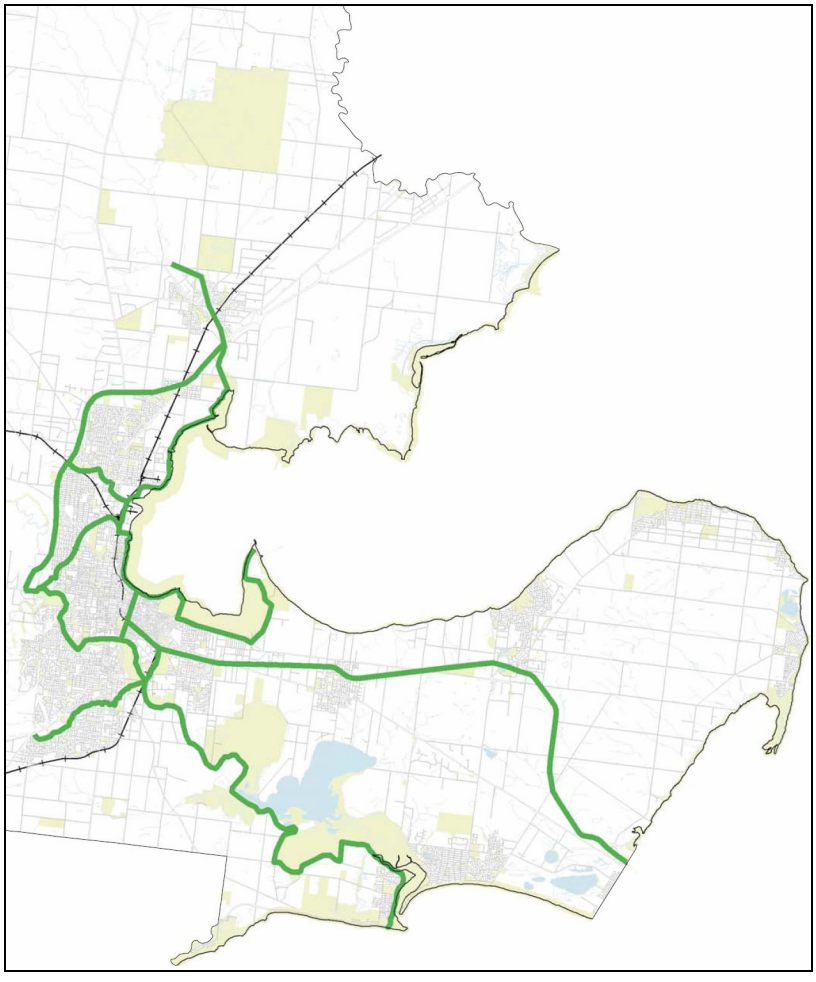
Connecting the Bay Trail through Rippleside and North Geelong would create a continuous connection to Lara. This will require negotiation with land owners and the Ford Motor Company. Connecting the Tom McKean Linear Trail and the Cowies Creek Trail to the Bay Trail is desirable.

A new off road path is planned to run parallel with the Geelong Bypass from the existing Freeway to Church Street. Connecting this path to the Cowies Creek, Tom McKean and Barwon River Trails is necessary.

Another new off road path is being investigated along the Barwon River from Belmont Common to Barwon Heads. This project, called the Barwon Valley Parklands Project, has state government funding and is being led by Parks Victoria. The project is expected to be implemented in the next four years. The City of Greater Geelong is supporting this project and should assist its implementation.

Figure 8 gives an indicative view of a possible future interconnected network of major off road cycle trails in Geelong.

Figure 8: Possible Geelong Major off Road Cycle Trails Network.



On Road

Significant gaps in the on road cycle network exist in Corio, North Geelong and the Bellarine Peninsula.

Key to connecting Corio and North Geelong to Central Geelong is the installation of bicycle lanes along Melbourne Road after the completion of the Geelong Bypass. Melbourne Road could be a significant spine for cyclists and attract large numbers of commuter cyclists from North Geelong, Norlane, Corio and Lara.

The reduction of traffic and heavy trucks on this road due to the Geelong Bypass warrants space being made available for bicycle lanes. Because of the busy nature of the road it is recommended that these bicycle lanes be separated from traffic as either Copenhagen Lanes or Back of Kerb Bicycle Lanes. Back of Kerb bicycle lanes are currently being trialled by VicRoads in the City of Casey. Figure 9, from Bicycle Victoria shows this example of a Back of Kerb Bicycle Lane with green cycle treatment through an intersection.

Figure 9: Back of Kerb Bicycle lane.

Source: Bicycle Victoria.

5.2.4 New Developments

The City of Greater Geelong has the opportunity to set a precedent through the implementation of the cycle strategy that ensures all future development and any retrofitting of existing developments include measures that support and promote bicycle use.

Required bicycle facilities requirements, including the number of bicycle spaces and requirements for showers and change rooms, are outlined in Clause 52.34 (Bicycle Facilities) of the Victorian Planning Provisions. Cycle network objectives are incorporated within Clause 56.06 (Access and Mobility Management), and include design standards for roads and neighbourhood streets.

Council should work with developers and planners to appropriately implement bicycle facilities in accordance with the provisions. Council should also continually seek best practice cycle planning in all new developments.

Priorities for developments are listed below under the development type.

Residential developments, i.e. subdivisions:

- 1.5m bicycle lanes, or separated cycle paths, on both sides of all arterial roads, with connections to existing bicycle lanes and/or paths;
- Footpaths on both sides of the road;
- Off road shared bicycle and pedestrian paths along all available creek/river reserves, transmission line reserves and rail corridors with connections to neighbouring residential, employment and education areas;
- Pedestrian and cycle access ways through any dead end streets or cul de sacs where necessary or required;
- Traffic calming measures (speed bumps, chicanes) that allow smooth bicycle passage installed where necessary (i.e. on wide roads that pose high speed risks); and
- Information packs outlining sustainable transport options, including cycle maps and promotion material, provided to new residents.

Commercial developments, i.e. large office buildings, large apartment buildings:

- Quality occupant cycle parking that allows for at least 20 bicycle parks per 100 residents/employees and has associated facilities such as lockers and showers;
- Quality visitor cycle parking at a convenient location near the entrance to the development;
- Development, implementation and monitoring of a green travel plan that outlines measures taken to reduce private motor vehicle use; and
- Identification of key cycle routes that connect to the building location, gaps in local network connections and works required to fix these gaps.

Other developments, i.e. Sports Centres, Movie Theatres, Shopping Centres etc:

- Quality visitor bicycle parking, located in high pedestrian areas that are well lit and close to entrances/exits;
- Quality cycle connections to residential areas and surrounding trip generators with no gaps in the network; and
- Information provision in the form of brochures, maps etc that indicate access to the facilities via walking, cycling and public transport.

Some of the above Council can request from the developer and some will be the responsibility of Council. Increased resources for cycle related issues within Council will help ensure implementation of the priorities occurs. This role will need to have the ability to liaise with statutory planning and have the authority to effect planning decisions.

5.2.5 Promotion and Education

Promoting bicycle use and educating people, young and old, about safe cycling is important to ensuring the bicycle network is used safely and appropriately. The City of Greater Geelong should facilitate increased bicycle education and promotion and support partners such as the Barwon Regional Bicycle Council (BRBC) in carrying out local initiatives.

A recommendation of the Cycle Strategy is that the role of the BRBC be reviewed and formalised. The BRBC should have support from Council and should be involved in bicycle planning, events and projects. Objectives of the review of the BRBC's role include:

- Gain agreement from the Geelong cycle community and clubs on a system of collaborating;
- Initiate annual planning events; and
- Identify resource and funding opportunities.

The City of Greater Geelong is currently working with five schools in developing 'School Travel Plans'. A School Travel P lan aims to develop customised initiatives that support the use of active transport to school. The City of Greater Geelong should continue and expand the existing School Travel Plan program and provide further support for initiatives arising from School Travel Plans.

Cycle On, Bike Ed and the Bike Ed Challenge are also school based initiatives that focus on developing bike safety skills and knowledge. The City of Greater Geelong should advocate for the expansion of school-based bicycle education programs in Geelong and should support increasing the age groups involved to include secondary school children.

The State Governments 'Go for your life' initiative includes a program called 'Stride and Ride'. This campaign aims to increase active transport for children through assisting local early childhood services and primary schools to adopt programs and policies that encourage walking and cycling. The City of Greater Geelong should continue to implement this program and support its outcomes.

Parents often make the decision whether their children are allowed to cycle, educating parents about safe cycling and the benefits of cycling allows them to pass these lessons on to their children. It is recommended that the City of Greater Geelong, in partnership with partners such as the BRBC and Bicycle Victoria, conduct a series of events aimed at encouraging families to ride together such as family fun rides and take a kid cycling days.

The City of Greater Geelong could also host a series of education sessions including classes on cycle safety for young and old, bicycle maintenance, bike purchasing and riding as a family activity.

5.2.6 Facilities

Signage

Good bicycle signage can help people move through their surroundings and get more from this experience. It can do this on three levels:

- By providing information that enables people to get to their chosen destination and understand the commitment in time and effort to get there;
- By providing information that enables people to get more from their journey, either by diminishing risk (through setting limits on acceptable behaviour or providing warnings) or enabling them to appreciate more of the surroundings they pass through; and
- By providing features that contribute to the quality of their surroundings in their own right.

A suite of signage should be developed to accompany the cycle network. This suite should include primary and secondary cycle signs which assist way finding and inform users of the time it takes to travel to key destinations.

Primary signage should be installed at key decision points along the cycle network. An example of primary cycle signage is shown in Figure 10.

Figure 10: Primary Cycle Signage on an Off Road Path Network.

Secondary cycle signage should be installed at cycle network intersections, public transport nodes, destinations such as the Geelong Waterfront, premier parks and reserves, tourist attractions and prominent locations that will encourage people to cycle more. Examples of secondary cycle signage are shown below.

Figure 11: Secondary Cycle Signage on an On Road Lane Network.

Parking

Installing sufficient and appropriate parking at key destinations and stop off locations provides a cyclist with a feeling of confidence that their bike will be safe and encourages them and others to cycle more often.

A key recommendation of the cycle strategy is that Council install a large secure bicycle parking facility within the Civic Centre Car Park. This facility should be promoted to commuter cyclists that do not have appropriate facilities in their workplace as well as people visiting Central Geelong for other purposes. Lockers and showers could be provided on a membership basis.

Throughout Greater Geelong a small number of quality bicycle parks at numerous locations should be installed. Bicycle parking should be provided at key destinations

such as libraries, sporting and leisure facilities, shopping centres and community services. The type of parking installed at the Geelong Waterfront is appropriate, this parking is shown in Figure 12.

Figure 12: Cycle Parking, Geelong Waterfront.

Cycle parking at train and bus stations is particularly important, at South Geelong Station there is clearly insufficient parking as bikes are being locked to poles and signs. It is recommended the City of Greater Geelong work with the Department of Infrastructure (DOI) and VicTrack to increase bicycle parking at all Geelong Railway Stations[16] .

At some stations throughout Geelong there are instances where bicycle lockers have been installed but there is no signage stating their purpose or how to hire them. This also needs to be rectified by working with DOI and VicTrack.

Council should be teaching businesses how to provide quality on site cycle parking and facilities for staff. A recommendation of the cycle strategy is that Council work with the top 10 employers (by number of employees) in Geelong to assist them in installing quality cycle parking.

Figure 13: Two Car Parks Converted to Store More Than 15 Bikes.

The following Bicycle Works Program lists the actions that achieve these key strategies and a number of other important priorities for cycling in Geelong.

[16] Note: Bicycle Victoria and DOI are undertaking a project to improve bicycle parking at South Geelong Station. City of Greater Geelong should continue to support this project.

6 Bicycle Works Program

The following bicycle works program has been devised to guide Council through the implementation of the bicycle network and associated bicycle; facility, maintenance, coordination, education and promotion priorities.

Proposals have been given priority rankings from A (highest priority) to E (lowest priority).

Costing is indicative only, based on unit rates provided by Council in 2007. All proposals will be subject to detailed design. Proposals within 'Network Priority' tables are for capital works only and not associated studies/planning.

Maps of network proposals for each year listed have been provided in Appendix A.

Council should be aware of all bicycle priorities for the City and keep these in mind when any development/retrofitting occurs.

6.1 Network Priorities

REF	Priority	Proposal	Suburb	MBN?	Treatment Type	Cost Estimate	Council Funded?	Funding Sources
1	A	Work with VicRoads to deliver the linking of the trails project. Council objectives for the project should include: ▪ All connections are off road paths, including a separated cycle path (Copenhagen lane) linking south Geelong Station to the Waterfront; ▪ Investigation of a cycle and pedestrian bridge over the Barwon River at Belmont Common near Moorabool Street; and ▪ Ensure signage on route is consistent with any cycle signage developed as an outcome of the cycle strategy.	Geelong, South Geelong	Yes	Off road shared path, 2.5m wide minimum plus signage	$3M	No	VicRoads
2	A	Install green colour treatment along conflict points on bicycle lanes in Central Geelong. Conflict points should include main intersections on Central Geelong routes including: Malop Street, Ryrie Street, Yarra Street etc. Consideration should be given to delineation of bicycle lanes through intersections.	Geelong	Yes	10 instances of 1.5m wide and 20m long green surfacing	$12,300	Yes	
3	A	Work with Parks Victoria to deliver the Barwon River Parklands Project. Council objectives for the project should be: ▪ A continuous cycle path from the ring road reserve to Barwon Heads; ▪ A connection to the Round the Heads trail; and ▪ Ensure signage is consistent with cycle signage developed as an outcome of the cycle strategy.	South Geelong to Barwon Heads	No	Off road shared path, 2.5m wide minimum	$3M	No	Parks Victoria
4	A	Work with VicRoads to address the safety of cyclists at the intersection of the Bellarine Rail Trail and the Bellarine Highway, and the Bellarine Rail Trail and Geelong Portarlington Road	Moolap, Curlewis	Yes	Signals and Signage	$210,000	No	VicRoads

REF	Priority	Proposal	Suburb	MBN?	Treatment Type	Cost Estimate	Council Funded?	Funding Sources
5	A	Advocate for improved design for cyclists on the Barwon Heads – Ocean Grove Bridge.	Barwon Heads	No	Bridge widening to incorporate cycle lanes or new cycle/ped bridge		No	VicRoads, DSE
6	A	Install an off road cycle path from the intersection of Boundary Road to Limeburners Road including a controlled cycle crossing of Ryrie Street. In conjunction with the Eastern Park Master Plan seek to connect to a shared path along the foreshore.	East Geelong	No	Signalised crossing of Ryrie Street (VicRoads) and 2m wide off road path to Limeburners Road	$140,000	$55,000 Council	VicRoads
7	A	Install advisory cyclist signage and green cycle treatment at the roundabout connecting Portarlington Road and Jetty Road.	Drysdale	No	Improvements to lining and signage	$12,400	No	VicRoads
8	A	Continue the Tom McKean linear trail through the rail reserve to Roseneath Street. Proposed bicycle lanes on Roseneath Street (Network Ref 48) will connect this trail to Victoria Street and North Geelong Station.	North Geelong	No	2.5m wide, 150m shared path plus signage	$20,400	Yes	
9	A	Install on road bicycle lanes along Garden Street.	East Geelong	Yes	1.5m wide bicycle lanes and signage	$23,700	Yes	
10	A	Install bicycle lanes on Jetty Road.	Clifton Springs	No	Improvements to line marking and signage	$42,000	Yes	
11	A	Install bicycle lanes along the north end of Sproat Street and Newcomb Street.	Portarlington	No	1.5m wide bicycle lanes and signage	$23,500	Yes	
12	A	Install bicycle lanes on Separation Street and improve design for cyclists at the intersection with Melbourne Road.	North Geelong	Yes	1.5m wide bicycle lanes and signage	$27,200	No	VicRoads

REF	Priority	Proposal	Suburb	MBN?	Treatment Type	Cost Estimate	Council Funded?	Funding Sources
13	A	Install bicycle lanes along Anakie Road to Mathews Road.	Geelong North	Yes	1.5m wide bicycle lanes and signage	$50,100	No	VicRoads
14	A	Install Cycle Lanes along Thomson Street and Fernleigh Street to connect High Street to West Fyans Street.	Belmont	No	1.5m wide bicycle lanes and signage	$25,000	Yes	
15	A	Work with CCMA to connect the Barwon River cycle path under the James Harrison bridge by removing fence and treating surface.	Geelong South	Yes	30m long, 2.5m wide shared path	$3,000	No	CCMA
16	A	Install on road bicycle lanes along Bacchus Marsh Road from Melbourne Road to Plantation Road.	Corio	Yes	1.5m wide bicycle lanes and signage	$25,000	No	VicRoads
17	A	Install bicycle lanes on Olympic Ave and Hinton Close. Include a connection to the Cowies Creek Path.	Norlane	Yes	1.5m bicycle lanes and line marking	$20,000	Yes	
18	A	Work with VicRoads to review the Municipal Bicycle Network and advocate for the expansion the Network to include the Bellarine Peninsula.	-	-	-	-	-	VicRoads
19	A	Install bicycle regulatory signing and driver warning and guidance signage on Deviation Road	Fyansford	Yes	Signage	$1,000	No	
20	A	Install shared path regulatory and warning signs on the shared path adjacent to Melbourne Road (Mackay Street to Swinburne Street) including warning signs for drivers and cyclists at the service station cross-over.	North Geelong	No	Signage	$1,000	Yes	
21	B	Install on road bicycle lanes on Beacon Point Road.	Clifton Springs	No	1.5m wide bicycle lanes and signage	$24,500	Yes	
22	B	Pilot bicycle priority signals at intersections along Pakington Street to promote cycle use. Complement with cycle parking and signage. If successful this scheme could be implemented at other appropriate areas.	Geelong West	Yes	Install cycle signals at 3 intersections	$67,600	Yes	

REF	Priority	Proposal	Suburb	MBN?	Treatment Type	Cost Estimate	Council Funded?	Funding Sources
23	B	Install bicycle lanes on St Georges Road and connect to the path from Stead Park to the Bay Trail.	Norlane	Yes	1.5m wide bicycle lanes and signage	$18,000	No	VicRoads
24	B	Install bicycle regulatory signing and driver warning and guidance signage along Laura Ave.	Belmont	No	signage	$1,000	Yes	
25	B	Connect lanes along Ballarat Road/Midland Highway. Address the intersection with Thomson Road and Anakie Road to improve safety for cyclists.	Hamlyn Heights	Yes	Improvements to line marking and signage	$33,000	No	VicRoads
26	B	Install bicycle lanes along Fenwick Street. Include a connection to Geelong Station.	Geelong	No	1.5m wide bicycle lane and signage	$50,000	Yes	
27	B	Install bicycle lanes along School Road and Plantation Road. Connect to Corio Station.	Corio	Yes	1.5m wide bicycle lanes and signage	$40,900	Yes	
28	B	Install bicycle lanes on Purnell Road, from Princess Road to Melbourne Road connecting to the path at Station Street and Corio Station.	Corio	Yes	1.5m wide bicycle lanes and signage	$24,000	Yes	
29	B	Install on road bicycle lanes on Wyndham Street.	Drysdale	No	1.5m wide bicycle lanes and signage	$18,400	Yes	
30	B	Seal the gravel path in the north of Belmont Common, under the Moorabool Street bridge.	Belmont	Yes	100m long, 2.5m wide shared path	$10,700	Yes	
31	B	Install bicycle lanes along Shell Parade from Geelong Grammar to Foreshore Road.	Corio	No	1.5m wide bicycle lanes and signage	$8,000	Yes	
32	B	Install bicycle lanes along Morgan Street and the Boulevard to connect Cowies Creek Path to North Shore Road.	North Geelong	Yes	1.5m bicycle lanes and signage	$12,200	No	VicRoads
33	B	Install bicycle lanes along Presidents Ave to connect to Orton Street.	Ocean Grove	No	1.5m bicycle lanes and	$2,700	Yes	

REF	Priority	Proposal	Suburb	MBN?	Treatment Type	Cost Estimate	Council Funded?	Funding Sources
					signage			
34	C	Install on road bicycle lanes along High Street from Corio Street to Settlement Road.	Belmont	No	1.5m wide bicycle lanes and signage	12,200	Yes	
35	C	Work with VicRoads to install the off road cycle path along side the Geelong Bypass. Council priorities for the path should be: ▪ A connection to the Cowies Creek trail; ▪ A connection to the Midland Highway trail; and ▪ A connection to existing Church St bicycle lanes. Ensure signage at key intersections is consistent with cycle signage developed as an outcome of the cycle strategy.	Bells Post Hill, Hamlyn Heights	Yes	Estimated additions to VicRoads Geelong Bypass project	$101,000	No	VicRoads
36	C	Create a link between the on-road bicycle lanes on the Princess Highway and the off-road Hovells Creek Trail	Lara	Yes	Short 2.5m wide shared path linking grade separated sections of network	$50,000		VicRoads
37	C	Link existing off road path from Ballan Road to Batesford	Batesford	No	400m off road bicycle lane	$43,100	Yes	
38	C	Post Geelong Bypass implementation; install separated cycle paths along Melbourne Road/Princes Highway to Mercer Street, as discussed in section 5.2.3.	Geelong North	No	Back of kerb bicycle lane or similar	Design dependant	No	VicRoads
39	C	Install signage and green cycle treatment at the intersection of Settlement Road and Barwon Heads Road.	Belmont	Yes	Signage and green bicycle lane pavement	$6,800	No	VicRoads
40	C	Improve cycle provision along the Hamilton Highway to connect to Golden Plains Shire. Work with Golden Plains Shire as a stakeholder.	Fyansford	No	1.5m wide bicycle lanes and signage	$39,000	No	VicRoads
41	C	Install bicycle lanes along Wallington Road between Thacker and Orton Streets, and connect to the path at Blue Waters Lake via Lake Ave.	Ocean Grove	No	1.5m wide bicycle lanes and signage	$31,600	Yes	

REF	Priority	Proposal	Suburb	MBN?	Treatment Type	Cost Estimate	Council Funded?	Funding Sources
42	C	Work with land owners to create a cycle connection between Seagull Paddock and Corio Quay Road.	North Geelong	Yes	550m long, 2.5m paved path	$59,000	Yes	
43	C	Install cyclist signs and green cycle pavement at the crossing of the Shannon Ave bridge (Princes Bridge) to improve safety for cyclists.	Belmont	Yes	Signage and green cycle treatment	$5,600	No	VicRoads
44	C	Install bicycle lanes on North Valley Road and Barwon Boulevard to connect to the Barwon River Path.	Highton	Yes	1.5m wide bicycle lanes and signage	$22,400	Yes	
45	C	Install on road bicycle lanes on Christies Road.	Leopold	No	1.5m wide bicycle lanes and signage	$21,100	Yes	
46	C	Work with VicRoads to identify upgrade existing roads with unsealed shoulders, and ensure that future roads are constructed with sealed shoulders	-	No	Shoulder upgrades	-		VicRoads
47	D	Install on road bicycle lanes on Melaluka Road.	Leopold	Yes	1.5m wide bicycle lanes and signage	$17,000	Yes	
48	D	Install bicycle regulatory signing and driver warning and guidance signage along Roseneath Street to connect to Victoria Street. Improve design for cyclists at the underpass and crossing of Melbourne Road. Alternatively, investigate Margaret Street Bridge as a crossing option.	North Geelong	No	signage	$1,000	Yes	
49	D	Install bicycle lanes on Leviens Road.	St Leonards	No	Wide kerbside lanes.	$17,300	Yes	
50	D	Upgrade the connection between the Waurn Ponds path and Barwon River Path Network via South Barwon Reserve.	Belmont	No	Path works and signage	$57,000	Yes	
51	D	Investigate an off road link connecting Geelong West to Geelong Station and Fenwick Street. Utilizing disused freight line and footbridge from Madden Avenue.	Geelong	No	2.5m off road bicycle path	80,000	No	VicTrack

REF	Priority	Proposal	Suburb	MBN?	Treatment Type	Cost Estimate	Council Funded?	Funding Sources
52	D	Seal shoulders and install bicycle lanes on Forest Road South from Lara to Melbourne Road.	Lara	Yes	1.5m wide bicycle lanes and signage	$42,200	No	VicRoads
53	D	Install bicycle regulatory signing and driver warning and guidance signagealong Aldebaran Road to connect to the Waterfront.	Ocean Grove	No	Signage	$1,000	Yes	
54	D	Install bicycle lanes along Madeley Street from Tuckfield Street to Blue Waters Lake.	Ocean Grove	No	1.5m wide bicycle lanes and signage	$17,200	Yes	
55	D	Connect the off road bicycle paths along Kees road to connect to Primary School and Lara township.	Lara	No	2.5m wide shared path	$79,000	Yes	
56	D	Install bicycle lanes along Rossack Drive from Monterey Drive to Colac Road.	Waurn Ponds	No	1.5m wide bicycle lanes and signage	$10,500	Yes	
57	E	Create an off road cycle connection between Stead Park and the Bay Trail. Investigate utilising the drainage line for this purpose.	Corio	No	1.4km long, 2.5m wide shared path	$150,900	Yes	
58	E	Install sealed shoulders along Barrabool Road from Scenic Road to the Geelong Bypass.	Highton	Yes	1.5m wide bicycle lanes and signage	$107,200	No	VicRoads
59	E	Install bicycle lanes on Darebin Street and Sparks Road from Peacock Ave to Station Street.	Norlane	No	1.5m wide bicycle lanes and signage	$27,000	Yes	
60	E	Work with VicTrack to install an off road bicycle connection from the Breakwater Road Bridge to the Bellarine Rail Trail following the railway line. In the future look to connect to Armstrong Creek by furthering the path to the south along the railway line.	Geelong South	Yes	1.6km long, 2.5m wide shared path	$172,500	Yes	VicTrack
61	E	Install bicycle lanes along Bluff Road to Mainsail Drive.	St Leonards	No	Wide kerbside lane	$21,500	Yes	

REF	Priority	Proposal	Suburb	MBN?	Treatment Type	Cost Estimate	Council Funded?	Funding Sources
62	E	Formalise a north-south cycle path through Kardinia Park and a link to the controlled crossing of Latrobe Terrace.	Geelong South	No	2.5m wide gravel path	$37,000	Yes	
63	E	Review bicycle lanes on Shell Road.	Ocean Grove to Point Lonsdale	No	Line marking and signage.	$26,400	Yes	
64	E	Install bicycle lanes along Mathews Road from Cox Road to the Geelong Bypass trail.	Corio	Yes	1.5m wide bicycle lanes and signage	$33,000	No	VicRoads
65	E	Install bicycle lanes along Hendy Street from Purnell Road to the Geelong Bypass.	Rosewall	Yes	1.5m wide bicycle lanes and signage	$15,800	Yes	
66	E	Install bicycle lanes along Sheepwash Road from the Round the Heads Trail to Barwon Heads Village Park.	Barwon Heads	No	1.5m wide bicycle lanes and signage	$13,200	Yes	
67	E	Install bicycle lanes along Thacker Street between Wallington Road and Tuckfield Street	Ocean Grove	No	1.5m wide bicycle lanes and signage	$28,800	Yes	

6.2 Maintenance Priorities

REF	Priority	Proposal	Cost Estimate	Stakeholders
68	A	Create a forum for answering/addressing comments and ideas from cyclists about network and facility issues. Such a forum could be web or email based and should include a process of following up with relevant departments to ensure suggestions are followed up appropriately. A phone number and postal address for cyclist issues should be linked to the forum.	-	BRBC, VicRoads
69	A	Mark future paths with a centre line to separate two-way flows and permit safe operation Paint directional (keep left) stencils and at regular intervals on all paved bicycle paths and install keep left signage on all unpaved trails. Refer to the toolkit section of the cycle strategy.	$5,000	
70	A	Implement a network and facilities maintenance and management program based on principals of the Road Management Act. The program should aim to carry out audits of high traffic routes every six months and low traffic routes every 12 months. The program should also: ▪ Allocate an appropriate ongoing maintenance budget for cycling infrastructure; ▪ Define responsibility for maintenance; ▪ Include all types of maintenance, i.e. sweeping, repairs, etc; and Obtain commitment from responsible parties to carry out maintenance within timeframes of the program.	-	VicRoads
71	A	Install centre line treatment on corners of the all sealed shared trails that have limited visibility.	$5,000	
72	A	Address existing maintenance issues that were highlighted via cycle strategy consultation (cycling@geelongcity.vic.gov.au email address). These are outlined within feedback section of the Cycle Strategy Consultation Report (pages 39 – 48).	$20,000	
73	B	Carry out yearly safety/maintenance audits of off road trails and paths. Key issues to address will be:	-	

REF	Priority	Proposal	Cost Estimate	Stakeholders
		▪ Blockages to sightlines; ▪ Conditions of pavement/surface; ▪ Condition of terminal treatments; ▪ Intersections with motor vehicles; and ▪ Interactions between modes. As part of this also review crash statistics and audit accident locations.		
74	B	Barwon Trail - Install centre line treatment on corners of the all sealed shared trails that have limited visibility.	$5,000	CCMA (Barwon Trail)
75	B	Paint black cycle stencils on the white surfaced bicycle lanes along Western Beach Road.	$5,000	

6.3 Facility Priorities

REF	Priority	Proposal	Cost Estimate	Stakeholders
76	A	Install permanent inductive loop counters (as discussed in Section 3.8) on the Barwon River and Bellerine Rail Trail paths to assist monitoring of cyclist numbers. Regularly monitor count data.	$5,000	
77	A	Carry out an audit of bicycle parking in Geelong. Areas of specific focus should include: ▪ Geelong Waterfront; ▪ Premier Reserves and Parks; ▪ Central Geelong; ▪ Train Stations; ▪ Bus stations; ▪ Activity Centres; ▪ Recreation Reserves; ▪ Sporting Facilities; ▪ Health Care Centres and Hospitals; and ▪ Other key trip attractors. All bicycle parking should be well lit and clearly visible, close to high traffic pedestrian areas, and designed so it can be locked to the frame and wheel of a bike. Cycle parking in longer stay areas (train stations) should be undercover.	$25,000	Parks Victoria, Vic Track, Sporting Clubs
78	A	Design and install primary cycle signs (key intersection signage) to direct cyclists to key attractions. Signs should be large, easily to read and show: ▪ Direction to major attractions i.e. Waterfront, City Centre, Linear Trails; and ▪ Estimated journey time. Signs should be located at key decision points along the cycle network. Signs should be consistent in design throughout Greater Geelong	$50,000+	Corangamite Catchment Management Authority (CCMA), Barwon Water, Vic Roads, Parks Victoria
79	A	Improve signage along the Geelong Waterfront, including warning and guidance signage notifying the shared nature of the path and encouraging people to be courteous to other users (e.g. pedestrians, cyclists, dog walkers, elderly walkers, children)	$10,000	

REF	Priority	Proposal	Cost Estimate	Stakeholders
		Evaluate the benefit of the signage and consider implementing on all shared cycle and pedestrian paths.		
80	A	Purchase or construct mobile bicycle parking stands that can be taken to council events and borrowed/hired by private event organisers. Parking stands should cater for a minimum of 20 cycles.	$2,000	
81	A	Implement policy for new public developments and facilities that ensures all new facilities have adequate cycle connections and appropriate end of trip facilities such as bicycle parking and storage. As discussed in Section 5.	-	
82	B	Create a bicycle parking facility within the Civic Centre car park. The facility should store a number of bicycles and include lockers, changing facilities and showers. A membership system, for individuals or businesses, could be introduced to assist with costs of the proposal. Promote the proposal to local businesses and commuter cyclists as a safe and convenient place to store bicycles. Incorporate best practice cycle parking design as discussed in the cycle strategy toolkit. Integrate into all new parking facilities and to expand to other existing car parks.	$10,000	
83	B	Design and install secondary cycle signs (on route signage) to guide cyclists in the correct direction and indicate locations of interest. Signs should indicate: ▪ Path direction; ▪ Facilities i.e. rest stops, toilets, water fountains; and ▪ Key locations i.e. parks, schools, swimming pools, cycle parking, railway stations. Signs should be installed at regular intervals along The Bellarine, Bay, Barwon, Waurn Ponds, Parklands, Geelong Bypass and Round the Heads trails and throughout the on road network. Primary and secondary signage should be developed as a suite to ensure consistency and aid legibility. Signs should be consistent in design throughout Greater Geelong	$50,000	CCMA, Barwon Water, Vic Roads, Parks Victoria
84	B	Pilot cycle rests (bars at waist height for cyclists to hold whilst waiting) at key intersections along the Tom McKean linear trail. Evaluate and install on other off road paths.	$5,000	
85	C	Work with the 10 largest employers (by number of employees) in the Greater Geelong area to develop well designed end of trip facilities such as cycle parking, lockers, changing rooms and showers.	-	
86	C	Install signs on all off road shared paths advising cyclists to ride at safe speeds on the approaches to known conflict points.	$10,000	

REF	Priority	Proposal	Cost Estimate	Stakeholders
87	C	Define the Bellarine Rail Trail as a showcase bicycle trail. Ensure that facilities (seating with shade, cycle parking at stop off points, rubbish bins, toilets etc) on route are high quality and at regular intervals. All new cycle paths and trails should be modeled on this showcase route. Refer to Toolkit section of the cycle strategy.	$20,000	Friends of the Bellarine Rail Trail
88	C	Carry out an audit of stop off facilities on off road cycle routes that includes assessment of seating, shade, drinking fountains, toilets etc.	$20,000	

6.4 Coordination, Promotion and Education Priorities

REF	Priority	Proposal	Cost Estimate	Stakeholders
89	A	Allocate staff resources for sustainable transport within Council to oversee the implementation of the cycle strategy. Resourcing will assist Council: ▪ Ensuring actions from the cycle strategy are implemented within the stated timeframes; ▪ Work across whole-of-council to increase awareness of bicycle facility and network, education, and promotion provision; ▪ Increase funding applications to increase funding for cycle infrastructure and coordination, education, promotion strategies; ▪ Improve cycle related maintenance via a feedback forum and audits of routes and facilities; ▪ Liaise with bicycle user groups; ▪ Promote school-based bicycle education programs; ▪ Improve Walking and Public Transport promotion and coordination; and ▪ Provide regular coverage within the media including City New.	-	Cycle Groups, Cycle Clubs, VicRoads
90	A	Work with neighbouring Councils to ensure consistency with the planning of cross borders links and inter-urban connections.	-	Wyndham City, Moorabool Shire, Golden Plains Shire, Surf Coast Shire
91	A	Review and formalise the role of the Barwon Regional Bicycle Council. Objectives should be: ▪ Gain agreement from cycle community on a system of collaborating; ▪ Initiate annual planning events; and ▪ Identify resource and funding opportunities.	-	BRBC, Cycle Groups
92	A	Develop on line cycle maps of the City of Greater Geelong. Maps should assist users in finding cycle routes that most suit their ability and preferences (on road or off road etc).	$5,000	

REF	Priority	Proposal	Cost Estimate	Stakeholders
93	A	Continue to promote Ride to Work day and sponsor local businesses that take part by providing prizes for businesses to distribute.	$6,500	Bicycle Victoria
94	A	Advocate for expansion of school-based bicycle education programs (e.g. Cycle on, Bike Ed, Bike Ed Challenge) Identify Council's role in promoting and growing the program and investigate the possibility of expanding to younger age groups.	-	Schools, Department of Education
95	A	Working with Cycle Groups and Clubs, define a series of event/training routes that event organizers can be encouraged to use. Event routes should: • Have minimal intersections requiring cyclist to give way; • Preferably have majority left had turns throughout; • Be connected to some type of minimal infrastructure i.e. public toilets/halls; • Cover topography and road surfaces that support road racing i.e. flat and smooth; • Be multiple lengths, i.e. loops of 25, 50 and 100Kms; • Minimise the need for excessive support, i.e. corner marshals, by having existing infrastructure; and • Avoid dangerous roads and intersections. Note: Geelong Cycling Club and Footscray Cycling Cub currently operate within COGG. Identified race routes include: St Leonards, Staughtonvale, Lara, Sutherlands Creek, Eastern Gardens and Little River. Some courses cross into neighbouring municipalities. The City of Greater Geelong should also facilitate joint use of equipment (signage, marquees, cycle parking etc) for races and events.	-	BRBC, Cycle Groups, Geelong Cycle Club
96	A	Encourage schools to apply for funding for cycle parking (i.e. Go For Your Life Program).	-	
97	A	Review Council fleet policies and look to increase Council staff cycle use by purchasing a bike fleet and encouraging Council staff to use them instead of cars.	-	
98	A	Implement the Domestic Animal Management Plan. Develop 'keep dogs on leads' stencils and signage notifying of the law and possible fine.	-	

REF	Priority	Proposal	Cost Estimate	Stakeholders
99	A	Implement and enforce a ban of motorcycles on off road paths and trails. Impose a $200 fine. Create and display signage notifying the ban and fine.	$5,000	
100	B	Continue to support family ride days such as the Bike Path Discovery Day.	$7,000	VicRoads, Education Department, Bicycle Victoria
101	B	Expand the TravelSMART Schools program with an aim to develop school travel plans at a minimum of 5 schools per year. Implement the priority outcomes of these travel plans.	$25,000	DOI, Schools
102	B	Undertake a City of Greater Geelong Green Travel Plan, compare travel statistics with previous surveys and implement actions resulting from the travel plan.	-	
103	B	Initiate an active transport to work program (i.e. TravelSMART) with an aim to develop workplace travel plans at 2 major employers per year. Coordinate this with the proposal to work with the 10 largest employers (by number of employees) in the Greater Geelong area to develop well designed end of trip facilities	$10,000	DOI, Businesses
104	B	Develop new cycle maps of the Greater Geelong region and distribute. Include sharing the paths and safety messages on maps. Investigate TravelSMART maps for this proposal.	$23,000 per map incl printing.	DOI/TravelSMART
105	B	Encourage schools to apply for funding for cycle parking (i.e. Go For Your Life Program).	-	
106	B	Work with Bicycle Victoria to deliver regional coordination of bicycle promotion, education and coordination.	-	Bicycle Victoria
107	B	Investigate identifying Bicycle Champions to promote cycling in Geelong. I.e. Encourage members of the Geelong Football Club to ride bicycles to/for training.	-	
108	B	Investigate opportunities to market cycle tourism. Information about touring trails and accommodation along cycle routes should be available at major events, on the City's website and from council offices.	-	Tourism Victoria, Geelong Otway Tourism
109	B	Work with local bus companies to install bike racks on buses along key bus routes.	-	McHarry's Bus Lines, Benders

REF	Priority	Proposal	Cost Estimate	Stakeholders
		Market the initiative as a way of exploring Geelong by sustainable modes.		Bus Service
110	B	Work with V-Line to promote Geelong as a destination accessible via bicycles on trains.		V Line
111	C	Adopt and instigate cycle priorities for new developments as described in Section 5.2.4.	-	
112	C	Contribute to cycle safety campaigning, complementing the existing Victoria Police Cycle Safe Campaign. Target the evening peak with radio advertisements between 3pm and 7pm. Align with existing approaches, Victoria Police, TAC, etc.	$10,000	Victoria Police, Transport Accident Commission, Amy Gillett Foundation
113	C	Implement a cycling rewards program which rewards efforts done to increase cycling or significant cyclist achievements. The categories for reward should be; individual, business and community.	$6,500	Leisure Networks, Businesses, Community Groups
114	C	Support local Cycle Groups to hold regular social road racing events close to Geelong City.		Cycle Groups, Cycle Clubs
115	D	Seek funding to develop a program that encourages residents to donate old bicycles to schools so that children without bikes can use them to ride to school.	-	Schools, DOE
116	D	Establish a series of themed cycle days and programs to support and encourage cycling in Geelong this may include: ▪ Learn to Ride Day; ▪ Take a Kid Cycling; ▪ Ride or Stride to School; ▪ Bike Maintenance; ▪ Bike Purchasing; ▪ Senior Rides; and ▪ Women's Cycle Days.	$15,000	Cycle Groups
117	D	Investigate imposing car parking restrictions at sample schools near the school entrance to move vehicles away from the school gate and make leaving school safer for cyclists.	-	

REF	Priority	Proposal	Cost Estimate	Stakeholders
		Evaluate the impact of the project.		
118	D	Develop and promote a 'girls on bikes' program to encourage more females to cycle in Geelong. The program could include: ▪ Social messages; ▪ Health and Fitness messages; ▪ Cycle ride days; and ▪ Competitions. Apply for funding available to projects of this nature.	$10,000	Leisure Networks, SSL
119	D	Run a series of spring time newspaper advertisements promoting the network of off road cycle paths in Geelong and the attractions along each route. Include safety and courtesy messages.	$1,000	
120	E	Regularly review and update the City of Greater Geelong Cycle Strategy	$50,000	
121	E	Encourage Cycle Groups to adopt a cycle path or route. Each group could be responsible for ensuring issues on route are identified to council and could assist with maintenance of rotes or part routes.	-	
122	E	Should Geelong be successful in obtaining hosting rights for the Cycling World Cup, roll out progressively increased marketing about the World Cup and the benefits to Geelong. Promoting Geelong as a 'Cycle City' and informing people that cycling is the best way to get around during the event.	$20,000	International Cycling Union (UCI).

Long Term Proposals

The following proposals are for significant network improvements that also incur significant cost. Council should pursue external funding for these initiatives and consider implementation when funding becomes available. At a minimum all high priority proposals should be implemented during the five year lifetime of the cycle strategy.

REF	Proposal	Suburb	MBN?	Treatment Type	Cost Estimate	Priority
123	Seal cycle path along the Bellarine Rail Trail from Geelong to Drysdale. Prioritise areas of high population.	Geelong to Drysdale	Yes	17km at 2.5m wide.	$2.3M	HIGH
124	Negotiate with CCMA to seal the Barwon River Trail between Swanston Street and Breakwater Road.	South Geelong	Yes	1.7km, 2.5m wide shared path plus signage.	$225,000	HIGH
125	Define Horseshoe Bend Road as a premier cycle training route, widen shoulders, improve signage and seek to reduce vehicle speeds to 60km/hr.	Marshall	Yes	New bicycle lanes and signage.	$200,000	HIGH
126	Resurface the shared path along the Tom McKean/Gabrielle Blythe Linear Trail. Install centre median lines on the path, signage and holding rails at intersections.	North Geelong	Yes	3.5km long, 2.5m wide shared path with signage and line marking.	$463,000	HIGH
127	Connect the fragmented cycle paths along the Waterfront from Rippleside Park to North Shore.	North Geelong	No	2.5m wide shared path plus signage.	$331,000	HIGH
128	Connect the cycle path along Hovells Creek from the Hovells Creek reserve to Flinders Ave (via Serendip Sanctuary).	Lara	Yes	2.5m wide shared path plus signage.	$424,000	HIGH
129	Improve cycle provision on The Esplanade.	Portarlington, Indented Head	No	Improvements to line marking and signage.	$396,000	MEDIUM
130	Install on road bicycle lanes along Portarlington Road (Portarlington – Queenscliff Road).	Portarlington to Point Lonsdale	No	1.5m wide bicycle lanes and signage.	$224,400	MEDIUM
131	Work with Cheetham Salt and DSE to create a shared cycle and pedestrian path from Limeburners Point to Point Henry, along Portarlington Road and Point Henry	East	No	2.5m shared path plus	$477,100	MEDIUM

REF	Proposal	Suburb	MBN?	Treatment Type	Cost Estimate	Priority
	Road.	Geelong		signage.		
132	Investigate off road bicycle lanes on north side of Townsend Road and link via Coppards Road and Wilsons Road to the rail trail.	Whittington	Yes	2m wide shared path plus signage.	$344,000	MEDIUM
133	Improve shoulders along Elcho, Patullos and Heales Roads to create connections from North Geelong to Lara.	Lara	Yes	0.5m sealed shoulders	$229,000	MEDIUM
134	Investigate installing a recreation trail around the Portarlington Recreation Reserve with connections to the Esplanade lanes.	Portarlington	No	2.5m sealed path plus signage.	$450,700	MEDIUM
135	Create an off road bicycle connection from the Geelong Bypass path to Deakin University. Investigate a link via the Barwon River Path, through Belmont and Colac Road for this purpose.	Geelong West	Yes	3m wide shared path plus signage.	$1.08M	MEDIUM
136	Improve on road bicycle lanes along Murradoc Road (Drysdale – St Leonard's).	Drysdale to St Leonard's	No	Improvements to line marking and signage.	$158,400	LOW
137	Work with Barwon Coast Committee of Land Management to investigate an off road shared path along the Buckley Park Foreshore Reserve connecting Ocean Grove to Queenscliff.	Ocean Grove to Queenscliff	No	2.5m wide shared path plus signage.	$662,000	LOW
138	Advocate for an off road shared path along the foreshore from Barwon Heads to the proposed off road path in Surf Coast Shire.	Barwon Heads	No	2.5m wide shared path plus signage.	$1.1M	LOW
139	Investigate the feasibility of an off road cycle and pedestrian path from Point Henry to Clifton Springs.	Point Henry to Clifton Springs	No	2.5m wide shared path plus signage.	$2.2M	LOW
140	Install an off road bicycle connection along Flinders Road to the You Yangs	Lara to the You Yangs	No	2.5m wide shared path plus signage.	$530,000	LOW

7 Conclusion

The aim of this strategy is to make Greater Geelong more cycle friendly and encourage more people to cycle to and within Geelong.

As Geelong grows it is important that the City of Greater Geelong anticipates and plans ahead for increased cycle infrastructure demand. This demand is evident across many urban centres around the world as petrol prices rise, climate change impacts on how we choose to live, traffic congestion becomes intolerable and communities become aware of health benefits of active transport and recreation.

By drawing on an extensive consultative process and delivering solutions based on agreed selection criteria, the proposals set out in this strategy will help develop infrastructure and education/coordination improvements for recreational, competition and commuter cyclists.

Achieving cycle strategy objectives required consultation, development of network and facilities, improvements for cyclist safety, better coordination and promotion and the delivery of an achievable plan. The strategy has tackled and delivered on each of these objectives.

A key output as mentioned is a plan for the development of the cycle network. Significant investigation and liaison with agencies and stakeholders has helped to construct a defined list of cycle schemes that, when implemented, will provide Geelong with a comprehensive network of off and on road bicycle paths/lanes.

Beyond network proposals, the strategy has identified promotional, educational and behavioural proposals as well as increased allocation of staff resources within Council to help deliver the strategy.

In conclusion, the strategy provides the City of Greater Geelong with the structure, information and forward planning to enable cycling to be significantly developed over the next 5 years and beyond.

8 Toolkit

The following toolkit has been devised to provide an indicative range of facilities and treatments that are be available to Council when implementing the Cycle Strategy.

It is important to note that these initiatives are suggested as indicative treatments only and each scheme will need to be assessed on it merits. Detailed design will determine whether a treatment is feasible and suitable in a particular location.

These toolkits are also provided as a guide of best practice at the time when the strategy was written. Advances in design and new techniques may provide improvements or preferred alternatives that will supersede the treatments listed below.

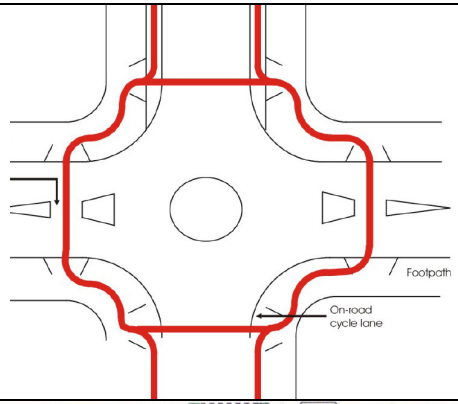
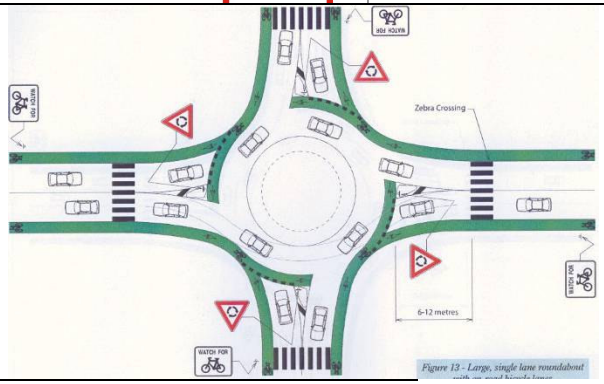
Council should regularly review VicRoads Cycle Notes and Austroads Part 14 Bicycles for detailed design information.

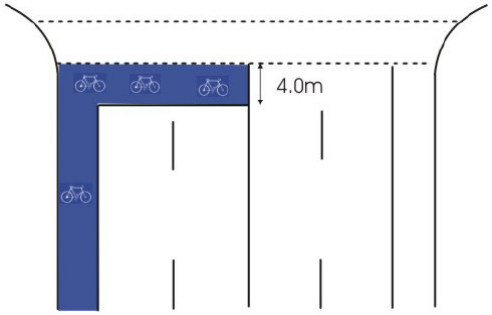
Intersections

For cyclists, intersections are the most dangerous locations. Cyclists are more vulnerable at these locations and yet typically they are provided with less facilities and protection. Intersection design is important to improving safety, creating vehicle deflection slows vehicle speeds and improves safety, particularly at roundabouts.

Refer to VicRoads Cycle Notes, numbers; 5, 8, 14, 15 and 16. Austroads Part 14.

Table 6: Intersection Toolkit

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Off-line Roundabout design.	Provision of lanes across the intersection that avoid cycle-car conflict.		<$50k if no land-take is required.	Not typically preferred by commuter-cyclists but safer for novice cyclists.
On-line Roundabout design.	Provision of cycle facilities through the roundabout intersection.		<50k dependent on size and widening etc.	If the intersection is to remain a roundabout then this design provides improved on-road cycle facilities. Can incorporate green bicycle lane treatment.

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Advance Stop Boxes.	Provision of advanced waiting boxes at intersections providing improved safety for cyclists.		$10k<	Relatively simple treatment promoting priority and safety for cyclists.
Continuous Biycle Lanes.	Provision of bicycle lanes that continue through the intersection.		$10k< if no carriageway widening is required.	Often where conflict occurs most and often where bicycle lanes are least present but this treatment maintains the lane straight through the intersection.
Early cycle phase at signalised intersections.	Provision of a cycle-only green phase enabling cyclists to get ahead of traffic.		$50k< although dependent on existing infrastructure.	Improves safety as well as visibility of cyclists.

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Green tarmac at conflict zones.	Where vehicles are required to cross bicycle lanes, green tarmac is used to highlight the conflict zone.		$10k<	Relatively cheap and effectively method of reducing conflict. Emphasises the presence of the cyclist.
Cyclist Signal Detection.	All light-controlled intersections are fitted with vehicle detection sensors. Because bicycles have much less metal than other vehicles such as cars and motorcycles, they can be difficult for the sensors to detect.		$20k estimate.	Intersections can be fitted with a row of diamonds painted on the road surface that are skid resistant and indicate the best location for cyclists to wait and be detected. Best used on roads with low traffic volumes.

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Contra-flow Bicycle Lane.	Where one-way traffic routes exist, there may be a demand for a contra-flow bike entry and lane.		Dependent on many factors including existing road width etc.	These provide access to the most direct route for cyclists. Signage and other markings need to be sufficient to reduce the risk of cyclist/vehicle conflict.
Segregated Intersection Design.	Where cyclists require protection from high speeds through an intersection but wish to maintain directness, this treatment can be used.		$25k estimate but retrofitting may cost significantly more.	Provides continuous priority for bicycles through intersections.

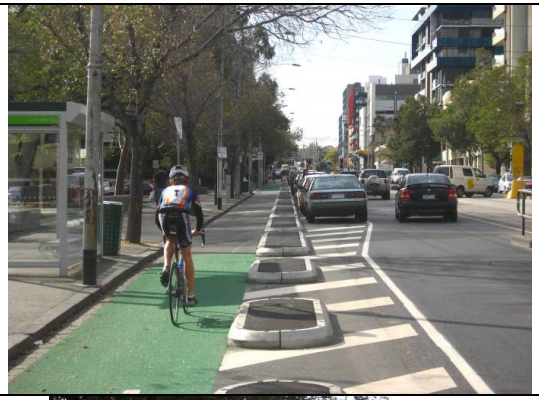
Network

The cycle network is extremely important and needs to cater to a wide range of cyclists. High speed, long distance touring cyclists require very different facilities to family recreation groups for example. The key distinction is between the on or off road network. The following options provide a series of facilities which should be considered against the location, the likely users and their requirements.

Refer to VicRoads Cycle Notes: 2, 3, 4, 7, 9, 12, 13 and 18. Austroads Part 14.

Table 7: Network Toolkit

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
On Road bicycle lanes.	Must be 1.5 metres wide minimum. Provides an exclusive lane for cycles to travel in. Typically located on the left-hand side of the road.		Line marking and signage $6k per km upwards.	The lanes themselves require line marking and signage and can therefore be cheap if space permits.

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Copenhagen Lanes.	The bicycle lane is located between car parking and the pedestrian footpath to reduce cycle-car conflict.		$450k per km in an urban context.	Particular effective in areas with high levels of car-parking movements.
Wide kerbside lanes.	Typically used where on-street car parking and bicycle lanes need to be incorporated together.		Line marking and signage $6k per km upwards.	Can create conflict with car drivers opening doors although sufficient space is intended to be provided.

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Shared Paths (Off-Road).	A shared path is provided for use by cyclists and pedestrians and is required to be at least 2.0-2.5 metres wide. Painted centre lines separate two-way flow and permit safe operation.		$50k per km depending on design etc.	Price typically includes asphalt paving costs unlike on-road paths and therefore more expensive.
Dedicated Off-road Cycle Path.	An off-road path is provided for use by cyclists only and is required to be 2.0-3.0m wide.		$50k per km depending on design etc.	Price typically includes asphalt paving costs unlike on-road paths and therefore more expensive.
Terminal treatments for off-road shared paths	Terminal treatments are provided to: ▪ Restrict illegal access by motorists; and/or ▪ Advice cyclists that there is a road ahead and slow down cyclists before they cross			Must be designed and installed in such way as to serve their intended purpose whilst not causing an unacceptable hazard to cyclists. Refer to VicRoads Cycle Notes No.17

Signage

The three main functions of signage systems are: to regulate and determine the type of facility within the context of the overall road system, to warn users of identifiable potential hazards within the riding environment; and, to assist users to find their way around the network[17]. Key design elements for signage are that signs are clear and easy to read, show important information and are located at appropriate locations, not blocked by trees or other obstructions and not too high. Signs should be consistent in design throughout.

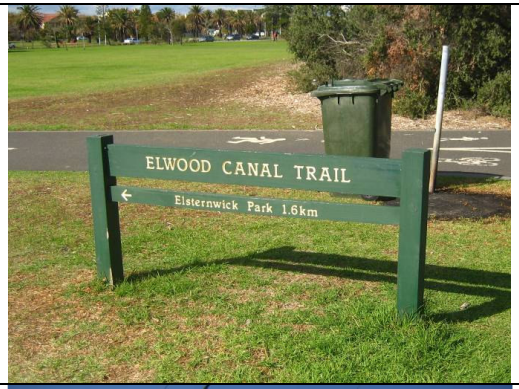
Refer to VicRoads Cycle Notes numbers: 2, 6, 10, 11, 12 and 15. Austroads Part 14.

Table 8: Signage Toolkit

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Shared Path Signage.	Important information signage as it helps warn pedestrians and cyclists that they are sharing the space and need to behave accordingly.		Approximately $200 per sign.	

[17] NSW Bicycle Guidelines.

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Pedestrian and Cyclist conflict controls.	In areas of potential conflict between dogs and cyclists, appropriate signage can help mitigate the problem.			
'Keep Left' Signage.	On shared paths this is used to reduce conflict particularly at reduced sightline locations.		Dependent on length of route and number of stencils and signs.	Various formats such as the arrows (shown), use of text or signage but typically all require a central line.

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Trail Signage.	Information signage typically used at the start, end and at key entrances to a trail.		$400 per sign approximately.	
Way finding Signs.	Typically used at intersections where trails and paths meet the road network.		$200 per sign approximately.	

End of trip facilities

End of trip facilities are just as important as the network when it comes to encouraging people to cycle, end of trip facilities are particularly important to encouraging people to commute by cycle. Cycle parking is one form of end of trip facility and comes in many different types, each bringing with them advantages, disadvantages and varying installation costs. The following list is not exhaustive but represents some of the types and options available.

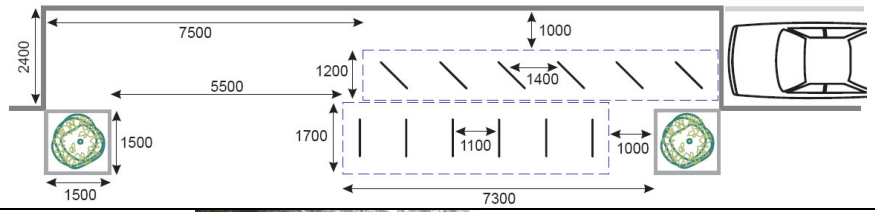
Cycle parking should always be in areas of high pedestrian activity, be sufficiently lit and be designed so the body of the bike, not just the wheel, can be locked to the park.

Other types of end of trip facilities include; lockers, showers and toilets/changing facilities. End of trip facilities should be designed to suit the type of cyclist they will cater for and fulfil as many of their needs as possible. End of trip facilities at a school will be different to end of trip facilities at a business or workplace.

Refer to Austroads Guide to Traffic Engineering part 14 Bicycles, chapter 10.

Table 9: Facilities Toolkit

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Cycle parking on pathways.	Where cycles are parked on the footpath the following style of parking is preferred.		Approximately $250 per rail.	Cycle parking should be placed near popular destinations. It is preferable to have more locations with less parks than fewer locations with lots of parks.

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Cycle parking on carriageway.	Cycle parking can replace car parking using this treatment.		Estimate $30k.	1 car parking space can equate to about 10 cycle parks.
Cycle Parking at Stations.	Lockers provide additional security and longer-term protection.		Estimate $2500 each based on Victorian scheme.	Particularly important at remote locations such as car parks. It is always necessary to have signage indicating the process for acquiring the parking and its purpose.
Caged bicycle parking in a car park.	The idea is to replace a small number of car parking spaces with many bicycle parking spaces.		$5k upwards and considerably more with a cage.	In this example, a secure cage is used for additional security.

Treatment Name	Description	Example	Indicative Costs	Comments/Notes
Hooks.	Where space is a premium, the use of hooks can provide additional storage.		$10k upwards depending on design.	More suited for private or membership parking rather than public parking.
Indoor Parking.	Indoor parking provides excellent security and convenience for the user.		$50k upwards depending on facilities.	In this example, indoor storage is provided alongside lockers and shower facilities.

9 Funding

VicRoads Funding

All VicRoads funded bicycle projects must separate cyclists from motor vehicles (on-road lanes and off-road paths) and maintain appropriate levels of priority for cyclists at intersections. Projects must also comply with the relevant requirements of:

- AUSTROADS Guide To Traffic Engineering Practice - Part 14 Bicycles;
- VicRoads Traffic Engineering Manual, Volumes 1 and 2;
- VicRoads Cycle Notes; and
- Applicable Australian Standards.

All new urban developments and all road improvement projects on roads forming part of strategic bicycle networks, should consider the provision of bicycle facilities. Bicycle facilities should also be considered when major road or freeway projects are undertaken and, if appropriate, funded as part of those projects.

Opportunities to provide for bicycle facilities, or to provide improved conditions for cycling, should be also assessed and implemented where feasible as part of road safety projects or when minor road improvements, road resurfacing or line-marking works are undertaken.

Projects will be considered for funding under this activity where they form part of the Principal Bicycle Network (PBN), in the metropolitan area, Priority Bicycle Routes (PBR's) in major cities and towns in regional Victoria, or other strategic routes providing for cycling as a mode of transport.

Bicycle projects in regional cities and towns should be focused on developing the area's strategic bicycle network. Projects will be considered for up to 100% funding if they are on agreed PBR's.

Bicycle projects may also be considered for funding if they are located on or adjacent to a VicRoads declared road that passes through a town in regional Victoria that does not have a network of Priority Bicycle Routes identified, or where a project fulfils an identified strategic need.

Other Programs and Funding Sources

Bicycle projects that are not considered eligible for funding under the above criteria may be eligible for funding under other bicycle and pedestrian programs as outlined in the table below.

For more information on these programs, Council can refer to *"Meeting our Transport Challenges – Connecting Victorian Communities" - May 2006,* or contact the relevant officer.

Table 10: Other Programs and Funding Sources.

Program	Outline of Program	Responsible Agency	Contact Details
Local Area Access Program.	Funds can be provided for small scale projects that improve access to local facilities that support increased cycling and walking.	Department of Infrastructure	Mr Tim Patton Planning and Policy Division 9655 6232
Transit Cities Program.	Improve the amenity of nominated areas and developing better transport links to reduce traffic congestion and improve liveability.	Department of Sustainability and Environment	Ms Fiona Powell 9637 9202
Provincial Pathways Program.	To increase tourism and support local communities by developing cycling and walking trails in Provincial Victoria such as Rail Trails.	Regional Development Victoria	Diana Barrie Project Manager 9651 9906
Metropolitan Trail Network (MTN).	Expansion and completion of critical gaps in the MTN.	Parks Victoria	Mr Gerard Delany 8627 4692

Under the Transit cities program $10 million will be invested over the next 4 years in the Footscray, Geelong, Ringwood, Ballarat, Box Hill, Werribee, Epping, Broadmeadows, Sydenham, Latrobe Valley and Bendigo Transit Cities for new projects such as planning for transport interchanges, improvements to streetscapes and public spaces, mobility and access improvements and support for urban planning and design.

Sport and Recreation Victoria have a number of funding avenues for cycle related investment. These include the 'Community Facility Funding Program' which contributes to the provision of high quality and accessible community sport and recreation facilities across Victoria and the 'Go for Your Life Bike Shed Seeding Grants' which provides money to schools to construct or improve bike storage facilities. More information on Sport and Recreation Victoria funding programs can be found on their website:

http://www.sport.vic.gov.au/web9/dvcsrv.nsf/headingpagesdisplay/grants+&+funding

The Department of Victorian Communities (DVC) also provides funding for cycling related initiatives. The DVC website has a useful 'Grants Finder' tool which can be located at:

http://www.grants.dvc.vic.gov.au/web18/dvcgrants.nsf/HeadingPagesDisplay/Grants+Finder?OpenDocument

The City of Greater Geelong should be actively pursuing these funding opportunities for priorities described within the cycle strategy.

10 Cycle Maps

The following maps show existing and proposed bicycle routes in Greater Geelong. Larger scale (A3) maps are available in Appendix B.

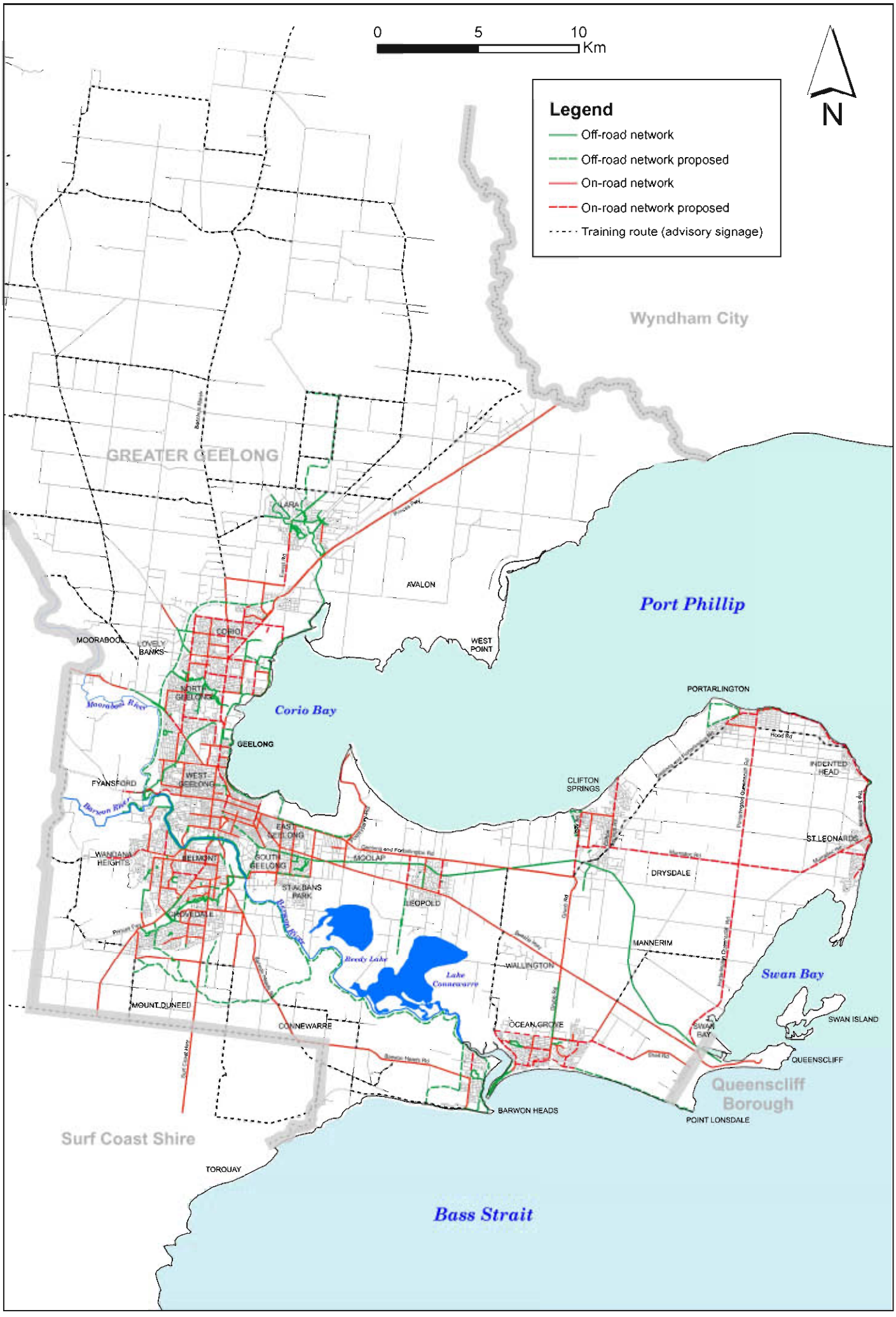
The existing on road network is shown by solid red lines. This network comprises of both wide kerbside cycle lanes (shared cycle and parking lanes) and on road bicycle only lanes.

The existing off road cycle network is shown by solid green lines. This off road networks comprises of both sealed and unsealed bicycle paths. Informal bike paths and tracks are not shown on the maps.

The proposed on and off road routes are shown by red and green dashed lines respectively.

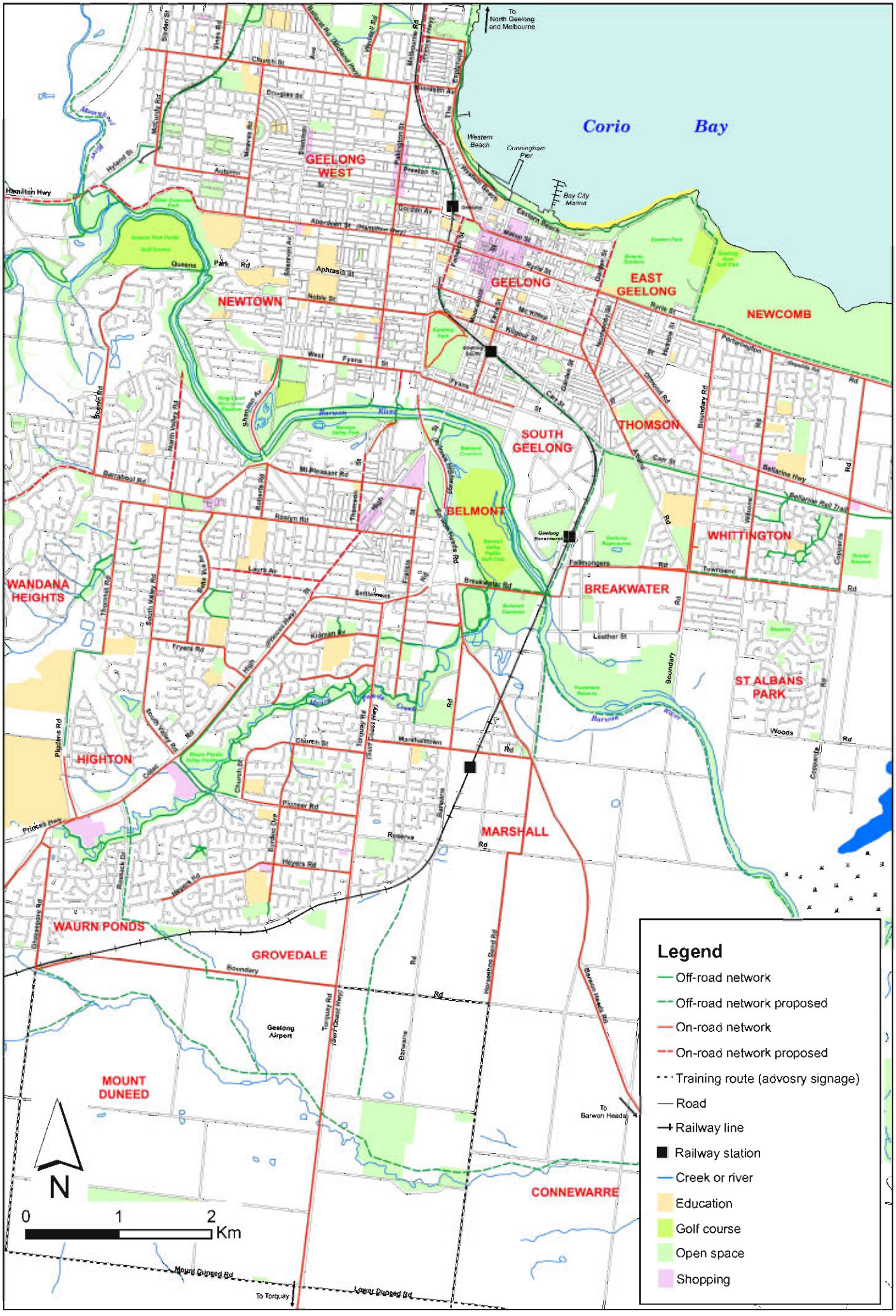
Training routes are shown on the maps by black dashed lines. A training route is a road that is recommended for long distance cycle training. These roads do not necessarily have existing facilities for cyclists, i.e. cycle lanes, however most routes should have advisory signage warning motorists of the presence of cyclists.

Map 1: Greater Geelong Existing and Proposed Routes

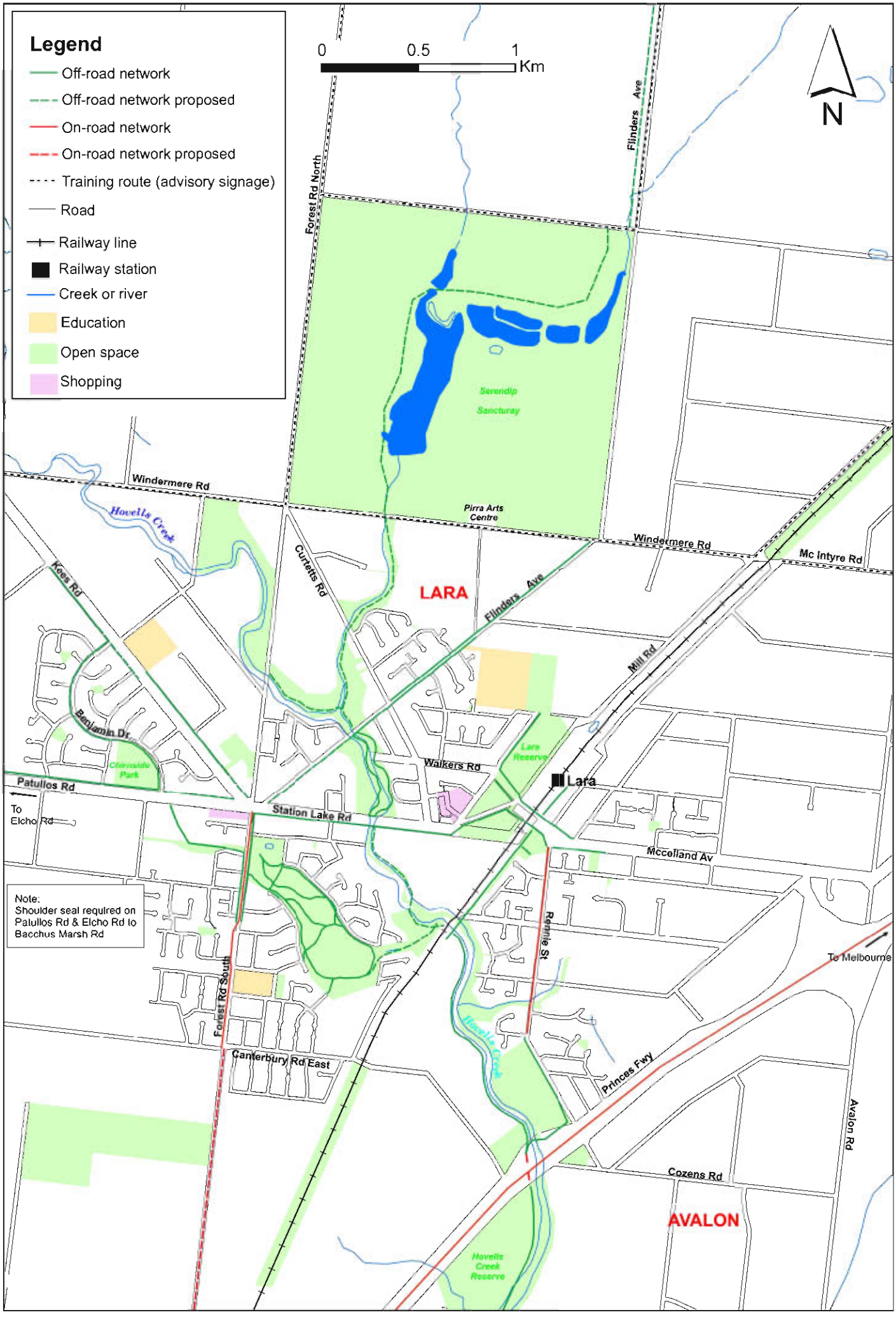


Map 2: North Geelong Cycling Routes

Map 3: South Geelong Cycling Routes

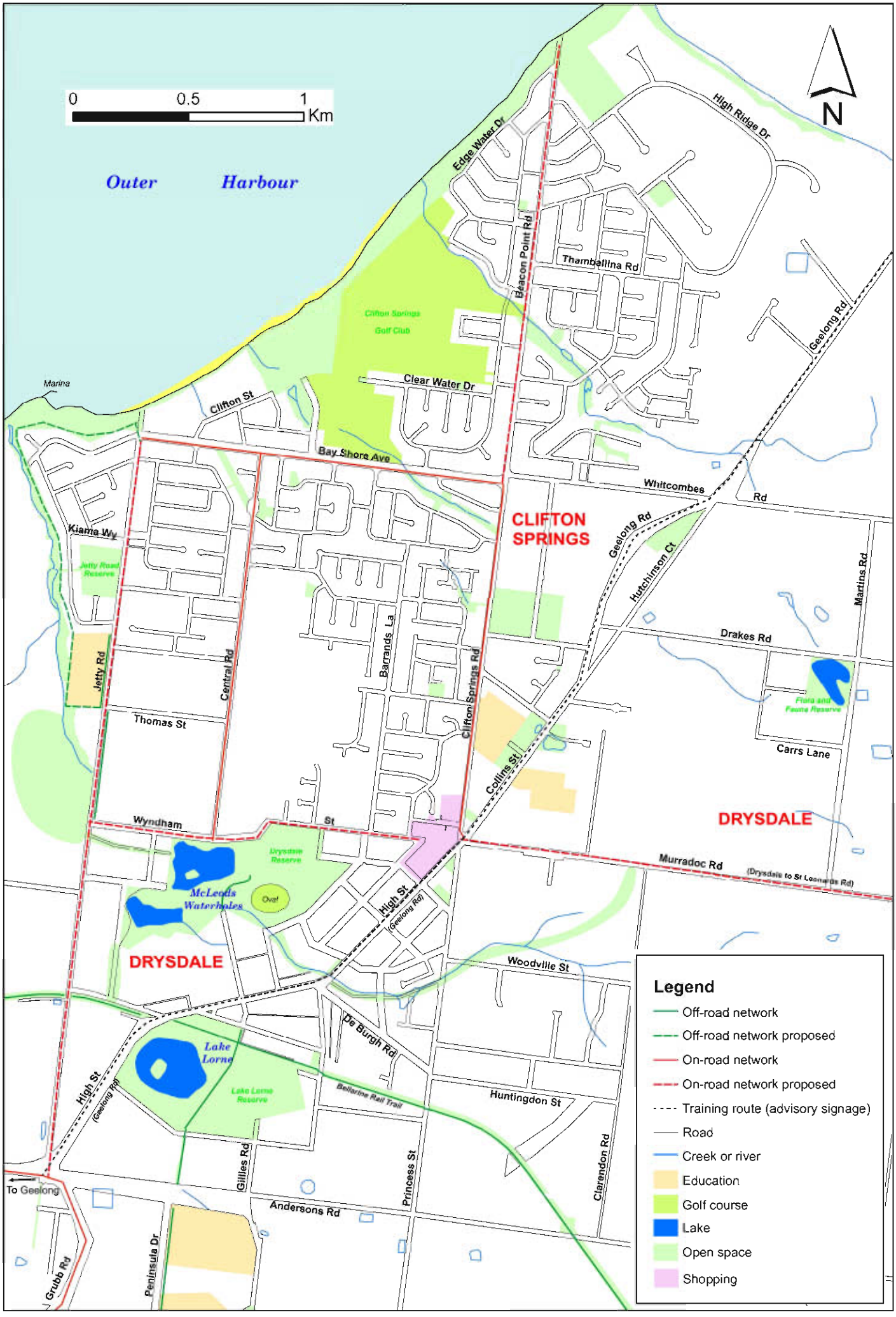


Map 4: Lara Cycling Routes

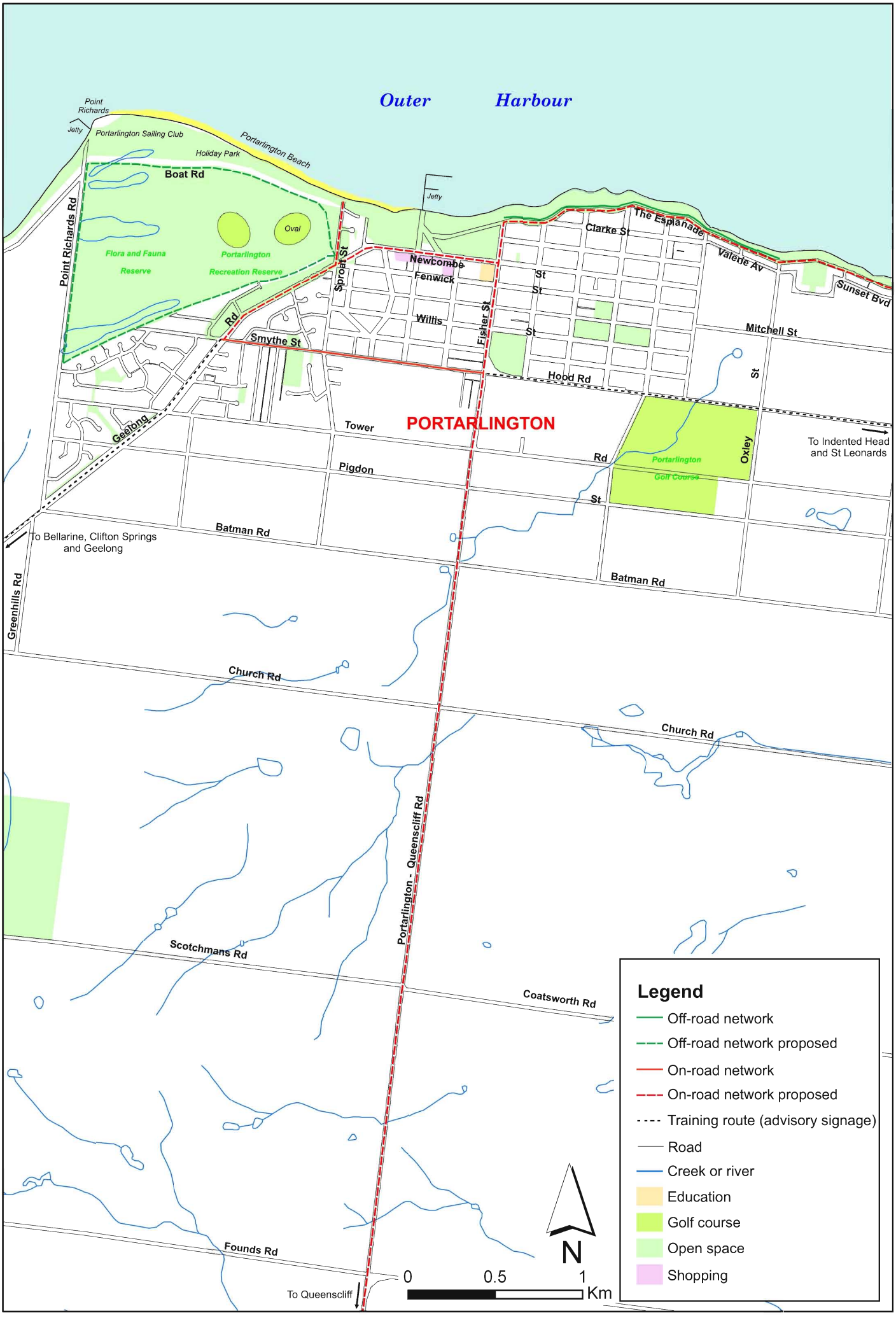


Map 5: Leopold Cycling Routes

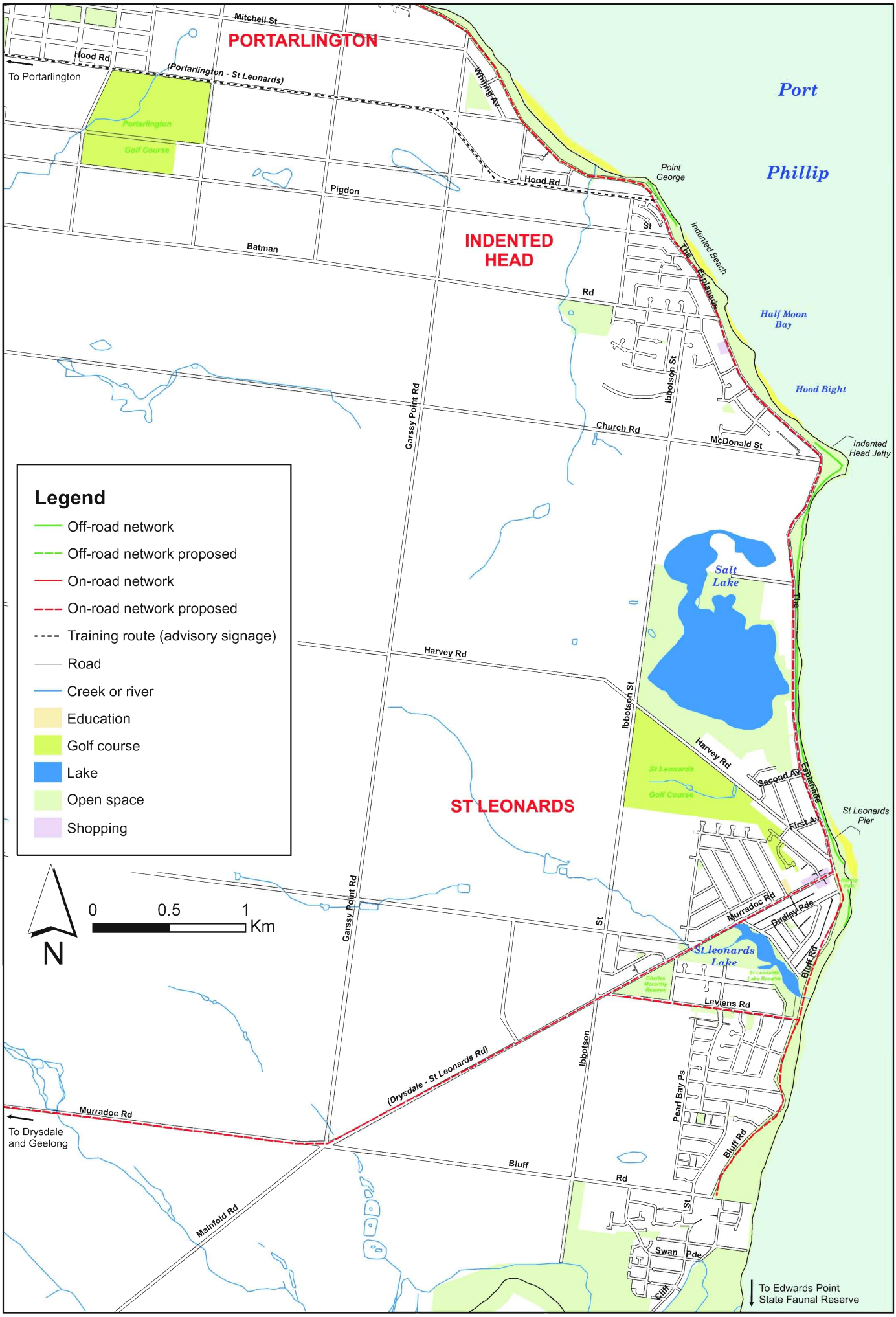
Map 6: Clifton Springs - Drysdale Cycling Routes



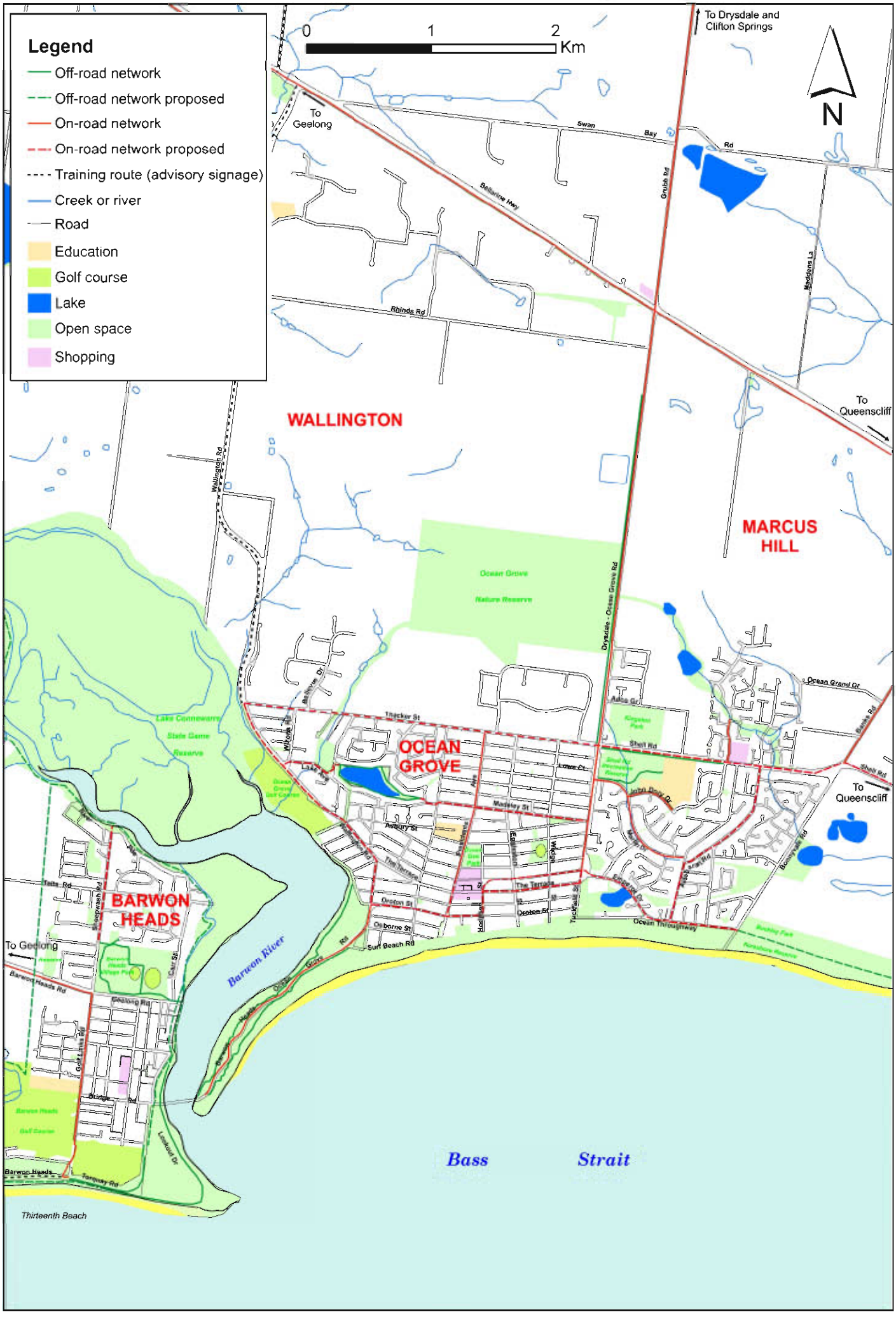
Map 7: Portarlington Cycling Routes



Map 8: St Leonards Cycling Routes

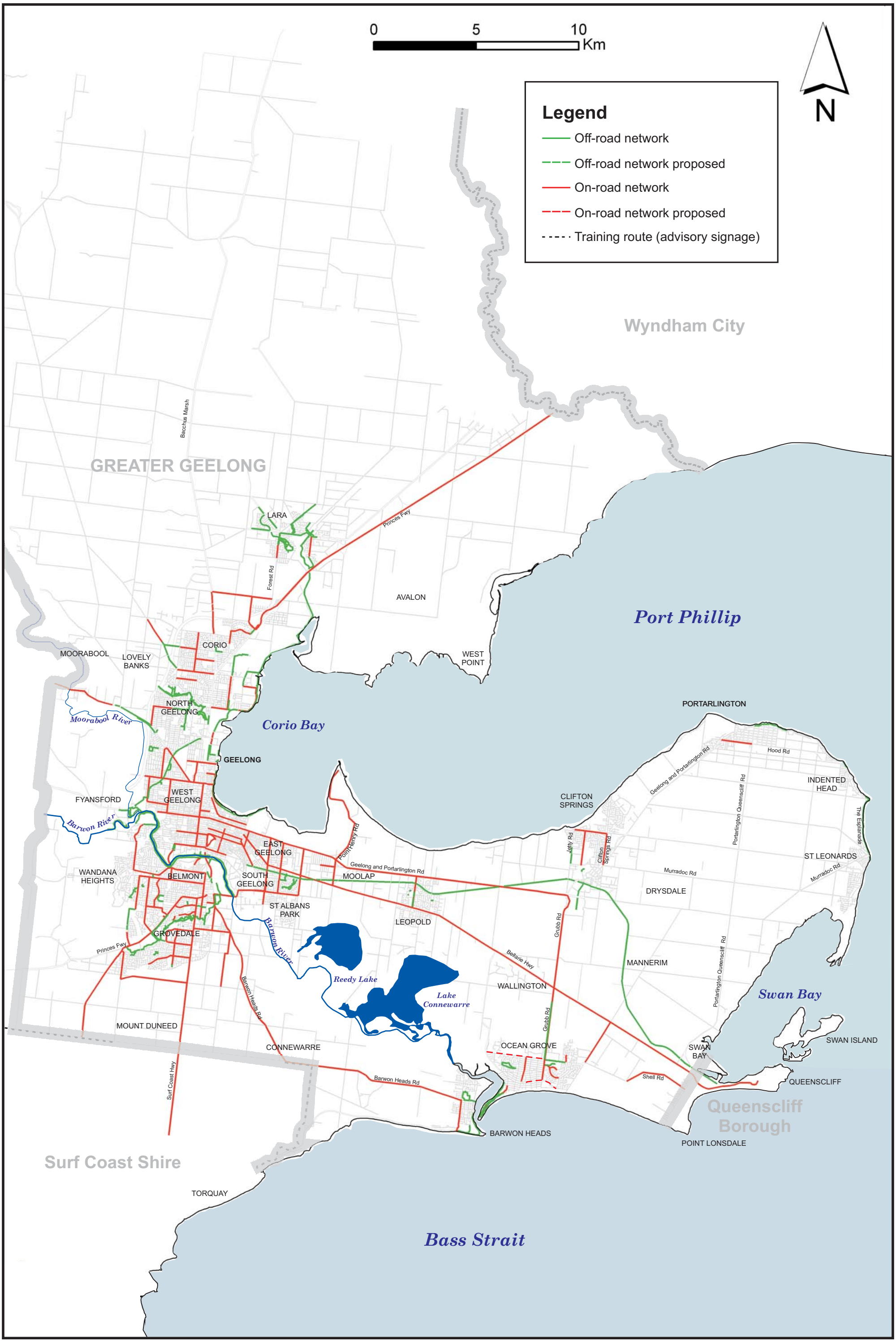


Map 9: Barwon Heads - Ocean Grove Cycling Routes



11 Appendix B – A3 Cycle Maps

Greater Geelong Existing Routes



Greater Geelong Existing and Proposed Routes