



BICYCLE PLAN 2012-16



melbourne.vic.gov.au/bicycleplan





**The Bicycle Plan
2012-16 is the City of
Melbourne's plan for
bicycle infrastructure
and programs to
make Melbourne
safer and more
attractive for current
and future cyclists.**

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FOREWORD

Melbourne - a cycling city

Melbourne is well on its way to becoming a cycling city with more residents, workers and visitors alike getting on bikes to move about our city. It is one of the most convenient and sustainable ways to experience Melbourne, as well as a lot of fun.

The Bicycle Plan 2012-2016 builds upon the work started during the 1980s to link comfortable and convenient bicycle routes across Greater Melbourne. We are continuing to invest in bicycle facilities and programs as Melbourne moves closer to becoming a city for people, a connected city and an eco-city.

Today a significant number of Melburnians are riding bikes. Melburnians take about 81,500 bike trips in the municipality each week day and more than 29,000 trips on the weekend. Although numbers continue to grow, there is still more that needs to be done if we are to realise our target of more than 122,000 daily bicycle trips by 2016.

In a cycling city, riders of all ages and abilities need to feel safe and comfortable. This plan outlines how this can be achieved, enabling Melbourne to realise its potential as a true cycling city.



Dr Kathy Alexander
CEO, City of Melbourne

EXECUTIVE SUMMARY

Melbourne is committed to becoming a cycling city with a safe and connected network of bicycle-friendly routes.

The draft Bicycle Plan 2012-16 is the City of Melbourne's plan for bicycle infrastructure and programs to make Melbourne safer and more attractive for current and future cyclists. The plan focuses on creating a strong bicycle network and improving links between existing routes, particularly in the central city, and encouraging people of all ages and abilities to take up cycling or cycle more frequently for local trips.

The plan provides a status on current cycling and lists potential strategies and actions to achieve the vision of a cycling city. It outlines actions for infrastructure, facilities, services and programs for investment by the City of Melbourne and partners.

The goals of the Bicycle Plan are to:

1. Plan and deliver a connected cycling network
2. Build high quality routes for local cycling trips
3. Increase participation in cycling
4. Make cycling safer.

Actions

More than 50 large and small-scale projects are proposed in the plan to strengthen the bike network both on- and off-road over the next four years.

The City of Melbourne will construct and upgrade a number of significant on-road routes, such as La Trobe Street, Princes Bridge, St Kilda Road, and Elizabeth, Exhibition and Clarendon streets. The plan also identifies off-road works that will improve transitions from off-road to on-road paths and particularly from the popular Yarra River Trail to the central city.

The plan commits to increasing bicycle parking throughout the municipality and working with peak groups and businesses to improve end-of-trip facilities to encourage more people to cycle to work.

The City of Melbourne will continue to support vehicle and bicycle safety campaigns that encourage responsible road use and promote Melbourne as a cycling city.

Additional research will help the City of Melbourne to better understand traffic conditions, cycling behaviour and crashes and monitor our performance.



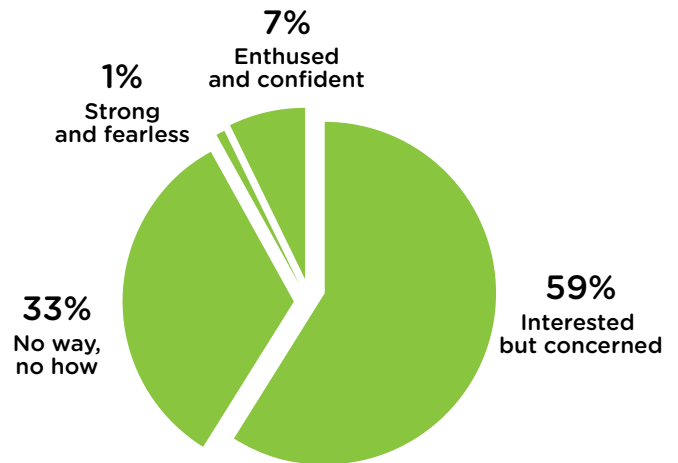
INTRODUCTION

PURPOSE OF THE PLAN

Everyday cycling

1. Melbourne is one of the world's most liveable cities¹. Cycling supports our liveability status by taking pressure off public transport, reducing congestion and noise and supporting a zero carbon future. Local cycling trips help people to be healthy and active. The purpose of the Bicycle Plan is to outline actions that will assist people of all ages and abilities to cycle more often.
2. A significant investment in time and resources is required to encourage more people to ride a bicycle. While there has been a comprehensive effort to make Melbourne a bicycle-friendly city, further work is needed if cycling is to become a more dominant mode of travel within the municipality².
3. Cyclists need to feel legitimate, safe and supported. In cities such as Melbourne, over half of the population is interested, but has some concerns, about riding a bicycle³.

Figure 1 - Types of cyclists and potential cyclists (Source: Geller, R 2010 Portland Bureau of Transportation, Oregon)



4. Consistent with the City of Melbourne's Transport Strategy, support will be given to walking, cycling and public transport as the dominant modes of transport in the municipality. This is in preference to (in order of priority) freight, multiple-occupancy vehicles and single-occupancy vehicle movements.

Figure 2 - Priority of transport mode



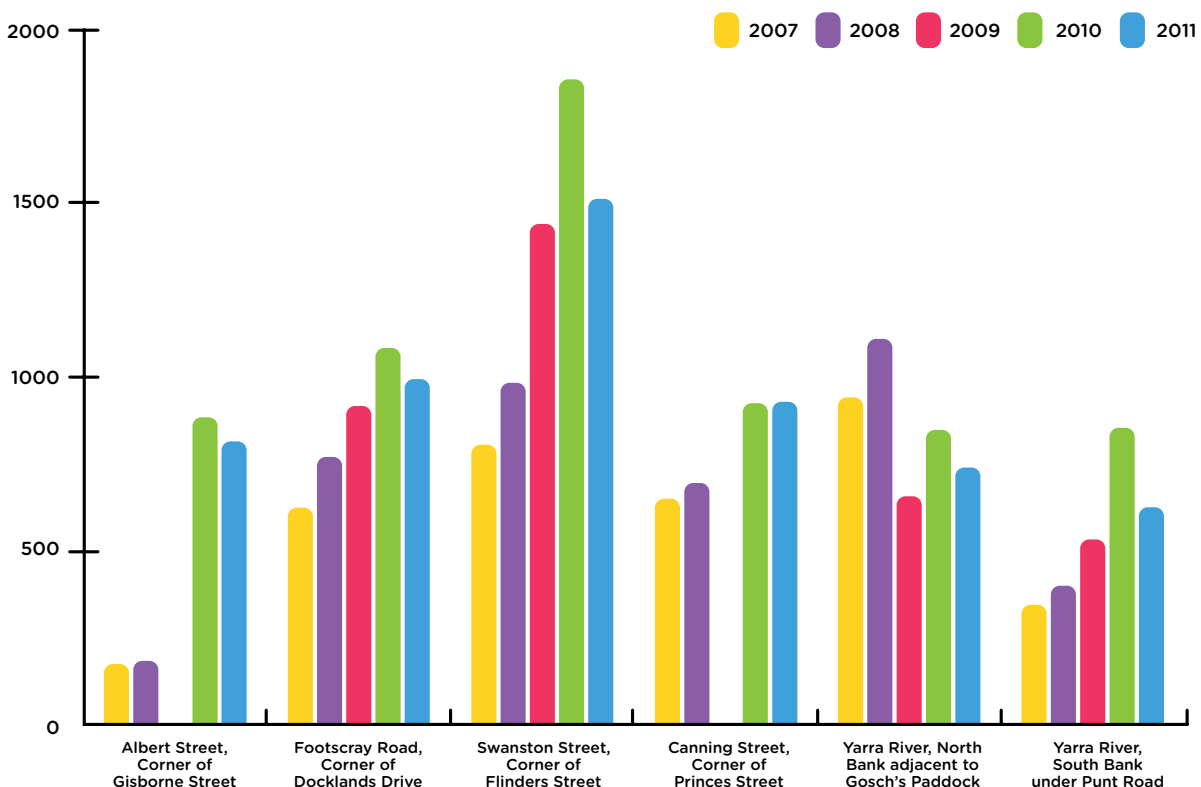
Melbourne cycling - a snapshot

5. The municipality of Melbourne is 37.6 km² and shares its border with seven other local government areas. The distance from east to west and north to south is approximately seven kilometres. The generally flat topography and mild climate make conditions ideal for cycling. Each weekday, about 800,000 people travel to the municipality to work, study or visit. By 2016, it is expected close to 900,000 people will travel into the expanding central city and suburbs daily.
6. The bicycle network in the City of Melbourne is made up of approximately 120 kilometres of bicycle routes. Approximately 52 kilometres are on-road and 68 kilometres are off-road.
7. The on-road cycling environment provides the capacity for cyclists to use all roads as well as a variety of dedicated bicycle lanes with different road treatments. These include:
 - 7.1. separated kerbside lanes such as those in Albert Street and Swanston Street (north)
 - 7.2. Queensberry Street where chevron markings separate bike lane from moving traffic
 - 7.3. Spring Street where green paint markings and bicycle stencils are in use.
8. The off-road environment includes well used shared paths and cycling trails such as the Yarra Trail, Moonee Ponds Creek Trail and the Maribyrnong River Trail. The Capital City Trail starts and ends in the City of Melbourne and circumnavigates Melbourne's inner suburbs for approximately 32 kilometres. Many of Melbourne's parks contain cycling routes.

Cycling in Melbourne - the numbers

9. In the City of Melbourne both the number and mode share for bicycles in the morning peak have increased considerably since 2007⁴. Lower numbers in 2011 can be attributed to poor weather conditions for cycling. In March 2012, 11 per cent of all vehicles travelling into the City of Melbourne during the morning peak between 7am and 10am were bicycles⁵. The challenge is to increase the number of cycling trips and the mode share of trips by bicycle.

Figure 3 - Cyclists entering the central city at key locations during the morning peak 7-9am (Source: Super Tuesday counts, Bicycle Network Victoria)



10. A high proportion of trips to, from and within the City of Melbourne are taken as a driver or passenger of a car or by public transport. For weekday trips between two and seven kilometres 44 per cent of people travel in cars and 40 per cent of people travel by public transport. For trips seven to 20 kilometres, 50 per cent of people travel in cars. Trips by bicycle are popular between two and seven kilometres.

Figure 4 - Vehicles entering the central city at key locations during the morning peak 7-10am in March 2012 (Source: Cycling counts, City of Melbourne)

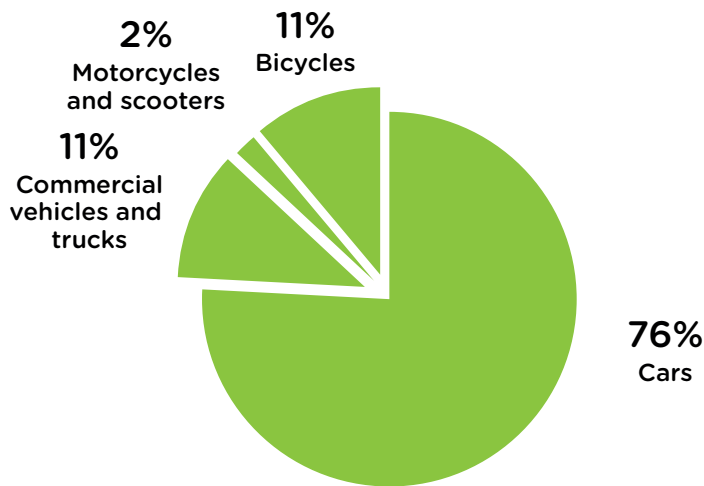


Table 1 - Mode of trips to, within and from the city by cumulative travel distance on weekdays (Source: VISTA 2009)

	0-2 km	2-7 km	7-20 km	> 20 km	TOTAL
CAR	12%	44%	50%	45%	40%
BICYCLE	2%	10%	4%	0%	4%
WALKING	79%	6%	0%	0%	19%
PUBLIC TRANSPORT	7%	40%	46%	55%	37%

Vision

11. Our Vision is that the City of Melbourne becomes a cycling city.

Goals

12. The goals of the Bicycle Plan are to:
- 12.1. Plan and deliver a connected cycling network
 - 12.2. Build high quality routes for local cycling trips
 - 12.3. Increase participation in cycling
 - 12.4. Make cycling safer.

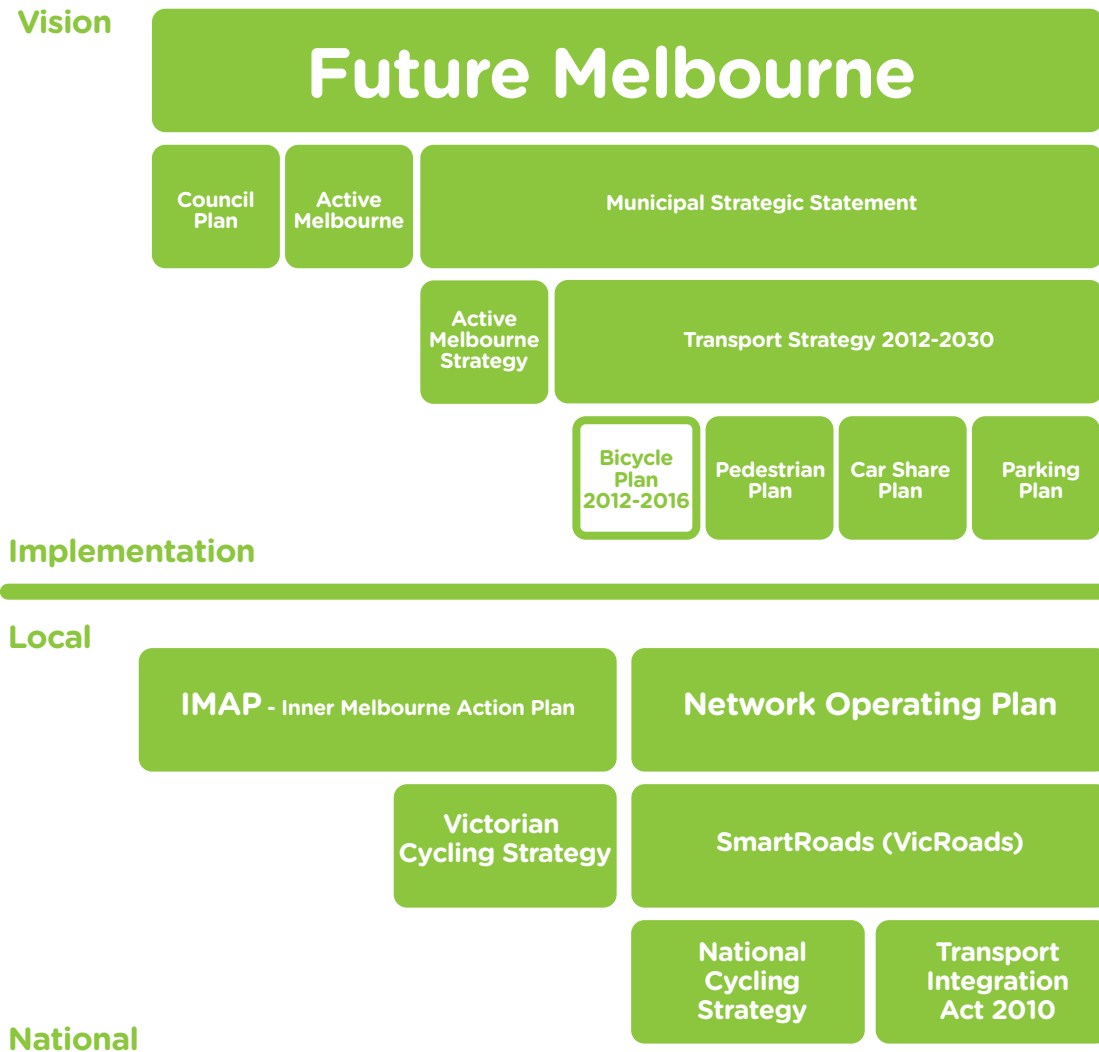
Targets

13. It is intended that by 2016:
- 13.1. There will be a 50 per cent increase in bicycle trips to, from and within the municipality on weekdays⁶
 - 13.2. There will be a 15 per cent change in the number of local trips under seven kilometres from car and public transport to bicycle⁷
 - 13.3. 15 per cent of all vehicles entering the central city during the morning peak will be bicycles⁸
 - 13.4. There will be a reduction of serious injury crashes by a minimum of 10 per cent relative to the number of cyclists per year⁹
 - 13.5. Two safe, high quality east-west and two north-south bicycle routes will be designed within the central city.



BACKGROUND

Figure 5 - Strategic framework



Understanding cycling in Melbourne

14. Cyclists ride for either recreation or for transport. The main difference is that 'transport' trips have a purpose and are generally direct trips. 'Recreation' trips are more flexible in time and distance.
15. Within the transport group, there are two main types of cyclists. The first sub-grouping includes very experienced cyclists who use a bicycle to commute to work, often ride fast and are confident enough in their ability to choose the most direct routes to work. A high intensity transport trip could be a distance of 12 kilometres or more with the rider likely to be seeking a shower at the workplace. The second group ride more slowly and will only travel to work, university or undertake local trips using safer on- or off-road routes. This group of cyclists is especially concerned about safety and comfort.
16. Recreational cycling is popular with young families and seniors and can occur on weekdays as well as weekends. Within this group there are some more experienced riders who will travel up to 30 kilometres per hour using recreational cycling as a means of keeping fit.

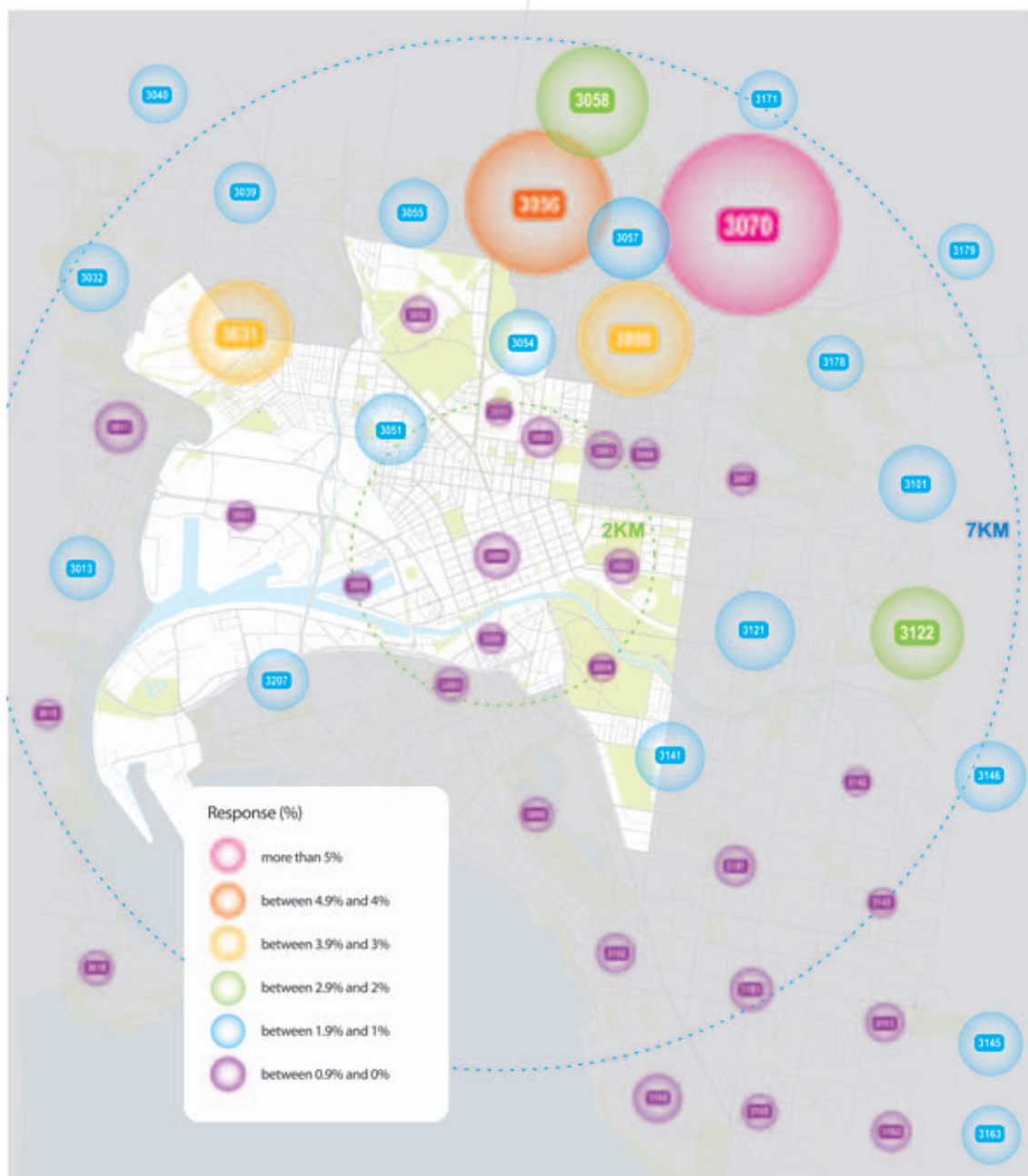
The challenge of increasing cycling numbers

17. Since 2006 the number of bicycles has more than doubled (from 4 per cent) as a mode share of all vehicles moving into the central city in the morning. In March 2012, bicycles comprised 11 per cent of vehicle movements to the central city in the morning peak¹⁰.
18. Increasing the number of bicycle trips to, from and within the municipality by 50 per cent in the next four years is achievable. The challenge is to find ways to move people from cars and public transport to bicycles. For trips less than two kilometres, walking is the preferred mode of transport although bikes can easily be used for short trips. For trips longer than two kilometres, cycling is ideal as it reduces congestion and pollution and takes pressure off the public transport system. The average trip length travelling to and from the City of Melbourne is about seven kilometres. Trips within the municipality average around two kilometres.¹¹



19. Cyclists travelling to the City of Melbourne come primarily from the north-eastern suburbs. The top six suburbs for commuting to Melbourne by bike are Northcote, Brunswick, Fitzroy North, Kensington, Coburg and Hawthorn. See Figure 6 below for further details.

Figure 6 - Density of cyclists travelling to the City of Melbourne by postcode
(Source: Bike Scope, Bicycle Network Victoria 2010)



Prioritising less experienced cyclists

20. The Bicycle Plan concentrates on creating an environment that encourages cycling by less experienced and novice cyclists. The City of Melbourne will also support people to take local cycling trips of less than seven kilometres. This approach taps into a latent desire to cycle by those people who require the presence of a strong network of cycling routes before they are prepared to ride their bicycle.

CONNECTING THE BICYCLE NETWORK

The bicycle network

21. A bicycle network is made up a number of different route options. These include:
 - 21.1. physically-separated bicycle lanes
 - 21.2. off-road paths for cyclists only or shared paths with pedestrians
 - 21.3. bicycle lanes with green pavement, profiled edge-lines or chevrons
 - 21.4. bicycle lanes with paint only
 - 21.5. roads with no bicycle treatments.

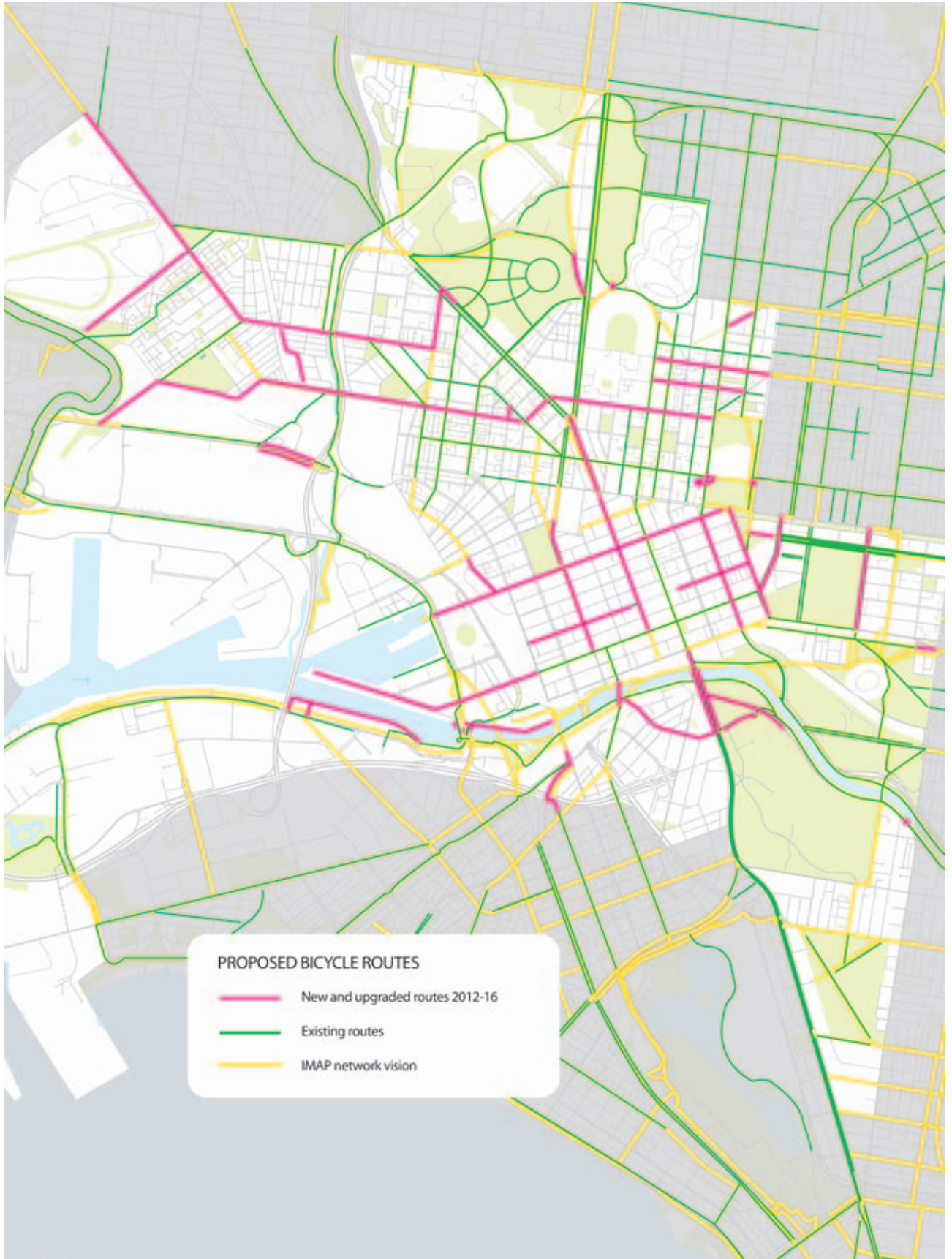
Figure 7 - Bicycle lane designs in the City of Melbourne. Physically-separated route Swanston Street (north) and green pavement and profiled edge-line treatments in Rathdowne Street



22. The bicycle network is comprised of three different levels. These are:
 - 22.1. *The Principal Bicycle Network (PBN)* which is a planned interconnecting network of on and off-road routes developed by VicRoads in consultation with local government authorities. VicRoads has the responsibility for managing the PBN and building key routes on arterial roads. Not all routes have been completed. VicRoads has identified priority routes on the PBN that will achieve the greatest return on investment by delivering the greatest number of cyclists to the central city (see Appendix A). They have also identified nine critical routes that have the highest priority for completion.
 - 22.2. *The Inner Municipality Action Plan (IMAP)* which coordinates growth and development across the inner metropolitan area. As a part of IMAP, a bicycle network map was adopted to coordinate bicycle infrastructure investment across the inner councils of Melbourne, Yarra, Stonnington, Port Phillip and partner organisations. The City of Melbourne uses the IMAP network map to help plan its bicycle infrastructure investments. It is especially useful for planning routes that cross municipal boundaries. The City of Melbourne is working towards implementing the routes in yellow to complete the local bicycle network (see Figure 8). The green routes are in place and the pink routes will be built or upgraded during the life of this plan. The outstanding gaps in yellow will be projects for completion after 2016. These routes are largely consistent with the PBN.
 - 22.3. Local area planning which is comprised of bicycle routes developed within the municipality. Some of these routes connect to other municipalities.
23. The road network is managed according to the SmartRoads program which balances the competing demands for limited road space through Network Operating Plans. Network Fit Assessments are completed to guide decisions about the allocation of space to different transport modes.

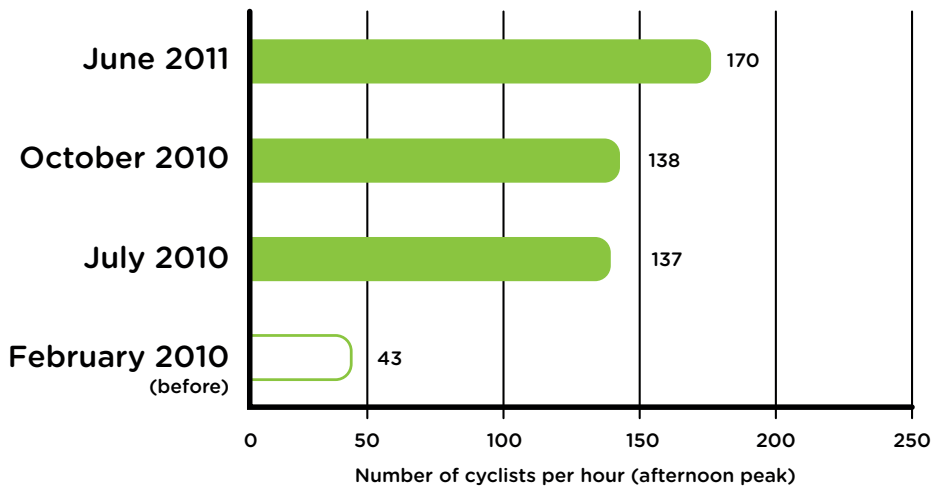
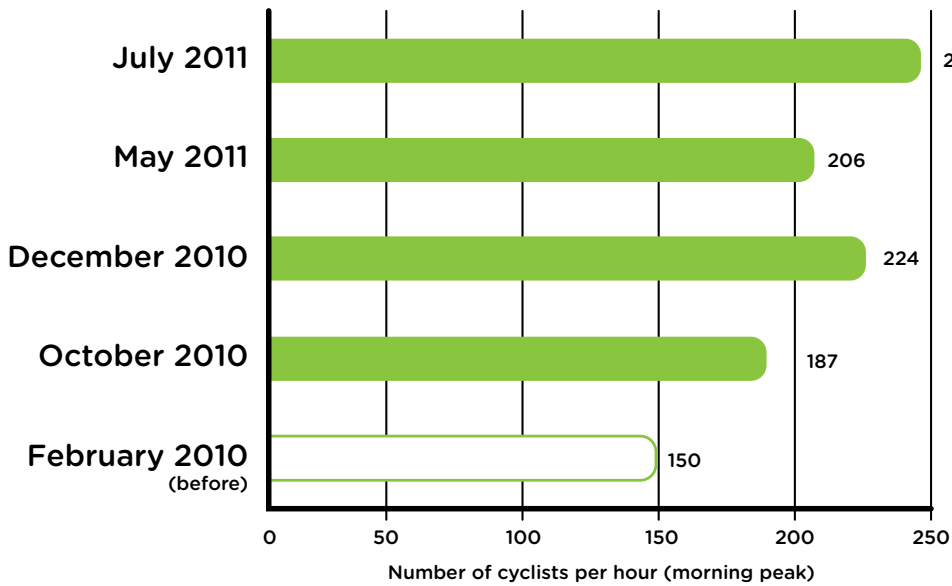


Figure 8 - Local bicycle network, existing and proposed routes 2012-16



24. The development of this network is delivering results for cyclists. As an example, the construction of physically-separated bicycle facilities in Albert Street has led to a 64 per cent increase in city bound cyclists in the morning peak (7-10am). Seasonalised volumes indicate that there is an overall 116 per cent increase to and from the central city in peak periods (in the peak directions). See Figure 9 below. Total movements of other vehicles on the road have slightly increased despite the addition of a separated bicycle route.

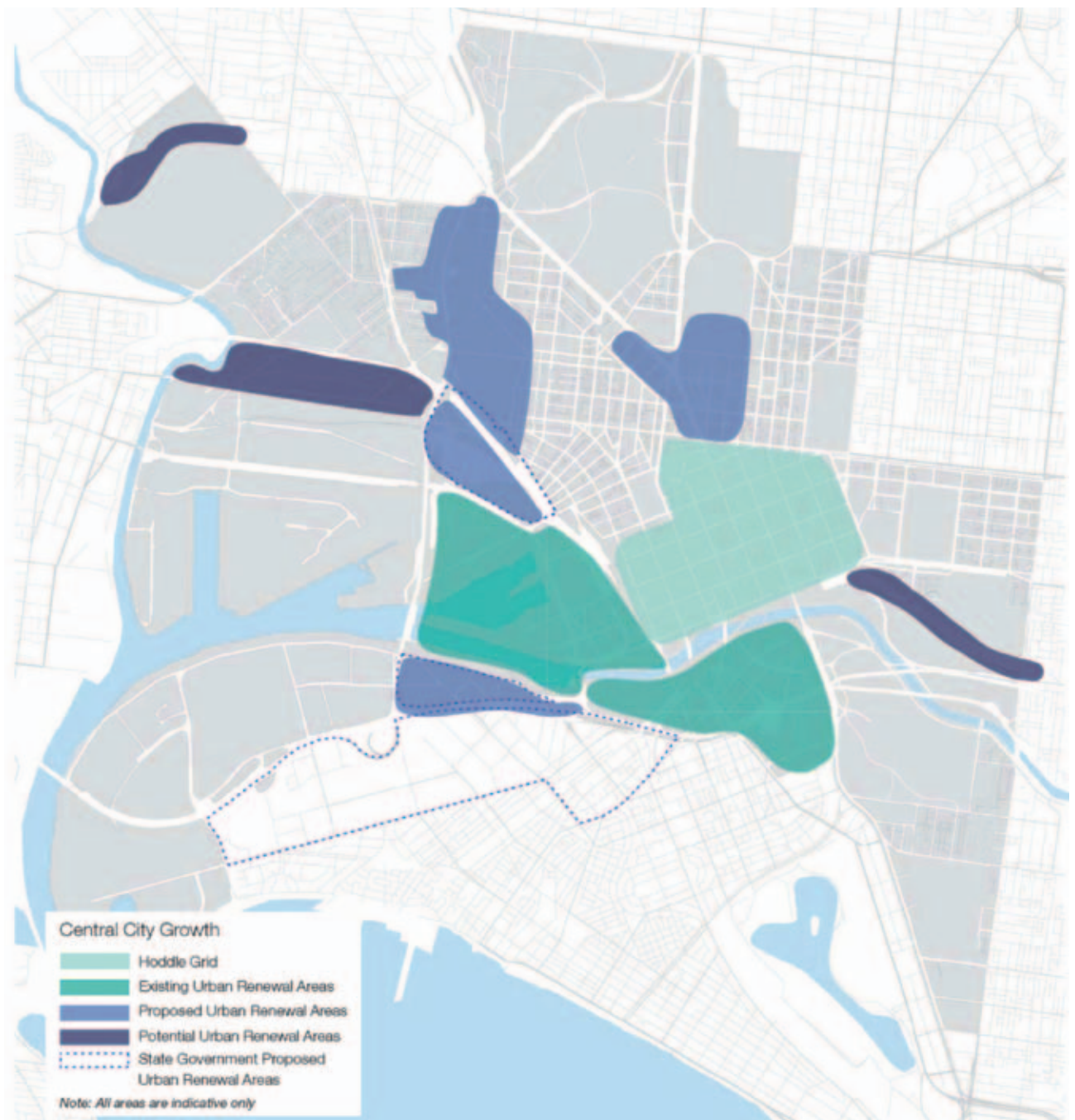
Figure 9 - Numbers of bicycles before and after separated bicycle lanes installed on Albert Street (Source: City of Melbourne counts)



Cycling and urban planning

25. The City of Melbourne, through the Municipal Strategic Statement, has detailed plans for accommodating future residential and business growth within Melbourne. This includes cycling infrastructure in new residential or mixed-use developments. As the areas of Arden-Macaulay, City North and Fishermans Bend are developed, cycling infrastructure will be included. The bicycle network is likely to be required to provide transport options for a projected population increase particularly in the west of metropolitan Melbourne.

Figure 10 - Urban renewal areas in City of Melbourne



Off-road cycling routes

26. Cycling numbers on off-road routes are also growing. City of Melbourne bicycle counts undertaken on weekdays between 7am and 10am show that between September 2007 and September 2011 numbers have more than doubled from 209 to 470 for cyclists commuting from the east on the Yarra Trail and from 204 to 500 for cyclists coming from the west on Footscray Road. Bicycle Network Victoria's Super Sunday counts show recreational cyclist numbers now total between 700 and 800 cyclists at the intersection of the Capital City Trail and Yarra Trail (north).
27. The Gardiners Creek-Yarra Trail has become more popular since an underpass was completed at Warrigal Road. The connection from the Yarra Trail to the on-road environment or shared zones along the river banks is constricted and potentially dangerous for pedestrians.
28. Royal Park, Yarra Park and Fawkner Park provide shared bicycle routes. In gardens in the municipality, such as Carlton Gardens and Fitzroy Gardens, the City of Melbourne currently has a policy to restrict cycling to families with children under 12. This policy will be reviewed as management plans are updated.

OPPORTUNITIES

Urban planning

29. The expected increase in cyclist numbers over the next four years is likely to be due in part to the expected development of urban renewal areas. Detailed plans for Southbank, Docklands, City North and Arden-Macaulay use best practice design guides to incorporate cycling into streets and other open spaces. These long-term plans are intended to guide activation of cycling in areas of high population growth and renewal.

Make all roads safer

30. The City of Melbourne endeavours to make all of the roads it manages suitable for cycling so that people can easily get to their destination by bicycle. Speed limits, traffic calming, line marking, early starts at signalised intersections and the exclusion of heavy vehicles from heavily built-up areas are an important means of making the cycling environment safer on all roads.
31. Safety can also be enhanced by providing visual cues for vehicles to slow down or stay in allocated traffic lanes. Bicycle storage boxes, green pavement, profiled edge-lines and chevron separator treatments all provide improved delineation between the cyclist and adjacent vehicle and pedestrian spaces. Bicycle pavement symbols and regulatory signage also provide visual cues.

Build and upgrade on-road bicycle routes

32. The principles used by engineers at the City of Melbourne to build or upgrade routes as part of the connected local network are:
 - 32.1. address gaps
 - 32.2. provide access to the central city from all directions
 - 32.3. provide access to high demand areas, public facilities, student nodes, retail and entertainment precincts
 - 32.4. cater for the highest current and predicted volumes
 - 32.5. provide a reasonable density of high quality routes to be consistent with Network Operating Plan (for example Lonsdale Street is a priority bus street)
 - 32.6. ensure permeability for cyclists
 - 32.7. minimise impacts on pedestrians and/or public transport
 - 32.8. be consistent with the direction people desire to travel wherever possible.
33. Physically-separated bicycle lanes are favoured on major roads that have vehicles travelling faster than 40 km/h¹² and higher volumes of traffic because they provide a safer environment for cyclists.



Routes in the central city

34. A priority of this plan is to connect routes through the central city. Through the Transport Strategy 2012, the City of Melbourne has committed to developing three new physically-separated bicycle routes within the central city by 2016. The development of physically-separated routes within the central city has been problematic due to high intensity land use and competing demands for space with other modes of transport.
35. Swanston Street will provide a cycling route – separated from general traffic from north to south – by the end of 2012. An east-west physically-separated bicycle route on La Trobe Street will be built in 2013 and peak hour bicycle lanes are proposed on Exhibition Street to connect quality routes in Rathdowne Street in the north to off-road paths to the Yarra River in the south.
36. These plans complement north-south quality routes at Spring, William and Market streets and east-west routes at Bourke Street and bicycle refuges in Collins Street.
37. Little streets in the central city including Flinders Lane, Little Collins Street, Little Bourke and other smaller north-south lanes have traditionally been used to service businesses and provide vehicle delivery access. Research has found that the incident of bicycle crashes, particularly with car doors is much lower in little streets. Investigations will be undertaken to see if these streets can be reconfigured over the longer term to make them viable east-west links through the central city as alternatives to Collins Street where the space for cyclists is constricted by other uses.
38. The City of Melbourne will collaborate with VicRoads to endeavour to make major north-west and south roads leading directly into the central city more bicycle-friendly. These include Royal Parade, Flemington Road, Elizabeth Street north and St Kilda Road.

Build and upgrade off-road bicycle routes

39. The City of Melbourne will continue to maintain and improve off-road routes. Developing links, effective signage and wayfinding is especially important to cater for recreational cyclists that may travel to unfamiliar locations and visitors to the city.
40. The development of major off-road routes involves working in collaboration with the Victorian Government and delegated authorities. An opportunity exists to upgrade the Capital City Trail, which begins and ends in the central city. The City of Melbourne will seek funding to upgrade signage and improve the design of high priority off-road routes.

Regular maintenance

41. Cyclists need strong visual cues when riding. Stencils, green pavement and profiled edge-line eventually wear or can be dug up by contractors or third parties. These need to be reinstated as quickly as possible so as safety is maintained. Debris must be promptly removed and uneven surfaces repaired. The City of Melbourne has a comprehensive customer service system for reporting hazards and requesting repairs.

Work with partners

42. The City of Melbourne will continue to lead and participate in the development of priority bicycle projects as part of the IMAP bicycle network. Bicycle infrastructure investments that are close to municipal borders will be completed in collaboration with adjoining councils.
43. Opportunities often arise to improve facilities when other Victorian Government departments or agencies complete projects. The City of Melbourne will continue to work closely with VicRoads, the Department of Transport and Yarra Trams to incorporate bicycle network improvements into other streetscape and transport improvement works.

ACTIONS

Build or upgrade high priority on-road routes

44. High priority on-road routes will be built and upgraded in 2012-13 to improve connections and safety and support cyclists to travel to, from and within the central city. The development of each project is subject to a community engagement process.

Location	Project and rationale	Cost	Timing
a) La Trobe Street	Construct a physically-separated bicycle route from Victoria Street to Adderley Street. This will provide east-west access across the city and improve linkages to Docklands and the western suburbs of Melbourne.	\$2.4 million	January 2013
b) Swanston Street, Princes Bridge	Install chevron-separated lanes on Princes Bridge by removing one lane of traffic. This will increase the capacity of a major link into the central city, improve safety and reduce pedestrian/cyclist conflict.	\$150,000	May 2013
c) Elizabeth Street (north)	Construct a physically-separated (northbound) and chevron-separated (southbound) route connecting Royal Parade and Flemington Road to the central city with improved intersection design at Victoria Street. This link will provide access from the north to the central city and the Queen Victoria Market. It will be completed in collaboration with VicRoads.	\$605,000	February 2013
d) Exhibition Street	Establish a bicycle route during peak hours, northbound from Flinders Street to La Trobe Street and southbound from La Trobe Street to Flinders Lane. This will provide a north-south link to the Yarra Trail.	\$490,000	February 2013
e) St Kilda Road (southbound)	Construct a separated bicycle route between Princes Bridge and Linlithgow Avenue and Southbank Boulevard intersection. This will increase the safety and quality of this major north-south route.	\$330,000	May 2013
f) Clarendon Street, East Melbourne	Construct a chevron-separated bicycle route between Victoria Parade and Wellington Parade. This route will connect Albert Street bicycle lanes to the Yarra Trail and reduce the desire of cyclists to ride through Fitzroy Gardens.	\$400,000	September 2012
g) Cecil Street to Whiteman Street to Normanby Road	Install an improved bicycle route by adding ramps and removing parking in Whiteman Street and connecting cyclists to the median in Normanby Road. This project will be completed in consultation with stakeholders and connect to the Cecil Street separated route within the City of Port Phillip.	\$50,000	April 2013



Build or upgrade high priority off-road routes

45. High priority off-road routes will be built and upgraded in 2012–13 to improve connections and support cyclists travelling to and from the central city.

Location	Project and rationale	Cost	Timing
h) Alexandra Gardens and Queen Victoria Gardens	Upgrade a shared path from Henley Landing to St Kilda Road on the south side of Alexandra Gardens. Establish signage, line marking and bicycle lanterns to assist cyclists to enter St Kilda Road. This will provide a convenient and safe link to the central city from the Yarra Trail and the south-east. Remove left turn slip lane from Linlithgow Avenue and establish signage and bicycle lanterns from Linlithgow Avenue shared path to Southbank Boulevard. This will give cyclists an alternate off-road route to travel to Southbank from the Yarra Trail.	\$25,000	November 2012
i) Lorimer Street to Webb Bridge	Formalise a bicycle route along the riverfront by sealing the existing gravel path and improving directional signage. This will provide a safer route and assist cyclists to find their way to and from the city to Fishermans Bend and the Westgate punt.	\$30,000	April 2013
j) Northbank	Support the Victorian Department of Planning and Community Development to construct the Jim Stynes Bridge for cyclists and pedestrians under Charles Grimes Bridge. This will link Harbour Esplanade paths and Spencer Street.	\$800,000	February 2013

Routes on arterial roads

46. The City of Melbourne will work with VicRoads to design, build and upgrade routes on or adjacent to arterial roads they control. The development of each project is subject to a community engagement process and extensive collaboration with VicRoads.

Location	Project and rationale
k) St Kilda Road (south of Southbank Boulevard)	Construct a separated lane along St Kilda Road over the longer term. This upgrade will increase capacity and attract cautious cyclists.
l) Royal Parade	Construct a separated bicycle route over the longer term. This will support cycling to the University of Melbourne, City North and the central city.
m) Flemington Road	Construct a separated lane on Flemington Road over the longer term. This upgrade will provide access to the central city from the north-west and attract cautious cyclists.
n) Peel Street	Investigate options for a separated or quality route from Dudley Street to Royal Parade and Flemington Road. This route will also service the Queen Victoria Market and Flagstaff Gardens.
o) Epsom Road (west of Smithfield Road) and Smithfield Road	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.
p) Lorimer Street	Upgrade the shared off-road path on south side of Lorimer Street from Todd Road to CityLink underpass. This will be a key route as Fishermans Bend develops and connects to the Westgate punt service.
q) Olympic Boulevard	Construct separated bicycle route on part of Olympic Boulevard. This will connect Swan Street to Yarra Trail and the central city to and from the south-east.
r) Footscray Road	Upgrade off-road path and intersections, Maribyrnong crossing and signage. This upgrades a key route to and from the west.

Other projects - on-road to be completed 2013 to 2016

47. These routes will be completed by 2016 as part of the annual works program. The development of each project is subject to a community engagement process.

Location	Project and rationale
s) Albert Street	Construct a separated bicycle route from Gisborne Street to Nicholson Street. This will connect the Albert Street separated route to the central city.
t) Neill Street from Canning to Rathdowne streets	Construct a physically-separated or chevron-separated bicycle route. This new route will take pressure off people cycling through the Carlton Gardens. It will connect to Canning Street.
u) William Street/Peel Street	Construct a separated bicycle route from La Trobe Street to Dudley Street and investigate options for connections between Flagstaff Gardens and Howard Street with other stakeholders. These upgrades will link Flagstaff Station and provides a quality route suitable for Bike Share.
v) William Street	Upgrade Collins Street to La Trobe Street with green pavement, profiled edge-line and other safety measures. This will improve linkages within the central city and to and from Flagstaff Station.
w) Elizabeth Street	Continue to upgrade the quality of Elizabeth Street in the central city from Victoria Street to Collins Street with bicycle boxes, green pavement and profiled edge-line. This will provide a quality north-south link.
x) Spring Street	Continue to upgrade Spring Street in the central city with bicycle boxes, green pavement and profiled edge-line. This will provide a quality north-south link.
y) Bourke Street	Continue to upgrade the quality of the route from Spencer Street to Bourke Street Mall to Spring Street (excluding the Mall) with green pavement, profiled edge-line and bicycle boxes. This will improve east-west movement in the central city.
z) Collins Street to Spencer Street	Upgrade Collins Street from the Harbour Esplanade off-road bicycle route to Southern Cross Station with green pavement and profiled edge-line. This connection will allow train commuters to reach their destination.
aa) Gisborne Street and Macarthur Street	Continue to increase separation of bicycles from vehicles with green pavement and profiled edge-line and redesign facilities at Parliament and Cathedral places. This will improve safety and connect to the Albert Street separated route.
bb) Faraday Street from Canning Street to the University of Melbourne	Continue to improve the level of service particularly at intersections and at the crossing of Swanston Street to the University of Melbourne. This will support a higher number of students and staff to use this route to the university precinct.
cc) Rathdowne Street at Queensberry Street	Improve traffic signals for bicycles from the north with a hook-turn into Queensberry Street. This will improve the connection of quality routes.
dd) Museum Road at Nicholson and Rathdowne streets	Improve ramps and signals. This will improve on- and off-road route connections.
ee) Elgin Street	Upgrade connections at intersections including bicycle boxes. This will support the university precinct and connect with Johnston Street.
ff) Wreckyn Street	Upgrade to connect Grattan Street route with Arden Street route.
gg) Arden Street	Upgrade route and bridge over Upfield railway line.
hh) Macaulay Road, Canning Street, Abbotsford Street	Upgrade bicycle routes. This option will encourage integrated transport from Macaulay Station to the Royal Children's Hospital.
ii) Leveson Street at Courtney Street	Upgrade Leveson Street access to Courtney Street for bicycles by removing kerb and some car parking spaces.
jj) Smithfield, Epsom and Macaulay roads	Upgrade with green pavement, profiled edge-line and intersection treatments to improve connections from the western suburbs.
kk) Childers Street, to Tennyson Street and Kensington Road	Upgrade with green pavement, profiled edge-line and intersection treatments. This will connect to the upgraded Arden Street route.



Other projects – off-road to be completed 2013 to 2016

48. These routes will be completed by 2016 as part of the annual works program. The development of each project is subject to a community engagement process.

Location	Project and rationale
ll) Bridge Road at Punt Road to Yarra Park	Work with City of Yarra to improve the gateway to the City of Melbourne at Bridge Road. Establish cut through to off-road path and widening of footpath at Weedon Reserve. This will improve linkages and safety of transition from on-road to off-road routes through Yarra Park.
mm) Yarra Trail	Install ramp on south side of Yarra River between Hoddle Bridge and Morrell Bridge. This will encourage city bound cyclists to cross to the north side of the river and use the shared paths in Birrarung Marr.
nn) Royal Park	Review and improve signage of the Capital City Trail and other key routes through Royal Park especially on west side of the zoo. This project will improve wayfinding on the Capital City Trail.
oo) Royal Park	Upgrade crossings to Abbotsford Street by establishing ramps and bicycle lanterns. This will make transition from off-road routes to on-road routes more convenient for cyclists.
pp) Royal Park	Upgrade signage on the Gatehouse Street shared path. Review and improve connections to the north and east of the Royal Children's Hospital once construction has been completed in the precinct. Input bicycle information to the 'Return to Royal Park' consultation. This upgrade will ensure the route provides more convenient connections to the hospital precinct.
qq) Lorimer Street	Install signage to transition cyclists from Lorimer Street to River Esplanade inbound. On the outbound route install signage and work to install signals at Ingles Street to give cyclists safe access to the shared off-road path. This will connect to Fishermans Bend and service the Westgate punt.
rr) Elliott Avenue and Macarthur Road	Improve signage for transitions from Elliott Avenue off-road path on north side to off-road path on south side of Macarthur Road. This will ensure navigation is easier.
ss) Princes Park Drive	Improve crossing at Cemetery Road West and College Crescent with cut-throughs and bicycle lanterns. This will enable convenient access from off-road routes at Princes Park.

Investigations

49. Investigations in collaboration with other stakeholders will be undertaken at the locations below to determine their suitability for bicycle-friendly routes. Studies will be completed for locations that are particularly complex and involve a number of stakeholders to resolve issues or contribute funding. Recommendations from these investigations will inform the City of Melbourne and other stakeholders. If possible, supported projects will be progressed by 2016 or be included in the next plan.

Location	Project and rationale
tt) Northbank and Flinders Street	Undertake a Yarra River corridor study to determine uses and options for cyclists on the riverfront and adjacent roads between Punt Road Bridge and Charles Grimes Bridge. This will aim to provide an alternative route for commuter cyclists using the Northbank shared zone.
uu) Southbank and Southbank Boulevard	Undertake a Yarra River corridor study. This will aim to provide an alternative route for commuter cyclists using the Southbank shared zone. Construct a bicycle route on Southbank Boulevard while longer term plans are developed.
vv) Little streets in the central city	Undertake research into street designs that would make Flinders Lane, Little Collins Street and Little Bourke Street more bicycle-friendly including parking, line markings and entry and exit points.
ww) Grattan Street	Engage with stakeholders regarding an appropriate bicycle route. This route will connect Flemington Parade to Rathdowne Street and Wreckyn and Arden streets. It will provide access along its length to the University of Melbourne and hospital precincts.
xx) Link Albert Street and La Trobe Street	Investigate connection from Albert Street separated bicycle route at Nicholson Street to the new La Trobe Street route.
yy) Queensbridge	Investigate an upgraded connection from Queensbridge to Market Street bicycle route. This will provide an improved connection across the Yarra River.
zz) Adderley Street	Investigate improving the quality and connections of Adderley Street between La Trobe and Dudley streets.
aaa) Dynon Road	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.
bbb) Elizabeth and Chelmsford streets	Investigate the possibility of contra-flow bicycle lane on one-way sections of Elizabeth and Chelmsford streets in Kensington to connect Macaulay Road to Arden Street.
ccc) Epsom to Macaulay and Racecourse Road to Elliot Avenue and off-road path	Investigate options for upgrading sections of Epsom Road and Racecourse Road. This will link Newmarket and Flemington Bridge stations to the University of Melbourne for commuters from the west.
ddd) The Avenue	Investigate installation of contra-flow bicycle lane on one-way section of The Avenue to connect Macarthur Road to Royal Parade.



FACILITIES

50. Cycling facilities are an important enabler to encourage people to ride to work¹³. A majority of people currently park their bicycles in off-street private facilities, such as workplaces or homes. For shorter trips, shopping or entertainment many people lock their bicycles to bicycle hoops provided by the City of Melbourne. There are currently over 2000 on-street bicycle hoops (see Figure 12). An increase in available hoops has seen a slight reduction in people locking their bikes to posts and other street furniture since 2008.

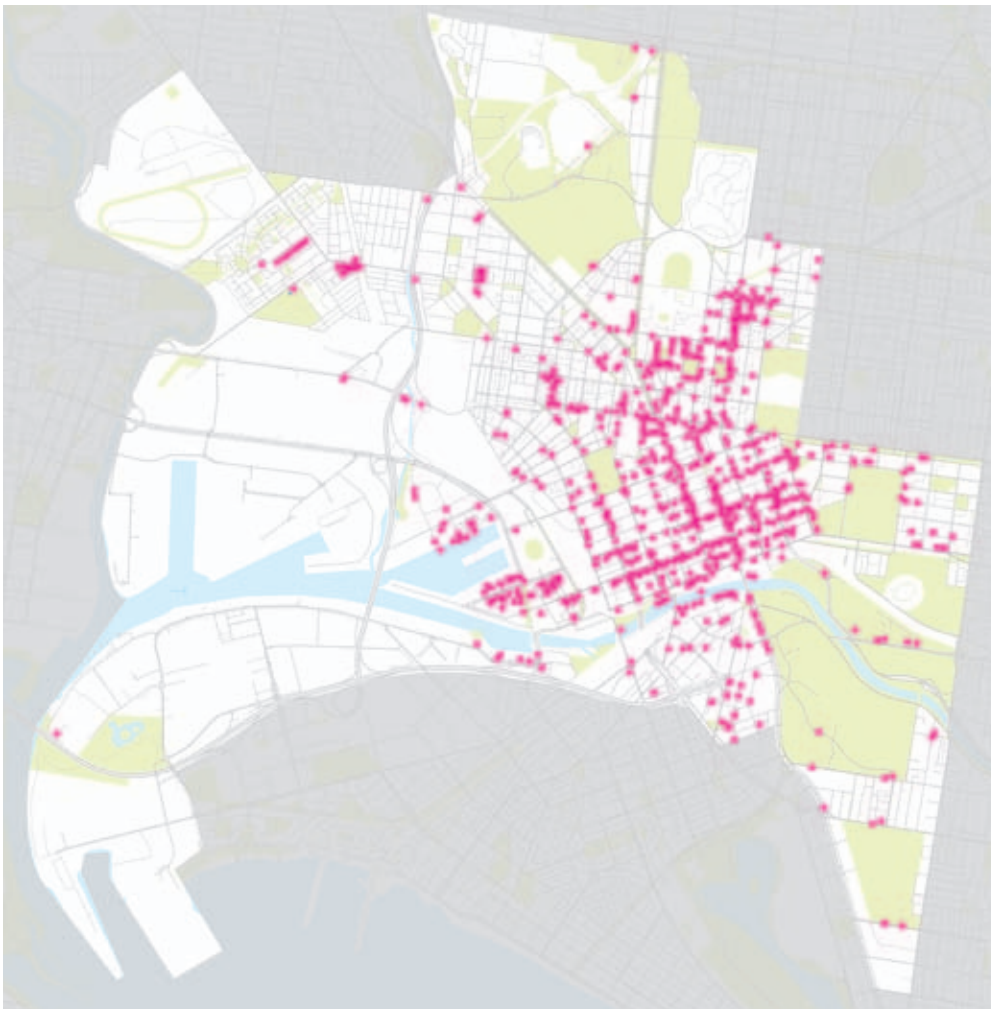
On-street bicycle facilities

51. In 2008, the City of Melbourne, supported by the Department of Transport, converted two car spaces adjacent to Lygon Court in Carlton to 16 bicycle parking spaces. More hoops have since been installed at this location to meet demand. The same kind of conversion took place as part of streetscaping works outside the CAE in Flinders Lane.

Figure 11 - Bicycle parking locations in the City of Melbourne 2010



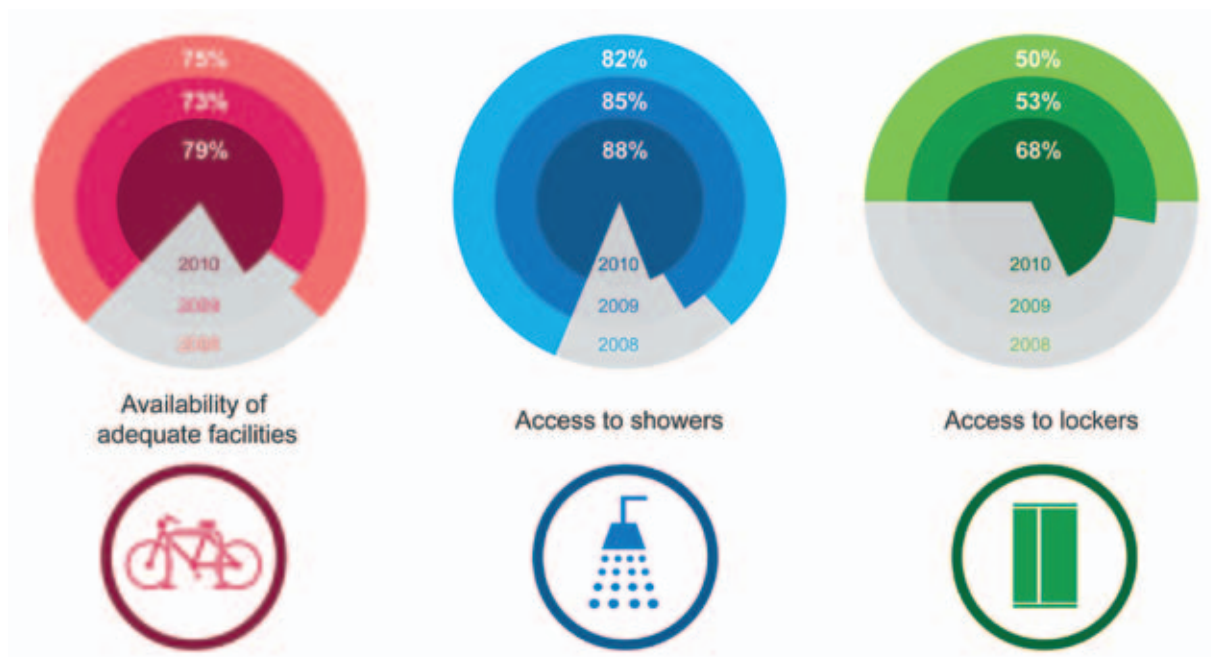
Figure 12 - Location of bicycle hoops in the City of Melbourne



End-of-trip facilities

52. Melbourne Bike Scope surveys in 2010 found that 88 per cent of respondents had access to showers at their workplace. This was an increase from 82 per cent in 2008.

Figure 13 – Facilities available to cyclists in the City of Melbourne 2008-10



53. In 2008 the City of Melbourne, with significant funding and support from the Victorian Government, established bicycle pods including secure bicycle parking, change and shower facilities at the City Square commercial car park and RMIT. Demand has not outstripped supply in these locations but more could be done to promote these sites.

Theft

54. According to Victoria Police, opportunistic and planned theft of bicycles is a growing problem. Reasons for the higher rates of theft include the increasing value of some bicycles and because bicycles are sometimes not adequately secured.

Signage and signals

55. Route and directional signage is provided on quality routes, such as Queensberry Street. Green pavement with white bicycle stencils have been progressively implemented at conflict points where driveways, laneways or streets intersect with the bicycle lane or on the approach to intersections where motorists may be changing lanes or preparing to turn left.
56. Signage varies from one municipality to the other. This is particularly evident on off-road routes such as the Capital City Trail and the Yarra Trail that cross municipal boundaries. Wayfinding can be difficult in locations such as Docklands, Southbank and Northbank.
57. Some bicycle lanterns are provided in key locations such as Swanston Street with early starts (and finishes). Rathdowne Street has bicycle lanterns to guide cyclists to complete a hook turn into Queensberry Street.



Public transport

58. In Melbourne bicycle trips are not integrated well with public transport. In the Netherlands, 40 per cent of train passengers travel to the train station by bicycle. Locally this proportion is 1 per cent suggesting that bicycles have not been optimised as a feeder or a distributor for the public transport network.

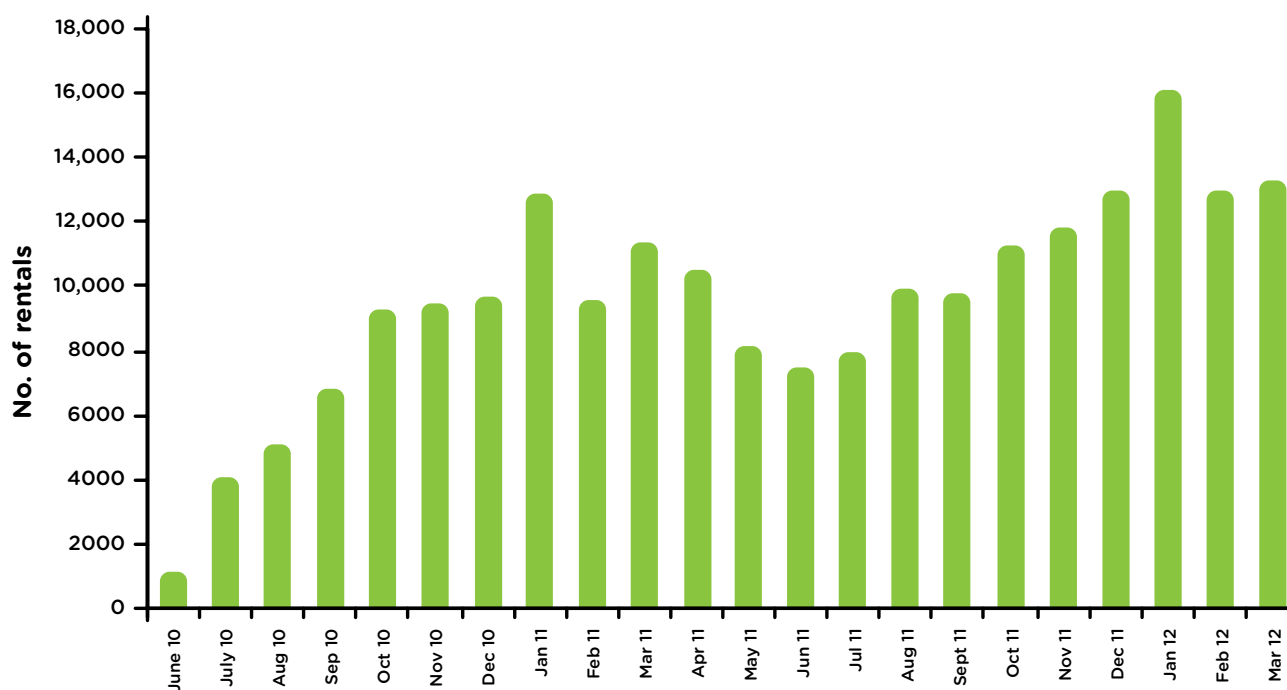
Melbourne Bike Share

59. In Melbourne, a public Bike Share scheme commenced in May 2010. The scheme is run by RACV on behalf of the Victorian Government. The City of Melbourne selects and provides locations for Bike Share bicycle stations. Currently there are about 50 bicycle stations with 600 bicycles operating. The stations are mostly located within the City of Melbourne with some in adjoining municipalities.

60. Initial implementation and planning costs totalled \$5 million over four years, which required a usage rate of 500 trips per day, or 15,000 per month, for the scheme to break even.¹⁴ After the scheme was introduced a helmet subsidy was introduced to assist uptake.

61. More than 16,000 trips were taken during January 2012. This represented a 50 per cent increase from July 2011. Federation Square was the most popular location to start a journey.

Figure 14 - Bike Share usage, number of trips per month



OPPORTUNITIES

On-street bicycle facilities

62. For convenience, more bicycle hoops will be installed at popular end destinations such as public places, entertainment and retail precincts.
63. There is an opportunity to convert car parking spaces to bicycle parking in selected high usage locations around the municipality similar to the facilities provided adjacent to Lygon Court. Opportunities include Federation Square, the University of Melbourne, RMIT, Queen Victoria Market and close to other public places, tertiary institutions, entertainment and retail precincts. Any new larger bicycle storage facilities of this type should be evaluated.
64. To reduce theft, alternative bicycle storage options will be investigated. This will include the possible use of parkiteer cages. More convenient and potentially less expensive options could be provided in existing commercial car parks with security accreditation.

End-of-trip facilities

65. Facilities such as showers and lockers are primarily the responsibility of businesses and workplaces. The City of Melbourne will work with the Department of Planning and Community Development and suggest planning scheme bicycle parking rates for new private buildings to support cycling. Cost-benefit analysis will be completed for the existing public bicycle pods before any more are installed.

Signage and signals

66. Route and directional signage should be consistent from one municipality to the next to ensure easy navigation for cyclists and clear visual cues for other users. Victorian municipalities are collaborating to develop standard designs for wayfinding. The City of Melbourne will trial designs for improved wayfinding on off-road routes as part of this project.
67. The City of Melbourne has completed an audit of signage on the Capital City Trail and Yarra Trail and will update and install new signage for easier wayfinding to key locations including the central city.

Integrating bicycles and public transport

68. Opportunities exist for more bicycle parking at railway stations. If more bicycle parking was available, people could cycle to or from a train station. The City of Melbourne will continue to work with the Department of Transport and Public Transport Victoria to improve bicycle facilities at stations.



ACTIONS

69. The City of Melbourne will determine the locations for bicycle parking hoops by:
 - 69.1. undertaking an annual review of requests for more bicycle hoops via the City of Melbourne's Pathway system and Bicycle Network Victoria's Pinpoint system
 - 69.2. ensuring these are located close to shops and cafés and popular destinations that provide stronger natural surveillance.

70. The City of Melbourne will:
 - 70.1. investigate options for converting a number of car parking spaces to bicycle parking at locations around the municipality. Locations will include Federation Square, the University of Melbourne, RMIT, Queen Victoria Market, Bourke Street near Spring Street, the northern end of Exhibition Street and on many of the little streets. An evaluation of these bicycle parking areas will include a cost benefit analysis
 - 70.2. work with bicycle advocacy groups, transport management associations, building managers and employers to encourage improved workplace end-of-trip facilities and accessible bicycle parking.

71. The City of Melbourne will work with Department of Transport and other transport stakeholders to:
 - 71.1. increase the amount of secure bicycle parking at train stations for inbound passengers and increase the amount of public bicycles for outbound passengers
 - 71.2. support research and analysis as a means of improving the integration of cycling with Melbourne's public transport system.

72. The City of Melbourne will:
 - 72.1. install more early starts (and finishes) for cyclists at signalised intersections to complement priorities for pedestrians and public transport on priority routes
 - 72.2. trial and install consistent bicycle signage and stencils for wayfinding to key locations according to standards agreed with Victorian municipalities.

CYCLING SAFELY

73. Safety on our roads and paths is the responsibility of all users. Campaigns introduced by other agencies, such as VicRoads' 'Share the Road' campaign and 'Operation Halo', lead by Victoria Police, have been supported by the City of Melbourne. The City of Melbourne also runs its own 'Move Mindfully in Melbourne' campaign and annual 'Road Harmony' program.
74. To support a safer cycling environment, the City of Melbourne has implemented early starts (and finishes) at traffic signals, profiled edge-lines, line markings and stencils, changes to speed limits and parking, training, education and awareness campaigns.
75. While there has been an increase in the total number of crashes resulting in injuries to cyclists since 2007 within the City of Melbourne (see Table 2 below), this increase is in line with growth in cycling numbers so that overall there has been a reduction in accidents by an average of 5 per cent per cyclist per year (2007-2011). Table 3 below details the types of crashes.

Table 2 - Crashes involving injuries to cyclists in the City of Melbourne by year

Year	Fatal	Serious injury	Other injury	Total
2007	0	67	114	181
2008	1	70	126	197
2009	0	68	153	221
2010	1	58	178	237
2011	1	70	200	271
				1107

Table 3 - Types of bicycle crashes in the City of Melbourne

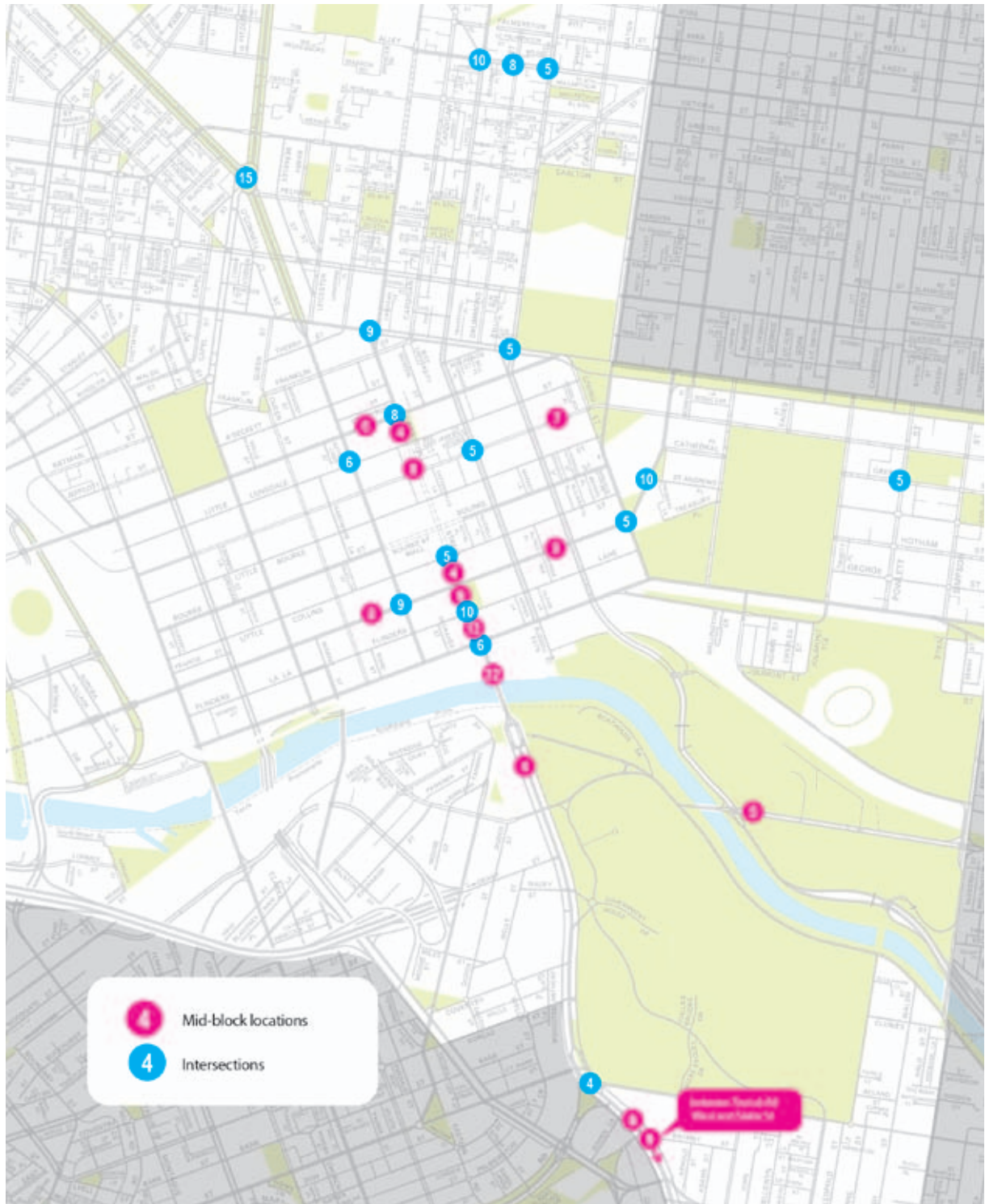
Description	2007-2011
Open door of a vehicle	23%
Turning right or through at intersection	10%
Turning left sideswipe at intersection	10%
Side swipe in parallel lanes	6%
Cross traffic at intersections	11%
Out of control on carriageway	7%
Vehicles off footpath strikes vehicle on carriageway	4%
Vehicle emerging from driveway	2%
Other	27%

76. Johnson, 2010¹⁵ found that most accidents and near misses involving cyclists in the City of Melbourne were due to driver behaviour. Locations in the municipality with the highest incidence of bicycle accidents are:
- 76.1. Mid-block on Swanston Street between Flinders Street and Princes Bridge and at the intersection of Swanston Street and Flinders Street. Changes to the alignment of the bicycle lane, green pavement treatment and early start bicycle lanterns have not made a material difference to safety at this busy location
- 76.2. Swanston and Little Bourke Street
- 76.3. Elgin and Drummond streets in Carlton, an intersection that has now been signalised
- 76.4. St. Andrews Place and Macarthur Street, East Melbourne. Traffic conditions at this intersection have been changed to ban right turning vehicles.



77. See Figure 15 below for major crash locations within the City of Melbourne.

Figure 15 - Location of bicycle crashes in the City of Melbourne 2008-10
(Source: VicRoads CrashStats)



Bicycle collisions with car doors

78. A study commissioned by the Road Safety Action Group Inner Melbourne (RSAGIM) shows 59 car dooring injuries occurred in the City of Melbourne in 2010¹⁶. This was the highest number of reported injuries for any municipality in inner Melbourne and is a significant increase from 38 injuries in 2007¹⁷. Many incidents go unreported. The majority of car dooring crashes occur on three streets in the City of Melbourne: St Kilda Road, Collins Street and Elizabeth Street.

Speed limits

79. Speed limits can help make the cycling environment safer. AustRoad guides suggest where car volumes are high, separate bicycle paths should be installed where vehicles are travelling over 40 km/h. Speed limits vary in the City of Melbourne from:

79.1. 60 km/h on major arterial roads

79.2. 50 km/h on most local roads

79.3. 40 km/h along major shopping strips and proposed for the central city (Hoddle grid)

79.4. 30 km/h on Swanston Street in the central city, for example

79.5. 10 km/h for shared zones.

Off-road safety

80. The main off-road locations where safety is a concern are the Northbank, Southbank and Morrell Bridge areas of the Yarra River corridor and the harbour front at Docklands and South Wharf.

81. At these locations, safety issues arise when:

81.1. cyclists are travelling at inappropriate speeds for the conditions

81.2. pedestrians are not looking for or expecting a cyclist – even at a moderate speed

81.3. sightlines are poor and paths are narrow with inadequate signage.

Safety campaigns and site interventions

82. The City of Melbourne has introduced behavioural change campaigns such as the 'Light Up!' in autumn when daylight savings ends, 'Respect the Red' and 'Road Harmony' projects. An awareness program was introduced to ensure all users of new tram stops in Swanston Street are aware of the correct way to use the space.



OPPORTUNITIES

83. The City of Melbourne has proposed a reduction in speed limits in the central city to 40 km/h to create a safer on-road environment especially for vulnerable users such as cyclists and pedestrians. Other speed limits will be reviewed based on crash data and other factors.
84. The City of Melbourne will support new Australian and Victorian safety campaigns and apply these to local conditions as well as continuing to introduce local safety campaigns.
85. RSAGIM will continue to use research to design and support behaviour change campaigns such as 'Look for Bike Riders' by targeting high incident areas such as St Kilda Road, Collins Street and Elizabeth Street. Other changes to infrastructure including separated lanes and chevron line marking and changed parking limits will be considered based on the research findings.
86. Other safety-related campaigns directed at improving bicycle safety include a Code of Conduct developed by key agencies (including the Amy Gillett Foundation) that raises awareness of the behaviours required for safe cycling and safe driving. The City of Melbourne will support the development of the Code of Conduct.
87. Increased signage is critical to support novice cyclists and visitors to the Bike Share scheme. Quality products need to be used so that stencils and other safety signage remains in place and gives all users clear signals that bicycle riding is supported and legitimate.
88. A thorough study of the intersection of Flinders Street and Swanston Street is required to address the high number of accidents in this area.

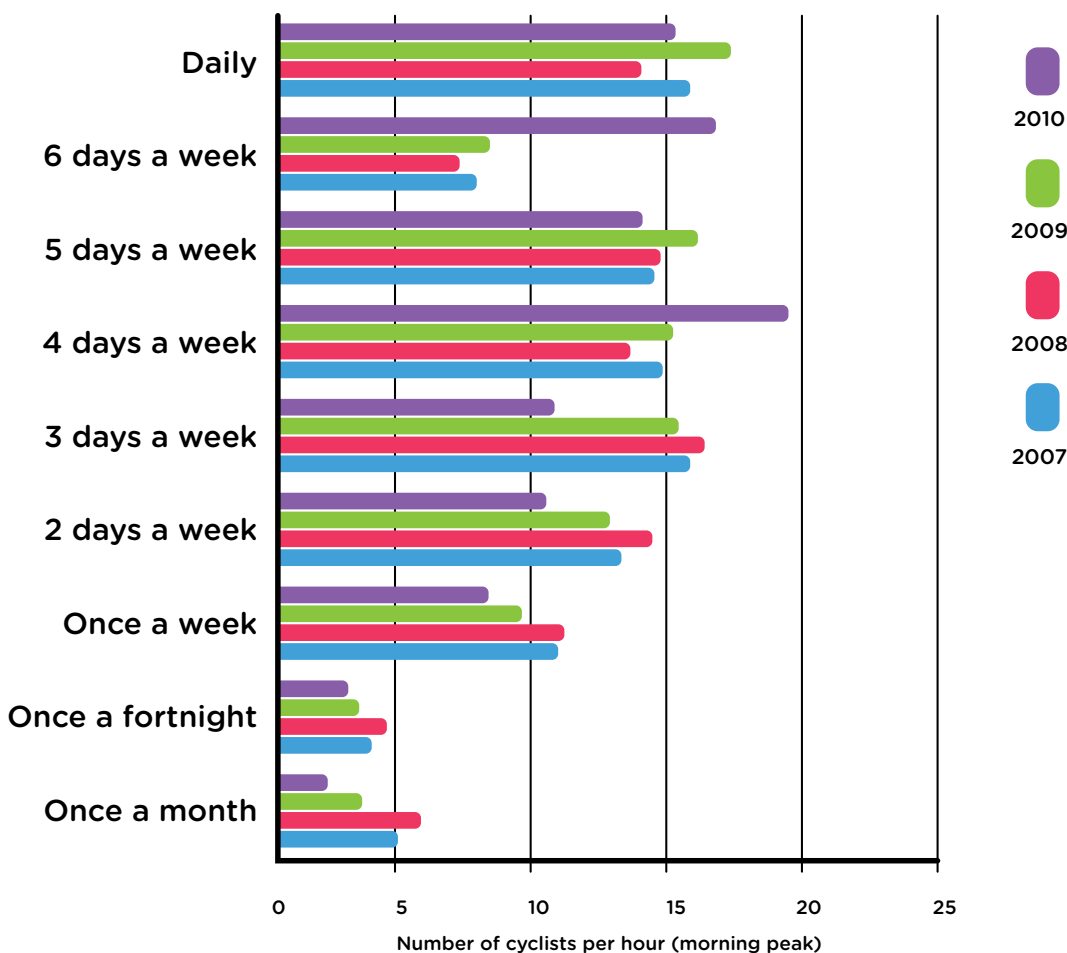
ACTIONS

89. The City of Melbourne will:
 - 89.1. Advocate for the Victorian Government to reduce speed limits in the central city to 40 km/h to improve the safety of vulnerable road users such as cyclists and pedestrians
 - 89.2. Continue to support and promote vehicle and bicycle safety campaigns and programs developed by the Australian and Victorian governments and their agencies
 - 89.3. Support research into cyclist collisions with car doors and plan interventions including bicycle lane design and marking, signage, parking turnover and behaviour change programs. The City of Melbourne will support VicRoads 'Look for Bike Riders' campaign by engaging directly with motorists in St Kilda Road, Collins Street and Elizabeth Street and distributing stickers with residential parking permits
 - 89.4. Support and promote the cycling Code of Conduct within the municipality
 - 89.5. Undertake a study at the intersection of Flinders and Swanston streets to Princes Bridge to find solutions to the high number of cycling accidents at this location
 - 89.6. Undertake a Yarra River corridor study between Punt Road and Charles Grimes bridges to determine bicycle and pedestrian movements and complete a pedestrian and cyclist safety plan with recommended, costed treatments to be implemented as part of this plan between 2013-16
 - 89.7. Undertake specific research in partnership with Bicycle Network Victoria in areas where there are observed cyclist and pedestrian conflict points, such as Swanston Street. The findings will contribute to the development of an effective behaviour change program for shared spaces within the municipality.

GROWING PARTICIPATION

90. A high proportion of people are interested in riding a bicycle but have some concerns about doing so.¹⁸ Research from similar cities indicates this may be as high as half to two-thirds of the population.
91. The most common length of bicycle trips to the City of Melbourne is between 7.5 kilometres and 12 kilometres¹⁹. This is also the average trip length for Ride To Work participants. The length of trips within the municipality averages about two kilometres.
92. People are cycling more frequently. There has been a significant increase in cyclists riding on a daily basis and particularly four to six times per week. See Figure 16 below.

Figure 16 - Frequency of bicycle trips to the City of Melbourne - Bike Scope 2007-10



93. The City of Melbourne works with community groups and schools to provide small amounts of funding and to support them to seek funding for education and awareness programs. For example, the City of Melbourne worked with Victoria Police and North Melbourne Football Club to seek TAC road safety funding to educate new migrants about bicycle use and safety.
94. Events such as 'Ride to Work Day', 'Bikefest' and the 'Tweed Ride' promote cycling. Melbourne has an active cycling community which links people with bicycle-related activities through social media. The City of Melbourne also promotes cycling as part of major events such as Moomba, the Sustainable Living Festival and Melbourne Spring Fashion Week. These promotional activities help increase the awareness of cycling.



OPPORTUNITIES

95. The City of Melbourne will undertake research to develop a better understanding of the barriers facing people who are interested in cycling but concerned about safety and other factors. This study will also examine what factors would enable people to take up cycling or cycle more often in Melbourne. Research findings will be used to inform programs to support more people to cycle.
96. The City of Melbourne will not directly provide education programs but will continue to work with community groups and schools to promote bicycle safety education and awareness. We will provide support for groups to apply for VicRoads and TAC road safety grants.
97. Each year the City of Melbourne hosts events and provides grants to organisers of events that attract a large number of people. There is an opportunity to provide improved bicycle parking at these large events. Events that have included bicycle parking or valet services have been Ride to the G, Run Melbourne, State of Design and Melbourne Fringe Festival.
98. Temporary or partial road closures in support of an event would encourage more novice cyclists to use the cycling network. Road closures provide opportunities for cyclists to become more confident riding in a closed road environment. A Ride Your Bicycle event could also be used to encourage people to experience riding on new quality bicycle routes as an alternate transport mode to get to work, school or local facilities.
99. The City of Melbourne provides TravelSmart maps through visitor information centres, bicycle shops and outdoor stores. The maps provide information about bicycle routes and bicycle safety and interconnect with adjoining municipalities. The maps are updated regularly. The feasibility of providing routes and information to Google Maps, Ride the City and other interactive mapping sites will be investigated.

ACTIONS

100. The City of Melbourne will:
 - 100.1. Conduct research to understand the barriers and enablers of Melburnians cycling or cycling more frequently, and use the results to inform the design of projects and programs
 - 100.2. Actively work with community groups and schools to promote bicycle safety education and awareness and provide support for them to apply for funding
 - 100.3. Investigate how the City of Melbourne can provide improved bicycle parking at large events
 - 100.4. Investigate partial road closures to enable cyclists to trial new bicycle routes
 - 100.5. Continue to support Ride to Work Day
 - 100.6. Produce a calendar of events where cycling is encouraged and promote these opportunities
 - 100.7. Coordinate information about the cycling network, cyclist safety and the safety of other road users on the City of Melbourne website, and through electronic media, map websites and the production of TravelSmart maps
 - 100.8. Use social media to promote cycling and the details of new and upgraded routes.

EVALUATION

101. The City of Melbourne has been conducting seasonal counts of bicycles relative to other vehicles entering the central city since March 2007. The counts are completed twice a year in autumn and spring at key intersections in the municipality.
102. Commencing in 2007 these and other regular surveys were completed and published as the Melbourne Bicycle Account. The account provides a snapshot of cycling trends.

Figure 17 – Melbourne Bicycle Account



103. Traffic impact studies were undertaken by the City of Melbourne before and after significant bicycle works at Albert Street and the Manningham Bridge. These studies included an assessment of the changes in number of cyclists and other users.
104. The studies complement existing counts of commuter and recreational cyclists as well as reports completed for the City of Melbourne by Bicycle Network Victoria.
105. Continuous data is also collected at nine locations within the City of Melbourne by VicRoads loop counters. The electronic systems used to keep track of the locations and number of Bike Share bicycles in use also provides useful information on cyclist numbers and movements around the city.



OPPORTUNITIES

106. The City of Melbourne will continue to gather a range of qualitative and quantitative data before and after completing large projects so as to inform its decision making.
107. The Melbourne Bicycle Account will continue to be produced every two years as an online document. It will summarise quantitative and qualitative data collected on bicycle usage and update progress towards the Bicycle Plan targets. Key initiatives and concerns will be highlighted so decision makers can plan for the future by better understanding emerging issues and trends.
108. New data will be tracked and reported to meet the Australian Bicycle Council requirements including cycling participation by age, mode shift to bicycles, and the amount of bicycle parking at workplaces.
109. The City of Melbourne will track the performance of all major routes for future planning. For example, studies of popular routes such as St Kilda Road to Swanston Street (north) will be conducted to gather detailed location information.
110. Emerging opportunities exist to use social media including blogs to gather insights into the cycling network and environment.

ACTIONS

111. The City of Melbourne will:
 - 111.1. Continue to monitor a range of qualitative and quantitative data before and after completing large projects. All projects above a value of \$200,000 will be accompanied by an evaluation report
 - 111.2. Compile a Melbourne Bicycle Account every two years and include new fields consistent with Australian Bicycle Council requirements
 - 111.3. Evaluate the performance of major routes to assist with future planning (counts, locations of most common entry and exit points on the route, accident data, gender).



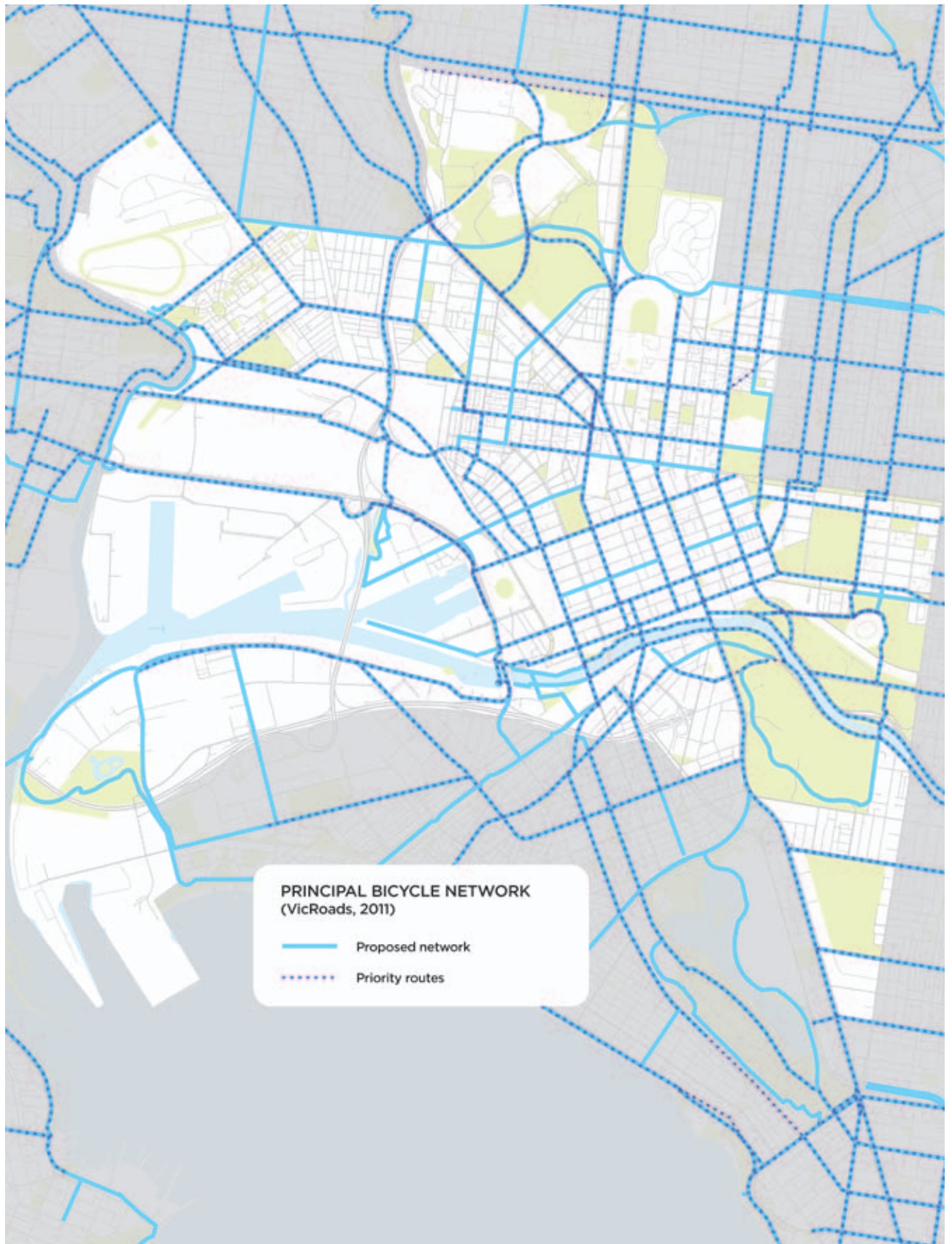
ACKNOWLEDGEMENTS

The City of Melbourne would like to thank and recognises the valuable contributions of the 99 submitters to the draft plan and those who participated in the stakeholder and community workshop.



APPENDICES

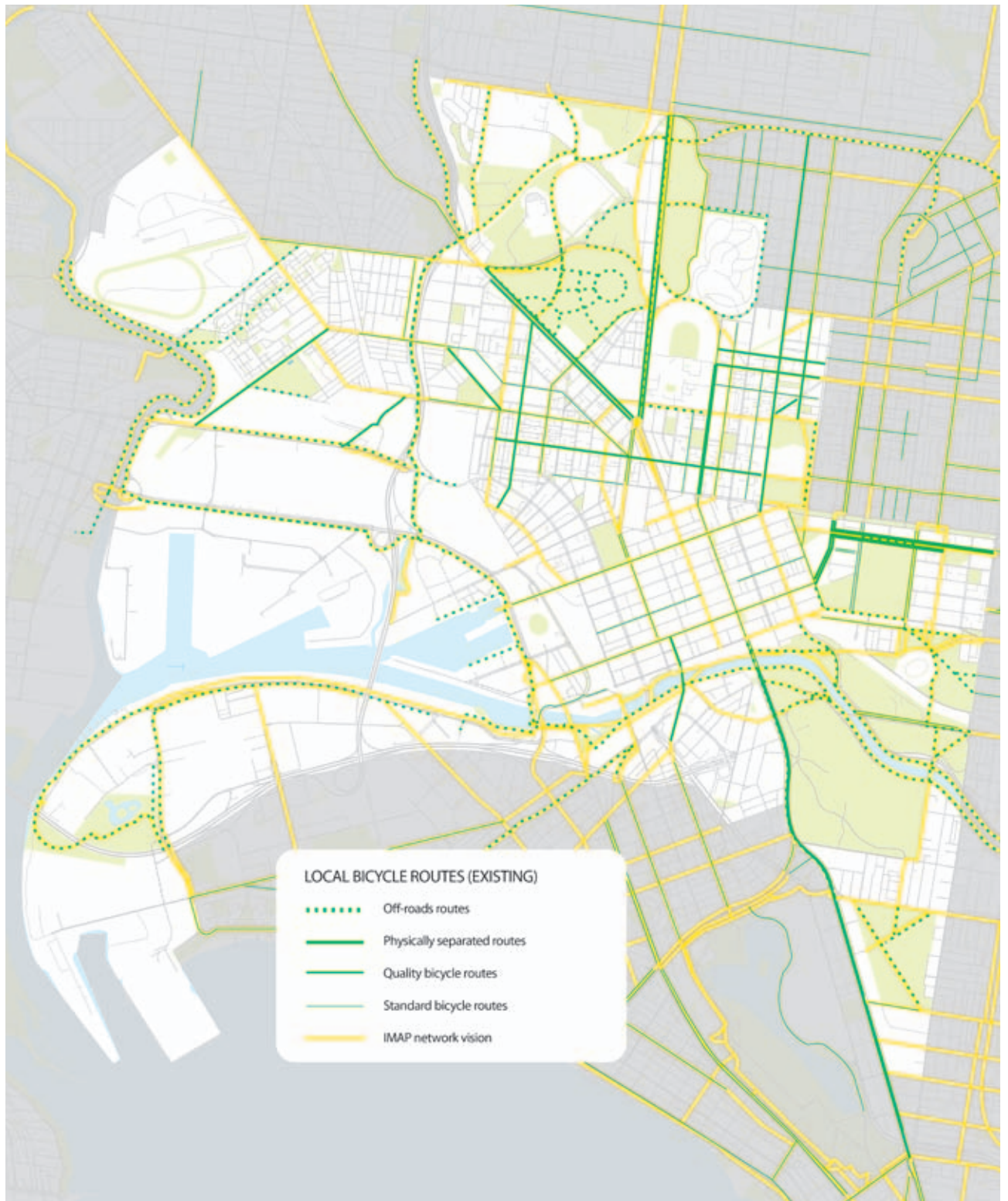
APPENDIX A - PRINCIPAL BICYCLE NETWORK



APPENDIX B - LOCAL BICYCLE NETWORK



APPENDIX C - EXISTING BICYCLE ROUTE



Note: Bicycle-friendly routes include:
Swanston Street from La Trobe Street to Flinders Street - restricted vehicle area
Princes Bridge - narrow bicycle refuges
La Trobe Street - bicycle lanes operating during peak periods

APPENDIX D - ACHIEVEMENTS OF BICYCLE PLAN 2007-11

Since the 1980s the City of Melbourne has supported bicycle-friendly policies and built infrastructure for cycling. The Bicycle Plan 2007-11 helped to deliver a coordinated approach to planning and developing routes for bicycles across five local areas surrounding the municipality. The City of Melbourne continues to be a world leader in developing innovative solutions to route design and function through the introduction of separated bicycle lanes, profiled edge-lines, chevron separation and signage.

Progress against 2007-11 targets

The City of Melbourne undertakes inbound vehicle movement surveys at 21 locations between 7am and 10am twice a year. Between 2006 and September 2011, the percentage of bicycles using these routes had increased from 4 per cent to 10 per cent. This achieved the target set out in the Bicycle Plan 2007-11.

A reduction of accidents by 5 per cent per cyclist per year (2007-11) has been achieved in the City of Melbourne. Improvements in safety for cyclists can be attributed, amongst other things, to the installation of 2.3 kilometres of separated bicycle lanes, targeting improvements to specific high incident intersections and banning certain types of vehicles from popular bicycle routes. Approximately six kilometres of new cycling routes (four kilometres on- and two kilometres off-road) have been completed across the municipality from 2007-2011 and 17 kilometres of existing routes upgraded.

Major projects

Over the five-year period to 2011, on-road facilities were built on:

- Macaulay Road
- Spring Street
- Nicholson Street
- Gisborne Street
- Wellington Parade south
- Market Street
- Albert Street (physically-separated route)
- Moray Street
- City Road.

The Albert Street separated bicycle route was the second physically-separated on-road route to be installed in the municipality. This design included the innovative use of flexible bollards to guide parking, chevrons, profiled edge-line and green pavement. The project recorded significant increases in cyclist numbers as well as providing much safer riding conditions.

Off-road routes completed from 2007 to 2011 include:

- Macarthur Road (Royal Park path)
- Yarra Park (north-south and east-west paths)
- Linlithgow Avenue (east-west shared path) and
- Batman Avenue to Speakers Corner to Birrarung Marr shared path.



Quality routes

The Bicycle Plan 2007-11 improved the quality of many existing bicycle routes in the municipality. Green pavement, profiled edge-line, chevron separation treatment and cyclist storage boxes were added to many routes including:

- Rathdowne Street (green pavement and profiled edge-line)
- Victoria Street (green pavement and profiled edge-line)
- Canning Street (green pavement)
- Abbotsford Street (green pavement)
- Gisborne Street (green pavement)
- Collins Street (green pavement and profiled edge-line)
- Royal Parade (shared path signs)
- Elgin Street (green pavement and profiled edge-line)
- Peel Street (green pavement)
- Arden Street (green pavement)
- Nicholson Street shared path (dashed centre-line, all weather tree surrounds, signage)
- Queensberry Street (green pavement, chevron and profiled edge-line)
- Gisborne Street to Macarthur Street to Collins Street (green pavement and profiled edge-line)
- Canning and Barkly Street (green pavement, chevron and profiled edge-line)
- Moray Street and Queensbridge Street (green pavement and profiled edge-line)
- Park Street (trial of raised reflective pavement markers).

The Swanston Street north separated bicycle lane was installed prior to the launch of the previous bicycle plan.

Improvements were made to cyclist safety by providing bicycle lanterns at the intersections of St Kilda Road and Linlithgow Avenue, St Kilda Road and Domain Road, and Queensbridge Street and Southbank Promenade. A key link was built with a pedestrian and cyclist bridge over Manningham Street. A signalised pedestrian crossing on Park Street significantly improved the convenience and safety of these road crossings.

The Bicycle Plan 2007-11 facilitated improvements to high accident intersections including the complex roundabout at Flemington Road, Royal Parade, Elizabeth Street and Peel Street (Haymarket), traffic lights at Drummond and Elgin streets in Carlton, removal of tourist buses and new tram stops in Swanston Street and new green pavement treatment and no right turns at Macarthur Street and St Andrews Place, East Melbourne. The area outside Flinders Street Station and the intersection of Flinders and Swanston streets remains a high accident area despite green pavement treatment being installed.

Other programs

The City of Melbourne has delivered and supported:

- Move Mindfully in Melbourne
- Streetsmarts
- Bikefest
- Light Up!
- Ride to Work Day
- Ride to School Day
- Round the Bay in a Day
- TravelSmart map.

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- ¹⁶ CDM research.
- ¹⁷ VicRoads, CrashStats.
- ¹⁸ Geller 2010, Translink 2011.
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