

**Northern Central City Corridor Study**  
**Transport and urban solutions for the inner north**

**Northern Central City  
Corridor (NCCC)  
Strategy**

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**Draft**

**August 2003**

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## Foreword from the Minister for Transport

I am delighted to present the draft Northern Central City Corridor (NCCC) Strategy. More than two years of intensive consultation, analysis and investigation have now resulted in a way forward, which is available to everyone in the community for comment.

The draft strategy presents a number of options we could adopt to address the transport and land use needs of Melbourne's inner north over the next three decades – and clearly indicates that there's a great deal more work to be done.

Major proposals – such as building a rapid public transit link to Doncaster, or an east-west tunnel between the Eastern Freeway and City Link – have been considered in the strategy, and weighed up against other options that would require less time and funding to complete. I'm pleased to note that some Bracks Government initiatives already underway – such as *Melbourne 2030* – promise to deliver real improvements to transport conditions in the inner north.

I'd like to take this opportunity to thank everyone who has contributed to the development of the draft strategy.

The input we've received from many individuals and interest groups has been invaluable. More than 1,100 people have offered us their opinions on transport and land use issues in the area, by attending public meetings and sending in submissions. I would particularly like to thank all the members of the NCCCS Community Reference Group.

This strategy will play a large part in the ongoing growth and improvement of the inner north, and I strongly encourage you to read the draft strategy and offer feedback.



Peter Batchelor MP  
Minister for Transport

## Executive summary

The Northern Central City Corridor (NCCC) Study has investigated transport and land use issues in Melbourne's inner northern suburbs, and has developed a draft *Northern Central City Corridor (NCCC) Strategy*, an integrated strategy designed to address the area's transport needs over the next 20-30 years, in anticipation of the development and activity growth that will occur in this time frame.

This report, prepared by the Department of Infrastructure, presents the *NCCC Strategy* for consideration.

The draft strategy presented in this report was developed consistent with the findings and conclusions in the accompanying *NCCCS Scenario Appraisal Report*.

### Objective and goals

The overall objective of the *NCCC Strategy* is **to improve the amenity and sustainability of the inner north whilst meeting the travel needs of people and goods.**

The strategy has been formulated to meet the following 'triple bottom line' goals:

- Social – improving amenity and liveability of the inner north
- Environmental – protecting and enhancing environmental sustainability in the inner north
- Economic – supporting growth in economic activity, especially in and around Melbourne's CBD.

More details are given in Chapter 2.

### Issues and trends

As summarised in Chapter 3, significant population and employment growth is expected in the inner north and surrounding areas (especially central Melbourne). Without intervention, inner north travel will continue to grow, although growth will be slowed by increasing congestion. Forecasts suggest that, by 2021, the number of inner north vehicle trips will increase by about 18%, whilst vehicle-kilometres of travel will increase by 21% and vehicle-hours by about 46%. This will give rise to an additional 6.3 million hours of travel time a year in the inner north alone (costing about \$55 million a year in lost time) and will reduce daily average vehicle speeds in the inner north from 34km/h to 28km/h (a 17% reduction).

This increasing congestion will continue to slow down buses and trams, unless more priority can be given to public transport. Freight will experience greater delays due to the increased car traffic. Existing problems for walkers and cyclists will also worsen.

### Strategic response

*Melbourne 2030* indicates future directions for land use and transport in Melbourne as a whole, and includes significant shifts in the location of growth and provision of transport throughout the metropolitan area. These changes include substantial improvements to public transport services and other measures to promote large increases in public transport use, walking and cycling as alternatives to car use. It is expected that these measures will have a significant effect on travel impacting on the inner north.

The *NCCC Strategy* takes these directions into account and contains the following elements:

Element	Description
<b>Melbourne-wide</b>	
Refocused growth	Refocused population and employment growth to reduce urban sprawl and enhance the viability of Melbourne's urban centres, including definition of an urban growth boundary, designated growth areas, housing initiatives, activity centres and green wedges.
Integrated transport	Metropolitan-wide <i>Melbourne 2030</i> integrated transport initiatives.
<b>Inner north</b>	
Public transport improvements	Selected improvements to service levels, travel times, reliability and accessibility for public transport serving the inner north and adjacent areas, subject to metropolitan-wide priorities.
Defined road classification and traffic management	Classification of arterial, collector and local streets throughout the inner north, with linkages into surrounding areas. Requires traffic management measures on local and arterial roads to remove excessive through traffic from sensitive areas and effectively manage traffic on arterial roads.
Parking initiatives	Policy changes to residents parking permit schemes and reorganisation of parking to ensure more appropriate use of available road space, and more appropriate use of parking by commuters and other users.
Cycling improvements	Completion of the principal bicycle network (PBN) in and through the inner north, and a range of initiatives to establish a 'fine-grained' local bicycle network in conjunction with the road hierarchy described above.
Walking improvements	A range of initiatives to improve conditions for pedestrians throughout the inner north, including improved local street linkages, provision for the disabled and measures to reduce severance and improve pedestrian safety on arterial routes.
Land use policy changes	Facilitate greater variation in housing types, conversion of existing buildings and improved sustainability of development, including transport-oriented development within urban amenity and urban conservation guidelines.
Demand-side management	Initiatives to encourage greater use of public transport and non-motorised modes in conjunction with physical proposals, e.g. behavioural programs such as TravelSMART.

Provided all elements of the *NCCC Strategy* are implemented (including Melbourne-wide elements), public transport mode share will increase substantially, as will the use of cycling and walking. This has the potential to result in reduced future traffic levels in the inner north, to or below today's levels, especially at the busiest times of day and week. Although more road space will be needed for public transport (and to a lesser extent, cycling and walking improvements), it is expected that, if the anticipated mode shift is achieved, traffic congestion levels will be reduced overall compared to projected levels with no strategy.

These outcomes for the inner north build on the implementation of *Melbourne 2030* initiatives, especially the transport initiatives. This includes improvements to public transport to make it more attractive and to ensure it is capable of carrying the targeted levels of patronage, and behavioural change programs to encourage or induce less car use and more use of sustainable modes (public transport, walking and cycling).

### ***Inner north public transport priorities***

Improving public transport in adjacent areas is expected to give significant benefits to the inner north, through the effect of the mode shift on alleviating road traffic.

Subject to metropolitan area-wide priorities, the following public transport improvements would be of greatest importance for the inner north:

- Train – upgrading Upfield line services, Craigieburn electrification, Hurstbridge and Epping line improvements
- Tram – upgrading routes 109, 19, 96, 86, 11 and 1 to achieve travel time and reliability improvements and increased service frequencies
- Bus – improvements to Johnston Street and Eastern Freeway bus services and east-west services within the inner north
- Doncaster area rapid transit (DART) – substantial improvements to Eastern Freeway corridor public transport (busway, light rail, heavy rail and ‘hybrid’ options require further study).

### ***Road network management***

A road hierarchy is proposed for the inner north to improve the relative roles of the different types of roads and streets in the area. The hierarchy is particularly designed to maximise overall community benefit without undue compromise to local amenity or the operation of the arterial road network.

Principles to establish a system of arterial roads, collector streets and local streets are proposed, with implementation by 2010 through cooperation between VicRoads and local government.

As part of this process, high priority is proposed for:

- Solving traffic and truck problems in Gatehouse Street, Harker Street, Michael Street, Scotchmer Street and Pigdon Street
- Standardising the timing of clearways, turn bans, parking limits, signal timing regimes and other devices to improve the efficiency of the arterial road network in peak periods and improve its use and understanding.

### ***Parking***

Availability of parking is a key determinant in mode choice. Provision of parking space has a major effect on local amenity and streetscape, especially in areas with a lot of on-street parking like the inner north.

As initiatives to encourage more public transport use and behavioural change programs are implemented, it is desirable to influence both parking availability and price. The following initiatives are suggested as the basis for ongoing development of parking as a demand management tool:

- Review residential parking permit schemes to make them more effective and more strongly related to the amount of parking space available
- Reduce conflicts between traffic flow and parking for commercial and retail areas, including access for off-street parking
- Review the availability and use of commuter and workplace parking as a tool to help manage the demand for commuter car travel
- Investigate more park and ride facilities at the outer ends of public transport serving the inner north and discourage further development of park and ride within the area
- Review the cost of commuter parking in the central city.

### ***Cycling***

Increased use of cycling depends on provision of improved facilities as well as encouragement, information and behavioural programs.

The Principal Bicycle Network requires completion in the inner north, as well as development of a finer-grained access network using local streets. In many cases, local area traffic management measures designed to prevent vehicular movement also impede or prevent bicycle movement; these should be identified and altered to ensure that cyclists are not disadvantaged.

The City of Melbourne Bike Plan, released in May 2002, provides a new focus for bicycle works in the municipality. The City of Yarra needs to review its bicycle program to meet its own requirements, and for consistency with the City of Melbourne, in both timing and connectivity terms.

End of trip facilities (especially parking) require improvement in many areas, in particular local shopping areas and at other focal points in the area (eg. community and cultural facilities).

### ***Walking***

Walking is an important mode of transport in the inner north, and between the inner north and the CBD to the south. There are some important actions required to provide improved conditions, especially safety and convenience, for walking:

- Improved linkages between the inner north and adjacent areas
- Reducing the severance effect of major transport routes by improving pedestrian crossing and access
- Improved walking access to public transport
- Other measures to promote and encourage walking.

## Land use

Key directions for land use in the inner north are:

- Protection and enhancement of the extensive heritage of the area in a way that also provides for efficient land use
- Effective integration of new development and changing land uses into the urban fabric
- Encouragement of more transport-sustainable forms of development.

There are also opportunities to enhance urban form in conjunction with transport improvements; a number of these were identified during the NCCC study, including some key 'gateways' to the city and Royal Park. These could be further investigated as part of the development of transport proposals.

A range of initiatives are under consideration or development as part of *Melbourne 2030*, to support more sustainable development. Many of these will protect and enhance the inner north more sustainably in the future; they include:

- Development densities, zoning issues
- Influence of overlays (eg. heritage)
- Parking for new developments/changes of use – reduced car parking needs, developer contributions to public transport improvements instead of parking, 'car free' developments
- Requirement for transport plans to accompany development applications
- Residential parking permit schemes, pricing and availability.

## Mobility management

As well as public transport improvements, behavioural, pricing and/or policy initiatives may be needed to achieve more sustainable transport outcomes. *Melbourne 2030* recognises this through the proposed development of an integrated transport plan.

Inner north travel will be most significantly affected by travel demand management initiatives that influence the following:

- General awareness and behavioural change (through behavioural programs like TravelSMART)
- Mode choice, especially for travel to and from central Melbourne.

Evidence suggests that such initiatives will need to be a part of long term transport planning strategies like the *NCCC Strategy*, but their introduction is most effective if accompanied by improvements in alternatives to car use (i.e. public transport, walking and cycling) to ensure that they keep pace with growing demand for their use.

## Major road infrastructure

The *NCCC Strategy* is directed towards increasing the use of public transport, cycling and walking to achieve amenity improvements in the inner north by minimising

the need for car travel, as one part of the Melbourne-wide approach put forward in *Melbourne 2030*.

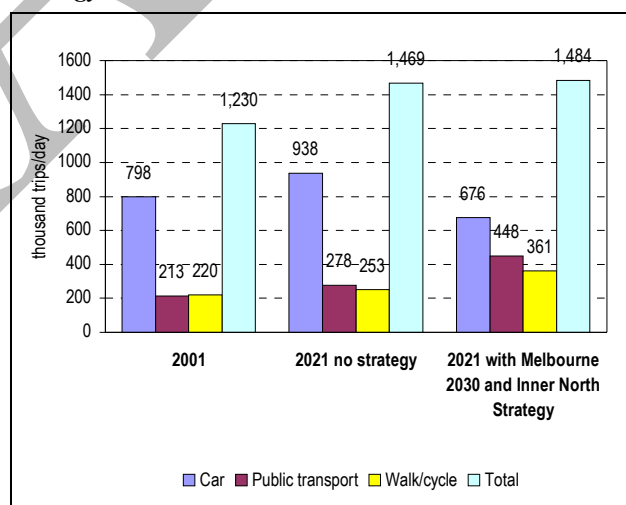
If the *NCCC Strategy* is successful, traffic modelling indicates car traffic levels at or below today's levels on most roads in the inner north. In this event there would be no need for additional road capacity; its provision would go against the basic philosophy of *Melbourne 2030* and the *NCCC Strategy*, to reduce avoidable private car travel.

A particular issue which was considered by the study was whether or not a tunnel is justified between the Eastern Freeway and the Tullamarine Freeway, or between the Eastern Freeway and the CBD.

The assessments reported in the *NCCCS Scenario Appraisal Report* concluded that due to their high cost in comparison to their benefits no further investigation should take place on road tunnel options in the inner north. As a result, they are not included in the *NCCC Strategy*.

Freight traffic will continue to grow in line with growth in economic activity, although growth in the inner north will also be influenced by the limited road space availability, the quality of alternative routes and (to some extent) the outcomes of the *Victorian Freight and Logistics Strategy* under development. The strategy actions proposed will assist in confining freight traffic to primary arterial roads.

## Strategy outcomes



Effect of the strategy on inner north daily travel

If the *NCCC Strategy* and the *Melbourne 2030* initiatives are implemented, modelling suggests that daily inner north car trips in 2021 could decrease by 15% compared with current (2001) levels. Inner north public transport travel could increase by 114%, whilst cycling and walking could increase by 61%. In peak periods, public transport could carry nearly 50% of inner north motorised travel, compared with under 30% today.

Vehicle-kilometres of inner north travel could decrease by 7% from today, whilst vehicle-hours could increase by about 12%. This will give rise to an additional 1.6 million

hours of inner north vehicle travel time a year, compared with 6.1 million hours with no strategy (saving about \$39 million a year in lost time by 2021).

The *NCCC Strategy* could result in lower pollution levels and improved air quality. Local amenity could be improved in some areas (through traffic management initiatives), but people living close to arterial roads will probably not experience significantly different conditions to today.

### Summary of proposed actions

The table below summarises the actions proposed to implement the *NCCC Strategy*.

### Next steps

Following comments on this report, the strategy will be finalised. It will then be referred to the relevant authorities for funding consideration and implementation.

Heading	Proposed actions	Responsibility
Improving public transport	1 Adopt Melbourne 2030 integrated transport initiatives as the basis for future development of public transport serving the inner north. Priority could be given to upgrading the existing tram network (especially routes 109, 19, 96, 86, 11 and 1, in that order of priority) and bus services that serve the inner north, provided this is consistent with wider metropolitan public transport needs.	DOI
	2 Conduct a feasibility study into upgrading public transport in the Doncaster corridor to determine the best overall option and to protect the corridor for possible future implementation.	DOI, VicRoads
Road management	3 Adopt a functional road hierarchy for the inner north by agreement with the Department of Infrastructure, VicRoads and the Cities of Melbourne and Yarra, and in consultation with neighbouring municipalities as necessary to ensure compatibility with connecting routes and adjacent areas.	All
	4 Implement the agreed road functions by the year 2010. The program should include improved traffic management in collector and local streets by local authorities as required, coupled with necessary works on arterial roads to manage traffic.	Councils, VicRoads
	5 In consultation with stakeholders, remove or reduce the impact of through traffic and trucks on Gatehouse Street, Harker Street, and the Michael, Scotchmer and Pigdon Street route.	Councils
	6 Undertake a comprehensive area-wide review of the timing of all time-dependent traffic control measures (including turn bans, signal timings, clearways and fairways, parking restrictions and the like) to ensure consistency with patterns of demand.	VicRoads, Councils
Parking	7 Review residential parking schemes to rationalise permit availability, make wider use of permit-only areas, review parking permit precincts and increase the price of permits.	Councils
	8 Review the provision of parking and delivery vehicle arrangements for commercial and retail activities throughout the inner north in consultation with stakeholders. Particular attention should be given to the retail areas centred on Lygon, Brunswick and Smith Streets, Rathdowne Street in Carlton North and the Scotchmer Street/St Georges Road area.	Councils
	9 Develop policies to regulate the supply and price of commuter parking in the CBD and surroundings, as tools to manage the demand for commuter car travel and influence public transport mode choice.	Councils, DOI
	10 Investigate development of park and ride facilities at the outer ends of the more important tram routes serving the inner north (such as 96, 19 and 11), and discourage further development of park and ride facilities within the inner north.	DOI, Councils
Cycling	11 Update the City of Yarra's bicycle works program in coordination with the May 2002 City of Melbourne Bike Plan implementation program, to ensure that the two Councils deliver benefits in a coordinated way for cycling in the inner north as a whole.	Councils
	12 Complete the Principal Bicycle Network in the inner north as soon as possible. Priority should be given to completing facilities in the Alexandra Parade-College Crescent route, Nicholson Street, Lygon Street and Swanston Street.	Councils, VicRoads
	13 Review local street networks and associated traffic management measures to ensure that safe and comprehensive bicycle access is provided throughout the inner north.	Councils
	14 Review bicycle parking facilities at all key trip attractors in the inner north, especially the 'village' shopping and activity areas, cultural, health and employment locations. Priority should be given to developing safe, secure, convenient and adequate facilities to encourage their use.	Councils
	15 Coordinate behavioural and promotional programs to encourage more cycling with wider initiatives such as TravelSMART, green travel plans and the like.	Councils, DOI
Walking	16 Improve linkages and continuity on key walking routes in the inner north, including the Capital City Trail, linkages between the inner north and the CBD, and internal east-west linkages between main streets in the southern part of the inner north.	Councils
	17 Provide improved pedestrian crossing priority and safety at selected locations on arterial roads, especially Hoddle Street, Alexandra Parade, Princes Street, Victoria Parade/Street, Royal Parade, Flemington Road and Nicholson Street, and use traffic signal coordination to maintain the efficiency of the arterial roads.	Councils, VicRoads
Land use policy	18 Review of land use policy directions for the inner north to encourage more transport-sustainable land uses, especially given the expected continued growth in demand for inner city land.	Councils, DSE
	19 Investigate urban design improvements in conjunction with transport improvements, including measures to provide improved definition of key 'gateways' to Central Melbourne and Royal Park.	Councils, DSE
Mobility management	20 Implement TravelSMART programs (subject to the outcomes of the trials currently under way), in the inner north and in surrounding areas, especially for residents and schools in the northern and north-eastern suburbs, and for businesses in and around central Melbourne and the inner north itself.	Councils, DOI
	21 Initiate studies into other travel demand management initiatives (transport pricing, policy and incentive mechanisms) to develop a Government position on the role of such measures in implementing transport planning and policy.	DOI

# 1 Introduction

## 1.1 Background

This report, prepared by the Department of Infrastructure, presents the *NCCC Strategy*, a transport and land-use strategy for Melbourne's inner north, covering:

- Abbotsford
- Carlton
- Carlton North
- Clifton Hill
- Collingwood
- Fitzroy
- Fitzroy North
- North Melbourne
- Parkville
- Princes Hill

The *NCCC Strategy* covers proposals for improving transport in these areas, including facilities and services for walking, cycling, public transport, freight and private car use now and in the future. It also proposes initiatives to address land use, urban design and heritage conservation issues, although the emphasis is on transport.

The strategy is based on the findings of an assessment of a range of strategic options for the Northern Central City Corridor Study (NCCCS), which is reported in the accompanying report '*Appraisal of Strategic Options*'. The NCCCS has been conducted by the Department of Infrastructure over the last two years with the active involvement of the City of Melbourne, the City of Yarra, community groups and other key stakeholders.

The *NCCC Strategy* will cover the area's needs over the next 20-30 years and will anticipate and guide the type of development and activity growth expected to occur in this time frame.

## 1.2 The inner north

The area referred to as the 'inner north' in this report extends east-west from the Yarra River and Merri Creek to CityLink (the southern end of the Tullamarine Freeway), and north-south from the northern part of Melbourne city centre near Victoria Parade to the vicinity of Brunswick Road (see Figure 1-1).

This area was chosen because it is the primary area of influence of a possible road tunnel link between the Eastern and Tullamarine Freeways, which has been suggested at various times. The Government decided to look at the broader picture of transport and land use in the area, before making any decisions about new transport infrastructure.

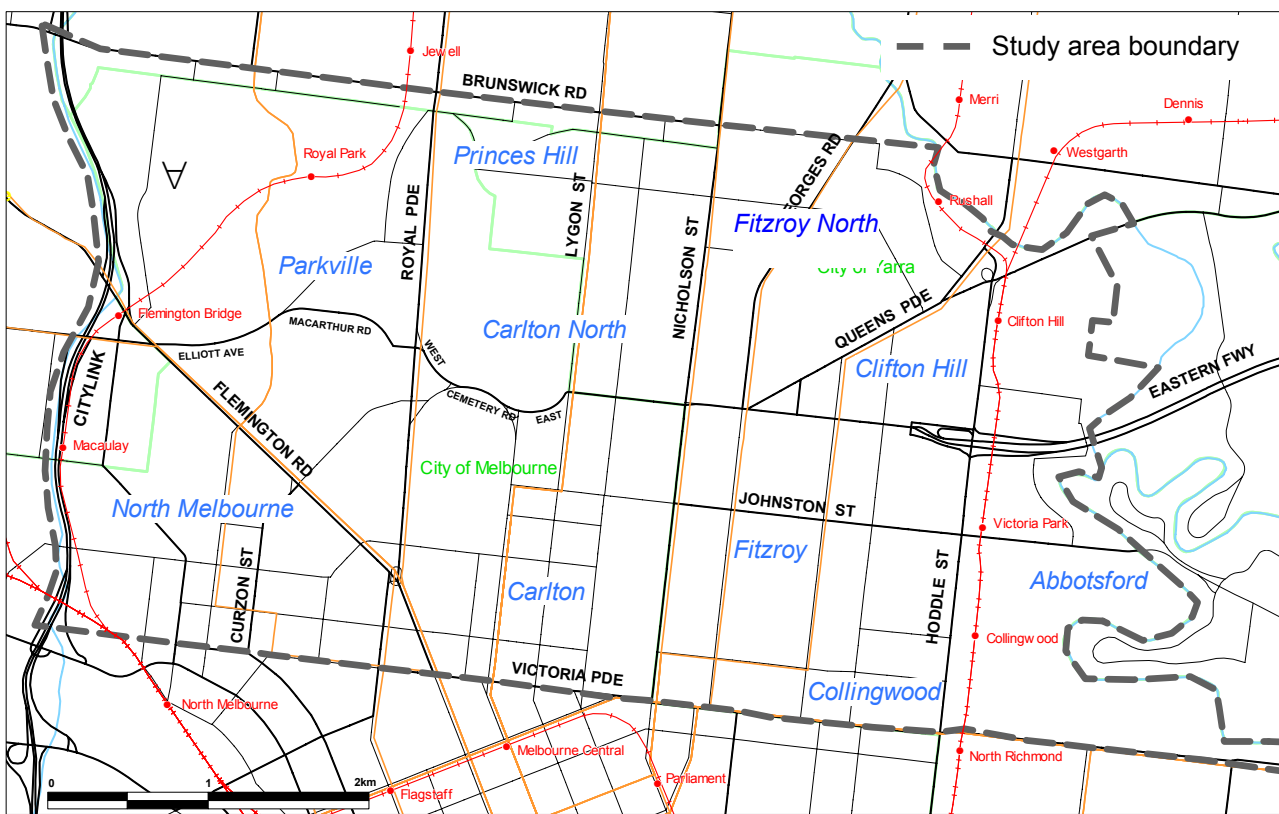
Many transport issues in the inner north are caused by travel generated outside the area. Because of this, the strategy recognises the importance of many initiatives outside the inner north. The *NCCC Strategy*'s sphere of influence includes the CBD and its surroundings to the south, and the northern and eastern suburbs, since these areas generate a large proportion of the travel that affects the inner north.

## 1.3 Sustainability and the triple bottom line

The *NCCC Strategy* has been developed using the principles of sustainability and seeks triple bottom line benefits, in line with the State Government's aims.

Sustainability and sustainable development are increasingly being discussed in the community. At its core, "sustainability" is **the ability to maintain something over time**. This concept can be applied to many different things. People often speak of 'ecological sustainability', 'social sustainability', 'economic sustainability' or 'organisational sustainability' or, when combined, 'holistic or triple bottom line sustainability'.



**Figure 1-1 The inner north**

The terms ‘sustainability’ and ‘sustainable development’ are often used interchangeably, but they are not the same. Sustainable development is a compound concept that combines concerns for continuity (sustainability) with concerns for change (development). So ‘sustainable development’ is the change process in society and the economy that enables the achievement of sustainability and the effective pursuit of genuine progress.

A society or environment that claimed to be sustainable would have to have achieved:

- social health & security - if it was socially sustainable; and
- ecological health & security - if it was ecologically sustainable;
- economic health & security - if it was economically sustainable.

Like all cities, a fully-sustainable condition is somewhat remote for Melbourne, although the community and Government are working towards it more and more. The concept of ‘greater sustainability’ or a ‘more sustainable’ state is therefore a more realistic goal in the time frames under consideration.

A positive triple bottom line outcome is one that achieves benefits in all three areas – social, environmental and economic. Achieving a positive triple bottom line is one way in which a move towards greater sustainability can be achieved. The State Government has adopted this concept, and triple bottom line assessments are recommended for all major policy or investment initiatives.

In the *NCCC Strategy*, the move towards greater sustainability is enshrined in the goals and the way in which the strategy elements address them.

## 2 Strategy objective and goals

The overall objective of the *NCCC Strategy* is:

***To improve the amenity and sustainability of the inner north  
whilst meeting the travel needs of people and goods.***

### 2.1 Strategic context

The *NCCC Strategy* will support the wider policy and strategy framework for Victoria and Melbourne, as summarised below.

#### *Growing Victoria Together*

The Bracks Government's vision for Victoria is summarised in *Growing Victoria Together*, which addresses the following eleven strategic issues:

- Valuing and investing in lifelong education
- High quality, accessible health and community services
- Sound financial management
- Safe streets, homes and workplaces
- Growing and linking all of Victoria
- Promoting sustainable development
- More jobs and thriving, innovative industries across Victoria
- Building cohesive communities and reducing inequalities
- Protecting the environment for future generations
- Promoting rights and respecting diversity
- Government that listens and leads

Many of these issues have relevance for the *NCCC Strategy*. One of the most important is the stated target (under 'growing and linking all of Victoria') of increasing travel taken on public transport in Melbourne from 9% to 20% by the year 2020 – the '20/2020' target.

#### *Melbourne 2030*

*Melbourne 2030* is a 30-year plan to manage growth and change across metropolitan Melbourne and the surrounding region. It emphasises the city's interdependence with regional Victoria, to provide maximum benefit to the whole State.

Despite a slowdown in population growth, Melbourne will grow substantially over the next 30 years. It is appropriate to plan for the capacity to comfortably absorb up to 620,000 extra households over that time while protecting and enhancing our existing suburbs.

The substance of *Melbourne 2030* is contained in nine 'directions' that embody the Government's aims of sustainability and of providing a better future for all. They are:

- A more compact city
- Better management of metropolitan growth
- Networks with the regional cities
- A more prosperous city
- A great place to be
- A fairer city
- A greener city
- Better transport links
- Better planning decisions, careful management.

Each of these directions is supported by specific policies that will be incorporated into the planning system. The policies will be implemented through a range of initiatives undertaken through joint action by local government, the Government and the wider community.

**The NCCC Strategy will be highly dependent on the implementation of Melbourne 2030 and its associated transport plans, which are presently under development.**

### *Cities of Melbourne and Yarra Plans*

The Cities of Melbourne and Yarra both have strategic plans in place. Such plans are constantly evolving, and provide a framework for more detailed planning and decision making. The most directly relevant goals from these plans are as follows:

- Competitive transport infrastructure supporting the economy
- Efficient use and reuse of resources
- Fairly/equitably managed parking
- Growth of business and retail, and relevant industry
- Improved access to services and facilities for residents, visitors and workers
- Improved air and water quality
- Improved, more attractive public transport
- Increased residential population
- Increased tourism
- Integration of road upgrades with other civic facilities
- Maintained social and cultural diversity
- Protected and enhanced biodiversity
- Protected and enhanced physical character
- Reduced greenhouse gas emissions
- Safe and comfortable shopping and cultural areas
- Sustainable and integrated transport system.

## 2.2 Community goals

Community consultation has included workshop discussions about suitable goals and aspirations for the inner north. These goals are echoed strongly in inputs received from the community at large as well. There is a strong emphasis on creating a more liveable environment and on reducing car dependency. The main community goals arising from consultations are summarised in Table 2-2.

**Table 2-1 Inner north community goals**

Theme	Community goals
Social	Healthier, less stressed community Improved cycling and walking conditions Improved public transport Improved safety Improved sense of place/community Preservation/enhancement of heritage
Environmental	Increased public open space Less freight on inappropriate roads Less through traffic on local streets More sustainable living conditions More sustainable transport Reduced air and noise pollution
Economic	Reduced car dependence Reduced traffic congestion

Source: summarised from NCCCS consultations

## 2.3 Strategy goals

Table 2-2 lists the goals that the NCCC Strategy aims to achieve, over the next 20-30 years. The goals encompass current and emerging policy directions at state and local government levels as well as the views and aspirations expressed by the community, as outlined above.

It is recognised that some of the goals conflict with one another, whilst others contribute to each other. The *NCCC Strategy* aims to achieve tangible benefits for all three components of the triple bottom line – it presents ‘win-win’ solutions that achieve positive outcomes for all of the goals, whilst seeking to minimise conflicts between them.

**Table 2-2** *NCCC Strategy goals*

Primary Category*	Goals
<b>Social</b>	<b>Improve amenity and liveability of the inner north by:</b> <ul style="list-style-type: none"> <li>• Significantly reducing the impacts of noise and air pollution from transport</li> <li>• Improving safety – reducing fatalities/casualties to or beyond state targets</li> <li>• Significantly enhancing urban landscape and heritage values in key areas</li> <li>• Minimising through traffic on local streets</li> <li>• Improving access and travel choices for residents, visitors and workers, including disadvantaged groups</li> <li>• Providing facilities for people with mobility disadvantages</li> </ul>
<b>Environmental</b>	<b>Protect and enhance environmental sustainability in the inner north by:</b> <ul style="list-style-type: none"> <li>• Ensuring a contribution to overall reductions in greenhouse gas emissions</li> <li>• Reducing anticipated car use for travel through, to/from and within the inner north</li> <li>• Substantially increasing public transport mode share</li> <li>• Increasing the use of walking and cycling</li> <li>• Protecting and enhancing biodiversity</li> </ul>
<b>Economic</b>	<b>Support growth in economic activity, especially in and around Melbourne's CBD, by:</b> <ul style="list-style-type: none"> <li>• Enhancing access for commercial activities including tourism and recreation</li> <li>• Catering for increased residential population in the inner north and surrounding areas</li> <li>• Providing for commercial travel movements, including safe, efficient primary routes for freight</li> <li>• Efficiently serving travel needs through, to/from and within the inner north</li> <li>• Maximising the economic return on investment in transport and land use initiatives</li> </ul>

\* Most goals have implications for all three ‘triple bottom line’ categories (social, environment, economic); they are shown here in their primary categories.

### 3 Issues and trends

The NCCCS *Issues and Trends* report, released in September 2001, discussed existing conditions and possible future trends for transport and land use in the inner north. This Chapter summarises and in some cases updates the information in the *Issues and Trends* report.

#### 3.1 Land use and demographics

Existing figures and preliminary projections of population and employment in the inner north, in line with *Melbourne 2030* directions, are shown in Table 3-1. The inner north contains about 64,000 people and over 75,000 jobs. Growth in residents, students, workers and visitors will continue, especially in the southern parts of the area (Abbotsford, Carlton and North Melbourne). Projections suggest that, by 2021, the area will accommodate 10,000 more people (a 15% increase) and 8,000 more jobs (an 11% increase).

**Table 3-1 Existing and future population and employment**

	Population			Employment		
	2001	2021	% growth	2001	2021	% growth
Abbotsford	4 000	6 400	60%	8 800	9 800	11%
Carlton	10 800	13 900	29%	16 300	17 900	10%
Carlton North/Princes Hill	8 600	8 500	-1%	2 400	2 500	4%
Clifton Hill/Fitzroy North	12 700	14 600	15%	5 000	4 400	-12%
Collingwood	5 200	6 900	33%	7 900	8 100	3%
Fitzroy	9 000	11 300	26%	10 800	12 300	14%
North Melbourne	7 200	6 500	-10%	10 300	12 600	22%
Parkville*	6 700	6 200	-7%	14 400	16 100	12%
<b>Inner north total</b>	<b>64 300</b>	<b>74 200</b>	<b>15%</b>	<b>75 900</b>	<b>83 900</b>	<b>11%</b>
CBD and surrounds**	34 200	64 100	87%	210 400	273 200	30%
Metropolitan Melbourne	3 365 600	4 153 100	23%	1 401 500	1 967 300	40%

\* Includes University of Melbourne

\*\* CBD, East, West and South Melbourne postcodes

Sources: ABS, Department of Infrastructure  
Updates information in *Issues and Trends* report

Future growth trends will place more pressure on resources in the inner north. Greater numbers of people living in, working in and visiting the area will generate new demands on housing, infrastructure and services, especially transport, and will increase pressure on heritage and amenity values.

#### 3.2 Transport

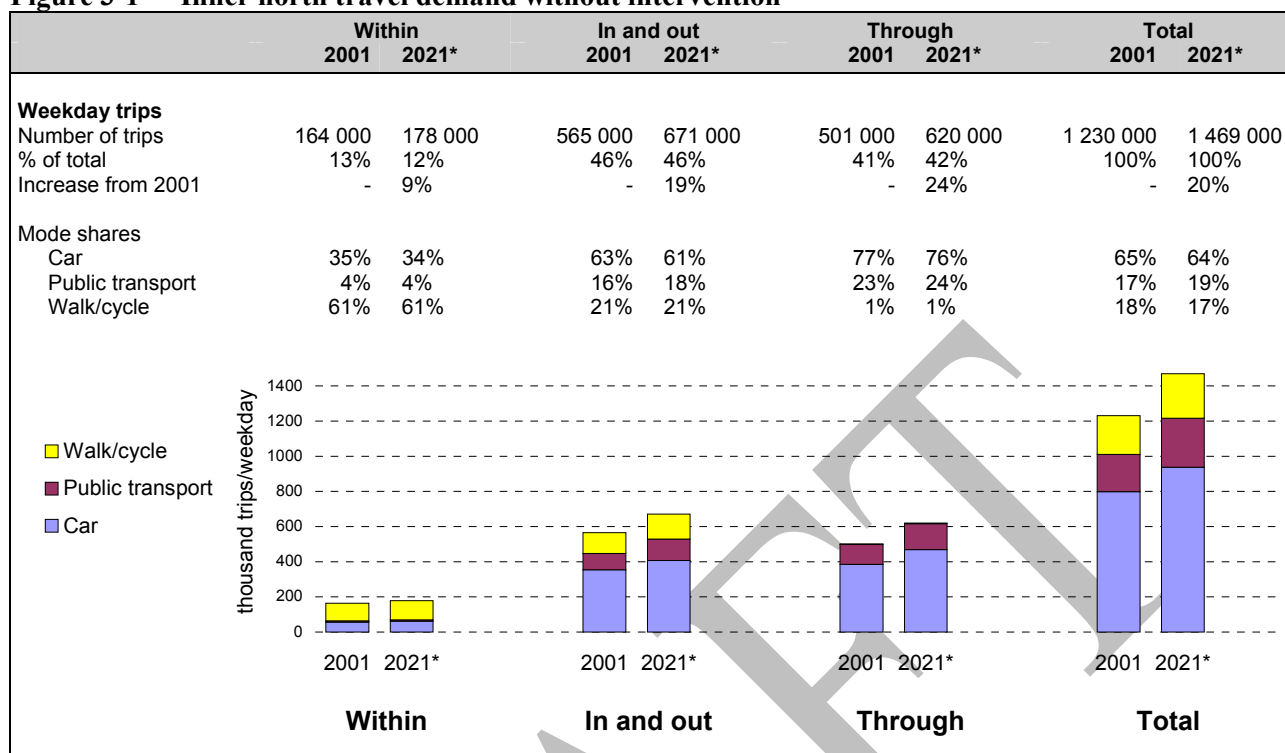
##### *Travel demand*

Over 85% of inner north travel<sup>1</sup> starts and/or finishes outside the area. The CBD and its surroundings generate the majority of through trips, both by road and public transport. Most trips wholly within the area take place on foot or by bike (61%), and about 35% by private car. Only 4% of trips within the area use public transport.

As shown in Figure 3-1, without intervention (that is, without implementation of *Melbourne 2030* transport plans and the *NCCC Strategy*) inner north travel will continue to grow (by 19% between 2001 and 2021), although growth will be limited by increasing congestion. Some increase in public transport mode share will occur, (mainly due to increasing road congestion, especially in the peak). Between 2001 and 2021, without intervention it is predicted that daily inner north public transport trips will increase by 30%, car trips by 18% and walking and cycling by about 15%.

Freight demand will also continue to increase, probably in line with growth in economic activity (it is generally agreed that freight demand grows in line with GDP growth). If so, freight traffic levels will double between 2001 and 2021. In this case it will be an increasing proportion of travel on roads in the inner north, but increasing congestion will probably limit this growth as commercial vehicles seek alternative routes (commercial traffic is typically more sensitive to congestion than private traffic).

<sup>1</sup> In this report, 'inner north travel' is defined as all travel that takes place within, to/from and through the inner north, and amounts to approximately 1.2 million trips a day at present.

**Figure 3-1 Inner north travel demand without intervention**

\* 2021 projections without intervention – i.e. no Melbourne 2030 transport plans or NCCC Strategy.

Source: Estimated from transport modelling for the study – updates information in Issues and Trends report.

### Mode share

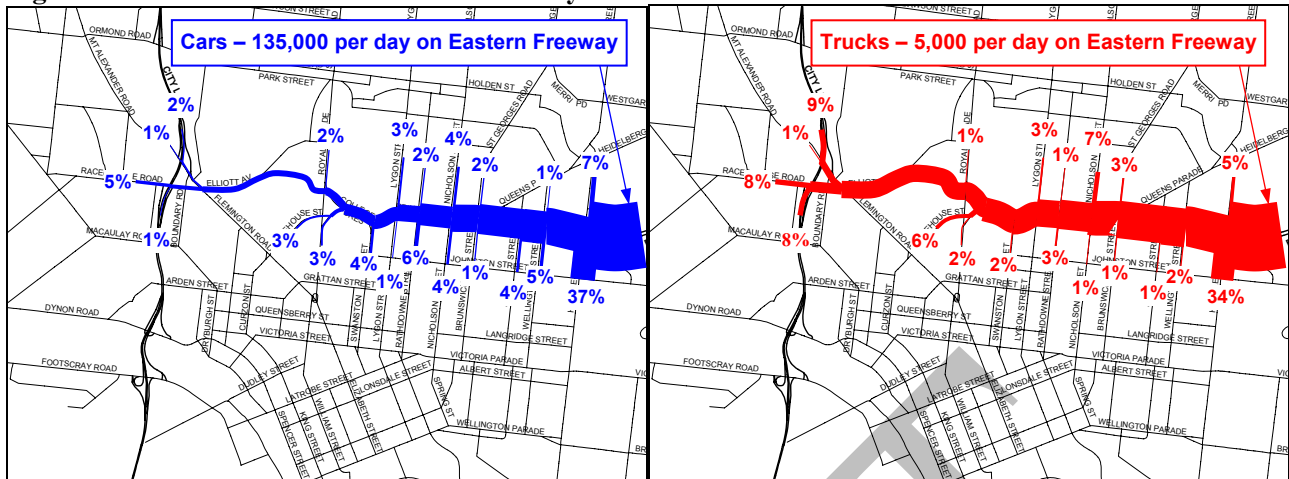
Public transport currently carries around 9% of motorised person-trips<sup>2</sup> Melbourne-wide, but for inner north travel this figure is about 21%. If the Melbourne-wide public transport mode share is to increase to 20% by 2020, the mode share for inner north travel is expected to increase to around 47%, meaning that nearly one in two motorised trips will be by public transport. Without intervention, public transport's share of inner north motorised trips will increase to only 23%.

### Road traffic

Road traffic levels and congestion have increased substantially in the inner north over the last 30 years. This has been due to overall travel growth in common with the rest of Melbourne, but the construction of the Eastern Freeway in particular added considerable volumes of traffic to Hoddle Street, Alexandra Parade and Princes Street, with overflows onto other streets as well.

Traffic volumes on the Eastern Freeway increased by over 30,000 vehicles a day after it was extended to Springvale Road. The freeway now carries about 140,000 vehicles a day at its western end. Two-thirds is to and from the CBD, its southern surroundings and the inner northern suburbs. Origin-destination surveys commissioned during the study showed that 10% of Eastern Freeway traffic (and 26% of truck traffic) travels to and from the Flemington Road/Elliott Avenue intersection (see Figure 3-2). Clearly, the east-west route is more important for trucks than cars. Whilst the percentage of trucks in the traffic stream is not high, they have a disproportionately large impact on residents along the route, especially in Princes Street (and on significant truck connecting routes such as Gatehouse Street).

<sup>2</sup> Motorised person-trips are those undertaken in cars and on public transport (buses, trams and trains), and exclude commercial vehicle, walk and cycle trips.

**Figure 3-2 Distribution of Eastern Freeway traffic**

Source: Vehicular number plate origin-destination surveys, October 2001

Without intervention, traffic will continue to grow in the inner north (and indeed throughout Melbourne as a whole). Forecasts suggest that, whilst the number of inner north vehicle trips will increase by 18%, vehicle-kilometres of inner north travel will increase by 21% and vehicle-hours by about 46%. This will give rise to an additional 6.3 million hours of inner north vehicle travel time a year (costing about \$55 million a year in lost time) and will reduce all-day average vehicle travel speeds in the inner north from 34km/h to 28km/h (a 17% reduction).

Figure 3-3 indicates potential traffic changes in the inner north between now and 2021 without intervention.

**Figure 3-3 Inner north traffic changes 2001-2021 without intervention**

Source: Transport modelling forecasts for the NCCC study

Traffic increases will be greatest in percentage terms on roads with less traffic, because the main arterials will not take significant increases due to capacity constraints. This implies that 'rat-running' traffic will increase substantially, putting increased pressure on residential and local shopping areas.

### *Public transport*

Public transport is generally well patronised, and provides good north-south coverage in the inner north. Services, though, are focussed on the CBD to the south and are less frequent outside peak hours. The main impediments to public transport gaining an increased share of inner north travel are considered to be:

- Low travel speeds and poor reliability of tram and bus services due to traffic congestion, not only in the inner north, but along the entire length of the routes
- Poor coverage of outer catchments by public transport, especially buses in the eastern and north-eastern suburbs
- A lack of integration between services, making it difficult to transfer between different public transport modes.

Within the inner north, public transport is hampered by delays from road congestion and a lack of east-west services resulting in poor access to key areas such as the University of Melbourne and the medical research facilities and hospitals in Carlton and Parkville.

Without intervention, increasing congestion will slow down road-based public transport services even more in the future. Although some improvements have been made in recent years to service levels and quality, substantially greater improvements will be needed to provide a public transport system that is attractive and capable enough to carry larger numbers of users.

### *Cycling*

Significant numbers of people cycle in the area, and they are relatively well provided for. However improvements to the principal bicycle network, linkages through parks and gardens, road crossing and end of trip facilities would further enhance the attractiveness of cycling. An opportunity exists to create a fine-grained and comprehensive bicycle network and related facilities in the area that would be a significant encouragement for more cycling by the community.

The City of Melbourne Bike Plan, released in May 2002, provides a new framework for future development of cycling facilities. The City of Yarra has an older but still relevant plan that requires updating, amongst other things to coordinate with the City of Melbourne document.

### *Walking*

Pedestrians experience some significant problems, including the dangers and delays of crossing major arterials, the lack of east-west linkages and the generally poor condition of footpaths, especially in the southern part of the area and to/from the CBD. Improvements to these aspects could significantly enhance the safety and attractiveness of walking, especially for the young, elderly and people with disabilities.

At the State level, mobility and access plans are under development as part of transport initiatives to implement *Melbourne 2030*. The role of walking will also become more important as more people use public transport. However without intervention to improve walking conditions, there is a risk that safety and capacity of pedestrian facilities will be further compromised in the future.

## **3.3 Social conditions**

The resident population primarily consists of students, public housing tenants, young professionals, families and the elderly. There are also Aboriginal and non-English speaking communities. The community of the area varies considerably by time of day and day of the week, because, as well as residents, many workers, tourists and visitors use the area.



The major roads and transport corridors in the area tend to divide communities and make access to local facilities more difficult. Alexandra Parade and Princes Street are particularly significant in this regard, severing the communities to the north and south.

In common with the rest of Australia, the average age of the population will continue to increase. With this ageing it can be expected that health and mobility issues will become more and more important.

### 3.4 Environmental values

Environmental issues in the inner north include:

- Noise – residents in the area are affected by noise from stop-start traffic on several major arterial roads (and other heavily used roads), and are also affected by noise from free flowing traffic on the Tullamarine and Eastern Freeways adjacent to the inner north.
- Airborne pollutants and greenhouse gas – technological breakthroughs and a marked change of attitude will be required to reduce pollution and greenhouse gas emissions from transport. Initiatives could include changing travel mode, improving vehicle efficiency and fuel economy.
- Soil and groundwater contamination – contamination arises from past decisions to locate industrial sites close to watercourses and drains. Opportunities exist to contain and allow cleaning-up of contamination, and create buffer zones between contamination sources and receptors.
- Vegetation and habitat – the Yarra River, Merri Creek and Royal Park are the major areas of ecological value in or adjacent to the study area.
- Stormwater and water quality – preservation and improvement of water quality in the Yarra River, Merri Creek and Moonee Ponds Creek would be a beneficial by-product of a well-managed transport system and land use improvements.

### 3.5 Heritage, urban and landscape design

The history of the inner north can be traced back to Aboriginal tribal lands and to the earliest days of European settlement. It includes:

- The first of Melbourne's developed suburbs (Fitzroy and Collingwood)
- The evolution of important transport routes
- Many landmark places and designated heritage sites
- Heritage precincts related to the industrial, ecclesiastical and social history of Melbourne
- The area's parklands and reserves, originally a vast green belt which surrounded the infant city and its first suburbs.

The area is of great significance for the amount of physical evidence that remains to illustrate this history, especially from the 1850s gold rush and the 1880s boom years.

The strong and highly significant heritage, landscape and urban design features of the area are a major constraint to infrastructure development, and to redevelopment to accommodate new or additional population and employment. Opportunities exist to preserve and enhance heritage and urban design values in a number of key locations.

### 3.6 Engineering considerations

Engineering of transport and land use solutions will require sympathy and integration with the existing urban fabric, avoiding any adverse effects such as the demolition of valuable property or inappropriate encroachment on parks and open spaces. Major services and utilities share the main transport corridors in the area, including major drains along Alexandra Parade, through Royal Park and North Melbourne.

## 4 Strategy elements

### 4.1 Background

The NCCCS has examined a ‘business as usual’ approach to transport in the area (the Base Case) and a range of potential strategy elements, including:

- Public transport improvements in line with *Melbourne 2030* transport directions
- Traffic management to reduce the effects of through traffic and trucks on local roads in the inner north
- Improvements to cycling and walking conditions and encouragement programmes
- Pricing signals such as increases to commuter parking prices in Melbourne’s CBD
- Behavioural programmes (such as TravelSMART see Figure 12-1 for description) to encourage use of public transport, cycling and walking.

Against this backdrop of wider initiatives, the study examined some significant infrastructure projects:

- Bus, light rail and heavy rail options for improved line haul public transport in the Doncaster-City corridor (Doncaster Area Rapid Transit or DART)
- An east-west road tunnel between the Eastern Freeway and City Link
- A road tunnel between the Eastern Freeway and Melbourne CBD

Appraisal of these is reported in the study’s *Scenario Appraisal Report*, which concluded that:

1. To remain at the ‘business as usual’ Base Case over the next twenty years would cause major social, environmental and economic consequences unacceptable to the local and wider community.
2. The following range of initiatives would support the strategic goals set out in *Melbourne 2030* and for the inner north by providing wide ranging social, environmental and economic benefits:
  - implement selected improvements to the public transport system which support region-wide public transport priorities;
  - implement local area and arterial road traffic management measures (eg kerb-side parking controls and turn bans) as part of an overall road hierarchy that improves local amenity and provides for the efficient movement of through traffic, public transport and freight on the arterial road network;
  - review land use controls in the area to accommodate the anticipated increases in residents and jobs;
  - implement selected walking and cycling network improvements and encouragement measures; and
  - implement measures to reduce car usage (for example, TravelSMART) and changes to parking policies.
3. Assessment of DART and the road tunnel options indicates:
  - DART would involve an implementation capital cost of \$130M for a dedicated busway, \$230M for light rail or \$610M for a heavy rail solution. The east-west road tunnel would cost \$810M to construct. Both present ‘break-even’ results from transport economic assessment; DART has a benefit-cost ratio (BCR) of 1.1 and the east-west road tunnel has a BCR of 1.0.
  - A road tunnel between the Eastern Freeway and the CBD would cost \$410M with a BCR of only 0.7 due to high levels of traffic congestion around its CBD terminal. It would also compete for radial public transport trips, to the detriment of mode share.
  - Both DART and the east-west road tunnel would be supportive of meeting social and economic development criteria, and both have positive environmental benefits. However, due to their lower overall benefits, they are considered to have a lower priority than the initiatives outlined in conclusion 2.
  - DART is more directly aligned to the government’s *Melbourne 2030* strategy.
4. It is concluded that the measures described in (2) above together with DART should be further assessed as components of the draft strategy for the inner north. DART requires further work to establish the scope and extent of a preferred option and to ensure the route is protected, whereas no further investigation should take place on the road tunnel options.

## 4.2 Melbourne-wide initiatives

The *NCCC Strategy* will be implemented against a backdrop of wider initiatives to improve Melbourne's land use and transport future. Such initiatives are guided by *Melbourne 2030* and will include:

- **Refocussed population and employment growth** to reduce urban sprawl and enhance the viability of Melbourne's urban centres, including definition of an urban growth boundary, designated growth areas, housing initiatives, activity centres and green wedges.
- **Integrated transport** to provide substantially improved public transport, encourage sustainable travel, provide for growth areas, provide for freight and commercial travel, improve links to regional Victoria and ensure integrated planning for Melbourne.

*Melbourne 2030* actions to address transport issues are summarised in Table 4-1.

**Table 4-1** *Melbourne 2030 integrated transport actions*

Action area	Tasks
Upgrade and develop the Principal Public Transport Network and improve local public transport services	Develop a metropolitan public transport plan
	Improve ticketing systems
Encourage sustainable travel	Develop and implement a travel demand management (TDM) action plan
	Develop a walking action plan
	Develop a cycling action plan
	Support policies for activity centres and Transit Cities
	Prepare guidelines to integrate transport infrastructure and development
Provide for the transport needs of growth areas	Build sustainable transport options into the design of growth areas
	Coordinate staging sequences and transport services
Provide for freight and commercial transport	Develop a freight and logistics strategy
	Plan for and develop capacity for ports
	Increase the rail share of freight to ports
Improve links to regional Victoria	Complete the fast rail projects
	Reopen country rail lines
	Complete high standard road links to provincial cities
Ensure integrated planning for metropolitan Melbourne	Develop and implement a plan to increase public transport mode share to 20% (20/2020)
	Develop a metropolitan road and traffic management strategy
	Develop sub-regional integrated transport strategies
	Complete the Local Government Transport and Mobility project
	Review metropolitan parking policies

Source: *Melbourne 2030 Implementation Plan 6 – Integrated Transport (Draft, December 2002)*

## 4.3 Inner north elements

Against the backdrop of Melbourne-wide initiatives, the *NCCC Strategy* includes the following key elements to achieve the stated goals:

- Public transport improvements in line with Melbourne-wide initiatives
- A defined road classification and associated traffic management measures
- Parking initiatives
- Cycling improvements
- Walking improvements
- Land use policy changes
- Travel demand management.

The above initiatives are summarised in Table 4-2 and described in more detail in the following Chapters.

**Table 4-2 Summary of the *NCCC Strategy***

Element	Description
<b>Melbourne-wide</b>	
Refocussed growth	Refocussed population and employment growth to reduce urban sprawl and enhance the viability of Melbourne's urban centres, including definition of an urban growth boundary, designated growth areas, housing initiatives, activity centres and green wedges.
Integrated transport	Metropolitan-wide <i>Melbourne 2030</i> integrated transport initiatives (see Table 4-1).
<b>Inner north</b>	
Public transport improvements	Improvements to service levels, travel times, reliability and accessibility for public transport serving the inner north and adjacent areas, subject to metropolitan-wide priorities. Includes further consideration of a rapid transit system in the Doncaster corridor.
Defined road classification and traffic management	Classification of arterial, collector and local streets throughout the inner north, with correct linkages into surrounding areas. Requires traffic management measures to implement the hierarchy effectively and remove excessive through traffic from sensitive areas.
Parking initiatives	Policy changes to residents parking permit schemes and reorganisation of parking to ensure more appropriate use of available road space, and more appropriate use of parking by commuters and other users.
Cycling improvements	Completion of the principal bicycle network (PBN) in and through the inner north, and a range of initiatives to establish a 'fine-grained' local bicycle network in conjunction with the road hierarchy described above.
Walking improvements	A range of initiatives to improve conditions for pedestrians throughout the inner north, including improved local street linkages, provision for the disabled and measures to reduce severance and improve pedestrian safety on arterial routes.
Land use policy changes	Changes to development controls to allow greater variation in housing types, conversion of existing buildings and improved sustainability of development, including transport-oriented development.
Demand-side management	Initiatives to encourage greater use of public transport and non-motorised modes in conjunction with physical proposals – behavioural programs (e.g. TravelSMART), policy initiatives, etc.

Provided metropolitan-wide initiatives and all elements of the *NCCC Strategy* are implemented, public transport mode share will increase substantially, as will the use of cycling and walking. This will result in significantly reduced future traffic levels in the inner north, especially at the busiest times of day and week. Although more road space will be needed for public transport (and to a lesser extent, cycling and walking improvements), it is expected that, if the anticipated mode shift is achieved, traffic congestion levels will be reduced overall compared to projected levels with no strategy.

These outcomes for the inner north are highly dependent on the implementation of *Melbourne 2030* initiatives, especially the transport initiatives. This includes improvements to public transport to make it more attractive and to ensure it is capable of carrying the targeted levels of patronage, and behavioural change programs to encourage or induce less car use and more use of sustainable modes (public transport, walking and cycling).

The *NCCC Strategy* recommends that Government does not proceed with any major road improvements such as an east-west tunnel linking the Eastern and Tullamarine Freeways, or a tunnel from the Eastern Freeway to the CBD, because:

- Increased road space in inner areas will encourage rather than discourage car use
- The tunnel projects studied are unlikely to give economic returns in proportion to the investment required
- The high level of investment required will divert resources from investment in other transport needs, which is more aligned with Government targets and *Melbourne 2030*.

## 5 Melbourne-wide initiatives

### 5.1 Refocussed population and employment growth

The *NCCC Strategy* has been formulated to take account of the expected changes in population and employment growth patterns that *Melbourne 2030* will promote. Section 3.1 summarises preliminary projections of population and employment in the inner north and surrounding areas.

### 5.2 Integrated transport

Over 80% of inner north travel is either to/from or through the area, so Melbourne-wide policies will impact significantly on transport conditions in the inner north.

#### *Improving public transport*

A draft plan for improving Melbourne's bus, trams and train systems in line with *Melbourne 2030* is being prepared. The plan will consider the following issues<sup>3</sup>:

- **Train** – additional express services to and from outer Melbourne, maximising the capacity of the existing network (particularly for the central area), efficient interchanges with other transport modes, coordination of timetables across modes, improved passenger facilities and information, and the interaction between urban and regional passenger and freight services on the metropolitan rail network.
- **Tram** – improved travel times and reliability (through improved separation between trams and traffic, and tram priority in road management), increased frequency of service, upgraded tram vehicles and infrastructure and selective extensions to the network where justifiable.
- **Bus** – high-capacity, high-frequency direct bus services (Smartbus), expansion of local routes, improved service frequency and regularity, more evening and weekend services, links to multi-modal interchanges and performance targets for bus operators.

Alongside this plan, the existing MetCard ticketing system is being upgraded to improve its reliability, information and convenience, and a new ticketing system is being investigated for the longer term.

Many of these improvements are highly relevant to the inner north, as discussed in 6 below.

#### *Encouraging sustainable travel*

Implementation of *Melbourne 2030* will include the following actions to encourage more sustainable travel:

- **A travel demand management (TDM) action plan** – TDM will encourage people to combine trips or reduce the distance travelled, reduce the amount of travel, change travel mode from car to walking, cycling or public transport, and change the time of travel from peak to off-peak.
- **Walking action plan** – will address the need for coordination of walking initiatives, better information, improved road safety, better pedestrian access and facilities, and skills and training for council planners and engineers.
- **Cycling action plan** – will develop cycling as transport to school, workplaces, public transport and to activity centres of all types, and will coordinate existing programs, develop infrastructure, end-of trip facilities, improved road safety, better information for cycling, and actions to address deterrents to cycling.
- **Support policies for activity centres and Transit Cities** – including improved public transport to activity centres, encouraging employment in 'transport-rich' locations, increasing residential densities, achieving the best urban design, build for and functionality for Transit Cities, improving public transport infrastructure and encouraging walking and cycling to Transit Cities.
- **Guidelines to integrate transport infrastructure and development** – to help planning approvals applicants and the planning authorities, including pedestrian and cycle access, development and management of transport corridors, and provision of public transport for new development areas.

<sup>3</sup> Summarised from *Melbourne 2030 Implementation Plan 6 – Integrated Transport* (Draft, December 2002)

The *NCCC Strategy* contains some specific proposals for the inner north, and will also benefit from implementation of the above measures throughout Melbourne.

#### *Freight and commercial transport*

The *NCCC Strategy* recognises that freight and commercial traffic will continue to share roads in the inner north with passenger traffic. However there is an environmental limit to the capacity of roads in the inner north to carry truck traffic; the inner north will benefit from wider measures to improve freight efficiency and increase the proportion of freight carried to and from ports by rail.

#### *Ensuring integrated planning for metropolitan transport*

Actions for integrated planning of transport in *Melbourne 2030* include development of:

- **The 20/2020 implementation plan** – will tie together the public transport plan, the TDM action plan and subregional integrated transport strategies.
- **A metropolitan road and traffic management strategy** – will seek to resolve competing demands and address network performance requirements, geographic issues and the needs of all modes of travel.
- **Subregional integrated transport strategies** – developed to provide more detailed guidance for integrated transport, in cooperation with relevant agencies, councils and the community. The *NCCC Strategy* is an example of such strategies.
- **A review of metropolitan parking policies** – will consider policy for parking on arterial roads, in the central city, at activity centres, at park and ride facilities and parking standards in the *Victoria Planning Provisions*.

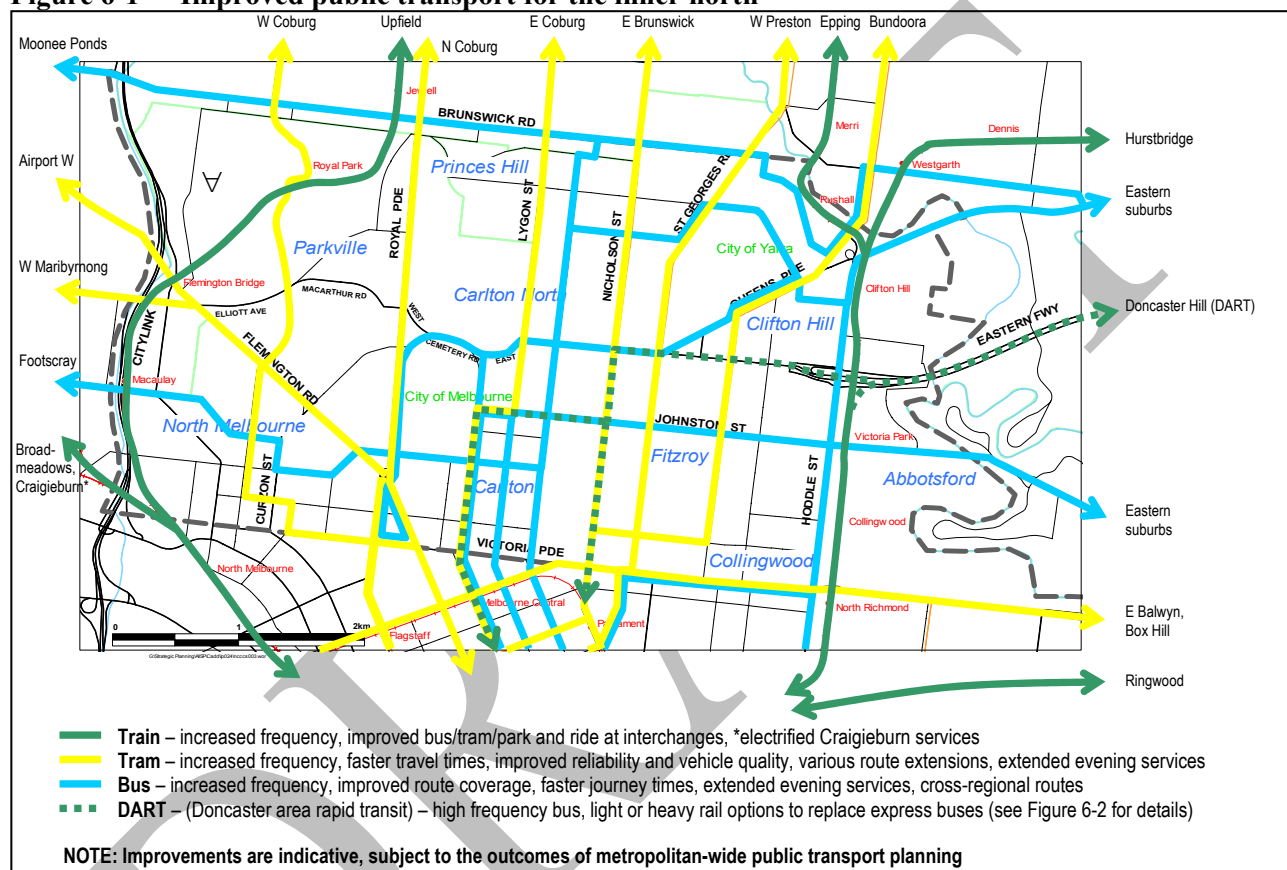
The *NCCC Strategy* is itself an integral part of this process, and brings together a number of actions relevant to the above headings.

## 6 Public transport priorities for the inner north

Of all the *Melbourne 2030* actions described in the preceding Chapter, improved public transport is the most important consideration in relation to the inner north. Without improvements to public transport and changes in travel habits, there will be little change from current trends in the inner north.

A number of public transport improvements have been studied during preparation of the *NCCC Strategy*, as illustrated in Figure 6-1 and described in the following paragraphs.

**Figure 6-1 Improved public transport for the inner north**



### Train

Current commitments include:

- Electrification of the Broadmeadows line to Craigieburn
- Redevelopment of Spencer Street Station

Patronage modelling suggests that the most significant initiatives from the perspective of inner north travel are largely required outside the area, and include:

- Upgrading of Upfield line services
- Electrification of the Broadmeadows line to Craigieburn
- Improvement of services on the Hurstbridge and Epping lines.

### Tram

Current commitments include:

- Fixing many tram delay points ('redspots') throughout the tram network
- Continued development of the Tram 109 project

- Completion of low-floor trams introduction ('Citadis' and 'Combino' vehicles)
- Continued development of tram services in Docklands
- Extension of route 70 from East Burwood to Vermont South.

The Tram 109 project is the 'test bed' and showcase for the application of a wide range of different techniques and solutions to improve tram operations. Future upgrades to tram routes could apply these techniques to achieve improved travel times and reliability, increase patronage and improved operating efficiency. Such upgrades would provide greater priority for trams in traffic, improved safety and improved accessibility for passengers (including access for people with disabilities, in line with Federal legislation).

Tram service levels are also being examined, with proposals to increase frequencies and to extend the span of services later into the night (especially on Fridays and Saturdays).

Melbourne's tram fleet will need to be progressively replaced with more low-floor, high-capacity vehicles to provide for future growth needs, improve comfort and accessibility and to comply with Federal disability legislation.

Patronage modelling undertaken for the study indicates that upgrading the following tram routes would have the most significance for travel affecting the inner north (in order of priority):

- Route 109 (Port Melbourne to Box Hill)
- Route 19 (City to North Coburg)
- Route 96 (St Kilda to East Brunswick)
- Route 86 (City to Bundoora)
- Route 11 (City to West Preston)
- Route 1 (South Melbourne Beach to East Coburg).

Of lesser significance in terms of patronage growth but still important for the inner north, are:

- Routes serving Melbourne University (primarily 3, 6, 8, 67 and 72)
- Route 22 (Arts Centre to Moreland)
- Route 55 (West Coburg to Domain Road).

### *Bus*

Bus transport generally serves areas beyond the core area of the tram network. Their role as feeders to rail and tram could be enhanced in several ways, including improved interchange conditions, better coordination of connecting services and improved user information systems.

Cross-suburban Smartbus route upgrades will help to fill in 'gaps' in public transport provision between the generally radial tram and train networks.

It is generally accepted that buses will best fill this role for the foreseeable future, but if and when demands reach sufficient levels, options for conversion to light rail should be provided for. Routes where this could apply in the longer term include Johnston Street and Brunswick Road. Possible future development of light rail on these routes should not be precluded in their ongoing management and development.

The following bus initiatives have the highest priority for the inner north:

- Improvement of Johnston Street services (including diversion of some routes to serve Melbourne University)
- In the short term, improvement of Eastern Freeway bus travel times and service levels through initiatives like the Victoria Street/Hoddle Street bus transit lanes
- Increased east-west service coverage, especially North Melbourne-Carlton-Fitzroy-Clifton Hill.

### *Doncaster Area Rapid Transit (DART)*

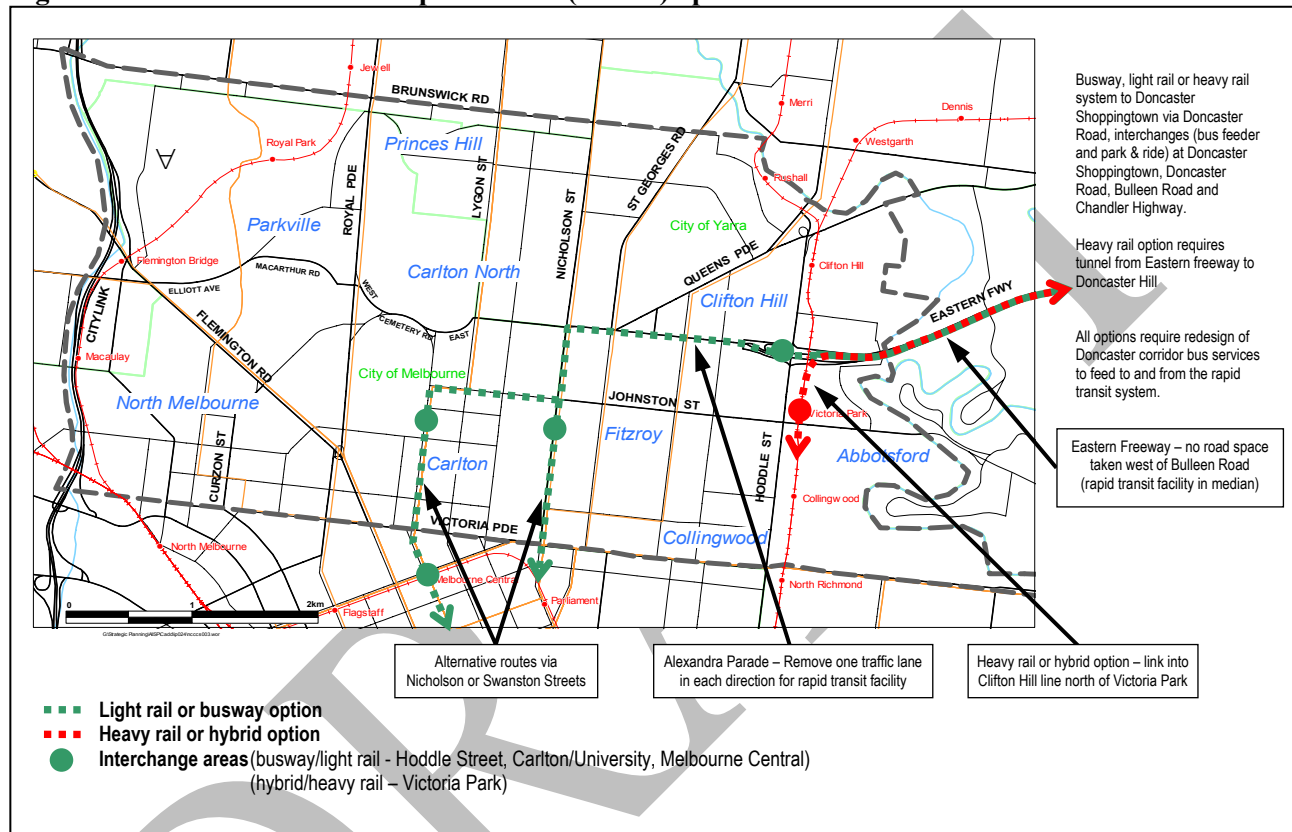
Express buses operating as they do today on the Eastern Freeway may not be sufficient to serve public transport demand levels in the longer term. The *NCCC Strategy* proposes consideration of a Doncaster Area



Rapid Transit (DART) system as part of Melbourne-wide improvements to public transport. DART would replace the current bus services with dedicated bus, light rail, heavy rail or a 'hybrid' system (preliminary studies favour light rail or a hybrid system, mainly on cost grounds, but detailed feasibility studies are needed to establish the best option). Such improvements have the potential to reduce the demand for car travel from the Doncaster area significantly, reducing future traffic levels on the Eastern Freeway and in the inner north as a result.

DART would operate between Doncaster Hill and the City, and is summarised in Figure 6-2. It will be important to protect the potential corridor from development that could compromise a future service.

**Figure 6-2 Doncaster Area Rapid Transit (DART) options**



A **light rail or busway** solution would run from a new underground bus/tram interchange at Doncaster Hill, in a dedicated right of way along Doncaster Road, then in the median of the Eastern Freeway from Doncaster Road to Alexandra Parade, requiring widening of the Freeway from Bulleen Road to Doncaster Road. From there, it would run along Alexandra Parade (in a dedicated right of way, and probably taking a traffic lane in each direction) to Nicholson Street, where it would join tram route 96 into the City. As shown in Figure 6-2, another option would be to turn into Elgin Street and Swanston Street to serve Melbourne University more directly, then into the city along Swanston Street. High-speed vehicles would be used to provide competitive overall journey times compared with car travel (and also to travel along the freeway at noticeably higher speeds than cars).

A **heavy rail** solution would run underground from Doncaster Hill to the Eastern Freeway at Bulleen Road, following the freeway median from there to the Clifton Hill railway overpass. At this point it would turn south, leaving the median to join the Clifton Hill line north of Victoria Park station. Doncaster train services would then enter the city using the city loop (service patterns would need to be worked up in detail).

A **hybrid** solution would combine features of the heavy and light rail options, running from Doncaster Hill along Doncaster Road and into the Freeway reserve (as per the bus and light rail options), then joining the Clifton Hill line at Victoria Park to run into the CBD using the city loop. The hybrid solution would require specially-designed vehicles capable of running in an on-road situation

With all options, the primary objective would be to provide a competitive edge, with shorter overall journey times than car travel, and much-improved reliability, capacity and passenger amenity than the present bus services. This means that DART will need to be fully segregated from road traffic throughout its length. An integral part of DART would be the redesign of bus services in the Doncaster corridor to improve their coverage and provide effective feeder services to and from the rapid transit system, including an effective bus/DART passenger interchange at Doncaster Hill.

Before any commitment is made to DART, a full feasibility study is needed into the options available, the potential benefits and costs. In the meantime, any land needed for future options should be protected.

## 6.1 Proposed actions

- Action 1**      **Adopt Melbourne 2030 integrated transport initiatives as the basis for future development of public transport serving the inner north. Priority could be given to upgrading the existing tram network (especially routes 109, 19, 96, 86, 11 and 1, in that order of priority) and bus services that serve the inner north, provided this is consistent with wider metropolitan public transport needs.**
- Action 2**      **Conduct a feasibility study into upgrading public transport in the Doncaster corridor to determine the best overall option and to protect the corridor for possible future implementation.**

## 7 Road management in the inner north

### 7.1 Overview

The road system provides access by a range of modes across the full spectrum of trip purposes. However it is important to ensure that roads are ‘fit for purpose’ in that their function is related to abutting land uses (eg. industrial, residential) and to the status of the particular road in the network (eg. whether it carries through traffic or just local traffic).

In many instances, conflict exists between abutting use and route function (eg residential development along a route used by a high proportion of trucks). To improve the ‘fitness for purpose’ of roads a classification of roads is suggested, to meet transport needs and maximise overall community benefit without undue compromise to local amenity. The classification must define and protect the functions of its elements to provide a reasonable balance between appropriate access for all travel modes and purposes while maintaining local amenity.

#### *Current policies*

The City of Melbourne Road Classification Plan recognises arterial roads as those contained in the VicRoads Declared Road Network Plan and designates these as Arterial Roads. The council recognises the multi-functional roles played by most inner area arterial roads, and has policies which strive to achieve a reasonable balance between competing needs demanded of these roads (these aspects are discussed in the following). All other roads and streets are (by default) ‘local streets’. In practice, the council manages the local street network in a manner akin to the basic principle defined above.

The City of Yarra is guided by the principles set out in the report ‘City of Yarra – Traffic Management Study’ (Andrew O’Brien and Associates, 1996). This report recognises the clear distinction of Freeways and Primary Arterial Roads (the major arterial roads in the VicRoads declared system) at one end of the spectrum and local streets at the other. It also addresses the problems of competing arterial road and local access functions in the ‘middle’ of the spectrum; it identifies:

- secondary arterials that supplement the basic arterial network;
- secondary arterials that also serve as major strip shopping centres;
- restricted traffic routes that supplement arterials in (say) peak periods but have also been traffic calmed to a degree; and
- local crossing roads (that cross local areas) but which should not be continuous traffic routes across primary arterial roads.

*Melbourne 2030* defines the Principal Public Transport Network for Melbourne and proposes a range of actions to develop public transport. *Melbourne 2030* also sets out some initiatives for managing the road system, of which the most important for inner city areas are:

- Introduce into the planning system principles for managing access to and from different categories of roads
- Develop a plan for management of arterial roads so that road space allocation better meets community and business needs in different urban environments
- Improve the management of key freight routes to make freight operations more efficient while reducing their external impacts
- Adopt, where appropriate, developments in transport technology that will make our roads more efficient and safer
- Adopt travel demand management measures to use road space more equitably and encourage more sustainable travel habits

## 7.2 Proposed hierarchy for the inner north

In order to respond to current policies and the directions set out in *Melbourne 2030*, it is proposed that the road network in the inner north be divided into three basic functional classifications:

- arterial roads;
- collector streets; and
- local streets.

In establishing such a classification the Principal Public Transport Network would also need to be considered, as would the Principal Bicycle Network.

### *Arterial roads*

Arterial roads should have a range of beneficial functions that (in all cases) include a primary designation to carry through traffic, including freight, with minimum impediment (note that over-dimensional vehicles are only catered for on specially designated arterial roads). The Eastern Freeway, City Link and other key routes such as Alexandra Parade, Hoddle Street and Victoria Parade clearly fall within this category.

Arterial roads have an emphasis on priority for road traffic. Many are also designated as part of the Principal Public Transport Network, implying that greater priority should be given to public transport on these routes.

Network continuity is a key factor or beneficial function in that the arterial road network should link all parts of the metropolitan area (and indeed the state).

The capability of arterial roads to provide for through and freight traffic can be enhanced by traffic signal priority, the provision of turns at major intersections, limited direct property access where possible and extended peak hour clearways (in both directions if required). Where appropriate, arterials that are also part of the Principal Public Transport Network could have tram or bus stops on the departure side of intersections, providing the opportunity for right turn lanes and minimised impact on other traffic, provided public transport has signal priority.

It should be noted that while the basic function of arterial roads is to cater for through traffic, where pedestrian movements are high (eg adjacent to key shopping/business precincts and the CBD), care must be taken to make adequate provision for pedestrian movements. Careful design and management is required to ensure neighbourhood amenity is not unduly compromised for the sake of through traffic.

### *Collector streets*

Collector streets provide access or transition between arterial roads and local streets as their main beneficial function. The term has a broad generic base – it includes roads which may be seen by some as secondary arterials ranging down to local crossing streets (eg City of Yarra).

Within this broad functional classification, there is a range of ‘beneficial functions’ bridging the gap between arterial roads and local streets. Some collector streets will provide priority for public transport if they are part of the Principal Public Transport Network (eg Abbotsford, Lygon, Rathdowne, Brunswick and Smith Streets). In some cases, they may also provide for limited through traffic, which may require peak direction clearways (eg Brunswick and Smith Streets) and other limitations such as peak period turn bans into local streets (eg Rathdowne Street). Several of these roads also function as retail shopping strips (Lygon, Brunswick and Smith Streets) and it is important to ensure that this beneficial use is recognised and protected.

Other collector roads (eg Arden/Grattan Streets and Queensberry Street) provide access into developing commercial areas and as a result will carry significant local area traffic. The collector function is best maintained by a reasonable level of access via traffic signals, but without encouraging through traffic by operating with a relatively low level of signal priority.

Towards the ‘local street’ end of the spectrum of collector streets, traffic calming measures are appropriate to ensure that the streets are not performing traffic functions beyond their environmental capabilities. These include:

- limitations to crossing traffic at intersections with arterial roads (eg. median closure could be considered for Scotchmer Street at St Georges Road, Nicholson and Lygon Streets);
- limitation of access to left turns only (eg Gatehouse Street at Royal Parade); and
- installation of speed humps and pavement narrowing on other collector streets. This fits the notional ‘local crossing road’ in the City of Yarra classification system.

### Local streets

Local streets have access to individual properties as their primary beneficial function. In many areas, local streets are also an integral part of the local ambience, providing parking, play space and the means for local contact between neighbours. In commercial areas, local streets provide access to businesses, parking etc and may also enhance the ambience of the area by providing for people movement and for meeting and relaxing. Tree planting and landscaping would add to local ambience.

Through traffic should be excluded and these streets are not suitable as Primary Public Transport routes (although local bus access may be appropriate).

Traffic calming measures such as pavement narrowing over extended lengths, speed humps and truncation are appropriate.

Table 7-1 summarises the key functions of each part of the road network.

**Table 7-1 Road hierarchy – key functions**

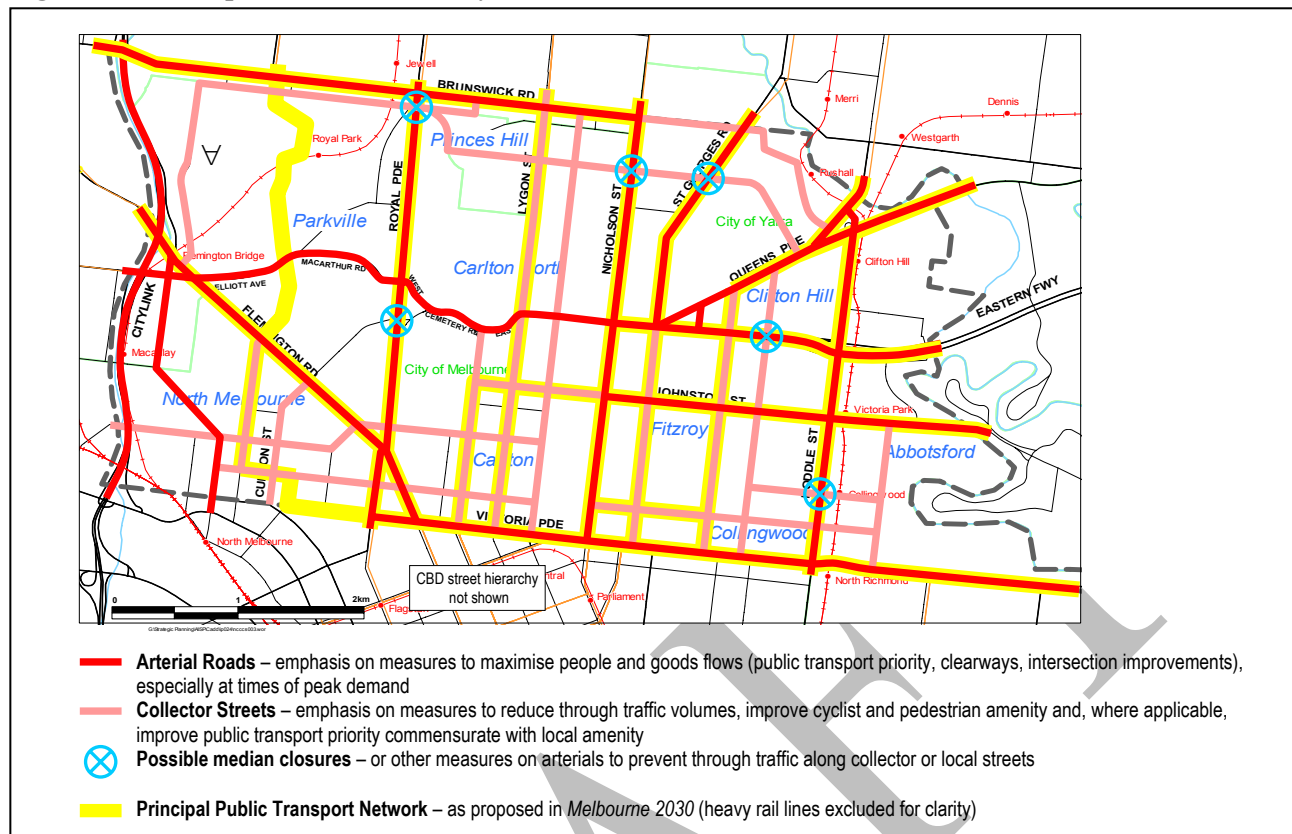
Key functions	Arterial	Basic hierarchy Collector	Local
Primary through traffic and freight	Main function	No	No
Principal public transport network (tram, trunk bus)	As required (own lanes)	As required	No
Limited through traffic	No	As required (peak period)	No
Minor public transport (local bus)	As required (not usual)	As required	As required
Local access, neighbourhood amenity	Controlled (if possible)	Main function	Main function

It is important to maintain a balanced network. As traffic calming measures have been introduced into the collector and local street systems in the inner north over the past decade or so, measures have been taken to maintain the capability of the Arterial Network and key collectors that complement the arterials in the peak periods. As *Melbourne 2030* and the *NCCC Strategy* is implemented, the development of public transport improvements will assist considerably in reducing pressure on the arterial road network as travel demands increase. However, the need to maintain a capable arterial road network will remain and steps should be taken to ensure this as further traffic calming measures are introduced into the local street network.

The needs of pedestrians and cyclists have also been recognised in the strategic options under consideration. The development of the functional road hierarchy should take account of these requirements as the system evolves.

## 7.3 Implementation

Figure 7-1 shows a proposed functional road hierarchy for the inner north. The final network depends upon ongoing consultation and investigation by the responsible authorities.

**Figure 7-1 Proposed road hierarchy**

Implementation of the functional road hierarchy would be the joint responsibility of VicRoads and the Cities of Melbourne and Yarra, with the Department of Infrastructure involved in relation to the Principal Public Transport Network. The active participation of stakeholder groups such as the Victorian Bicycle Advisory Council, various non-government bodies and local interest groups is also an important ingredient in the implementation process.

The implementation process should be completed within a time frame consistent with the introduction of improved public transport, and consistent with the capabilities of local governments to implement their components of the works. It is suggested that a completion date of 2010 be targeted for the range of measures required to implement the road classification, including all traffic management measures.

As part of this process, a high priority should be given to solving traffic problems in the following specific locations, in consultation with stakeholders:

- Gatehouse and Harker Streets (high volumes of heavy trucks)
- Michael, Scotchmer and Pigdon Streets (high volumes of through traffic and also truck traffic activity associated with local businesses).

A high priority should also be given to standardising the timing of clearways, turn bans, parking limits, signal timing regimes and other devices, to improve the efficiency of the road network in peak periods and improve user understanding. Many inconsistencies exist across local authority boundaries, and many such traffic provisions are not well timed in relation to demand. For example, peak period turn bans into minor side streets operate on Lygon Street in Carlton North until 9am, but traffic volumes suggest they should be extended to 9:30am or 10:00am to reduce rat-running. Similar situations arise after 6pm, when many peak period measures such as clearways cease but traffic levels are still high and delays increase as a result.

## 7.4 Proposed actions

**Action 3** Adopt a functional road hierarchy for the inner north by agreement with the Department of Infrastructure, VicRoads and the Cities of Melbourne and Yarra, and

**in consultation with neighbouring municipalities as necessary to ensure compatibility with connecting routes and adjacent areas.**

- Action 4**      **Implement the agreed road functions by the year 2010. The program should include improved traffic management in collector and local streets by local authorities as required, coupled with necessary works on arterial roads to manage traffic.**
- Action 5**      **In consultation with stakeholders, remove or reduce the impact of through traffic and trucks on Gatehouse Street, Harker Street, and the Michael, Scotchmer and Pigdon Street route.**
- Action 6**      **Undertake a comprehensive area-wide review of the timing of all time-dependent traffic control measures (including turn bans, signal timings, clearways and fairways, parking restrictions and the like) to ensure consistency with patterns of demand.**

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## 8 Parking

### 8.1 Overview

Parking is primarily a local government responsibility, even on arterial roads. Availability of parking is a key determinant in mode choice; parking at home influences car ownership levels, and parking at or near destinations influences the decision to use a car for a journey. Provision of parking space has a major effect on local amenity and streetscape, especially in areas like the inner north where the majority of residential car parking (and a large proportion of commercial and retail parking) is on-street.

As initiatives to encourage more public transport use and behavioural change programs are implemented, it is desirable to influence both parking availability and price as part of the overall management of demand. The following initiatives are suggested as the basis for ongoing development of parking as a demand management tool.

### 8.2 Residential parking

Residential parking permit schemes in the inner north (administered by the Cities of Melbourne and Yarra) should be revised to provide the following key features:

- Availability of residential and visitor permits should be more strongly linked to the amount of on-street and off-street parking space available
- Permit-only on-street parking spaces should be provided consistent with the number of permits issued in residential areas, to guarantee that there will be at least one permit-only parking space for each permit issued
- Permit parking precincts or areas should be reviewed. In general they should be reduced in size and increased in number, to discourage people living in one part of a precinct from parking in another
- Pricing of permits should be increased to a level that more accurately reflects the value and impacts of on-street parking
- Trading (selling) of permits should be banned.

### 8.3 Commercial and retail parking

#### *On-street*

Adequate provision should be made for a suitable mix of on-street parking in commercial and retail areas throughout the inner north. Most of the commercial and retail areas are on arterial or collector streets, so there is inevitable conflict between parking and traffic flow requirements in many areas. Commercial and retail area parking should provide the following:

- Strong emphasis on short-stay parking especially during daytime business hours, primarily for visitors to the commercial and retail areas served
- Charges for on-street parking using meters or ticket machines, and development of suitable off-street facilities where parking demand clearly exceeds supply (for example in Brunswick, Smith and Lygon Streets)
- Sufficient and appropriately located space for loading and unloading unless off-street provision is available
- Measures to prevent parking demand from spilling into adjacent residential streets (positioning of resident permit zones can be a significant factor)
- Conveniently located taxi ranks.

On arterial roads (especially on roads with trams in traffic), on-street parking spaces should be longer than the normal standard length, to enable cars to park in a single forward movement instead of reverse parking. This will reduce delays to traffic, including trams.



### *Off-street*

Adequate off-street parking should be provided wherever possible for commercial and retail parking developments, in line with applicable standards. However there is room for more innovative approaches to parking provision; for example, developers should be encouraged to contribute to development of public transport services or to provision of bicycle and pedestrian facilities, in lieu of parking when appropriate.

An example of a specific problem exists at Piedmonte's supermarket on the corner of Scotchmer Street and St Georges Road in Fitzroy North. Parking demand often exceeds supply at the car park in front of the supermarket (especially in the afternoon commuter peak), resulting in queuing on St Georges Road that delays through traffic and public transport and creates safety hazards. Additionally, large delivery trucks often require access, and frequently use Scotchmer Street where a truck ban is in place. Parking and delivery vehicle provision should be reviewed at this location and suitable solutions developed with relevant stakeholders.

## **8.4 Commuter parking**

### *Workplace parking*

Workplaces in the inner north do not generally have high levels of dedicated off-street employee parking. The same is true of adjacent areas, especially the CBD, where a large number of commuter parking spaces are provided in centralised off-street parking stations instead. Pricing and supply of CBD parking is a key determinant of commuter mode choice. It is beyond the scope of the *NCCC Strategy* to propose such major policy changes, but the strategy recognises that greater control of commuter parking in the CBD would promote more sustainable transport modes.

Little or no formal change is proposed to the principles behind provision of workplace parking in the inner north itself. However the use of parking and its influence on travel behaviour is the subject of initiatives discussed in Chapter 12.

### *Park and ride*

The park and ride scheme at Melbourne Museum attracts significant usage. It offers a cost-effective alternative to commuter parking in the CBD for most users. However it is too close to the centre of the city to make a significant difference to road traffic levels. Park and ride should generally be further out of the city.

Off-street secure parking facilities at the ends of tram routes (especially the faster or shorter routes, such as route 96 to East Brunswick, where significant informal parking already takes place in Nicholson Street north of Blyth Road) could be investigated, although land is generally in short supply in such locations.

It is proposed that no further park and ride schemes should be developed in the inner north. Instead, park and ride should be developed at strategic locations further out in the Principal Public Transport Network to intercept incoming car users at an earlier point in their journeys (and at strategic locations on the public transport network), thus maximising the car use reduction effect.

## **8.5 Proposed actions**

- |                 |  |
|-----------------|--|
| <b>Action 7</b> | <b>Review residential parking schemes to rationalise permit availability, make wider use of permit-only areas, review parking permit precincts and increase the price of permits.</b>  |
| <b>Action 8</b> | <b>Review the provision of parking and delivery vehicle arrangements for commercial and retail activities throughout the inner north in consultation with stakeholders. Particular attention should be given to the retail areas centred on Lygon, Brunswick and Smith Streets, Rathdowne Street in Carlton North and the Scotchmer Street/St Georges Road area.</b> |

- Action 9**      **Develop policies to regulate the supply and price of commuter parking in the CBD and surroundings, as tools to manage the demand for commuter car travel and influence public transport mode choice.**
- Action 10**     **Investigate development of park and ride facilities at the outer ends of the more important tram routes serving the inner north (such as 96, 19 and 11), and discourage further development of park and ride facilities within the inner north.**

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## 9 Cycling

### 9.1 Overview

Increased use of cycling depends on provision of improved facilities as well as encouragement, information and behavioural programs.

The Principal Bicycle Network requires completion in the inner north, as well as development of a finer-grained access network using local streets. In many cases, local area traffic management measures designed to prevent vehicular movement also impede or prevent bicycle movement; these should be identified and altered to ensure that cyclists are not disadvantaged.

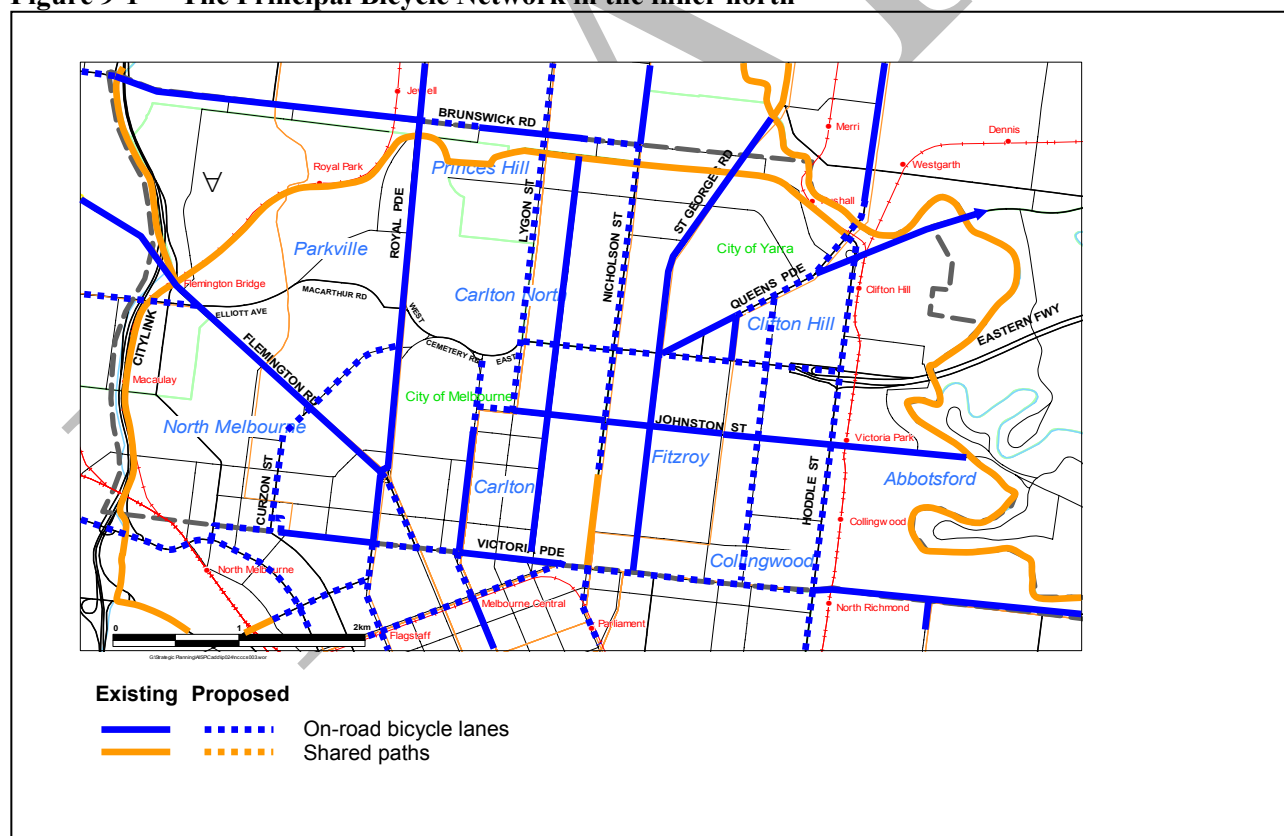
The City of Melbourne Bike Plan, released in May 2002, provides a focus for bicycle works in the municipality. The City of Yarra needs to review its bicycle program to meet its own requirements, and for consistency with the City of Melbourne, in both timing and connectivity terms.

End of trip facilities (especially parking) require improvement in many areas, in particular local shopping areas and at other focal points in the area (eg. community and cultural facilities).

### 9.2 Principal Bicycle Network

Figure 9-1 shows the extent of the Principal Bicycle Network in the inner north, indicating the existing and proposed components.

**Figure 9-1 The Principal Bicycle Network in the inner north**



Source: VicRoads Principal Bicycle Network (March 2001)

It is proposed that a high priority be given to completing the Principal Bicycle Network in the inner north. Key routes for early completion include:

- Alexandra Parade, Princes Street and College Crescent
- Nicholson Street

- Lygon Street
- Swanston Street (north of Faraday Street).

### 9.3 Local streets

Away from the Principal Bicycle Network, cyclists using local streets for access experience a relatively safe but somewhat disjointed and discontinuous cycling environment, especially where traffic management measures have been implemented to prevent vehicular access or where local streets intersect with arterial roads. Considerable improvements can be made to the ‘permeability’ of the local street network for cyclists by reviewing the provision of pathways through street closures, crossing facilities on arterial roads and related facilities.

### 9.4 Other initiatives

At most of the ‘village’ locations in the inner north, and at major institutions like Melbourne University and the hospitals, improvements in bicycle parking/locking facilities are needed to make them more accessible, better segregated from pedestrians and other footpath activities and more secure. Many of the existing parking facilities fall well short of current standards and demand for their use, and cyclists frequently use lampposts and other street furniture instead, inconveniencing other footpath users and creating potential safety hazards in the process. Development of safe and convenient bicycle parking in these locations should be given a high priority for its potential to encourage more cycling in the inner north.

Behavioural programs to encourage more cycling in the inner north and surrounding areas should be coordinated with wider initiatives such as TravelSMART and the access and mobility strategy.

### 9.5 Proposed actions

- Action 11**      **Update the City of Yarra’s bicycle works program in coordination with the May 2002 City of Melbourne Bike Plan implementation program, to ensure that the two Councils deliver benefits in a coordinated way for cycling in the inner north as a whole.**
- Action 12**      **Complete the Principal Bicycle Network in the inner north as soon as possible. Priority should be given to completing facilities in the Alexandra Parade-College Crescent route, Nicholson Street, Lygon Street and Swanston Street.**
- Action 13**      **Review local street networks and associated traffic management measures to ensure that safe and comprehensive bicycle access is provided throughout the inner north.**
- Action 14**      **Review bicycle parking facilities at all key trip attractors in the inner north, especially the ‘village’ shopping and activity areas, cultural, health and employment locations. Priority should be given to developing safe, secure, convenient and adequate facilities to encourage their use.**
- Action 15**      **Coordinate behavioural and promotional programs to encourage more cycling with wider initiatives such as TravelSMART, green travel plans and the like.**

## 10 Walking

### 10.1 Overview

Walking is an important mode of transport in the inner north, and between the inner north and the CBD to the south. Initiatives to encourage increased walking activity generally are included in *Melbourne 2030* and can be expected to have significant effects in the inner north, where there are comparatively few barriers to increased walking.

However there are some important actions required in and around the inner north to provide improved conditions, especially safety and convenience, for walking:

- Improved linkages between the inner north and adjacent areas
- Reducing the severance effect of major transport routes by improving pedestrian crossing and access;
- Improved walking access to public transport
- Other measures to promote and encourage walking (mainly Local Govt but with State/Federal Govt support where possible, through established programs and new initiatives).

### 10.2 Improved walking linkages

The following key pedestrian routes would benefit from further improvement:

- The Capital City Trail, a shared walking and cycling route that provides a circle around central Melbourne and the inner north as well as linking significant destinations along its length
- Linkages between the inner north and the CBD, including along main arterial and other roads crossing Victoria Parade and Victoria Street
- Internal east-west linkages between main streets in the southern part of the inner north, especially between Smith Street, Brunswick Street Nicholson Street and Lygon Street, where side streets lack some continuity and security for pedestrians.

### 10.3 Reduced severance

Main transport routes (especially roads) in the inner north present significant hazards to pedestrian movements. Improved pedestrian crossing priority and safety should be provided for main routes such as Hoddle Street, Alexandra Parade, Princes Street, Victoria Parade/Street, Royal Parade, Flemington Road and Nicholson Street.

### 10.4 Improved walking access to public transport

It is expected that improved walking access to public transport will be provided primarily through the improvements to public transport already discussed, including provision of access for disabled people in line with Federal legislation.

### 10.5 Other measures

Other measures to improve walking amenity and safety in general should be achieved through development of the *Melbourne 2030* walking action plan and its implementation.

### 10.6 Proposed actions

- Action 16**      **Improve linkages and continuity on key walking routes in the inner north, including the Capital City Trail, linkages between the inner north and the CBD, and internal east-west linkages between main streets in the southern part of the inner north.**
- Action 17**      **Provide improved pedestrian crossing priority and safety at selected locations on arterial roads, especially Hoddle Street, Alexandra Parade, Princes Street, Victoria Parade/Street, Royal Parade, Flemington Road and Nicholson Street, and use traffic signal coordination to maintain the efficiency of the arterial roads.**

# 11 Land use policy

## 11.1 Overview

Key directions for land use in the inner north are:

- Protection and enhancement of the extensive heritage of the area in a way that also provides for efficient land use;
- Effective integration of new development and changing land uses into the urban fabric; and
- Encouragement of more transport-sustainable forms of development.

There are also opportunities to enhance urban form in conjunction with transport improvements; a number of these were identified by the heritage and urban design specialists on the NCCC study, and include identification of some key ‘gateways’ to the city and Royal Park in particular. These could be further investigated as part of the development of transport proposals.

A range of important initiatives are under development as part of *Melbourne 2030*, to support more sustainable development in a more compact city form. It is expected that many of these will provide greatly-improved means to protect and enhance the unique character of the inner north more sustainably in the future. Areas of coverage include:

- Development densities, zoning issues
- Influence of overlays (eg. heritage)
- Parking for new developments/changes of use – reduced car parking needs, developer contributions to public transport improvements instead of parking, ‘car free’ developments
- Requirement for transport plans to accompany development applications
- Residential parking permit schemes, pricing and availability.

## 11.2 Proposed actions

**Action 18** Review land use policy directions for the inner north to encourage more transport-sustainable land uses, especially given the expected continued growth in demand for inner city land.

**Action 19** Investigate urban design improvements in conjunction with transport improvements, including measures to provide improved definition of key ‘gateways’ to Central Melbourne and Royal Park.

## 12 Travel demand management

### 12.1 Overview

As well as initiatives to improve transport conditions and the choices available, there is significant potential to manage the overall level of demand for travel, through a range of policy and behavioural measures (excluding those already discussed for land use and parking, for example). Such measures include:

- Behavioural programs like TravelSMART
- Various forms of road and transport pricing
- Wider policy measures influencing travel choice, such as taxation.

Such programs can and should influence not only personal travel, but also freight movement.

### 12.2 Behavioural programs

Behavioural programs like TravelSMART (see Figure 12-1) can have a substantial effect on travel patterns and mode choices. For such programs to affect the inner north significantly they need to be implemented over a much wider area, given the origins and destinations of travel affecting the inner north.

**Figure 12-1 About TravelSMART**

TravelSMART is an innovative project aimed at encouraging people to choose sustainable travel alternatives such as cycling, walking or catching public transport, and reducing their dependency on the car. It involves State and local Governments working with individuals, households and organisations to identify and promote these alternatives where possible.

There are three components to the TravelSMART program – TravelSMART Work, TravelSMART Communities and TravelSMART Schools. TravelSMART communities is being piloted in the City of Moreland, the City of Greater Dandenong, the City of Port Phillip and the City of Boroondara.

Similar programs in Perth have shown that significant reductions in car use can be achieved, with corresponding increases in public transport use, cycling and walking, for a relatively low overall cost.



### 12.3 Transport pricing

During consultations for the NCCCS, many suggestions were made in relation to tolls and user charges, including central city cordon charges and a specific toll on the Eastern Freeway to fund public transport improvements in the freeway corridor.

Modelling for the NCCCS suggests that a \$10 increase in the cost of commuter parking in the CBD (effectively doubling the typical cost of early bird parking) could have a significant effect on mode choice for peak period travel through the study area to and from the CBD, by reducing car travel and increasing public transport patronage.

Wider charging devices such as cordon tolls or congestion charges are becoming more widespread as demand exceeds the capacity of transport networks and congestion increases. A central city cordon entry charge has operated in Singapore for many years, and a similar scheme has recently been introduced in London.

Research indicates that road or transport pricing schemes are much more acceptable when the revenue is hypothecated to transport investment. London's cordon charges will raise funds for public transport development, whilst many cities have schemes where parking revenues or levies pay for public transport in central areas (e.g. Perth) or park and ride further out (e.g. Sydney).

The *NCCC Strategy* does not cover transport pricing. However it is likely that changes in relative pricing would maximise the benefits of the Strategy, and indeed improve the future sustainability of transport in Melbourne as a whole.

## 12.4 Wider policy measures

Many suggestions were raised by stakeholders during the NCCCS, including:

- Taxation changes to encourage employers to provide public transport tickets instead of company cars
- Integrating public transport tickets with major events tickets
- Linking more of car running costs to distance travelled (for example, reducing registration charges whilst increasing fuel levies).

These ideas and others are being addressed in wider studies of travel demand management measures.

## 12.5 Conclusions

Behavioural, pricing and/or policy initiatives would maximise the benefits of public transport improvements and other measures.

Inner north travel will be most significantly affected by travel demand management initiatives that influence:

- General awareness and behavioural change (through behavioural programs like TravelSMART)
- Mode choice, especially for travel to and from central Melbourne.

Evidence suggests that such initiatives will need to be a part of long term transport planning strategies like the *NCCC Strategy*, but their introduction must accompany improvements in alternatives to car use (i.e. public transport, walking and cycling) to ensure that they keep pace with growing demand for their use.

## 12.6 Proposed actions

- Action 20**      **Implement TravelSMART programs (subject to the outcomes of the trials currently under way), in the inner north and in surrounding areas, especially for residents and schools in the northern and north-eastern suburbs, and for businesses in and around central Melbourne and the inner north itself.**
- Action 21**      **Initiate studies into other travel demand management initiatives (transport pricing, policy and incentive mechanisms) to develop a Government position on the role of such measures in implementing transport planning and policy.**



## 13 Major road infrastructure

### 13.1 Discussion

The *NCCC Strategy* is directed towards increasing the use of public transport, cycling and walking to achieve the best overall result for amenity in the inner north by minimising the need for car travel, as one part of a Melbourne-wide approach.

If the strategy is successful, predictions show traffic levels at or below today's levels on most roads in the inner north; especially on the major arterials. The need for additional road capacity is therefore questionable at this stage.

As explained in the *Appraisal Report*, the road tunnel options investigated are not considered justifiable, mainly because the economic benefits do not cover their high cost, and the social and environmental impacts are mixed, with negative local impacts offset by wider positive effects.

### 13.2 Road tunnel options

An east-west tunnel is the only real way to remove traffic from Royal Park, but it is difficult to justify the expense, even of a shorter tunnel, based on relief to this area alone. Relief to the rest of the Alexandra Parade and Princes Street route is less assured (there are significant traffic reductions, but remaining traffic levels are still substantial). Induced traffic may refill the additional road capacity unless it is utilised for other purposes (eg. improved north-south priority, public transport, cycling and walking facilities).

The Eastern Freeway-CBD tunnel is shorter and less costly than the east-west tunnel, but it does little more than move the morning peak congestion point from the Hoddle Street end of Freeway to the edge of the CBD. Unless full ventilation is provided, traffic metering would be necessary at the eastern portal, to prevent traffic entering the tunnel faster than it can exit into congested city streets. The afternoon peak would be less of a problem because the tunnel would feed onto a (more or less) free-flowing freeway. A two-lane tidal flow tunnel would be less costly, but would still be difficult to justify. The CBD tunnel would have some effect on traffic levels on Hoddle Street, Alexandra Parade and Victoria Parade, but the road space created would have to be used for other things if induced traffic is to be avoided.

### 13.3 Freight and commercial traffic

Freight and commercial traffic is not a high proportion of road traffic in the inner north. The volume of freight traffic relates to the commercial development in the area, and in nearby areas served by corridors into the area, with only a relatively small volume of longer distance through traffic (e.g. eastern suburbs to the Dynon rail/port precinct).

The most important freight route in the inner north is the Elliott Avenue-Alexandra Parade east-west route through the area, which carries 2,500 trucks a day at its western end, increasing to 5,000 at the eastern end. This is a small proportion of total traffic, although the large trucks have a disproportionate impact on adjacent land uses, especially residents.

Figure 3-2 illustrates that only 10% of cars on the Eastern Freeway use Elliott Avenue, but for trucks the figure is 26%.

Mode shift from *Melbourne 2030* initiatives will result in faster growth in public transport than car use, but truck use is expected to increase steadily (and probably faster than car use) as well. The percentage of trucks in the traffic stream will therefore grow. However, they will remain relatively small in number in the inner north, and major cross-town freight routes such as City Link and Bell Street will continue to spread the load.

The existing overdimensional (OD) vehicle route along Elliott Avenue-Alexandra Parade needs to be preserved. However no significant improvements to this route are anticipated; indeed with increased north-south priority for public transport (especially at peak times), changed road functional definitions and

increasing traffic demands, travel times on the east-west route will increase. As a result, trucks may increasingly seek other routes; wider roads and traffic management strategies should seek to encourage trucks to use freeways and other high-standard routes wherever possible.

An east-west tunnel is the only real way of removing through traffic (including trucks) from Royal Park, but it is costly and gives low economic returns. A tunnel reduces traffic levels on the surface east-west route significantly (especially if it is constructed with intermediate ramp access). It would also attract traffic from other regional routes, such as Victoria Parade, Brunswick Road, Bell Street and City Link, although the volumes from each route are not significant enough to make a noticeable difference to their traffic performance or the amenity of surrounding areas.

### 13.4 Other road infrastructure considerations

Other road infrastructure initiatives considered include:

- The longer-term implications for road infrastructure of public transport improvements for the inner city, such as increased priority and frequency of trams in central Melbourne (the relevant *Melbourne 2030* public transport plans will address this issue)
- possible grade separations at key locations (for example, Nicholson Street/Victoria Parade, Victoria Parade/Hoddle Street, Hoddle Street/Johnston Street). Solutions for such locations are extremely difficult, given the space constraints and the high volumes of turning traffic to be accommodated. In the longer term there may be some merit in considering grade separations for public transport at such locations, but the high costs of such measures will require confidence that they will achieve the desired benefits, without inconveniencing public transport users, pedestrians and cyclists and with positive urban amenity effects.

### 13.5 Conclusions

If the *NCCC Strategy* is successful, traffic modelling indicates car traffic levels at or below today's levels on most roads in the inner north. In this event there would be no need for additional road capacity; its provision would go against the basic philosophy of *Melbourne 2030* and the *NCCC Strategy*, to reduce private car travel.

The *NCCCS Scenario Appraisal Report* concluded that no further investigation should take place on road tunnel options in the inner north. As a result, they are not included in the *NCCC Strategy*.

Given this conclusion there is little expectation that freight traffic levels will be reduced in the inner north; they will continue to grow in line with growth in economic activity, although growth in the inner north will also be influenced by the limited road space availability and the outcomes of the *Victorian Freight and Logistics Strategy*.

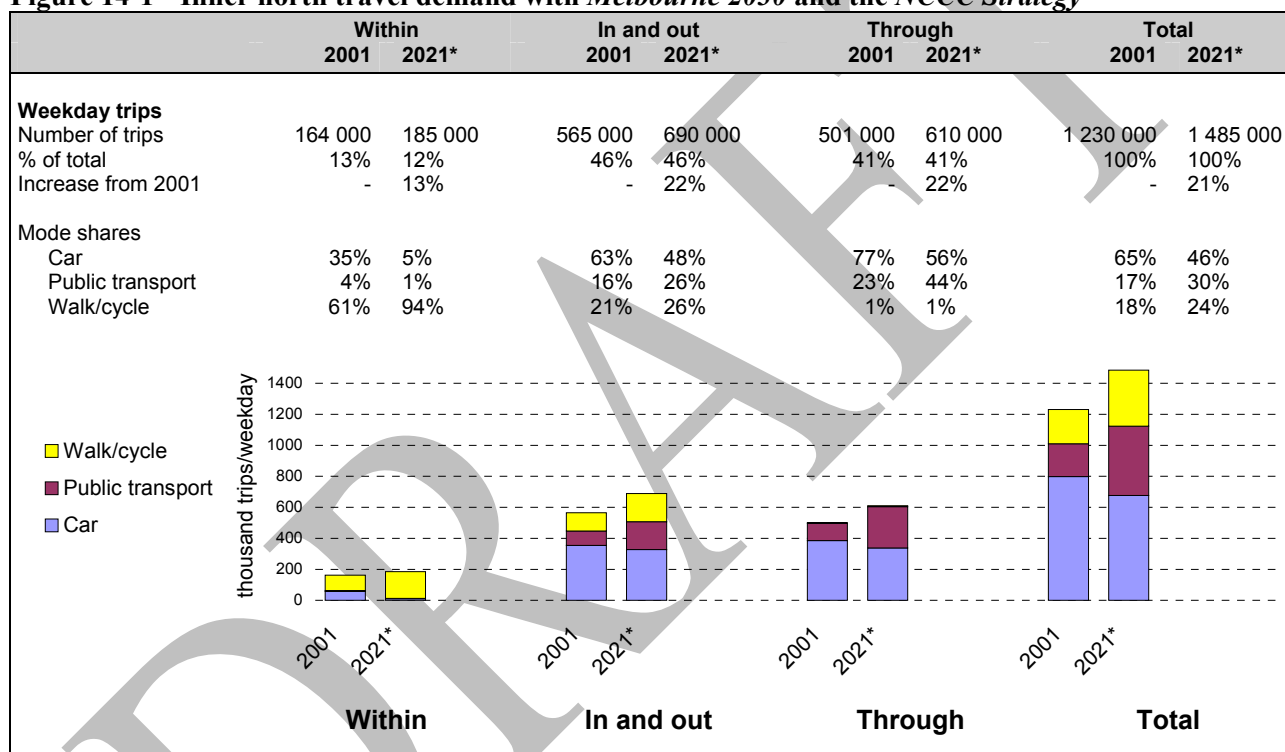
## 14 Strategy outcomes

### 14.1 Effects on transport and traffic

The *NCCC Strategy* has been formulated to achieve a balanced improvement to transport and traffic conditions in the inner north over time, in conjunction with wider *Melbourne 2030* transport initiatives throughout the metropolitan area.

Figure 14-1 shows the effects of the strategy (and Melbourne-wide initiatives) on daily travel demand. Predictions suggest that public transport mode share for inner north travel could increase from 17% to 30% of person travel, or from 21% to 39% of motorised travel. This represents a substantial increase in public transport use. Further increases in mode share would probably require much more significant shifts in the relative pricing of private and public transport.

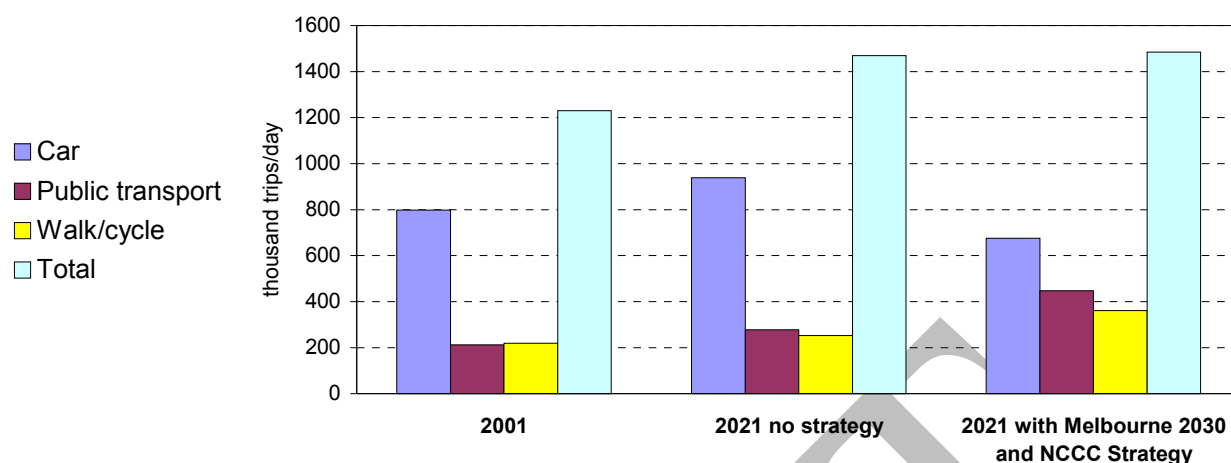
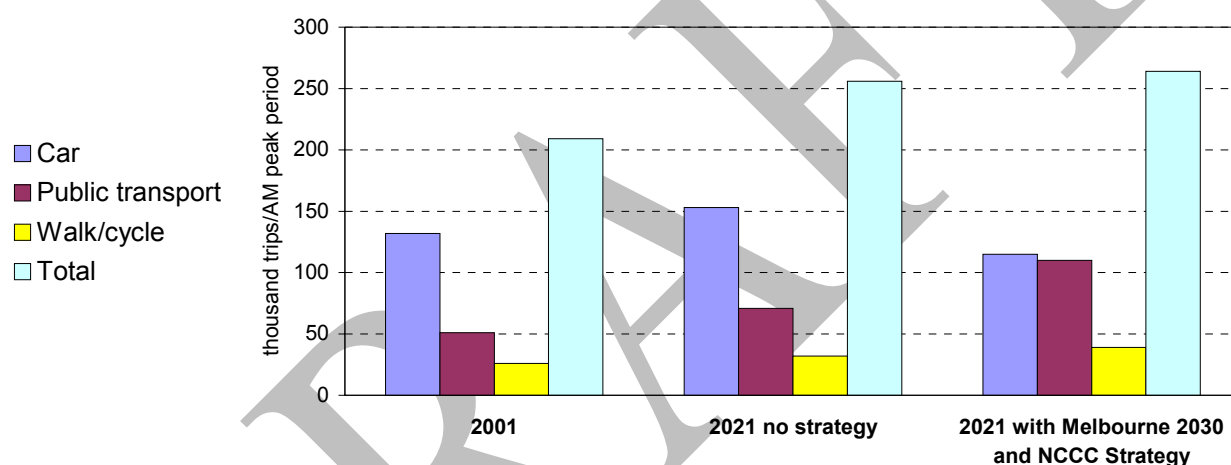
**Figure 14-1 Inner north travel demand with *Melbourne 2030* and the *NCCC Strategy***



\* 2021 projections for NCCC Strategy and wider Melbourne 2030 initiatives together.

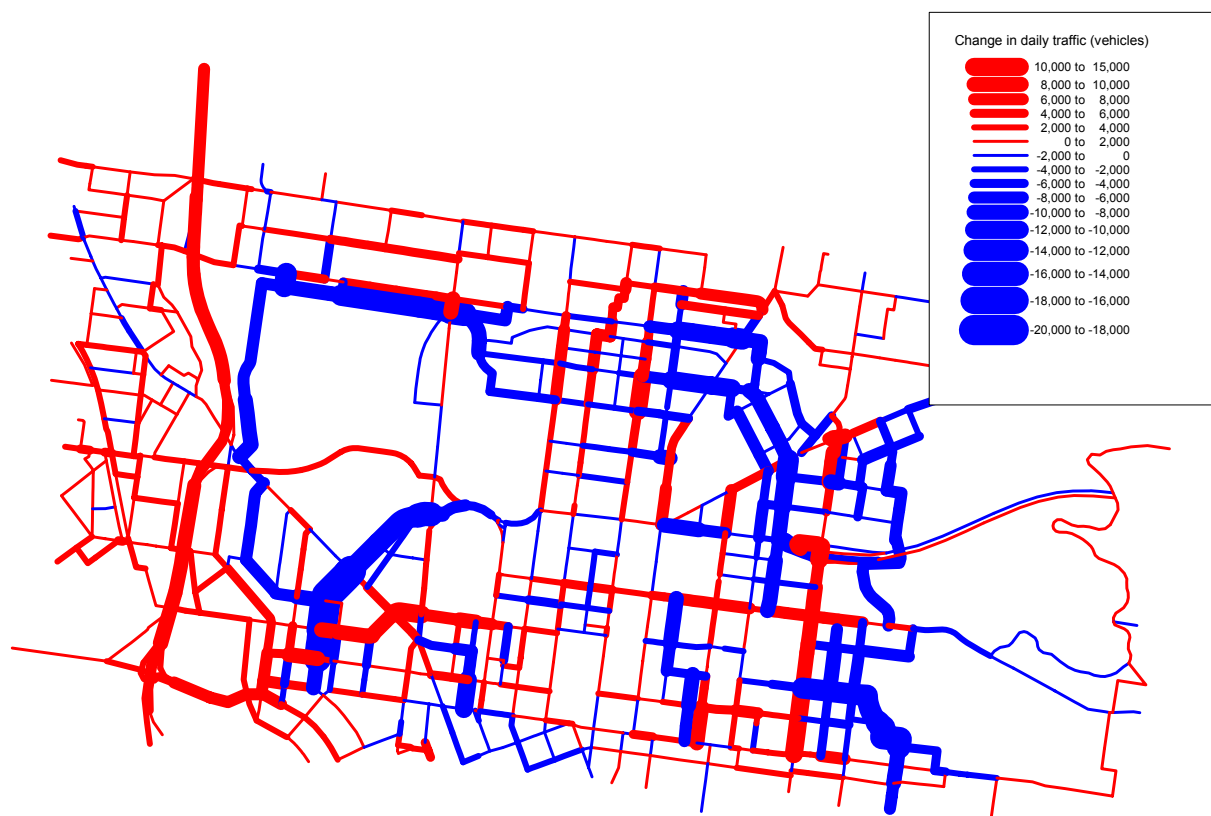
Source: Estimated from transport modelling for the study.

Figure 14-2 and Figure 14-3 illustrate the overall effect of the strategy on daily and peak period inner north travel respectively. Daily inner north car travel in 2021 could decrease by 15% compared with current (2001) levels. Inner north public transport travel could increase by 114%, whilst cycling and walking could increase by 61%. In peak periods, inner north car travel in 2021 could decrease by 15%, public transport travel could increase by 120%, whilst cycling and walking could increase by 33%. In peak periods, public transport could carry nearly 50% of inner north motorised travel, compared with under 30% today.

**Figure 14-2 Effect on inner north daily travel****Figure 14-3 Effect on inner north peak period travel**

The potential effect of *Melbourne 2030* transport initiatives and the *NCCC Strategy* on road traffic levels is illustrated in Figure 14-4. Significant reductions in traffic could occur on traffic-managed roads in residential areas, especially the Pigdon/Scotchmer/Michael Street route, Gatehouse Street and Harker Street. Most other roads could experience changes within the range of  $\pm 20\%$ , which should be interpreted to mean that they will probably experience conditions comparable to today's peak periods for longer times of the day, due to peak spreading.

With the strategy, forecasts suggest that vehicle-kilometres of inner north travel will decrease by 7% from today, whilst vehicle-hours will increase by about 12%. This will give rise to an additional 1.6 million hours of inner north vehicle travel time a year, compared with 6.1 million hours with no strategy (saving about \$39 million a year in lost time by 2021). All-day average vehicle travel speeds in the inner north could reduce from 34km/h to 28km/h (a 17% reduction). This is comparable to that with no strategy, because although the amount of car travel might reduce, the strategy will also reduce the amount of road space available to private traffic, to provide more public transport priority and to manage through traffic impacts more effectively.

**Figure 14-4 Indicative inner north traffic changes 2001-2021 with the strategy in place**

Source: Transport modelling forecasts for the NCCCS

## 14.2 Appraisal framework

The outcomes of the *NCCC Strategy* have been appraised against the overall strategy goals presented in Chapter 2. The appraisal is consistent with triple bottom line principles as discussed in Chapter 1.

Table 14-1 summarises the outcomes of the *NCCC Strategy* compared with the outcomes of not implementing it, in terms of the projected conditions in the inner north in 2021.

**Table 14-1 Appraisal of NCCC Strategy outcomes**

Goal	Indicator	Expected outcome of NCCC Strategy in 2021
<b>Social: Improve amenity and liveability of the inner north by:</b>		
Significantly reducing the impacts of noise and air pollution from transport	Extent of noise-sensitive land uses (especially residential) exposed to changes in noise exposure	Significant improvement in noise environment overall. If through car travel is reduced this represents a social benefit to the area. Noise improvements in some localities however conditions worse in some locations
	Concentration of air pollutants at relevant sites according to adopted standards	Decreases in NO <sub>x</sub> , CO, VOC, SO <sub>2</sub> and particle emissions. Small improvements overall have positive health outcomes.
Improving safety – reducing fatalities/casualties to or beyond state targets	Casualty accidents	Reducing through car travel will reduce accident risk and improve perceived safety, hence enhancing social amenity.
	Safety/security risk at key locations related to travel routes and/or interchanges, and sensitive land uses	Improvements to public transport (tram, bus, train and DART) may be perceived to increase safety and security.
Significantly enhancing urban landscape and heritage values in key areas	Effect on parklands	No loss of parkland or open space. If car travel is reduced this will enhance local amenity of valued places and improve accessibility to these areas.
	Effect on other public areas, streetscapes	Changes to existing infrastructure must be carefully managed to avoid negative impacts on public areas and streetscapes. Possible opportunities for improvement of public areas (eg around premium stations). If car travel is reduced this will enhance local amenity of valued places and improve accessibility to these areas.

Goal	Indicator	Expected outcome of NCCC Strategy in 2021
	Effect on heritage protection/interpretation	Substantial change to existing buildings and infrastructure must be carefully managed to avoid negative impacts on the cultural heritage significance of places or settings. Changes must be tested against Burra Charter requirements and in relation to the degree of heritage significance reflected in the statutory controls. Opportunities exist to incorporate improved interpretation of heritage areas and items. If car travel is reduced this will enhance local amenity of valued places and improve accessibility to these areas.
	Effect on urban settings	Changes to urban infrastructure (such as paving, street furniture, street trees, lighting, access for elderly/disabled people) should respond to the local setting, especially with tram route upgrades. Opportunities exist for gateway experiences into the inner north and improvement of specific areas. If car travel is reduced this will enhance local amenity of valued places and improve accessibility to these areas.
Minimising through traffic on local streets	Car/truck traffic levels on local/collector streets	Public transport and arterial road infrastructure changes should be managed carefully to avoid displacement of cars to local streets.
Improving access and travel choices for residents, visitors and workers, including disadvantaged groups	Transport accessibility to homes, jobs and services	Enhanced transport choices within, to/from and through the inner north will improve accessibility
	Sense of place/neighbourhood	Qualitative assessment of neighbourhood and sense of place effects is required to identify enhancement opportunities.
Providing facilities for people with mobility disadvantages	Contribution to Disability Discrimination Act (DDA) compliance levels	DDA compliance for all public transport will enhance services for disabled people.
<b>Environmental: Protect and enhance environmental sustainability in the inner north by:</b>		
Ensuring a contribution to overall reductions in greenhouse gas emissions	Estimated effect on greenhouse gas emissions	Reduction in greenhouse gas emissions
Reducing car use for travel through, to/from and within the inner north	Effect on car travel	Substantial reduction in car trips
	Car mode share	Reduction in car mode share
Substantially increasing public transport mode share	Public transport travel	Substantial increase in public transport trips
	Public transport mode share	Substantial increase in public transport mode share
Increasing the use of walking and cycling	Cycling/walking travel	Significant increases in cycling and walking activity
	Cycling/walking mode share	Significant increases in cycling and walking mode share
	Amount of cycling and walking infrastructure provision	Significant increases in cycling and walking infrastructure provision
Protecting and enhancing biodiversity	Effect on natural habitats	No significant effect
	Effect on exotic habitats	No significant effect
	Effect on water quality	No significant effect if properly managed
	Effect on ground contamination	Low risk of impact. Potential for enhancement.
<b>Economic: Support growth in economic activity, especially in and around Melbourne's CBD, by:</b>		
Enhancing access for commercial activities including tourism and recreation	Accessibility to recreational, cultural and commercial areas in and around CBD and in the inner north	Improved access provided to specific sites and precincts. Greater mode choice available and greater choice of destinations served.
Catering for increased residential population in the inner north and surrounding areas	Existing or potential residential land affected	No loss of potential residential land is expected.
	Changes of land use (eg from commercial to residential)	No significant changes expected (beyond those that would happen with no strategy)
	Accessibility to/from residential areas	Improved access for local traffic due to improved management of longer-distance traffic
Providing for commercial travel movements, including safe, efficient primary routes for freight	Effect on goods vehicle travel within, to/from and through the inner north	Traffic relief will improve conditions for commercial vehicles, but general conditions are unlikely to change significantly
Efficiently serving travel needs through, to/from and within the inner north	Effect on business/private travel	Provides greater mode choice for travel to/from the inner north
Maximising the economic return on investment in transport and land use initiatives	Capital and operating costs	Increased public transport capital and operating costs offset by reduced private vehicle operating costs and improved cost recovery for public transport.
	Economic benefits, private/public sector provider impacts, other	Generally positive economic returns. Wider public transport improvements will reduce unit operating costs and increase revenues from public transport.
	Government impacts	Generally positive impact on business activity.
	Regional economic effects (effect on businesses etc)	

# 15 Conclusions

## 15.1 NCCC Strategy proposed actions

The *NCCC Strategy* proposed actions on transport and land use initiatives are listed in Table 15-1 under the relevant headings. The table also indicates those primarily responsible for implementing each proposed action.

**Table 15-1 NCCC Strategy proposed actions**

Heading	Proposed actions	Responsibility
Improving public transport	1 Adopt Melbourne 2030 integrated transport initiatives as the basis for future development of public transport serving the inner north. Priority could be given to upgrading the existing tram network (especially routes 109, 19, 96, 86, 11 and 1, in that order of priority) and bus services that serve the inner north, provided this is consistent with wider metropolitan public transport needs.	DOI
	2 Conduct a feasibility study into upgrading public transport in the Doncaster corridor to determine the best overall option and to protect the corridor for possible future implementation.	DOI, VicRoads
Road management	3 Adopt a functional road hierarchy for the inner north by agreement with the Department of Infrastructure, VicRoads and the Cities of Melbourne and Yarra, and in consultation with neighbouring municipalities as necessary to ensure compatibility with connecting routes and adjacent areas.	All
	4 Implement the agreed road functions by the year 2010. The program should include improved traffic management in collector and local streets by local authorities as required, coupled with necessary works on arterial roads to manage traffic.	Councils, VicRoads
	5 In consultation with stakeholders, remove or reduce the impact of through traffic and trucks on Gatehouse Street, Harker Street, and the Michael, Scotchmer and Pigdon Street route.	Councils
	6 Undertake a comprehensive area-wide review of the timing of all time-dependent traffic control measures (including turn bans, signal timings, clearways and fairways, parking restrictions and the like) to ensure consistency with patterns of demand.	VicRoads, Councils
Parking	7 Review residential parking schemes to rationalise permit availability, make wider use of permit-only areas, review parking permit precincts and increase the price of permits.	Councils
	8 Review the provision of parking and delivery vehicle arrangements for commercial and retail activities throughout the inner north in consultation with stakeholders. Particular attention should be given to the retail areas centred on Lygon, Brunswick and Smith Streets, Rathdowne Street in Carlton North and the Scotchmer Street/St Georges Road area.	Councils
	9 Develop policies to regulate the supply and price of commuter parking in the CBD and surroundings, as tools to manage the demand for commuter car travel and influence public transport mode choice.	DOI, Councils
	10 Investigate development of park and ride facilities at the outer ends of the more important tram routes serving the inner north (such as 96, 19 and 11), and discourage further development of park and ride facilities within the inner north.	DOI, Councils
Cycling	11 Update the City of Yarra's bicycle works program in coordination with the May 2002 City of Melbourne Bike Plan implementation program, to ensure that the two Councils deliver benefits in a coordinated way for cycling in the inner north as a whole.	Councils
	12 Complete the Principal Bicycle Network in the inner north as soon as possible. Priority should be given to completing facilities in the Alexandra Parade-College Crescent route, Nicholson Street, Lygon Street and Swanston Street.	Councils, VicRoads
	13 Review local street networks and associated traffic management measures to ensure that safe and comprehensive bicycle access is provided throughout the inner north.	Councils
	14 Review bicycle parking facilities at all key trip attractors in the inner north, especially the 'village' shopping and activity areas, cultural, health and employment locations. Priority should be given to developing safe, secure, convenient and adequate facilities to encourage their use.	Councils
	15 Coordinate behavioural and promotional programs to encourage more cycling with wider initiatives such as TravelSMART, green travel plans and the like.	Councils, DOI
Walking	16 Improve linkages and continuity on key walking routes in the inner north, including the Capital City Trail, linkages between the inner north and the CBD, and internal east-west linkages between main streets in the southern part of the inner north.	Councils

Heading	Proposed actions	Responsibility
	17 Provide improved pedestrian crossing priority and safety at selected locations on arterial roads, especially Hoddle Street, Alexandra Parade, Princes Street, Victoria Parade/Street, Royal Parade, Flemington Road and Nicholson Street, and use traffic signal coordination to maintain the efficiency of the arterial roads.	Councils, VicRoads
Land use policy	18 Review land use policy directions for the inner north to encourage more transport-sustainable land uses, especially given the expected continued growth in demand for inner city land.	Councils, DSE
	19 Investigate urban design improvements in conjunction with transport improvements, including measures to provide improved definition of key 'gateways' to Central Melbourne and Royal Park.	Councils, DSE
Travel demand management	20 Implement TravelSMART programs (subject to the outcomes of the trials currently under way), in the inner north and in surrounding areas, especially for residents and schools in the northern and north-eastern suburbs, and for businesses in and around central Melbourne and the inner north itself.	Councils, DOI
	21 Initiate studies into other travel demand management initiatives (transport pricing, policy and incentive mechanisms) to develop a Government position on the role of such measures in implementing transport planning and policy.	DOI

DOI – Department of Infrastructure, DSE – Department of Sustainability and Environment

## 15.2 Next steps

The following next steps are proposed to implement the *NCCC Strategy*:

- Finalise the strategy in the light of stakeholder consultations
- Draw up more detailed designs and plans for strategy elements
- Obtain funding of strategy elements according to merit
- Proceed with implementation
- Monitor the key outcomes and review the strategy when appropriate.

### *Administrative structure*

The NCCCS Steering Committee (comprising DOI, VicRoads, City of Melbourne and City of Yarra) should be reconvened at suitable intervals to review and guide implementation of the *NCCC Strategy*, including monitoring and reporting of outcomes.

### *Elements for further study*

Amongst the proposed actions in Table 15-1 are a number of items requiring further study, including:

- Actions being examined in the process of developing *Melbourne 2030* transport initiatives, especially a metropolitan public transport plan, TDM action plan, walking and cycling action plans, and the freight and logistics strategy
- Options for improved public transport in the Doncaster corridor.



## Appendix A – Supporting reports

Booz.Allen Hamilton, 2001. Northern Central City Corridor, Existing Conditions, Public Transport, 2001.

Booz.Allen Hamilton, 2002. Appraisal of Transit Strategy Results 2002

Department of Infrastructure, 2001a. Northern Central City Corridor Study – Draft Study Process, 2001.

Department of Infrastructure, 2001b. Northern Central City Corridor Study – Issues and Trends, April 2001.

Department of Infrastructure, 2003. *Northern Central City Corridor Study Scenario Appraisal Report*, Department of Infrastructure, August 2003.

Helen Lardner Conservation and Design, 2001. Northern Central City Corridor Study Existing Conditions Report – Heritage, Landscape and Urban Design Component, August 2001.

Helen Lardner Conservation and Design, 2002. Northern Central City Corridor Study Scenario Appraisal Report – Heritage, Landscape and Urban Design Component, 2002.

Maunsell McIntyre, 2001a. Northern Central City Corridor Study Existing Conditions Report – Land Use and Macroeconomics Component, August 2001.

Maunsell McIntyre, 2001b. Northern Central City Corridor Study Existing Conditions Report – Environment Component, August 2001.

Maunsell McIntyre, 2002a. Northern Central City Corridor Study Scenario Appraisal Report – Land Use and Macroeconomics Component, 2002.

Maunsell McIntyre, 2002b. Northern Central City Corridor Study Scenario Appraisal Report – Environment Component, 2002.

Sinclair Knight Merz, 2001a. Northern Central City Corridor Study Existing Conditions Report – Engineering, August 2001.

Sinclair Knight Merz, 2001b. Northern Central City Corridor Study Existing Conditions Report – Social Appraisal Component, August 2001.

Sinclair Knight Merz, 2001c. Northern Central City Corridor Study Existing Conditions Report – Transport, August 2001.

Sinclair Knight Merz, 2002a. Northern Central City Corridor Study Scenario Appraisal Report – Engineering, Implications and Strategy Costs, 2002.

Sinclair Knight Merz, 2002b. Northern Central City Corridor Study Scenario Appraisal Report – Engineering, Strategy Elements Cost Estimate Validation, 2002.

Sinclair Knight Merz, 2002c. Northern Central City Corridor Study Scenario Appraisal Report – Social Appraisal Component, 2002.

Sinclair Knight Merz, 2002. Northern Central City Corridor Study Economic Appraisal Report – Transport.

Sinclair Knight Merz, 2003. Northern Central City Corridor Study Initial Appraisal Report – Transport.

VicRoads and Department of Infrastructure, 1999. Northern City Corridor Study Interim Report, October 1999 (work of a previous study, released at the start of the NCCCS in 2001).