Maribyrnong Bicycle Strategy 2014
Mayor’s Message

Maribyrnong Bicycle Strategy 2014

Maribyrnong is a city on the move, adapting and responding to times of change. There is growing demand for sustainable forms of transport, as well as the infrastructure to support it, on both a global and local level. Maribyrnong City Council is proud to continue its commitment to cycling by delivering the Maribyrnong Bicycle Strategy 2014.

This Council has a strong commitment to a greener, safer and more connected city, as stated in our Council Plan 2014-2015 and illustrated by the countless projects we deliver for our community. The Maribyrnong Bicycle Strategy identifies ways of making our city even better planned, more connected and more welcoming for all cyclists.

Cycling as a form of transport brings significant individual and community benefit. It is inexpensive, provides exercise, relieves congestion on the road network, reduces transport related greenhouse gas emissions and improves air quality. The Strategy will help overcome the main barriers to more people cycling more often by providing safe places to ride.

The Strategy will guide the planning and delivery of sustainable bike-friendly transport and traffic management systems. This includes things like expanding our network of shared pathways and on-road bike lanes, as well as advocating to other levels of government for transport improvements that prioritise cyclists as much as motorists.

This Strategy is a direct response to the priorities laid out in the Maribyrnong Integrated Transport Strategy 2012, an overarching commitment that prioritises the sustainable transport modes of walking and cycling above all other modes. This is an opportunity and challenge for Council, one that we have welcomed the ideas of our community through a Bicycle Strategy Reference Group, as well as through public consultation. The Strategy provides the actions to deliver these commitments, making Maribyrnong more rideable.

Maribyrnong is a great place for families and people of all ages to enjoy active and fulfilling lifestyles. We want a well built and well maintained city that has robust community infrastructure that caters to cycling and the Maribyrnong Bicycle Strategy 2014 helps us achieve this.

Cr Nam Quach
Mayor
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1 Summary

1.1 Introduction

The following quotes from the study brief provide a context for this strategy.

Project Objectives

The main purpose of the overall project is to review Maribyrnong Strategic Bicycle Plan (MSBP) and produce a new strategy document. This document will guide planning for cycling in Maribyrnong to enable more people to ride more often and to make Maribyrnong more liveable by reducing car dependency. The document will also be a key advocacy tool for funding improvements in cycling in Maribyrnong.

- A vision for the direction of cycling for transport within Maribyrnong.
- A strategy reflecting current transport issues to guide cycling development in Maribyrnong to maximise mobility and accessibility in a sustainable way.
- A guide to Council’s decision-making in relation to funding bike projects for the short-medium term (approximately 5 years).

Project Scope

The aim of this consultancy is to produce a revised Maribyrnong Strategic Bicycle Plan including prioritised, costed actions that will guide the planning of cycling for transport within Maribyrnong for the next 5 years.

1.2 Study process

This Draft Strategy was the result of a process that involved the following activities:

- Formation of a Steering Committee of Council officers; the names of those on this committee (including corresponding members) were: Gael Reid, Stuart Hale, Katy McMahon, Lena Okin, Michael Chew, Mal McDonald, Josh Gould, Linda Williamson, Grace Girardi, Mary Dallas, Kristen Bell, and Kon Kouinis;
- Formation of a Liaison Committee (Reference Advisory Group) of active cyclists. The names of those on this committee were: Simon Crawford, Robert de Maid, Corey Innes, Trevor Junge, Frank Kinnersley, Alistair McDonald, Lisa Monaghan, Greg Rose, Kate Simnett, David St John, Lachlan Stott, Paul Thomson, Simon Whitaker, and Debbie Senior - although not all were able to attend the two evening meetings held during the study;
- Publication of an ‘Issues Report’ in December 2013 that documented the issues that the Strategy should address and feedback from both the Committees on that report;
• Consultation with the following external organisations:
  o Phone contact with bike planners from adjoining municipalities – The City of Hobsons Bay, the City of Moonee Valley, the City of Brimbank and the City of Melbourne;
  o Letters to every primary and secondary school in Maribyrnong asking for comment;
  o Contact with Chambers of Commerce; The Yarraville Traders Association, the Footscray Traders Association, the Footscray Asian Business Association and the Seddon Traders Association;
  o Phone contact with local residents known to be interested in bike transport; and
  o Meeting with a representative from Bicycle Network Victoria – Jason den Hollander;
• Consultation with a range of Council staff from different departments within Council;
• Analysis of bike related data collected since the previous strategy (2004);
• Four days of riding the main bike routes in Maribyrnong; and
• Publication of this Draft Bike Strategy (March 2014).

1.3 Summary of the Bicycle Strategy

Significant achievements have been made in developing the cycling network and increasing ridership across the City since adoption of the first Maribyrnong Strategic Bicycle Plan 2004. This draft Bicycle Strategy recommends a number of key actions and initiatives to further progress cycling in the City.

1.3.1 Increase the ‘bike consciousness’ of the Council Community

An important factor to increase bike riding in Maribyrnong will be the creation of a ‘bike – aware – culture’ among Council officers and community. It is a different way of thinking about bike planning – not the responsibility of a particular Council officer, not just a small line item in Council’s budget or Council simply waiting for some funding by state government. Developing a bike consciousness means changing how Council staff operate in their day-to-day business - and how they will seek out opportunities to improve bike riding as an important part of providing transport infrastructure.
The objectives of the Draft Maribyrnong Bicycle Strategy 2014 of promoting and increasing bike use will be realised by Councillors, Council staff and the Maribyrnong bike community working closely together.

In effect this means that Maribyrnong Council will adopt the approach that has worked very successfully in other inner urban municipalities in Melbourne. Maribyrnong City Council will achieve this by taking the following steps:

- Develop the mindset of existing staff (including managers) to become more aware of bikes – particularly the traffic engineers and planners and those dealing with redevelopment sites. This means in-service training, attendance to IMAP bike meetings, developing career paths for sustainable transport specialists, attendance at bike conferences and presentations, field trips to other municipalities, and informal professional contact with the bike planning and engineering community.

- Identify and implement best practice in the design of infrastructure to serve cyclists and pedestrians. There has been a technical revolution in traffic engineering. Good practice for inner urban design for walking and cycling has not yet been documented in standard references or in standard road design guides. Many conventional or ‘normal’ design practices are now considered poor practice for cyclists.

- Recruit Council staff that have had experience building up bike networks in other municipalities or overseas. There is now a small pool of skilful traffic engineers in Victoria who are familiar with modern techniques to improve the riding environment.

- Look for opportunities to improve bike infrastructure as part of other projects. Common opportunities arise when:
  - Re-surfacing roads – the lines can be put back in better places
  - Re-constructing roads and the replacement of underground services – the space might be reallocated to favour walking and cycling
  - Traffic signal re-models - early green starts for cyclists and the addition of bike boxes on the pavement
  - Traffic management upgrades – make sure the left hand part of the road surface is protected from high speed movements – add lines to guide cars out of the bike riding area
  - Bridge replacement - increase widths for walking and cycling – and check that the kerbside lane is much wider than the other lanes
  - New pipe bridges – most can be designed to also carry bikes
  - Brown-field redevelopments – add new bike links across sites to avoid long detours around and add convenient bike parking
  - New residential subdivisions – make sure that riders can access from all directions
- Eliminate steps and rough surfaces when parks and recreational reserves are upgraded
- Large sites are redeveloped take the opportunity to construct shared paths along the adjacent roads or adjacent reservations.

- An implication of this opportunistic approach is that bike improvement projects will crop up randomly all over the Municipality – not just the on the high cycling areas (Seddon, Yarraville and Footscray). There are often ‘missing links’ and desirable projects in the areas where riding is less popular. These locations are opportunities for ‘easy wins’ to add momentum to the cycling cause.

- Seek the active engagement of local cyclists such as the ‘Maribyrnong Bicycle Users Group’ in developing road and path designs. Bicycle Network Victoria (BNV) has many hundreds of members in Maribyrnong. Developing stronger links between Council and BNV would benefit staff development and advocacy to state government. In future years Maribyrnong’s bike riders and pedestrians will be better served by the designs implemented as part of state government projects and land developments. In the past poor infrastructure was unlikely to have been a case of deliberate omission but one of unconscious omission where the needs of bike riders were not considered. Most road designers, architects and civil designers simply do not have an understanding of the recent developments in the provision of infrastructure for walking and cycling.

- In all of these examples the provision of better bike infrastructure would cost little or no more than ‘how we have always done it’. There are several implications to this approach to bike planning:
  - Bike upgrades are embedded in the plans of others, such as State Government, land developers and transport infrastructure proposals for other modes.
  - Most of the funding comes from sources that aren’t labelled as ‘bike’.
  - The locations of many network improvements for bikes cannot be predicted – they occur when and where the opportunities arise and randomly across the whole municipality.
  - The main responsibility for improvement will lie with Council (as funders and advocates) rather than with State Government.

- An upcoming series of Major State Government Projects will likely provide major opportunities to improve bike infrastructure. The State Government and Infrastructure Australia both have explicit policies to include consideration of new bike infrastructure in these projects. Council will assist in developing specific bike proposals in relation to each of the new major infrastructure proposals and will be persistent at both the political level and the professional officer level in advocating these proposals. These possible projects include the Regional Rail Link (presently under construction), the Metro Rail Project, and the East West Link (east west tunnel under Footscray).
1.3.2 Further develop the heavily used premier bike routes

It is only by developing higher profile routes to a standard that female cyclists feel comfortable (ie relatively traffic free) that more people will start riding – ‘Build it and they will come’. Every city and inner suburb that has high riding rates also has a high percentage of female bike riders. In Maribyrnong developing the premier routes means constantly improving and extending the Maribyrnong River shared path, and improving and extending access routes to the Hopkins Road Bridge and Shepherd Bridge across the Maribyrnong River. All Melbourne’s most prominent bike routes have taken many years to develop - principally by persistent Councils – the Canning Street route through Carlton, the Upfield line route and The Main Yarra Trail.

1.3.3 Develop a shared path riding network in the suburbs

The combination of heavy traffic flows, infrequent driveways and low pedestrians flows means that off-road shared paths are the best option for many parts of the municipality. The Cross Street path and its forthcoming extension north along Ashley Street are good examples of how bike infrastructure should be provided. The provision of off-road shared paths on the major approach routes to Highpoint will be another.

1.3.4 Every street is a cycling street

The only illegitimate riding route in Maribyrnong is the West Gate Freeway – every other route is legitimate and can be improved for bike riders. This means that arterial roads can be improved for more experienced high speed riders using conventional techniques such as bike lanes, sealed shoulders, edge lines and narrowing excessively wide general traffic lanes.

1.3.5 Actions to Improve bike riding

Figure 5-1 (page 56) shows the locations of many places where the riding network could be improved. Chapter 5 provides a commentary on the current status and provides general and specific advice on how Council will improve the bike-riding network. There are many more projects there that could be completed in the nominal 5-year planning horizon for this Strategy. The emphasis should be on developing traffic-protected routes where people want to ride. Traffic-protected routes have been shown to get more women riding. These routes are shown in Figure 1-1.

Overleaf: Figure 1-1 Traffic-protected routes that should be the focus in the next 5 years

Note 1: These routes fulfill all of the following criteria; (a) they are direct connections (b) there are opportunities to improve the route within the next 5 years, and (c) they are, or could be made protected from high speed/high volume traffic’. Note 2: There are other routes not shown on this plan that will justify investment – especially if undertaken opportunistically in conjunction with other projects. Note 3: Most of these routes are also recognised as important by State Government agencies – see Figure 2-2. However few are likely to be funded by State Government over the next 5 years.

1The purpose of this map is to guide infrastructure investment. Councils
2TravelSmart’ Map provides a more detailed description of the local routes available to cyclists.
3The exception is Barkly Street where for some of its length there is no traffic protected parallel route that could be upgraded
2 Introduction

2.1 Past achievements

The following have been among the many achievements over the past five years:

- The Cross Street / Rupert Street shared path from West Footscray to Tottenham has been constructed;
- The shared path along River Street Maribyrnong has been constructed;
- The Maribyrnong River path has been renewed in many places;
- About 300 way-finding signs have been erected;
- Many bike lanes have been painted - some with green surfacing;
- Five ride-to-work breakfasts have been held;
- TravelSmart maps have been reviewed and distributed; 2009 = 5,000 maps, 2011 = 5,000 maps and 2013 = 13,000 maps; and
- Bike counts have been introduced since 2007 and currently bike riders are counted at about 28 locations on Super Tuesday – the morning of the first Tuesday in March.
- Advocacy of major bike infrastructure projects such as the Federation Trail, Shepherd Bridge, and the forthcoming traffic signals at the intersection of Parker Street and Whitehall Street.

The previous Maribyrnong Bicycle Strategy (2004) recommended about 77 projects and about 29 of these have been completed to date at a total cost of around $3,428,500. Many of these projects are on the metropolitan PBN and are yet to be funded by state government.

*Figure 2-1
The Hyde Street buffered bike lane follows best practice

\(^1\) The nature of some of these projects has changed over time due to changed circumstances

\(^4\) PBN is defined later in Section 2.3.
2.2 Maribyrnong Integrated Transport Strategy (MITS)

The starting point for the Bicycle Strategy is the Maribyrnong Integrated Transport Strategy (MITS), which was adopted by Council in 2012. The following quotes from the MITS summarise the basis for the Bicycle Strategy:

(MITS) Will help to deliver a thriving and sustainable City, which meets the diverse needs of our residents, workers and visitors. Maribyrnong will be a city where it is possible for people to walk and cycle more often, and catch public transport with ease, thus relieving congestion on the road network, reducing the City of Maribyrnong’s contribution to transport related greenhouse gas emissions and improving air quality....page 3 MITS

Transport System Hierarchy ...In managing and developing a safe and well-connected transport system, the City of Maribyrnong will give consideration and priority to transport modes in the following order: Walking, bike riding, public transport, freight, multi-occupancy vehicles, then single occupancy vehicles...Page 25 MITS

2.3 Classifications of bike routes in Maribyrnong

There have been many classifications for the more important bike routes by state agencies. The most recent classification is shown on Figure 2-2. It was tabled for discussion at the December 2013 meeting of bike planners from the Inner Melbourne Action Plan Councils (IMAP) – Cities of Yarra, Melbourne, Maribyrnong, Port Phillip and Stonnington. VicRoads and the Department of Transport Planning and Local Infrastructure conceived these classifications. Each of the classifications has a slightly different history and slightly different meaning – generally relating to the status of possible funding by state government. They are routes that are recognised as having some level of regional importance. Some other more local routes are vital to bike riders in Maribyrnong but are not shown in this diagram.
The Department of Transport, Planning and Local Infrastructure are currently reviewing state government priorities with respect to improving bike routes in the inner areas of Melbourne.

**Figure 2-2 IMAP Classification of bike routes in Maribyrnong**

Note: There are some inadvertent typographical errors in this map. This map is currently under review by the IMAP councils and State government agencies. See next page for the legend.
Critical Route Corridor: ‘VicRoads has identified twelve Critical Route Corridors (CRCs) for cycling within a 10 kilometre radius of the Melbourne CBD’ (Traffix 2012). Critical Route Corridors 1, 2, 3 and 4 all pass through Maribyrnong.

PBN stands for the Principle Bicycle Network and is defined by VicRoads as... ‘a network of proposed and existing cycle routes that help people cycle for transport, and provide access to major destinations in the Melbourne metropolitan area. Cycling for transport includes riding bicycles to work, to school, shopping, visiting friends etc. The PBN is also a ‘bicycle infrastructure planning tool’ to guide State investment in the development of transport bicycle network. The PBN is one of a number of network planning tools in Melbourne (other examples include individual Council networks) Together these networks make up the developing cycle infrastructure of Melbourne. The PBN makes use of many local roads and off-road paths, as well as State arterial roads. New bicycle facilities on the PBN are designed with the principle of increasing separation between cyclists and motorists, and giving priority to cyclists at key intersections.’

Bicycle Priority Routes (BPRs) are ‘an elevated subset of the PBN - with bicycle routes identified within the SmartRoads Road User Hierarchy. The BPRs have been identified as providing priority access into key destinations, while complementing and supporting the requirements of VicRoads SmartRoads framework’.

2.4 Victorian Bicycle Strategy

Relevant quotes from this strategy are listed below:

- Some of our work in Metropolitan Melbourne includes...
  - extensions and improvements to the Federation Trail ...
  - Parkiteer bike cages and bike hoops at 16 railway stations...
  - bike infrastructure as part of the Regional Rail Link project... (Page IV of the Victorian Bicycle Strategy)
- The Victorian Government is committed to supporting and encouraging cycling, recognising the important part cycling can play in responding to a range of challenges facing Victoria.
  - It can help to reduce physical inactivity and improve the health of Victorians.
  - It can contribute to creating better places to live by making it easy for people to move around their local communities.

5 VicRoads website 26th March 2014
6 VicRoads website 26th March 2014
16 Maribyrnong Bicycle Strategy

- Cycling can support economic growth and help generate jobs. It is a cost-effective form of transport that can help reduce delays on our roads and public transport networks.

- Cycling can also contribute to a healthier environment by helping to reduce air pollution, noise and greenhouse gas emissions. (Page VI of the VBS)

2.5 Benefits of investment in bike transport

The environmental, mobility, health and social equity benefits of investment in infrastructure and programs supporting cycling have been known for many years. A typical summary is shown in Figure 2-3.

Figure 2-3 The many benefits of increasing bicycle mode share of transport over other modes

Source: Dr Jan Garrard presentation to Metropolitan Transport Forum Sept 2012 – after Litman & Doherty 2009 when comparing different forms of expenditure in meeting planning objectives

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However it is only in recent years that economists and public health professionals have been able to quantify some of the benefits that investment in bike infrastructure returns. The following points from the same presentation by Dr Jan Garrard summarise a range of studies. They indicate very high returns and much of these returns are health benefits to riders. Earlier studies overseas demonstrated that the longevity benefits of cycling far outweigh the loss due to traffic crashes.
Valuing the benefits of utility cycling (USA)

- Lincoln, Nebraska: Every $1 spent on use of bicycle and pedestrian trails results in $2.94 in direct medical benefits (Wang et al. 2008)
- Portland, Oregon: Every $1 invested in bicycling yields $3.40 in health care cost savings. (Gotschi 2011)
- Kansas City: Every dollar invested in bicycle and pedestrian projects yields $11.80 in benefits (Ridgway 2010)
- Every dollar invested in bicycle networks yields at least $4 to $5 in benefits (Sælensminde 2004)

Valuing the health benefits of utility cycling (UK)

- In England, the health benefits of a regular commuting cyclist (three times a week for a year) has been valued at £679.67 (A$1,053) (SQW Consulting 2008)
- Health benefits (reduced mortality only) in the UK Cycling Demonstration Towns project is estimated to be around £2.50 for every £1 spent (Cycling England 2010).

Valuing the overall benefits of utility cycling

- Review of economic valuations of walking and cycling transportation infrastructure or policy (16 studies) (Cavill et al. 2008);
  - Benefit-cost ratios (BCR) for walking and cycling projects ranged from -0.4 to 32.5, with a median value of 5
  - Reduced health costs account for between two-thirds and one-half of the total benefits in cycling BCRs (Nordic Council of Ministers 2005).

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2.6 Types of riders

There are many ways to categorise different types of cyclists. An understanding of the needs of different types of cyclists is critical to determining the best investment strategies. A very useful characterisation is shown in Figure 2-4. It is based on market research carried out in Oregon that categorised people according to their willingness to ride. Willingness to ride was directly related to the riding environment. The categories and the percentages of the population in each category are summarised:

- The ‘strong and fearless’ were those who would ride irrespective of the riding conditions (<1%);
- The ‘enthused and confident’ were those who were willing to ride but needed some protection from other traffic (7%);
- The ‘interested but concerned’ (60%) were those who would only ride if there was physical separation from other traffic eg shared paths or ‘Copenhagen-style’ lanes; and
- The ‘no way no how’ (33%) were those who would never consider riding.

There is no reason to suspect that this characterisation of riders is much different in Maribyrnong – about two thirds of the population would ride if given a traffic protected network.

Figure 2-4 Different types of cyclists and corresponding infrastructure

Source: Bart Sbegem BNV presentation April 2013 based on research in Oregon USA
2.7 Why people don’t ride more often

It is a misconception that Australians don’t ride. The National Cycling Participation 2013 survey indicated that 16.6% of the Australian population had ridden in the previous week and 37.4% had ridden at least once in the previous year. Young children have the highest levels of cycling participation: 44.4% of 2 to 9 year old children had ridden in the previous week, decreasing to 32.2% of 10 to 17 year olds. Males are more likely to participate in cycling than females: 20.9% of males and 12.4% of females had ridden in the previous week. The average Australian household has 1.47 bicycles in working order and 55.2% of households have at least one bicycle in working order.

Riding rates for Maribyrnong residents are shown in Section 3.10 of this report.

The question is not ‘why don’t people ride?’ but rather ‘why don’t they ride more often – particularly for everyday transport?’

2.7.1 Research overseas

There has been a large amount of academic research and informed discussion on this topic. There is a broad consensus on why some people don’t ride - and the associated question of ‘how to achieve higher cycling levels?’ The following quote is typical of this consensus.

‘The key to achieving high levels of cycling appears to be the provision of separate cycling facilities along heavily travelled roads and at intersections, combined with traffic calming of most residential neighbourhoods. Extensive cycling rights of way in the Netherlands, Denmark and Germany are complemented by ample bike parking, full integration with public transport, comprehensive traffic education and training of both cyclists and motorists, and a wide range of promotional events intended to generate enthusiasm and wide public support for cycling. … Moreover, strict land-use policies foster compact, mixed-use developments that generate shorter and thus more bikeable trips.’...John Pucher and Ralph Buehler (2008)

2.7.2 Research in Australia

Victorian municipal bike studies of the 1980s were the first to obtain non-cyclist perception data on this topic. At that time it was conventional to undertake household telephone interview surveys as part of municipal bike studies to determine why people did not ride. The results were consistent across a wide range of different geographies – issues of ‘safety’ and lack of ‘safe paths’ were always the highest on the list of reasons.

Several more recent studies have researched this topic in Australia. This following quote from Dr Jan Garrard summarises a 2011 study by the Cycling Promotion Fund and the National Heart Foundation. It describes the top four reasons why Australians (who would like to) do not cycle for transport.

- Unsafe road conditions (46%)
- Speed/volume of traffic (42%)
• Don’t feel safe riding (41%)
• Lack of bicycle lanes/trails (35%)
These reasons overlap each other but all merge into the theme of lack of suitable infrastructure.

For many adults it is a question of re-commencing riding. A recent ‘Ride On’ article quotes unpublished research from Katie Rowe from Deakin University on the experiences that women go through when re-commencing riding. They provide a social context to the infrastructure-as-a-barrier theme:

‘...often cycled as kids but found cycling as an adult to be a completely different experience’

‘...the biggest barrier they discussed was mapping a safe route to their destination and not mixing with fast moving traffic.’

‘...gears were a huge issue. Once women learned to use gears in an education course, the doors opened for them.’

‘...Even with their friends and families, these women felt they would be too slow and hold them up.’

2.7.3 Implications for the City of Maribyrnong
The research points in the same direction for Maribyrnong as for every other inner suburb in Australia – the key to increasing riding levels is the provision of suitable infrastructure. Suitable infrastructure will not simply be adding some bike lanes to busy roads (although bike lanes will be suitable for the ‘strong and fearless’ experienced riders) but providing a higher level of protection by bike routes being physically separated from motorised traffic such as building separate cycle-ways within the road reservation. These network improvements will be supported by promotional and support programs.

The nature of the support programs has not been determined at this stage. They could involve support to community riding groups, bike maintenance courses, riding skills course and the general promotion of riding.
3 Riding Patterns in Maribyrnong

This chapter presents data on bike riding in Maribyrnong. There is now enough data to obtain an overall picture of bike riding in Maribyrnong.

3.1 Growth in the ride to work

The only regular long-term data on riding is the 5 yearly population and housing census. One question asks about the mode used on the journey to work that day. Although riding to work is only a small part of riding – most riding trips are not work trips – the census data does give a long term prospective and shows trends.

Cycling for commuting travel has increased significantly in Maribyrnong since 2001. The number of cycling trips to work (as a sole mode) almost doubled between 2001 and 2006 and doubled again between 2006 and 2011 to 963 trips (Figure 3-1). Furthermore, as a proportion of all journeys to work cycling’s share of journeys has increased from 1.3% in 2001 to 2.4% in 2006 and 3.2% in 2011 (Figure 3-2). The number of cycling trips and the mode share is greater than most neighbouring council areas aside from the Cities of Melbourne and Moreland. The areas closest to the CBD (within a range of about 7 km) have the highest rates of cycling.

It should be noted that within metropolitan Melbourne the highest bike mode share on the journey to work is around 8% to 10% in the City of Yarra. Although the City of Yarra provides a good example of how to approach bike planning, its closer proximity to the CBD means its riding potential for the journey to work will be higher than municipalities further out.

The rate of growth in Maribyrnong since 2001 has also exceeded most of its neighbouring municipalities. See Figure 3-3. Moreland is the only nearby municipality to have exceeded Maribyrnong growth.
• Figure 3.1 Bicycle trips to work by Local Government Area
Note that Maribyrnong is in green

• Figure 3.2 Mode share for bicycle trips to work by Local Government Area
Note that Maribyrnong is in green
3.2 Gender and the growth in riding

The link between gender and increasing rates of riding has been known in Victoria since the early 1980s. This is particularly evident in the great cycling cities of Europe where about 50% of riders are female. The same trend is evident in recent census data. The growth in cycling for journeys to work has also illustrated an increased proportion of females; the proportion of journeys to work by bicycle made by females in Maribyrnong has increased from 21% to 26% between 2001 and 2011 (Figure 3-4). This trend towards a more even balance between males and females as cycling rates increase is fairly typical. Nonetheless, the proportion of female riders is still less than for Moreland and Melbourne when their bicycle mode shares were similar to those of Maribyrnong currently (around 3%).

The counts shown on Figure 3-5 show an average of 22% of riders were female during the morning peak. This is comparable with the census results.
- Figure 3 4
  Bicycle mode share and female proportion of trips by year and Local Government Area
  *Note that Maribyrnong is in green*

Figure 3-5 Gender for selected locations: Super Tuesday 2013

<table>
<thead>
<tr>
<th>site</th>
<th>female</th>
<th>male</th>
<th>% female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albert St and Pilgrim St</td>
<td>46</td>
<td>143</td>
<td>24</td>
</tr>
<tr>
<td>Ashley St and South Rd</td>
<td>8</td>
<td>35</td>
<td>19</td>
</tr>
<tr>
<td>Ballarat Geelong Nicholson</td>
<td>30</td>
<td>65</td>
<td>32</td>
</tr>
<tr>
<td>Barkly St &amp; Droop St</td>
<td>42</td>
<td>110</td>
<td>28</td>
</tr>
<tr>
<td>Barkly St &amp; Geelong &amp; Victoria</td>
<td>58</td>
<td>129</td>
<td>31</td>
</tr>
<tr>
<td>Buckley St and Albert St</td>
<td>28</td>
<td>65</td>
<td>30</td>
</tr>
<tr>
<td>Buckley St &amp; Victoria</td>
<td>51</td>
<td>120</td>
<td>30</td>
</tr>
<tr>
<td>Charles St and Victoria St</td>
<td>18</td>
<td>58</td>
<td>24</td>
</tr>
<tr>
<td>Cross St at West Footscray Station</td>
<td>166</td>
<td>526</td>
<td>24</td>
</tr>
<tr>
<td>Footscray Rd and Moreland St</td>
<td>17</td>
<td>35</td>
<td>20</td>
</tr>
<tr>
<td>Gordon St and Essex St</td>
<td>13</td>
<td>43</td>
<td>23</td>
</tr>
<tr>
<td>Gordon St and Mitchell St</td>
<td>62</td>
<td>263</td>
<td>19</td>
</tr>
<tr>
<td>Hyde St and Francis St</td>
<td>45</td>
<td>123</td>
<td>20</td>
</tr>
<tr>
<td>Hyde St and Parker St</td>
<td>105</td>
<td>363</td>
<td>22</td>
</tr>
<tr>
<td>Hyde St, Napier St</td>
<td>14</td>
<td>102</td>
<td>10</td>
</tr>
<tr>
<td>M River Trail 1 Raleigh Rd</td>
<td>25</td>
<td>136</td>
<td>16</td>
</tr>
<tr>
<td>M River Trail 3 Farnsworth Ave bridge</td>
<td>58</td>
<td>225</td>
<td>20</td>
</tr>
<tr>
<td>M River Trail 4 Stockman Bridge</td>
<td>82</td>
<td>286</td>
<td>22</td>
</tr>
<tr>
<td>M River Trail 5 Hopkins St</td>
<td>77</td>
<td>344</td>
<td>18</td>
</tr>
<tr>
<td>Mitchell St and Rosamond Rd</td>
<td>15</td>
<td>35</td>
<td>30</td>
</tr>
<tr>
<td>Summerhill Rd and Barkly St</td>
<td>23</td>
<td>55</td>
<td>29</td>
</tr>
<tr>
<td>Williamstown Rd and Somerville Rd</td>
<td>31</td>
<td>83</td>
<td>27</td>
</tr>
<tr>
<td>Irving &amp; Albert</td>
<td>7</td>
<td>36</td>
<td>16</td>
</tr>
<tr>
<td>Whitehall and Parker</td>
<td>47</td>
<td>244</td>
<td>16</td>
</tr>
<tr>
<td>Williamstown Rd &amp; Geelong St</td>
<td>4</td>
<td>27</td>
<td>13</td>
</tr>
<tr>
<td>Buckingham &amp; Victoria &amp; Pickett Sts</td>
<td>38</td>
<td>80</td>
<td>32</td>
</tr>
<tr>
<td>Geelong/Somerville Rds and Roberts St</td>
<td>9</td>
<td>32</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1149</strong></td>
<td><strong>3970</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>
3.3 Household location and riding to work

Although there is a random variation due to the small numbers of riders from some areas it is clear that the growth in cycling for journeys to work has been driven by residents of the suburbs to the east and southeast of the municipality, and particularly Footscray, Seddon and Yarraville. Data from the most three recent censuses are shown on Figure 3-6 to Figure 3-8. The 1991 and 1996 census years (not shown in this report) indicated much lower riding rates – and significantly – and the south-eastern part of the Maribyrnong municipality had similar riding rates to other parts. Although there are many possible explanations for the recent localised growth, a likely reason was the construction of the Docklands shared path and the shared path leading south from Shepherd Bridge.
• Figure 3-6
Cycling journey to work mode share by census collection district (2001)

• Figure 3-7
Cycling journey to work mode share by census collection district (2006)
3.4 Geographic patterns

Maribyrnong is mainly a generator of cycling trips to work rather than a destination; in 2011 there were 422 trips originating in the municipality with a destination elsewhere compared with 169 bicycle trips that originated elsewhere but finished in the municipality. In addition, there were 131 bicycle trips to work that started and finished in the municipality (Figure 3-9). The main movement was to the City of Melbourne, with 249 trips (or 45% of all bicycle trips to work from the municipality).

*A total of 553 trips from the municipality had a destination which could be identified; the remaining 410 (42%) trips either had a destination which was not stated, could not be identified or was outside metropolitan Melbourne.*
3.5 Morning peak bike counts on Super Tuesday

Super Tuesday is so called because it occurs on the traditionally most popular riding day of the week - Tuesday - on the traditionally most popular riding week – the first week in March. These counts are undertaken manually. Recorders are placed beside roads and bike paths and manually record the numbers of riders. The results of the 2014 count are shown on Figure 3-10. These counts reinforce the pattern of riding revealed in the census results - high levels in the south east of the municipality and high levels along the Maribyrnong River and the bridges across it.
Figure 3-10
Super Tuesday 2014 bike counts

Note: The counts were taken between 7am and 9am
3.6 Daily and seasonal variations

In July 2011 VicRoads installed an automatic permanent counter on the shared path beside Moreland Street. The graphs below were produced by the VicRoad’s website (February 2014). This counter records bike riders on one of the major approaches to Shepherd Bridge. It is important because it reflects the pattern of bike traffic on Shepherd Bridge itself and, most likely on Hopetoun Bridge (Hopkins Street) as well. The following observations and comments can be made:

- The morning peak is much more intense than the evening peak. This is common with other modes (e.g., car commuters and public transport loadings). It may also have been the result of some southbound riders – more common in the afternoon peak - not being counted, as they are possibly more likely to ride on the Moreland Street road surface (and not be counted) than northbound riders.

- Typically the days early in the week are busier than Friday.

- As expected the flows during the weekend are quite different from those during the week. Flows gradually increase from early morning to late morning then drop during the afternoon. Saturdays and Sundays have a similar pattern to each other.

- The monthly variation is typical of commuter rider behavior seen elsewhere. Although flows drop during the colder months and shorter days, most riders keep riding through the winter.

- The precise location of the counter means that many bike riders using Shepherd Bridge are not counted, that is those to/from the north and to/from the Maribyrnong River path (south). See Figure 3-11.
3.7 Travel patterns of Shepherd Bridge riders

Bicycle Network Victoria has developed an iPhone Application called ‘Rider log’ that records the routes taken by cyclists. These are then uploaded and riding patterns of the volunteer riders identified. Figure 3-14 shows the routes used for those who crossed Shepherd Bridge on one day. Several conclusions can be drawn:

- The riding catchment within the City of Maribyrnong extends across Footscray, West Footscray, Yarraville, Seddon and Kingsville;
• The riding pattern on the west bank of the Maribyrnong River shows a strong bias to the south. However many southern oriented riders have origins and destinations south of the West Gate Freeway. If only riders with an origin or destination within Maribyrnong are taken into account the southern bias is much less pronounced. Pilgrim Street and Buckley Street appear to be significant feeders to Shepherd Bridge.

• Although the Melbourne CBD is clearly the dominant destination (or origin in the afternoons) in the east, destinations (or origins) are quite dispersed. Many cyclists appear to be destined to Carlton and surrounding suburbs in the north, or to South Melbourne and surrounding suburbs in the south. These areas do not have direct public transport services from the City of Maribyrnong.

• Riders had few destinations between the Maribyrnong River and City Link (Moonee Ponds Creek) – they rode through the Footscray Road docks area rather than to it.

• The Capital City Trail appears to be a significant feeder route.

Figure 3-14
Shepherd Bridge: Origins and Destinations
Source: Bicycle Network Victoria Website
3.8 Comparison of rider volumes with other inner metro routes

The peak weekday bike flows on the Footscray Road path are comparable with the busiest routes in the inner metropolitan area. See Figure 3-15, which shows the most recent readily available data. Since that time (2007) bike traffic in the inner metro area has increased significantly. Figure 3-10 shows more recent counts within Maribyrnong itself. It shows that although bike traffic on Shepherd Bridge is high - even by inner metro standards, the intensity of bike traffic drops in the western part of the City of Maribyrnong.

![Pattern of inner metro peak morning flows](Image)

Source: Bicycle Network Website November 2013 - Super Tuesday 2007

3.9 Maribyrnong River Trail Users

The Super Sunday count provides an indication of the mixture of users on the Maribyrnong Trail during a recreational period. Figure 3-16 shows that the total volume of users along the path varies widely and the mix of users also varies widely. There was very heavy usage of the path near Chifley Drive – about one user every 13 seconds dropping to about half that number as the path passed Footscray Park. Walkers and runners were the predominant users of the path near Chifley Driver whereas bike riders outnumbered walkers and runners near Footscray Park. Past Footscray Park the intensity of bike traffic was similar to that counted during the morning peak on weekdays. See Figure 3-10.
3.10 Riding participation in Maribyrnong

In 2011 the Australian Bicycle Council administered a telephone survey of Maribyrnong residents concerning their bike riding. ‘In Maribyrnong about 15,900 people ride in a typical week and 32,400 people ride at least once in a typical year. The proportion of people who ride in Maribyrnong is similar to that of the Melbourne Metropolitan area and Victoria.’ (Australian Bicycle Council 2012). See Figure 3-17.

Further details of this Cycling Participation survey can be obtained from the Maribyrnong Council website.

3.11 Perceptions of riders

Figure 3-18 provides an indication of where riders consider that there are issues. The concentration of perceived issues in the south east of the municipality corresponds to both the locations of complaints voiced by members of the Liaison Committee (Reference Advisory Group) of active cyclists, and the highest rider counts in ‘Super Tuesday’ as shown in Figure 3-10.

<table>
<thead>
<tr>
<th>Location</th>
<th>Bikes</th>
<th>Walkers</th>
<th>Runners</th>
<th>Dogs</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjacent to Chifley Drive Maribyrnong</td>
<td>182</td>
<td>533</td>
<td>313</td>
<td>103</td>
<td>1</td>
<td>1,132</td>
</tr>
<tr>
<td>Adjacent to Footscray Park</td>
<td>348</td>
<td>105</td>
<td>114</td>
<td>11</td>
<td>0</td>
<td>578</td>
</tr>
</tbody>
</table>
3.12 Reported road crashes involving cyclists

The patterns of reported road crashes involving cyclists are shown in Figure 3-20, Figure 3-19 and in Figure 3-21. The period covers the most recent ten-year period for which data is available. The following points should be noted when interpreting the data:

- Cyclists are normally only required to report crashes to Police that occur on public roads eg there is no requirement to report single loss-of-control bike crashes on off-road trails;
- A number of studies have shown that the number of reported hospital admissions as a result of bike crashes are significantly more than recorded on the VicRoad's database; and
- Crashes that result in only minor damage are not included in the database.

<table>
<thead>
<tr>
<th>Severity</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal</td>
<td>2</td>
</tr>
<tr>
<td>Serious injury</td>
<td>78</td>
</tr>
<tr>
<td>Other injury</td>
<td>123</td>
</tr>
<tr>
<td>TOTAL</td>
<td>203</td>
</tr>
</tbody>
</table>

Figure 3-18
Geographical distribution of cyclist issues
Note: This diagram is based on volunteers responding to an invitation by a political party to register an issue and will therefore reflect the locations of these volunteers.
Source: Australian Greens Website based on data from the ‘lovemybike’ app.

Figure 3-19
Severity of reported bike Crashes
Source: Crash Stats from VicRoads 2003 to 2012 inclusive.
The total number of reported bike crashes (203) represents an average of one every 18 days over the ten-year period. Given the severity of many of the crashes (See Figure 3-19) the total cost to the community is considerable.

The following observations can be made concerning the geographical distribution of crashes shown on Figure 3-20:

- The crashes are concentrated in the south-east part of the City of Maribyrnong. This reflects the concentration of riders there and possibly the intensity of motor vehicle traffic in that area.
- The crashes tend to be concentrated along arterial roads. This reflects the higher levels of conflict between cyclists and other traffic compared with quiet local streets.
- Although there are a few sites where there is a concentration of crashes, most crash sites only have had 1 or 2 reported crashes over the ten-year period. Signals are soon to be installed at the site with the most reported bike crashes (6) – the intersection of Whitehall Street and Parker Street in Footscray.

The actual movements that the cyclists were undertaking immediately before each crash are typical for urban areas. See Figure 3-21. Unfortunately there are no easily applied counter-measures available for these types of crashes. The overwhelming majority involved collisions between bikes and motor vehicles.

- No particular type of collision dominated; the most common made up only 12% of the total. Together the DCA code 147 (19 crashes) and DCA code 148 (24 crashes) amounted to 43 crashes – 21% of the total. Both these types of crash involved a vehicle (generally the bike) being struck when entering the roadway from a driveway or a footpath.
- Another common type (DCA 121) involves a vehicle turning right in front of a vehicle (generally the bike) travelling straight ahead – 12% of the total.
Figure 3-20

Geographical distribution of reported bike crashes

Source: Crash Stats from VicRoads 2003 to 2012 inclusive. Aqua colour indicates intersection crashes and pink colour indicates midblock crashes. The number in each box indicates the number of reported bike crashes over the ten-year period. Total = 203 bike crashes.
### Figure 3-21

Road user movements in reported bike crashes

*Source: Crash Stats from VicRoads 2003 to 2012 inclusive.*

<table>
<thead>
<tr>
<th>DCA</th>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>Cross traffic (intersections only)</td>
<td>22</td>
</tr>
<tr>
<td>111</td>
<td>Right far (intersections only)</td>
<td>3</td>
</tr>
<tr>
<td>113</td>
<td>Right near (intersections only)</td>
<td>6</td>
</tr>
<tr>
<td>114</td>
<td>Two right turning (intersections only)</td>
<td>3</td>
</tr>
<tr>
<td>116</td>
<td>Left near (intersections only)</td>
<td>10</td>
</tr>
<tr>
<td>119</td>
<td>Other adjacent (intersections only)</td>
<td>3</td>
</tr>
<tr>
<td>120</td>
<td>Head on (not overtaking)</td>
<td>5</td>
</tr>
<tr>
<td>121</td>
<td>Right through</td>
<td>25</td>
</tr>
<tr>
<td>126</td>
<td>Other opposing manoeuvres</td>
<td>2</td>
</tr>
<tr>
<td>130</td>
<td>Rear end (vehicles in same lane)</td>
<td>10</td>
</tr>
<tr>
<td>131</td>
<td>Left rear</td>
<td>2</td>
</tr>
<tr>
<td>133</td>
<td>Lane side swipe (vehicles in parallel lanes)</td>
<td>12</td>
</tr>
<tr>
<td>134</td>
<td>Lane change right (not overtaking)</td>
<td>4</td>
</tr>
<tr>
<td>135</td>
<td>Lane change left (not overtaking)</td>
<td>6</td>
</tr>
<tr>
<td>136</td>
<td>Right turn sideswipe</td>
<td>2</td>
</tr>
<tr>
<td>137</td>
<td>Left turn sideswipe</td>
<td>12</td>
</tr>
<tr>
<td>139</td>
<td>Other same direction manoeuvres</td>
<td>2</td>
</tr>
<tr>
<td>140</td>
<td>U turn</td>
<td>2</td>
</tr>
<tr>
<td>142</td>
<td>Leaving parking</td>
<td>2</td>
</tr>
<tr>
<td>147</td>
<td>Vehicle strikes another vehicle while emerging from driveway</td>
<td>19</td>
</tr>
<tr>
<td>148</td>
<td>Vehicle off footpath strikes vehicle on carriageway</td>
<td>24</td>
</tr>
<tr>
<td>149</td>
<td>Other manoeuvring</td>
<td>3</td>
</tr>
<tr>
<td>150</td>
<td>Vehicle collides with vehicle parked on left of road</td>
<td>4</td>
</tr>
<tr>
<td>153</td>
<td>Vehicle strikes door of parked/stationary vehicle</td>
<td>6</td>
</tr>
<tr>
<td>156</td>
<td>Struck object on carriageway</td>
<td>1</td>
</tr>
<tr>
<td>171</td>
<td>Left off carriageway into object/parked vehicle</td>
<td>1</td>
</tr>
<tr>
<td>172</td>
<td>Off carriageway to right</td>
<td>1</td>
</tr>
<tr>
<td>174</td>
<td>Out of control on carriageway (on straight)</td>
<td>8</td>
</tr>
<tr>
<td>179</td>
<td>Other accidents off straight</td>
<td>1</td>
</tr>
<tr>
<td>192</td>
<td>Struck tram</td>
<td>1</td>
</tr>
<tr>
<td>199</td>
<td>Unknown, no details on manoeuvres</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL** | **203**
4 Response to Issues

This chapter describes some of the issues raised in formulating the Bicycle Strategy and the approach Maribyrnong Council will take in addressing them.

4.1 The Draft Footscray Structure Plan

The Footscray centre is a very important destination for cyclists, and a place to ride through when heading for more distant places such as Melbourne CBD.

Council has prepared a Structure Plan to guide future development for the centre. In respect to cycling the Structure Plan states...

The relatively flat topography around Footscray CAA (Central Activities Area) and the close proximity to Melbourne’s CBD makes cycling an attractive, low cost and sustainable transport mode. Footscray CAA includes key, well utilised, commuter routes linking the centre to Melbourne CBD. Across the CAA a number of issues affect the cycling network including, discontinuity in the Barkly/Hopkins on road path; poor cycling connections in some areas; poor amenity and crossing points; and potential conflict with high levels of traffic along some of the key cycle routes.... page 22 of the Footscray Structure Plan Draft for Public Consultation 2013

Disincentives to cycling exist with some existing on-road cycle paths poorly protected from traffic and ‘gaps’ in cycling routes through the centre.... page 10 of the Footscray Structure Plan Draft for Public Consultation 2013.

The Structure Plan has been reviewed, and is predominantly supported, by an Independent Planning Panel. In regards to cycling the Panel stated...

The Panel commends the Council on its commitment to improving provisions for cyclists and pedestrians, particularly in linking up areas currently isolated by physical or psychological barriers. The Panel supports the concept of providing improved cycling access along the Hopkins St and Napier St corridors (or on alternative routes parallel to these corridors), and encourages Council to proactively plan for these links in parallel with development of the area, not after it has occurred.... Page 58 of the Amendment C125 Panel Report Feb 2014.

Once the Structure Plan and Amendment have been adopted by Council they will be forwarded to the Minister for Planning for final approval.

The Structure Plan recommends a cycling network for the Centre and this is shown in Figure 4-3. More clarity about the specifics can be seen on Figure 4-2. Some of the proposals in the Structure Plan are:

- On-road bike lanes;
- A new bridge across the Railway just north of Hopkins Street; and
- A new shared path on the south side of the Railway between Hopkins Street and the Maribyrnong River.
The most effective and practicable way to improve the Centre for bikes can be summarised as follows. These projects are discussed in more detail in Chapter 5.

- Council will advocate for the proposed bike and walking bridge across the Railway just north of Hopkins Street and develop the local riding network in the area on the western side of the new bridge – particularly along Donald Street.
- Permit contra-flow movements for bikes along selected and appropriate one-way streets within the Centre.
- Council will undertake a progressive rationalisation of road space within the Centre to better provide for cyclists.

Council will add bike lanes to many of the streets that do not already have them and which are suitable.

- In conjunction with VicRoads, Council will pursue the development of a protected cycle-way on Buckley Street and on Napier Street.
- Improve links between the two VU campuses and from the station.
Figure 4-2 Movement network from the Footscray Structure Plan
Note: The cycling network is shown as thin blue lines

Figure 4-3 Proposed bike lanes in Footscray
Source: Footscray Structure Plan Background Report
4.2 Melbourne Bike Share Scheme

The expansion of the Melbourne Bike share scheme (‘the blue bikes’) could, in time include the inner parts of Maribyrnong. In practice this would mean Council would allocate public space to bicycle stations such as along the Maribyrnong River and in the Footscray Centre. A common view among bike planners is that the bike stations have to be quite close – not more than around 300m apart - for a scheme to be successful. This could mean about 20 bike stations in Footscray and along the Maribyrnong River. More would need to be provided between the Maribyrnong River and the Docklands. Although such an expansion of the Bike Share Scheme may be feasible in the long term it is unlikely to be attractive to operators or the state government in the short term. Most potential riders have their own bikes. Traditionally the main markets for bike share schemes have been to provide access to the public transport system, to replace short public transport trips, and replace long walking trips, or for tourist use. Building a traffic protected bike network is often considered an important pre-requisite of a public bike share scheme. Council could investigate options to participate in Bike Share – perhaps with those already running bike share schemes.

4.3 Permit Contra-flow bike movements in one-way streets

Maribyrnong has a large number of one-way streets. Historically the most common reasons for converting these streets to operate in only one direction were related to the operation of cars. Most common reasons are that (a) these streets are too narrow for cars in opposite directions to pass, (b) to simplify movements at the intersections at each end of the street or to (c) discourage through traffic. Few (if any) of these streets in Maribyrnong permit cycling in the opposite direction yet there are few disadvantages of legalising the reverse movement and the reductions in riding distance provide clear benefits.

Many cyclists are likely to be discouraged from undertaking illegal movements – particularly females . Car drivers may not be expecting cyclists in the opposite direction. A long term rolling program of legalising these movements will be introduced. This will require changing signage (adding ‘cyclists excepted’) on NO ENTRY signs, road marking within the street eg painting sharrows or a bike lane in the opposite direction and perhaps the addition of kerb cuts (pram ramps) at the ends so that cyclists can enter and leave the one way street safely. Every street is subtly different and each will require a slightly different approach. The City of Moreland has more successful examples of this technique than any other municipality in Victoria. High priority streets where contraflow movements could be considered are;

- the eastbound Somerville Road service road (Tongue Street to Pentland Parade) west of the Railway bridge in Yarraville;
- the eastern end of Chicago Street in Maribyrnong;
- the westbound service road (Pentland Parade to Birmingham Street) in Yarraville; and
- streets within the Footscray Centre – see Chapter 5.
4.4 More data collection on riding patterns

Little quantitative data on cycling in Maribyrnong was known when the previous strategy was undertaken in 2004. Since then the following data collection programs have been introduced;

- Super Tuesday visual counts 7am to 9am (March);
- Super Sunday visual counts 9am to 1pm (Nov); conducted by BNV volunteers; several of 2013 sites were near the border of Maribyrnong and its neighbouring municipalities;
- Permanent count stations across the inner metropolitan area – one in Maribyrnong was introduced in July 2011 on the shared path beside Moreland Street just south of Shepherd Bridge – see Figure 3.11;
- The ‘Rider Log’ app for iPhones sponsored by Bicycle Network Victoria – see Figure 3.14.

With the rapid growth of riding in Maribyrnong there is a case for the addition of more permanent counters given the large area of the municipality and the likely completion of the Federation Trail within the next 5 years. The initial cost of a permanent counter site is $5k to $8k with an additional ongoing maintenance cost. Locations such as bridges across the Maribyrnong River and on the Federation Trial itself would be prime candidates for reliable long-term count stations. On-road sites are technically more difficult because of the requirement to avoid false counting of motor vehicles.

Figure 4.4
Examples of contra flow bike movement in one way streets

A green contra-flow lane used in the City of Moreland is shown on the left. Red is used on bike lanes in the UK and this photograph is from St Andrews Scotland. In this case the cyclist just in the frame is riding in the main direction of flow. The photograph on the right shows one treatment for the entry to the contra-flow lane. In both photographs the main direction of flow is towards the camera. Note sharrows can be used instead of contra-flow bike lanes. In most cases the ‘no entry’ sign will display a supplementary sign ‘bicycle excepted’. The treatment required on every street will be slightly different.
4.5 Way finding

Since the previous strategy Maribyrnong Council has erected about 300 signs to help bike riders navigate to popular destinations. Feedback from cyclists has been mixed – some appreciate the assistance while others seem to be less impressed. The practical task of erecting way-finding signage to serve every possible informational need is considerable. Moreover the widespread introduction of portable navigation aids (eg navigational apps on smart phones) means that it is possible that fewer riders now rely on street signs. The ‘TravelSmart’ map produced with the assistance of Maribyrnong Council would also seem to have been very useful to some cyclists in the pre-planning stage of riding.

The nature of the bike network in Maribyrnong is that there are some very useful ‘backstreet routes’ that newcomers would appreciate knowing about eg the local street route from Footscray along the Newport Railway to Yarraville and Seddon.

Where there is a clear case for new signing it should be implemented at the same time as the improvement eg where a new route is developed to a high standard or a barrier is breached eg new bridge or crossing point.

Figure 4.5 Recent way-finding signage
4.6 Major projects and bike infrastructure

Maribyrnong is likely to have more than its share of major State Government transport projects over the next few years. These include the following possibilities:

- The completion of the Regional Rail Link (under construction);
- A future stage of the East West Link (EWL) that could incorporate an east-west road tunnel under Footscray and West Footscray - previously known as Westlink; and
- The Metro Rail project.

Many of the most significant additions to off-road bike routes in the metropolitan area have been funded by other modes through major projects eg the Peninsula Link Trail, the East Link Trail, the trail along the Outer Ring Road and the construction of pedestrian/bike crossings parallel to the green-fields sections of the Regional Rail Link. Present State and Federal government policies including Infrastructure Australia specify the consideration of cycling improvements as part of improvements to the other modes.

“We are building cycling into designs for our cities and towns, and we are making sure that the needs of bike riders are considered as we plan major new transport and infrastructure projects.”… Victorian Cycling Strategy (Cycling into the Future 2013-2023)

‘All transport projects led by the Department of Transport must assess cycling opportunities in project scoping and design’… Providing Bicycle Facilities as part of Transport Projects 2010 Victorian Government.

Although the details of these projects are unclear Council will be a strong advocate of improvements in infrastructure. The sponsoring State agency, Maribyrnong Council, in association with other Councils, will develop specific proposals at each stage in each project eg to complement the Melbourne Metro project. The Maribyrnong Open Space Strategy has previously highlighted the importance of maintaining walking and cycling links along Stony Creek in Tottenham in the light of the East West Link.

Maribyrnong Council will identify new links made possible by each new major transport project. In the case of the East West Link the Linking Melbourne Authority proposal includes a ‘shared path’ beside the new link all the way to the Western Ring Road. Careful attention will be paid to the need for additional local links to connect with the proposed shared path and Council will work with the state government agencies to resolve the connection with the Stony Creek path. Importantly this project would provide the opportunity to reallocate some of the east-west road space for bikes. Specific proposals for this reclamation will be part of Councils advocacy to State Government.
Figure 4 6 West Link Proposal in Paramount Road area

Note this proposal shown may well be modified, as it becomes a future stage of the East West Link. The shared paths are shown as thin yellow lines.
4.7 Local street traffic management

Several concerns have arisen in the traffic engineering community about the practice of using roundabouts in local areas because of the stress and danger they pose to riders. There are other examples where traffic devices also cause squeeze points or present problems to cyclists.

New traffic management devices on both arterial roads and on local streets can have potentially negative effects on cyclists. Although the arguments for roundabouts may be overwhelming at some locations there are alternatives that warrant consideration. These include, raised intersections, offset approaches, and partial road closures. Every case will be considered on its merits. If a roundabout is to be retained or introduced the following design guidelines will be followed:

- Keep approach speeds very low – normally by having the approach road meet the circulating roadway at right angles – contrary to superseded documented design practice that supports tangential entries;
- If approach speeds are low, design the approach so that riders can ‘defend’ their lane; and
- Keep circulating speeds very low so that riders can have confidence to occupy the centre of the circulating roadway – perhaps reinforced by sharrows.

Designs should take into consideration the increasing numbers of mobility scooters, recumbent cycles, and tricycles. Obstructions to these minority modes can directly affect users; many of whom already suffer from reduced mobility.

**Figure 4-7**
Bike bypass to avoid a squeeze in Eldridge Street Maribyrnong
4.8 Bike parking and end of trip facilities

Council has constructed leaning rails at many points around the Maribyrnong municipality. It is also part-funding a bike cage at Yarraville Station in the 13/14 financial year.

Bike parking was the most frequently mentioned topic when the business community within Maribyrnong were approached for comment as part of the preparation of this current Bicycle Strategy. From previous consultation undertaken on other projects by the Strategic Planning section of Council, lack of convenient bike parking and end of trip facilities are still significant problems for riders.

The Maribyrnong Planning Scheme requires many developers to provide end of trip facilities as part of the planning permit – typically apartments and larger commercial buildings.

Over recent years Council has progressively increased public bike parking particularly in shopping areas. Bike parking facilities have responded to parking demand. To assist managers of buildings to notify Council officers where bike parking is needed Council will consider enhancing its website to enable electronic lodgement of requests for bike parking. The City of Yarra already operates such a system.

The Maribyrnong Transport Strategy 2012 outlined five actions that still provide a firm basis for the Bicycle Strategy. These five actions are:

**Action 8.1: Review the current and future demand for bike parking (in response to existing and new development) and the appropriateness (in number, distribution and quality) of current on-street bike parking facilities to identify opportunities for improvement across the municipality.**

Action 8.2: Work with State government to amend the Victoria Planning Provisions to require a minimum of one off-street bicycle parking space per dwelling for all multi-unit developments. New developments should also provide adequate on-street bike parking to support visitors.

Action 8.3: Work with all shopping centres and supermarkets in the municipality to provide bike parking in immediate proximity to the respective front/main entrances.

Action 8.4: Establish design guidelines, for possible integration with the Planning Scheme, that encourage new offices and other employment locations to provide employee bicycle parking facilities within buildings in safe undercover areas immediately adjacent to work areas.

Figure 4.9
Bike parking in a converted car parking space in Yarraville - five customers

4.9 Lower speed limits

The Maribyrnong Integrated Transport Strategy (p41) supports lower speed limits to improve pedestrian safety. It also includes the following municipality wide objectives...

‘...Implement 40 km/h speed limit on local roads...and ... Implement 50 km/h speed limit on arterial roads’... p.116 MITS.

These initiatives are supported by this strategy. Most of the riding network in Maribyrnong is along local streets and a reduction in vehicle speeds would improve riding conditions there.

4.10 The schools

Historically schools were a major part of bike strategies. Unfortunately active transport rates to schools have plummeted. However some primary schools are making efforts to increase the number of students who use active modes to travel to and from school eg walking, cycling and scooters. Yarraville West Primary School conducts a Ride2School program and collects data every month on the modes used to get to school.
Efforts to introduce Bike-Ed into schools have recently been frustrated by lack of teachers. Yarraville West Primary School conducts bike maintenance classes to help the school community become familiar with their bikes. There are several ways Council can assist schools:

- Introduce bike parking for parents on road reservations near the school entry points;
- Assist school communities in reducing conflict with parking and car traffic by enforcement of no-standing and parking bans; and
- Work with schools to improve their routes to school – previously known as the ‘safe routes to school’ program

4.11 Off Road cycle course

Council officers are presently considering whether there are any suitable sites in the municipality of an off-road course that would be suitable for bike related sports such as MTB, Cyclocross and BMX. Although cycle sports are not the main thrust of the bike strategy it seems that these sports could develop riding skills in a controlled environment. Quiet off-road paths provide ‘rider nurseries’ by providing the opportunity for inexperienced riders to practice their riding skills in a safe environment before embarking onto more challenging street and road networks. An off-road cycle course could fulfil a similar function for advanced riders.

4.12 Infrastructure – historical background

Early last century there was a very good network of bike routes in Maribyrnong and riding rates were very high compared with today. The good riding network was the road network. Unfortunately the growth in car and truck traffic has squeezed out riders. The main thrust in western cities has been to reclaim some of the road space for cyclists and to create new off road paths. Good infrastructure is central to encouraging riding. All of the great cycling cities in Europe (e.g. Amsterdam and Copenhagen) and North America (Vancouver and Portland, Oregon) have good infrastructure.

The provision of road, street and park infrastructure is what municipal councils do well. Therefore there is a convergence in what is needed and what Council can do well.

4.13 Priorities for infrastructure

Infrastructure priorities will be a balance between (a) the likely benefits of the infrastructure and (b) the construction and maintenance cost, and (c) the ease of administration.

The most benefit of new infrastructure is likely to occur where there are the most riders riding in the worst conditions. In Maribyrnong the heaviest flows are along the routes leading to the bridges across the Maribyrnong River. The reality is that substantial upgrading these routes may need the injection of substantial amounts of State government funding e.g. the Napier Street cycleway. Moreover opportunities to improve the riding network
are likely to crop up in other places all across Maribyrnong and Council will grasp these opportunities when they occur so that they are not lost forever. Therefore to some extent it is not possible to be definitive in setting a list of Council priorities. However the following principles will guide the setting of year-by-year priorities:

- Undertake works that complement other concurrent projects;
- Recognise that two of the objectives of the Maribyrnong Integrated Transport Strategy are to “create a bike-friendly city” and provide an “expanded bike network”;
- Favour projects where there are more riders or potential riders; and
- Give priority to ‘missing links’ in the bike network

4.14 Celebration and encouragement of riding
Better infrastructure will lead to more riders and more riders will lead to the development of a stronger ‘bike culture’ within Maribyrnong. This bike culture is already present in clothes and bike fashions, in eating, and in street life. It already exists in Seddon and Yarraville and is closely identified with the ‘inner urban economy’. Therefore it is important for Council to seek opportunities to celebrate Maribyrnong’s bike culture in community events, in theatre, in art and in sculpture. Creating events to celebrate the opening of new bike infrastructure will be an ideal way to both publicise its existence and to bring riders together - creating informal social connections.

4.15 Education and Marketing
To increase the participation in cycling the following will be undertaken:

- Provide up to date information about cycle routes and other cycling resources on the Maribyrnong Council website and continue to update, improve and widely distribute the Maribyrnong TravelSmart map.
- Assist people, including women and MCC staff, to develop skills to ride with confidence and maintain their bikes.
- Investigate providing incentives to staff to encourage riding to and during work.
- Continue to advocate for Bike Ed to be included in the school curriculum.
- Raise the profile of cycling and promote the benefits of a cycling so that Council’s approach to priority and investment is understood and supported within the community and by partner organisations.
- Promote a culture of respectful behaviour by all road and path users through events and media campaigns.
4.16 Premier bike routes

This section below provides a short description of the current condition of the premier routes within Maribyrnong and the preferred direction of investment for the future. More detailed comments for some of these routes are given in Chapter 5.

4.16.1 The Maribyrnong River Shared Path

This is the heavily used spine of the network and popular for recreation, commuting and for walking. It is generally in good condition but expectations and usage are likely to increase in future. Moreover the Defence Department redevelopment and a string of smaller redevelopments along the Maribyrnong River will add to its importance. There are three areas needing attention:

- Sometimes uneven and narrow surfaces particularly between the Farnsworth Avenue bridge and the Raleigh Road bridge;
- Missing links through the Maribyrnong Defence Department land and the eastern part of Medway Golf Club; and
- Lighting on the heavily used sections – either conventional overhead lighting or (more likely) inexpensive passive solar lighting embedded along the edges of the path. The section between Napier Street and Raleigh Road would be a suitable stretch to start on - commencing at the Napier Street end where bike flows are high.

4.16.2 The Shepherd Bridge to West Gate Route

Bicycle Network Victoria recently rated Shepherd Bridge as the Number 1 project in the Melbourne Metropolitan area. VicRoads are also reported to have rated it the top priority cycling project for Melbourne’s west. The cost of bridge strengthening and a new bike bridge was reported to be $13.5 million (The Age 25th Feb 2014). Its poor level of service to riders has already been the focus of many discussions. In 2010 a new bridge across the Maribyrnong River south of the existing road bridge was proposed as part of the Truck Action Plan works. Several alternative designs were put forward including one design incorporating a span across the Docklands Highway (Moreland Street).

Council will continue to advocate for the new bike and walking bridge. It is very important to the local riding network and to the regional riding network.

In the short term Council will consider removing obstacles and uneven surfaces on the approaches to the existing bridge. However the bridge itself is a VicRoads responsibility rather than the City’s responsibility. It may eventuate that a new bridge may not be built for some time therefore a series of minor improvements on Council land on its approaches would improve conditions for existing riders.

Upgrading the existing 2.5km southern approach route from the West Gate Bridge is equally important as Shepherd Bridge itself - perhaps more so. The completion of the Federation Trail will put more riders on this route. In the foreseeable future the best improvement strategy for this approach route is one of incremental improvement such as improving the section along Somerville Road and reducing conflicts at problem side streets.
4.16.3 The Barkly Street - Hopkins Street Route

This is another radial route towards the Melbourne CBD that already attracts many riders – see Figure 3 10. The short section between Leeds Street and Moore Street, and the section leading down to the Hopetoun Bridge can be improved immediately for experienced cyclists with line marking. A cycleway on the northern verge of Hopkins Street will be critical for the section adjacent to the ‘Joseph Road redevelopment’. The proposed bridge across the Railway just north of Hopkins Street Railway Bridge is critical to riders gaining traffic-protected access to the Maribyrnong River. A high standard link on Barkly Street - Hopkins Street rests with the possibility of a future stage of the East West Link – a tunnel under Footscray. Even then it would need creative designers working with traffic engineers to create the road space.

Figure 4-10 These poles and uneven surfaces reduce the level of service to riders on Shepherd Bridge

Figure 4-11 About 700 riders travel across Shepherd Bridge (Footscray Road) every morning
4.16.4 The Buckley Street – Napier Street Route

Even poor riding conditions don’t deter riders from this route – see Figure 3 10. The demand for a suitable route in this corridor is shown by the popularity of Pilgrim Street – which is also a sub-standard route. A high standard cycleway on the south side of Buckley Street and Napier Street would greatly improve the prominence of this route and provide access to the Footscray centre. Only low cost minor line-marking is possible in the interim.

4.16.5 Other local routes

A key to the success of network building in the inner northern suburbs has been the development of local riding routes – some less than a kilometre long. Maribyrnong will adopt a similar strategy. Two local routes stand out:

**The Railway route to Yarraville.** This is a convenient low traffic route along the west side of the Railway from Yarraville along Birmingham Street, Pentland Parade and into Albert Street in the north. Importantly it is grade separated across Somerville Road and has traffic signals at Buckley Street. Assistance to cross busy arterial roads is critical for local bike riding routes.

**The Skyline Drive Route.** This route has the potential to generate new riders because it is direct, has no hilly sections and could form a direct connection between Highpoint and Footscray Centre – nearly 3km long. It is the only north-south route though the Municipality that comes close to being able to be traffic protected. The most critical opportunity is the redevelopment of the ‘Kinnears Site’ on the northern side of Ballarat Road between Gordon Street and Farnsworth Avenue. A direct link through this site with traffic signal assistance across Ballarat Road to Commercial Road – a quiet residential street – would take traffic-shy riders all the way to Barkly Street – and to Victoria Street further south. A long-term program of incremental improvements will deliver this very important local route.
5 Specific Actions

5.1 Actions to improve the bike network

This chapter outlines a list of actions at various stages of development. Some are well advanced whereas others are concepts to be developed further. The notes under each action provide some insights to assist Council when it considers these projects in more detail. These projects pertain to those locations that were raised during the various consultation activities undertaken in the preparation of this strategy. There will be many other locations not mentioned in this chapter where the riding network can be improved.

Projects are ranked from highest priority (1) to lower priority (3). Responsibility for initiating nearly all of these actions rests with the City of Maribyrnong. The notes outline those projects where VicRoads and other state government agencies would play a funding or an approval role. VicRoads has been both a major advocate and major supplier of high quality bike infrastructure in the metropolitan area. Works on the routes shown on Figure 2 2 could be funded by state government agencies. Although many of the important routes for local riders have been given State government recognition in the Victorian Bike Strategy (eg Principle Bicycle Network) it would be unrealistic to expect VicRoads to fund many of the improvement works on these routes in the next 5 years. Two priority projects recommended for VicRoads funding include a new shared path bridge across the Maribyrnong River at Shepherd Bridge and a shared path along Napier Street and Buckley Street.

Works on road pavement under the control VicRoads would require VicRoad’s approval – the roads marked red or black in the Melway Street Directory.

A summary of the actions to improve the riding network is shown in Figure 5 2 at the end of this chapter. Indicative construction costs are given in the ranges below. For many actions the specific scope of work has not been defined so the actual costs may be higher or lower than those shown.

- Low (less than $100,000)
- Medium (between $100,000 and $1M)
- High (greater than $1M)

Council is committed to allocating funds, as part of its annual Capital Works Program, towards the implementation of actions as listed in this report, over the life of the Strategy, 2014-2019.
Figure 5.1 Location codes for specific sites discussed in Figure 5.2
Improve the Skyline Drive route.
A major issue is that it is easy for riders to stray off the route. The main treatments that could be considered are as follows:

- Emphasise its connection through the traffic signals with the shared path on the west side of Gordon Street north of River Street;
- Reinforce its crossing of Edgewater Boulevard - at present there is no practicable way bikes can be given priority across the legs of roundabouts like this one but pedestrians can have priority if a zebra is painted;
- Reinforce the shared path status of the parts of this route that are shared paths by pavement marking symbols;
- Make the connection from Skyline Drive to Eldridge Street clearer. Eldridge Street provides a suitable alternative while there is no funding to upgrade the back lane connection past Footscray Secondary College to Kinnear Street.

The Skyline Drive shared path makes a right angled turn through the roundabout here at Owen Street. Planning should see strong connections developed through Quarry Park to Farnsworth Avenue and to Footscray Secondary College and then further south through the Kinnears site.

The right of way beside the Footscray Secondary College will be developed in conjunction with Quarry Park as a high standard, direct and convenient riding link. Until then Eldridge Street which runs parallel, would be preferred by most riders.

The lanes on Eldridge Street are unnecessarily wide. More space could be given to riders and people accessing their parked cars.

Even local riders miss this low-key entry from Gordon Street to the important shared path along Skyline Drive. Its importance should be emphasised. Signage should be considered to complement upgrading of this route.

The Skyline Drive shared path can be lost as it passes through the roundabout with Edgewater Boulevard where cars have priority over pedestrians as well.
Include a north-south bike link through the Kinnears Rope Factory Site and a traffic signal assisted crossing of Ballarat Road into Commercial Road.

- The link will be slow speed within the site.
- The preferred long-term plan will be a direct connection across Kinnear Street to the (presently) unsealed lane next to Footscray Secondary College in the north.
- Signals would operate in the ‘shadow’ of the Droop Street/Ballarat Signals just to the east with no significant additional delays to motorised traffic on Ballarat Road.
- The development plan overlay (DPO- Schedule 14) for Kinnear Rope Factory Site requires north-south links through the site – see below.

Develop Commercial Road as the southern end of the Skyline Drive north-south link. No change to Commercial Road would be required – at least initially. The main issue would be to improve connections across Geelong Road at Barkly Street.

Commercial Road could provide an important link in a low traffic north-south bike link through the Maribyrnong Municipality.
Rearrange the line marking of Barkly Street between Geelong Road and Gordon Street.

- This section of Barkly Street is called on to perform multiple traffic functions - right turns to adjacent properties, intermittent on-street parking, through movements, and also cater for bike riders. With little line marking and a wide road of about 13m between kerbs there are opportunities to provide more predictability in traffic movements of all types.

- One possibility would be a central narrow turning lane of about 2.5m with a single through lane each side would promise to yield safety benefits. Its practicability would be subject to closer study – particularly the frequency of cars two abreast entering this section of Barkly Street from the intersections at each end and the prospect of squeezing cyclists. The peak period parking bans add to the complexity of line marking especially if there is to be a centre lane.

- The intermittency of on-street parking causes a particular problem to line markers because the preferred lateral bike riding position varies according to the presence or the absence of parking. The present ‘advisory bike lanes’ are of little use to riders when there is on street parking.

- The preferred arrangement would appear to be a four lane road with wide kerbside lanes (approx. 3.8m) that bike riders could share side by side with peak period cars, and share with cars parked during off-peak periods. Bike logos are not useful in this configuration because of the changing lateral position for bike riders during the day.

Improve the intersection of Barkly Street and Geelong Road.

- This intersection has all the hallmarks of being difficult for bike riders, car traffic and pedestrians.

- It is on an important east west bike route and, when the Skyline Drive north south link is developed, it will be an important connection between Commercial Road and Victoria Street.

- There are many possible improvement options but no easy task in identifying the most cost effective. The following are possibilities for the east west direction:
  - Early green start for pedestrians and bike riders;
  - Early green cut off for bike riders to reduce chance of being stranded at the end of green;
  - Separate bike displays beside the pedestrian display on the signals to legalise riding within the pedestrian crosswalk;
  - Coloured riding areas like the Copenhagen blue pavement within intersections – not yet tried in Australia.
  - Elements of the ‘protected intersection’ concept traditional in the Netherlands but not yet tried in Australia.
**Construct a two way off road cycleway** on the south side of Napier Street from Moreland Street to Nicholson Street.

- This cycleway need not wait for a new bike bridge across the Maribyrnong;
- Several design studies have already been carried out including a congestion analysis as part of the ‘Truck Action Plan’; In particular, south of Napier Street, northbound trucks were proposed to be diverted from Whitehall Street to Moreland Street. The present State Government has not made a determination on the future of the Truck Action Plan. The diversion of northbound trucks from Whitehall Street to Moreland Street would reduce any congestion effects that a cycleway might possibly generate; bikes could be grade separated on a bridge above Moreland Street and there would be less traffic load on the intersection of Napier Street and Whitehall Street where a cycleway might slightly reduce available road space for other traffic.
- In 2010 Traffix produced an engineering design for VicRoads for the section between Moreland Street and Albert Street; That design envisaged major changes to Napier Street including the relocation of the median northwards and permanent indented parking on the southern side;
- It may be possible to identify a satisfactory but less expensive design;
- Although an alternative designs could take the form of a wide shared path and incorporate the existing footpath a better design solution where space permits would be would be a two-way cycleway separate from pedestrians;
- Although the design details have not been determined, significant road space could be reclaimed on the south side of Napier Street by removing on-street parking between Whitehall Street and Hyde Street where cars can now park for 7 hours between peaks; the land uses do not seem dependent on this parking;
- There is readily available parking on the north side of Napier Street and in Cowper Street;
- Bike riders on the cycleway should have priority over minor side street traffic with (ideally) the cycleway being raised as it crosses the side streets.

The 2010 Concept for the cycleway on the south side of Napier Street envisaged major changes to the median.
Construct a two way off road cycleway (or shared path) on the south side of Buckley Street from Moreland Street Nicholson Street to West Footscray Station. Although there would be the usual design trade-offs, the existing situation gives confidence that a satisfactory cycleway design could be identified that would avoid unreasonable impacts on other road users, pedestrians or nearby landholders.

West Footscray Station under construction

Buckley Street – careful attention to the usage of road space, footpaths, parking and bus stops will be required to design a successful cycle-way

The West Footscray Railway line shared path runs beside Cross Street. A new residential development proceeded on the north side of Cross Street (between Hocking street and Warleigh Road) on the understanding that it did not require on street parking on Cross Street. At present there are bike lanes in each direction on Cross Street and on off-road shared path on the verge on the south side. Residents would now like to park on-street in Cross Street and this would require the removal of one or both on-road bike lanes.

- Cross Street is a Bicycle Priority Route on VicRoads’ Principal Bicycle Network, recognised as a route with a high number of existing - and potential - riders.
- The number of riders will increase as the western end is extended to Sunshine Station and the shared path in Ashley Street is constructed later in 2014.
- It is appropriate that faster riders use the road and leave the path for slower and less confident riders and faster riders are best separated from pedestrians – particularly near West Footscray Station.
- There is no parallel alternative for faster riders as parking already compromises the bike lanes in Barkly Street.
- Bike safety would decline if riders had to swing out into the adjacent high-speed lane each time they had to pass a parked vehicle.
- Experienced eastbound riders with both their origin and destination on the north side of Cross Street are unlikely to cross Cross Street twice to use the path.

If Council were of the view to increase car parking without compromising bike riders then the cross section could be changed, lanes narrowed and north side parking indented however this would be a significant cost.
RRL Path Ashley Street to Sunshine Station

On 9th of June 2014 the Minister for Public Transport and Minister for Roads announced that funding for this shared path would be provided through the RRL Project. It included the statement that ‘It is expected that the landscaping and both pathway projects will be constructed in the 2014/2015 financial year as part of Brimbank City Council’s capital works program, following successful completion of detailed design work, in conjunction with stakeholder approvals.’

- This route includes the section opposite the Beachley Street Redevelopment Braybrook. A condition of this residential redevelopment was that the developers fund a new east west shared path within the southern boundary of the estate about 500m. This path would ultimately be part of a long path from Sunshine Station to West Footscray Station.

- At the time of writing (2014) this redevelopment has been approved but development is still pending.

It is vital that this shared path incorporate frequent connections to the various residential estates abutting it to the north. This would provide many options for recreational walking loops and enable ready access to the path.

Federation Trail. At present (February 2014) the eastern end terminates at Millers Road.

- All four adjoining municipalities support the completion of the Federation Trail.

- In November 2013 The State Government announced the awarding of the contract to build the Federation Trail bridge across the Newport-Albion freight line. This bridge and additional works will connect the end of the current trail at Millers Road through to Fogarty Avenue in Yarraville. Completion of this stage is due late in 2014.

- Engineering plans have been prepared by VicRoads for the next stage along Fogarty Avenue to Williamstown Road. However as at February 2014 there is no funding.

There is no accepted route for the section between Williamstown Road and Hyde Street. Many alternatives have been suggested over the past decade.
Upgrade Shepherd Bridge and its Approaches

This project is considered in two parts: 11a The provision of a high standard crossing of the Maribyrnong River; and 11b the removal of obstacles on the approaches to Shepherd Bridge. Project 11a is primarily State Government’s responsibility whereas Project 11b is primarily Council’s responsibility.

11a Priority 1

Provision of a high standard crossing of the Maribyrnong River

- Bicycle Network Victoria recently rated a new bridge across the Maribyrnong River as the Number 1 project in the Melbourne Metropolitan area. VicRoads are also reported to have rated it the top priority cycling project for Melbourne’s west. The cost of bridge strengthening and a new bike bridge was reported to be $13.5 million (The Age 25th Feb 2014). Its poor level of service to riders has already been the focus of many discussions. In 2010 a new bridge across the Maribyrnong River south of the existing road bridge was proposed as part of the Truck Action Plan works. Several alternative designs were put forward including one design incorporating a span across the Docklands Highway (Moreland Street).

- The obstacles and poor surfaces distract riders and limit the effective width of this path that carried about 693 riders in the 7am to 9am period on Super Tuesday 2013.

- On 16th of May 2014 the Minister for Public Transport and Minister for Roads announced “$650,000 or safer cycling facilities and a resurfaced pedestrian path to the south of the bridge, with works to begin in the coming weeks”. “Improvements will take place on the southern side of the bridge, and will involve widening the shared user path to 3.5 metres. This will provide plenty of space for passing cyclists and pedestrians and reduce the risk of collisions with vehicles. “The current kerb will be maintained, providing a barrier between vehicles and cyclists. “Street lighting will be removed from the middle of the path and relocated, to provide a hazard-free area, while resurfacing works will ensure a smooth ride.” Shared user path works are expected to be completed in late 2014”
Remove obstacles on the approaches to Shepherd Bridge

- Although bridge itself is the responsibility of VicRoads the approaches are the responsibility of Council.
- If a new bike and walking bridge were built across the Maribyrnong River then some of these improvements may become redundant however it would seem the state government’s priorities are elsewhere for the immediate future.
Upgrade the shared path between Shepherd Bridge and the West Gate Freeway is heavily used and works well in places – but not in other places such as across driveways just north of Lyons Street. Although it is less than 10 years old, it is time to look at improvements. The opening of the Federation Trail is likely to see many more cyclists using this route both during the commuter peak and at weekends. There is some scope to make changes such as pavement colouring and/or raising the path surface as it crosses side streets. This would clarify that situation that path users do indeed have priority over drivers emerging from the side street – providing the statutory signs are also there. At around $30k per side street, raising the surface could not be justified with limited funds. It could be justified in new developments where shared paths cross new driveways.

In the medium term it is worth considering the usage of the southbound kerbside lane in the section running beside Docklands Highway (Whitehall Street and Moreland Highway. This consideration would involve video observations of traffic and parking to determine present behaviour. It seems that much of this kerbside lane is presently under-utilised and southbound traffic (often trucks) tend to run in single file - although spread between the two southbound lanes. This introduces the prospect of using the kerbside lane for a cycleway. This in turn would have benefits in better visibility at driveways and side-streets and a more even riding surface. Because there are few driveways in the section south of Youell Street this treatment should only be considered for the 600m section between Youell Street and Napier Street.

Somerville Road Street shared path from Hyde Street to Whitehall Street

- Although it crosses just four driveways, the shared path is of minimal standard along this section - especially its effective width of just over a metre and poor sight lines.
- There is lot of ‘lazy space’ within the existing road reservation.
- There are several upgrade options worthy of more investigation. The most promising is the reconstruction of the shared path about 3m north of its present location - and about 3m wide - see the yellow line in the adjacent photograph.
- Kerbside parking could be removed completely (there is parking on the opposite side of Somerville Road) or relocated somewhere behind the new kerb-line.
- The design would essentially move the existing kerb about 2 metres further north. The driveways would be reconstructed with bike priority.
- This would create flexibility about how the space between the new kerb and existing fence could be used. There are several alternatives including (a) eastbound riders to pass north of the utility poles and westbound to the south (b) both to pass to the north and pedestrians to the south or (c) the alignments to wander a little between the new kerb and the existing fence.
- Rider flows and pedestrian flows are still low enough to allow mixing within a shared path but it may well be practicable to separate them along this section.
Improve bike access to Highpoint Shopping Centre

- The North Maribyrnong Integrated Transport Study made a series of recommendations. Those relating to bikes, and not taken up by other items in this section, are reproduced below.
- ‘Provide pedestrian pathways on both sides of all roads within the Activity Centre. Nearly of these footpaths would carry sufficiently small numbers of pedestrians to allow the ‘pedestrian pathways’ to become shared paths about 2.5m wide. This would greatly increase bike rider access once the rider arrives in the vicinity of Highpoint.
- Provide better connections to off-road pathways, particularly those located in Pipemakers Park and Waterford Green, and consider further opportunities to link pathways on both sides of the river through ‘green bridges’.
- Provide better connections between key destinations and origins within the Activity Centre, including retail shopping entrances, public transport stops and car parking areas, and to surrounding land parcels such as the Maribyrnong Defence site and residential development to the west of Wests Road.
- Provide end-of-trip bicycle facilities (parking/lockers/shower) within the Activity Centre.
- Incorporate the bicycle network within the vicinity of the Activity Centre, including any proposed paths, within VicRoads’ Principal Bicycle Network.’
- A major weakness of bike access to Highpoint is the absence of traffic protected bike routes from nearby residential areas – notionally to the edge of a 5km (at least) arc extending from the Highpoint centre. A 5km arc covers the entire municipality of Maribyrnong. The proposed shared paths on Hampstead Road Williamson Road, on the tram reservation parallel to Wests Road would increase bike accessibility to Highpoint significantly.

Upgrade the Aquatic Drive Shared Path

- The shared path on the southern verge functions adequately, albeit with low expectations of a good riding facility.
- In time, consideration should be given to raising the crossings with the three driveways to the level of the shared path but at present this is not justified.
Plan and construct shared path from Aquatic Drive through Pipemakers Park to the Maribyrnong River Path

- This link has been mentioned in three previous bike studies as important including the North Maribyrnong Integrated Transport Study - partly because of the Newsom Street Bridge to Ascot Vale.
- Steep topography makes the present roadway and the walkway to its north, too steep to be attractive to riders.
- The 2004 Bike Strategy recommended a formal crossing of Van Ness Avenue in this vicinity. At least one other study has recommended the creation of a new flatter track down to the River.
- Both these recommendations are still relevant. A new path would need to be about 400m long to achieve an acceptably flat grade.
- A zebra crossing of Van Ness Avenue just south of the roundabout has merit because both northbound and southbound speeds are slow. A zebra would be considerably less expensive than push button signals. However bike riders would be legally required to dismount. The signals option would include bike displays, which would make riding across legal.

Construct Shared path beside Williamson Road between Rosemond Road and Hampstead Road

- Large format commercial and retail developments and their car parks abut the south side of this block.
- Walking flows are relatively low and mixing with riders would be acceptable.
- Although the northern verge of Williamson Road would be suitable (albeit with more driveways) the presence of the existing shared path on the south side of Aquatic Drive favours a south side path here.
- There are a number of actions that would improve the situation for bike riders here.
  - Changing its status from ‘footpath’ to ‘shared path’.
  - Widening the pavement from about 1.5m to around 3m.
  - Raising the crossings with driveways to the height of the shared path to reinforce the legal priority pedestrians already have. At least two driveways are already at footpath height.
  - Changing the colour of the path to show that it is continuous across the driveways rather than the other way round.
Shared path on Williamson Road west of Hampstead Road

- The wide pavement in relation to very low traffic flows means that bike lanes could be implemented easily.
- The ultimate redevelopment of the adjacent area to the south means that a shared path on the southern verge could well be justified at that time. It would be the trigger for its development – and possibly be funded by it.
- Such a path would connect neatly with the recently constructed footpath in Cedar Drive. At present a fence separates it from the extension of Williamsons Road. Consideration would then be given to converting this footpath to a shared path.

A shared path on the south side of Williamsons Road west of Hampstead Road would cross few driveways, have little pedestrian conflict and provide a direct feeder route to Highpoint Shopping Centre

Shared path on Hampstead Road

- This is a main access route to Highpoint and subject to rapid redevelopment along its edges.
- The 2004 Strategy recommended a reallocation of road space to make on-road riding more comfortable. This is still relevant. Hampstead Road has a far greater width than is required to cater for motorised traffic functions.
- In the long term a shared path on at least one side of Hampstead Road will be justified. Council will investigate one or both sides and require a 2.5m wide shared path (and suitable crossings) as a condition of development applications of adjacent lots.

The wide verges along Hampstead Road are suitable for shared paths, have few driveways side-streets and few pedestrians and would provide direct feeder routes for bike riders to Highpoint
Improve Cordite Avenue and Raleigh Road

- This is a vital link connecting Avondale Heights in the Municipality of Moonee Valley, to Moonee Ponds and Ascot Vale – also in the municipality of Moonee Valley.
- The recent GHD study for the Defence Department land and the Traffix bike study for the CRC4 Route concluded that there is little that can be done to assist riders along the narrow parts of this route. The reports placed their faith in new routes being developed through and on the south boundary of the Maribyrnong Defence site. Places Victoria is currently investigating the future bike network including links along the southern boundary.
- The City of Moonee Valley has proposed a new foot and riding bridge (pictured) to be constructed on the north side of the existing Raleigh Road Bridge across the Maribyrnong River. The reason has been to cater for high volumes of recreational walkers who now threaten to spill onto the road surface of the Bridge. This strategy supports the proposal by the City of Moonee Valley.

New Bridges across the Maribyrnong River

- These two bridges are critical to the riding and the walking networks. They are located on the southern extremities of the Steele Creek path where it meets near the confluence of Steele Creek and the Maribyrnong River, and the ‘Monte Carlo’ path where it meets the Maribyrnong River next to the ‘Tea Gardens’.
- The river bank slopes are quite steep but it is critical that riding routes are direct – many of the users will be undertaking utilitarian trips so directness will be important. In design terms there may well be a case for both a high level Maribyrnong River Trail and a low level Maribyrnong River Trail (existing) right at the connections with Steelees Creek and the Monte Carlo Path. This would be similar to the off and on ramps connecting a depressed freeway to a higher-level network. In this case the bridge(s) may be at a higher level.
- Although not part of the current strategy, consideration should be given to the long-term construction of a new bridge of the Maribyrnong River near Aberfeldie Park to provide north/south continuity. This was part of the 2004 Maribyrnong Bicycle Strategy.
Redevelopment of the Maribyrnong Defence Site

- Broad guidelines were provided in the 2004 Bicycle Strategy. Those guidelines are summarised below. Unfortunately there is an unfortunate design history for bike and walking infrastructure in major redevelopments around the Metropolitan area (eg Docklands). It will only be persistent influence on the various development parties that could provide different outcomes here.

- A fine grained and connective bicycle and pedestrian network free of major traffic across the site;
- The construction of a continuous path on the south bank of the Maribyrnong River including a link under Cordite Avenue Bridge;
- The construction of two bridges across the river, corresponding to the valleys on the north side (see comments elsewhere in this chapter);
- Many connections into the residential area to the east, even if vehicular connections are not provided;
- Crossings of Raleigh Road and Cordite Avenue at each of the existing traffic signals with walking and cycling networks radiating from each into the Defence site
- An off road shared path on the north side of Cordite Avenue and Raleigh Road – where practicable; and
- On-road bike facilities on Cordite Road and Raleigh Road if these roads are upgraded (ie bicycle lanes in each direction where practicable)

Extension of the Maribyrnong River Path

- Recent development on the ‘Waterford Estate’ has accentuated the missing link in the Maribyrnong River path on the northern side of the Medway Golf Club. Although there is a path on the other side (Avondale Heights) of the River there is no direct way it can be reached.
- A path on each side of the River has been critical to the success of the network through Aberfeldie, through Ascot Vale and through Footscray.
- There is a barrier on the northern end of the pipe bridge preventing riders crossing – unless they lift their bikes above their heads to get over a fence. This barrier should be removed.

This is a vital link for local movements at the western end of Cedar Drive. However the bike network needs more routes parallel to the contours including a path along the bank of the Maribyrnong River itself
23 Priority 1

Formalise connections between Cranwell Park and the Maribyrnong River path in Braybrook

This would extend north east of Lacy Street towards the pipe bridge. M102 Melbourne Water pipeline renewal is likely to occur in the next few years and may make improvements to the bridge possible at a lower cost than otherwise would be the case.

24 Priority 2

Upgrade the Maribyrnong River path beside Chifley Drive Maribyrnong

- The present surface is granitic sand. Upgrading would see it converted to asphalt or concrete.
- Similarly the path near the Anglers Tavern is unsealed which is unsuitable for bikes – except those with wide tyres.

_In time, this crossing of the Maribyrnong River path with the very lightly used Anglers Tavern cul-de-sac, should be marked to provide path users with priority and level access rather than the other way around_.

25 Priority 1

Upgrade the Maribyrnong River path near Hillside Crescent Maribyrnong

- This section of the Path has worse riding conditions than most and is in close proximity to traffic on Van Ness Avenue.
- The options appear to be; improve shared path, remove pole and palm, renew surface OR narrow road lanes and use extra space to widen path & provide separation from road.

26 Priority 2

Upgrade the Maribyrnong River Path between the Farnsworth Bridge and the Raleigh Road Bridge

- Although this is not yet a pressing problem this section of the path is noticeably worse than further south.
- In effect an upgrade probably means the conversion of the present asphalt path to a concrete path.
Plan for shared path in the Tram Reservation

- Council supports the proposal to construct a two-way cycleway (or shared path) on the eastern verge of Wests Road between Cordite Avenue and Williamson Road. See location 51 below.

- The tram reservation runs parallel to this route just a hundred (or so) metres to the east. Both routes would connect the Maribyrnong Defence site redevelopment and existing residential areas with Highpoint and its related retail and commercial areas. The tram reservation route already provides access to maintenance vehicles and features an existing signalised crossing of Cordite Avenue. As well as this direct signalised crossing, the tram reservation route has the advantage over Wests Road in that it is free of traffic – except an occasional tram.

- The first step in investigating this route further would be to approach the Department of Transport (VicTrack) to seek permission to construct a combined maintenance track/shared path along the tram reservation between Raleigh Road and Williamson Road. It would have an east-west connection at the existing crossing at White Street (pictured). The shared path may well need lighting (possibly passive) and careful attention to minimising the effective grade at the northern end. The redevelopment of the Maribyrnong Defence Site could well provide the impetus for this project (and others).

Ashley Street Shared Path Rupert Street to South Road

- This link on the western verge is due for construction in 14/15.

- It will connect well with the existing path along the north side of the railway to West Footscray Station.

- This route is presently being designed with the intention of early construction commencing from the south.
South Road Shared Path

- This link would be on the southern verge of South Road from Ashley Street to Garden Drive Braybrook.

- Further west there are service roads on the south side of South Road that are not connected to each other. Careful attention to detail would be required west of Garden Drive as there are few places in Australia where bi-directional cycle ways have been retrofitted successfully to service roads. There are several design options available including the concept of treating bike riders in the easterly direction as undertaking contra-flow movements with the service road marked accordingly.

Connect Buckingham/Errol with Pickett/Raleigh

- This would incorporate the conversion of the existing footpaths to shared paths.

- Note that the eastbound direction involves a left-right stagger whereas the westbound direction involves a right-left stagger.

Geelong Road – whole length

- The centre carriageway of Geelong Road could be remarked to increase the width of the kerbside lane for buses and bike riders at the expense of the inside lanes. The additional space could be marked with an edge line or possibly a bike lane if space permits. The low number of riders on Geelong Road means that this remarking could only be justified when the road is to be resealed.

- The service roads offer the prospect of a traffic-protected route for bike riders. Alternatively the footpaths could be converted to shared paths where pedestrian volumes are low and there are few driveways.

- Whatever design solution is adopted there will be the need to provide connecting shared paths (or footpaths) across space where there are no paths existing. One example is on the southeast corner of the intersection of Geelong Road with Cemetery Road where there is no walking path to the traffic signals or even a ‘pram ramp’ from the verge level down to road level.

Mitchell Street Rosamond Road intersection.

- This project is mentioned because it is an example of taking the opportunity of improving the space allocation of a road when it is to be resurfaced.

- The project involves upgrading the line marking, the installation of advanced bike boxes and green surface marking.
Somerville Road and Williamstown Road intersection.
• This project is mentioned because it is an example of taking the opportunity of improving the space allocation of a road when it is to be resurfaced.
• The project involves upgrading the line marking, the installation of advanced bike boxes and green surface marking.

Introduce traffic calming in Somerville Rd to reduce motor vehicle numbers and speed and upgrade cycling infrastructure

Mark bike lanes in Robbs Road between Geelong Road and Glamis Road West Footscray
• The project corresponds to the anticipated re-construction of Robbs Road.
• Robbs Road is far wider than is needed for its traffic carrying functions.

Mark bike lanes on Roberts Street Yarraville
• The road space is poorly defined at present and provides bike riders little protection.
• The only design question arises as to whether the sparse level of parking and relatively narrow road may mean that a new edge line may be a better design solution than a bike lane.

Bike lanes on Williamstown Road between Somerville Road and Geelong Street Kingsville
• This design should be relatively straightforward.
• It would formalise existing road user behaviour.

Bunbury Street Connection - Whitehall St to Maribyrnong St
• This would be a direct connection along a quiet street but riders would still be presented with the task of crossing Whitehall Street – perhaps by new refuges. The priority of this route would be dependent on costs with more expensive (but more popular) east-west routes to the north and the south.
• Providing a traffic protected route on Napier Street deserves higher priority;
• Alternatively linking the Maribyrnong River path directly with Hopkins Street just north of Hopetoun Bridge and providing a traffic-protected route beside Hopkins Street and then to the Footscray Station would also be attractive to more riders.
Allow contra-flow bike riding on Footscray Centre’s one way streets

- This potentially includes Paisley Street (French Street to Leeds Street) and Nicholson Street (Paisley Street to Irving Street) and Leeds Street (Byron Street to Hopkins Street).

Line mark streets in Footscray Central to better protect bike riders

- This generally means bike lanes or moving the edge line further to the right.
- In Donald Street it could well mean a single general-purpose lane in each direction, central opposed turning lane and protected space for slow speed manoeuvres including bike riders on the left. It could also mean widened refuges including Nicholson Street to allow bike riders and mobility scooters enough width to pause in the centre of Donald Street. The narrow width of the refuge doesn’t allow them to pause safely at present. This route including Donald Street will become an important feeder for bike riders to the proposed bridge across the Railway as part of the Joseph Road redevelopment.
- In Nicholson Street (north) it would mean narrowing the excessively wide general-purpose traffic lanes and introducing a ‘buffered bike lane’ similar to the recently painted lane in Hyde Street south of Napier Street.
- In Albert Street between Irving Street and Hopkins Street it means confining car traffic to the centre of the road – probably by edge lines well clear of parked cars – or by a formal bike lane.
- In Hopkins Street between Leeds Street and Moore Street it means painting an edge line (perhaps a bike lane) to encourage drivers to track away from bike riders and people accessing parked cars. The speed limit is already 40km/h along this stretch. There is no evidence that drivers have difficulty in the existing lanes 2.5m wide in Hopkins Street west of Leeds Street.

Develop continuous north south bike riding routes through Footscray

- The introduction of contra-flow riding to some one way streets (eg southbound on Nicholson Street south of Paisley Street) will go some way to creating a continuous north-south link. If possible more than one continuous north-south link will be developed because of the intensity of local attractions.
- Albert Street is close to being a continuous north-south link but meets Barkly Street at a Tee junction. Much can be done with line-marking to better protect bike riders along Albert Street north of Irving Street.
Develop a continuous east-west bike riding route north of Footscray Central

In the long term, the West Link tunnel (now modified and called Stage 3 of the East West Link) should remove significant vehicular traffic from Hopkins Street. At that time substantial improvements in the on-road bike facilities would clearly become achievable with ease. In the meantime bike lanes, or their equivalent suitable for experienced cyclists, may be possible on Hopkins Street west of the Railway. The Super Tuesday counts (2013) already shows 144 eastbound cyclists on Hopkins Street during the morning peak two hours. Hopkins Street has been given “Priority Bicycle Route” status by VicRoads but this status would appear to reflect its importance and poor riding conditions rather than the availability of a ready solution to the problem of poor riding conditions.

The 5m set-back that will be imposed on new properties on the northern verge of Hopkins Street east of the Railway provides the potential for a two-way path suitable for less experienced riders from Hopetoun Bridge across the Maribyrnong River (Hopkins Street).

The City of Melbourne plan to extend the shared path beside Dynon Road to the Maribyrnong River so that there will soon be no ‘missing link’ on the east side of the River for inexperienced riders. See Project 45 below.

The proposed bridge across the Railway just north of Hopkins Street would open up a significant area north of the Footscray CBD and would connect with existing cycling routes leading directly into it from the north ie via Cowper Street and Donald Street. The Joseph Road redevelopment should take the lead from the Kensington redevelopment of the 1990s (Stockyard Bridge across the Maribyrnong River) and incorporate an attractive longer distance walking and cycling route. Within the redevelopment, a high quality-riding route could be incorporated into the design of Whitehall Street north of Hopkins Street.

Maribyrnong Council will advocate for the Hopkins Street/Cowper Street intersection to be signalised as part of Joseph Road project because this would allow pedestrians from the north-east destined to the Station or the Footscray Centre to cross to the south side of Hopkins at this point. This would provide opportunities to reconsider the allocation of space between bikes and pedestrians on the north and the south sides of Hopkins Street and free up space on north side path for riders.

This new east-west riding route depends entirely on the ‘missing link’ across the Railway (a new bridge) being funded. The remainder of the route exists already or land will become available – ie the north verge of Hopkins Street east of Railway and the network of local streets including Donald Street north of the Footscray Centre. A suitable route for inexperienced riders already exists across the Maribyrnong River on the north side of Dynon Road east of Kensington Road in the City of Melbourne. The main issue is how could this be done without having a similar experience to the recent ‘non-widening’ of the northern verge of the Hopkins Road. This bridge across the Railway was reconstructed for the Regional Rail Link – soon to be operational - but without taking the opportunity to widen the northern verge on the bridge itself. Council will advocate for this new bridge at every opportunity.
The significance of these four projects (below) to be undertaken by Melbourne City Council is that they will attract more riders to the bridges across the Maribyrnong River and hence more put more pressure on the feeder routes in the City of Maribyrnong and increase the urgency of upgrades.

**Dynon Road Shared Path**

The City of Melbourne Bicycle Plan 2012-16 has this project listed under ‘investigations’. It states that ‘if possible, supported projects will be progressed by 2016 or be included in the next plan’. In respect to the Dynon Road shared path it says, ‘Investigate upgrade of shared path on north side of Dynon Road and construction of shared path on south side of the road. This will improve connections to and from the west’.

**Footscray Road Shared Path**

The City of Melbourne Bicycle Plan 2012-16 lists this as an ‘action’ and proposes to upgrade this path in association with VicRoads. In particular it proposes to ‘upgrade off-road path and intersections, Maribyrnong crossing and signage. This upgrades a key route to and from the west’.

**Smithfield Road and Epsom Road on-road upgrades**

The City of Melbourne Bicycle Plan 2012-16 shows Smithfield Road and Epsom Roads as ‘new and upgraded routes 2012-16’ (Figure 8) and proposes to upgrade both roads for bikes in association with VicRoads. In particular it proposes to ‘construct an on-road quality route to connect from the north-west to the local road section of Epsom Road. This will link routes from the west to Racecourse Road’. Under the heading of ‘Smithfield Road, Epsom Road and Macaulay Roads’ it envisages, ‘Upgrade with green pavement, profiled edge-line and intersection treatments to improve connections from the western suburbs’ in the period 2013-2016.

**Kensington Road on-road upgrades**

The City of Melbourne Bicycle Plan 2012-16 shows Kensington Road as a ‘new and upgraded routes 2012-16’ (Figure 8). In particular it proposes to ‘Upgrade with green pavement, profiled edge-line and intersection treatments. This will connect to the upgraded Arden Street route’. This would be completed in the period 2013-16.

**Quarry Park bike link**

There is a critical north south missing link across this park. This link was a recommendation from the 2004 bike strategy. Depending on the levels and the details, it may even be possible to provide a bridge over Farnsworth Avenue. However the cost of such a bridge would make a bridge a low priority. The Open Space team of Maribyrnong Council is presently investigating the development of Quarry Park.
The Maidstone Hampstead Road East Framework Plan was developed to provide land use guidance for the Strategic Investigation Area in Maidstone in the area bound by Hampstead Road, Mitchell Street and Wattle Road. It identified two major areas that have potential to transition to mixed use as follows:

- 15ha in between Emu Road and Mitchell Street; and
- The site fronting Emu Road to the north of the 15ha adjacent to the proposed George Street.
- North south and east west cycle links in this transition will be important as follows:
  - North-south between Emu Rd and Mitchell St and up George Street to Wattle Rd and beyond into Highpoint (Precinct 5 of the emerging Highpoint Framework Plan); and
  - East-west from Marsh and Verdun Streets through the transitional 15ha site. This will also be managed through the rezoning process through the planning framework developed for the site.

Wests Road Shared Path on eastern side.
This proposal was recommended in the Bicycle Strategy (2004) and was also recommended by the Maribyrnong Defence Site Bicycle Investment Strategy (2012). It is a suitable route for a shared path and would provide improved access to Highpoint from the north – particularly from the redevelopment of the Defence site. The route along the tram reservation has advantages over this route because it already has a signalised crossing at Raleigh Road and would have less conflict with other users and with driveways. If the tram reservation is not available for development as a shared path then this eastern verge of Wests Road is also suitable.

Stony Creek
The Stony Creek Future Directions Plan of 2011 provides guidance on the development of bike linkages along this valley. It recommends the construction of ‘2.5 - 3m wide vehicular grade concrete paths to provide for pedestrian, disability, cycle and maintenance access’.

Although some parts of the Stony Creek Valley already have adequate links such as through C.J.Cruikshank Park, other parts do not, such as south of Francis Street. Council will pay particular attention to the connection of shared paths along this corridor with existing and new shared paths such as the Federation Trail. The completion of the Federation Trail would mean the Stony Creek path would be a significant local feeder.
Introduce Contra flow for bikes in Chicago Street Maribyrnong

The introduction of contraflow bike flow in the northbound direction would avoid a diversion of several hundred metres by riders to access Chifley Drive from the residential area to the south.

Improve Nicholson Street/ Ballarat Road/ Geelong Road intersection for bikes

The growth of the University is likely to add additional bike and pedestrian traffic to this intersection. A major issue is the level of service for pedestrians and cyclists between Nicholson Street in the south and the northern verge of Ballarat Road; some riders have reported that it presently requires waiting for three changes of signal phases to cross. The options for improvement are one or all of the following:

- Changes in signal phases to reduce the waiting time;
- Addition of signal displays to include lanterns for cyclists so cyclists can cross legally without having to dismount;
- Minor changes to the levels of islands and location of fencing to reduce impediments when crossing;
- Move the stop line for traffic from the south-west approach on Geelong Road about two car lengths further back to avoid having pedestrians and cyclists divert when they walk across the median - which would also reduce the walking distance across the north-western carriageway of Geelong Road because pedestrians would be crossing at right angles. At present pedestrians have to walk a zig-zag route across Geelong Road. Note this implies an (acceptably) wide crosswalk across Geelong Road to accommodate pedestrians from both Nicholson Street and from Ballarat Road (east);
- Improvement of the path on the southern outer separator of Geelong Road ie the island between the service road and the main carriageway of Geelong Road;
- Changes to the road layout of the intersection of Nicholson Street and the Geelong Road southern service road to improve northbound cyclist and pedestrian access from Nicholson Street. There is a large amount of road space for the small amount of vehicular traffic carried.

Allow contraflow bike movements near Somerville Road bridge over the Railway in Yarraville

The two movements that would be considered are:

- the westbound movement on the Somerville Road northern service road (Pentland Parade to Tongue Street) west of the Railway; and
- the eastbound movement on the southern service road (Birmingham Street to Pentland Parade) including Pentland Parade northbound under the road bridge.

Because the road widths here are wide, physical separation of the contraflow bike lane could be considered. Alternatively a new shared path may be practicable.
Install traffic signals on the Cross Street shared path across Gordon Street

This is a critical crossing as it is the main bike route from the west to the Footscray centre and an important pedestrian route. The existing crossing is clearly unsuitable for younger bike riders, pedestrians with vision impairment, those with mobility impairment, and the frail elderly. The RRL project committed to funding traffic signals at this location. If the signals are not very responsive to the needs of both shared path users and the needs of Gordon Street traffic there will be a potential issue with shared path users crossing against the red when there is a gap in Gordon Street traffic and/or Gordon Street traffic being held up unnecessarily. It is a location where a wide cross-walk (perhaps 10m) would be suitable to cater for path users across a greater length of Gordon Street. Also the walking distance between kerbs could possibly be reduced to reduce the clearance time for pedestrians. The main issue is the way in which signals would be operated in this unusual context.

The main alternatives would appear to be as follows;

- ‘Rest on red’ for cars. The signals would default to green for those on the shared path and change to green for cars as they are detected approaching from Gordon Street. There is heavy bunching of traffic on the Gordon Street approach and there is opportunity to detect approaching traffic more than 5 seconds from when it would cross. This means the signals would have time to change and there would be few delays for traffic on Gordon Street as the signals would normally be able to switch to green on the arrival of the first car in the bunch. This would have the benefit of giving a high level of service to shared path users and reduce non-compliant crossings to almost zero.

- ‘Rest on red’ for shared path users but have advance detection of pedestrians and cyclists so that the crossing would show green when they arrive. This would require immediate signal response to pedestrians and riders. There are several examples of where immediate pedestrian response already operates including between the am and pm peaks at the pedestrian operated signals across Orrong Road near Sydney Street in Armadale. Automatic advance detection of cyclists operates on the Gardiners Creek Trail where it crosses Winton Road Malvern East.

Priority 1

There are many types of shared path user. The present crossing is clearly unsuitable for those with vision or mobility impairment.

Unofficial sign indicates concern by bike riders

Two sets of inductive loops are used to detect bike riders approaching the signals on the Railway Cycleway in New Zealand. Source: ‘Green Lights for Bikes’ by Bicycle Network Victoria 2012.
Install Parkiteer cage at Yarraville Station
Council has constructed leaning rails at many points around the Maribyrnong municipality. It is also part-funding a bike cage at Yarraville Station in the 14/15 financial year.

Install Whitehall/Parker intersection signals
This project has been approved by VicRoads and is likely to be completed in 2014/15.

Delineation of the Maribyrnong River Path between Hopkins Street and Napier Street
Regular cyclists here deflected to the informal route using the bitumen path south from Saltriver Place to Maribyrnong Street through the car park and under Napier Street as opposed to riding along the shared path that has a right angle turn and the occasional fishermen obstructing the path.

The current shared path route also has very poor sight-lines when exiting on the south side of Napier Street which is additional incentive to follow the informal route through this area.

Investigation of options would be needed before a clear action plan could be formulated.

Improve the north/south bike linkages along Melbourne Road
The Hobsons Bay City Council is currently working with VicRoads to improve connections under the West Gate Freeway. This would benefit cyclists making trips between the two municipalities.
<table>
<thead>
<tr>
<th>Location Code</th>
<th>Priority</th>
<th>Advocacy</th>
<th>Design &amp; Construction</th>
<th>Funding</th>
<th>Indicative construct cost</th>
<th>Action</th>
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<tr>
<td>11a</td>
<td>1</td>
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<td></td>
<td>Provision of a high standard crossing of the Maribyrnong River</td>
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<tr>
<td>11b</td>
<td>1</td>
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<td>Remove obstacles on the approaches to Shepherd Bridge</td>
</tr>
<tr>
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<td>Construct off road cycleway on south side of Napier Street between Moreland Street and Nicholson Street</td>
</tr>
<tr>
<td>44</td>
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<td>Develop a continuous east-west bike riding route north of Footscray Central</td>
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<td>58</td>
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<td></td>
<td>Construct Whitehall/Parker intersection signals</td>
</tr>
<tr>
<td>25</td>
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<td></td>
<td>Upgrade the Maribyrnong River path</td>
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<tr>
<td>10</td>
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<td>✓ ✓</td>
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<td></td>
<td></td>
<td>Complete Federation Trail to Hyde Street</td>
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<tr>
<td>57</td>
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<td></td>
<td></td>
<td>Parkiteer cage for Yarraville Station</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>✓ ✓</td>
<td>med</td>
<td></td>
<td></td>
<td>Improve Skyline Drive Route from Footscray to Highpoint</td>
</tr>
<tr>
<td>2</td>
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<td></td>
<td></td>
<td>Include north-south link through the Kinnears Rope Factory site</td>
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<td>9</td>
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<td></td>
<td></td>
<td>Construct a shared path from Ashley Street to Duke Street along rail corridor (to Sunshine)</td>
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<tr>
<td>12</td>
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<td></td>
<td>Upgrade the shared path between Shepherd Bridge and the West Gate Freeway</td>
</tr>
<tr>
<td>23</td>
<td>1</td>
<td>✓ ✓</td>
<td>med</td>
<td></td>
<td></td>
<td>Formalise connections between Cranwell Park and the Maribyrnong River path in Braybrook</td>
</tr>
<tr>
<td>28</td>
<td>1</td>
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<td></td>
<td>Ashley Street Shared Path Rupert Street to South Road</td>
</tr>
<tr>
<td>29</td>
<td>1</td>
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<td></td>
<td></td>
<td>South Road Shared Path</td>
</tr>
<tr>
<td>56</td>
<td>1</td>
<td>✓</td>
<td>med</td>
<td></td>
<td></td>
<td>Install traffic signals on the Cross Street shared path across Gordon Street and Ashley Street</td>
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<tr>
<td>34</td>
<td>1</td>
<td>✓ ✓</td>
<td>med</td>
<td></td>
<td></td>
<td>Introduce traffic calming in Somerville Rd to reduce motor vehicle numbers and speed and upgrade cycling infrastructure.</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>✓ ✓</td>
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<td></td>
<td></td>
<td>Develop Commercial Road as the north-south route</td>
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<tr>
<td>4</td>
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<td></td>
<td>Line marking of Barkly Street between Geelong Road and Gordon Street and Ashley Street</td>
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<tr>
<td>5</td>
<td>1</td>
<td>✓ ✓</td>
<td>low</td>
<td></td>
<td></td>
<td>Improve intersection of Barkly Street and Geelong Road</td>
</tr>
<tr>
<td>35</td>
<td>1</td>
<td>✓ ✓</td>
<td>low</td>
<td></td>
<td></td>
<td>Mark bike lanes in Robbs Road between Geelong Road and Glamis Road West Footscray</td>
</tr>
<tr>
<td>43</td>
<td>1</td>
<td>✓ ✓</td>
<td>low</td>
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<td></td>
<td>Develop links to Footscray including a continuous north south bike riding route</td>
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<tr>
<td>19</td>
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<td></td>
<td>Improve Cordite Avenue and Raleigh Road</td>
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<td>7</td>
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<td>high</td>
<td></td>
<td></td>
<td>Construct off road cycleway (or shared path) on south side of Buckley Street from Nicholson Street to West Footscray</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td></td>
<td>low</td>
<td></td>
<td></td>
<td>Maintain the integrity of Cross Street as a safe route for experienced riders</td>
</tr>
</tbody>
</table>

Figure 5.2 Summary of actions to improve the riding network

Note: The columns headed advocacy, design and construction, and funding indicate where the major responsibilities of Council will lie. In some cases there will be joint funding with other organisations.
<table>
<thead>
<tr>
<th>Location Code</th>
<th>Priority</th>
<th>Advocacy</th>
<th>Design &amp; Construction</th>
<th>Funding</th>
<th>Indicative construct cost</th>
<th>Action</th>
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<tbody>
<tr>
<td>13</td>
<td>2</td>
<td></td>
<td></td>
<td>med</td>
<td></td>
<td>Improve bike access to Highpoint Shopping Centre</td>
</tr>
<tr>
<td>15</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>med</td>
<td></td>
<td>Plan and construct shared path from Aquatic Drive through Pipemakers Park to the Maribyrnong River Path</td>
</tr>
<tr>
<td>16</td>
<td>2</td>
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<td>✓</td>
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<td></td>
<td>Construct Shared path beside Williamson Road between Rosemond Road and Hampstead Road</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>med</td>
<td></td>
<td>Shared path on Hampstead Road</td>
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<tr>
<td>24</td>
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<td>Upgrade the Maribyrnong River path beside Chifley Drive Maribyrnong</td>
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<tr>
<td>26</td>
<td>2</td>
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<td>Upgrade the Maribyrnong River Path between the Farnsworth Bridge and the Raleigh Road Bridge</td>
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<td>30</td>
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<td>Connect Buckingham/Errol with Pickett/Raleigh</td>
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<td>32</td>
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<td>Mitchell Street Rosmond Road intersection.</td>
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<td>Bike lanes on Williamstown Road between Somerville Road and Geelong Street Kingsville</td>
</tr>
<tr>
<td>41</td>
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<td>✓</td>
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<td>Allow contra-flow bike riding on Footscray Centre’s one way streets</td>
</tr>
<tr>
<td>42</td>
<td>2</td>
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<td>✓</td>
<td>low</td>
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<td>Line mark streets in Footscray Central to better protect bike riders</td>
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<tr>
<td>52</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>med</td>
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<td>Stony Creek</td>
</tr>
<tr>
<td>50</td>
<td>2</td>
<td>✓</td>
<td></td>
<td>low</td>
<td></td>
<td>The Maidstone Hampstead Road East Framework Plan</td>
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<tr>
<td>54</td>
<td>2</td>
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<td>med</td>
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<td>Improve Nicholson Street/ Ballarat Road/ Geelong Road intersection for bikes</td>
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<tr>
<td>55</td>
<td>2</td>
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<td>Allow contraflow bike movements near Somerville Road bridge over the Railway in Yarraville</td>
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<td>14</td>
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<td>low</td>
<td></td>
<td>Upgrade the Aquatic Drive Shared Path</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
<td>✓</td>
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<td>med</td>
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<td>Plan and construct shared path from Aquatic Drive through Pipemakers Park to the Maribyrnong River Path</td>
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<tr>
<td>17</td>
<td>3</td>
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<td>Shared path on Williamson Road west of Hampstead Road</td>
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<td>New Bridges across the Maribyrnong River</td>
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<td>Redevelopment of the Maribyrnong Defence Site</td>
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<td>Extension of the Maribyrnong River Path</td>
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<td></td>
<td>Plan for shared path in the Tram Reservation</td>
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<td>3</td>
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<td></td>
<td>Geelong Road – whole length</td>
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<td>3</td>
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<td></td>
<td>Mark bike lanes on Roberts Street Yarraville</td>
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<td>40</td>
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<td>✓</td>
<td>low</td>
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<td>Bunbury Street Connection - Whitehall St to Maribyrnong St</td>
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<td>49</td>
<td>3</td>
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<td>med</td>
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<td>Quarry Park bike link</td>
</tr>
<tr>
<td>51</td>
<td>3</td>
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<td>✓</td>
<td>med</td>
<td></td>
<td>Wests Road Shared Path on eastern side</td>
</tr>
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<td>53</td>
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<td>✓</td>
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<td>Introduce Contra flow for bikes in Chicago Street Maribyrnong</td>
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<td>59</td>
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<td>Delineation of the Maribyrnong River Path</td>
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<td>60</td>
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<td>med</td>
<td></td>
<td>Improve the north/south bike linkages along Melbourne Road</td>
</tr>
</tbody>
</table>
6 References

2013 Annual Community Survey Prepared by Metropolis Research Pty Ltd ABN 39 083 090 993 for Maribyrnong City Council October 2013

Amendment C125 Panel Report Feb 2014 – ‘Josephs Road’ redevelopment


Background Report: Footscray Structure Plan Published by Maribyrnong City Council Nov 2012

Buckley Street / Napier Street Bicycle Route Concept by Traffix Design Consultants for VicRoads and the City of Maribyrnong 2010.

Bicycle Plan 2012-16 City of Melbourne. melbourne.vic.gov.au/bicycleplan


Critical Route Corridor Analysis for Bicycles – Corridor 4 (Raleigh Road Epsom Road) by Traffix Group June 2012.


Footscray Access and Mobility Strategy Update. AECOM 2012 for the Department of Transport 1 June 2012

Healthy Suburbs; Presentation by Bart Sbegan Bicycle Network Victoria April 2013

Increasing Bicycle Mode Share for Transport: Lessons from the Netherlands by Dr. Jan Garrard, Presentation to the Metropolitan Transport Forum 6th September 2012.


Maribyrnong Integrated Transport Strategy prepared by Urban Trans for the City of Maribyrnong APRIL 2012


**Maribyrnong Open Space Strategy** DRAFT ISSUES PAPER V2 For internal project working group comment only. Prepared by: Thompson Berrill Landscape Design Pty Ltd in association with Environment & Land Management Pty Ltd October 2013


**Providing bicycle facilities as part of transport projects.** Published by Department of Transport 121 Exhibition Street, Melbourne 3000 © State Government of Victoria 2010 walkingandcycling@transport.vic.gov.au


**Ride On Magazine article** published by Bicycle Victoria February - March 2014 quoting original research by PhD candidate Katie Rowe of Deakin University.

**Seddon Urban Design Framework.** 2010 Review. City of Maribyrnong.

**Stony Creek Future Directions** City of Maribyrnong June 2011

**Transport Integration Act 2010 No. 6 of 2010** Authorised Version incorporating amendments as at 1 July 2013. State of Victoria.

**Yarraville Village Urban Design & Traffic Management Strategy** by Coomes Consulting and John Piper Traffic Pty Ltd 2006