
Bicycle Victoria's Review of the Priority Bike Route Network for IMAP

14 January 2008

1 Introduction

1.1 Background

The Inner Melbourne Action Plan (IMAP)

The councils of Melbourne, Port Phillip, Stonnington (west of Kooyong Road), and Yarra in association with VicUrban and the State Government launched the Making Melbourne More Liveable - Inner Melbourne Action Plan in 2006.

This document has been prepared collaboratively to provide a regional approach to implementing 'Melbourne 2030' – the State Government's 30 year planning strategy for metropolitan Melbourne.

Strategy two of IMAP is to “effectively link transport routes so that the Inner Melbourne Region is accessible throughout by walking, cycling and public transport.”

In regard to cycling specifically the strategy states:

Improving cycling links and facilities in the Inner Melbourne Region has led to dramatic increases in bicycle use on some routes. The stronger the separation between bicycles and cars, the more people will cycle. Cities with the highest level of bicycle use provide fully separated bicycle lanes. In some European cities, bicycles account for up to 30 per cent of journey to work trips.

In order to achieve the above aims IMAP developed Action: 2.3 Bicycle Network Legibility Improve the legibility of the bicycle network (Principal Bicycle Network and local links) with an emphasis on clear delineation of continuous links.

The IMAP Bicycle network Project

The IMAP project team has recognised that a highly legible bicycle network is one with no gaps and one that serves the origins and destinations of cyclists in the IMAP area.

Bicycle Victoria was engaged by IMAP to conduct a bicycle network study to:

- Identify the destinations and preferred routes for people riding bikes for transport.
- Identify the current missing links and prioritise them for improvement.

1.2 Outline of Report

This report is structured in following main sections:

- **Data and Analysis**; which outlines the data used to inform the network study.
- **Ideal IMAP Bicycle Network**; which details what a complete bike network could look like
- **IMAP Priority Bike Routes**; which identifies the priority routes that require short term action and continuous improvement.
- **Conclusions and recommendations**; including quick wins.

2 Data and Analysis

2.1 Introduction

The bicycle network analysis has been based on three main data sources. They are:

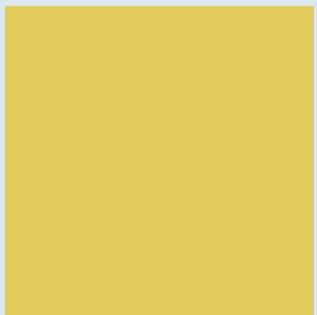
- Identification of trip generating destinations
- Super Tuesday Bike Counts
- Analysis of the existing bike network.

2.2 Trip attracting destinations

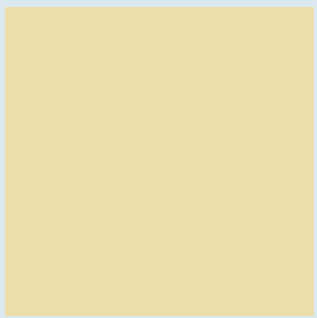
Essential to any discussion of a bike network are the places that people ride to. This study identified a number of destinations that are likely to generate bicycle trips. The destinations are Melbourne's Central Business District and other major activity centres such as universities and major strip shopping centres. These locations are identified on Map A. This map was presented to IMAP member councils for feedback.



Destination Assumptions



Core - high trip generators



Secondary - retail, medium trip generators

Map A – Destinations

2.3 Super Tuesday Bike Counts

'Super Tuesday' is a manual bike count conducted on the First Tuesday in March. Bike counts were conducted between 7am and 9am at over 100 sites on March 6 2007.

The locations for count sites were chosen to identify where current bike riders are riding and to identify areas of low rider numbers that to help identify significant gaps in the network.

Results of the Super Tuesday Bike Counts are presented in Map B and are summarised below:

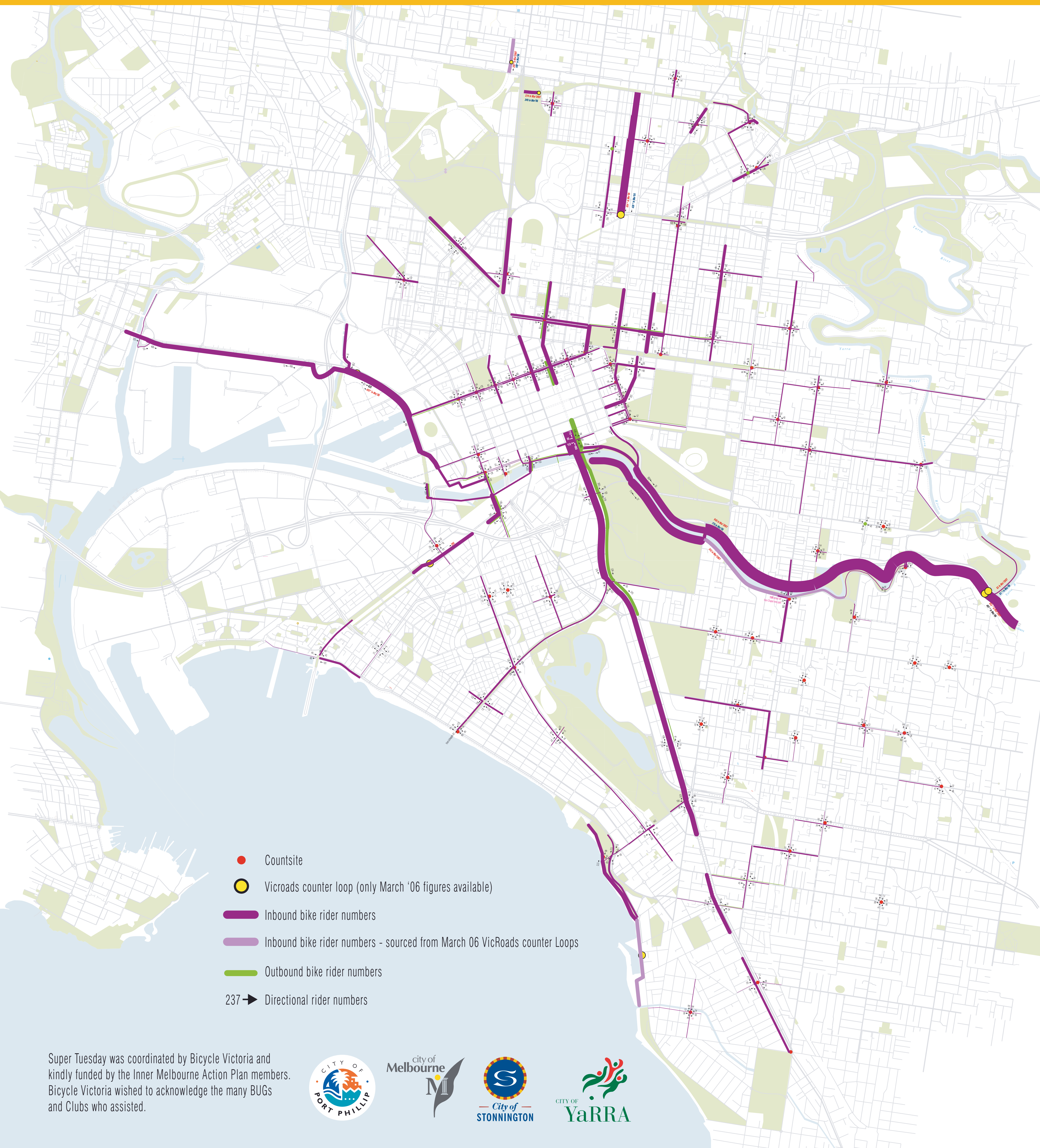
- Overall onroad numbers are up by 10% since last year
- Rider numbers are up by 20% on offroad/separated routes since last year. Anecdotal evidence would suggest this represents new riders.
- Numbers from the western side were up by an incredible 37%
- Riders will go out of their way to reach a 'quality' route such as the Main Yarra Trail or Canning St, rather than opt for the more direct route
- St Kilda Rd is a major destination in itself. For every 2 riders going up Swanston St into the CBD, there will be another heading out of town southbound to a workplace, most likely north of Commercial Rd.
- The majority of Chapel St riders are heading north to use the Main Yarra Trail (south side)
- Morrell Bridge is a major interchange, with riders coming from the north or swapping sides of the river to suit their destination.

Super Tuesday Bike Count 6 March 2007



An initiative to audit and gain a deeper knowledge of current rider movements across the inner Melbourne area. These numbers represent the 7-9am on a Tuesday in early March (statistically the busiest riding day of the week and time of year respectively).

It is important to note that a riders' am inbound and pm outbound routes may differ due to a variation in riding conditions.

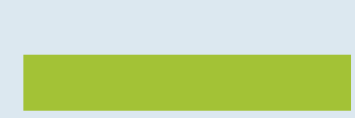
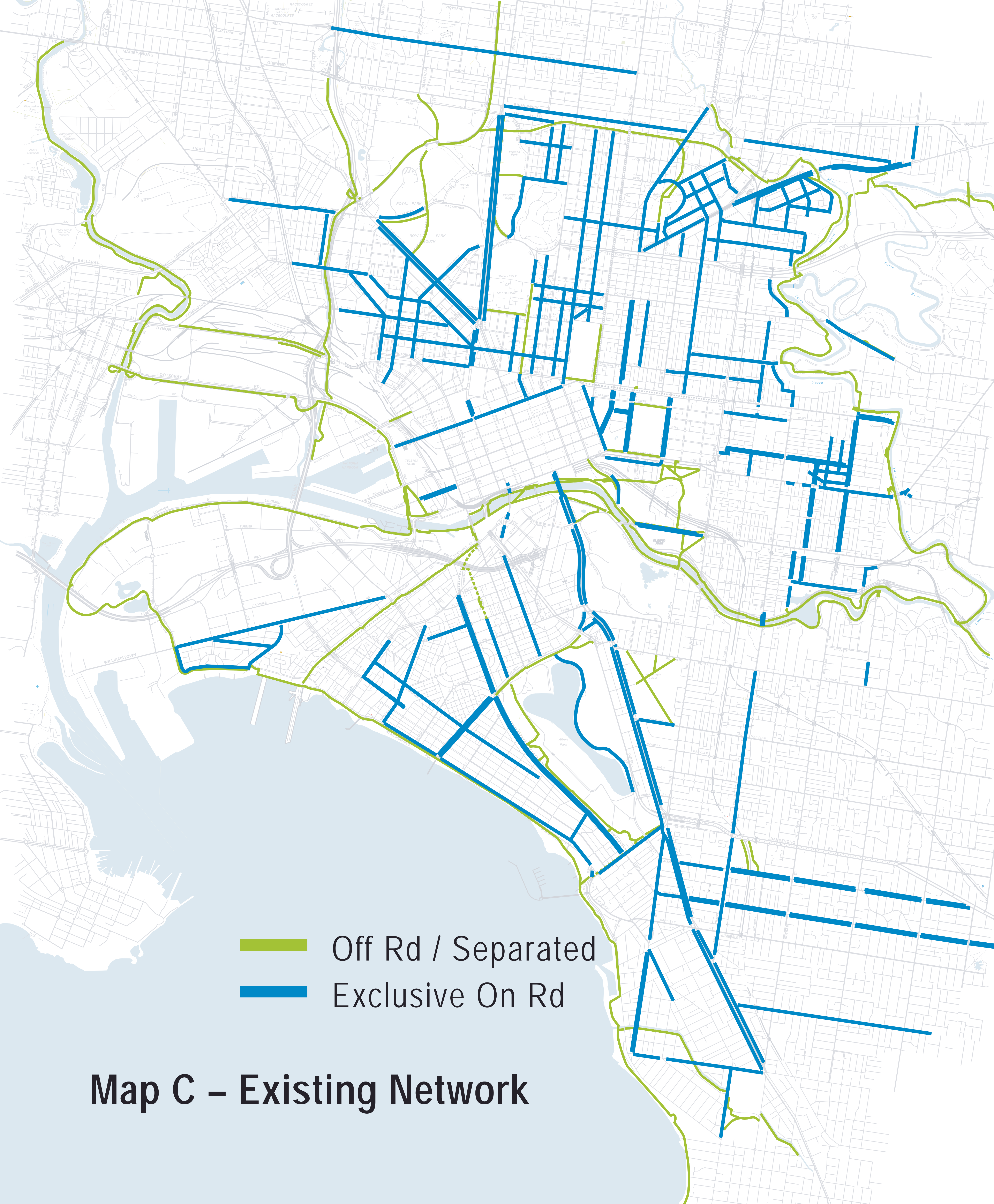


Super Tuesday was coordinated by Bicycle Victoria and kindly funded by the Inner Melbourne Action Plan members. Bicycle Victoria wished to acknowledge the many BUGs and Clubs who assisted.

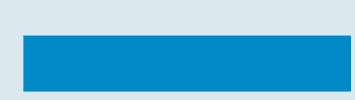


2.4 Existing Bike Network

In order to understand current and future bike routes within the IMAP area a good understanding of the existing bike network is required. The existing bike network is presented in Map C (existing network of on road bike facilities). Information for this map was compiled from VicRoads Principal Bicycle Network data, IMAP council data and bike plans, and site investigations by Bicycle Victoria staff.



Off Rd / Separated



Exclusive On Rd

Map C – Existing Network

Table 1 below provides a taste of some of the existing bike facilities in each of the municipalities within IMAP and provides a brief summary of the types and numbers of bike riders in each municipality.

The investigations undertaken have clearly shown that there is a high variety in coverage and quality of bike facilities across the IMAP area.

2.4.1 Table 1

Council –	On Road Facility	Separated facility
Melbourne – High level of Transport and Recreational Riding. Bikes are more than 10% of vehicle traffic on some roads. Riding on weekdays is comparable to rider numbers on weekends.		
Port Phillip – Possibly the most diverse IMAP council with unique high intensity training along beach, very high recreation on trails and moderate to high riding for transport.		
Stonnington – Relatively low numbers of bike riders. Main Yarra Trail and Chapel St are the main arteries. Moderate recreational riding, low to moderate transport riding.		
Yarra – Highest of all municipalities for trips to work in 2001 census. Majority of bike riding is for transport		

2.5 Conclusions and recommendations

The three sources of data listed above have provided a good base on which this study has built its analysis of an ideal IMAP Bicycle network and Priority Routes within that network.

Bicycle Victoria strongly recommends that the Super Tuesday counts are conducted annually to observe trends in bike riding, evaluate improvements in infrastructure, and inform future priorities.

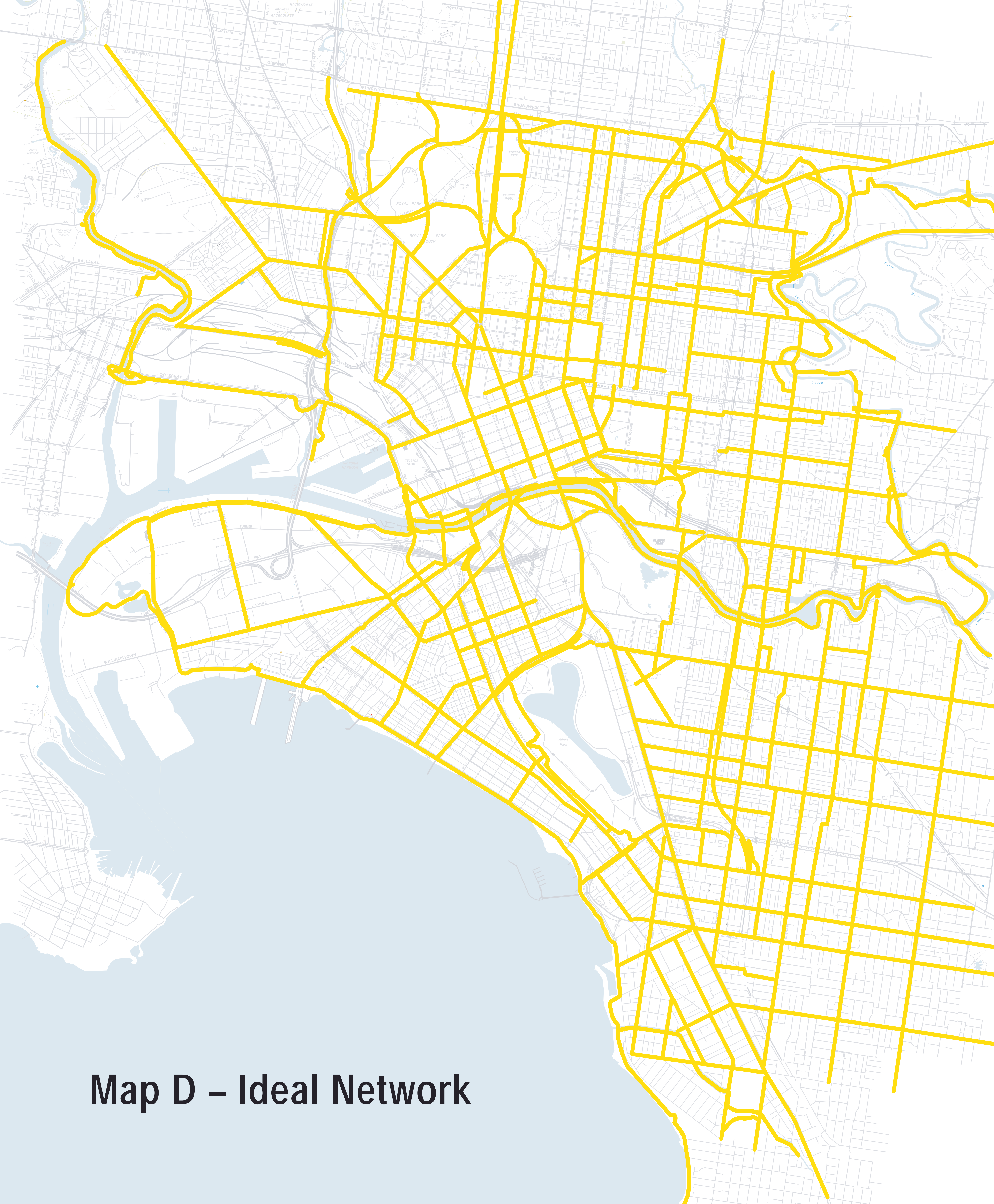
3 Ideal IMAP Bicycle Network

In identifying an ideal IMAP bicycle network this study has assumed that a quality bike network has the following characteristics:

- **Coherent**; a network needs to be logical and consistent
- **Appropriate density**; it should be coarse in low use areas and fine in areas of high use.
- **Reach**; appropriate reach is desirable.
- **Relevance**; a network should focus on destinations and attractions.

The results of applying these criteria to the IMAP region are presented in Map D. The network map provided does not distinguish between high priority and supporting routes. Not all of the routes on this map are relevant to IMAP as they are local routes contained solely within one municipality.

The ideal IMAP bicycle network as presented in Map D requires significant additional infrastructure for completion. To assist in delivering the network in the most cost effective manner this study has identified a number of Priority Routes, which are presented in the following section.



Map D – Ideal Network

4 IMAP Priority Bike Routes

4.1 Priority Routes - Description

Historically we have referred to the network being comprised of on and off road routes. We have recently been using the concept of quality and economy routes with Melbourne City Council. This project has found that the concept of a priority route is more useful.

The IMAP Priority Route Network is presented in Map E

Priority Bike Routes in the IMAP area have the following characteristics:

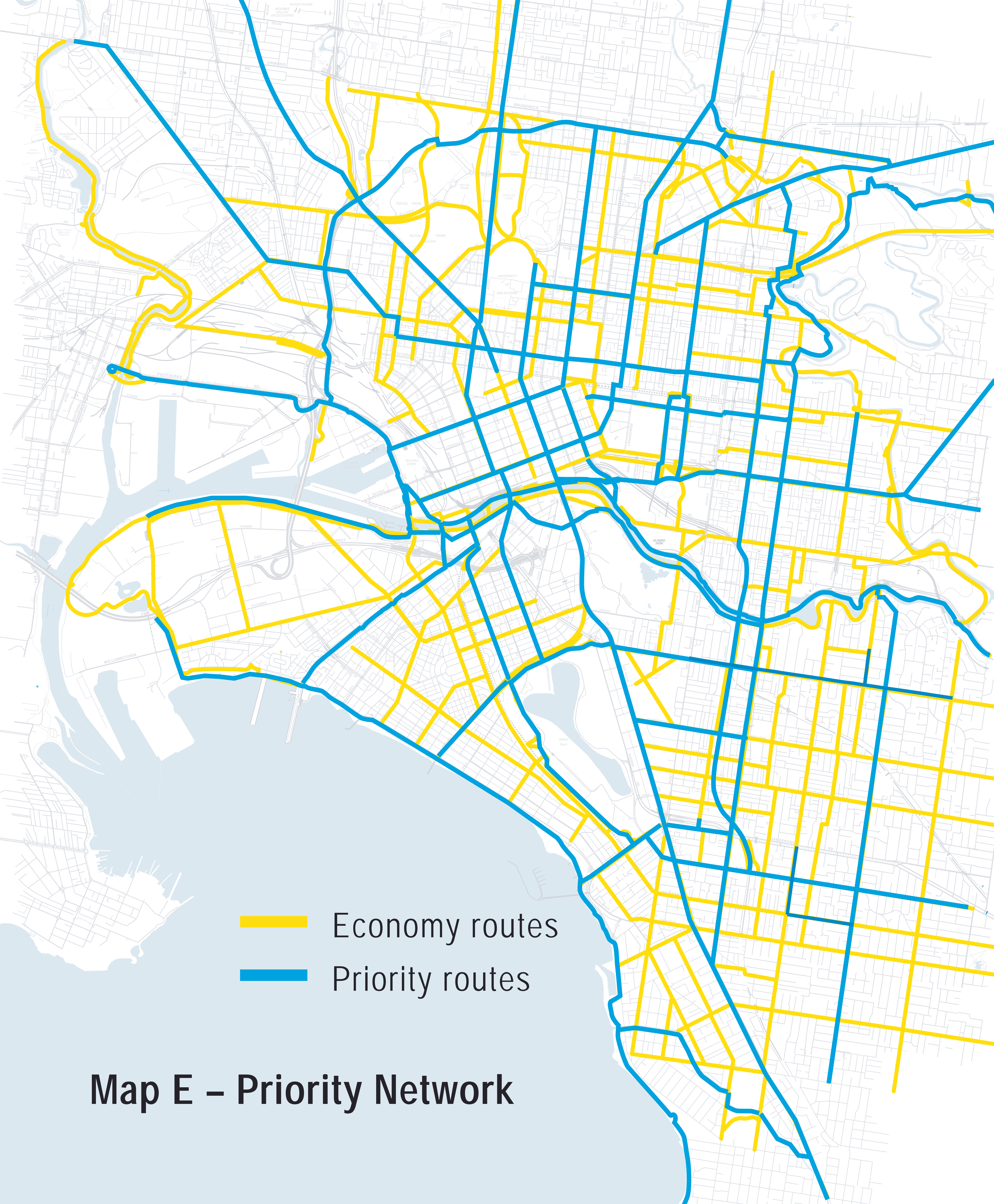
- They are the main bike riding corridors
- They are attractive to novices – they provide as much separation from motor vehicles as possible.
- They cross Council boundaries
- They are a long term investment
- In most cases, current usage is strong enough to make us confident that further investment will further lift numbers.
- Not all of them are functioning yet – Cecil St will not be popular until the Fitzroy St separated lanes make it so.
- Priority routes are not fine grain – they are the arterials of the network
- Priority routes can be on or off road. Not every off road route is a priority route.
- Priority routes run to the IMAP boundary and are intended to be adopted by neighbouring municipalities.

This new thinking may lead some to query why one route has been given ‘Priority Route’ status over another nearby or parallel route.

There are a number of criteria which have governed our thinking when designating which routes get Priority or Economy status.

They act as a network. As such they connect well, not only to each other but to the major trip generators in the IMAP area. For example, Brunswick St, compared to Napier St, is fed by the St Georges Rd path and Capital City Trail at the northern end and connects into the CBD at the southern (whilst crossing many other east-west routes along the way. Napier St is an attractive route and will continue to attract riders, however there is a limit to its success, due mainly to lack of connectivity potential at its southern end (Victoria Parade).

Similarly, Rathdowne St gets Priority status over Canning St due to the lack of clean connectivity at the southern end and the desire to avoid pedestrian/rider conflict through Carlton Gardens. Rathdowne St itself is also a destination in its own right. Melbourne City Council has also been approached by residents and traders to return the street to a more attractive destination. The section of Rathdowne St south of Macpherson St should be focused upon first for these reasons.



-  Economy routes
-  Priority routes

Map E – Priority Network

4.2 Priority Routes - What needs to be done

Priority Routes require the following actions from IMAP councils:

- Priority routes are allocated the lions share of the annual bicycle budget.
- Priority routes should be audited and a prioritised project list should be developed.
- Priority routes are recommended for continuous improvement – something is done to improve them each year.
- The process of continuous improvement will focus on maximising delineation and especially separation. Separation (space) is the first thing you should look to do on a priority route. Advance light signals (time) should also be considered
- Projects need to be selected for implementation based primarily on their impact (see table below) and secondly on their cost and ease.

		Impact		
		High	Medium	Low
Difficulty	Low	Project 1	Project 3	Project 6
	Medium	Project 2	Project 5	Project 8
	High	Project 4	Project 7	Project 9

Projects are numbered according to their relative priority – e.g. where possible Project 2 should be completed before Project 3

Malcolm Daff from SKM has compiled a report on the next generation of achievable separation. We believe that these new processes will help to build many parts of the priority network. It is important to understand that not all of the IMAP Priority Network will be solved in the same way. Differing environs will require varying solutions to suit.

Comprise such treatments as:

- Off Road Separation
- On Road Separation
- Greater Delineation (green lanes, chevron ‘premium lanes’, Ripple-strip lines)
- Calmed streets or access points
- Advance signal phases at intersections
- ‘Vancouver’ lights (trial being implemented at Napier/Johnston St)

4.3 Quick Wins

These projects have been identified for their relative ease and cost. The majority of these may be simple in nature and initially be line marking lanes projects.

4.3.1 City of Melbourne

Peel St – Dudley to Victoria St – Exclusive Bike Lanes to close one block gap

Market St – Flinders to Collins St – Exclusive Bike Lanes to close one block gap

Flinders St – Spring to Exhibition – Designate path on south side as a Shared path

St Kilda Rd/Princes Bridge – **Bike lane (behind curb) on bridge delineated with Green treatment**

College Crescent – Swanston St to Princes Park Drive – Smooth pram ramp off Swanston St and formalise shared path. Bike Lanes (westbound) between Princes Park Drive and Royal Parade

4.3.2 City of Yarra

Maugie/Lulo/Truro/Keel Streets – Bike lanes on Maugie, Lulo and Keel Streets.

Improve path through Railway yard (opposite Victoria Park). Curb outstand to exclude parked cars at entry point

Lennox Street – 100m section from Bridge, heading south – Bike lanes where road space allows. Investigate future reorientation of parking from angled to parking, south of this point.

4.3.3 City of Stonnington

Chapel St – Toorak Rd to Alexandra Ave – Bike lanes to complete gap in network.

High St – Chapel to St Kilda Rd – Peak hour Exclusive Bike Lanes and green lanes on approach to major intersections.

Wellington St – Upton to St Kilda Rd – Bike lanes to complete gap in network. Provide cut-through at Upton intersection to allow bikes to access Upton from Wellington.

4.3.4 City of Port Phillip

Alma Rd/Princes St – St Kilda Rd to Fitzroy St – Bike lanes to complete gap in network.

St Kilda St – Ester Canal path – Improve connection between west side path at canal and path on east side (adjacent to gold course). Suggest crossing should be close to canal, not on south side of Spray St. Possible refuge island on St Kilda St.



- Economy routes
- Priority routes
- Quick Wins

Map F – Quick Wins

4.4 Non-Priority Routes

4.4.1 Introduction

Obviously there are many bike routes and facilities that are not Priority Routes. We have classified these routes into three classes:

- Support Routes;
- Local Routes; and
- Quiet Local Roads.

4.4.2 Support Routes

Support routes in the IMAP area have the following characteristics:

- These are usually on road lanes.
- They may not be attractive to novices.
- They are cheaper to do than priority routes.
- They are shorter
- They might lead to a specific or less attractive destination.
- They may or may not act as feeders for the priority routes.
- For most of their length they are within one municipality.
- They provide a finer grain to the bike network.
- They have limited potential through limited catchments and destinations.
- They are unlikely to become priority routes.
- One half to two thirds of the support routes are already there. Some key gaps remain to be filled.

4.4.3 Local routes

Local routes in the IMAP area have the following characteristics:

- Runs to a school or pool for a short distance.
- They may have a strong traffic calming function and a weak bike riding performance.
- They link to the other routes.
- These are not on the IMAP maps

4.4.4 Quiet local roads

Every road is a bike riding road. This may be done by controlling speed and volume of motor vehicles rather than delineating or separating space.

5 Conclusions and Recommendations

The following conclusions can be made as a result from the IMAP Bicycle Network Study:

- Major destinations for bike riders in the IMAP area Melbourne's Central Business District and other activity centres such as universities and major strip shopping centres.
- A large increase in the number of people riding for transport has been observed across the IMAP area in the last two years.
- Currently there is that there is a high variety in coverage and quality of bike facilities across the IMAP area.
- A network of Priority Bike Routes has been established across the IMAP Area
- Priority routes are the main bike riding corridors, provide as much separation from motor vehicles as possible, and are long term investments
- Priority routes need the lions share of the annual bicycle budget and a process of continuous improvement will focus on maximising delineation and especially separation
- This Priority Network should be reviewed after a period as conditions and influencing factors and rider needs' may change.

It is recommended that:

- Super Tuesday counts are conducted annually to observe trends in bike riding, evaluate improvements in infrastructure, and inform future priorities.
- Priority routes should be audited and a prioritised project list should be developed
- Projects will need to be assessed against each other in order to ensure the highest impact and cheapest projects are delivered in the short term.