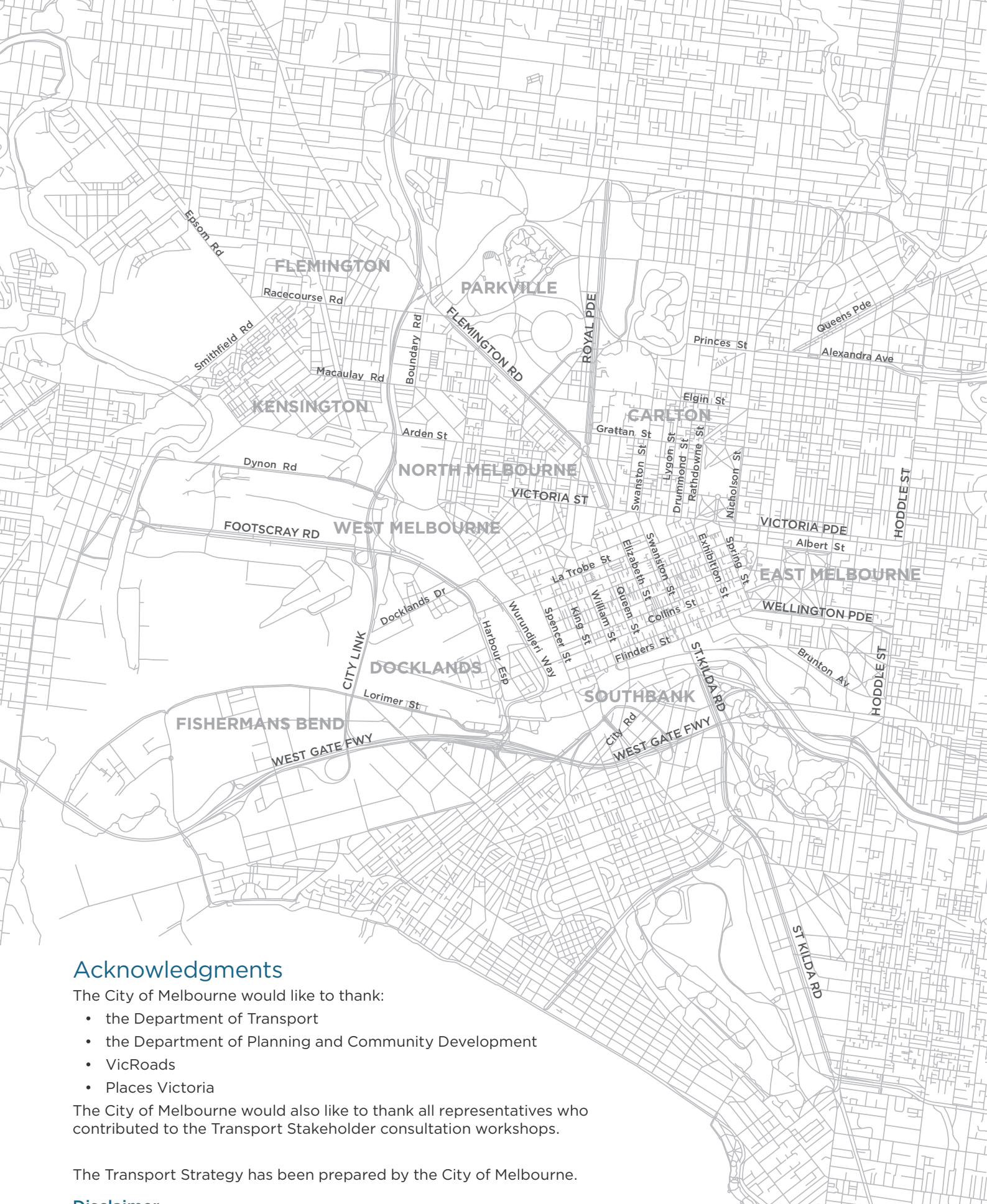


A yellow Melbourne tram is stopped at a platform. Several people are standing on the platform, some looking towards the tram. The tram has a distinctive yellow and maroon color scheme. The background is slightly blurred, showing greenery and a building.

Transport Strategy

2012

PLANNING FOR FUTURE GROWTH



Acknowledgments

The City of Melbourne would like to thank:

- the Department of Transport
- the Department of Planning and Community Development
- VicRoads
- Places Victoria

The City of Melbourne would also like to thank all representatives who contributed to the Transport Stakeholder consultation workshops.

The Transport Strategy has been prepared by the City of Melbourne.

Disclaimer

This report is provided for information and it does not purport to be complete. While care has been taken to ensure the content in the report is accurate, we cannot guarantee that the report is without flaw of any kind, there may be errors and omissions or may not be wholly appropriate for your particular purposes. In addition, the publication is a snapshot in time based on historic information which is liable to change. The City of Melbourne accepts no responsibility and disclaims all liability for any error, loss or other consequence which may arise from you relying on any information contained in this report.

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Foreword

Melbourne is the heart of Victoria's prosperous economy and enjoys a vibrant social and cultural life. Almost 800,000 people pass through our city daily. This is likely to rise to one million by 2030.

The City of Melbourne is responding to the rapid growth rate with well-thought out strategies for transport, land use and community services. The City of Melbourne Transport Strategy 2012-2030 is an important part of this. We consulted widely during the strategy's draft stage and have incorporated many suggestions.

Significantly, the strategy promotes a much more integrated approach, linking all modes of transport and coordinating this with city development and urban renewal. This requires close collaboration between all partners.

Melbourne is a 24-hour city. We are a walking and cycling city, and Council provides infrastructure to improve the safety and convenience of cyclists and pedestrians. Public transport use is growing very strongly and Council is working with the Victorian Government and our partners to support improvements to public transport.

Our vision for Melbourne as a connected city means a place for people, a city with great streets linked by a well-designed transport system. This strategy provides an important foundation for Melbourne's future.

**Lord Mayor Robert Doyle and
Cr Kevin Louey, Chair of
Council's Connected City
Portfolio.**



Pedestrians cross Spencer Street from Southern Cross station

Executive summary

This strategy sets new key directions and policy targets and plans for strong growth in the City of Melbourne to 2030. It takes into account the significant changes in transport policy and strong growth in public transport use, cycling and walking since the 2006 transport strategy, *Moving People and Freight*.

The key directions are:

- Integrate transport and land use planning.
- Go anywhere, anytime public transport for inner Melbourne.
- Support public transport, walking and cycling as the dominant modes of transport in inner Melbourne.
- Develop high-mobility pedestrian and public transport streets in the central city.
- Make Melbourne a cycling city.
- Foster innovative, low-impact freight and delivery in central Melbourne.

This strategy will be coordinated with the State Government to ensure that projects such as new tram stops and rail tunnels also contribute to creating great streets.

An annual report will be presented to the City of Melbourne to track the strategy's achievements. The strategy will be reviewed again in 2016.

Purpose of the strategy

The strategy has five goals:

- To coordinate the City of Melbourne's transport initiatives: plans, programs, research and five-year capital works program.
- To coordinate the City of Melbourne's strategic land use development policy.
- To advocate the City of Melbourne's position on transport and related land use policy to State Government.
- To enable alignment between City of Melbourne and State Government investment in transport infrastructure, service improvements, programs and research.
- To enable alignment between the City of Melbourne and its many stakeholders including traders, businesses, universities and neighbours.

Reason for the update

This transport strategy has been update due to:

- significant change in the state of transport activity and policy
- changes in the City of Melbourne's position on various aspects of transport policy
- changes in the City of Melbourne's strategic land use policy
- the need to coordinate with the State Government's new metropolitan strategy on transport and land use
- the need to refresh the priorities for the next four years.

Process for the update

This strategy update aligns the City of Melbourne's transport policy with its review of the Melbourne Planning Scheme. It complements the City of Melbourne's new Municipal Strategic Statement (MSS) and together they provide an integration of land use and transport policy. It maintains the general direction of Moving People and Freight 2006-2030 but incorporates the many advances in transport and land use development that have occurred since 2006.

Extensive community and stakeholder engagement has informed the update. This has included various stakeholder, industry and community workshops and briefings. A draft strategy was published in May 2011, with public input shaping the final strategy. This final version was approved by Council on 8 May 2012.

The major actions for 2012-2016

The actions identified in the strategy are listed at the end of the document in Section 16. Various actions contribute to the following six lead activities which the City of Melbourne will work towards in 2012-2016.

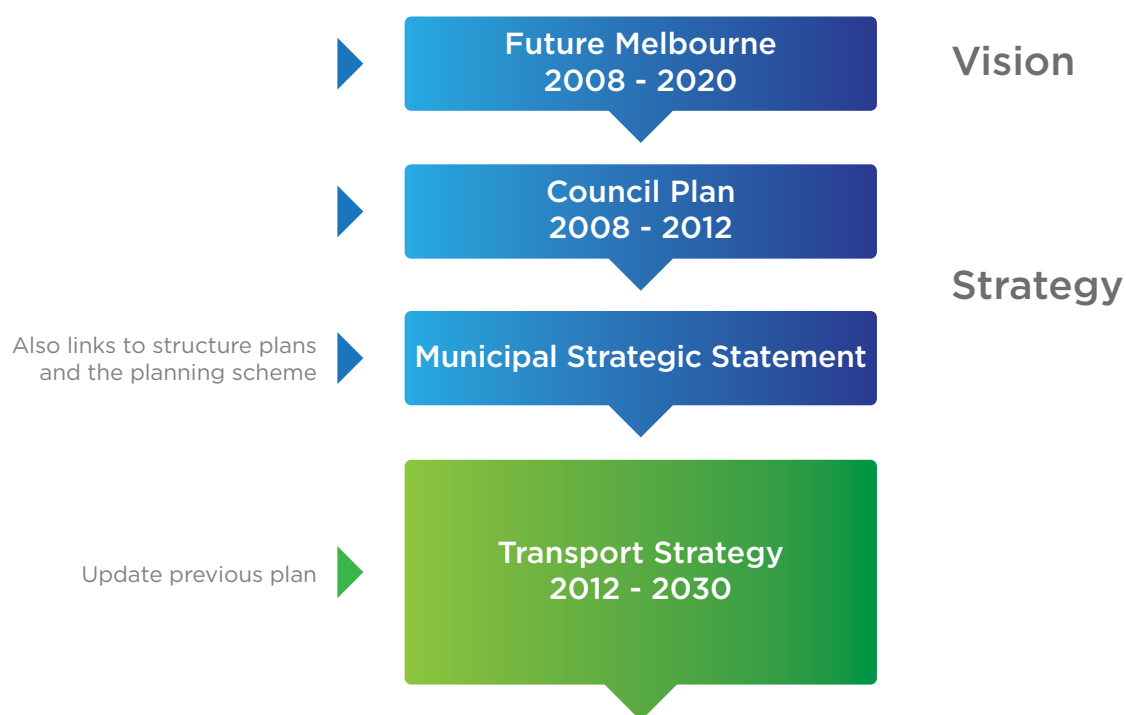
The City of Melbourne will:

- improve the municipality's walking environment to and around rail, tram and bus stations and stops
- upgrade the cycling network in the central city, and
- develop options for central city freight delivery.

The City of Melbourne will work with others to:

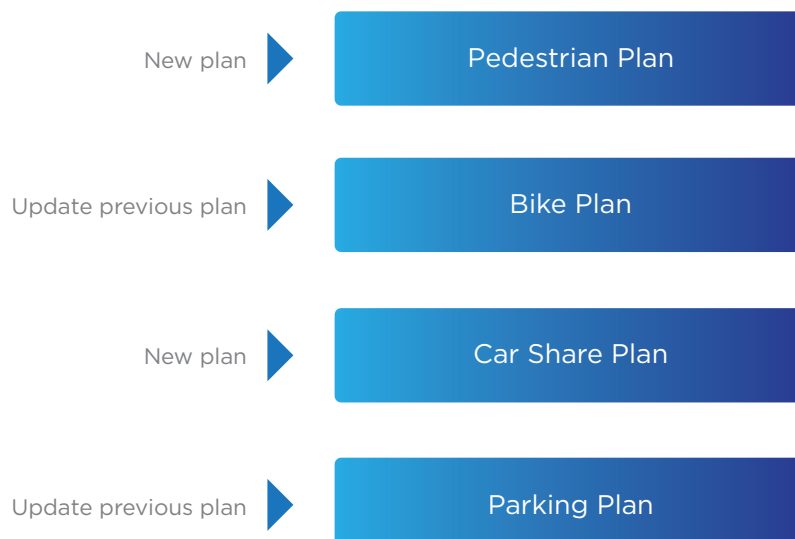
- increase the capacity for more rail trips into the city, particularly through constructing a new Footscray to Caulfield underground line
- optimise the city's streets as 'high mobility streets' for the new generation of trams services, and
- develop a road Network Operating Plan for the municipality that will enable future mobility growth to be serviced mainly through tram, bus, walking and cycling.

Strategic Framework



Implementation

Action Plans



Introduction



Little Collins Street is open to pedestrians between Swanston and Elizabeth Street from 12-2pm each weekday to cater to busy lunchtime crowds.



1 Preface

The achievements of Moving People and Freight 2006-2020

The City of Melbourne adopted Moving People and Freight 2006-2020 as its transport strategy in 2006. The vision of the strategy was for an integrated and sustainable transport system for getting people to and around the city, and for freight and commercial travel.

The strategy proposed major infrastructure ideas such as an early version of the Melbourne Metro rail tunnel and the Melbourne bike share scheme. Both of these have won State and Federal Government support.

It launched planning and capital works by the City of Melbourne including the new bus lanes on Queen and Lonsdale Streets, an amendment to the Melbourne Planning Scheme to enable lower rates of car parking provision in new residential developments, better management of on-street resident parking, expanded car sharing facilities, improved cycle times for pedestrians at traffic signals in the Hoddle Grid area and extension of bicycle lanes including dedicated lanes.

Melbourne's changing transport environment

In 2012 the vision of Moving People and Freight 2006-2020 and its strategic directions remains relevant. In the six years since its adoption, however, there have been significant developments in transport in Melbourne — stronger than expected growth in public transport use, walking and cycling, increasing costs of congestion on both road and public transport,

new Victorian State Government transport policy and legislation, and the implementation of major new transport infrastructure.

This update of Moving People and Freight 2006-2020 is a response to these new transport developments and it extends the horizon of the strategy to 2030. The update also aligns with the City of Melbourne's new strategic urban growth and development perspective set out in its Municipal Strategic Statement and associated structure plans for the urban renewal areas of the municipality.

City of Melbourne policy

Future Melbourne 2008

Future Melbourne (2008) was developed as the community's plan for Melbourne. Its overall vision was for Melbourne to grow as a global city, and as one of the top ten most liveable and sustainable cities in the world. To realise this vision it set out a framework of objectives grouped under six main goals:

- A city for people
- A creative city
- A prosperous city
- A city of knowledge
- An eco-city
- A connected city.

This review and update of Moving People and Freight 2006-2020 incorporates the Future Melbourne's connected city goal: 'for all people to be able to move about freely, to communicate and trade locally, regionally and globally, without sacrificing essential social or ecological values. The Future Melbourne's Connected City target is for 90 per cent of people working in the Melbourne

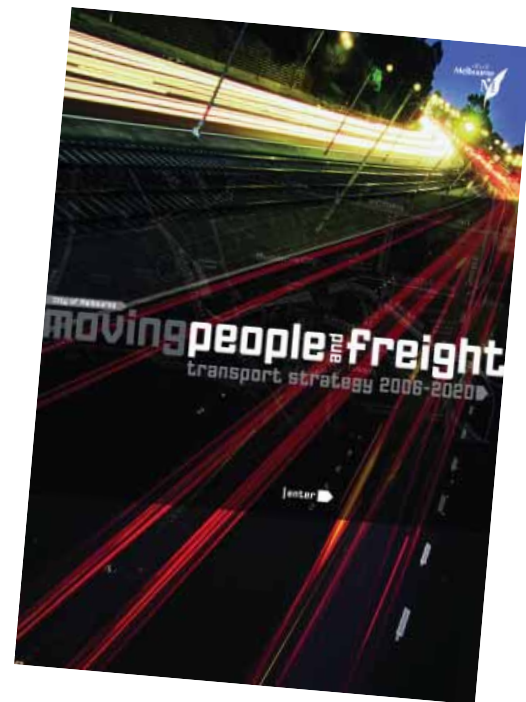


Fig 1.1 Moving People and Freight, Transport Strategy 2006

CBD to arrive by public transport, cycling or walking in 2020 — up from 72 per cent in 2006.

Council Plan 2008-2013

Council has adopted many of the Future Melbourne goals in its Council Plan 2008-2013.

Council policies and strategies

A range of council policies and strategies and plans are in place. These have all been developed within the framework of Future Melbourne since 2008.

Municipal Strategic Statement

The City of Melbourne's new Municipal Strategic Statement is a plan for the growth and development of the municipality over the next 20 to 30 years. This growth will see significant increases in resident, worker and visitor populations in the municipality. The plan identifies the need to expand and upgrade transport to service the city's future urban renewal areas, Central City growth and links to the inner west and Footscray Central Activities Area.

Planning for urban renewal

Structure plans for urban renewal are being developed in line with the Municipal Strategic Statement. The City of Melbourne has recently developed plans for Southbank, City North (south Parkville area) and Arden-Macaulay (industrial land in North Melbourne/Kensington). State Government

is leading comparable planning for urban renewal in Docklands, E-Gate and Port Melbourne. All of these plans have identified new transport directions and developments in these areas.

Another area which will see significant growth is the Hoddle Grid area of the Central City. Here one of the major new directions has been the City of Melbourne's redevelopment of Swanston Street to accommodate the high levels of tram, pedestrian and bicycle activity in the street.

Inner Melbourne Action Plan

The Inner Melbourne Action Plan was adopted by its members (the Cities of Melbourne, Yarra, Port Phillip and Stonnington and VicUrban) in 2005, with a 10 year plan to make Melbourne more liveable. Since then its strategies include:

- linking and improving transport routes
- minimising traffic congestion and increasing public transport use
- supporting planned residential growth and housing choice
- developing the inner city's distinctive activity centres
- business investment and tourism; and
- linking regional open spaces.

Victorian State Government policy and legislation

Key policies and strategies from the previous State Government included the East West Link Needs Assessment (2008), the Victorian Transport Plan (2009) and Shaping Melbourne's Freight Future (2010). Based on these, a number of major transport projects have been planned, including the Melbourne Metro Rail, the Regional Rail Link (under construction) and planning for the Port of Melbourne and the Melbourne Freight Terminal.

The previous government also updated its Metropolitan Strategy with Melbourne @ 5 million (2008), and developed the Victorian Cycling Strategy (2009) and the Pedestrian Access Strategy (2010).

Under the current State Government a new metropolitan strategy is expected in 2012-2013.

The Victorian Transport Integration Act (2010)

The new Transport Integration Act (2010) requires the transport system to be planned as a single system performing multiple tasks rather than as separate transport modes. Its core focus is integration and sustainability.

The City of Melbourne is required to have regard for the objectives and decision-making principles of the Act. The transport system objectives of the Act are to achieve social and economic inclusion, economic prosperity, environmental sustainability, integration of transport and land use, efficiency, coordination and reliability, safety, health and wellbeing.

The Act prescribes principles that support integrated decision-making;

- triple bottom line assessment
- social equity
- a user perspective of the transport system
- a precautionary approach
- stakeholder engagement
- community participation; and
- transparency.

The City of Melbourne's transport and land use policies align with these principles and objectives and the City of Melbourne will use them when making transport and land use decisions.

There have been other legislative changes since 2006 which will continue to have an impact on the planning and delivery of transport services and infrastructure in Victoria, such as the Climate Change Act (2010).

Victoria's Submission to Infrastructure Australia

The November 2011 Victorian Government submission to Infrastructure Australia represents the most complete view of the current State government priorities in transport. It was developed in the context of increasing demand on our transport networks, a growing freight task, declining productivity growth across the economy, escalating construction costs and a tight fiscal environment.

The submission presents current State Government priority projects in the following framework:

- Strategic city-shaping projects that would increase capacity at

the core of the transport network

- Maximising the efficient use of existing infrastructure
- Unlocking opportunities for integrated urban renewal in Melbourne

The centrepiece of the submission is the Melbourne Metro project, a rail tunnel from South Kensington to South Yarra. It includes an additional pair of tracks through central Melbourne in a 9km tunnel and five new stations at Arden, Parkville, CBD North, CBD South and Domain.

The following projects are included in the submission, many of which are of significance to the City of Melbourne and contribute to achieving the vision outlined in this strategy.

Planning and Development

- East West Link
- Port of Hastings
- Dandenong Rail Capacity program
- Avalon Airport Rail Link
- High Capacity Signalling
- Removing Level Crossings
- Western Interstate Freight Terminal
- Integrated Urban Renewal

Delivery

- Melbourne Metro
- National Managed Motorways
- Tram Route 86
- Green Triangle Freight Transport program

Further work

- Doncaster Rail Link Study
- Rowville Rail Link Study
- Melbourne Airport Rail Link Study
- Rail Revival Study
- Upgrade Regional Passenger Lines
- Metropolitan Intermodal System
- Truck Action Plan

Australian Government policy and legislation

Infrastructure Australia

The Australian Government established Infrastructure Australia in 2008 and the Major Cities Unit under the Department of Infrastructure and Transport to raise the profile and improve the coordination of Australian city planning and development.

The Major Cities Unit is setting out the Australian Government's new framework for transport and

land use planning. Infrastructure Australia advises the Government on Australia's current and future infrastructure needs; mechanisms for financing infrastructure investments; policy, pricing and regulation and their impacts on investment, and on the efficiency of the delivery, operation and use of national infrastructure networks.

Clean Energy Futures, Carbon Price and Transport

In July 2011, the Federal Government released the 'Clean Energy Future Plan including the introduction of a carbon price from 1 July 2012. Emissions from domestic aviation, shipping and rail transport will be covered.

However, the carbon price will not apply to fuel used by households in private cars and light on-road commercial vehicles.

The Government will seek to expand the coverage of the carbon price to include heavy on-road vehicles from 1 July 2014.

Trip distance to the City of Melbourne
Average weekday trips 2009

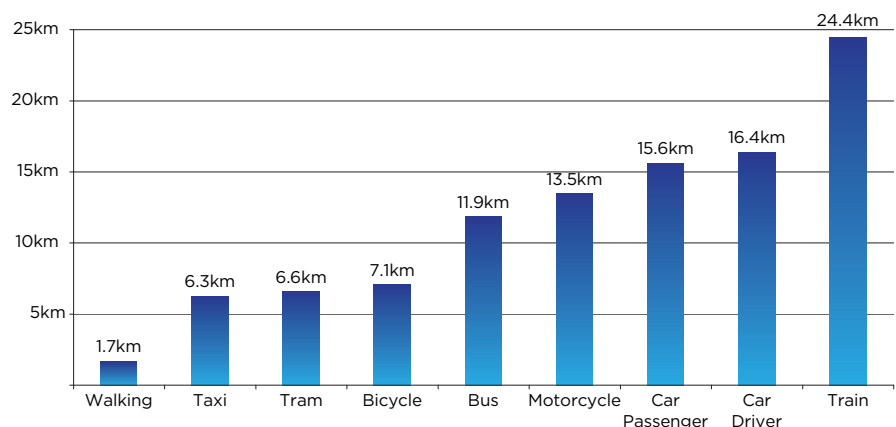
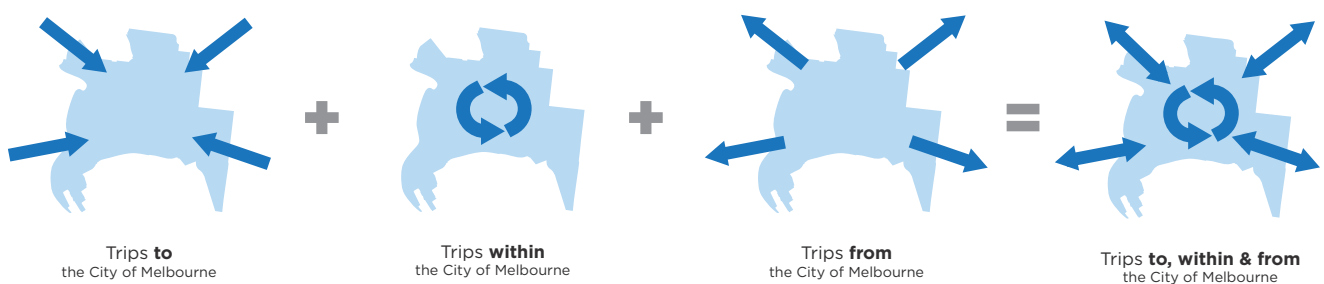


Fig 1.2

Source: VISTA 2009



Total trips to, within & from the City of Melbourne

Weekday current, forecast growth and target mode share

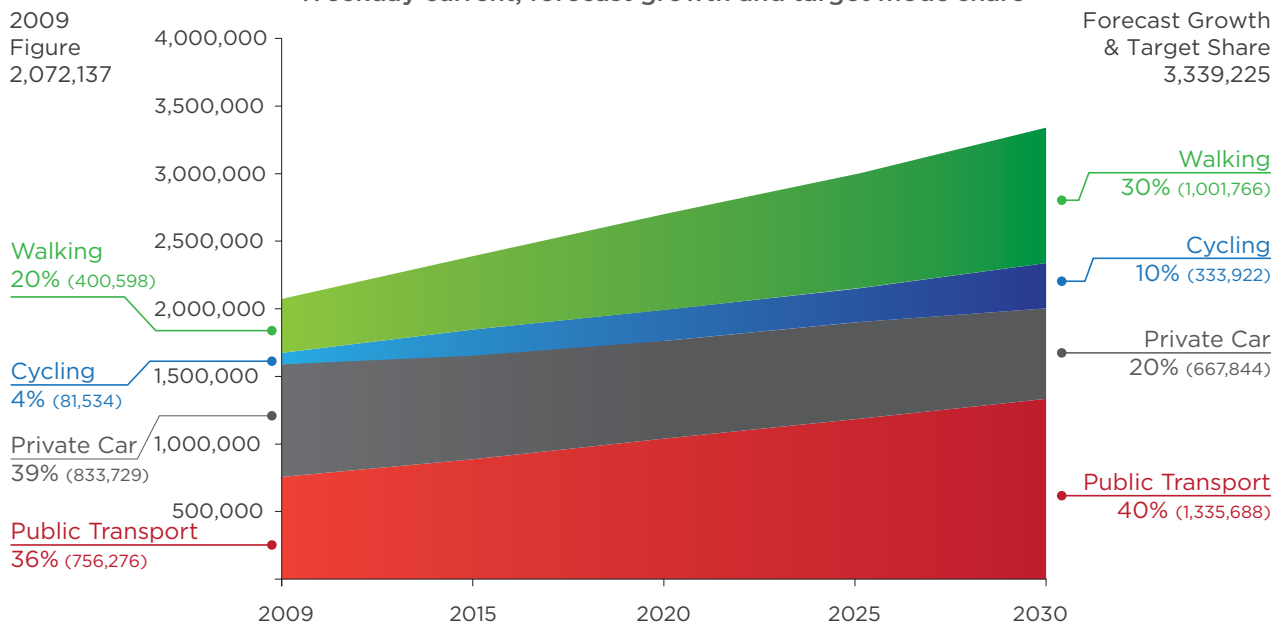


Figure 1.3

Source: 2009 mode share, Victorian Integrated Survey of Travel and Activity, Department of Transport

Weekday 2010 population & 2030 forecast, Central City User Survey, daily population estimates and forecasts model, 2011, City of Melbourne City research branch. 2030 amount of trips is based on current level of trips per person per day

Transport patterns in Melbourne

This strategy sets targets for the movement of people in Melbourne. The targets are for:

- Trips to the City of Melbourne;
- Trips from the City of Melbourne;
- Trips within the City of Melbourne;

According to the Victorian Integrated Survey of Travel and Activity, in 2009 there were around 2.1 million trips per day to, from and within the City of Melbourne. This number is predicted to increase to around 3.3 million trips by 2030 as more people come to live, work and play in the city.

The following graph shows the modes by which those trips were made in 2009 and the mode share targets for 2030.

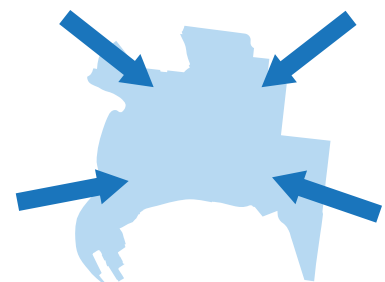
High level targets

By 2020

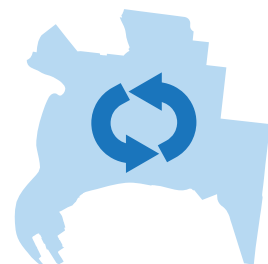
- 90 per cent of all commuter trips to the CBD will be by public transport, cycling or walking — the 2006 journey to work census figure was 72 per cent.

By 2030

- 80 per cent of all trips to the City of Melbourne will be by public transport, cycling or walking — the latest Victorian Integrated Survey of Travel and Activity (VISTA) 2009 figure is 50.9 per cent.
- Bicycle use will increase by 400 per cent from 4 per cent to 12 per cent of all trips.
- 95 per cent of all trips within the municipality will be by public transport cycling and walking — the latest VISTA 2009 figure is 84 per cent.



Trips **to**
City of Melbourne



Trips **within**
City of Melbourne

Figure 1.4 & 1.5 (right)

Source: 2009 mode share, Victorian Integrated Survey of Travel and Activity, Department of Transport. This does not include commercial deliveries.

Weekday 2010 population & 2030 projection based on Central City User Survey, daily population estimates and forecasts model, 2011, City of Melbourne City research branch
2030 amount of trips is based on current level of trips per person per day

Weekday trips to the Municipality

Current, forecast growth and target mode share

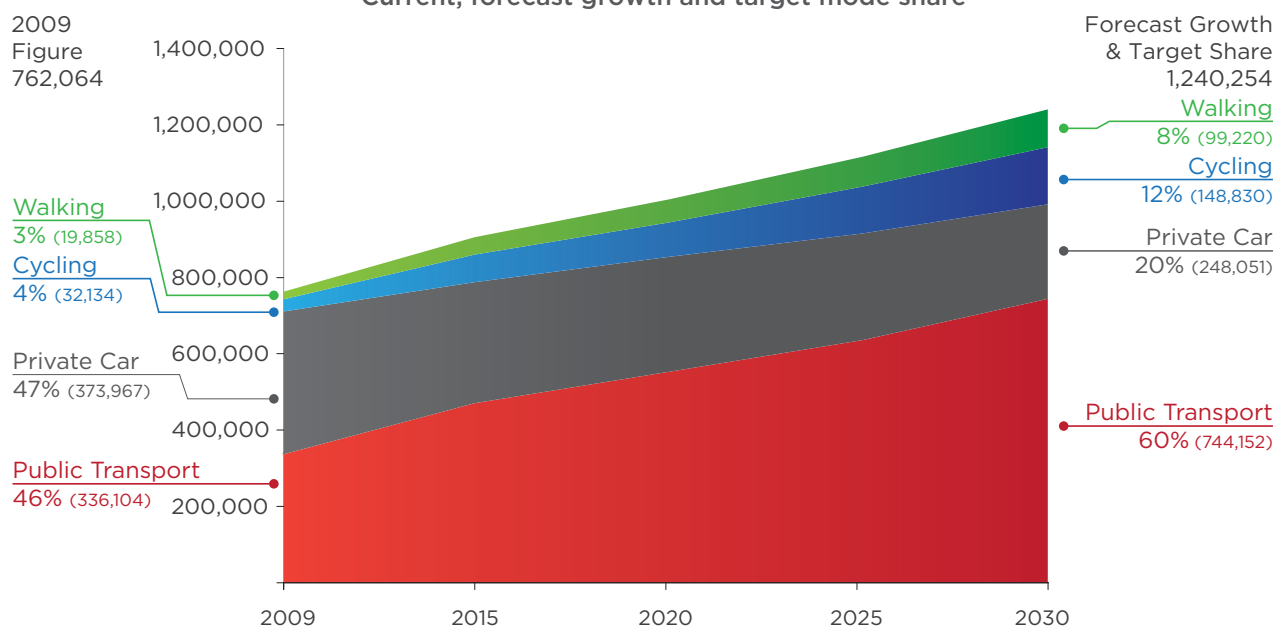


Figure 1.3

Weekday trips within the Municipality

Current, forecast growth and target mode share

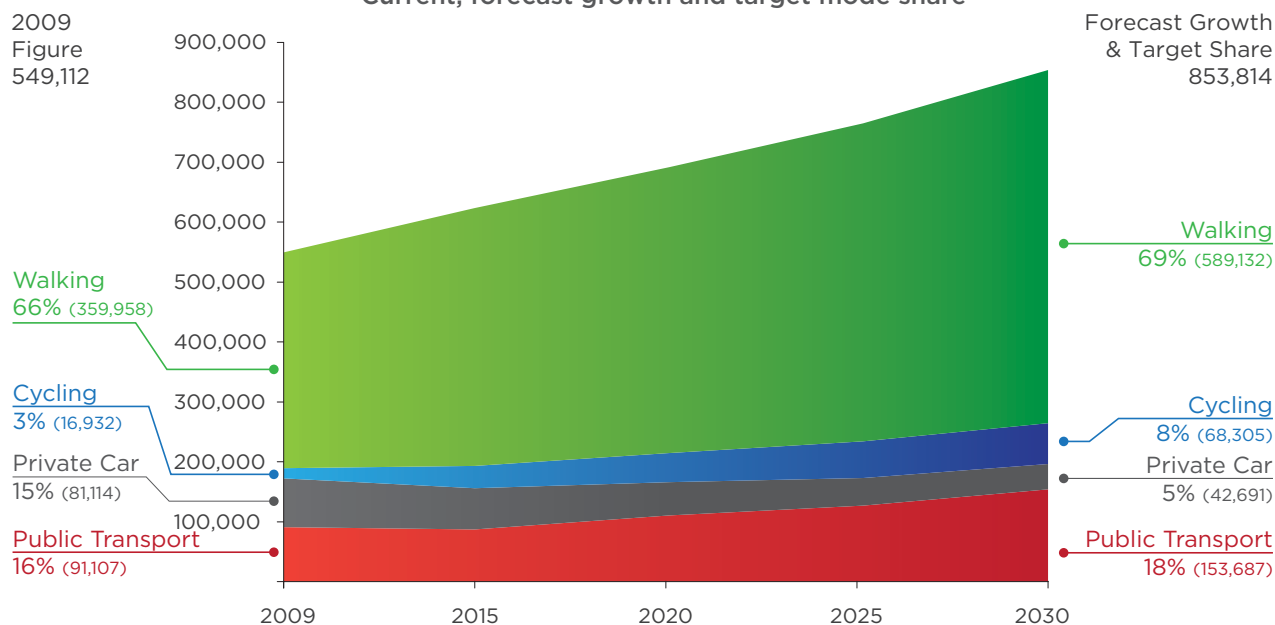
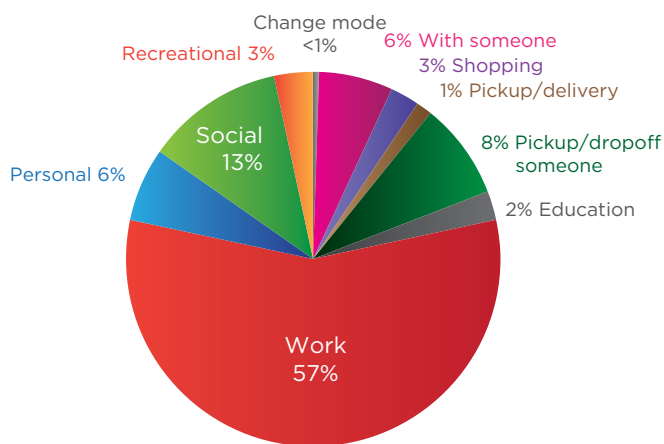


Figure 1.4

Car trips by purpose To the City of Melbourne 2009



Source: VISTA 2009

Fig 1.6 Average weekday car driver and passenger trips to the City of Melbourne by purpose 2009. This does not include commercial deliveries.

Policy targets

By 2016 (the term of the 2012-2016 Melbourne City Council):

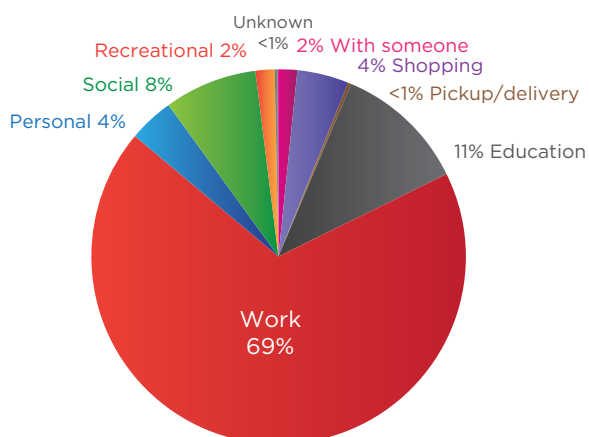
Bicycles

- Bicycles trips to the municipality and six per cent of all trips within the municipality — the latest VISTA 2009 figure for each was four per cent.
- Planning scheme is amended to increase provision of off-street bicycle parking in inner Melbourne.
- 30 new on-street bicycle parking corrals are installed.
- Two fully-connected east-west and two north-south separated bicycle routes are constructed in the Hoddle Grid.
- A map of the quality of the inner Melbourne bicycle network is published regularly.

Pedestrians

- Pedestrians account for six per cent of trips to the municipality — the VISTA 2009 figure was 2.6 per cent — and 80 per cent of all trips within the municipality — the Vista 2009 figure was 65.6 per cent.
- Master plans are completed to maximise pedestrian access to key public transport nodes including all City Loop and Melbourne Metro 1 stations, and key trams stops.
- Pedestrians are given priority in traffic signal operation at all key intersections in the Central City.
- Pedestrian death or major trauma from road accidents is reduced by 25 per cent.

Public Transport trips by purpose To the City of Melbourne 2009



Source: VISTA 2009

Fig 1.7 Average weekday public transport trips to the City of Melbourne by purpose 2009. This does not include commercial deliveries.

Cars

- Review car parking rate controls in the Melbourne Planning Scheme for non-residential uses outside the Capital City Zone.
- A minimum of 300 on-street car share spaces are installed in the City of Melbourne, of which 50 are in the Hoddle Grid.
- 40 kph is implemented as the speed limit in central Melbourne.
- New network operating plan is approved and 50 per cent of Hoddle Grid signals are changed to prioritise efficient transport modes.

Trains

- Construction has commenced on the Melbourne Metro line.
- Regional Rail Link is complete and operating.
- Peak hour (peak direction) train frequency is increased by more than 50 per cent from the current 115 services.

Trams

- 90 per cent of tram stops in the municipality are level access stops.
- Average tram speeds in the municipality are increased by 20 per cent and reliability is improved due to signal priority, level access stops and tram lanes.
- Tram frequency is increased to a minimum of 10 minute frequencies, where these levels are not currently met.

Buses

- Queen Street and Lonsdale Street are optimised to reduce bus travel times by 30 per cent

in the city and improve reliability.

- Blue Orbital (inner metropolitan) SmartBus route is operating.

Governance

- Transport and land use systems in central Melbourne are being planned and managed in a transparent and integrated manner, with the participation of key agencies including the Department of Transport, Department of Planning and Community Development, VicRoads, the City of Melbourne and others.
- A program of enforcement is improving the operation of on-road public transport in Melbourne.

Data

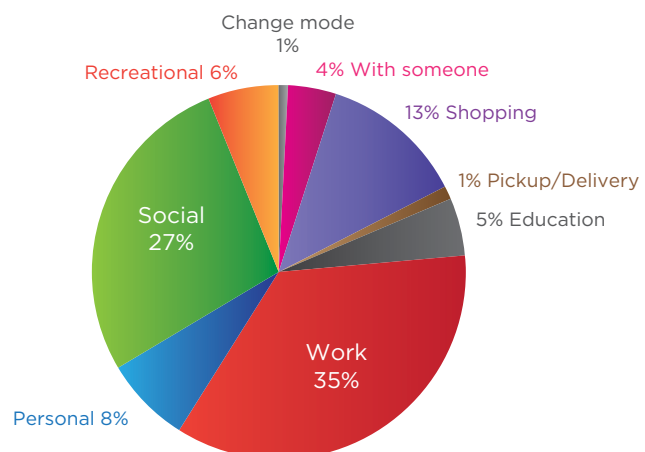
- A Melbourne Transport Account is published regularly, indicating progress towards

strategic transport goals for central Melbourne.

Communications

- A coordinated communications campaign is informing travellers about appropriate travel choices and behaviours in Melbourne.

Walking trips by purpose Within the City of Melbourne 2009



Source: VISTA 2009

Fig 1.8 Weekday walking trips within the City of Melbourne by purpose 2009. This does not include commercial deliveries.

2 Making Melbourne a connected city

Planning for future growth

The metropolitan growth trend in the west

Metropolitan Melbourne is a sprawling metropolis of 7,700 square kilometres with a population of just over four million. There are five outer metropolitan economic sub-regions surrounding the inner metropolitan region.

The inner region includes the municipality of Melbourne, the area immediately outside the municipality and the middle eastern and southern suburbs.

Metropolitan growth has been skewed to the east and south east of the central city.¹ The highest concentration of jobs is along the inner south eastern corridor from the central city to approximately Clayton. This concentration of jobs is enabled by a rich infrastructure of roads, rail and tram which provides businesses with a high degree of accessibility.

Metropolitan Melbourne's growth by one million people by 2030 is expected to occur mainly in the western half of the metropolis. One of the key challenges for metropolitan planning is matching this residential growth with jobs growth in the west.

Traditionally jobs in the west have been in manufacturing but this sector has been in relative decline and is unlikely to be a major source of future jobs growth. The current and future jobs growth is in the knowledge/service sector. In the west this sector will be fostered by

¹ The metropolitan population is centred 10km south east of the Central City at Glen Iris.



Fig 2.1 Self contained employment regions. Source: SGS Economics

intensive development of the mixed use activity centres at Footscray, Sunshine, Sydenham and Werribee.

Business growth in these urban centres will require improved transport connections, particularly to provide high levels of accessibility to the employment centre in the central and inner eastern areas. These connections will also give residents in the west better access to jobs in the centre and inner east. Because much of this improved east-west connectivity would be to, and through, the municipality of Melbourne, it is also an important focus of this strategy.

Growth in the municipality of Melbourne

The City of Melbourne has an area of 37.7 square kilometres and a residential population of 96,000. It is the economic and cultural heart of metropolitan Melbourne. Each workday about 787,000 people travel into the municipality to work, study and visit. Most come into the central city, an intensive activity area of 15 square km.

Over the last 20 years this area has expanded from the Hoddle Grid area (the traditional CBD) to include Southbank and Docklands.

The growth surge in the municipality which began in the 1980s is predicted to see a doubling of the residential

population to 180,000, and an increase of more than 110,000 jobs (currently 430,000) by 2030. The number of people coming into the municipality each weekday for work, recreation, education, and other purposes is expected to grow from 780,000 in 2011 to over 1.2 million per day by 2030.

The City of Melbourne is planning for much of this growth to be accommodated by intensified development of urban renewal areas within the municipality. These areas will need to be serviced by efficient and effective transport locally and to the wider metropolitan and inner metropolitan regions.

The aim of this strategy is to ensure that access and mobility to and around the City of Melbourne meets future demands, while improving prosperity, sustainability and liveability.

Economic prosperity

The economic importance of the municipality of Melbourne

The City of Melbourne is Victoria's capital city municipality and primary business and activity destination. Twenty one per cent of Victorian jobs, are located in the municipality, and 40 per cent in inner Melbourne. The municipality is an international hub for trade, business, retailing, education, science, arts, culture, freight logistics and industry.

The municipality's productivity is essential for the prosperity of Melbourne, Victoria and the nation. In 2008, the gross local product of the municipality was an estimated \$45 billion, approximately 24 per cent of the gross state product (GSP) of the

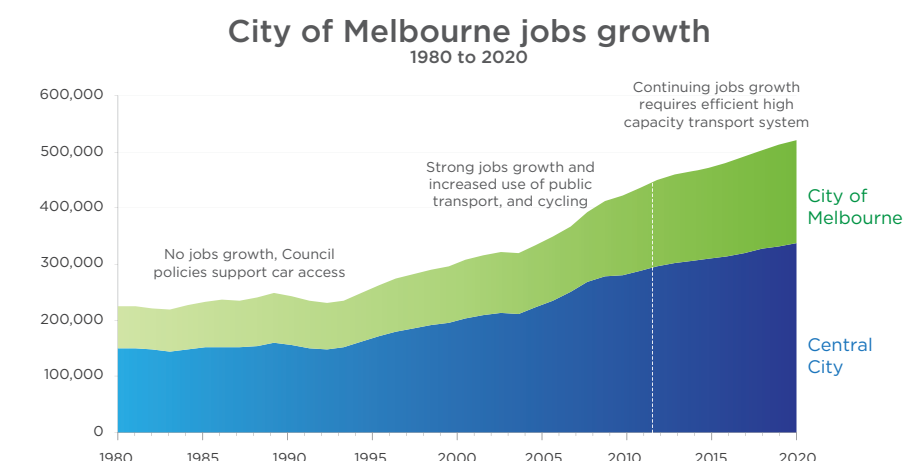


Fig 2.2 City of Melbourne jobs growth 1980-2020

Melbourne Statistical Division and 18.5 per cent of Victoria's GSP.

The knowledge/services economy enabled by excellent transport

Melbourne's decline in manufacturing competitiveness has been compensated by the growth of its new knowledge/service economy.

Knowledge/service sector businesses seek to agglomerate

in dense urban locations, enabled by high levels of transport accessibility, because this results in greater economies of operation, increased rates of knowledge transfer and innovation, and higher levels of specialisation. This is why the municipality is an attractive location for this sector. Melbourne's central city is the hub of Victoria's knowledge/services economy with finance, insurance, personal, property and business

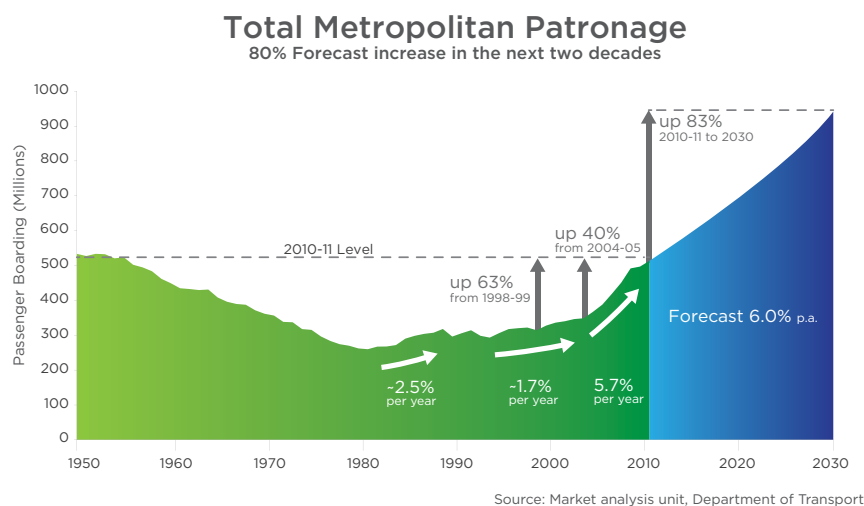


Fig 2.3 Department of Transport total metropolitan public transport patronage

Work trips by mode

To the City of Melbourne 2009

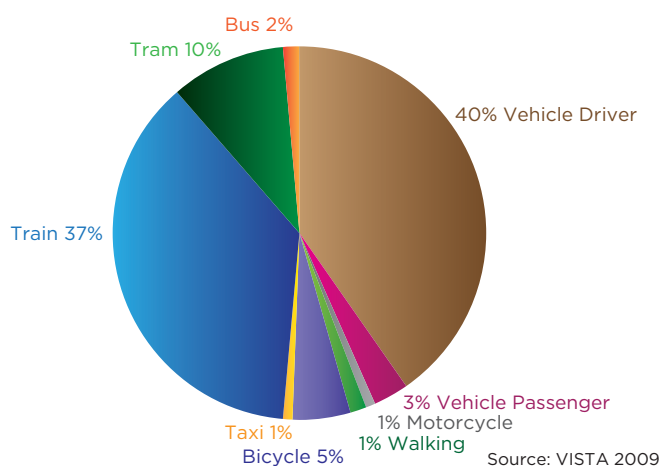


Fig 2.4 Weekday work trips to the City of Melbourne by mode 2009

services. Jobs in these areas are forecast to grow and the central city footprint must expand to accommodate this growth.

Transport enabled agglomeration can be measured by Effective Job

Density (EJD)². EJD maps the density of businesses and their degree of connectedness to other businesses and the labour market pool. Metropolitan Melbourne's highest EJD area is in the inner

metropolitan region, with the peak in the municipality of Melbourne. This high EJD is achieved by the accessibility afforded to businesses by the private and public transport services in these areas.

In past decades, the car has been the dominant enabler of this accessibility. Train and tram services and walking however, are growing in importance because they are better at servicing this high density agglomeration. These modes are also needed to underpin the expansion of the central city to the inner west of the municipality, the Footscray Central Activities Area and subsidiary centres in the west.

Melbourne as a 24-hour city

Over the past decade the city has attracted a diverse and vibrant mix of residents, visitors and business using the city 24 hours a day, seven days a week.

This has underpinned economic and cultural development and has seen the city develop into an internationally recognised location in which to live, work, visit and socialise.

Melbourne's vibrant night-time economy is a major contributor to its status as a world leading cultural city. However, as the city stays awake longer, there is a need to make policy and operational decisions to manage the competing demands of the groups who visit the city, as well as those who live and work there.

Liveability and social inclusion

Since the 1990s, 30,000 new residents have come to live in the municipality. Most of this new residential population is living in high density apartment

Work trips by mode

Within the City of Melbourne 2009

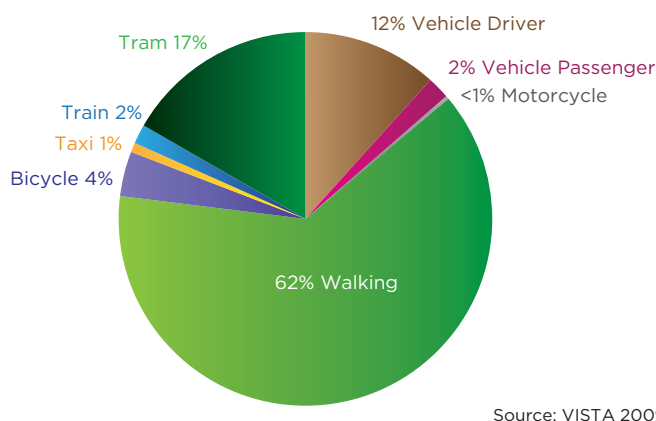


Fig 2.5 Weekday work trips within the City of Melbourne by mode 2009
Source: VISTA 2009; Melbourne Planning (2010) Employment Land Study; Kensington North Melbourne, for the City of Melbourne

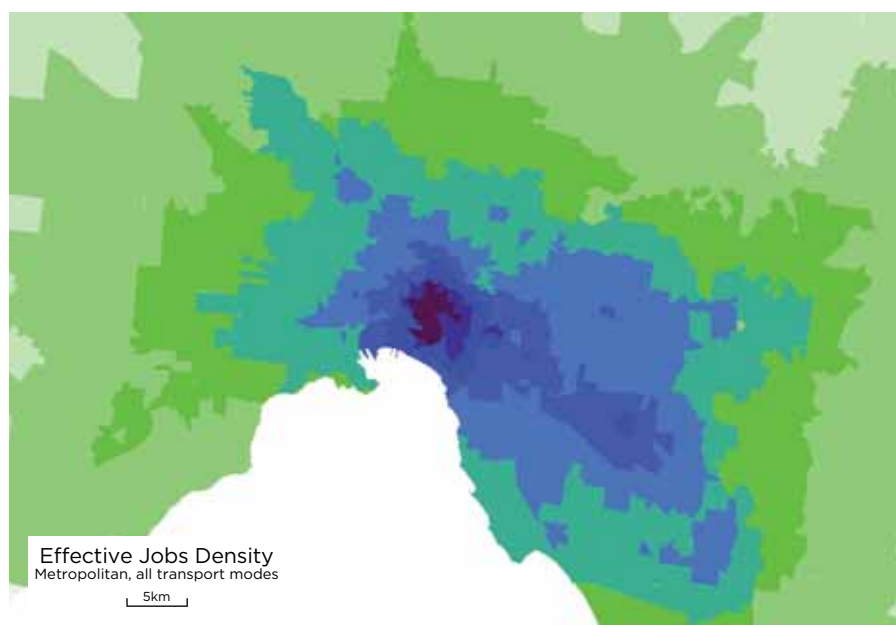
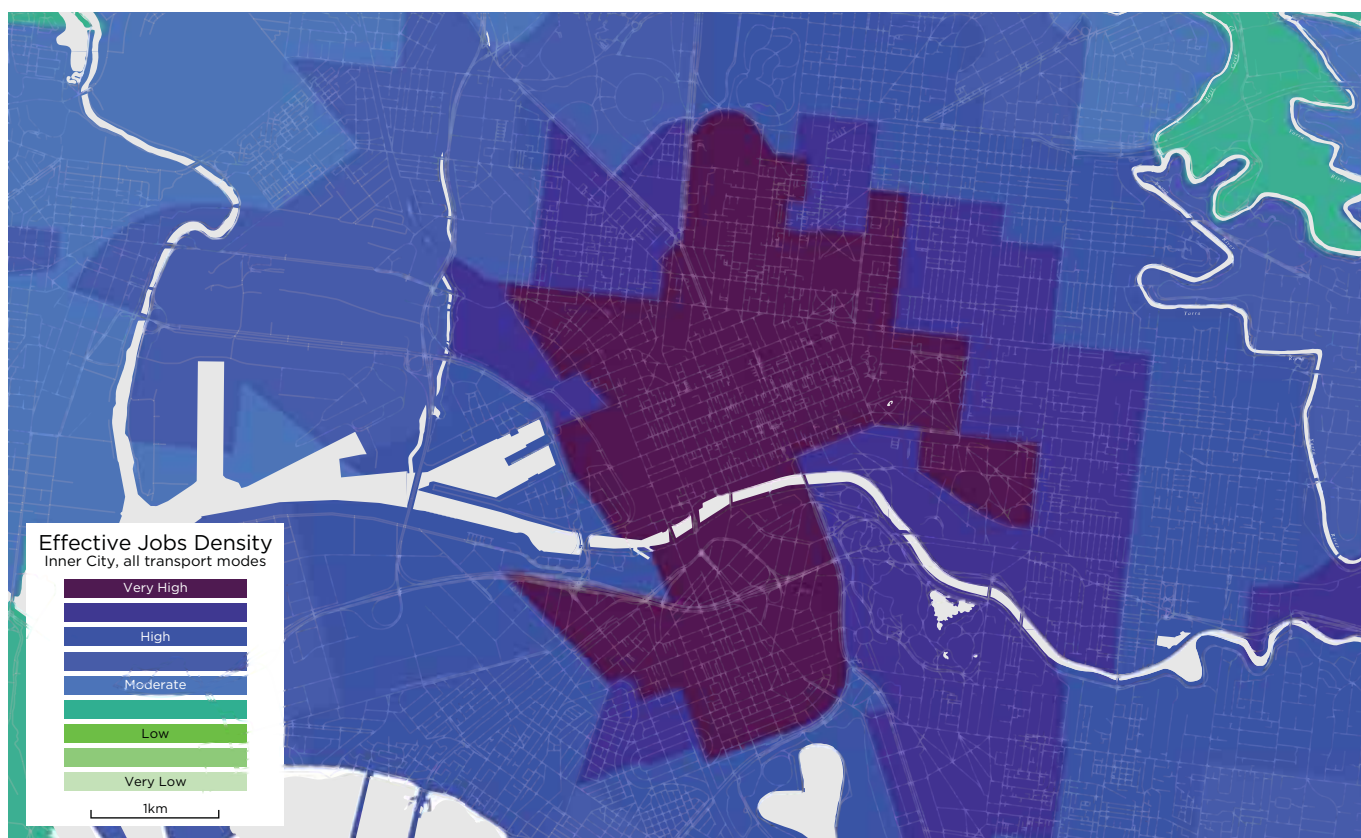


Fig 2.5 Effective Jobs Density Source: SGS Economics

dwellings, 20,000 in the central city. These residents are attracted to live in the city for many of the same reasons as business – close access to a very wide range of employment, social, entertainment, shopping, cultural, recreational and transport opportunities and services. Residents of public housing make up 10 per cent of dwellings in the municipality.

Most residents in the municipality have access to tram, train and bus services that provide them with above average public transport accessibility and 69 per cent of all trips in the municipality are by walking.

A very high proportion of apartment residents in the municipality's two main urban renewal areas walk to work – 34 per cent in Docklands and 48 per cent in Southbank. Future urban renewal will be designed to provide similar or better levels of access by public transport, walking and cycling.

Disability access

Approximately 18 per cent of the Victorian population has some form of disability. This strategy incorporates the City of Melbourne's policy commitments³ to ensure access to the municipality's publicly accessible spaces and places for all abilities and ages.

The Disability Discrimination Act (DDA) requires 90 per cent of the public transport system to be compliant with the act by 2017. This strategy incorporates these objectives to ensure those with disabilities can access train, trams and buses. DDA compliant access

³ City of Melbourne – Children's Plan (2010) and Disability Action Plan

Melbourne as a 24 hour City

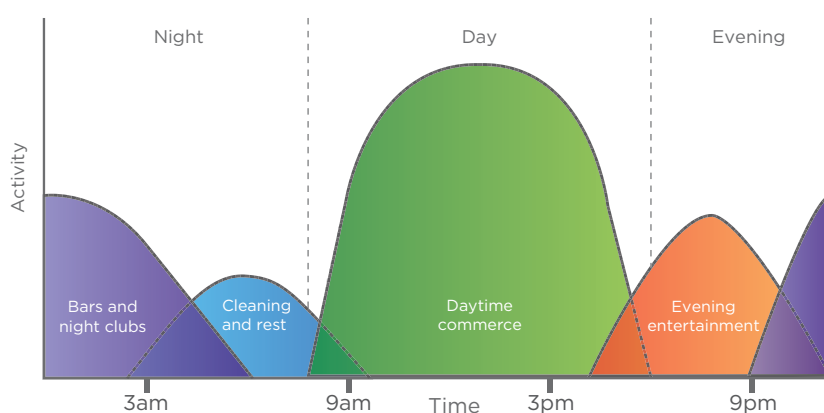


Fig 2.4 City of Melbourne 24-hour city rhythms.

also means quicker and easier access for able bodied users and for users with pushers and trolleys.

Equitable access to the central city

Residents and businesses in Melbourne's inner and middle eastern suburbs have above average to very good access to the municipality and central city. With most metropolitan growth likely to occur in the west, significantly improved transport connections from the west to the central city and to the inner and middle east are needed to provide residents and businesses in the west with more equitable access to the high density of jobs and services in those areas.

Transport and Health

Transport consequences for human health are varied and range from direct effects like noise and air pollution to less direct effects such as more sedentary lifestyles. The benefits of addressing these issues are spread across health, environment and transport which create a challenge for

integrated and coordinated responses from government.

Physical activity

There are significant benefits to increased physical activity and transport provides a major opportunity to increase physical activity through increased levels of walking and cycling. Creating the conditions in which healthy lifestyles become embedded in our social and physical infrastructure is a key step in addressing these issues.

Air quality

Transport is a major source of urban air pollution which in turn imposes significant health impacts on the community. Human health effects range from mild respiratory effects, through to asthma, cardiovascular conditions and premature mortality. Despite substantial reductions in the levels of many ambient air pollutants, several remain of policy concern. These are particulates and the precursors to photochemical smog—nitrogen oxides and volatile organic compounds. Motor vehicles are the major source of

the precursors to photochemical smog in Australian capital cities.⁴

Environmental sustainability

The transport integration act requires that the transport system actively contribute to environmental sustainability by protecting the natural environment, minimising harm to the broader environment, promoting more sustainable modes of transport and improving the environmental performance of all modes of transport.

This can be achieved by:

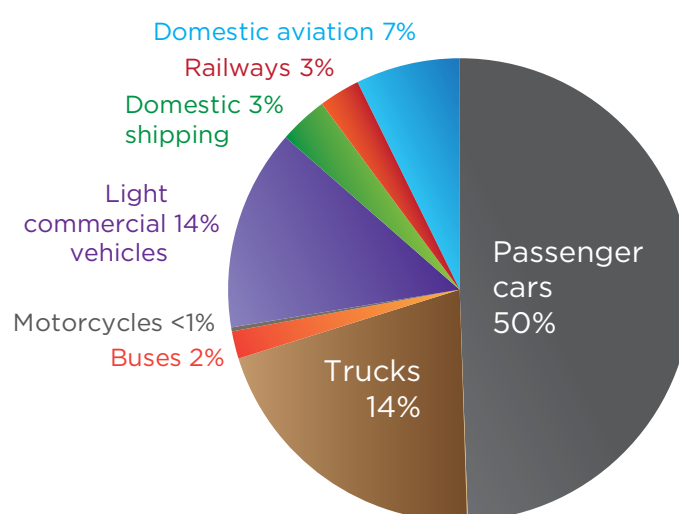
- adapting the transport system to a changing climate
- ensuring transport infrastructure practices are resource-efficient and environmentally friendly
- reducing travel distances
- increasing the use of environmentally sustainable transport
- ensuring all forms of transport are more resource efficient and environmentally friendly.

Transport emissions

Transport emissions are the result of the quantity and type of transport being used. There are many kinds of emissions that have a significant effect on human health and the environment. Substantial growth in the demand for travel in Victoria is predicted over the coming decades. This growth must be accompanied by

⁴ Bureau of Transport and Regional Economics (2005). *Health impacts of transport emissions in Australia: economic costs*. Canberra, Department of Transport and Regional Services.

Transport emissions in 2009



Source: Department of Climate Change and Energy Efficiency

Fig 2.6 Transport emissions

a shift to low emissions modes of transport and an improvement in vehicle fuel efficiency to prevent a significant increase in emissions.

Greenhouse emissions

A framework for reducing greenhouse gas emissions (GHG) associated with the municipality is set out in the City of Melbourne's Zero Net Emissions by 2020 (Update 2008).

Transport emissions associated with the municipality of Melbourne accounted for 20 per cent of all GHG emissions in 2005-06 and this is predicted to grow by 61 per cent by 2020. Passenger transport (road and rail) accounts for 12 per cent of total emissions, with freight at 8 per cent.

The focus of transport solutions in the Zero Net Emissions strategy is on passenger transport. Passenger cars are the largest contributors to

transport emissions. The primary source of passenger transport emission reduction in the short-to medium-term (and which the City of Melbourne can reasonably influence) are policies and actions to facilitate a mode shift away from cars to public transport, cycling and pedestrian options.

Carbon price and transport

The federal government's Clean Energy Future Plan (CEF) includes a carbon price from 1 July 2012. Emissions from domestic aviation, shipping and rail transport will be covered however, the carbon price will not apply to fuel use by households for transport and light on-road commercial vehicles. Insulating private vehicle travel from the carbon price, while applying it to other more sustainable transport, like public transport, may have a negative effect on achieving the mode

share targets outlined in this strategy. It is important to begin moving to low carbon forms of transport sooner rather than later.

The relative impact that the CEF will have on the cost of driving and public transport needs to be understood and accounted for. However the combination of a carbon price and volatility in the global price of oil means that transport emissions are likely to become an economic issue as much as an environmental one.

Electric cars

Passenger cars are the largest source of GHG emissions in the transport sector, accounting for almost half of transport emissions in 2009. These emissions are primarily related to vehicle kilometres travelled and the fuel efficiency of the vehicle fleet. Electric cars have lower emissions and are not reliant on petrol for fuel. The higher costs of electric vehicles are expected to reduce over the next 10 to 20 years. Hybrid and fully electric freight vehicles are also expected to play a significant role in the future reducing the pollution and amenity impacts of urban freight.

Electric vehicles appear likely to become more prolific over the next 20 years. This increase will reduce noise and air pollution, however, it will not change the transport characteristics of driving and it will not lower greenhouse gas emissions while Victoria's electricity comes from burning brown coal. A combination of train, tram, walking, cycling and reducing the overall need for travel through land use policies will remain intrinsically more energy and logistically efficient for the city's core transport tasks.

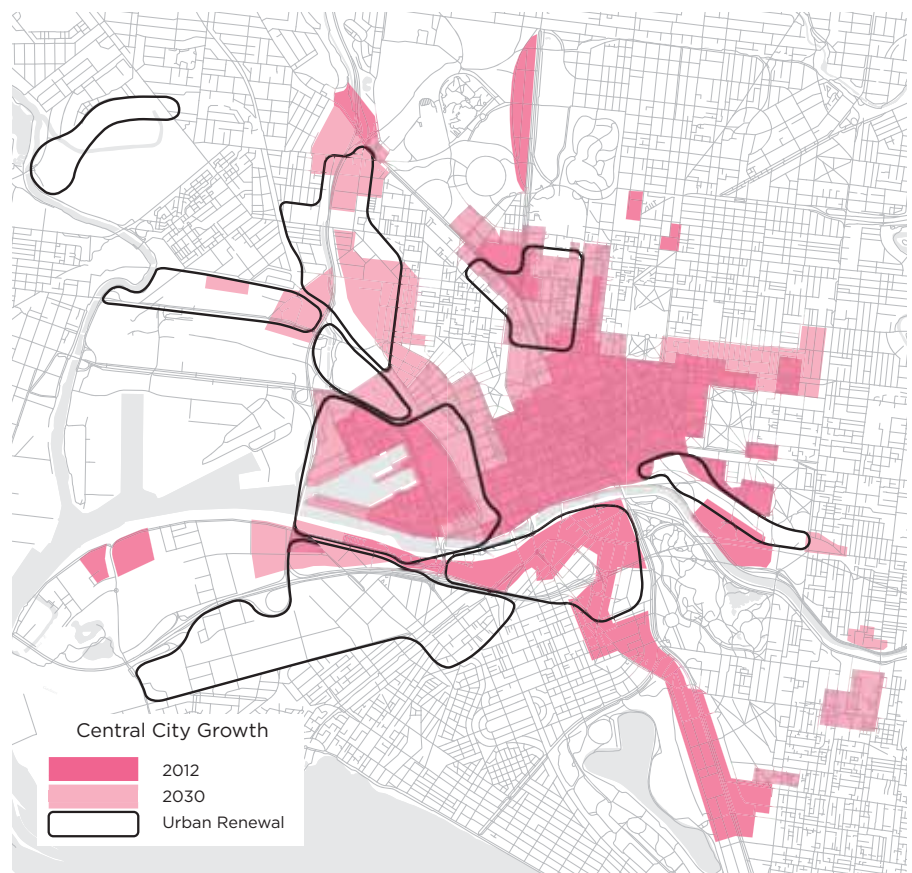


Fig 2.7 Central city growth scenario and urban renewal areas.

Energy cost vulnerability

CSIRO predictions of oil price rises indicate that petrol prices in Australia could be between \$2 and \$8 per litre if there is a near-term peak in international oil production, resulting in declining future oil supplies⁵. A significant factor behind the surge in public transport patronage during 2006 and 2008 was the rise in petrol prices.

Large residential areas of metropolitan Melbourne are

dependant on car access and are therefore vulnerable to oil price rises⁶. This strategy and the Municipal Strategic Statement will increase the provision of urban development that is efficiently serviced by good public transport, and will reduce Melbourne's vulnerability to transport energy cost increases

⁵ CSIRO (2008) *Fuel for thought: The future of transport fuels: challenges and opportunities*. CSIRO Corporate Centre

⁶ Vampire index, from Dodson, J. & Sipe, N. (2008) *Unsettling Suburbia: The New Landscape of Oil and Mortgage Vulnerability in Australian Cities*. Griffith University Urban Research Program, Research Paper No. 17

Climate change adaptation

The City of Melbourne developed its Climate Change Adaptation Strategy in 2009. The strategy identifies key risks to the City of Melbourne, several of which have implications for our transport system. They include consideration of the impact of the transport system on the environment as well as how a changing climate will impact on the functioning of the transport system.

Of the key adaptation risks to the City of Melbourne, heat waves, intense rainfall and wind storm events are the most likely to effect our transport systems and are expected increase in intensity and frequency,

Extreme heat can severely impact train and tram networks due to rail infrastructure vulnerability and power supply issues.

The train system is highly interdependent. Failures at one location can quickly impact the whole network. Heat stress can also lead to passenger illness causing significant train delays.

Mitigating the urban heat island effect

Many dense urban environments suffer from the urban heat island effect due to the build up and retention of heat in buildings and pavements during summer. This effect increases the temperatures of hot summer nights in the city by as much as four degrees. It increases air conditioning loads, premature death and the risk of anti-social behaviour. City of Melbourne Climate Change Adaptation Strategy (2009) predicts an increasingly hotter and drier climate for Melbourne

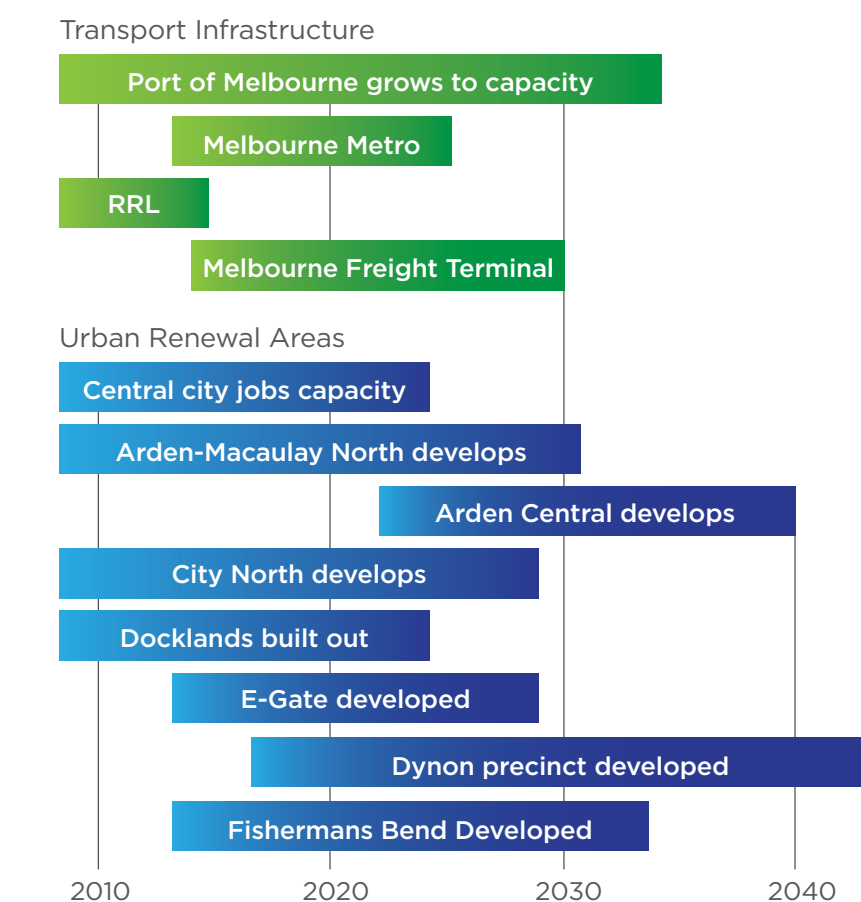


Fig 2.8 Future inner Melbourne land renewal build out scenario

and identifies this effect as one of the key associated risks. The most effective means of mitigating the effect is by building a functioning healthy urban street tree canopy to provide shade and cooling (by evapotranspiration)⁷ to reduce heat absorption and emission from the built environment. During the daytime, the street tree canopy also improves human thermal comfort

in the street for pedestrians and cyclists, and reduces air conditioning loads in vehicles. In this context, street trees play a part in the effectiveness and fuel efficiency of the municipality's transport system. The City of Melbourne's approach to managing its urban forests is outlined in its Urban Forest Strategy 2012-2032.

⁷ City of Melbourne (2011) draft Urban Forest Strategy; Making a Greener City 2012-2032

Integration of transport and land use

Urban renewal in the municipality

The decline of manufacturing and the rationalisation of freight logistics in the municipality provides significant urban renewal opportunities. This enabled development of Southbank and Docklands. Within the municipality of Melbourne there remain about 400 hectares of relatively underutilised industrial/freight land close to the central city.

This land provides a significant competitive advantage for Melbourne and Victoria. Through urban renewal it can be activated into new high-density, mixed-use developments as attractive places to live, and productive places for businesses and high value jobs. It can provide space for central city's continued expansion.

The Municipal Strategic Statement sets out a high-level, integrated transport and land use strategy for accommodating the residential and business growth through the development of the urban renewal areas. The mobility needs of these high-density areas would be primarily served by the space efficient modes of walking, cycling and public transport.

The Municipal Strategic Statement proposes that between now and 2030, land will be developed in Docklands, E-Gate, City North and then into the Arden/Macaulay and Dynon areas. This will form a high-density activity and employment corridor contiguous with the Footscray Central Activity Area.

This transport strategy shows in more detail how the Municipal Strategic Statement urban renewal

strategy will be integrated with, and enabled by, the provision of high quality access and mobility infrastructure and services.

Coordination of transport systems

Growth and transport mode shift transition

Since the 1990s, the municipality has moved into a mode shift transition. Rates of driving in Melbourne have generally levelled off since 2003⁸. Between 1990 and 2007 the share of all weekday trips into the municipality made by car declined from 65 per cent to 45 per cent in a context of very strong residential and worker population growth in the same period. Whereas travel by public transport, cycling and walking have all increased. This trend is predicted to continue and is reflected in the 2030 target for public transport, cycling and walking to comprise 80 per cent of all weekday trips to the municipality.

The mode share targets in this strategy for weekday trips into the municipality and for weekday trips within the municipality factor in this population growth.

Effective and integrated public transport

Our definition of public transport includes train, tram, bus, taxi, car share and bike share and, for regional trips, air travel – all cases of the use of a shared vehicle. Government plays a major role through ownership,

operation, regulation and coordination of these services.

State Government is largely responsible for running much of the public transport system, but local government, as the land use regulator and the manager of the pedestrian network, has a key role integrating the public transport system with land use development in the municipality and with the walking component of each public transport trip. The City of Melbourne has an additional role as it is at the hub of the public transport system.

Train and tram are the most effective means of moving large numbers of people safely and efficiently. Currently, about the same number of people take public transport to the municipality on a weekday as drive, but this strategy envisages they will account for 60 per cent of these trips by 2030.

The city's transport systems should be useable and navigable by the widest possible cross section of the public – for people from the ages of eight to eighty, men and women and for visitors.

This is a high priority for this strategy and will require a close collaboration between State Government and the City of Melbourne. The key tasks are to significantly upgrade and expand networks and rolling stock, increase the speed, frequency and reliability and provide safe and convenient pedestrian access to and from all stations, stops and interchanges.

Flexible and adaptable private transport

Government, and particularly local government, has a significant role in developing, maintaining and operating the

⁸ Newman, P. & Kenworthy, J. (2011) 'Peak Car Use': Understanding the Demise of Automobile Dependence. *World Transport, Policy & Practice*. Vol. 17.2, June 2011

road and path network required by pedestrians, cyclists and drivers.

Pedestrians and cyclists are vulnerable road users and their safety is a critical factor. Cycling and walking are also effort-sensitive modes and need to be provided with routes that take this into account: for example the most direct, and least hilly. For this reason, walking and cycling should have as wide an access as possible to the whole road and path network and that network needs to have a fine grain. Walking and cycling are ideal for direct door-to-door trips.

Walking is part of any public transport trip. Together, walking and public transport account for the majority of all weekday trips into and within the municipality, and this is targeted to increase as priority is given to both. Cycling is also a good complement to public transport. It can significantly extend the catchment of rail stations when combined with a rail trip.

Walking will remain a marginal mode for trips into the municipality. Cycling is likely to grow more strongly as the safe cycling network is expanded around and within the municipality.

Driving is predicted to continue to decline as a proportion of weekday trips, as improved public transport increases its share. It is anticipated that driving will also decline in absolute terms, as the tram and bus networks to and through the municipality are provided optimum road priority and pedestrian access. Driving into and within the municipality will become a complementary mode, catering for those more specialist trips that cannot be achieved by public transport, walking or cycling.

Efficient urban freight

The movement of goods and services to and from the municipality is critically important for the city and the state's economy. The two focal areas for freight are the Port of Melbourne and the central city.

The Port of Melbourne is central to Victoria's import and export markets. It is Australia's largest port and continued significant expansion of throughput is predicted up to 2035. This growth requires major infrastructure upgrade of rail and road freight distribution systems.

In the short term this freight growth will be taken up on road. Direct and efficient access to the metropolitan freeway/tollway network will be vital. Longer term, rail capacity will be developed, including the Melbourne Freight terminal south of Dynon Road. Urban renewal around the port and freight terminal precinct will need careful planning to ensure it does not inhibit freight efficient operations.

The central city's intensive land uses require high levels of goods and services deliveries and waste collection. This freight is provided by many different operators, resulting in overall logistics inefficiencies.

This is a large and often intrusive component of traffic on the municipality's roads. This strategy identifies the need to develop more efficient solutions to reduce the overall cost of this freight task and reduce its impact on the roads and general urban amenity.

Better transport information systems

Public transport's customer information user interfaces are extremely important for ease

of journey planning, payment, navigation and orientation. Rapid innovation using mobile devices, online journey planning, booking and payment and real time service status information is starting to enable convenient, personalised use of public transport services.

These information systems can now bring together all modes of public transport – rail, tram, bus, taxi, car and bike share – as one integrated service to meet the user's mobility needs. They also allow the public transport planners and managers to work together to optimise the efficiency, running costs and customer orientation of the system.

When integrated with similar advances in real time information and payment systems for drivers, cyclists and pedestrians, the separation between public and private transport begin to dissolve. This empowers users to make informed choices to meet their mobility needs using all the modes at their disposal.

Increasing the deployment of this information technology will be a powerful agent for the behaviour change needed for the modal shift envisaged in this strategy. Improved information systems are also important to manage mass public transport interruptions and failures caused by heatwaves or storm events. These technologies will also revolutionise how those with disabilities can access and navigate city transport.

Increased innovation and implementation of these approaches will require closer collaboration between transport providers and planners and increased data sharing between providers, as well as information technology innovators wherever they are.



Flexible and adaptable private transport



Flexible and adaptable private transport

Goal

The city's private transport networks will complement the public transport system, and will enable people to move easily around the municipality. Walking and cycling will develop as predominant local modes of inner urban travel, while the role of the car will change to a niche mode for specific journeys.

Overview

Government, and particularly local government, has a significant role in developing, maintaining and operating the road and path network for pedestrians, cyclists and drivers.

Pedestrians and cyclists are the most vulnerable road users and safety is a critical factor for them. They also need routes that require less effort – the most direct and the flattest. For this reason walking and cycling should have as wide an access as possible to the whole road and path network and that network needs to be fine grain. Walking and cycling take people from door-to-door.

Walking is part of any public transport trip. Together, walking and public transport account for the majority of all weekday trips into and within the municipality, and this is targeted to increase as priority is given to both. Cycling is also a good complement to public transport. It can significantly extend the catchment of rail stations when combined with a rail trip.

For trips into the municipality, walking is and will remain a marginal mode. Cycling is likely to grow as the safe cycling network is expanded around and within the municipality.

Driving is predicted to continue to decline as a proportion of weekday trips as improved public transport increases its share. Further decline is anticipated as the tram and bus networks to and through the municipality are provided with optimum road priority for their vehicles and optimum pedestrian access to their stops. Driving into and within the municipality will increasingly develop as an important complementary

mode, catering for trips that cannot be undertaken by public transport, walking or cycling.

The impact of decades of investment in private car transport on urban form is evident in metropolitan Melbourne. Urban sprawl has been exaggerated by the creation of a road network that allows people who own cars to travel vast distances in relatively short times. The limitations of this network and this behaviour are becoming more and more obvious, and costly. It is now widely understood that continuing to invest in infrastructure dedicated to daily long distance car travel may threaten Melbourne's long term competitiveness and liveability.

Walking in conjunction with public transport

Making the city's walking and public transport systems balanced and supportive of each other will be a major focus for the City of Melbourne's investment and advocacy. The need for seamless pedestrian links between public transport stops and stations and the land uses on, and abutting, the street network, will become increasingly important considering the forecast growth in urban activity.

Walking is sensitive to distance, amenity and safety, and therefore requires significant support, especially from local government. The City of Melbourne has a strong history of designing and creating places for people, and this approach will be continued and advanced to link with the public transport network.

A complementary role for private car transport

The private car will continue to serve a unique role in the City of Melbourne's transport mix. This strategy proposes cars be managed in a way that they complement the service provided by other modes, and do not detract from the efficiency, amenity or safety of more important modes. Transport by private car cannot accommodate the current demand for peak travel, and will not be able to support the city's growth. It is imperative that cars are accommodated on our streets, but are managed in a way that enables the city to continue to grow as a liveable and vibrant place.

Increased cycling in the central city

Bicycle transport will be reinforced as a mode of choice for moving around the central city through measures which increase safety and convenience. The past five years have seen the City of Melbourne progress cycling infrastructure on many streets leading into the central city. Now it is time to provide high quality bicycle facilities on streets within the Hoddle Grid, so as to encourage everyday bicycle use in the city of Melbourne as well as make other innovative changes to make the city's entire road network much more bicycle friendly.

3

Walking city

Goal

The City of Melbourne will create an excellent and safe walking environment for residents, workers and visitors, with seamless high-priority links between the city's public spaces and the public transport system.

Context

In a connected city, walking has top priority over other modes of urban mobility.

Walking accounts for 66 per cent of all trips within the municipality. This is projected to grow to 69 per cent by 2030. With the number of daily city users predicted to increase from 800,000 today to over 1,200,000 by 2030, this will mean an increase of 64 per cent in the absolute numbers of walking trips.

Walking is the primary mode for short trips up to 1 km, but walking also starts and finishes trips made by all the other modes. Walking trips are important for the economy, with 36 per cent of walking trips being for business purposes, and it is the primary mode for shopping, tourism and city visitors. Walking has also grown as more people have come to live in the municipality – 49 per cent of Southbank residents and 34 per cent of Docklands residents walk to work.¹

Walking is an essential part of effective public transport. Patrons walk to and from the stations and stops and to make their connections between services. Safe, easy and disability compliant access to public transport vehicles at the stations and stops is critical for the effective operation of the public transport system.

The economic value of walking to cities has been described as the walking economy.

There is a direct link between the city's economic prosperity and the safety and convenience of the pedestrian experience.

The grand streets and hidden laneway of the Hoddle Grid and the broad promenades of Swanston Street, Bourke Street and the Yarra River, enhance the city's liveability, attracting businesses, visitors and shoppers alike.

Twenty years ago, the City of Melbourne set about transforming the municipality's walking environment. Guided by the Places for People studies in 1994 and 2004, the City of Melbourne began by widening footpaths, laying good quality pavements, encouraging outdoor dining, reducing traffic signal cycle times and building interesting pedestrian spaces to attract more residents to the central city and to support improvements to public transport.

Over this time the city has increased actual and perceived pedestrian safety with:

- level access trams stops
- zebra crossings
- safe staging points for pedestrians to cross busy roads
- shared zones which give pedestrians priority over motor vehicles and reduce speed limits to 10 kph
- 30 kph and 40 kph speed limits in key pedestrian streets

The City of Melbourne has applied to reduce the speed limit in the central city to 40 kph.

Issues

Growth in walking

The number of walking trips in the municipality will continue to grow and these will require an increased share of the fixed road space in the city.

¹ ABS (2006) *Journey to Work*

Footpath congestion and poor crossing opportunities

The design and capacity of many streets footpaths is not meeting the current and predicted volumes of pedestrians, resulting in congestion at the pedestrian peak times: the start and finish of the working day, lunchtimes and late night.

Movement priority

On many streets, pedestrian movement has been constrained by low priority at traffic signals and a lack of safe road crossing opportunities.

Sub standard walking conditions to and from public transport

Current public transport use is not being matched with provision of a safe, comfortable and easy pedestrian access at and between stations and stops.

Increase the rate of disability access compliance to and from public transport

The City of Melbourne has a high demand for pedestrian access to public transport. The upgrade of stations and stops in the municipality is therefore a priority, particularly to meet the disability access compliance target of 90 per cent by 2017.

Pedestrian fatalities and serious injuries

The city's roads need to be safer for pedestrians. Pedestrians account for the greatest number of journeys in the municipality and they are the most vulnerable road users. They suffer 23 per cent of the municipality's road casualties, increasing to 27 per cent in the Hoddle Grid area. The City of Melbourne also has the highest

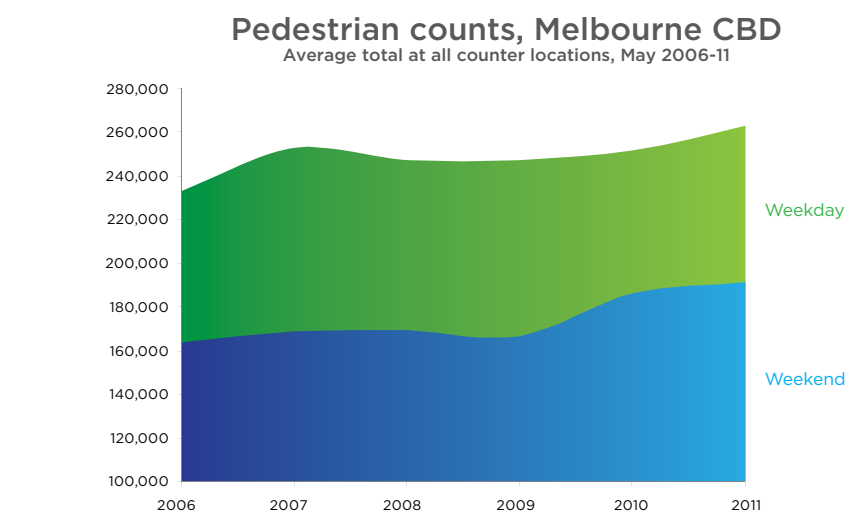


Fig 3.1 Pedestrian activity growth in the central city

number of crashes causing serious injury to pedestrians in Victoria.

Conflicts with cyclists in shared areas

Many cyclists find on-road cycling dangerous and so choose off-road paths, where they come into conflict with pedestrians. A road network that is safer for cyclists will attract them to on-road routes. Where mixing of cyclists and pedestrians is inevitable or appropriate, adequate space needs to be allocated and the mix needs to be well designed and managed.

An interesting and pleasant urban environment

City streets and laneways should be suitable for the efficient movement of people. Consideration of the need for stopping, dwelling, sitting, interacting and socialising will improve the overall quality of the walking environment.

Better network permeability

Some parts of the city are unattractive for walking because there are not enough connections

in the network, which makes accessing destinations difficult. In some cases crossing opportunities have been removed or relocated to improve private vehicle traffic flow. Many city blocks do not allow pedestrian access through or between buildings.

In recent cases like Goldsbrough Lane and QV, developers have included pedestrian access through redeveloped areas. This has benefitted both the development and the broader walking network across the city. More pedestrian crossings have also been added to address locally specific issues, where the opportunity has arisen. Through increasing the frequency of links through city blocks and road crossing opportunities, the walkability of the overall network will be improved.

Better network legibility

Parts of central Melbourne are difficult to navigate, particularly for visitors, due to lack of signage or mixed messages from various agencies. Public Transport Victoria has improved public transport

information by combining the signage for trains, trams and buses in a single system and the city also now features clearer representations of landmarks and the surrounding area. Better integration in planning transport systems will help to ensure that streets, roads, footpaths and the public transport network is presented in a more integrated and legible way.

Recreational spaces for central city residents

The central city residential population has grown from almost zero to 30,000 residents in 20 years and for many residents the streets and lanes are the only local recreational places.

Planning for walking as a bona fide mode of mobility

Traditional road transport planning has treated walking trips as incidental to road traffic. In inner and central Melbourne walking is the dominant mode of mobility on the road network. This needs to be recognised and factored into network operating plans more strongly.

Use of footpath space for trading, dining, parking and other uses

Valuable footpath space is increasingly used for outdoor dining, street trading, motorcycle parking, bicycle parking and other uses. Maintaining pedestrian access is important as competition for this space increases. Where appropriate, kerbs may be extended, certain uses may be restricted or specifically accommodated in other parts of the street.

Objectives and actions

A comprehensive transport oriented walking network in urban renewal areas

The Municipal Strategic Statement sets out the areas for long-term urban renewal in the municipality. This offers a unique and important opportunity to ensure that walking is given a high priority throughout the planning and development process. In particular, consideration should be given to the optimisation of the walking network to improve access to the public transport network.

A city pedestrian plan

In the last 20 years, the City of Melbourne has progressively and successfully improved the city's walkability through various initiatives. It does not however have a comprehensive and coordinated plan to meet the predicted demand for walking in the municipality, particularly the demands from the growth of public transport use. Such a plan would aim to:

- Improve pedestrian movement around public transport nodes high movement areas.
- Focus on the pedestrian network in urban renewal areas to optimise access and provide the most direct access to public transport.
- Relieve and avoid pedestrian congestion in areas of current and predicted high activity.
- Improve pedestrian priority at road crossings with signals to reduce walking delays.
- Improve permeability with new pedestrian network links and crossing opportunities.
- Improve city amenity for

walking, including seating and drinking fountains.

- Reduce the rate of pedestrian fatalities and serious injuries from motor vehicle collisions.
- Enhance the legibility and navigability of the network through way-finding technologies.
- Provide safe and practical solutions for bike and pedestrian shared areas.
- Audit and report on the overall level of service the city's pedestrian network provides.
- Expand the program of opening designated streets to temporary pedestrianisation.
- Create a pedestrian-oriented fully-accessible streetscape.
- Ensure pedestrian access and movement is not unduly affected by the use of footpath space for trading, dining, motorcycle parking and other activities.
- Utilise the state-level principal pedestrian network methodology to identify and develop pedestrian networks.
- Form a Pedestrian Advisory Committee to assist with the development and implementation of the plan.
- Investigate and trial locations for shared zones to provide an enhanced public realm, better pedestrian service and two-way bicycle access.
- Research and gather data on pedestrian activity in the city including the value of the walking economy.

1. Priority Action: Develop a municipal Pedestrian Plan.

High mobility streets

High mobility streets have high frequency tram and priority bus services and excellent pedestrian access to and around stops. These streets will generally have highest density and diversity of destinations along them (see key direction 4).

On these streets, the infrastructure and signalling will enable pedestrians to move safely and seamlessly from footpaths to public transport stops, providing level access to trams and buses, interchanges between public transport services and along the approaches to the stops. They will have a high quality streetscape including shade trees, good pedestrian lighting, street furniture and materials and comply with the Disability Discrimination Act. High mobility streets will provide excellent pedestrian thoroughfares and also provide high quality spaces for stationary activities.

2. **Priority Action: Work with the Department of Transport, VicRoads and Yarra Trams to design and build the municipality's network of high-mobility streets.**

Opening streets for temporary pedestrianisation.

The City of Melbourne has successfully opened streets such as Little Collins Street for temporary pedestrianisation during peak pedestrian activity. The number of locations and duration of times continue to grow and spread throughout the central city as the demand from the residential population and special events increases.

3. **Action: Expand the program of opening streets for temporary pedestrianisation.**

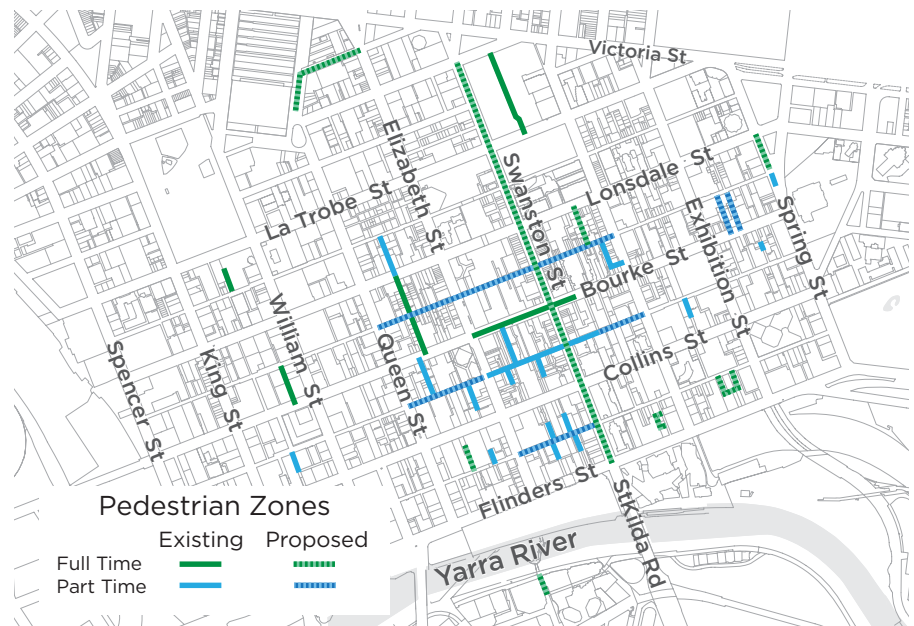


Fig 3.2 Existing and proposed intermittent street closures

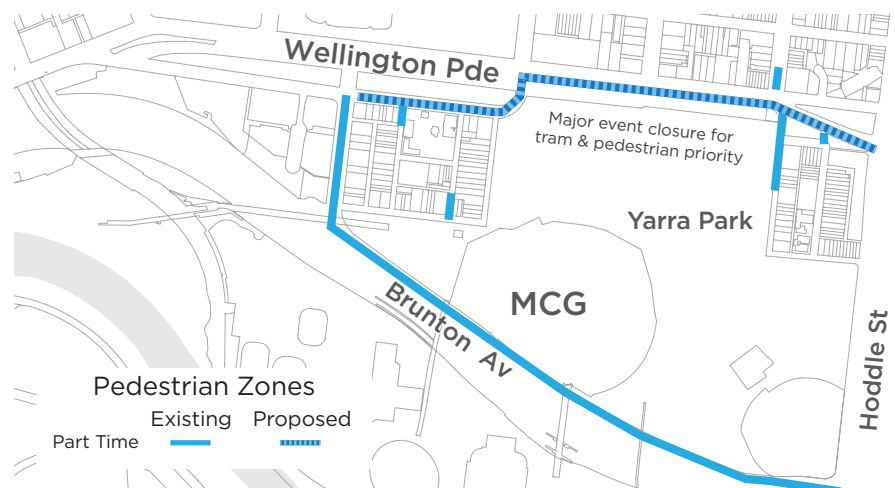


Fig 3.3 Existing and proposed intermittent street closures

Pedestrian priority at stations and public transport interchanges

Walking is an essential component of all public transport journeys and providing an excellent walking environment around public transport stops, stations

and interchanges is critical for providing an accessible, high quality public transport service. Strong growth in the use of public transport means more people will be walking to access the network.

4. **Priority Action: Work with the Department of Transport to provide excellent quality pedestrian access to all public transport stops, stations and interchanges.**

5. **Priority Action: Prepare pedestrian accessibility plans for the precincts around Flinders Street Station and Southern Cross Station.**

An inner city Road Network Operating Plan

The inner and central city road network is unique for the intensity of local land uses it services and the growing dominance of the network by trams, buses, pedestrians and bicycles. The Road Network Operating Plan to be developed VicRoads, the Department of Transport and the City of Melbourne needs to incorporate high level of priority for pedestrians trips.

6. **Priority Action: Work with the Department of Transport, Department of Planning and Community Development and VicRoads to ensure that the municipality's Road Network Operating Plan provides a high level of priority to pedestrian trips**

Safety for pedestrians

In the municipality, walking, public transport and cycling trips are predicted to grow, while private motor vehicle trips diminish. The municipality's roads need to be made safer to reduce collisions between motorised vehicles and pedestrians of all ages. A high quality walking environment can also reduce the risk of pedestrian injuries occurring from falls and other accidents.

7. **Action: Update the Road Safety Plan to strengthen the commitment to reducing pedestrian death and serious injury without reducing pedestrian access to the road network.**

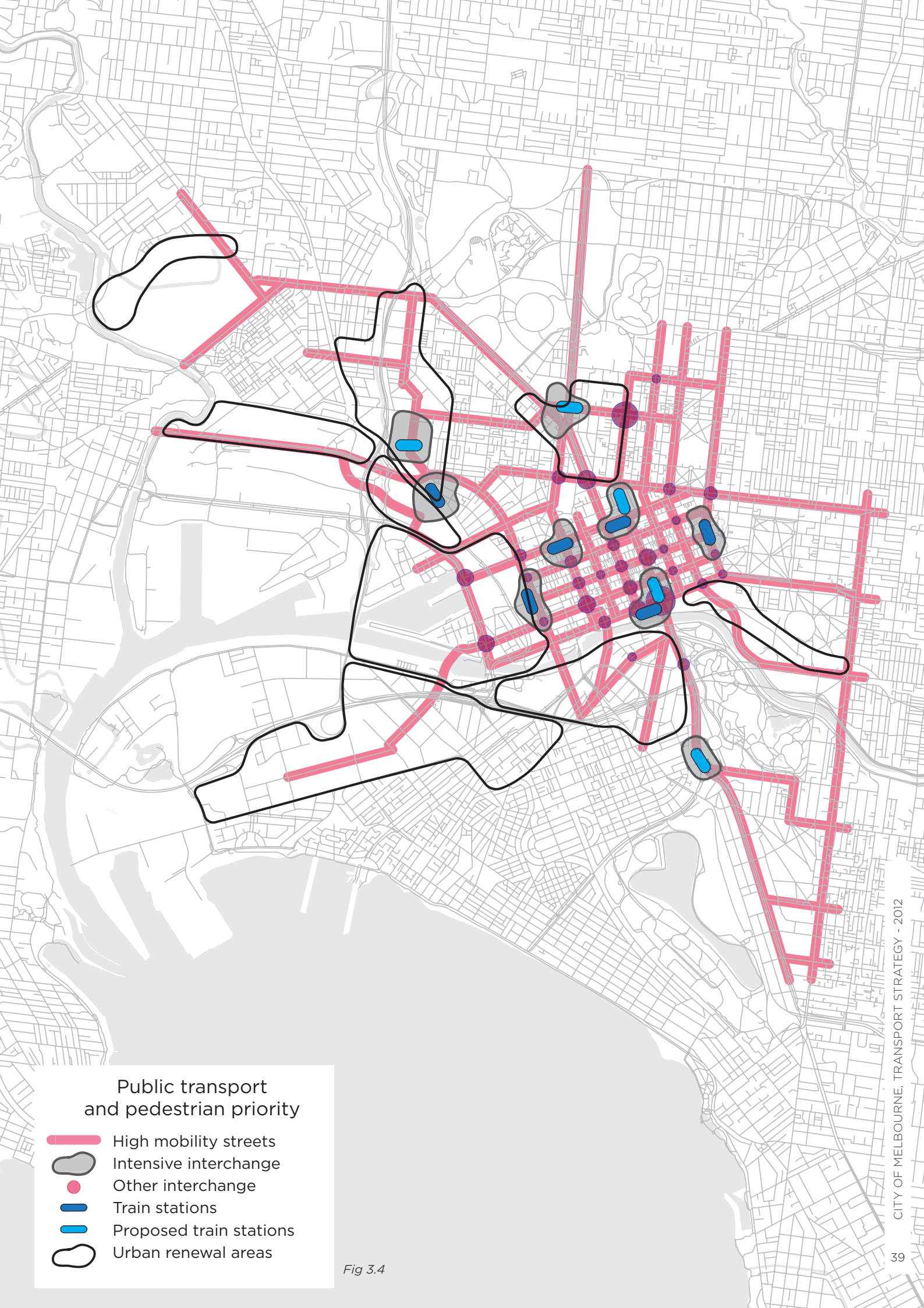
Accessible transport

The City of Melbourne's Disability Action Plan 2010-2013 outlines the vision for Melbourne to be a barrier-free city, where people with a disability can access and participate in all aspects of life with dignity and independence.

Twenty per cent of the Victorian population and 15 per cent of the resident population of the City of Melbourne experience some form of a disability.

The Disability Discrimination Act makes it unlawful to discriminate against a person on the grounds of a disability in regard to work, accommodation, public transport and access to premises. Currently many people with a disability experience barriers to accessing and utilising Melbourne transport system.

8. **Priority Action: Work with State Government to reduce information and infrastructure barriers to universal access in the public transport system**
9. **Action: Work with other tiers of government to advocate for universal transport accessibility**



Public transport and pedestrian priority

- High mobility streets
- Intensive interchange
- Other interchange
- Train stations
- Proposed train stations
- Urban renewal areas

Fig 3.4

4 Cycling city

Goal

The City of Melbourne will be a cycling city, with its entire road network safe and attractive for cyclists of all ages, and cycling will increase by 400% to account for 12 per cent of all trips to and around the city by 2030.

Context

Cycling is a low cost, space efficient, low carbon, healthy and sociable mode of private transport. It is ideal for medium distance trips of around 5 km to 8 km, and is an effective alternative to driving, trams or bus over the same distance.

This strategy is seeking a 400% increase in the number of bicycle trips to, within and from the City of Melbourne by 2030.

The municipality is at the heart of Melbourne's bicycle network and has the highest rates of cycling in Victoria, comprising four per cent of trips to the city for all purposes¹. Cycling is the city's fastest growing transport mode. It now comprises around 11 per cent of private vehicles on roads in the morning peak² and on some main city entry roads the number of bikes is comparable with the number of cars.

Cycling has become increasingly attractive when compared with the congestion, cost and inconvenience of car driving, the overcrowding on peak public transport services and the health benefits of active transport. Cyclists, however, are vulnerable road users and this shift has also depended on increasing the safety of the network by introducing reduced traffic speeds on some streets and purpose built safe on- and off-road bicycle routes.

¹ VISTA (2009).

² City of Melbourne (2012) Inbound Morning Peak Period Vehicle Survey at Various Locations (7am to 10am).

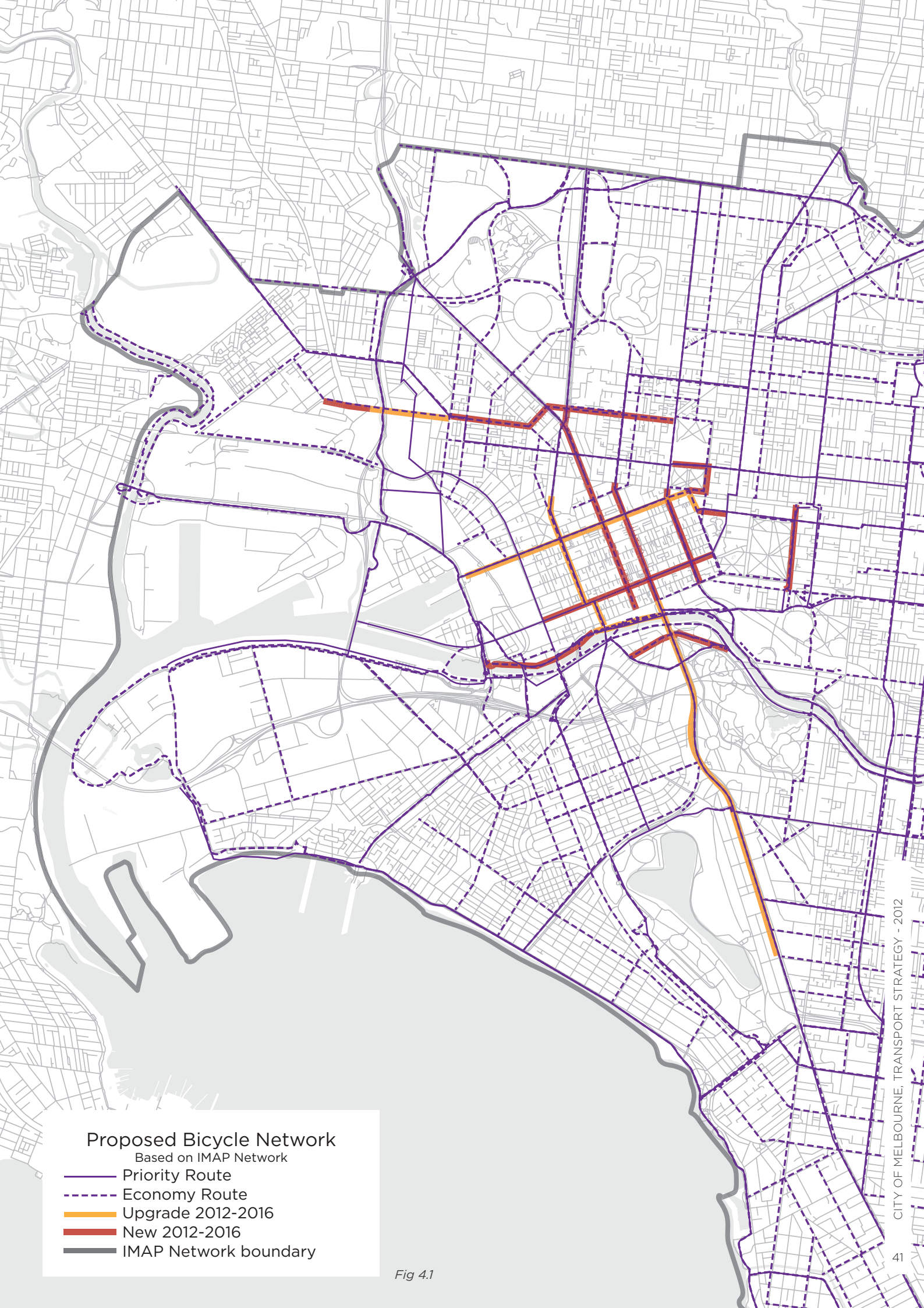
Cyclists also need to be able to take the most direct, least taxing routes.

The Zero Net Emissions by 2020 strategy demonstrates that transport emissions can be further reduced through improvements in cycling.

The rates of cycling in inner Melbourne however are low by global standards, leaving significant untapped potential to increase cycling. Because bikes are so space efficient, increased rates of cycling can significantly increase the carrying capacity of our existing inner city road network and a shift of public transport passengers onto bicycles would help alleviate overcrowding. In 2010, the Melbourne bike share scheme was installed in the municipality. This new way of cycling could significantly boost the shift to cycling. But the cycling network must be safe, direct, convenient, attractive and well connected.

The experience of international cities shows the potential of cycling³. Cities such as Vienna, Copenhagen and Amsterdam have rates of cycling two or three times higher than inner Melbourne. Many of the world's leading cities now recognise the value of cycling for dense inner urban areas. London and Manhattan have been rolling out major road management and infrastructure programs to support cycling. As inner Melbourne continues to intensify, more people will be within easy cycling distance of their destinations and cycling will become an increasingly effective mode in the transport mix.

³ The average distance cycled to and from the city is just under 8 km, and within the city, just over 5 km.

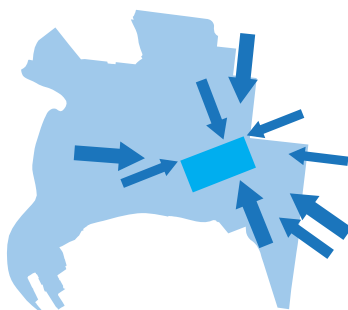


Proposed Bicycle Network

Based on IMAP Network

- Priority Route
- - - Economy Route
- Upgrade 2012-2016
- New 2012-2016
- IMAP Network boundary

Fig 4.1



Bicycle Traffic to
the City of Melbourne

Number of cyclists on bicycle arterials in morning peak

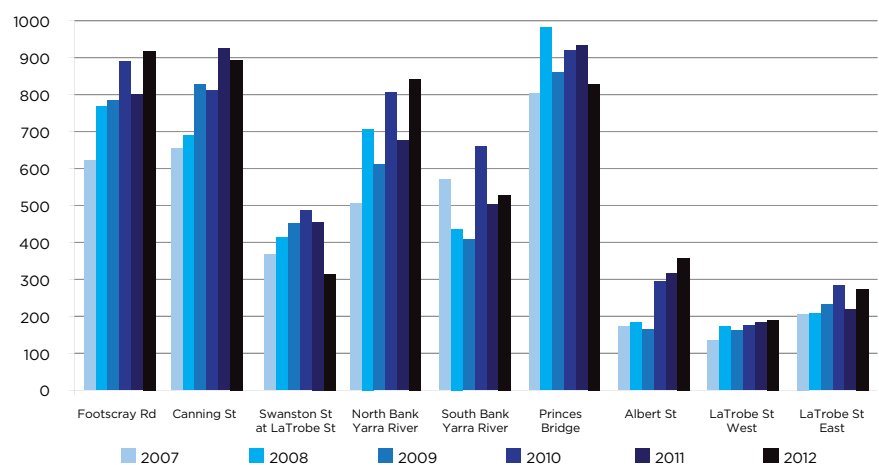


Fig 4.2 Bicycle volumes 7-9am at selected locations on the first Tuesday in March
Source: Bicycle Network, Super Tuesday count.

Issues

Large gaps in the municipality's safe cycling network deter cyclists

The most important issue for cycling is providing for safe cycling throughout the municipality's road network. Safe cycling can be achieved through separated cycle lanes and/or making traffic speeds compatible with average cycling speeds. The existing safe bicycle network has some excellent sections but many gaps. The network within the central city and city entry streets from the south are two of the key gaps. Partly because of poor network connections, fewer people cycle to work from the south of the city than from the north and east.

Breaks in the network where cycling is not allowed

Unlike driving, cycling is effort sensitive. Breaks in the road

network where cycling is not permitted deter cyclists because they impose lengthy detours. Consideration of these barriers in the context of the overall network will ensure that cycling through the central city is pleasant and effective.

Insufficient secure parking on- and off-street

The provision of on- and off-street secure bicycle parking has not kept pace with the growth in cycling. This deters people from cycling and results in bicycles cluttering footpaths which are needed by growing numbers of pedestrians.

Poor data on inner city cycling

The available data on inner city cycling is patchy. This makes planning for cycling and allocating resources to improvements more difficult. Data is needed about where cyclists are riding, reasons for people choosing to ride or not to ride, the number of cyclists on



Fig 4.3 Rathdowne Street bike lanes, Carlton



Fig 4.4 Lygon Street bike parking corral, Carlton

roads and paths, and the evaluation of new network designs to maximise the cycling opportunities.

Promotion of a central city cycling culture

The culture of cycling in and around the dense central city is relatively new and little is known about how cyclists mix with other road users. The programs to educate road users about cyclists and cultivate good city cycling etiquette, such as Ride to Work Day, TravelSmart and Darebin's Cycle Confidence Training are a good start but need to be broadened and boosted into a more comprehensive program.

Conflict with pedestrians on shared paths

Rates of cycling and walking have increased throughout the central city in recent years, as have reports of conflict between the two groups. As walking and cycling continue to grow, pressure on existing infrastructure will need to be addressed. More space needs to be allocated to paths and clearer guidance given to cyclists and pedestrians, both formally and informally, through signage and good design.

Access to shared paths needs to be maintained for both user groups but there are often opportunities to investigate alternative routes

for faster cyclists (often on-road). An example is the Yarra River corridor where high quality, high volume cycle connections funnel riders into popular pedestrian areas along both banks of the river through the city. Ideally most cycling in these areas would be slower, predominantly by tourists or families with children. An action of the Southbank Structure Plan is to convert City Road into a pedestrian and bicycle friendly high street. This could link to the Main Yarra Trail at Boathouse Drive providing an alternative route to and through Southbank.



Fig 4.5 Swanston street redevelopment stage one artists impression

Objectives and actions

Complete a connected safe inner city arterial bicycle network

The City of Melbourne is working with adjoining municipalities and the State Government to plan and construct a safe arterial bicycle network for inner Melbourne leading into the municipality. This is a network of separated bike lanes augmented by local bicycle routes, including bicycle lanes and traffic signal priority. Slower traffic speeds compatible with average cycling speeds would also complement the safe network. The most critical gaps in the network are along the southern approaches to the municipality and in the Hoddle Grid. In addition to safety and connectivity, cycling routes must also be planned and upgraded with the capacity to cater for future growth in cycling.

10. Priority Action: Review and update the Bicycle Plan 2007-2011 with a strategy to complete the safe central city bike network over the next five years.

11. Action: Investigate key corridors and locations where congestion and conflict occurs between pedestrians and cyclists with a view to providing alternative routes attractive to faster cyclists while maintaining access to shared paths for both user groups.

12. Action: Include initiatives in Bike Plan and other Council programs to encourage road sharing by all user groups.

Bicycles entering the Central City 2006-2012
as a percentage of all vehicles in the morning peak

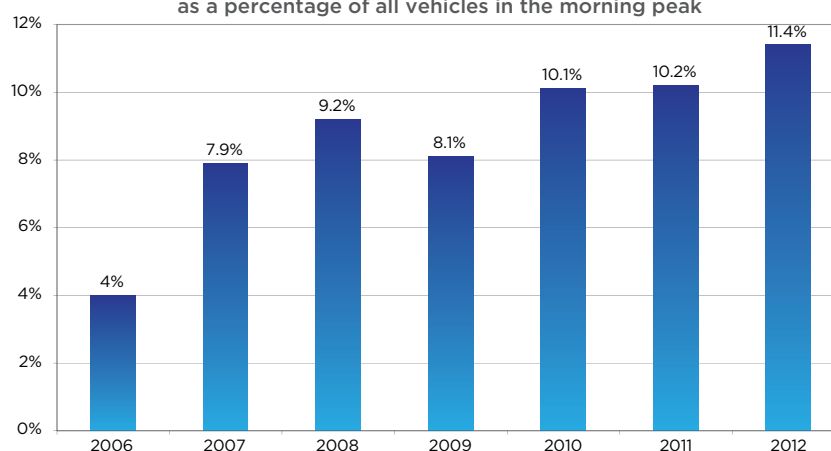


Fig 4.6 Bicycles entering the central city as a percentage of all vehicles in the morning peak, Survey taken on one day in March each year. This figure does not include public transport vehicles or represent changes in the total number of vehicles. Source: City of Melbourne traffic cordon count.

13. Action: Ensure new bicycle routes will meet capacity demands when planning and upgrading the bike network.

14. Action: Publish a map of the quality of existing bicycle routes in Melbourne and the planned improvements to the network.

Cycling along high mobility streets

High mobility streets have high frequency tram and priority bus services and excellent pedestrian access to and around stops. These streets will generally have the highest density and diversity of destinations along them. They will provide a primary network for cycling within the municipality. On these streets, the infrastructure and signalling will enable pedestrians to move safely and seamlessly from footpaths to public transport stops, providing

level access to trams and buses, interchanges between public transport services and along the approaches to the stops. Safe cycling will be integrated, with a combination of separated lanes, early starts at signals and low speed mixed traffic zones.

15. Priority Action: Work with the Department of Transport, VicRoads and Yarra Trams to design and build safe cycling along the high mobility streets.

A comprehensive safe cycling network in the municipality's urban renewal areas.

The Municipal Strategic Statement sets out the areas for long term urban renewal in the municipality and the objective for these areas to be served by a comprehensive safe cycling network made up of separated on-road lanes, low speed streets and off-road paths. These urban renewal

areas are an opportunity to build a culture of cycling into the neighbourhood at the outset rather than retrofit it later.

16. **Priority Action: Plan and construct a complete safe cycling network throughout the City's Urban Renewal Areas.**
17. **Priority Action: Work with the Department of Transport and the Urban Renewal Authority to develop the cycling network in Docklands including cycle/pedestrian links across Victoria Harbour and the Yarra.**

Safe cycling on all city streets

Cyclists need safe access to the entire road network (excluding freeways). Therefore the whole network of local streets and lanes needs to be designed for safe cycling. Generally these streets can be low speed mixed traffic streets and, where space permits, include separated lanes. Laneways and the 'little' streets in the Hoddle Grid area also need to be cycling streets where walking, cycling and vehicles can mix safely in a low speed environment. As roads are improved, bicycles should be considered. Careful planning is also required to ensure that other improvements and changes to streets do not adversely impact on bicycles. In particular, new taxi ranks and tram stop designs must consider bicycles.

The 'no cycling permitted breaks' in the road network deter cycling. These breaks need to be reviewed so cycling can be integrated into the central city road networks. Possible solutions include installing contra flow bike lanes on one-way streets, providing early starts at traffic signals or designated shared zones.

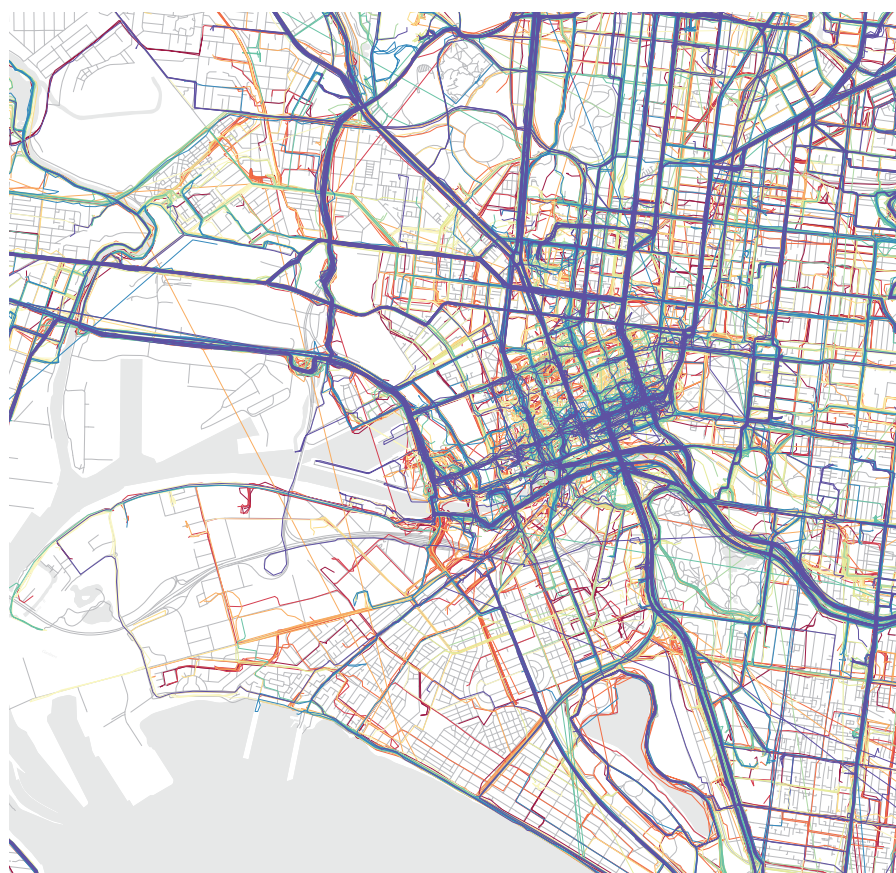


Fig 4.7 RiderLog GPS Bicycle trip survey Source: CDM Research & Bicycle Network Victoria

18. **Priority Action: Update the Bicycle Plan to improve the connectivity of the bicycle network in the local streets and lanes.**
19. **Action: Install and improve bicycle facilities as part of all traffic works in the municipality.**

Cycling in an inner city Road Network Operating Plan

The inner and central city road network is unique for the intensity of local land uses it services and the growing dominance of the network by trams, buses, pedestrians and bicycles. The Road Network

Operating Plan to be developed by VicRoads, the Department of Transport, Department of Planning and Community Development and the City of Melbourne will include a high level of priority for cyclists, with the provision of separated bicycle lanes, bicycle lanterns and advanced starts at traffic signals.

20. **Priority Action: Work with the Department of Transport, Department of Planning and Community Development and VicRoads to provide a high level of priority to cycling in the municipality's Road Network Operating Plan.**

- 21. Action: Work with VicRoads to investigate early starts for cyclists at signalised intersections (along with pedestrians and public transport vehicles).**

Improved bicycle safety

For cycling to grow as a transport mode of choice in Melbourne, the street and path network must be safer. This requires more people using it, and it needs to be more attractive.

There are many measures that the City of Melbourne will undertake to reduce car-bike conflict and encourage cycling. Among the most effective will be the construction of high quality bike lanes, and a reduction in the traffic speed limit in the central city to a 40 kph maximum.

The City of Melbourne's policies aim to create a calmed transport environment in which cycling and walking will be inherently safe activities.

- 22. Action: Update the Road Safety Strategy to include a focus on accident blackspots for cyclists, including behavioural and other approaches to reduce injury due to car doors being opened in front of cyclists.**
- 23. Action: Work with VicRoads to achieve a significant improvement to cyclist and pedestrian safety.**

More on-street bicycle parking

Provision of easy to find and use on-street bike parking needs to keep pace with demand. In many of the city's streets, demand for pedestrian space is high. On street car parking in many locations provides a good opportunity for conversion.

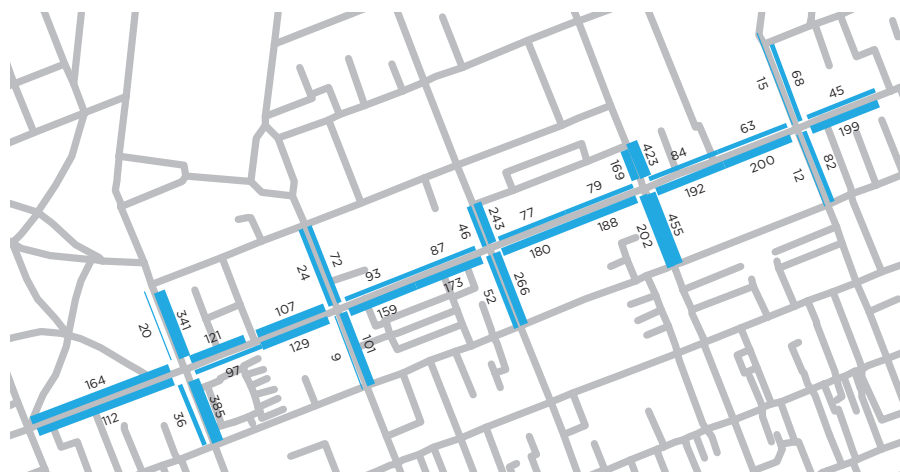


Fig 4.8 LaTrobe Street bicycle volumes in the AM peak, Source: Bicycle Victoria Super Tuesday 2010

Options include a range of street improvements including converting to a corral of bicycle parking.

This was done in 2008 in Lygon Street, where two car park spaces were converted into 16 bike parks. A review in 2010 found strong community and business support for this, and retail spending generated by the conversion increased significantly.

- 24. Action: Implement a program of delivering on-street bicycle parking corrals at high demand locations.**

Off-street bicycle parking

Workplaces and educational institutions need secure bicycle parking and facilities for long-stay users. The single state-wide bicycle parking provision rate is not adequate for the high employment density, and transport characteristics of the municipality.

On an average weekday, 100 car spaces across the rail network are made available by riding rather than driving to the station. Bicycle parking at suburban train stations is a cost-effective and

space-efficient form of ride and ride access to trains, but more parking spaces are required.

- 25. Priority Action: Work with the Department of Planning and Community Development to review planning scheme bicycle parking rates for new building developments.**

- 26. Action: Work with bicycle advocacy groups, transport management associations and employers to encourage the installation of good workplace end of trip facilities.**

Integrating cycling with public transport

Cycling can effectively complement public transport services by providing flexible, independent mobility at either end of a public transport trip. Carrying bicycles on all forms of public transport is common in many similar cities around the world. Given Melbourne's vast geographical spread, there is potential to make cycling more flexible, adaptive and accessible. Catering for bicycles on public transport vehicles will require careful planning to ensure any

trials are not too limited to create useful opportunities. Capacity, loading times and other issues also need to be considered during peak times in the central city.

27. Action: Work with the Department of Transport to increase secure bicycle parking at suburban train stations.

28. Action: Work with transport stakeholders to support trials, research and analysis to improve the integration of cycling with Melbourne's public transport system.

Cycling data and information

The scope and currency of data on cycling in the municipality is insufficient for good planning for, and promotion of, cycling. There is no comprehensive and coherent strategy for data collection based on current data gathering techniques and methodologies.

Data from the existing nine loop counters, manual counts and mobile and online applications such as the Bicycle Victoria Rider Log provide useful but patchy data. Melbourne bike share is a rich source of cycling data which could also be utilised. There is potential to crowd source information and utilise social media to gather quantitative and qualitative insights into the bicycle network.

More comprehensive data will enable better planning and development of the bicycle network, and its publication can be used to promote and manage cycling in the city.

Expanding the Melbourne Bicycle Account

The City of Melbourne's Melbourne Bicycle Account reports on bike

usage trends, and progress on the City of Melbourne's Bicycle Plan projects. However cycling in the city needs to be better understood in the context of other modes of city mobility.

The Bicycle Account could be expanded into a Melbourne Transport Account that reports to stakeholders and the public on all city mobility trends and progress. It could report on VISTA statistics about mode shares, the bicycle statistics, the pedestrian counts, car traffic counts on key roads, on- and off-street car parking spaces, and usage of tram, bus, tram, car share and blue bikes.

Innovation through pilot projects

The expansion of city cycling will require innovation in the traditional approaches to traffic design and management. Traffic modelling can be limited as a tool to predict the outcomes of innovations and should be complemented with

trials and pilots with robust pre and post installation evaluations. A trial will produce clear evidence of success or failure and guidance on improvements, and may be less expensive than traffic modelling. Innovation trials are deployed successfully in cities leading in their transport infrastructure such as Vancouver (for example the bicycle lanes on the Burrard Bridge) and New York (Times Square pedestrianisation).

29. Action: Begin a program of trials and pilots to test innovative bicycle infrastructure and traffic management in inner Melbourne.



Fig 4.9 Albert Street

5 City driving

Goal

Melbourne will embrace a culture of smart city driving. This will improve traffic flow, safety and road use efficiency and mitigate the degrading effects of traffic on urban liveability, safety and productivity.

Context

To date the inner and central city has owed its prosperity in large measure to excellent driving access. Private car driving will continue to be an important option for people to access the city, and for residents and businesses in Melbourne to move around. It meets the need for those trips for which there is no alternative, such as late night travel, some business travel, travel out of town, in bad weather, or for freight and servicing.

From the 1950s Melbourne's metropolitan transport system became car based. While the radial tram and train network was configured to service the traditional centre of Melbourne, the road network allowed car drivers to travel anywhere, anytime.

This post-war shift to high levels of driving re-shaped the municipality: access to large parts of the road network has been limited to all but the most local traffic to protect the amenity of residential streets; large

amounts of off-street car parking has been constructed around the central city (60,000 spaces) and a partially complete system of central city by-pass arterials/freeways has been constructed.

Since the 1990s the city moved into a new transport phase. Rates of driving in Melbourne have levelled off since 2003 (figure 5.1 and 5.2) despite strong residential and worker population growth. Whereas travel by public transport, cycling and walking has increased, and this growth is predicted to continue.

The future mobility needs of the municipality as a growing high density city can no longer be met predominantly by driving. The municipality is now well into a major shift away from car driving to greater use of a combination of train, tram, bus, walking and cycling. In this context car driving has become a part of an effective mix of modes rather than the dominant mode.

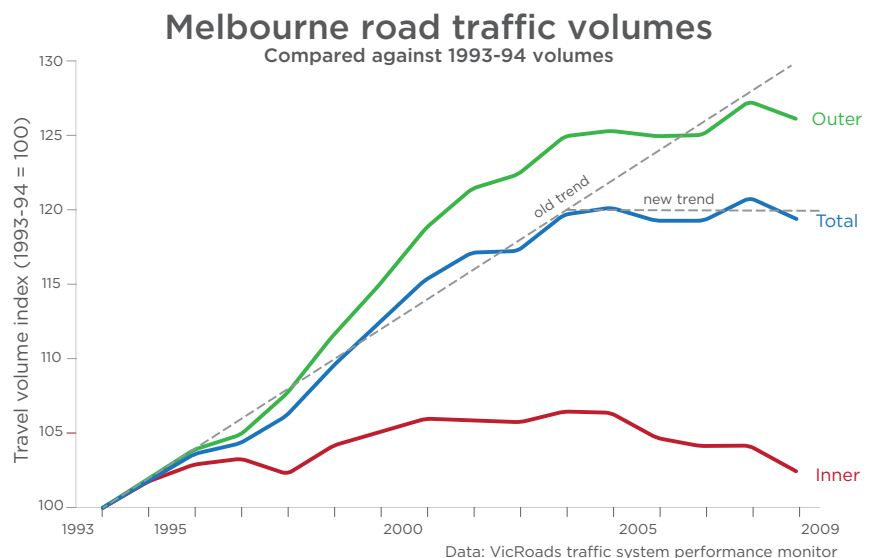


Fig 5.1 Melbourne Road Traffic Volumes

Issues

East-west road travel

The road links connecting the western metropolitan region to the inner and central areas are much less well developed than the comparable links to the east. There is significantly lower capacity, with the Westgate Freeway being the only motorway connection and with roughly half the number of arterial east-west connections.

The lack of good east west connections is most acute in the inner north where the Hoddle Street, Victoria Street/Dudley/Footscray and the Alexander Parade/Macarthur Road corridors are often congested and where the Port of Melbourne road freight is forced to use the local road network.

In response to this issue, the City of Melbourne transport strategy, Moving People and Freight 2006 proposed an inner east-west motorway connecting the Eastern Freeway with the Western Ring Road via the city's inner north and inner west. This concept was further developed by the State Government in the 2008 East West Link Needs Assessment 2008 (EWLNA).

The EWLNA identified the need to increase access from the west to business services and jobs in inner and middle-eastern Melbourne, to improve freight access from the west to the Port of Melbourne and to reduce truck trips on inner west's local roads. It proposed an inner city motorway connecting the end of the Eastern Freeway via a tunnel through to CityLink and on to the inner west.

In June of 2008 Council resolved to oppose the EWLNA East West

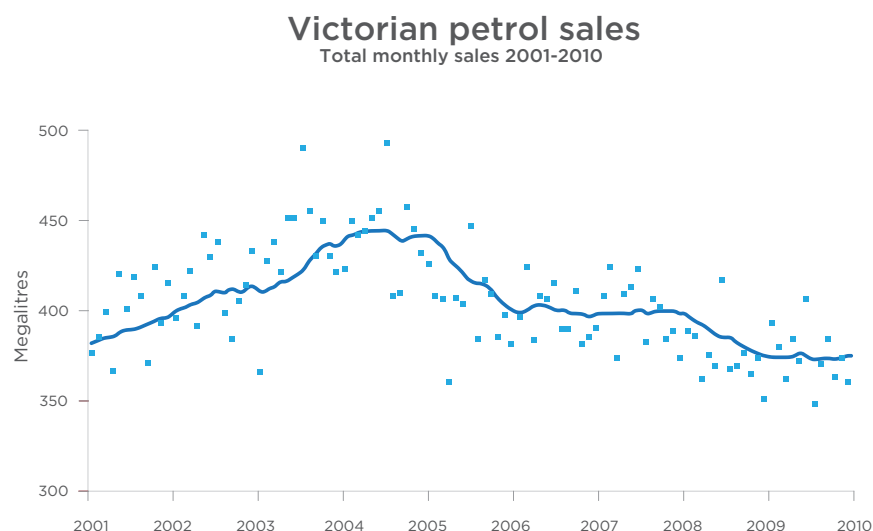


Fig 5.2 Victorian monthly petrol sales 2001-2010 Source: VicRoads

Road Tunnel; to oppose the use of parks for any works associated with the tunnel or road works or associated activities; to provide in principle support for sustainable transport infrastructure to reduce congestion across Melbourne; to note the redrafted submission to the EWLNA reflecting this change along with the prioritisation of all public transport initiatives including a higher priority for Doncaster Rail; to redraft Council's transport strategy to reflect these changes and to call on the State Government to adequately fund public transport as an alternative transport solution to overcome the congestion on the road network.

State Government proposal for an east west freeway link

Since 2009 the State Government has been planning the Westlink freeway to run from the Dynon precinct to West Footscray via a road tunnel (stage one) and on to the Western Ring Road by an elevated road (stage two). The plan also includes a ramp connecting

the Port of Melbourne truck freight directly to the West Gate Bridge.

In 2011 the Victorian Government reviewed and expanded the Westlink project to subsume it into an East-West Link proposal for an 18 kilometre inner urban freeway connecting the Eastern Freeway and the Western Ring Road, with key intermediate connections to the Tullamarine Freeway, Port of Melbourne and Geelong Road.

The State Government's 2011 submission to Infrastructure Australia seeks \$30 million over two years to further develop this project. The submission states that the East West Link, in combination with other transport network initiatives, aims to support the long term sustainable growth and development of Melbourne, and have state-wide benefits. The State Government's project aims are:

- Providing an alternative to the M1 corridor (Monash Freeway – CityLink Tunnels – West Gate Bridge – West Gate Freeway)
- Reducing traffic on Melbourne's inner urban

arterial roads, especially at the Hoddle Street exit on the Eastern Freeway.

- Linking industry in Melbourne's north, east and west with national and international markets via the Port of Melbourne, and Tullamarine and Avalon Airports.
- Enhancing urban renewal and commercial development opportunities to the north and west of the CBD.

The Victorian Government East West Link proposal has significant implications for meeting the demands for east-west road travel across the metropolitan area and more locally for the functioning of public and private transport and mobility on the road network in the municipality's north and for the location and quality of urban renewal in the municipality.

Intrusive effect of through traffic

A significant volume of car, van and truck traffic uses the municipality as a through route accounting for half of all vehicle traffic on some streets in the Hoddle Grid area. This traffic generates congestion, degrades urban amenity and impedes public transport, walking and cycling, without contributing directly to the productive activity within the municipality.

Traffic congestion on main roads leads to widespread filtering through residential areas, as drivers attempt to by-pass peak traffic queues. Local Area Traffic Management (LATM) has been used to limit this by discouraging traffic for all but local users and reducing the intrusive impacts of through traffic on neighbourhood amenity.

The municipality is now developing high-density, mixed-use areas where residential, commercial, retailing, educational and entertainment uses co-exist. In former times the amenity for residents, pedestrians and users of pavement cafes and restaurants was not a concern but now, in streets where residential, commercial and retail users alike value a comfortable, safe and attractive streetscape, the impact of intrusive traffic is becoming a significant issue.

Roads such as Victoria Street and City Road which were once city by-pass roads, now run through the heart of activity precincts and heavy through traffic disrupts the local mobility and amenity.

While M1/CityLink provides a by-pass that takes some through traffic off the southwest parts of the local road network, east-west through traffic in the northern part of the city is not being well provided for by the Hoddle Street and Alexander Parade/Macarthur Road by-pass links.

Priority for freight and service vehicles

The municipality, including the Port of Melbourne, is the single biggest metropolitan origin/destination for passenger and freight driving trips. Road access for these trips has been essential, but the road network into the city is reaching its capacity and demand will increase with Melbourne's predicted growth.

The Port of Melbourne is reliant on efficient freight distribution and collection. High quality road and rail connections to and from the port are essential for its growing operation. Vehicles servicing the central city including deliveries are also

significantly negatively affected by congestion. The cost of delays is generally higher for commercial vehicles and they usually have no alternative but to use roads.

Need for more efficient use of the municipality's road network

The municipality is served by an established and well-connected road network, but the roads have limited capacity. Traditionally, traffic growth has been met by allocating more space to cars often at the expense of trams, buses, pedestrians and cycling. Many of the key roads in the municipality have gone beyond their capacity under this approach leading to significant congestion which costs the city's economy \$3 billion a year. As the use of land in the city intensifies and the city grows, its roads will need to move more people and goods more efficiently to prevent the cost of congestion rising to \$6 billion by 2020.

To avoid future congestion, the municipality's road network needs to be optimised for the more space-efficient modes, including dedicated lanes for trams, bus priority lanes, bicycles lanes, wider pedestrian footpaths, safer and more comfortable level access tram stops and significantly better priority for space efficient vehicles at traffic lights especially trams, buses and pedestrians. Road space efficiency can also be achieved by lower speed limits, encouraging the use of more compact cars and vans, and the increased use of motorbikes and scooters.

Work has begun on improving the efficiency of roads including trials of tram priority at traffic signals, the installation of bus lanes and the integration of trams, walking and cycling on Swanston

Street, but much more needs to be done. Also, the share of trips on our roads by a combination of space-efficient modes is now increasing while the relative share of trips by car is falling. Improving efficiency reduces the cost to the community per trip as faster trams and buses can do more journeys, moving more people and providing a more frequent service without the need to buy new vehicles.

On-road public transport vehicles are frequently delayed where they cross high volume, inner city arterials. This occurs in the case of both Hoddle Street and Punt Road (for east-west tram and bus services), and Alexandra Parade and Victoria Street (for north-south tram and bus services). Some reductions in waiting times have been achieved through changes to traffic signal operation such as has been demonstrated in recent trial of full traffic signal priority for north-south trams on Nicholson Street.

Greenhouse gas emissions

Transport emissions accounted for 20 per cent of all emissions associated with the municipality of Melbourne in 2005–06 and this is predicted to grow by 61 per cent by 2020.

Passenger transport (road and rail) accounts for 12 per cent of total emissions, with freight at eight per cent. The primary way to reduce passenger transport emissions in the short to medium term (and which the City of Melbourne can reasonably influence) is to facilitate a mode shift away from cars to public transport, cycling and pedestrian options.

Council has set an emissions reduction target of approximately 188 kilotonnes of carbon dioxide from the passenger transport

sector compared to a 2020 business-as-usual emissions scenario. This represents an increase of 23 per cent on 2006 levels and a nine per cent decrease on the 2020 business-as-usual scenario. The emission reduction targets outlined in the City of Melbourne's Zero Net Emissions strategy include:

- a 20 per cent reduction in public transport emissions by 2020, and
- a 100 per cent increase in bicycle use by 2015, to be maintained to 2020.

Increasing the use of electric vehicles offers the potential to reduce transport emissions, especially if vehicles are charged with renewable energy. Other advantages of electric vehicles include the use of vehicle batteries to store energy to smooth the electricity demand profile and the quietness and small size of electric vehicles and the absence of tailpipe emissions.

The City of Melbourne has been trialling its own electric vehicles and is participating in the State Government's Electric Vehicle Trial.

Excessive idling can be a significant contributor to transport emissions and degrade local amenity, especially idling by large diesel-fuelled trucks and buses. Several jurisdictions overseas have anti-idling laws including 13 US states and the cities of Vancouver and New York.

The rising cost of driving

Driving is expensive and it is getting dearer. The purchase, insurance and maintenance of the vehicles and fuelling them (oil and electricity) will continue to grow as a major business and household cost. This will likely drive a shift to more

economic patterns of driving, such as priority access for delivery and service vehicles, smaller lighter vehicles and car sharing.

Road safety for vulnerable road users

Road crashes cost at least \$18 billion in Australia and have devastating social consequences¹. The City of Melbourne is unique in Victoria for having the most vulnerable road users, pedestrians, cyclists, accounting for large majority of all road trips made within the city (69 per cent in 2009 increasing to 78 per cent by 2030). The focus on road safety in the municipality therefore needs to be on removing the threat from driving to these vulnerable road users.

The perceived threat of serious injury or death from drivers is also a major deterrent to cycling and a key reason for the low level of use of this otherwise attractive and effective mode.

Excessive provision of off-street parking

Drivers need parking spaces but inner Melbourne has a comparatively high amount of off-street parking, a legacy of past policies to support increased commuting by car. Parking in offices and commercial parking stations attracts driving into the heart of the city where it contributes to peak hour congestion and compromises the operation of the tram and bus services. Much of the traffic on City Road in Southbank is accessing local off-street parking.

¹ Bureau of Infrastructure Transport and Regional Economics (2009). *Cost of road crashes in Australia 2006*

To avoid the costs of basement car parking there has also been a recent developer trend to provide this off-street parking in multi-level above ground. This is resulting in developments where up to the first 10 levels of the building are car parking, presenting a 'dead' frontage to the street and fostering a lifeless streetscape.

Many existing and new city residents do not own a car. Much of the city has good to excellent public transport services and many dwellings can access shopping and fulfil their other needs easily by walking or cycling.

There is evidence to suggest that off-street parking in many residential areas is over-supplied, with vacancy rates in residential body corporate garages of up to 30 per cent. With a cost to build of approximately \$40,000 per space, parking significantly increases the cost of city housing. Many developers have sought waivers to reduce the rate of provision below the amount prescribed by the planning regulations.

In response, the City of Melbourne has amended the residential planning controls from requiring a minimum parking provision to making provision of parking optional, up to a maximum rate of one per dwelling. Many new residential developments now have low or zero off-street parking.

It is critical that, in conjunction with this trend, the on-street parking in the city is tightly managed to ensure cars associated with these new residential developments do not use the on-street parking as a de facto private parking space.

There is an opportunity for new parking capacity to be constructed so it can be converted to other

more productive uses if it is not needed for car parking in the future.

Increasing demand for on-street parking

The most convenient form of city parking is on-street parking. The stock of on-street parking has been falling however, as road space is re-allocated for higher efficiency road uses such as wider pedestrian paths, bicycle lanes and bicycle parking and better tram stops. This trend will continue as city activity intensifies and expands, and so will the demand for car parking spaces.

A new level-access tram stop which provides access for around 12,000 people per day is equivalent in area to 40 on-street parking spaces, which provide access for only about 480 people per day. The new stop also increases the speed, reliability and comfort of the tram service. Other high priority uses will include, safe taxi ranks, wider footpaths, bicycle lanes and parking, footpath trading places, and more street trees to improve the pedestrian comfort of the street.

The high demand for Central City on-street parking requires active management of these spaces to service more short stay drivers and to reduce the traffic and congestion from drivers searching for an on-street parking space.

Access for service and delivery vehicles is essential for the maintenance and operation of the Central City. They need guaranteed and dedicated parking near their destinations to minimise turnaround times. This increasingly conflicts with other road space priorities.

Car sharing for residents and businesses is growing and requires dedicated car parking space, particularly in the Central City where it suits the high

Time-space needs per person

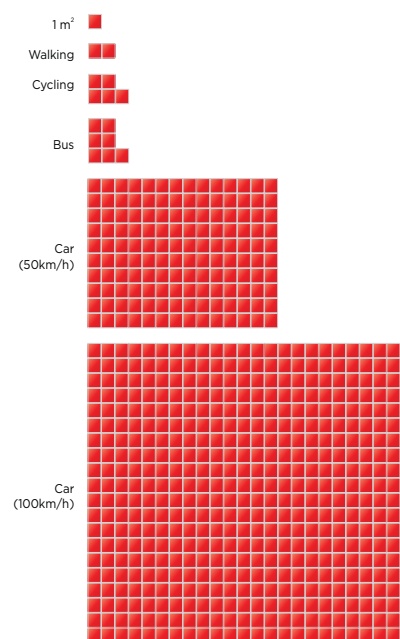


Fig 5.4 Space efficiency of various modes of personal transport

density and mix of uses. Other growing types of driving such as small vehicles, motor scooters/bikes and bicycles are requiring new and more specialised on-street parking facilities.

In the municipality's established residential areas, many of the dwellings are heritage buildings which pre-date car use. They have little or no capacity for on-site car parking. As car ownership in the city has increased, the City of Melbourne has instituted resident parking permit schemes to enable cars associated with these established dwellings to park in the local street.

Early versions of these schemes were undermined by a proliferation of permits being issued to new dwellings associated with higher density redevelopment or to

drivers who no longer lived in the municipality, let alone the street. This meant there were many more permits than available spaces. Current resident parking permit practice is to exclude the additional new dwellings from higher density redevelopment from the scheme.

Objectives and actions

East West Link

30. Priority Action: Consider the Government's proposed East West Link when details are known to make sure that it achieves the City of Melbourne's transport and urban development objectives and is consistent with council's resolution of June 2008 opposing the use of any parkland for the purposes of any road works or associated activities.

Develop an integrated land use and transport plan for access to and through the Central City hub

Melbourne has a knowledge/service employment corridor which runs from the inner south east to the inner west via the Central City. The corridor is characterised by employment with high effective job density (EJD), a measure of business density and connectedness to other jobs and workers. This high EJD is enabled by high quality transport including roads and public transport.

This corridor needs to be consolidated and extended further east and west to run from Clayton to beyond Footscray Central Activities Area. We also need to build on the City of Melbourne's growth as the primary centre of knowledge and services jobs by expanding the footprint of

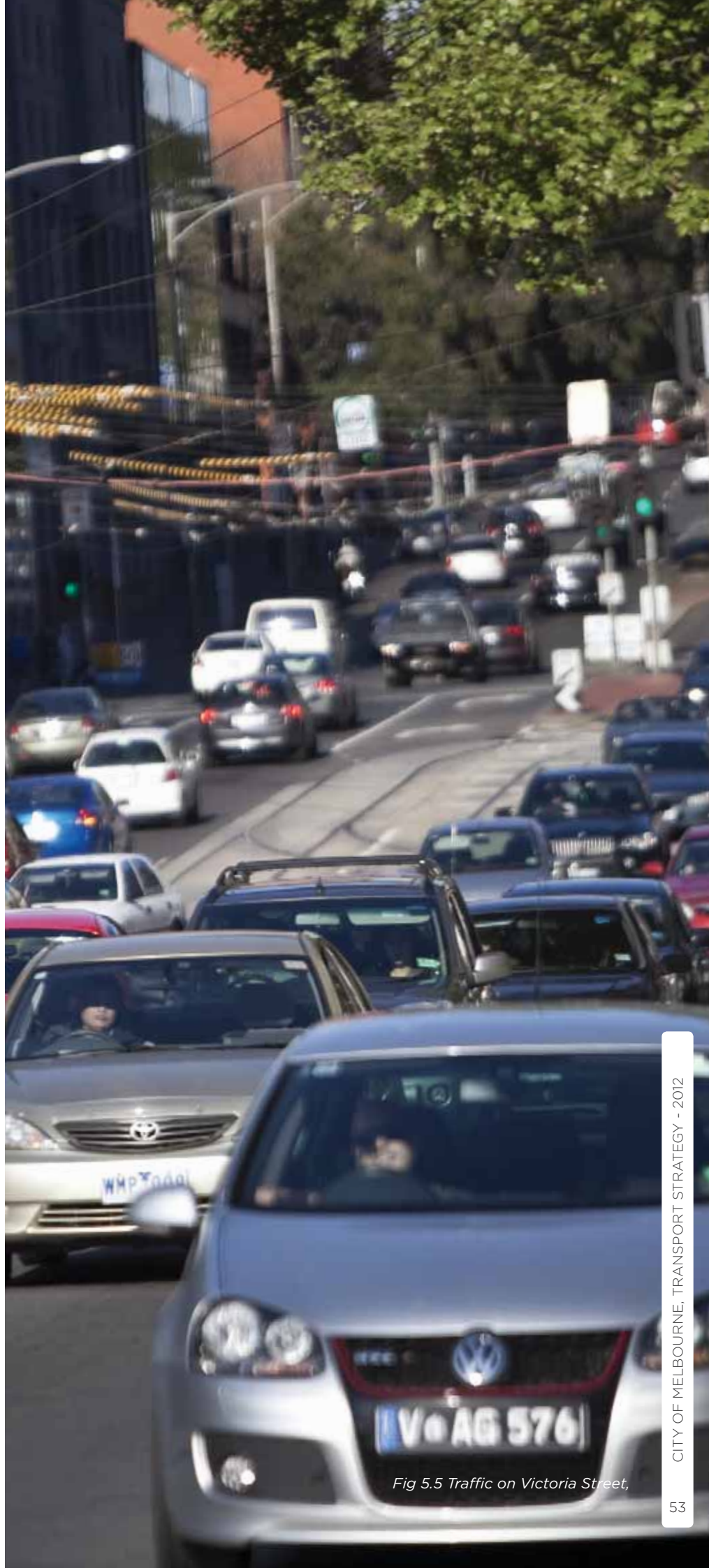


Fig 5.5 Traffic on Victoria Street,

the Central City. This land use proposal builds on Melbourne's existing successful transport and land use infrastructure and supports many of the objectives and actions of this strategy. Making this corridor a reality will mean providing a comprehensive public transport service that integrates rail, tram, bus, taxi, car and local bike share to service the full range of peak and off-peak business travel needs through the corridor. These services will need to be complemented along the corridor by good passenger car, service and delivery vehicle access.

Current planning for major infrastructure expansion and upgrade (including Regional Rail link, Metro Rail, East-West Link proposal) needs to be brought into a common perspective, as an integrated multi-modal transport plan servicing a unified land use development strategy, which includes the development of the east west employment corridor. Such a plan will provide a clear direction for the complementary roles of the different modes and for the transport infrastructure and urban land development priorities.

31. Priority Action: Work with the Department of Transport and Department of Planning and Community Development to ensure infrastructure to support east-west travel considers all transport modes and is well integrated with the city's land use development strategy.

Progressively reduce the intrusion of through traffic

The municipality needs to be connected to its surroundings and to other centres via the road network and this will always

generate through traffic, but this traffic should not be given priority over the internal traffic movements. Instead, it should move through the city consistent with local conditions.

The City of Melbourne's long standing policy to protect the established residential streets from through traffic will continue. Traffic access in urban areas nominated as stable in land use policies will continue to be managed to minimise intrusive impacts on neighbourhood amenity.

The municipality's expanding mixed use neighbourhoods are the new and emerging residential population growth areas. Here, housing is mixed at high densities with commercial, retail, educational and entertainment uses. All of these uses value safe, attractive and comfortable streetscapes for the residential liveability, business prosperity and visitor enjoyment. The roads through these areas will be designed to minimise the intrusive impact from all modes of traffic.

The Hoddle Street corridor will become increasingly important as a north-south 'city bypass' for traffic, local freight and bus services, and also as a land use corridor. Initiatives to improve the flow of people and goods must be closely integrated with land use planning, to ensure the corridor develops as a vibrant place as well as an efficient through route.

32. Priority Action: Work with the Department of Transport and Department of Planning and Community Development to develop a network operating plan to reduce the intrusion of through traffic.

A inner city road Network Operating Plan (NOP)

Many of the issues outlined above need to be resolved in a comprehensive and integrated Network Operation Plan for managing the road network that recognises the municipality's unique road use profile and needs now and into the future.

The NOP will allocate priority for time at traffic signals and space on roads and footpaths, to achieve the optimum mix of pedestrians, trams, buses, bicycles, and passenger and freight driving.

This will provide the City of Melbourne, VicRoads, Department of Transport and the trams and bus companies with a common basis for coordinated investment in improving and developing the road network to meet the current and agreed future use profile. Each local government NOP becomes part of VicRoads' SmartRoads NOP.

The City of Melbourne is working with VicRoads, the Department of Transport and the Department of Planning and Community Development to develop the NOP for all roads in the municipality.

Key principles underpinning the development of the NOP are:

- The planning and management of roads must enable the creation of people-oriented places and an active and vibrant city.
- Priority must be given to space efficient modes including walking, public transport and cycling.
- Through motor vehicle traffic must not degrade the amenity of the street life and operation of the city. It will be

encouraged to use roads on the perimeter of the city.

- Motor vehicle traffic will continue to access the city in ways that are compatible with high levels of activity by public transport and vulnerable road users.

33. Priority Action: Work with the Department of Transport and VicRoads to ensure that the municipality's Road Network Operating Plan provides for driving balanced with the priority for trams, buses, walking and cycling.

34. Action: Publish, and regularly review the municipality's network operating plan for all roads in the municipality including information about traffic signal operation to ensure that the management of the network is transparent.

Crossing King Street

An example of the NOP approach is the City of Melbourne's plan to review traffic signal operation on King Street.

This street currently carries a significant number of motor vehicles, some travelling to the city and some going through. It crosses tram and bus routes at Flinders Street, Collins Street, Bourke Street, Lonsdale Street and Latrobe Street.

It also crosses pedestrian routes leading from Southern Cross Station into the Hoddle Grid on Collins and Bourke Streets as well as on 'little' streets.

Currently, the traffic lights are set up to favour motor vehicle traffic on King Street, forcing public transport passengers and pedestrians to wait for up to 90 seconds.

This signal set-up encourages traffic to use King Street as a

route through the city and it undermines the efficiency of the public transport operation. This affects all east-west public transport travel and exacerbates the difficulty of travelling to Docklands on the tram network.

While King Street is a declared arterial road and is likely to retain a traffic function, opportunities to improve its operation for high-priority users will be identified as part of the new NOP.

35. Priority Action: Apply the Network Operating Plan principles to change the way King Street traffic signals operate.

Taxation and road pricing

Some cities have implemented road pricing systems in an attempt to limit car use in central, active and dense urban environments. These can be effective transport management tools to improve city access, reduce transport emissions and to fund transport improvement projects.

Congestion pricing schemes in London and Stockholm, for example, have delivered significant successes.

Other reasons for considering road pricing include:

- The Victorian Competition and Efficiency Commission (VCEC) urged the government in 2006 to undertake a comprehensive road charging study in Melbourne.
- A 2008 study into the emissions impact of the City of Melbourne's transport strategies found that road pricing would deliver the single greatest emissions saving.

The Henry Tax Review recommended governments

analyse the potential network-wide benefits and costs of variable congestion pricing on existing toll roads and other heavily congested parts of the road network.

A key issue for the City of Melbourne in considering changes to road pricing is maintaining and enhancing access to the city for a wide variety of trip purposes.

Only when capacity issues on public transport have been addressed, will Council consider a congestion levy or 'City Access' charge to manage demand for private vehicle access to the Central City during peak periods.

Recent changes to fringe benefits tax arrangements removed milestone-based incentives that encouraged more driving. However, the current system still provides tax benefits for driving that are not available for public transport. The application of the GST and carbon pricing to public transport but not to private car travel also undermines federal, state and local policy objectives relating to efficient, sustainable travel.

There are a number of price levers in place across the transport sector that send mixed messages to users. These include tollway charges, on- and off- street parking charges, registration fees, petrol levies and public transport fares. Most of these charges have been separately established to raise revenue or recover infrastructure investment. There is an opportunity to look at these in a more integrated way and consider how they can work together to achieve a more balanced transport system.

- 36. Action: Work with the Department of Transport to better understand various transport pricing signals and the effect that they have on influencing transport choices.**

Integrated land use and transport network planning

The increasing intensity of Melbourne's Central City and the provision of high quality public transport services will require transport and land use planning to be better integrated. The NOP will provide guidance on the operation of streets but a higher level management tool will be needed to coordinate transport operations with the way land is used.

This integrated transport and land use management tool must be a coordinated initiative of the City of Melbourne and State Government, with participation from key government agencies such as VicRoads.

This tool will identify how the transport network will develop, including where new tram stops, train stations, bus routes, bicycle lanes, freight routes and so on will be located, as well as the priorities for land use development adjacent to the transport network. The plan will be able to describe or illustrate how streets will look in the future, taking into account the demands that adjacent land uses will place on the transport network located along the full length of the street. It will also be able to inform the design of new developments based on existing and future transport plans.

This will enable agencies to plan jointly for a sustainable, economically efficient and socially supportive transport and land use system for the city.

- 37. Priority Action: Work with the Department of Transport and The Department of Planning and Community Development to develop a coordinated transport and land use plan for the inner metropolitan east-west employment corridor integrating all modes rail, tram, bus, taxi, car and bike share and private car.**

- 38. Priority Action: Work with the Department of Planning and Community Development and the Department of Transport to develop an integrated land use and transport planning approach for the municipality.**

Enforcement

This strategy highlights the need for efficiency across the city's transport network. Enforcing rules, such as road rules, is a key component of making sure the transport system is doing what we need it to be doing.

Many aspects of the transport system require tougher enforcement:

- High occupancy vehicle lanes on arterial roads and freeways are used appropriately.
- Intersections are kept free of vehicles blocking the progress of on-road public transport, pedestrians, cyclists and other traffic.
- Traffic is kept within speed limits, especially on streets such as Lygon Street, where the speed limit is 40 kph.
- Bicycle lanes are kept clear of vehicles.

- 39. Action: Work with Victoria Police and the Department of Justice to ensure these aspects of the transport network are enforced effectively.**

Car pooling

Car pooling offers the potential to increase significantly the efficiency of the smart city driving network. The road use efficiency of a vehicle carrying four people is four times as high as a single occupancy vehicle. The State Government has been investigating a car pooling program.

- 40. Action: Encourage and facilitate car pooling.**

Motorcycles

Motorcycles, particularly smaller ones, are a relatively space efficient mode of individual travel. Key issues for motorcyclists are road safety and motorcycle parking. In Victoria, motorcycles can be legally parked on the footpath (unless otherwise signed) as long as the motorbike does not obstruct pedestrians, delivery vehicles, public transport users or parked cars.

While this is beneficial for motorcycle riders, it can have drawbacks in terms of pedestrian access, safety and amenity in the CBD. Continuing growth in pedestrian numbers will put increased pressure on footpath parking for motorcycles.

The Melbourne Planning Scheme requires motorcycle parking to be provided in all car park developments at a rate of one space for every 100 car spaces. In the CBD, this provides for a motorcycle mode share of 0.2 per cent of all trips. The proportion of workers riding motorcycles (or scooters) into the CBD more than doubled (to two per cent of all workers' trips) between 2004 and 2006, although motorcycles are only one per cent of all trips to the city, according to the 2007 VISTA figures.



Fig 5.6 Police Enforcement of traffic in the Central City has the potential to improve Public Transport operation. Source: Victoria Police

41. **Action:** Consult with motorcycle user groups when changes to existing motorcycle parking are contemplated and use VicRoads' guidelines for making provision for on-street motorcycle parking facilities.

42. **Action:** Increase the supply of motorcycle parking in congested areas to reduce the need to park on footpaths and prohibit motorcycle parking where it obstructs walking, or other complementary activities.

43. **Priority Action:** Amend the planning scheme to require motorcycle parking provision at a rate that better matches the levels of current and predicted use.

44. **Action:** Update the Road Safety Strategy to strengthen commitment to reducing death and serious injury to motorcyclists as vulnerable road users.

Electric and other alternatively-fuelled vehicles

There are a variety of innovative vehicles being tested and researched which may offer significant benefits to cities. These include electric and other alternately fuelled vehicles which are becoming more popular as an answer to rising fuel prices and environmental concerns. Electric motor vehicles can reduce emissions and noise. Electric bicycles offer potentially greater emissions reductions and use less space if they replace cars. Others include the Massachusetts Institute of Technology's stackable and shareable city car concept.

45. **Action:** Investigate ways to reduce pollution generated by vehicles idling including anti-idling laws.

46. **Action:** Work with the State Government and other stakeholders to assess the applicability of electric vehicle technologies and other innovations in the city.

Make the roads safe for vulnerable users

The city's vulnerable road users, pedestrians and cyclists, account for the great majority of trips on the roads. So, their safety is critical to maintaining high levels of mobility in the city. Driving speed is a key factor in the death and serious injury of vulnerable road users, with the evidence showing that injury severity increases significantly when collisions occur at greater than 30kph.

On roads where there is pedestrian and cycling activity, slower driving improves overall city mobility, creates a safer city and improves the amenity of the public realm. Reducing speed limits on these roads will have little effect on driving travel times.

This approach is consistent with the National Road Safety Strategy 2011-2020 and was highlighted in Moving People and Freight 2006-2020. A business case compiled by the City of Melbourne in 2007 for a 40kph limit in the Central City demonstrated a benefit/cost ratio of 60:1 for the proposal. There is an immediate need for the 40kph Central City speed limit to be implemented. Following this a review will be undertaken to examine the feasibility of a 40kph speed limit across the municipality.

47. **Priority Action:** Work with State Government to deploy driving speed limits across the municipality that achieve mobility objectives of this strategy.

Optimise the provision of off-street parking

Melbourne also has a significant supply of off-street parking which could, in the future, provide short term capacity.

The City of Melbourne's current parking policy is to limit provision of parking in residential buildings.

In March 2010, the City of Melbourne adopted planning scheme amendment C133, which applies to Carlton, Southbank and parts of North Melbourne, West Melbourne and East Melbourne. It allows the provision of zero on-site car parking spaces in residential developments over four storeys, and places a discretionary limit of one car parking space per dwelling. This amendment was based on demographic and accessibility analysis, which determined that the areas affected by the amendment have excellent accessibility to public transport and other facilities.

Following the success of this amendment, the City of Melbourne will pursue another amendment to the planning scheme to set maximum car parking rates for other land uses (for example, offices) throughout the municipality, and review the area to which amendment C133 applies.

48. **Investigate an amendment to the planning scheme to set maximum car parking rates for all land uses throughout the municipality, and review the area to which amendment C133 applies.**

49. Action: Investigate opportunities for new parking capacity to be constructed so that it can be converted to more productive uses in the future.

50. Action: Discourage the provision of long term commercial parking, particularly in the Central City, and encourage conversion of existing long-term commuter parking into affordable short stay parking or other uses.

51. Action: Optimise parking accessibility to meet the needs for universal access.

Managing on-street parking more intensively

The transport efficiency and effectiveness of some of the road space currently allocated to car parking needs to be increased by re-allocating it to meet the emerging profile of city mobility needs, including new level-access tram stops, bus priority lanes, safe city taxi ranks, car share parking, bike share parking, dedicated bicycle lanes, and footpath widening.

In addition, other streetscape infrastructure that supports the city mobility needs may require spaces currently allocated to car parking. This re-allocation of parking spaces will result in a reduction in the number of on-street car parking spaces.

In the Central City, where demand for on-street parking is very high, the City of Melbourne is introducing information technology to enable better active management of these spaces to deliver greater public benefit. Higher rates of turnover will enable more intensive use by short stay drivers. This will mean that spaces are regularly vacated, which

will reduce the number of drivers circling in search of a vacant space.

52. Action: Implement parking systems that allow payment without requiring parking machines or meters, that will remotely sense and assess parking occupancy.

It is important for the City of Melbourne to plan proactively for a declining on-street parking supply, especially in the Central City. This should include an analysis of potential City of Melbourne revenue loss, acknowledging any economic impact to abutting businesses, and considering the social and environmental benefit of changing car parking to other uses.

In streets with established dwellings that have limited or no option for on-site parking, such as restrictive heritage controls and an established history of permit restricted parking on their local street, the City of Melbourne will provide a well managed resident only parking scheme that matches the number of available parking spaces in the street with the number of dwellings. The scheme will prevent over-subscription and remove access to the scheme for new, additional dwellings which increase the site density.

There is an opportunity to use parking data and information to develop user interfaces which make parking in the city more streamlined. This may lead to more efficient traffic behaviour by reducing the need to 'hunt' for parking, and lead to greater compliance through a better public understanding of parking controls in different areas. To encourage innovation in this area, Council can be open with parking information and support the development of user interfaces and tools.

53. Priority Action: Review and update Council's on-street parking strategy so it is consistent with mobility objectives of this strategy.

54. Action: Increase the allocation of central city on-street parking to short term parking.

55. Action: Publish parking data, including occupancy rates, prices, availability and other information.

56. Action: Provide an effective resident-only parking permit scheme to established dwellings that have little or no option for on-site parking.

Effective and integrated public transport





Effective and integrated public transport

Goal

Public transport will be the most attractive way to travel around the municipality and the inner metropolitan Melbourne region. An integrated system of rail, tram, bus, taxi, car and bike share will meet customer's needs and be fully coordinated with the municipality's pedestrian network. It will be possible to live and do business in inner Melbourne without needing a car.

Overview

Public transport includes rail, tram, bus, taxi, car share and bike share and, for regional trips, air travel – all cases of the use of a shared vehicle. Government plays a major role through ownership, operation, regulation and coordination of these services.

State Government is largely responsible for running much of the public transport system, but local government, as the land use regulator, and the manager of the pedestrian network, has a key role integrating the system with land use and the walking component of each public transport trip. The City of Melbourne has an additional role, as it is at the hub of the public transport system.

Melbourne's public transport network extends throughout metropolitan Melbourne, with varying degrees of service. Most of the train stations and tram stops are in the inner metropolitan region because much of the expansion beyond this region has been enabled and driven by car usage. The inner metropolitan region also has the highest densities of residents and jobs. The municipality of Melbourne has the highest concentration of public transport services.

Public transport in the inner metropolitan sub-region needs to provide for continuing high employment and residential growth, coordination with land use development, integration of all the public transport modes as one system, increased capacity, reliability and accessibility, and establishing a complementary role with private transport, particularly in addressing the

need to enable better east west travel through the sub-region.

Priorities

Planning public transport for growth

Over the next 20 years the municipality and the inner region will see continued significant growth in population and employment. The main growth sector will be knowledge/services. Constraints on public transport availability may significantly impede labour productivity. Melbourne's productivity growth has been falling in recent years, in part due to these constraints on its transport system. This sector thrives on the agglomeration effects of high densities enabled by very good transport connections. This growth will need to be matched by a significant expansion and upgrade of the public transport system.

Public transport within the central city

Metropolitan train and tram networks have traditionally focussed on Swanston Street as the spine of the central city. This has reinforced both the public transport network itself and the economic productivity of the city. As the city has expanded projects like the City Loop and road-based tram improvements have improved the ability of the network to deliver and disperse larger numbers of people to their destinations in the Hoddle Grid.

Swanston Street plays a vital role in the tram network, the bicycle network and for pedestrians. Balancing these competing priorities has made the redevelopment of the street a challenge. A significant opportunity

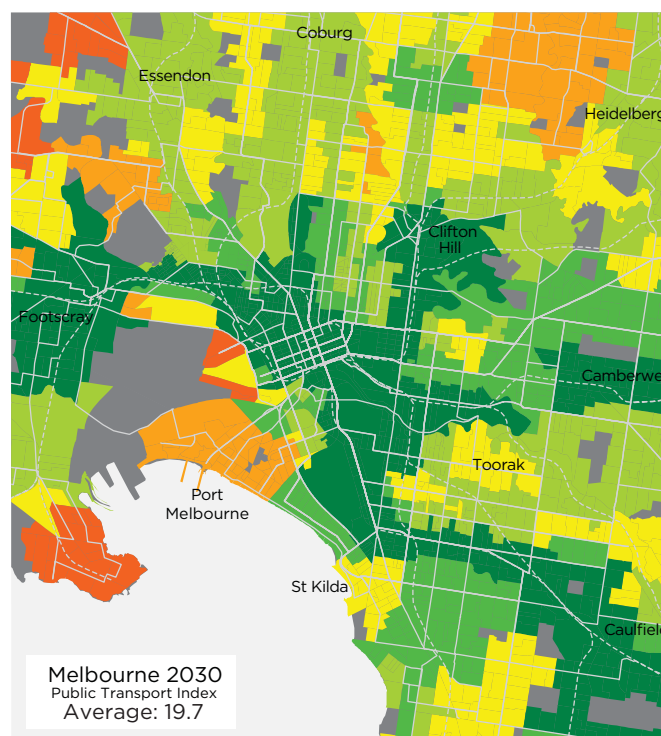
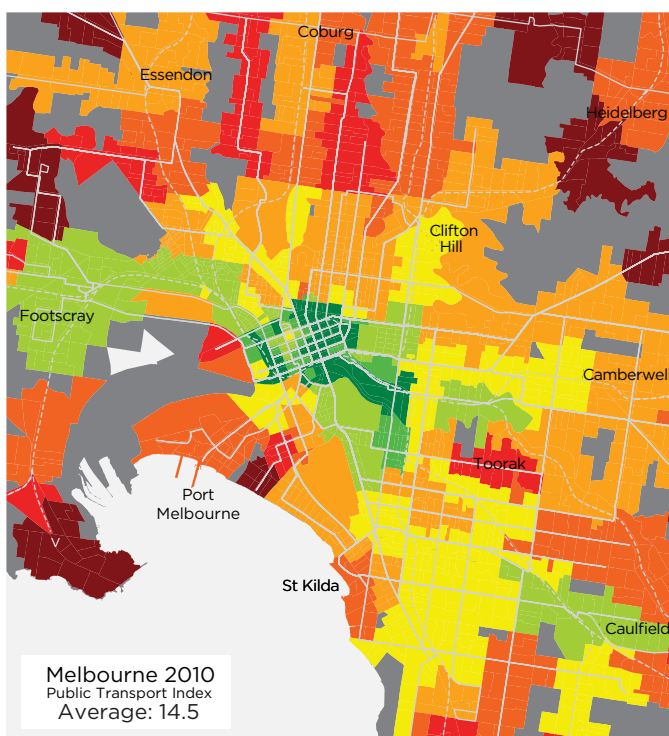
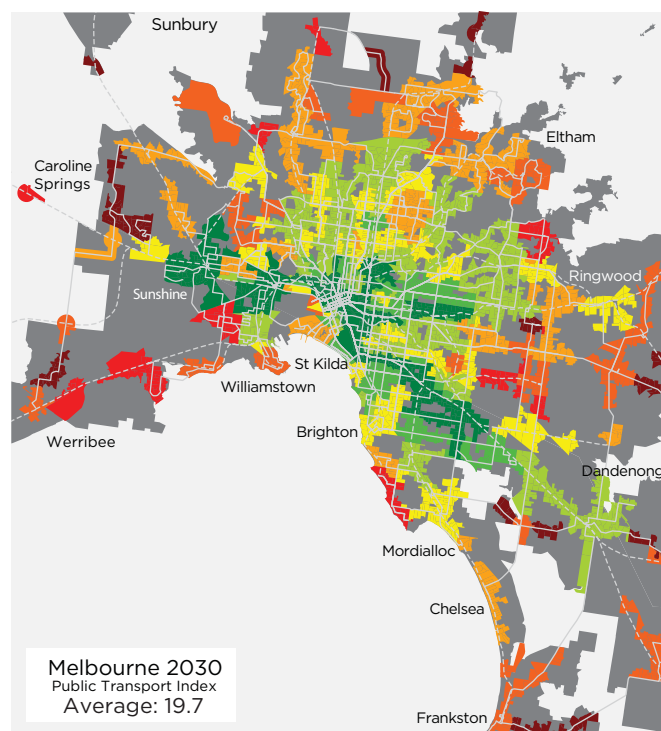
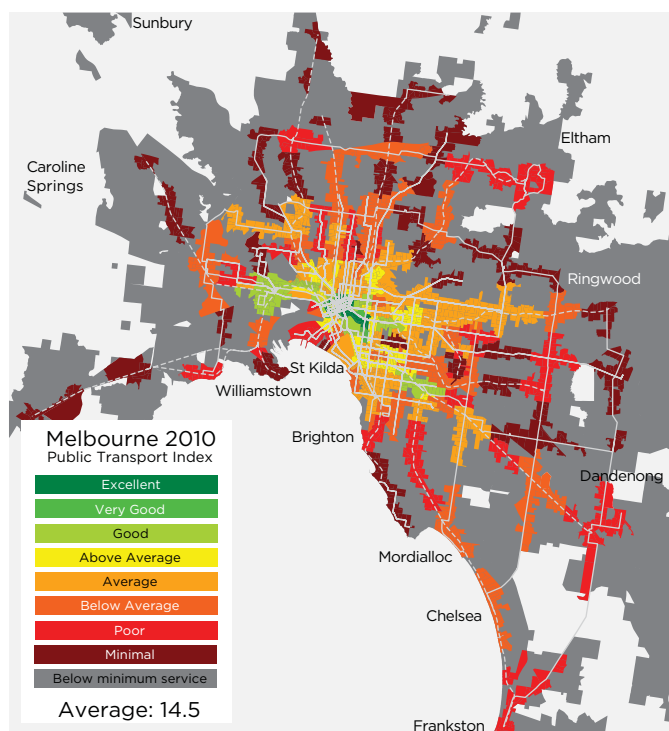


Fig 6.0 Spatial Network Analysis for Multimodal Urban Transport Systems (SNAMUTS) 2010. Source: RMIT. Dr Jan Scheurer

exists with the development of the Melbourne metro rail project to create better tram connections and land use integration through Southbank, to the west of the CBD and the north of the CBD.

Coordinated development of transport and land use

The development of urban transport and land use must be coordinated. Rail and tram are space efficient and high capacity, making them ideal for the mobility needs of high density mixed development land uses. These modes are also at their most efficient when their high infrastructure and running costs are spread across a large number of trips over the whole daily and weekly cycle.

This relationship is evident in the region of the Melbourne's network extending out from the central city along the inner south-eastern corridor. This area has the highest density of stops, interchanges and service levels and is also the region with metropolitan Melbourne's highest effective jobs density.

The economy in this region is also well serviced by high capacity roads for driving, but driving is a space hungry mode best suited to lower density urban areas.

As this region's land use density increases, driving will become a less effective mode. This trend is evident already in the municipality and particularly in the central city.

Twenty-four hour activity in the City of Melbourne requires reliable and safe inter-peak transport options. There is currently a clash between the hours of operation of many central city land uses (restaurants, bars and clubs) and the hours of public transport operation. Taxis and flexible bus transport are best

suited to meet the demands of people travelling late at night.

Integrating public transport modes as one system

Each of the public transport modes suits different types of trips. These modes must be integrated into a seamless public transport system allowing users to mix and match modes easily to suit their trip needs.

This has started, with Public Transport Victoria and myki providing customers with information for a single user perspective for trip planning and payment, but we are only beginning to optimise the coordination of rail, tram and bus routes, the modal interchanges and the incorporation of taxi, car share and bike share directly into one system, planned developed and coordinated across government departments, transport companies and agencies, and local government. A 'one system' approach to planning and governance.

Making our public transport system more effective

Capacity

Public transport capacity today cannot comfortably meet demand. To meet the future demand from projected growth, especially at peak times, the capacity of the system will need expansion and significant upgrades, including metro style separated train lines, new rolling stock, tram and bus priority, and new tram routes.

The walking component of public transport journeys also requires more capacity. Many parts of the pedestrian network are now at capacity during peak times. More than 153,000 people per day use Flinders Street Station

and 36,000 people use the Federation Square tram stop. In 12 years these numbers will more than double, to 380,000.

Reliability

Overloaded trains, cancellations and maintenance difficulties are reducing train service reliability. Melbourne's large suburban rail system is ill suited to providing a high frequency, high capacity service. The reliability of the tram and bus services is undermined by delays caused by road traffic congestion and insufficient priority at intersections.

Users rate reliable departure and arrival times as more important than journey time. As customers come to rely more on public transport its reliability becomes more critical. Improvements to reliability require improvements to infrastructure as well as operations.

Accessibility

A world standard public transport system in a dense, mixed-use city provides users with good access to a wide range of destinations at most times of the day and week. The London Underground, Paris Metro and New York Subway do this. These metro style systems provide business users, visitors and residents with a high degree of accessibility, meeting most of their transport requirements and underpinning the economy in those city centres.

An assessment of the accessibility afforded by Melbourne's combined rail, tram and bus network¹ shows

¹ *Spatial Network Analysis for Multi Modal Urban Transport Systems (SNAMUTS) 2010. RMIT. Dr Jan Scheurer*

that a large east-west corridor through the inner Melbourne region provides users with above average accessibility. A world class system should provide them very good to excellent accessibility.

By expanding and upgrading Melbourne's public transport network over the next 20 years, the system would provide very good to excellent accessibility over a much larger area. With this degree of accessibility, users would be able to go anywhere, anytime using the public transport system much as they would use their car.

The scenario expansions and upgrades include a new Footscray to Caulfield Metro line, reengineering the train network

into a system of separated metro style lines, reducing travel times by 25 per cent, increasing service frequency to no less than every 10 minutes, adding new rolling stock, redeploying tram routes to provide a more even service spread across the central city, and adding new services and links.

Building the complementary relationship with private transport

Disjointed strategic transport planning is the result of long institutionalised separation at all levels of governments between the planning and provision for private transport and that for public transport.

Walking in particular is a critical trip component of the public transport system and its ability to service land uses effectively. The locale of a station or stop must link with convenient, logical and safe walking connections. The design and management of the public realm between stops and stations must be integrated with the design of stops, stations and interchanges.

Driving has been the dominant mode of metropolitan travel for nearly 50 years, but it is not the universal solution it once appeared to be. In the more dense parts of the city, public transport and walking are the most effective combination, so driving needs to be designed to



complement this combination rather than compete with it.

Cycling is an ideal mode for extending the catchment of public transport. High quality cycling networks linking stops and stations with residential and employment centres, are critical for enabling cycling to complement the public transport system. Facilitating the carriage of bicycles on some public transport vehicles may also be appropriate. Secure bike parking at suburban stations can facilitate a form of 'park and ride' that is significantly more space and cost efficient than 'drive and ride' car parking. This, together with improved bike share mobility options in the central city, can enable public transport users to integrate cycling easily into their journey.

Enabling east west travel

Whilst the population of the western half of the metropolitan region is growing rapidly, this is not being matched with strong jobs growth. The high effective jobs density along the south eastern corridor between central Melbourne and Clayton is underpinned by a strong road and public transport network (figure 4.2, p15). There is no comparable employment corridor or underpinning transport network west of the Maribyrnong River.

The western suburbs need better transport connections with Central Melbourne and the south eastern employment corridor, as well as with the Port of Melbourne. These connections would boost the west's capacity to attract and retain businesses and reduce social disadvantage by providing better access to the central city for work, education and other purposes. They

would also open up new business opportunities in the west (especially in the services sector) and improve its competitive advantage as a freight and logistics hub.

The 2008 East West Link Needs Assessment (EWLNA) identified that the lack of rail capacity through North Melbourne and the City Loop constrains the ability to boost rail services to and from the west. The Regional Rail Link (RRL) and the proposed Footscray to Caulfield Metro Rail link are designed to build a rail service to the west comparable with that serving the south east.

The City of Melbourne's envisages the urban renewal of Docklands, E-Gate, Arden Macaulay and the land north of Dynon Road as an intensive employment and residential corridor extending out from the central city to the Footscray Central Activities Area and beyond. These land uses would be serviced by the new rail services and by new and re-directed tram and bus services to the inner west.

Public Transport and the 24-hour city

The NightRider bus provides the best solution to late night public transport on Fridays and Saturdays.

Extending train operating hours may not be ideally suited to the night time transport task. Trains have a significantly higher operating cost than buses. Additionally any overlap between trains and NightRider will result in competition between the two modes.

Considerable improvements to NightRider have been made in recent years. This has contributed to high demand for services. Further improving service frequencies will increase

transport in and out of the city during these times.

There is scope to extend tram services into the night on Fridays and Saturdays. The City of Melbourne will work with others to explore the value of extending trams until 2am, and running services on selected routes all night to provide a complementary service with NightRider buses.

Contributing to emissions reductions

The public transport system will be a central component of a low emissions future. High capacity public transport will enable people to move throughout inner Melbourne in an environmentally efficient way. Sustainable transport behaviour will be further enabled by fine grain public transport modes throughout the municipality, such as tram and bus systems, taxis, car and bike share programs, which together will provide flexibility in mode choice without the embedded restrictions of vehicle ownership.

Zero Net Emissions by 2020 (Update 2008) sets a target for reducing the carbon intensity of the public transport system: a 20 per cent reduction by 2020.

The most effective way to achieve this in Melbourne will be to decarbonise the fuel supply, through the introduction of low-carbon or clean source energy, thereby reducing reliance on emission-intensive sources.

Additionally, improvements to the energy efficiency of the public transport network, such as regenerative braking on trains, can also contribute to overall reductions in greenhouse gas emissions.



6 Train

Goal

Train travel to and within the City of Melbourne will be convenient, reliable, safe and efficient. Peak hour (peak direction) train frequency will be increased by 50 per cent from 2011 service levels.

Context

An efficient and reliable train network is the central component of a well functioning public transport system. High capacity and fast train connections are vital for enabling access to the central city and the variety of facilities and services hosted there.

The Melbourne train system carries about 400,000 people each day on a network of 830 km of track, using 180 six-carriage trains. There is no other mode of transport with the capacity and efficiency of trains, capable of moving people into and from the central city.

Improving train network efficiency and integration with complementary modes of transport is essential if we are to support sustainable growth in the number of residents and employment opportunities in the City of Melbourne.

Melbourne has a large suburban rail system. Suburban rail systems operate on main line tracks, carrying a mix of other rail traffic such as regional passenger rail and freight services. This means that the train traffic is more complex, headways are longer, average speeds slower and service frequencies lower.

As the density of activity in Melbourne's inner metropolitan region has grown over the last 20 to 30 years, our suburban system has become increasingly ill-suited to meet the rail service needs of these parts of the city.

Issues

The suburban rail system is inadequate for inner Melbourne

The dense inner metropolitan regions of most large advanced

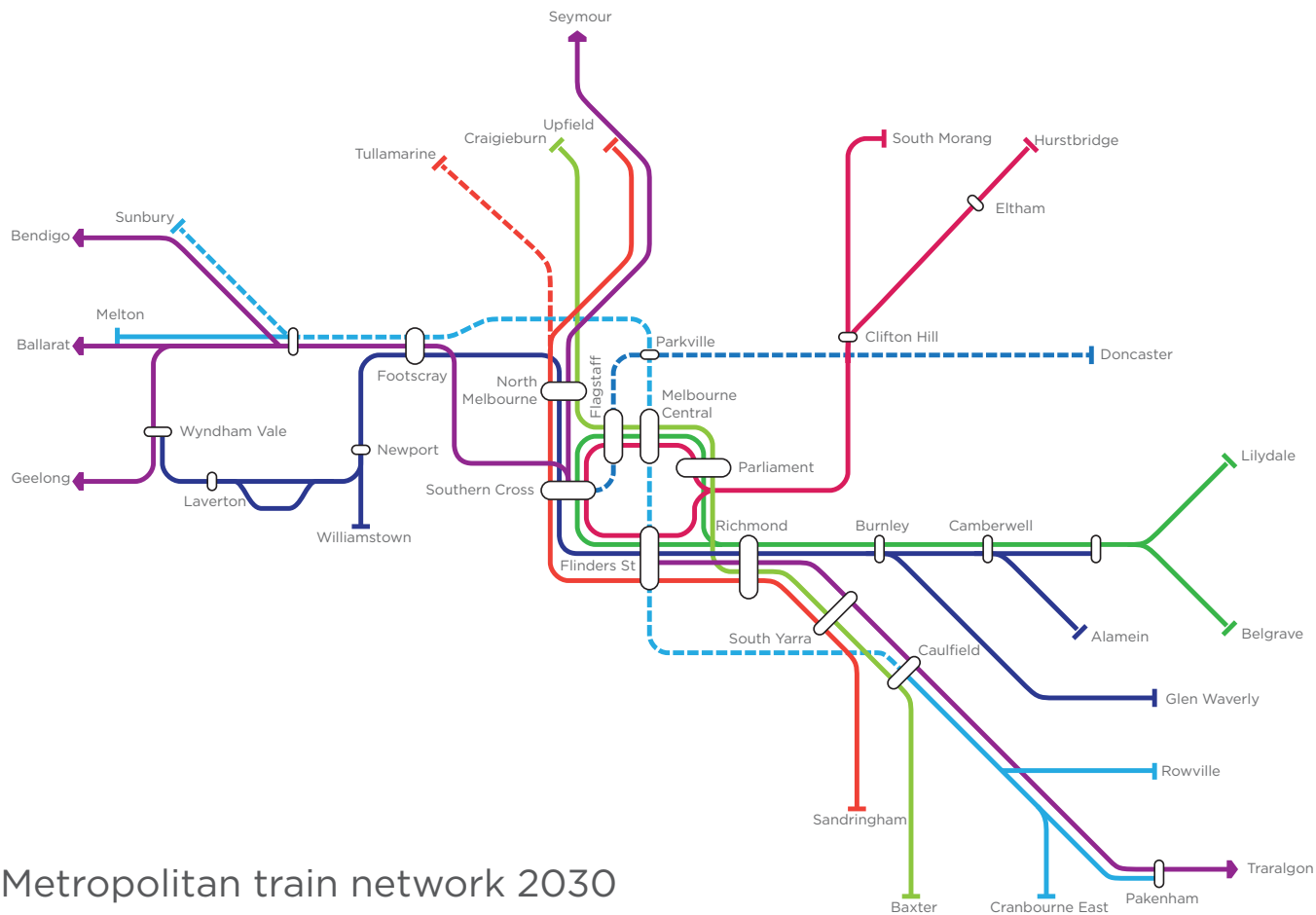
cities across the world have (or are installing) a metro rail system to meet the more intensive passenger rail task. Unlike a suburban rail system, a metro (or rapid transit) rail system is a network of dedicated lines segregated from each other and other rail traffic and running back and forth along the one line. Passengers wanting to traverse the network make interchanges at hub stations where two or more lines pass by each other.

Melbourne needs a metro style rail service that can run at higher frequencies and speeds and with greater reliability. Running at frequencies of every five minutes means a timetable is not required. The metro network can be complemented by a suburban rail service to the outer metropolitan areas.

The costs of congestion on trains

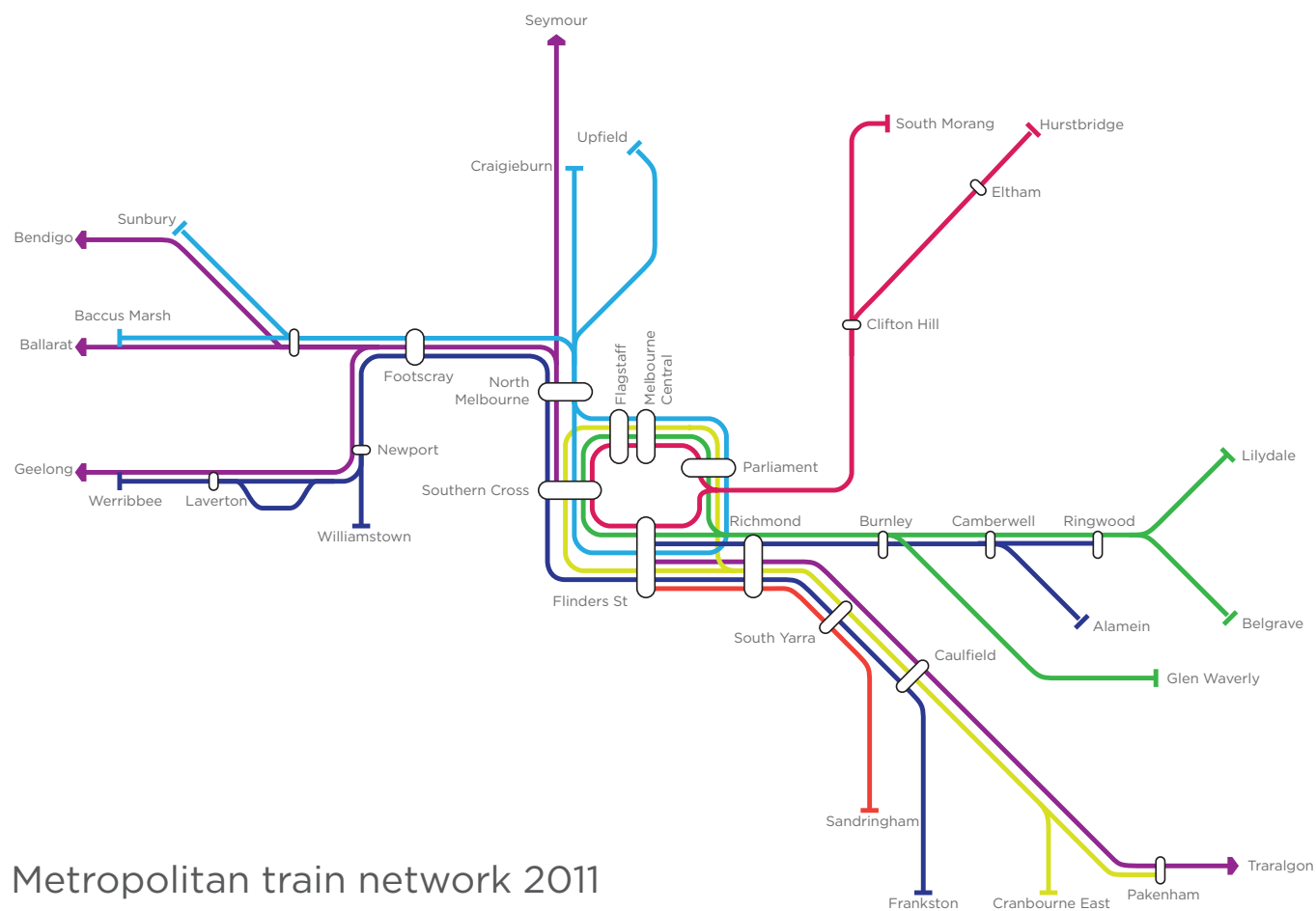
Overcrowding on our train network makes access to the City of Melbourne difficult for some people across the metropolitan area and coming from some regional centres. It also affects inner city residents who are unable to access persistently overcrowded services. This can be especially problematic at peak times, when many people rely on the rail network to get to work. Further overcrowding on our trains has the potential to suppress jobs growth in inner Melbourne. It has been calculated that for every 10 per cent of overcrowding on Melbourne's trains, the city misses out on creating between 1600 and 2600 jobs¹. The peak

¹ Currie, G, 2010 *Understanding Urban Agglomeration Benefits in Mass Transit Project Evaluation*, Monash University



Metropolitan train network 2030

Fig 6.1 Possible Train Network Concept 2030 showing new lines with less convergence



Metropolitan train network 2011

Fig 6.2 Train Network Configuration 2011 showing pressure on Flinders Street



Fig 6.3 Melbourne Metro project proposed alignment Source: Department of Transport

rail capacity of Melbourne's train system is currently approximately 40 per cent overloaded and this is projected to go as high as 44 per cent by 2015, even with current planned improvements in place.

Regional Rail Link is an important project addressing train congestion by constructing new tracks to separate suburban trains from the west from regional trains servicing Geelong, Ballarat and Bendigo.

Poor customer pedestrian connections and interchanges

Poor pedestrian connections for customers around modal

interchanges is undermining the ability of the public transport system to function as an integrated multi modal system.

Some precincts such as the train/tram interchange at Swanston Street, at Flinders Street Station, or the Spring Street exits for Parliament Station, have not been designed for current peak capacity and congestion will only increase as patronage grows.

Urban renewal areas will require new train services

Major urban renewal areas such as City North and Arden-Macaulay

will require new rail services to provide excellent accessibility and high passenger capacity to serve what will be high intensity, mixed-use areas very similar to the current central city. The long-term planning for land use development and transport planning in these contexts must be coordinated.

Greenhouse emissions and energy cost

Melbourne's train network currently relies on electricity generated by brown coal. This is very greenhouse gas intensive. Fuel costs are expected to rise in

the future, including the cost of electricity to run the train network.

Objectives and actions

Re-engineer the suburban rail system to provide a metro service

The suburban train system needs to be converted into a metro train service to cater for the large number of users and to serve the growth and intensity of development in inner Melbourne.

Creating a metro system could increase the capacity of the train network from approximately 135 trains in the morning peak hour to about 256 trains.

- Through-route trains – The most efficient way for trains to operate is to travel from one side of the metropolitan area to the other, running through the central city. This means they spend as little time as possible in the most congested part of the network which, in Melbourne, is the City Loop.
- Separate lines – When lines are separated they can be upgraded independently (including larger train sets and new signalling) and breakdowns are isolated to a single line. Washing and repair facilities are provided for each line so trains do not travel on the network to access servicing. Trains can be run simply and more frequently because complex timetabling and track sharing is avoided.
- New routes – As Melbourne grows, new train lines will be needed. The first of these will be the Melbourne Metro Rail Tunnel. Other potential future extensions to Melbourne Airport, Doncaster and

Rowville are currently being studied.

57. Priority Action: Work with the Department of Transport to achieve the conversion of the suburban rail network into a metro style system.

Melbourne Metro

The State Government has proposed that one of the next major improvements to the train system is to be the Melbourne Metro rail tunnel. This new service, planned to be operating by around 2020, was initially proposed by the East West Link Needs Assessment (the Eddington Report) and is similar to the North-South Underground Rail Line proposed in the City of Melbourne's previous transport strategy, Moving People and Freight 2006-2020.

The project would provide a high capacity underground train running from Footscray, via new stations at Arden-Macaulay, Parkville, City North, City South and Domain to join the existing train network near South Yarra station. The Melbourne Metro would add 24, nine-car trains per hour to Melbourne's network and be able to carry 60,000 people per hour.

The Melbourne Metro proposal is a major city shaping project comparable in scale and effect with the City Loop. Planning for the new Melbourne Metro stations at Arden, Parkville, CBD North, CBD South and Domain has been incorporated into City of Melbourne's new Municipal Strategic Statement (MSS), the Arden-Macaulay Structure Plan 2012 and City North Structure Plan 2012. These are plans for the local land use development, transport and mobility in these urban renewal areas. The City of Melbourne has developed these



Fig 6.4 Proposed Arden station location

plans in close consultation with the community and the State Government to ensure that the local land use and transport planning is fully integrated with the planning for the proposed Melbourne Metro.

The timeframes envisaged in the City of Melbourne's plans are coordinated with State Government's project timelines. In November 2011 the Victorian Government submitted a bid to Infrastructure Australia for \$130 million for pre-construction work on the project (nominally for 2012/13).

The Melbourne Metro proposal must provide for a very high level of transport and land use integration. New development located near stations or feeder services to the Melbourne Metro (such as new tram or bus lines) should be strongly transit-oriented. The project should include a review of existing transport systems to ensure they provide optimal service to the growing city. In particular

tram services should be re-routed from the overcrowded Swanston Street corridor on to routes that will feed better transport service to the west of the central city.

The project must integrate the new stations with the surrounding urban fabric to enhance the mobility, liveability and economic performance of the city. This would mean excellent pedestrian networks to ensure that the walking leg of public transport journeys is prioritised, efficient and attractive.

Construction of the Melbourne Metro would take several years and have a significant impact on city operation. Construction in the central city is complex and affects many people and businesses. The City of Melbourne will need to work closely with the State Government to minimise negative impacts of construction.

58. Priority Action: Work closely with the Department of Transport on the planning and construction of the Melbourne Metro project to ensure it is well integrated with the existing city and its future development and enhances Melbourne's transport network in addition to actively supporting future rail extensions to Doncaster.

Improve customer pedestrian interchanges and connections

The design of the public realm around existing and proposed stations needs to optimise pedestrian priority, safety, amenity and convenience of all rail customers as they move between the station and their final destination, or the next leg of their journey. This requires specific improvements to facilitate convenient access for people with

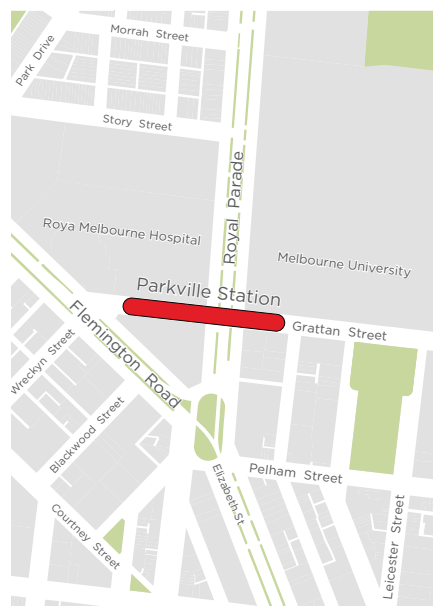


Fig 6.5 Proposed Parkville station location

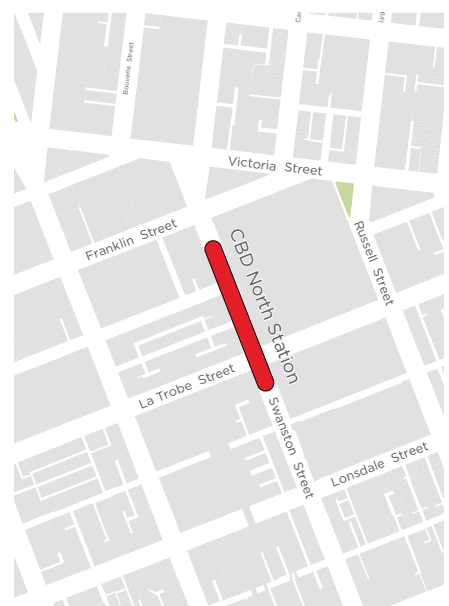


Fig 6.6 Proposed CBD North station location

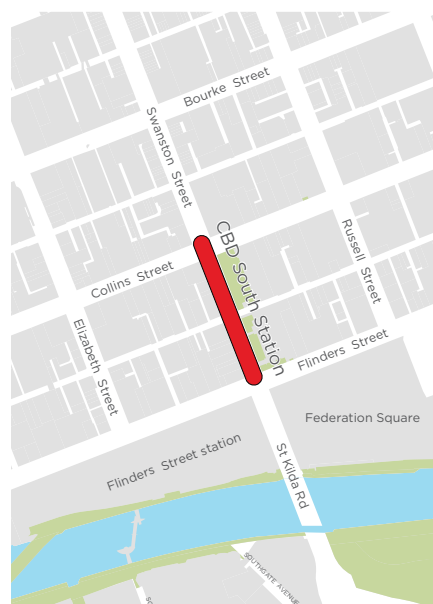


Fig 6.7 Proposed CBD South station location

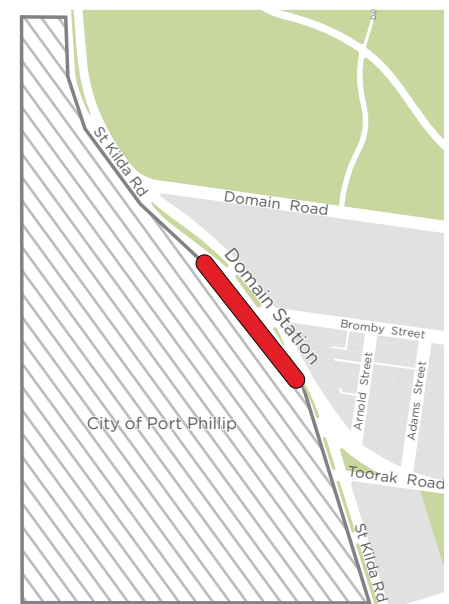


Fig 6.8 Proposed Domain station location

disabilities to existing and future underground train stations. The Flinders Street precinct, and links to the Federation Square tram stop and the Elizabeth Street tram terminus require specific short term improvements.

59. Priority Action: Work with the Department of Transport and train operators to ensure that areas around train stations provide excellent pedestrian access.

60. Priority Action: Work with State Government to ensure the municipality's urban renewal areas (Southbank, Docklands, E-Gate, Arden-Macaulay and City North) are planned to prioritise direct, high quality, high capacity pedestrian links for 800m around new and existing stations.

Coordinate land use intensification with existing and new rail stations

The development of land around new rail stations should be planned to maximise the benefit of the accessibility provided by the train network. Higher density, mixed-use developments should be located closest to stations.

Existing train stations, such as Flagstaff and North Melbourne, will play a more important role as urban renewal of the inner north and west of the central city continues. These stations should be managed to complement this increase in activity and provide convenient access for residents, commuters and visitors.

61. Priority Action: Work with the State Government to ensure that planning for new rail stations and precincts integrates land-use planning with the transport network.

62. Action: Advocate for the hours and days of operation of Flagstaff Station to be similar to other City Loop stations.

Greenhouse emissions and energy cost

There are opportunities to reduce the greenhouse intensity of the public transport network through both the operation of the network and the energy that is used to power it.

63. Action: Advocate to improve the overall energy efficiency of the train network and in particular increase the use of low-carbon and clean-source energy to power Melbourne's train system.

7 Tram

Goal

Tram operations in the City of Melbourne will be improved to offer a more frequent and reliable service. Tram stops will be better integrated into the public realm to improve passenger access, safety and amenity, with 90 per cent of stops upgraded to 'level access' by 2016.

Context

Melbourne's trams are an iconic part of the city's street life. They connect Melbourne's inner suburbs and shopping centres and offer a fine grain of mobility compared with the longer distance task performed by the heavy rail network. Melbourne's trams have the potential to be one of the world's leading surface transport systems.

Trams serve approximately 600,000 people every day in Melbourne's inner metropolitan areas, on a 247 km network that is worth between \$10 billion and \$15 billion. Trams can move more than 10,000 people per hour in a single arterial traffic lane that could otherwise move only 800 cars. During peak hour on key routes into the city, trams already move more people than motor vehicles. For example, they move 56 per cent of the people travelling on Nicholson Street, Carlton, and 54 per cent of the people on Bridge Road, Richmond.

The tram network is one of Melbourne's most important strategic assets. Trams provide high quality, on-street public transport that does not require passengers to travel underground to access it.

However Melbourne's trams are amongst the slowest in the world, running at around 16 kph throughout the system and 10 kph in the city.

The low average running speeds are caused by:

- Sharing tramways with general road traffic – This means trams are being stalled in road congestion and stopped by

traffic manoeuvres crossing the rails, such as cars turning right.

- Only limited priority at intersections with signals along tram routes – Trams receive some level of priority at traffic lights but this could be significantly increased. On average, Melbourne's trams spend 17 per cent of their journey time waiting at traffic signals. Analysis by Yarra Trams shows that changing signal operation to give trams dynamic priority (signals responding to arriving trams) on Swanston Street could result in delays being reduced by up to 33 per cent.
- Tram stops are too frequent – Melbourne's tram stops are very closely spaced compared with tram and light rail systems overseas. This provides excellent access to tram services, however it can also mean frequent stopping, which increases travel time.
- Tram stop design is inefficient for passenger boarding – Many tram stop designs are inefficient. These include stops yet to be converted to level access and stops where passengers have to wait for vehicles to halt before they can cross traffic lanes.

Many tram routes in the city have developed as corridors of mixed use and often high density land uses. This integration of efficient transport and centres of employment and housing is beneficial for people living, working and visiting these areas, as well as for the macro-urban form of Melbourne. While this is common in the inner city, many tram routes in the middle and outer network are underdeveloped and have

the potential to accommodate significantly more residents, jobs and other services.

Issues

Slow tram speeds

There are many factors that impede and slow down trams, together making Melbourne's trams the slowest in the world.

Delays caused by sharing tramways with general road traffic result in unpredictable delays and even cancellations of services. Consequently, the tram service becomes less reliable in running to timetable, which deters travellers from using the service. It is also extremely expensive to manage a tram network that is heavily impacted by traffic; if trams were not held up by traffic congestion, the same level of service could be achieved with approximately 100 fewer trams. (Melbourne has 486 trams, including 37 historic W class vehicles). Many tram routes in the city of Melbourne have been separated from traffic, however trams are often still held up by non-compliant traffic and right turning vehicles. These issues can be most obvious on streets which provide access to off street car parking.

Considering the critical role that trams play in the transport system, they are often afforded little priority at traffic lights, which can reduce the quality of the service they provide. The City of Melbourne has been working with VicRoads and tram operators to improve tram priority at signals for many years, achieving some excellent results. However, more can be done to reduce the time that trams are held up at traffic lights.



Fig 7.1 Level access tram stop in Swanston Street, Melbourne



Fig 7.2 Level access tram stop showing permeable access to footpath in St Kilda

Infrequent services

Poor frequency of tram services can be a result of the problems which slow trams down. When services are significantly delayed, there is often a knock-on effect to other services using the same route or line, resulting in extended time gaps between services.

Many tram routes are scheduled to run at low frequency, due to a lack of rolling stock, lack of demand, or inability to accommodate more services on the existing infrastructure. Low frequencies are common in the inter-peak times.

Stop and interchange design

Tram stop designs need significant improvement to ease overcrowding and improve connections for walking. Level access stops have improved the safety and amenity of stops, as well as reducing loading times. In some cases they have calmed traffic in high pedestrian areas. However, some are now overcrowded and require staff to maintain passenger safety and efficient movement. Extensive fencing is used to separate traffic (often 50 to 60 kph zones) from pedestrian areas, which has led to an impermeable walking environment.

Creating a more equitable, accessible transport system is a major driver for improving the design of tram stops. Meeting the requirements of the Disability Discrimination Act will ensure those with physical disabilities can access trams and it improves the ease and safety of access for all customers.

Some of the most important tram stops in the city are interchanges between tram and train or bus. For example, the Flinders Street Station connection to the

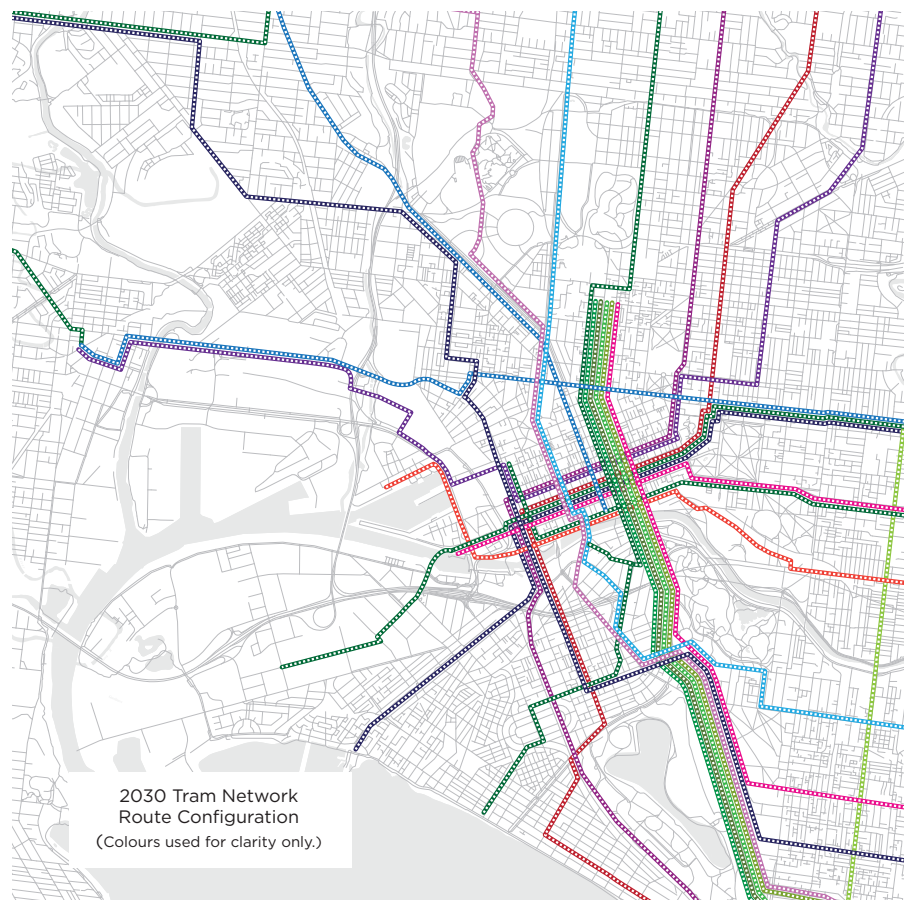
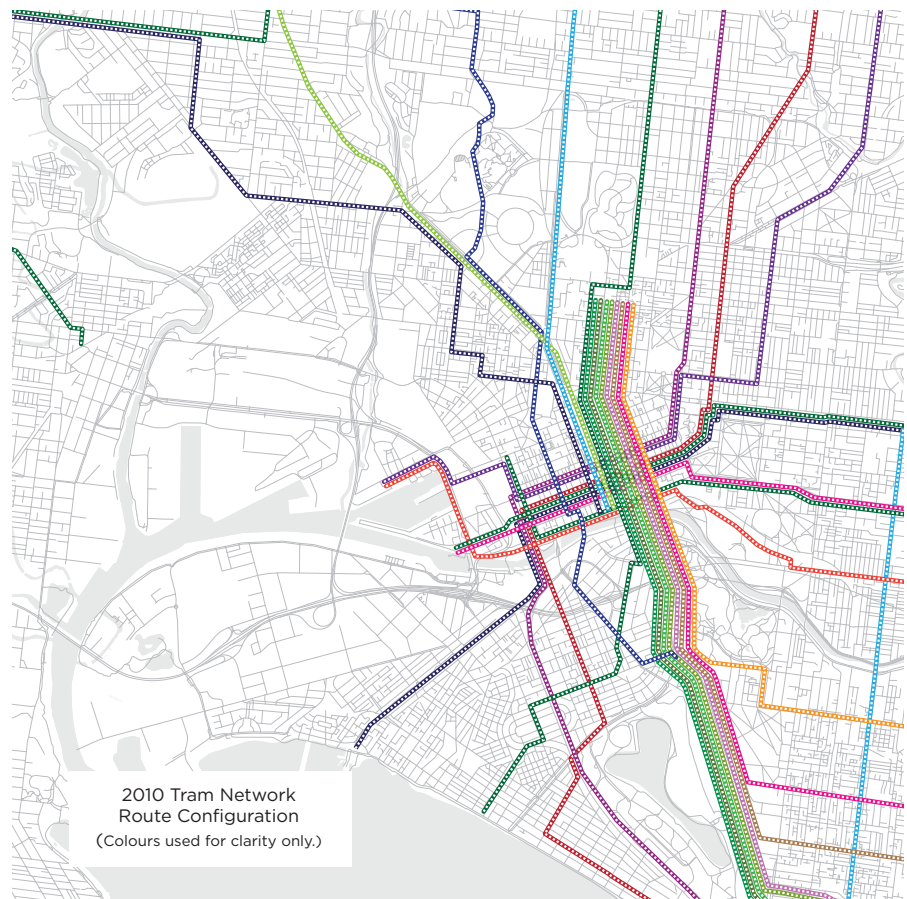
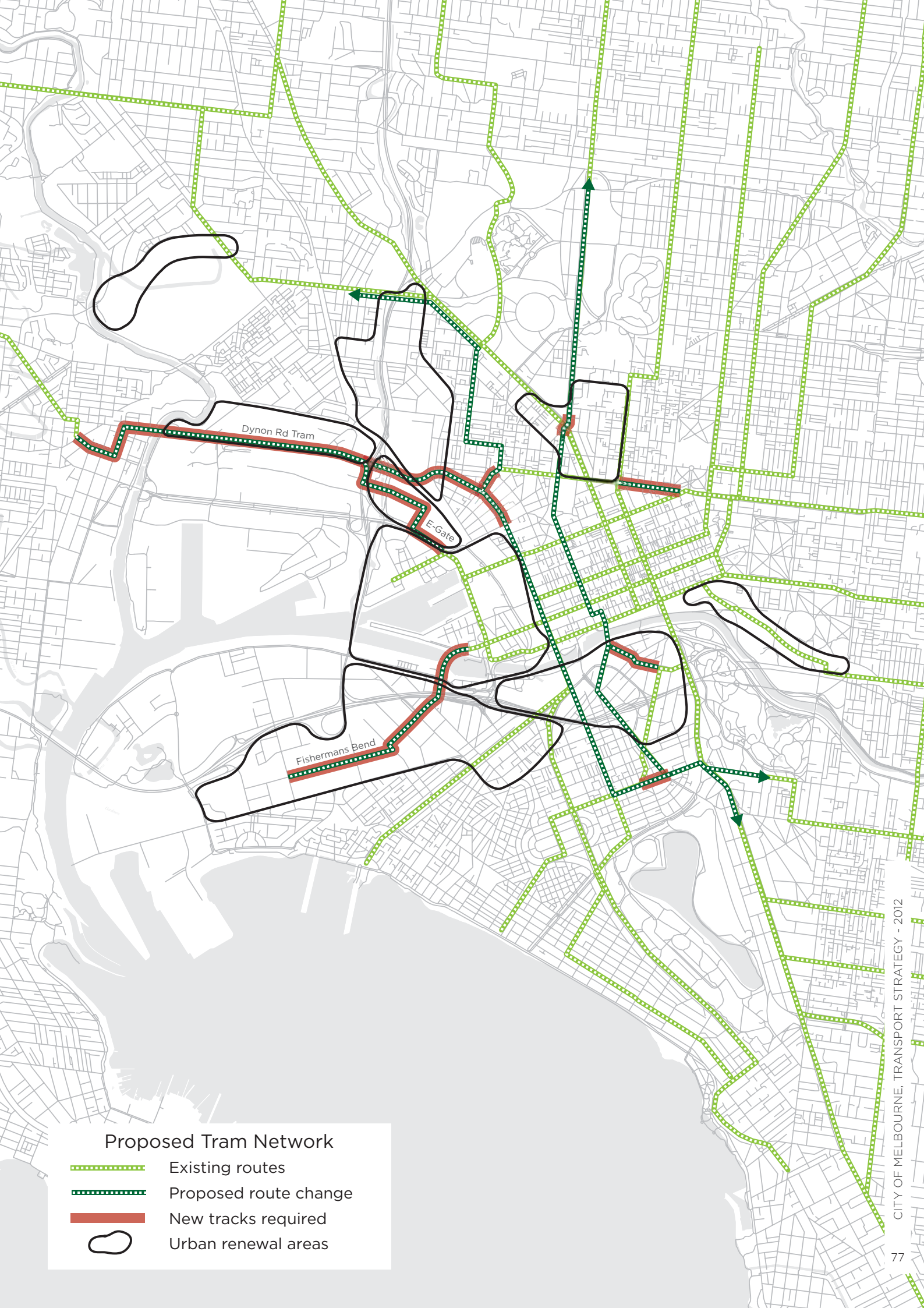






Fig 7.3 Tram congestion on Swanston Street

Fig 7.4 Trams to the west of the central city and additional routes

Fig 7.5 (Right) Tram routes moved to the west of the central city; additional tracks at Victoria Parade, E-Gate and Haymarket. New tracks and routes on Dynon Rd, in Fishermans Bend, and along Grattan and Elgin Streets



Proposed Tram Network

-  Existing routes
-  Proposed route change
-  New tracks required
-  Urban renewal areas

Federation Square tram stop, and the interchange between Southern Cross Station and the tram network are extremely busy places in the morning and evening peaks. Better tram stop design, and traffic treatment, including lower speeds, can help create a more permeable walking environment to ease some of the current overcrowding, safety and amenity issues.

Network imbalances and gaps

The tram network in the city is currently very dependent on the St Kilda Road-Swanston Street corridor. The number of routes that feed into this corridor means that even a slight problem can have a major impact on tram operations and people's travel time. The emerging and future urban renewal areas will need to be serviced by extensions to the tram network to deliver excellent accessibility.

Greenhouse emissions and energy cost

Similarly to Melbourne's train network, the tram system currently relies on carbon intensive electricity. As the use and deployment of tram services increases, and in an economic climate where fuel costs are expected to rise, it will be increasingly important to transition the tram fleet onto a sustainable power supply.

Ageing tram fleet

The age of Melbourne's tram fleet needs to be addressed. Many trams will reach the end of their design life during the next decade. The lead-in time to buy new trams is three years, and the system requires a long term commitment to managing and expanding the capacity of the tram fleet. Trams are often overcrowded, partly because

many vehicles are too small: 147 of the fleet's 486 trams are Z class, which carry only 70 people, compared with the Bumblebee (C2 class), which carries 140 people. Recent increases in user numbers has meant Melbourne's trams are becoming overcrowded more often. Upgrading of the fleet can address this issue and realise significant performance and quality improvements.

Objectives and Actions

Improving tram speeds

There are many infrastructure and traffic management techniques which can improve tram speeds across the network. Together, these initiatives can improve speeds from the current network average of 16 kph, and central city average of 10 kph.

On-road public transport needs significantly greater priority over general traffic in the allocation of road space and time at traffic signals. This can be achieved by better delineation between traffic and tram lanes, and enforcement of road rules that ensure trams and buses are not impeded.

64. Action: Work with Victoria Police, VicRoads, the Department of Transport and the Department of Justice to improve traffic enforcement to reduce delays to trams and buses.

65. Priority Action: Work with the Department of Transport to reduce tram and bus delays by providing dedicated tram rights of way.

Giving greater traffic signal priority to trams across the network is a high priority for improving the level of service trams provide. In the CBD, priority along east-west

streets (Flinders, Collins, Bourke, La Trobe and buses on Lonsdale), at streets such as King Street, would significantly reduce tram delays. The Department of Transport plans a test of 'absolute priority' for tram routes 96 and 109, which would reduce to zero the delays trams experience at traffic signals.

66. Priority Action: Work with VicRoads to change traffic signalling to prioritise tram movements.

The road Network Operating Plan (NOP) to be developed by the City of Melbourne in cooperation with the Department of Transport and VicRoads will include the highest level of priority for trams to ensure fast running times, reduced tram crowding, better reliability and a better customer experience.

67. Priority Action: Work with the Department of Transport and VicRoads to ensure that the municipality's Network Operating Plan provides a high level of priority to trams.

Frequency boost

More frequent tram services will deliver significant benefits for access and mobility in the inner region. A frequency boost can be achieved by speeding up the network, minimising externalities which impede tram movements, and better design solutions for busy tram stops and interchanges. A 25 per cent increase in tram frequencies will deliver substantial network improvements, as detailed in the accessibility analysis (Spatial Network Analysis of Multimodal Urban Transport Systems – SNAMUTS) which underpins this strategy.



Fig 7.6 Federation Square Tram Stop

68. Priority Action: Work with the Department of Transport, VicRoads and Yarra Trams to improve tram frequency and average running speeds.

Walkable stops and interchanges

Constructing new level access stops for trams will be one of the most important parts of developing high mobility public transport and pedestrian streets. These should be constructed to provide pedestrian priority access and high levels of pedestrian permeability.

69. Priority Action: Work with the Department of Transport, Yarra Trams and VicRoads to develop a four-year strategic plan to design and construct level-access stops in the municipality as part of a whole-of-streetscape renewal. Include a review of the function of existing level-access stops.

Providing access to trams and buses for people of all abilities is important for access. By 2017, the Disability Discrimination Act (DDA) requires that 90 per cent of the public transport system (stops and vehicles) must be DDA compliant. Providing fully accessible stops will contribute to a more equitable transport system, and also improve the capacity and reliability of the tram and bus networks by speeding up boarding and alighting.

70. Action: Work with the Department of Transport, Yarra Trams and VicRoads on the construction of level access stops in the municipality to meet comply with the requirements of the Disability Discrimination Act.

The high cost of new stops and the need to reduce tram delays means that the overall number of stops

will be reduced in the city. There is a requirement to balance the needs of pedestrians, for example their tolerance for long distances between stops, with the speed and operational needs of trams.

New stops will be designed to integrate much more easily into the surrounding footpath network and provide better access for cyclists. The City of Melbourne's plans for Swanston Street, and the existing stop at Cleve Plaza (Fitzroy Street, St Kilda) are examples of the new streetscape tram stop improvements we will see more of in the near future. This will mean greater permeability for pedestrians, reduced fencing, lower traffic speeds and better bicycle access.

71. Priority Action: Work with the Department of Transport, Yarra Trams and VicRoads to ensure the design of new level-access tram stops that have excellent pedestrian accessibility with the surrounding footpath network.

New trams

Melbourne needs a transparent, ongoing asset management program of phasing out old trams, introducing new ones and expanding the tram fleet to cope with strong patronage growth. The arrival of 50 new E class trams in Melbourne between 2012 and 2017 is welcome. Despite this, tram overcrowding will worsen over that time due to growth in passenger numbers.

As new trams are deployed on high performing tram routes, the routes should be upgraded to provide the highest possible level of tram priority, high quality stops and route separation. New trams will go on routes 96, 109, 19 and 112, in

that order. This is an opportunity to create a master plan for the streets on which these trams run, to ensure new transport infrastructure is integrated with high quality street design, pedestrian and public transport priority, and new, more permeable stops.

72. Priority Action: Work with the Department of Transport to master plan streets in preparation for the introduction of new low floor E class trams.

Balance and optimise the network

The City of Melbourne has identified opportunities to balance the tram network to ease over-burdened routes and also assist poorly serviced areas. This strategy is closely aligned with the urban renewal planned for the municipality, and involves improving tram services to the inner west of the central city.

Trams to the west of the CBD

There is an opportunity to redirect some of the trams currently using St Kilda Road to the west of the city. This will help activate development in the west of the CBD and reduce pressure on the Swanston Street-St Kilda Road spine. This would be coordinated with the construction of a new tram interchange at Domain as part of the Melbourne Metro Domain station. The Melbourne Metro will also service some of the current trips on the Swanston Street corridor.

A north-south tram alignment running through the Haymarket roundabout will also improve tram accessibility to the west of the central city. This will link the Royal Parade corridor with the Peel-William Street tram lines.

These options can be implemented in the short term, between 2011 and 2016.

Victoria Parade, E-Gate and Haymarket

The redevelopment of the E-Gate site will require high quality public transport links into Docklands and the central city. A tram link via Footscray Road and pedestrian access to the North Melbourne train station will provide this. Future extension of this route beyond E-Gate to the Dynon Road corridor will fit well with land use activity linking central Melbourne with the Footscray precinct. A tram line will stimulate activity and deliver high quality access and mobility for commercial and residential developments along this route.

Other initiatives include connecting the two sections of tram track on Victoria Parade, between Swanston Street and Carlton Gardens, and linking the Errol Street service with the Spencer Street corridor.

These initiatives can be implemented in the medium term, between 2020 and 2030.

Fishermans Bend

Fishermans Bend is currently poorly served by public transport. Any future mixed use development of this precinct must be accompanied by high quality public transport services. There are opportunities to link Docklands and the 109 light rail in Port Melbourne via the planned Fishermans Bend development site.

- 73. Priority Action: Work with the Department of Transport and Yarra Trams and VicRoads to implement the long term reconfiguration and extension of the tram network proposed in this strategy.**

The City of Melbourne has been working with the Department of Transport, the Department of Planning and Community Development and adjacent municipalities to develop tram routes 96 and 109 as examples of integrated transport and land use planning.

Tram route 96 is already one of the most successful, and the third most patronised, tram route in Melbourne. However, current running times between Spencer Street and East Brunswick are 40 per cent slower than in 1950 (28 minutes today compared with 20 minutes in 1950). Route 96 trams spend 33 per cent of their journey time stationary. This is in addition to the 17 per cent of the journey spent loading passengers. This is a poor use of public investment in the tram system.

- 74. Priority Action: Work with Yarra Trams, The Department of Transport and VicRoads to implement the 96 and 109 route upgrade projects, including ensuring that the network operating plan gives good signal priority through the city.**



Fig 7.7 Collins Street, Melbourne

Greenhouse emissions and energy cost

- 75. Action: Advocate to increase the energy efficiency of Melbourne's tram system and the use of low-carbon and clean-source energy.**

Targets

Increase tram running speeds

The City of Melbourne's analysis of accessibility showed that increasing tram speeds by 25 per cent had a significant effect on the accessibility provided by the public transport network.

Increase service frequency

Progressively increase the service frequency across the network to increase the accessibility provided by the service. The City of Melbourne's analysis of accessibility showed that increasing service frequency was a key part of improving the overall public transport accessibility. Frequencies can be increased to a minimum of 10 minutes in inter-peak times, by implementing actions to improve running speed as well as adding more vehicles to the tram system.

8

Bus

Goal

Buses will develop as an efficient and prioritised mode of public transport for residents, workers and visitors to the city of Melbourne. Central city bus routes, such as Lonsdale and Queen streets will be improved for buses, with travel times reduced on these routes by 30 per cent.

Context

Melbourne's bus network is experiencing similar growth to other public transport modes, and this growth is forecast to continue. In inner Melbourne buses are a complementary component of the public transport network, in many cases filling gaps in the train and tram networks and feeding or extending these rail routes.

Buses currently link the central city with the Doncaster area, Fishermans Bend, linking the Parkville precinct to North Melbourne train station, and offering late night transport options, for example, NightRider.

The use of NightRider buses has been growing strongly. Patronage doubled to about 4,300 patrons per weekend after 2008, when standard fares were applied. Buses are well suited to late night operation. They are flexible (services can be quickly increased or rerouted to take account of demand) run from 'kerb-to-kerb' and can run on infrastructure that already operates 24 hours a day (the road network).

The City of Melbourne's key CBD bus corridors are Lonsdale Street (serving the Doncaster Area Rapid Transit and other services) and Queen Street. In its busiest section, Lonsdale Street carries more than 1200 buses per weekday. Queen Street carries nearly 750 buses. Bus lanes have been installed on both sides of Lonsdale Street and on one side of Queen Street. These projects were proposed in Moving People and Freight 2006-2020.

The Doncaster Area Rapid Transit (DART) is a series of effective high capacity routes connecting the central city to the Doncaster area. The routes continue to experience

strong patronage growth, and provide an example of how buses can contribute to meeting the mass transit task in Melbourne.

Issues

Reliability and travel times

Buses in the central city are often delayed or obstructed by general traffic, both legally and illegally. Traffic using dedicated bus lanes, left turning vehicles which block bus lanes, and general congestion, affect bus travel speeds, reliability and the frequency of services.

Poor scheduled frequency

The infrequency of some services is a major issue for Melbourne's bus network. Some routes operate as little as once or twice per hour, and often do not offer late night or weekend service. This is not a frequency level that the City of Melbourne regards as a minimum standard.

Bus stop design

Many bus stops are too short to cater for high-service bus routes and may need to be lengthened, requiring the removal of some on-street parking. Compared to tram stops, bus stops often provide poor amenity.

Network imbalances and gaps

In 2010 the Department of Transport initiated a bus service review for the Melbourne, Port Phillip and Yarra areas. This review contains many recommendations for improving bus services across the region.

Greenhouse emissions and energy cost

The noise and air quality issues associated with diesel fuelled buses are most prominent in

the central city. These vehicles can have a damaging impact on inner urban amenity and the environmental performance of the public transport network as a whole. Reliance on diesel also exposes the bus industry to the risks of future oil price fluctuations.

Objectives and actions

Balance and optimise the network

Investment in the bus system can be a relatively cost effective way of improving public transport service provision. Enhancing existing bus routes or adding new routes to the network can also act as a precursor to future rail and tram network extensions.

The initiatives proposed in the Bus Service Review should be implemented. Some of the network changes and additional bus network alterations are shown in this strategy.

Buses in North Melbourne should be diverted to better integrate with activity in the Errol Street precinct. Use of Queensberry Street for bus services should respect the important role of the street for cycling.

The developing urban renewal area around Arden-Macaulay will require excellent public transport. The details of the transport network in this area will be developed in the future. The City of Melbourne supports a bus link from Racecourse Road to North Melbourne train station, to serve the land use development in this area. This bus route may mature over time and eventually demand a tram service.

Buses in Fishermans Bend can be rationalised to benefit travel times and untangle the central



Fig 8.1 Daily Bus volumes in the Central City, Source: Department of Transport

Australian bus patronage 2001-2010

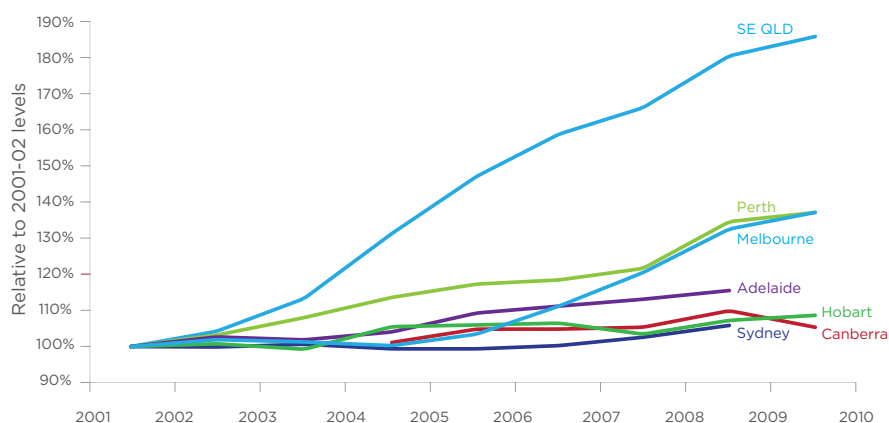


Fig 8.2, Australian bus patronage 2001-2010, Source: Bus Association of Victoria

city components of these routes. By terminating bus services at the western end of the central city and integrating these with the train, tram and other trunk bus routes, significant efficiencies can be gained without any great loss in convenience for passengers.

There is scope to use the Lonsdale Street corridor for routes that enter the central city from the south and north, such as routes 216 and 220. This realignment will use the established Lonsdale Street bus lanes and stops.

76. Priority Action: Work with the Department of Transport and the Bus Association for the implementation of the bus service review recommendations.

Bus operations in the central city have been greatly improved by the introduction of bus lanes on key routes, such as Lonsdale Street. Queen Street, which acts as the central city's key north-south route, requires similar priority.

77. Priority Action: Install north bound bus lanes on Queen Street in the central city.

Increase service frequency

The City of Melbourne's analysis of the accessibility of the bus network found that increasing bus speeds and service frequency to a minimum of 10 minutes in inter-peak times significantly improved the service provided by the public transport network.

78. Priority Action: Work with the Department of Transport, VicRoads and the Bus Association to improve bus frequency.

Increase running speed

A bus system that is not impacted by traffic congestion requires dedicated bus lanes, traffic signal priority, safe and efficient stops and interchanges. The system also needs to be managed in a way that reduces the impact of general traffic on bus operations. For example, dedicated bus lanes require enforcement, and other traffic impacts such as left turning vehicles blocking bus lanes need to be closely monitored and avoided where possible. There is scope to incorporate automated enforcement techniques on key high mobility streets, to ensure public transport priority is not impeded by illegal driver behaviour.

79. Priority Action: Work with the Department of Transport, VicRoads and the Bus Association to improve the running speed of buses.

80. Priority Action: Work with the Department of Transport and VicRoads for separate bus rights-of-way.

Better stops and interchanges

There is a general need to improve the legibility of bus stops across the network, including improved design, signage and information. The main bus interchange in the city is at Lonsdale Street, near Spencer Street. This stop and link with Southern Cross Station are important for the legibility and convenience of the public transport network as a whole. Pedestrians at this location, and at other major bus stops, such as Lonsdale Street near Swanston Street, require the highest possible pedestrian amenity and safety. Many bus stops may need to be

lengthened to allow buses to move easily into and out of them.

81. Action: Extend bus stops where necessary by removing on-street parking or other measures and improve bus stop amenity.

82. Priority Action: Work with the Department of Transport to improve the performance of bus interchanges.

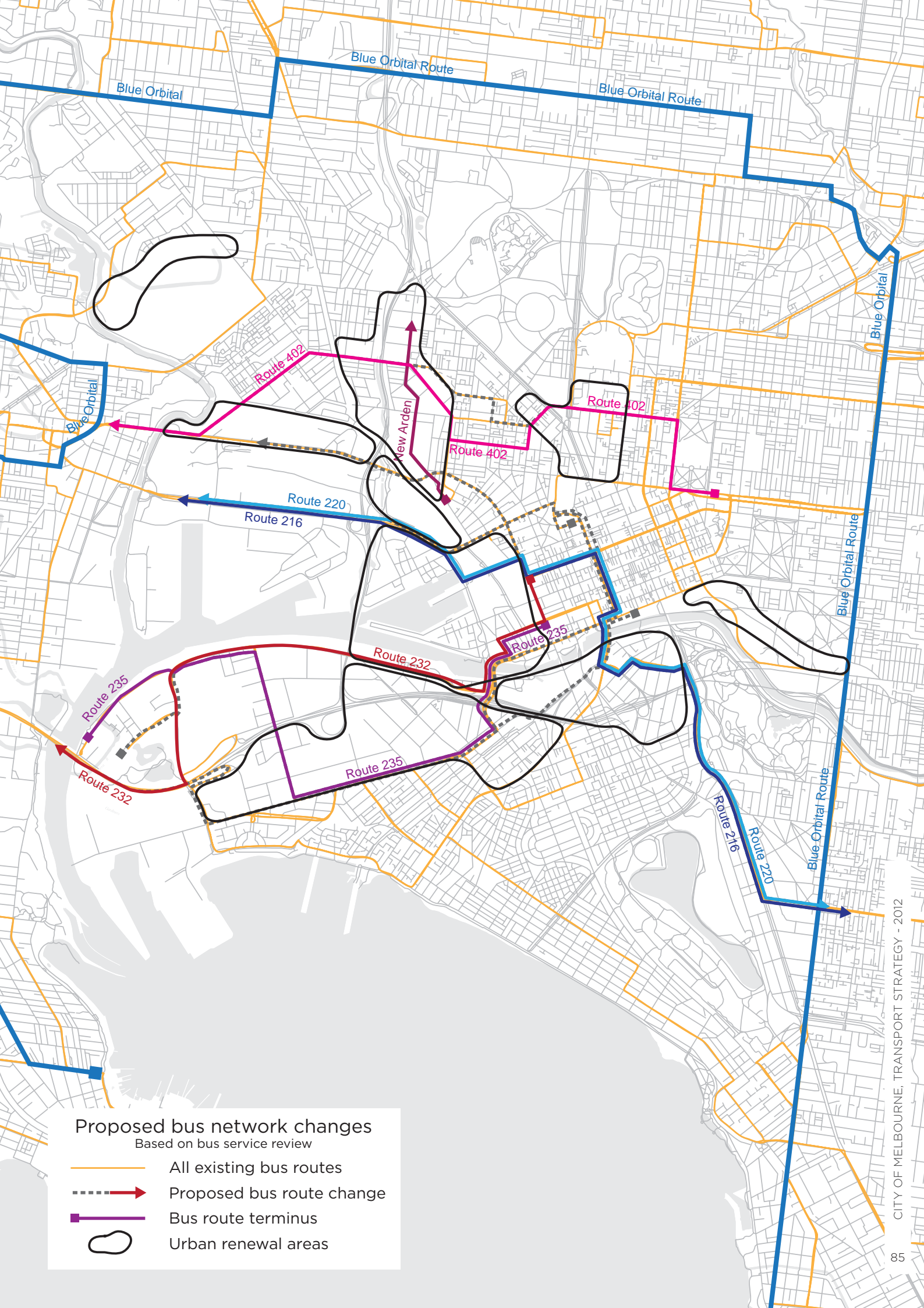
Meet late night travel demand with bus services

Buses such as the NightRider service currently meet demand for late night travel on Friday and Saturday evenings. Expanding the times and days of NightRider services, improving capacity, and adding new routes to the network can help to improve public transport accessibility when train and tram services do not operate.

83. Priority Action: Work with the Department of Transport and Public Transport Victoria to improve the NightRider bus service including consideration of smaller more flexible buses.

As the frequency of buses increases on key central city routes, the impact of buses on the amenity of the footpath will increase. Buses run at a frequency of one per minute on Lonsdale Street. Many bus rapid transit systems around the world run buses in the centre of the road in a similar way to how Melbourne's trams operate. This removes the buses from kerbside conflicts such as turning vehicles and reduces their impact on footpath amenity. It also provides certainty to pedestrians about the position of buses on the road.

Fig 8.3 Proposed bus network changes



Proposed bus network changes

Based on bus service review

- All existing bus routes
- Proposed bus route change
- Bus route terminus
- Urban renewal areas

- 84. Priority Action: Investigate designing centre of the road bus operation on high-frequency routes in the city.**

Greenhouse emissions and energy cost

Innovation in vehicle technology will continue to present opportunities for making Melbourne's buses more fuel efficient. The use of clean source energy to power buses will also deliver amenity benefits in active central city locations.

- 85. Priority Action: Work with the Department of Transport and the Bus Association to introduce a fleet of clean fuel buses by 2016.**

Targets

Targets for the bus system parallel those highlighted for trams.

Increase bus running speeds

The City of Melbourne's analysis of accessibility showed that increasing bus speeds by 25 per cent had a significant effect on the accessibility provided by the public transport network.

Increase service frequency

Progressively increase the service frequency across the network to increase the accessibility provided by the service. Inter-peak services can be improved to a minimum of 10 minutes to offer more frequent buses, especially to meet late night and weekend travel demand.

- 86. Priority Action: Work with the Department of Transport, VicRoads the Bus Association and operators to improve bus service frequency and average route speeds.**





Fig 8.4 Smart Buses running in Lonsdale street

9 Taxi

Goal

Taxis will become a high quality inner urban transport option, complementing other public and private transport modes.

The City of Melbourne will work with industry and government to ensure taxis can play a complementary role in the transport system.

With improved and integrated transport information, the flexibility of the taxi fleet can be further realised.

Context

Taxis are a form of public transport, offering 24-hour service, door-to-door delivery, services for special needs, responsiveness to demand and flexibility in destination. Taxis also play a vital role in welcoming and guiding visitors to Melbourne.

Visitors from interstate and overseas are the primary users of taxis in the city. They account for 59 per cent of weekday trips and 79 per cent of weekend trips. Visitors from other parts of Melbourne account for four per cent of weekday taxi trips and seven per cent of weekend taxi trips, while business travel is 31 per cent of travel on weekdays and virtually zero on weekends.

Taxis are the main public transport service operating on Saturdays from 4.30am to 5am, and on Sundays from midnight to 1.30 am and from 5.30am to 7am. These are times when there are still significant numbers of people in the city.

The City of Melbourne allocates kerbside space for taxi ranks at locations throughout the CBD, to make it easier for people to find taxis and reduce the need for taxis to drive around looking for fares.

Issues

Lack of knowledge about the detailed transport role of taxis

There is currently no data available on origins and destinations for taxi trips, numbers of patrons for each trip, or taxi availability at any particular time.

The changing role of taxis

The role of taxis is likely to change in the future. As the city becomes more pedestrianised and public transport use increases, demand

for taxis may increase and taxi ranks may need to be moved. Improved public transport and information technology may reduce the role of taxis at the airport.

Fuel efficiency and taxi vehicle type

The role of taxis in Melbourne is well suited to a diverse vehicle fleet. Small, low emissions vehicles are suitable for inner urban trips with few passengers. Larger vehicles with luggage capacity serve the airport and other metropolitan connections. Specific vehicles for people with disabilities and mobility impairments are vital for ensuring equitable access. Improving the fuel efficiency of the taxi fleet should be a strong objective of the taxi industry, considering these vehicles' role in the highly populated and active urban environment.

Objectives and actions

Support the taxi inquiry

The State Government has announced an inquiry into the taxi industry, including the current and potential role of taxis, and other demand responsive transport services in an integrated transport system.

87. Priority Action: Participate in the State Government Taxi Industry Inquiry into the taxi and hire care industry

Review taxi parking zones

Council can play a central role in facilitating seamless taxi transport through the management of taxi parking zones. It is important to have a good understanding of the role taxis play in the transport system in order to manage appropriately their pick-up and drop-off locations.

This knowledge of why, when and who taxis serve should be integrated with an understanding of land uses, business operating hours and other city activity.

The location of taxi parking can help improve late night transport options, especially in entertainment, restaurant and bar precincts.

88. Priority Action: Develop taxi parking and ranks that will improve late night transport options, especially in entertainment, restaurant and bar precincts.

89. Priority Action: Work with the taxi industry, mobility groups and other stakeholders to review the locations and availability of taxi parking zones and to understand better the role that taxis play in Melbourne.

90. Priority Action: Work with the Department of Transport, Public Transport Victoria, the taxi industry and other stakeholders to improve the role of taxis in meeting demand for late night transport

A more efficient taxi fleet

Introducing efficient vehicle technology into the taxi fleet is required. There is a pressing need for taxis to become more respectful of the inner urban environment, as city activity increases.

91. Priority Action: Work with the Taxi industry and The Department of Transport to develop a more efficient and effective taxi fleet.

New water-based transport services for docklands

New water-based transport services such as fixed-service

ferries or water taxis offer several key advantages:

- An effective transport alternative for residents and workers in Docklands to overcome the barriers posed by Victoria Harbour and the Yarra River,
- an attractive alternate link to and from the CBD
- the ability to initiate services quickly, as major new infrastructure is not required
- the opportunity to embrace the waterfront, generating concentrated pedestrian and cyclist traffic at key waterfront destinations.

New ferry connections between West Gate Bridge and Docklands / CBD would provide significant new opportunities for high quality links.

Water transport stops at key locations consistent with the Docklands Waterways Strategic Plan, including Yarra's Edge, the north and south sides of Victoria Harbour, ANZ Bank and Northbank. Central Pier is also a potential location for water arrivals in Victoria Harbour.

92. Priority Action: Work with the Department of Transport to develop water taxi services along the Yarra River connecting Southbank, Docklands and the Hoddle Grid and the sports and entertainment precinct.

93. Action: The City of Melbourne will work with VicUrban and Docklands stakeholders to further develop options for water-based transport through the Docklands transport plan.



Fig 9.1 Taxi rank at Flinders street station

10 Car share

Goal

Car share programs will mature to offer a realistic alternative to car ownership for people living and working in the municipality. The City of Melbourne will support this by allocating on- and off-street parking to car sharing where possible. A minimum of 300 on-street car parking spaces will be allocated to car sharing by 2016.

Context

Car sharing is a proven catalyst for moving people from a lifestyle of regular car use to one of mostly using public transport, walking and cycling, with occasional use of shared cars for specific trips for which the other modes of transport are poorly suited. The process works for both residential and business users and results in reduced car dependency.

City of Melbourne research into the trends of car share users shows that by introducing one car share vehicle, over seven private cars are taken off the road, as people sell or avoid buying cars. Car sharing also supports policies that reduce the provision of car parking in new buildings, such as amendment C133 to the Melbourne Planning Scheme.

In 2010, the City of Melbourne expanded its support for car sharing to propose a trial of 21 on-street spaces in the Hoddle Grid and to increase the number of spaces outside the Hoddle Grid to more than 60.

Car sharing is a rapidly evolving concept, and is likely to continue to offer different arrangements for customers to access a shared vehicle. Peer-to-peer car sharing enables the shared use of vehicles already owned by the community and the 'Blue Car' trial which commenced in the Paris in 2011 provides the convenience of one-way trips. These approaches deliver significant environmental and financial efficiencies.

The growth of car sharing internationally shows that people are changing the way they access an expensive asset such as a car. For many people living and working in inner urban areas, owning a car is both expensive and inflexible, and is

Private Car Ownership
For car share members, after joining

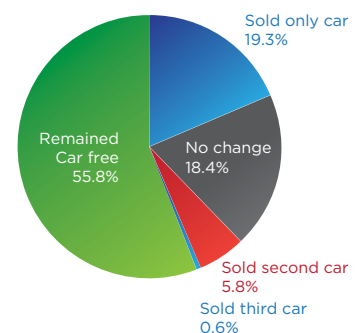


Fig 10.1 Behaviour change outcomes for car share members in Melbourne, Source: GHD

a significant over-investment in one transport mode. For this reason, car sharing is becoming more popular, and cities benefit as private car travel and parking stress decline.

Issues

Minimum profitable fleet size

Car sharing in Melbourne is a commercial operation. Its success relies in part on having a fleet that is large enough to generate sufficient car sharing activity to cover its costs. Costs include purchase and management of cars, booking operations and marketing. Inner Melbourne has about 130 car share cars provided by three car sharing firms. Expanding the car share fleet will provide greater certainty for the car sharing industry as well as a more comprehensive service for users.

Allocating space to car sharing

To support car sharing, the City of Melbourne allocates on-street parking spaces for use by car share operators, in a similar way to the allocation of taxi parking spaces. This use of public space must occur in a way that is sympathetic to the local area and

surrounding land uses. Therefore it will be necessary for car share parking to be allocated in an open and transparent manner, in close collaboration with local businesses and residents.

Opportunities to locate car sharing in off-street parking facilities are often complicated by access requirements (need for 24/7 access) and a general lack of legibility and visibility. For these reasons, on-street space for car sharing is often preferred.

Objectives and actions

Support and enable the expansion of car sharing

Assisting car sharing to flourish in Melbourne is directly aligned with the City of Melbourne's transport policies. The City of Melbourne will continue to re-purpose street space to accommodate car sharing throughout the municipality.

The role of local government in supporting car sharing can also extend to marketing and communications channels, and providing information

about the benefits of car sharing to the community.

94. Priority Action: Work with car share operators in allocating City of Melbourne operated parking spaces to car sharing in the municipality's existing and emerging high density mixed use areas.

Develop a car share policy

In order to direct the City of Melbourne's support for car sharing, a specific policy will be developed to:

- provide a clear process for allocating parking spaces
- detail the City of Melbourne's communications activity to support the growth of car sharing
- discuss and address revenue implications of allocating on-street space to car sharing
- define the rules for operating a car share scheme in the municipality
- recommend City of Melbourne projects to further embed car sharing in Melbourne, for

example opportunities to amend the planning scheme to encourage off-street car share parking.

95. Priority Action: Review Council's car sharing policy to ensure it meets the objectives of this strategy.

Encourage an innovative car share industry

New forms of car sharing are constantly evolving, including programs for which a car does not have to be parked at a 'home pod' and can be used for one-way journeys. These may offer new mobility choices and further encourage sustainable transport choices.

96. Action: Monitor innovations in car sharing and update its car sharing policy where these would produce improvements.

Behaviour changes of Melbourne car share members

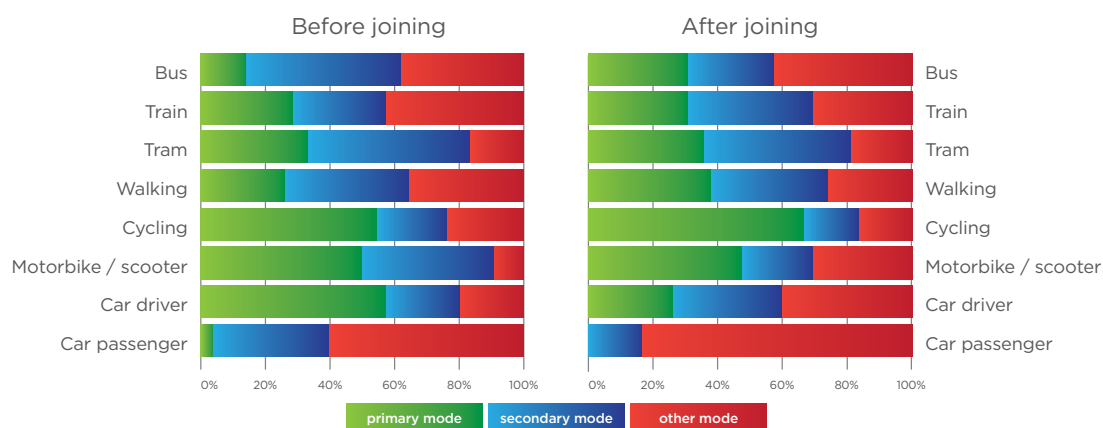


Fig 10.2 Behaviour change outcomes for car share member, Source: GHD

11 Bike share

Goal

Melbourne will have a successful, popular and well utilised public bicycle system. Bike share will be well integrated with and complementary to the rest of the public transport system, from the strategic location of stations to integrated information and payment systems.

Melbourne bike share will be supported by a network of safe cycling routes and low speed streets in the central city.

Context

Moving People and Freight 2006-2020 (2006) supported the establishment of Melbourne bike share. The scheme was launched by RACV on behalf of the State Government in May 2010. The City of Melbourne provided considerable support in selecting and providing locations for bike stations on City of Melbourne land. The scheme includes over 400 bicycles and 50 stations, mostly in the municipality. There have been no major accidents reported.

Issues

Limited take up

Melbourne bike share has been operating successfully, but use of the scheme has lagged behind some other bike share schemes around the world. There has been fewer than one use per day per bike compared with up to 10 uses per day in more successful schemes.

One issue believed to be contributing to limited take-up

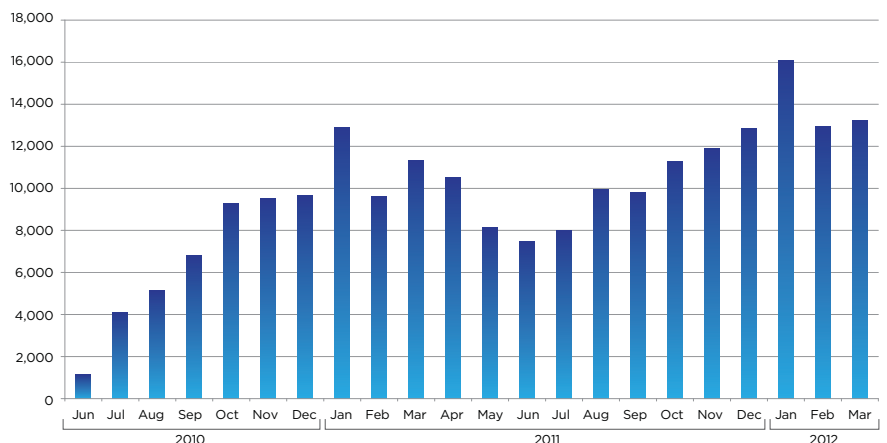
of the scheme include Victoria's compulsory helmet law. The need to purchase a helmet or provide your own can be a barrier for many potential users, making the scheme impractical especially for spontaneous trips. A lack of high quality bicycle facilities, such as separated lanes, in central Melbourne and the relatively small size of the scheme may also play a role.

Integration with public transport

There is an opportunity for the scheme to play a greater role as part of the public transport system, providing an option for people who need to travel from a public transport node (particularly city train stations) to their final destination. Bicycle journeys can be a low cost option, especially compared with the cost of building new tram or bus infrastructure. They can also link to destinations that are greater than walking distance from public transport nodes.

Melbourne Bike Share rentals

June 2010 - March 2012



Source: RACV

Fig 11.1 Melbourne Bike Share rentals 2010-2012

Location of stations

Growing pedestrian volumes on the city's streets will mean that some existing or new bike share stations may need to be located on the road rather than on footpaths. Lower city speed limits and redesigned, high mobility streets will help reduce any safety concerns about bike stations on roads. There are opportunities to improve the location and visibility of existing bike stations and promote their use more strongly as an integral part of public transport journeys, as well as ensuring key public transport nodes are appropriately served by bike share stations.

Cyclists' perceptions of safety on central city streets

One of the key barriers to cycling is that the road environment is not safe enough for many people to ride. This is likely to be a factor affecting take up of Melbourne bike share, especially as many of the stations are concentrated in the Hoddle Grid where there are few separated bicycle lanes.

Objectives and actions

Review Melbourne bike share

There is an opportunity for a comprehensive review of Melbourne bike share involving all key stakeholders including comparison and assessment against international best practice.

97. Priority Action: Work with VicRoads, RACV, Bicycle Victoria and the Department of Transport to review the operation of Melbourne Bike Share and develop joint strategies to increase its use including a review of the location of bike stations.



Fig 11.2 Melbourne Bike Share Station in Swanston Street

Improve central city cycling conditions

Improvement in cycling conditions in the centre of Melbourne is likely to help boost the use of the scheme. Separated bicycle lanes and lower speed limits will contribute to this.

98. Priority Action: Update the Bicycle Plan with a strategy to connect up the bike share stations in the central city with a network of safe and attractive bicycle routes (see chapter 6) including separated lanes and compatible speed limits.

Expand and improve Melbourne bike share

99. Action: Support Melbourne bike share and advocate for its expansion within the city and to neighbouring municipalities through IMAP.

12 Transport information

Goal

Logical and innovative user interfaces will enable seamless use of the public transport system. Open access to transport data will allow everyone to make more informed planning decisions across the transport system.

Context

The interfaces that people experience when using the public transport system are extremely important for ease of use, journey planning, payment, navigation and orientation. There has been great innovation in this field recently due to advancements in smart phone technology, the use of online applications for journey planning and trip mapping, and new payment systems.

The Victorian Government launched the myki smart card ticketing system in 2010. Despite its problems, the card allows seamless and cashless use of Melbourne's trains, trams and buses. The data generated by myki will be a significant benefit to the day-to-day management and long term planning of the public transport network, and will hopefully feed into new user interfaces.

The C40 Smart City workshop held in Melbourne in 2010, developed our understanding of 'Smart City' principles and applications for transport systems. Improving the user experience and enabling innovation through open and engaging government (e-gov, gov2.0) are central to the Melbourne Smart City work, and have been integrated into this strategy.

The data collected by governments and transport operators can enable a greater community understanding of transport systems. Many cities around the world are actively opening up their data to encourage the development of third party applications and tools which improve public understanding of transport, create a more sophisticated system and ultimately encourage more efficient

transport behaviour. Open data also has benefits for government transparency and accountability.

Issues

Comprehensive integrated customer payment systems

The implementation of myki has been a significant improvement towards an integrated payment system for mobility in Melbourne. Payment systems for other public and private transport remain divided, requiring users of taxis, car parking, bike and car share programs to be subscribed to various accounts, all with individual access cards, websites, payment methods and journey planners or maps.

Signage and information

The signage and information relevant to public transport can play a significant role in how easy the system is to navigate and use. There are major gaps in signage and information across Melbourne's public transport network, and also issues for people with vision and hearing impairments accessing information.

Closed data

Data and back-end information related to the transport system is often not publicly available, or is not well published for easy public access. This limits the ability of the broader community to use transport data, and restricts the development of innovative user interfaces such as apps and online tools.

Objectives and actions

Seamless payment systems

There is also great potential in rolling out the myki platform to

other modes of transport and other aspects of city life that may require a ticket, or instant payment. Services that could be included in the myki system include Melbourne bike share, bicycle parking at train stations, SkyBus, car sharing, car parking and other non-transport services. This integration will make car-free mobility easier and more flexible in Melbourne, which will enable it to compete more effectively against private car use.

100. Priority Action: Work with the Department of Transport and Public Transport Victoria to develop a public transport user online information interface for customer payment and trip planning that merges all modes - rail, tram, bus, taxi, car share, bike share and extending to regional trains, buses and air travel.

Easy to understand signage and information

Transport information needs to be simple, easy to understand and common across the network. Metlink has been successful in integrating train, tram and bus information and signage, which has improved the legibility of the public transport network. There remain issues regarding access to information for people with disabilities and people from non-English speaking backgrounds. Improving internet access at public transport stops and stations and on vehicles can help elevate the attractiveness of public transport above car use.

101. Priority Action: Work with the Department of Transport and Public Transport Victoria to improve the integration of signage and user information of all the public transport modes - rail, tram, bus, taxi, car share, bike share.

Open data

The data the City of Melbourne collects relating to the transport system presents significant opportunities to improve the planning, operation and user experience of the whole system.

There are increasingly new ways of collecting and analysing data which can help improve the ways in which people move around the city. The rate of innovation in this field is likely to continue as new technologies are developed, new collection methods are forged and the international community becomes more advanced in its use and understanding of such information. Melbourne is a knowledge city. A key way to advance knowledge is to recognise the talent of creative people and engage their expertise and creativity by making data open.

102. Priority Action: Make the transport data the City of Melbourne collects publicly available on an open data basis to encourage research, innovation and applications (apps) in its use and interpretation.

103. Priority Action: Expand the Melbourne Bicycle Account into a Melbourne Transport Activity Account to report on all modes of transport in the municipality.

104. Priority Action: Work with the Department of Transport, Bicycle Victoria, VicRoads and RACV, to gather and use cycling data for planning the development and promotion of city cycling.

13 Regional and global transport connections

Goal

Melbourne will have fast and direct connections to Australia's network of major cities and global cities in the Asia-Pacific region and around the world. Very high speed business and tourist passenger transport will connect Melbourne to the eastern seaboard region (including Sydney, Brisbane and Canberra). This connectivity is essential for the future prosperity and global competitiveness of Melbourne, Victoria and Australia.

Context

The number of people travelling to Melbourne from regional Victoria, from interstate and overseas is growing significantly, as Victoria continues to act as a major attractor of business and tourism trips.

By 2020, more than 50,000 international visitors, and more than 33,000 interstate visitors will come to Melbourne daily. This visitation will be primarily channelled through Melbourne Airport. Melbourne Airport currently carries approximately 23 million people annually and this is expected to double by 2027/28.

As the hub of many business and tourism trips to Victoria, Melbourne has an important role to play in accommodating this growth. It is imperative that the urban environment and transport systems can handle significant increases in people accessing the airports and other regional and interstate centres. For Melbourne to enhance its role as a key economic unit in the Asia-Pacific region, the city also needs to be an inviting, vibrant and safe place for visitors.

Central Melbourne is a major destination for many people visiting Australia. Tourism is an important jobs sector for Melbourne, and the City of Melbourne has clear commitments to enhancing the city experience for tourists. One of the best ways to experience a city like Melbourne is on foot and by public transport.

Issues

Reliance on air travel

Connections between Melbourne and other major Australian cities are important for the economic

prosperity of the country.

Melbourne's airports deliver a substantial number of people to Victoria every day. The airports link the city with the rest of the world, contribute greatly to Melbourne's competitiveness as a successful business and knowledge city, and foster high levels of tourism.

The Melbourne-Sydney air route is the second most travelled domestic air route in the world. Options to relieve air traffic present significant opportunities to improve mobility on the eastern seaboard and reduce greenhouse gas emissions.

Airport access

The airports are primarily accessible by private car, taxi, hire car, and some bus services. The current demand for travel and the projected growth of the airports means that public transport services to Melbourne and Avalon airports need to improve.

The major change since 2006 has been the growth of the SkyBus service. SkyBus now operates over 230 services a day between Melbourne airport and Southern Cross Station, carrying more than 1.7 million people annually. This is a major improvement in public transport provision. The City of Melbourne has a lot to gain from improvements to the journey between the central city and Melbourne and Avalon airports.

Regional connections

Melbourne's capital city role requires the central area to be well connected with regional centres of activity. Current travel between regional centres and inner Melbourne is dominated by car use, which is enabled through the extensive freeway network. Infrequent timetabling

and capacity constraints on some routes are often issues which encourage car use.

Visitor transport in the central city

Catering for visitor transport modes in the central city is important to encourage tourism and create a welcoming and enjoyable city for visitors. Forms of visitor transport operating in the city (in addition to most public and private transport) vary from large tourist buses and coaches, the City Circle tram, the Melbourne tourist shuttle, river transport, down to niche local forms such as horse drawn carriages.

Whilst these forms provide a valuable service, it is important they complement and do not impede other public and private transport modes. Signage and information for users of these systems also needs to be well integrated into visitor services and other tourism points of contact.

Objectives and actions

Inter-city high speed rail

Central city to central city transport would provide a convenient option for travellers, improve directness, and potentially reduce the overall travel time of the journey.

Developing high speed rail links between Australian cities is essential to maintaining transport connections in a future of rising oil costs and a lower carbon economy.

105. Priority Action: Work with state and federal government and the cities of Sydney and Brisbane to investigate the benefits and feasibility of a very high speed CBD-to-CBD rail service between Melbourne, Canberra, Sydney and Brisbane.

Public transport to Melbourne's airports

The City of Melbourne supports the improvement of public transport serving Melbourne and Avalon airports. The State Government has announced plans for rail links to both airports. In the interim, the City of Melbourne supports a significant upgrade of the network infrastructure on which SkyBus operates, to reduce travel times, improve reliability and continue to boost patronage.

106. Priority Action: Work with the Department of Transport to improve the reliability, travel times and frequencies of the SkyBus service and the introduction of standard public transport fares to encourage greater public transport access to Melbourne Airport.

Better regional connections

Regional Rail Link will make a significant contribution to improving rail links with Geelong, Bendigo and Ballarat.

107. Action: Work with the Department of Transport to improve the public transport links between Victoria's regional centres and Melbourne's central city.

Melbourne city tourist shuttle

The tourist shuttle — a free bus service that connects many tourist attractions within the central city — has been a success. The service is used by approximately 800 people every day, and user feedback indicates the service is of great value to the city.

There is potential to integrate the tourist shuttle with other tourist transport services in the inner city, such as the City Circle tram and river transport. By

combining these services as a package, the visitor experience in Melbourne could be improved.

108. Action: Work with the operators of tourist shuttle services to develop integrated services, joint promotion and to offer visitors an easily understood offer of visitor mobility options.

The role of our waterways

River transport presents a great opportunity to improve visitor connections between the central city and Docklands, and other destinations such as Port Melbourne, St Kilda and Williamstown.

Integrating river transport with the public transport ticketing system has the potential to make it more accessible and easily understood by both the Melbourne public and visitors to the city.

Any transport using the waterways must respect the speed limit which has been implemented to protect the banks from erosion and the amenity along the river. This may limit the ability of water transport to compete with trams, buses, taxis, walking and cycling, and therefore it is likely that water transport will continue to serve a predominantly tourist market.

109. Action: Work with State Government to improve tourist river transport connections especially between Docklands and the east of the central city.

Provide a legible transport network for visitors

Melbourne's walking environment and public transport network must be easy to use to create a good experience for visitors. There has been a deliberate focus on a high quality public realm in

the central city, however more can be done to make Melbourne welcoming to visitors. Integration across transport modes will help achieve this – for example, trams approaching intersecting bus routes should advise passengers of their choices, and vice-versa.

110. Action: Development and manage the city's walking network and signage so that visitors and tourists find it welcoming and easy to navigate.

111. Priority Action: Work with the Department of Transport and Public Transport Victoria to make the city's public transport services - rail, tram, bus, taxi, car share and bike share - easy to access and use for visitors and tourists.

Urban bicycle tourism

Bicycle tourism is booming in regional Victoria. Cycling along rail-trails between country towns, wineries and restaurants is becoming a major promotional focus for many regional centres, and the local economies are benefiting from the new markets that this industry is opening. The 'Pedal to Produce' initiative in northern Victoria is one example of this.

Inner Melbourne hosts some very high quality food markets and a network of excellent food and drink precincts throughout the region.

The City of Melbourne sees a tourism opportunity to promote cycling to and between these locations. This would reinforce the City of Melbourne's support for everyday cycling and also build on a strong culture of social and recreational cycling.

Melbourne bike share offers an excellent network of publicly

available bikes, perfect for visitors to use. This network could be expanded to cover key destinations, such as the region's markets.

112. Priority Action: Develop the opportunities to promote bicycle tourism in inner Melbourne through IMAP.

Bus and coach access

The City of Melbourne has investigated the concept of a single bus terminal to cater for tour buses, public transport route buses, interstate coaches and airport buses in one central location. The research found that it would be very difficult to find a space large enough to accommodate the different types of buses and their varied requirements. It concluded that all buses converging on a single location would be unnecessary and inefficient.

113. Action: Manage tourist bus parking to enable efficient passenger loading and minimise impact on other modes of mobility.





Fig 13.1 SkyBus connects Melbourne's CBD to Tullamarine International Airport

Efficient urban freight





Efficient urban freight

Goal

Melbourne will have innovative and efficient freight and logistics infrastructure, optimising the flow of goods locally and globally. Melbourne's freight system will strengthen the municipality's economy. It will be environmentally sustainable, and freight traffic will be designed and managed to enhance the municipality's liveability.

Overview

The movement of goods to and from the City of Melbourne is critically important for the city and the state's economy. The Port of Melbourne plays a central role in facilitating Victoria's import and export markets. Inner urban freight and the 'last kilometre' delivery of goods into the central city presents unique issues and opportunities for the city, which require clear policy direction.

This chapter has been arranged into two sections to enable a clear discussion relating to these two aspects of freight:

- Port freight and logistics
- Central city freight and delivery.

The Port of Melbourne is central to Victoria's import and export markets. It is Australia's busiest port and is projected to continue with significant expansion of throughput. This growth requires a major infrastructure upgrade of rail and road freight distribution systems.

In the short term, this freight growth will be taken up on road for which direct, efficient access to the metropolitan freeway/tollway network will be vital. Longer term rail capacity will be developed, including the Melbourne Freight Terminal south of Dynon Road. Urban renewal around the port and freight terminal precinct will need careful planning to ensure it does not inhibit their efficient operations.

The central city's intensive land uses require high levels of goods and services deliveries and waste collection. This freight is provided by many different operators, resulting in overall logistics inefficiencies. This strategy identifies the need to develop

more efficient solutions to reduce the overall cost of this freight task and reduce its impact on the roads and general urban amenity

Priorities

Enable growth, maintain and enhance efficiency

The efficient movement of freight underpins Melbourne's economic performance. As the city grows and the freight task increases, the need to facilitate and enable freight movement will be amplified.

An intermodal, coordinated freight system

Enabling an intermodal freight system will be important for both the 'heavy' freight task and the 'last kilometre' task. Considerable efficiencies can be achieved by utilising high capacity vehicles for the distribution of goods between industrial precincts. The last kilometre freight task will demand transport which is compatible with the inner urban area.

Compatibility with urban renewal

Planning for inner urban development, much of which is seeing a transition from industrial to mixed land use, often along or near road and rail freight routes, requires close integration with freight transport planning.



Metropolitan principal freight network

- Freight activity areas (major, medium)
- Principal Freight Network - road
- Principal Freight Network - rail
- Port
- Airport
- Major road
- Major road project
- Metropolitan rail network
- Rail (non metropolitan)

Fig 14.0 Source: Department of Transport

14 Port freight and logistics

Goal

The major freight task associated with the Port of Melbourne is enabled by efficient road and rail infrastructure.

Context

The freight task in Melbourne is growing significantly. The carriage of goods through the Port of Melbourne is expected to quadruple to eight million TEU (Twenty-foot Equivalent Units) per annum by 2035. This freight is distributed throughout the state by road and rail haulage, across a network that is extremely important to Melbourne's economic performance. Melbourne's road network has received considerable investment over the past 50 years, which has contributed to the success and growth in port activity.

Around 200,000 containers of goods are currently shipped by rail to and from Melbourne each year. Whilst this equates to only eight per cent of total freight movement in Victoria, this saves around 130,000 truck trips. Road freight is significantly affected by congestion, as the cost of operating commercial vehicles ranges from \$32 per hour for light vehicles up to about \$75 per hour for B-doubles, compared with about \$20 per hour for a standard passenger vehicle.

As Melbourne grows a shared port-city vision, a whole of supply chain and transport network approach is required. This should ideally occur whilst maintaining the long term ability of the port to operate to its full capacity.

Issues

Freight conflicts with amenity

Freight and logistics associated with the Port of Melbourne involve large quantities of goods and bulk items. The vehicles carrying these goods need to be high capacity, which often means they are not compatible with inner urban land uses such as the central city

and residential neighbourhoods, specifically in Melbourne's inner west. Efficiency in the movement of goods must be optimised so as the externalities of van and truck transport do not damage inner urban amenity. Light and noise pollution from port operations can also adversely impact amenity of neighbouring land uses.

The two-way consideration of amenity impacts is consistent with the National Ports Strategy. This includes a recommendation for policies, planning schemes and controls to include 'buffer' strategies for the relevant port and freight corridors and other related places. This will ensure the continued ability to conduct freight and related activities whilst minimising impacts on communities of these activities.

Freeway capacity for east west freight

The East West Link Needs Assessment and the previous State Government's Freight Futures strategy both highlight the constraints on the road network for carrying freight across metropolitan Melbourne. Cross city, or east-west freight transport, is slowed by traffic congestion caused primarily by low occupancy passenger cars. This problem is most pronounced on the West Gate corridor at morning and evening peak times. Over reliance on the West Gate has created significant risks for industries which depend on efficient cross city freight transport, and these risks are likely to be amplified in coming years with growth in port activity.

Metropolitan distribution of freight

There are inefficiencies in the current distribution patterns of freight to and from the port. The State Government's 2010 discussion paper *Shaping Melbourne's Freight Future* highlights the current practice of 'road direct' distribution of cargo from the Port to Melbourne's key industrial areas, and the externalities created by an inefficient road freight system.

Externality costs (\$/TEU)¹

	Road direct	Rail
North	21	8
West	16	7
South east	49	12

Truck access to the freeway network

Enabling efficient links between the port precinct and the freeway network is important to ensure efficient movement of goods, and to minimise friction with other modes and land uses in the central city and residential neighbourhoods.

Freight movement across metropolitan Melbourne, especially from the port precinct to the east and south east, will continue to be an issue for the management and planning of Melbourne's road and rail networks. The East West Link Needs Assessment (2008) highlighted the demand for cross city travel, and the increasing significance of this

issue considering forecast growth in port activity.

Emissions from freight

Emissions from the freight sector are significant, mainly due to Melbourne's reliance on road haulage to move goods throughout the city and interstate. The expected increase in freight activity in Melbourne will significantly increase CO2 emissions if current vehicle technology and distribution methods remain unchanged.

Objectives and actions

Support the Port of Melbourne

The Port of Melbourne is one of the primary origins and/or destinations for freight traffic in Victoria. To maintain and enhance the performance of the port, consistent with the State Planning Policy Framework, the City of Melbourne will ensure planning scheme controls and future urban renewal opportunities respect and allow for port operations.

This includes recognition of both road and rail freight routes and the need to facilitate appropriate development along these routes, whilst maintaining efficient freight movement and port operation.

The City of Melbourne supports any investigations into the expanded use of other Victorian ports, to assist in accommodating the forecast growth in port activity. This may include a wider role for the Port of Hastings, and other strategic locations for new port facilities that enable efficient links to intermodal terminals and Melbourne's key industrial precincts.

114. Provide planning scheme support for acoustic attenuation of new dwellings and businesses adjacent to major freight routes and in the Port's vicinity.

Port of Melbourne International Freight Terminal

A new Melbourne International Freight Terminal (MIFT) is proposed to be built to the north of Footscray Road in the Dynon-Port precinct. The MIFT is planned to form the central hub of the Metropolitan Freight Terminal Network and enable the timely and efficient transfer of containers between the stevedoring terminals and rail and road shuttle services connecting the Port to intermodal terminals located in Melbourne's key industrial areas to the west, north and south-east. Funding has been sought for this project through Infrastructure Australia.

The interfaces between the MIFT and future urban renewal areas in the inner west will need careful management. The City of Melbourne supports 24/7 operations of the MIFT, and recognises that buffering against noise and light is likely to be required for adjoining land uses.

115. Action: Work with the Department of Transport on the rationalisation and modernising of the Melbourne Freight Terminal in the Dynon precinct to provide more efficient port freight logistics.

116. Priority Action: Work with the Department of Transport and the Department of Planning and Community Development to develop land use controls to ensure urban renewal near Melbourne Freight Terminal is compatible with the terminal's operations.

¹ *Shaping Melbourne's Freight Future*, Department of Transport, 2010, p27.

Prioritise freight on the freeway network

Road freight vehicles will continue to play a significant role in distributing goods throughout metropolitan Melbourne. More efficient road freight including Higher Productivity Freight Vehicles (HPFVs) will serve more of Melbourne's freight task. These B-Double and Super B-Double vehicles will require access and priority on the freeway network to ensure efficient travel times.

With a vision for a significantly improved public transport system fundamentally integrated with land use across Melbourne, it is reasonable to plan for a shift in priority on our freeways.

This will involve a shift from managing freeways for passenger transport, to improving their ability to accommodate the road freight task. In this context, Melbourne's extensive freeway network may be able to accommodate port traffic without significant new infrastructure.

117. Work with State Government on improving the efficiency of road freight transport, including the use of High Productivity Freight Vehicles (HPFV) and supporting their priority on the existing freeway network.

More freight on rail

More goods need to be transported by rail. A switch to rail will have many benefits for Melbourne's transport system, as well as significant economic and environmental benefits:

- Environmental benefits – rail goods transport is significantly

more efficient than road haulage.

- Reduced road congestion.
- Road safety benefits from a reduction in truck traffic.
- Financial savings by avoiding the need for road construction and maintenance, due to fewer trucks using the road and freeway network.

This increase in rail freight should be achieved with no adverse impact on the commuter rail network. Significant investment will be required to achieve a balance between these two important rail functions.

118. Work with State Government to increase the proportion of port freight by carried by rail.

119. Work with State Government for extensions and new links for rail access from the western suburbs to the port, including adding capacity through the Bunbury Street tunnel.

Webb Dock rail

The Municipal Strategic Statement indicates the need for rail access to Webb Dock, to support the growth of this section of the Port of Melbourne, whilst growing the share of freight carried by rail.

If the Webb Dock continues to grow, the City of Melbourne supports efforts to improve rail access to this area, to support a greater share of freight being carried by rail.

120. Work with State Government to ensure any future rail link from Web Dock to the Melbourne Freight terminal is designed to minimise noise along the interface with Docklands.



Fig 14.1 Containers arriving at the Port of Melbourne

15 Central City freight and delivery

Goal

Central city freight and delivery systems efficiently support a vibrant central city retail, knowledge, food and entertainment economy.

Through research, collaboration and application of international best practice, Melbourne will continue to grow with the knowledge and systems to achieve highly efficient freight, delivery and waste systems in the central city.

Context

The last kilometre freight and delivery task in the central city is extremely important to the city's economy and the services and businesses that function within it. The management of the street network has a direct influence on how and when goods can be delivered to businesses. Therefore the infrastructure supporting the delivery of goods, such as loading zones and the management practices used by the City of Melbourne, such as ephemeral street closures, must be integrated with the needs of businesses throughout the municipality.

Light commercial vehicles, which deliver much of the freight consumed in the city, make up 70 per cent of the delivery fleet and deliver 10 per cent of the freight. Increasing the efficiency of these vehicles could make an impact on congestion and improve the amenity of the central city, where space is a scarce resource.

Transporting waste out of the city will become a more important task, with the continuing growth of the central city and future urban renewal. In 2011, the City of Melbourne endorsed the Integrated Waste Management Program, which highlights how the City of Melbourne will respond to this challenge. Aspects of the Integrated Waste Management Program have been incorporated into the Transport Strategy.

Construction in the municipality will continue to influence street environments, both in the use of space for construction zones, and the amount of traffic delivering materials to development sites. Many major developments in the central

city can introduce significant amounts of construction traffic, which are often time sensitive.

Traffic associated with servicing and maintenance of utilities and buildings in the city can be substantial, and the maintenance role of these contractors is essential. Catering for such vehicles is an important consideration for the City of Melbourne.

Issues

Ensure efficiency

Efficient delivery of goods to destinations in the city will continue to influence the City of Melbourne's management of the street network and public realm. The flow-on effect of inefficiencies in the last kilometre freight task can lead to significant commercial losses, which can ultimately impact the prosperity of the city. Ensuring ease of access for freight and delivery vehicles will continue to be a challenge for the City of Melbourne, considering the increase in activity in the central city and demands on public space.

Avoid conflicts with other transport modes and uses of city spaces.

With changing priorities on our street network, including more pedestrianised areas and greater priority for people, the task of delivering goods will also change. Factors such as congestion on the road network are likely to prompt innovative changes to how deliveries are made to the central city.

If delivering to the city is inefficient, the risks to economic performance can be significant. This means the City of Melbourne's role in providing space for deliveries is

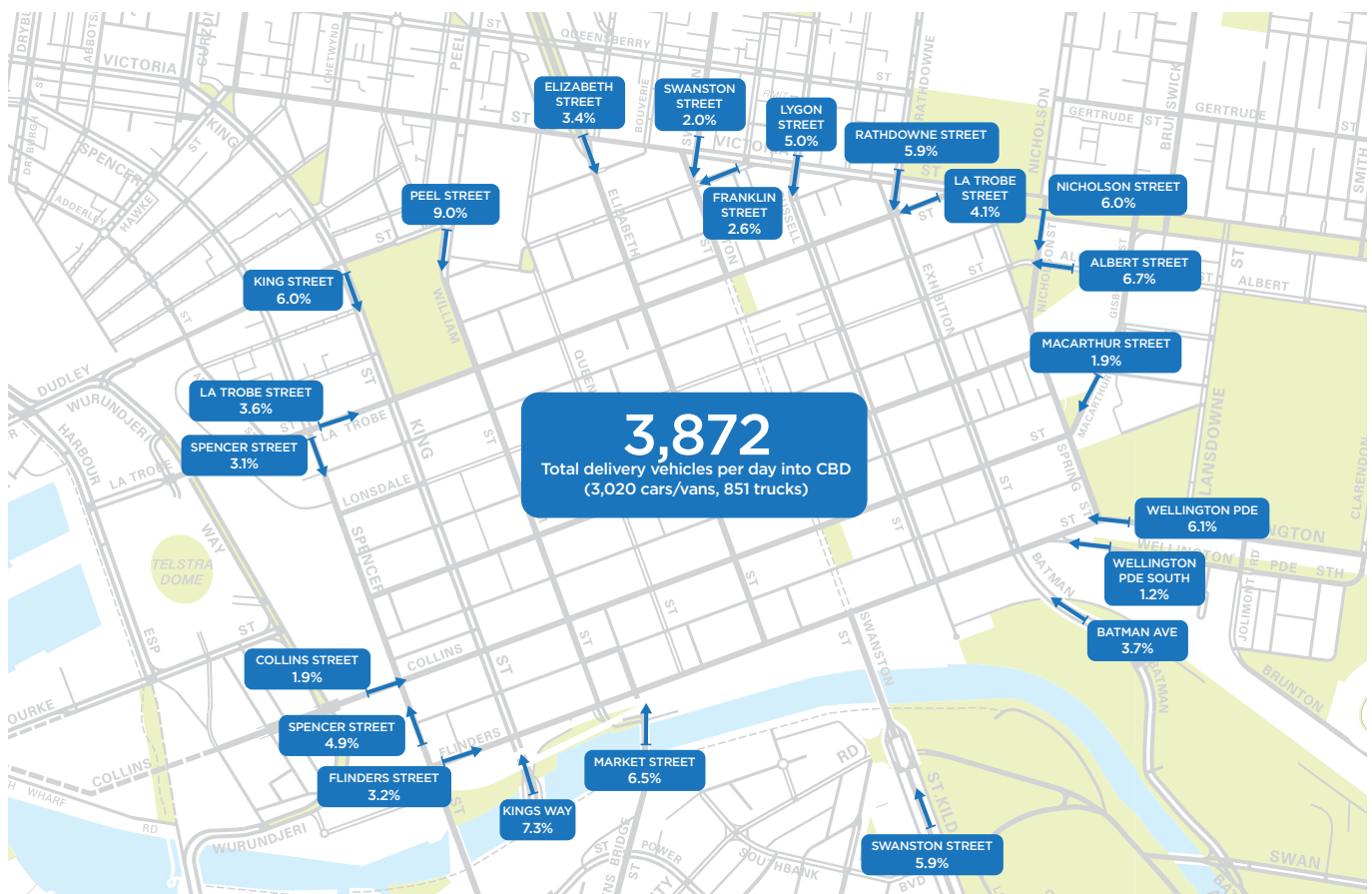


Fig 15.1 Total delivery vehicles per day into Melbourne CBD, 2012

closely related to the viability of business operations in the city.

Need to improve knowledge of the last kilometre freight task

Despite the significance of the white vans that deliver goods to the city, there is very little information about how the system is operating, if it is efficient, and if and how it may be able to be improved. There is a gap in understanding of the last kilometre task, due to the dispersed nature of deliveries and the wide range of participants in the industry.

Inefficient waste transport

Some current arrangements for waste removal are inefficient and result in a loss of urban quality, especially in some of our active laneways, which are becoming more people-oriented. This has removed space traditionally used for waste collection. These laneways and 'little streets' were originally designed to accommodate deliveries and waste removal, with most buildings' freight and docking facilities oriented towards them. The City of Melbourne must ensure that these streets and laneways allow for the buildings

abutting them to receive goods and get rid of waste, whilst also supporting the active street life and laneway culture for which Melbourne is known. Innovative and creative approaches to this challenge will be essential.

Delays to construction traffic

Large scale development in the City of Melbourne will continue, and the traffic associated with construction will require convenient and time efficient access. Delays caused by friction on the road network, specifically congestion, can have a major impact on the construction industry and the

overall cost of building in the city. Managing these issues will require site specific solutions

Accommodating service vehicles

Access to on-street parking for servicing and maintenance vehicles is an issue where parking demand is high. The important role of these vehicles in the city requires appropriate support in terms of parking management.

Objectives and actions

Support innovative last kilometre freight solutions

Examples of the types of innovations that may help to improve the efficiency of freight delivery, while reducing the negative amenity impacts of freight vehicles, are:

- local delivery and consolidation centres
- environmentally friendly delivery vehicles
- changing times for loading zone and delivery operation
- incentives for shared deliveries.

121. Priority Action: Plan and implement more efficient and less intrusive freight delivery options in the central city using a street or precinct based approach.

122. Action: Review the impact of the Swanston Street works on delivery and waste removal. Assess how low-impact delivery and waste removal initiatives can apply to the high-intensity corridor between Swanston and Elizabeth Streets and other precincts in the city.



Fig 15.2 Cargo bicycles are already improving the last km freight task

Develop knowledge on urban freight

There is a lack of understanding regarding the last kilometre delivery task, which makes it more difficult for government to support businesses and the delivery industry. To fill this knowledge gap, the City of Melbourne will need to work with industry to identify opportunities for specific improvements.

This will leverage the design and consultation opportunities associated with street redevelopment and structure planning projects to establish delivery and waste management opportunities.

During these projects, the City of Melbourne will work with industry stakeholders to discuss improvements to last kilometre freight and take advantage of any opportunities for innovative solutions that lessen the negative impact of deliveries on the amenity of the city, reduce delivery costs and improve efficiency.

123. Priority Work with the Department of Transport and freight stakeholders to develop a central city last kilometre freight delivery strategy including an analysis of freight movements and options for consolidation and low impact distribution.

Off-street loading facilities

By encouraging loading facilities to be located off-street, there is potential to minimise the impact of freight and delivery activity on the surrounding street network that will result from high density land use and activity. This may have multiple benefits for local amenity, daily operations on busy streets, and encourage a consolidated approach to deliveries for buildings or precincts.

124. Action: Do an assessment of the options for planning scheme controls to encourage building developments to accommodate loading and delivery space off-street. (Action)

Integrated Waste Management Program

The Integrated Waste Management Program, endorsed by the City of Melbourne in May 2011, seeks to ease the issue of waste transport impacting amenity and inner urban traffic congestion. Initiatives of the program include targeted recycling for high rise residential buildings, ensuring streamlined waste contracts, and an analysis of potential vacuum waste systems.

125. Implement the actions of the City of Melbourne's Integrated Waste Management Program.

Innovative parking management

Opportunities to improve parking management by utilising new technologies will become increasingly relevant, to better understand what is happening in on-street parking spaces and better manage the system as a whole. This may improve the overall efficiency of delivery, service and maintenance vehicles, which often require very short term parking in convenient locations to their destinations.

126. Action: Develop a strategy of on-street parking management across the municipality to improve the efficiency of deliveries.



Fig 15.3 Handcart delivery in Melbourne CBD

Key directions and actions



16 Key directions

The key directions synthesise the most important aspects of this strategy and represent the areas in which the City of Melbourne's advocacy and actions will be concentrated.

High level targets

By 2020

- 90 per cent of all commuter trips to the CBD will be by public transport, cycling or walking — the 2006 journey to work census figure was 72 per cent.

By 2030

- 80 per cent of all trips to the City of Melbourne will be by public transport, cycling or walking — the latest Victorian Integrated Survey of Travel and Activity (VISTA) 2009 figure is 50.9 per cent.
- 95 per cent of all trips within the municipality will be by public transport cycling and walking — the latest VISTA 2009 figure is 84 per cent.

Key direction 1

Integrated transport and land use planning

A key principle of the Transport Integration Act 2010 is that the transport system should provide for the effective integration of transport and land use. This includes specifically reducing the need for private motor vehicle transport and having regard for current and future land use.

The Transport Integration Act has created the definition ‘interface body’ to recognise that the responsibility and role of planning in the State of Victoria rests with a broad range of organisations. Similarly, transport and land use planning does not always occur in such a deliberative and linear way. Often opportunities or new insights will allow us to achieve stronger outcomes that would not have been originally imagined. It is essential for all interface bodies, departments, agencies, councils and transport providers to work together actively and to plan effectively for the future.

The City of Melbourne will be deliberate and innovative in planning for the city’s transport systems, land uses and development. This will be fundamentally guided by the Transport Integration Act. The City of Melbourne will continue to synchronise land use and transport planning, as has been coordinated for the development of this strategy and the Municipal Strategic Statement. Integrated planning will lead to a more liveable and sustainable city.

Policy targets

By 2016 (the term of the 2012-2016 Melbourne City Council):

Governance

- Transport and land use systems in central Melbourne are being planned and managed in a transparent and integrated manner, with the participation of key agencies including the Department of Transport, Department of Planning and Community Development, VicRoads, the City of Melbourne and others.

Data

- A Melbourne Transport Account is published regularly, indicating progress towards strategic transport goals for central Melbourne.

Communications

- A coordinated communications campaign is informing travellers about appropriate travel choices and behaviours in Melbourne.

Pedestrians

- Pedestrians account for six per cent of trips to the municipality — the VISTA 2009 figure was 2.6 per cent — and 80 per cent of all trips within the municipality — the Vista 2009 figure was 65.6 per cent.

Key direction 2

Go anywhere, anytime public transport for inner Melbourne

The City of Melbourne will foster the capacity and integration of the public transport system. This will provide more businesses and residents of inner Melbourne with a level of mobility that becomes competitive with that provided by the private car. It will also support the continued shift from private car to public transport and help reduce road congestion.

The service provided by Melbourne's public transport needs to be significantly improved, in order to support the expansion of the central city area, jobs growth, the intensification of the city and the growing trend towards using public transport in preference to driving.

The most important public transport initiatives are:

- untangling the train network
- adding new lines, including the Melbourne Metro train tunnel, to double train capacity to the central city and improve accessibility and capacity throughout the network, and
- speeding up the tram and bus networks by increasing capacity, frequency and the quality of bus stops.

Walking is an integral part of public transport journeys. The City of Melbourne will give greater priority to pedestrianisation for routes to public transport nodes.

Policy targets

By 2016 (the term of the 2012-2016 Melbourne City Council):

Pedestrians

- Master plans are completed to maximise pedestrian access to key public transport nodes including all City Loop and Melbourne Metro 1 stations, and key trams stops.

Trains

- Construction has commenced on the Melbourne Metro line.
- Regional Rail Link is complete and operating.
- Peak hour (peak direction) train frequency is increased by more than 50 per cent from the current 115 services.

Trams

- Tram frequency is increased to a minimum of 10 minute frequencies, where these levels are not currently met.

Buses

- Blue Orbital (inner metropolitan) SmartBus route is operating.

Key direction 3

Optimise the transport effectiveness of inner Melbourne's roads

The City of Melbourne will support growth in public transport, walking and cycling as the dominant modes of transport in inner Melbourne. This includes redesigning road space allocation, traffic signalling, containing the provision of off-street parking and improving taxi and car share options.

This will help address the problems of congestion, road trauma, urban pollution and greenhouse emissions and inefficient use of valuable space in the city.

The City of Melbourne will work with the State Government to develop a new network operating plan for the city's streets, which will encourage through traffic to use roads designed to cater for by-pass traffic on the perimeter of the city, and will give priority at traffic signals to high capacity public transport vehicles, pedestrians and cyclists.

Policy targets

By 2016 (the term of the 2012-2016 Melbourne City Council):

Pedestrians

- Pedestrians are given priority in traffic signal operation at all key intersections in the Central City.

Cars

- Review car parking rate controls in the Melbourne Planning Scheme for non-residential uses outside the Capital City Zone.
- New network operating plan is approved and 50 per cent of Hoddle Grid signals are changed to prioritise efficient transport modes.

Trams

- Average tram speeds in the municipality are increased by 20 per cent and reliability is improved due to signal priority, level access stops and tram lanes.

Buses

- Queen Street and Lonsdale Street are optimised to reduce bus travel times by 30 per cent in the city and improve reliability.

Governance

- A program of enforcement is improving the operation of on-road public transport in Melbourne.

Key direction 4

Develop high mobility, pedestrian and public transport streets in the central city

The City of Melbourne will progressively upgrade the mobility provided by Melbourne's central city streets by prioritising public transport, walking and cycling. This will be coordinated with tram and bus route upgrades, using a whole-of-street approach to integrate infrastructure changes such as new level access stops into a high quality public realm.

Functional objectives for these streets include:

- a pedestrian-oriented streetscape
- high quality connections between activity centres and transport interchanges
- street trees, water sensitive urban design principles and other sustainable design elements.

Improved streetscapes will coincide with improved priority for high capacity public transport vehicles at traffic signals, as part of the improvement of public transport routes such as tram route 96.

Policy targets

By 2016 (the term of the 2012-2016 Melbourne City Council):

Pedestrians

- Pedestrians are given priority in traffic signal operation at all key intersections in the Central City.
- Pedestrian death or major trauma from road accidents is reduced by 25 per cent.

Cars

- A minimum of 300 on-street car share spaces are installed in the City of Melbourne, of which 50 are in the Hoddle Grid.
- 40 kph is implemented as the speed limit in central Melbourne.

Trams

- 90 per cent of tram stops in the municipality are level access stops.

Key direction 5

Make Melbourne a true cycling city

Make Melbourne a true cycling city, in the inner and central areas, with infrastructure such as separated lanes and road management improvements. The safety, convenience and attractiveness of cycling on inner and central city roads will tap Melbourne's significant latent cycling potential. Such a shift to cycling will help reduce congestion on road and on public transport.

Other initiatives that will boost cycling include constructing more on-street bicycle parking, and changing planning rules so that more bicycle parking is constructed in new buildings.

The City of Melbourne will work to improve and expand Melbourne bike share, to increase its use and better integrate the system into Melbourne's transport networks.

High level targets

By 2030

- Bicycle use will increase by 400% from 4% to 12% of all trips.

Policy targets

By 2016 (the term of the 2012-2016 Melbourne City Council):

Bicycles

- Bicycles trips to the municipality and six per cent of all trips within the municipality — the latest VISTA 2009 figure for each was four per cent.
- Planning scheme is amended to increase provision of off-street bicycle parking in inner Melbourne.
- 30 new on-street bicycle parking corrals are installed.
- Two fully-connected east-west and two north-south separated bicycle routes are constructed in the Hoddle Grid.
- A map of the quality of the inner Melbourne bicycle network is published regularly.

Key Direction 6

Foster innovative, low impact freight and delivery in central Melbourne

The City of Melbourne will foster more efficient and lower impact freight and delivery to the central city. An efficient freight delivery system is vital to the city. Freight deliveries provide everything that is consumed in the city, including stock for shops, food for restaurants and office supplies.

The last kilometre of these supply chains has the most impact on the central city and it is where there are the most opportunities for improvements in efficiency.

Future streetscape developments will give high priority access to freight delivery and service vehicles. The City of Melbourne will encourage innovative, low impact delivery systems such as low emission and hand-operated vehicles and freight consolidation centres.

It will use the opportunity of new developments to investigate the provision of innovative delivery solutions.



17 Summary of actions

This strategy outlines a range of direct actions that the City of Melbourne will undertake as well as a series of collaborative actions that the City of Melbourne will take to work with other bodies to deliver integrated transport outcomes. Some of the items are listed for priority action.

Taking action and working with others

The following actions have been grouped by the mode which they primarily relate to. During implementation it is likely that several actions relating to various transport modes will be achieved at once.

Priority Actions

Actions in red text have been nominated as priorities which the City of Melbourne will endeavour to implement in the short term (2012-2016).

Walking City

The City of Melbourne will:

- **Develop a municipal Pedestrian Plan. (Priority action 1).**
- **Expand the program of opening streets for temporary pedestrianisation. (Action 3).**
- **Prepare pedestrian accessibility plans for the precincts around Flinders Street Station and Southern Cross Station. (Priority action 5).**
- **Update the Road Safety Plan to strengthen the commitment to reducing pedestrian death and serious injury without reducing pedestrian access to the road network. (Priority action 7).**

Working with others the City of Melbourne will:

- **Transport, VicRoads and Yarra Trams to design and build the municipality's network of high-mobility streets. (Priority action 2).**
- **Work with the Department of Transport to provide excellent quality pedestrian access to all public transport stops, stations and interchanges. (Priority action 4).**
- **Work with the Department of Transport and VicRoads to ensure that the municipality's Road Network Operating Plan provides a high level of priority to pedestrian trips. (Priority action 6).**

- **Work with State Government to reduce information and infrastructure barriers to universal access in the public transport system. (Priority action 8).**
- **Work with other tiers of government to advocate for universal transport accessibility. (Action 9).**

Cycling city

The City of Melbourne will:

- Review and update the Bicycle Plan 2007-2011 with a strategy to complete the safe arterial bike network over the next five years. (Priority action 10).
- Investigate key corridors and locations where congestion and conflict occurs between pedestrians and cyclists with a view to providing alternative routes attractive to faster cyclists while maintaining access to shared paths for both user groups. (Action 11).
- Include initiatives in Bike Plan and other Council programs to encourage road sharing by all user groups. (Action 12).
- Ensure new bicycle routes will meet capacity demands when planning and upgrading the bike network. (Action 13).
- Publish a map of the quality of existing bicycle routes in Melbourne and the planned improvements to the network. (Action 14).
- Plan and construct a complete safe cycling network throughout the city's Urban Renewal Areas. (Priority action 16).
- Update the Bicycle Plan to improve the connectivity of the bicycle network in the local streets and lanes. (Priority action 18).
- Install and improve bicycle facilities as part of all traffic works in the municipality. (Action 19).
- Update the Road Safety Strategy to include a focus on accident blackspots for cyclists. (Action 22).

- Implement a program of delivering on-street bicycle parking corrals at high demand locations. (Action 24).

- Begin a program of trials and pilots to test innovative bicycle infrastructure and traffic management in inner Melbourne. (Action 29).

Working with others the City of Melbourne will:

- Work with the Department of Transport, VicRoads and Yarra Trams to design and build safe cycling along the high-mobility streets. (Priority action 15).
- Work with the Department of Transport and Places Victoria to develop the cycling network in Docklands including cycle/pedestrian links across Victoria Harbour and the Yarra. (Priority action 17).
- Work with the Department of Transport and VicRoads to provide a high level of priority to cycling in the municipality's Road Network Operating Plan. (Priority action 20).
- Work with VicRoads to investigate early starts for cyclists at signalised intersections (along with pedestrians and public transport vehicles. (Action 21).
- Work with VicRoads to achieve a significant improvement to cyclist and pedestrian safety. (Action 23).
- Work with the Department of Planning and Community Development to review planning scheme bicycle parking rates for new building developments. (Priority action 25).

- Work with bicycle advocacy groups, transport management associations and employers to encourage the installation of good workplace end of trip facilities. (Action 26).
- Work with the Department of Transport to increase secure bicycle parking at suburban train stations. (Action 27).
- Work with transport stakeholders to support trials, research and analysis to improve the integration of cycling with Melbourne's train and bus systems. (Action 28).

Driving

The City of Melbourne will:

- Consider the Government's proposed East West Link when details are known to make sure that it achieves the City of Melbourne's transport and urban development objectives and is consistent with council's resolution of June 2008 opposing the use of any parkland for the purposes of any road works or associated activities.. (Priority action 30).
- Publish, and regularly review the municipality's network operating plan for all roads in the municipality including information about traffic signal operation to ensure that the management of the network is transparent. (Action 34).
- Apply the Network Operating Plan principles to change the way King Street traffic signals operate. (Priority action 35).
- Encourage and facilitate car pooling. (Action 40).
- Consult with motorcycle user groups when changes to existing motorcycle parking are contemplated and use VicRoads' guidelines for making provision for on-street motorcycle parking facilities. (Action 41).
- Increase the supply of motorcycle parking in congested areas to reduce the need to park on footpaths and prohibit motorcycle parking where it obstructs walking, or other complementary activities. (Action 42).
- Amend the planning scheme to require motorcycle parking provision at a rate that better matches the levels of current and predicted use. (Priority action 43).
- Update Road Safety Strategy to strengthen commitment to reducing death and serious injury to motorcyclists as vulnerable road users. (Action 44).
- Investigate ways to reduce pollution generated by vehicles idling including anti-idling laws. (Action 45).

- Investigate an amendment to the planning scheme to set maximum car parking rates for all land uses throughout the municipality, and review the area to which amendment C133 applies. (Priority action 48).
- Investigate opportunities for new parking capacity to be constructed so that it can be converted to more productive uses in the future. (Action 49).
- Discourage the provision of long term commercial parking, particularly in the central city, and encourage conversion of existing long-term commuter parking into affordable short stay parking or other uses. (Action 50).
- Optimise parking accessibility to meet the needs for universal access. (Action 51).
- Implement parking systems that allow payment without requiring parking machines or meters and that will remotely sense and assess parking occupancy. (Action 52).
- Review and update the City of Melbourne's on-street parking strategy so it is consistent with mobility objectives of this strategy. (Priority action 53).
- Increase the allocation of central city on-street parking to short term parking. (Action 54).
- Publish parking data, including occupancy rates, prices, availability and other information. (Action 55).
- Provide an effective resident-only parking permit scheme to established dwellings that have little or no option for on-site parking. (Action 56).

Working with others the City of Melbourne will:

- Work with the Department of Transport and the Department of Planning and Community Development to ensure infrastructure to support east-west travel considers all transport modes and is well integrated with the city's land use development strategy. (Priority action 31).

- Work with the Department of Transport and Department of Planning and Community Development to develop a network operating plan to reduce the intrusion of through traffic. (Priority action 32).
- Work with the Department of Transport and VicRoads to ensure that the municipality's Road Network Operating Plan provides for driving balanced with the priority for trams, buses, walking and cycling. (Priority action 33).
- Work with the Department of Transport to better understand various transport pricing signals and the effect that they have on influencing transport choices. (Action 36).
- Work with the Department of Transport and the Department of Planning and Community Development to develop a coordinated transport and land use plan for the inner metropolitan east-west employment corridor integrating all modes rail, tram, bus, taxi, car and bike share and private car. (Priority action 37).
- Work with the Department of Planning and Community Development and the Department of Transport to develop an integrated land use and transport planning approach for the municipality. (Priority action 38).
- Work with Victoria Police and the Department of Justice to ensure these aspects of the transport network are enforced effectively. (Action 39).
- Work with the State Government to assess the applicability of electric vehicle technologies and other innovations in the city. (Action 46).
- Work with State Government to deploy driving speed limits across the municipality that achieve mobility objectives of this strategy. (Priority action 47).

Train

The City of Melbourne will:

- Advocate for the hours and days of operation of Flagstaff Station to be similar to other City Loop stations. (Action 62).
- Advocate to improve the overall energy efficiency of the train network and in particular increase the use of low-carbon and clean-source energy to power Melbourne's train system. (Action 63).

Working with others the City of Melbourne will:

- Work with the Department of Transport to achieve the conversion of the suburban rail network into a metro style system. (Priority action 57).
- Work closely with the Department of Transport on the planning and construction of the Melbourne Metro project to ensure it is well integrated with the existing city and its future development and enhances Melbourne's transport network in addition to actively supporting future rail extensions to Doncaster. (Priority action 58).
- Work with the Department of Transport and train operators to ensure that areas around train stations provide excellent pedestrian access. (Priority action 59).
- Work with State Government to ensure the municipality's urban renewal areas (Southbank, Docklands, E-Gate, Arden-Macaulay and City North) are planned to prioritise direct, high quality, high capacity pedestrian links for 800m around new and existing stations. (Priority action 60).
- Work with the State Government to ensure that planning for new rail stations and precincts integrates land-use planning with the transport network. (Priority action 61).

Tram

The City of Melbourne will:

- Advocate to increase the energy efficiency of Melbourne's tram system and the use of low-carbon and clean-source energy. (Action 75).

Working with others the City of Melbourne will:

- Work with Victoria Police, VicRoads, the Department of Transport and the Department of Justice to improve traffic enforcement to reduce delays to trams and buses. (Action 64).
- Work with the Department of Transport to reduce tram and bus delays by providing dedicated tram rights of way. (Priority action 65).
- Work with VicRoads to change traffic signalling to prioritise tram movements. (Priority action 66).
- Work with the Department of Transport and VicRoads to ensure that the municipality's Network Operating Plan provides a high level of priority to trams. (Priority action 67).
- Work with the Department of Transport, VicRoads and Yarra Trams to improve tram frequency and average running speeds. (Priority action 68).
- Work with the Department of Transport, Yarra Trams and VicRoads to develop a four-year strategic plan to design and construct level-access stops in the municipality as part of a whole-of-streetscape renewal. Include a review of the function of existing level-access stops. (Priority action 69).
- Work with the Department of Transport, Yarra Trams and VicRoads on the construction of level access stops in the municipality to meet comply with the requirements of the Disability Discrimination Act. (Priority action 70).
- Work with the Department of Transport, Yarra Trams and VicRoads to ensure the design of new level-access tram stops that have excellent pedestrian accessibility with the surrounding footpath network. (Priority action 71).

- Work with the Department of Transport to master plan streets in preparation for the introduction of new low floor E-class trams. (Priority action 72).
- Work with the Department of Transport and Yarra Trams and VicRoads to implement the long term reconfiguration and extension of the tram network proposed in this strategy. (Priority action 73).
- Work with Yarra Trams, the Department of Transport and VicRoads to implement the 96 and 109 route upgrade projects, including ensuring that the network operating plan gives good signal priority through the city. (Priority action 74).

Bus

The City of Melbourne will:

- Install north bound bus lanes on Queen Street in the central city. (Priority action 77).
- Extend bus stops where necessary by removing on-street parking or other measures and improve bus stop amenity. (Action 81).
- Investigate designing centre of the road bus operation on high-frequency routes in the city. (Priority action 84).

Working with others the City of Melbourne will:

- Work with the Department of Transport and the Bus Association for the implementation of the bus service review recommendations. (Priority action 76).
- Work with the Department of Transport, VicRoads and the Bus Association to improve bus frequency. (Priority action 78).
- Work with the Department of Transport, VicRoads and the Bus Association to improve the running speed of buses. (Priority action 79).
- Work with the Department of Transport and VicRoads for separate bus rights-of-way. (Priority action 80).
- Work with the Department of Transport to improve the performance of bus interchanges. (Priority action 82).
- Work with the Department of Transport and Public Transport Victoria to improve the NightRider bus service including consideration of smaller more flexible buses. (Priority action 83).
- Work with the Department of Transport and the Bus Association to introduce a fleet of clean fuel buses by 2016. (Priority action 85).
- Work with the Department of Transport, VicRoads the Bus Association and operators to improve bus service frequency and average route speeds. (Priority action 86).

Taxi

The City of Melbourne will:

- Participate in the State Government Taxi Industry Inquiry into the taxi and hire care industry. (Priority action 87).
- Develop taxi parking and ranks that will improve late night transport options, especially in entertainment, restaurant and bar precincts. (Priority action 88).

Working with others the City of Melbourne will:

- Work with the taxi industry, mobility groups and other stakeholders to review the locations and availability of taxi parking zones and to understand better the role that taxis play in Melbourne. (Priority action 89).
- Work with the Department of Transport, Public Transport Victoria, the taxi industry and other stakeholders to improve the role of taxis in meeting demand for late night transport. (Priority action 90).
- Work with the Taxi industry and the Department of Transport to develop a more efficient and effective taxi fleet. (Priority action 91).
- Work with the Department of Transport to develop water taxi services along the Yarra River connecting Southbank, Docklands and the Hoddle Grid and the sports an entertainment precinct. (Priority action 92).
- The City of Melbourne will work with Places Victoria and Docklands stakeholders to further develop options for water based transport through the Docklands transport plan. (Action 93).

Car share

The City of Melbourne will:

- Review Council's car sharing policy to ensure it meets the objectives of this strategy. (Priority action 95).
- Monitor innovations in car sharing and update its car sharing policy where these would produce improvements. (Action 96).

Working with others the City of Melbourne will:

- Work with car share operators in allocating City of Melbourne operated parking spaces to car sharing in the municipality's existing and emerging high-density mixed-use areas. (Priority action 94).

Bike share

The City of Melbourne will:

- Update the Bicycle Plan with a strategy to connect bike share stations in the central city with a network of safe and attractive bicycle routes including separated lanes and compatible speed limits. (Priority action 98).
- Support Melbourne Bike Share and advocate for its expansion within the city and to neighbouring municipalities through IMAP. (Action 99).

Working with others the City of Melbourne will:

- Work with VicRoads, RACV, Bicycle Network Victoria and the Department of Transport to review the operation of Melbourne Bike Share and develop joint strategies to increase its use including a review of the location of bike stations. (Priority action 97).

Transport Information

The City of Melbourne will:

- Make the transport data the City of Melbourne collects publicly available on an open data basis to encourage research, innovation and applications (apps) in its use and interpretation. (Priority action 102).
- Expand the Melbourne Bicycle Account into a Melbourne Transport Activity Account to report on all modes of transport in the municipality. (Priority action 103).

Working with others the City of Melbourne will:

- Work with the Department of Transport and Public Transport Victoria to develop a public transport user online information interface for customer payment and trip planning that merges all modes - rail, tram, bus, taxi, car share, bike share and extending to regional trains, buses and air travel. (Priority action 100).
- Work with the Department of Transport and Public Transport Victoria to improve the integration and accessibility of signage and user information of all the public transport modes - rail, tram, bus, taxi, car share, bike share. (Priority action 101).
- Work with the Department of Transport, Bicycle Network Victoria, VicRoads and RACV, to gather and use cycling data for planning the development and promotion of city cycling. (Priority action 104).

Regional and global transport connections

The City of Melbourne will:

- Development and manage the city's walking network and signage so that visitors and tourists find it welcoming, easy to navigate. (Action 110).
- Develop the opportunities to promote bicycle tourism in inner Melbourne through IMAP. (Priority action 112).
- Manage tourist bus parking to enable efficient passenger loading and minimise impact on other modes of mobility. (Action 113).

Working with others the City of Melbourne will:

- Work with the state and federal government and the cities of Sydney and Brisbane to investigate the benefits and feasibility of a very high speed CBD-to-CBD rail service between Melbourne, Canberra, Sydney and Brisbane. (Priority action 105).
- Work with the Department of Transport to improve the reliability, travel times and frequencies of the SkyBus service and the introduction of standard public transport fares to encourage greater public transport access to Melbourne Airport. (Priority action 106).
- Work with the Department of Transport to improve the public transport links between Victoria's regional centres and Melbourne's central city. (Action 107).
- Work with the operators of tourist shuttle services to develop integrated services, joint promotion and to offer visitors an easily understood offer of visitor mobility options. (Action 108).
- Work with State Government to improve tourist river transport connections especially between Docklands and the east of the central city. (Action 109).
- Work with the Department of Transport and Public Transport Victoria to make the city's public transport services - rail, tram, bus, taxi, car share and bike share - easy to access and use for visitors and tourists. (Priority action 111).

Port freight and logistics

The City of Melbourne will:

- Provide planning scheme support for acoustic attenuation of new dwellings and businesses adjacent to major freight routes and in the port's vicinity. (Action 114).

Working with others the City of Melbourne will:

- Work with the Department of Transport on the rationalisation and modernising of the Melbourne Freight Terminal in the Dynon precinct to provide more efficient port freight logistics. (Action 115).
- Work with the Department of Transport and the Department of Planning and Community Development to develop land use controls to ensure urban renewal near Melbourne Freight Terminal is compatible with the terminal's operations. (Priority action 116).
- Work with State Government on improving the efficiency of road freight transport, including the use of High Productivity Freight Vehicles (HPFV) and supporting their priority on the existing freeway network. (Action 117).
- Work with State Government to increase the proportion of port freight by carried by rail. (Action 118).
- Work with State Government for extensions and new links for rail access from the western suburbs to the port, including adding capacity through the Bunbury Street tunnel. (Action 119).

- Work with State Government to ensure any future rail link from Web Dock to the Melbourne Freight terminal is designed to minimise noise along the interface with Docklands. (Action 120).

Central city freight and delivery

The City of Melbourne will:

- Plan and implement more efficient and less intrusive freight delivery options in the central city on a street or precinct based approach. (Priority action 121).
- Review the impact of the Swanston Street works on delivery and waste removal. Assess how low-impact delivery and waste removal initiatives can apply to the high-intensity corridor between Swanston and Elizabeth Streets and other precincts in the city. (Action 122).
- Do an assessment of the options for planning scheme controls to encourage building developments to accommodate loading and delivery space off-street. (Action 124).
- Implement the actions of the City of Melbourne's Integrated Waste Management Program. (Action 125).
- Develop a strategy of on-street parking management across the municipality to improve the efficiency of deliveries. (Action 126).

Working with others the City of Melbourne will:

- Work with the Department of Transport and freight stakeholders to develop a central city last kilometre freight delivery strategy including an analysis of freight movements and options for consolidation and low impact distribution. (Priority action 123).

