



## Developing Cycling as a Safe and Appealing Mode of Transport





VICTORIA

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Victorian  
Auditor-General

# Developing Cycling as a Safe and Appealing Mode of Transport

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The Hon. Bruce Atkinson MLC  
President  
Legislative Council  
Parliament House  
Melbourne

The Hon. Ken Smith MP  
Speaker  
Legislative Assembly  
Parliament House  
Melbourne

Dear Presiding Officers

Under the provisions of section 16AB of the *Audit Act 1994*, I transmit my performance report on *Developing Cycling as a Safe and Appealing Mode of Transport*.

Yours faithfully



D D R PEARSON  
*Auditor-General*

17 August 2011



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# Audit summary

## Background

Population and economic growth have increased motorised traffic and congestion and focused attention on less damaging forms of transport. Cycling offers benefits over other forms of transport because it reduces congestion, is environmentally friendly and improves riders' health and wellbeing.

Cycling has become more popular, especially for travel around inner Melbourne, but it remains a minor rather than 'mainstream' mode of travel for Victorians. In 2006 Victorians cycled for 1.6 per cent of the journeys they made on a typical weekday.

This compares unfavourably with shares of between 10 and 27 per cent for European countries where cycling has become a 'mainstream' form of personal travel. These countries transformed cycling's role through substantial investment in infrastructure and facilities, extensive promotion and education, changes to the law and measures to make car use more expensive and less convenient.

The ultimate goal established by the 2009 *Victorian Cycling Strategy* (the strategy) was to 'grow' cycling into a major form of personal transport. The objective of the strategy is, however, expressed more narrowly as being to 'continue to support' this growth. The strategy targeted areas with high demand and high growth potential, focusing on cycling for transport firstly for inner Melbourne and then for central activities districts, such as Footscray, and for regional towns.

The audit assessed the effectiveness of the Department of Transport (the department) and VicRoads in developing cycling as a safe and appealing mode of transport by examining their performance in developing and implementing the strategy and achieving the intended outcomes.

## Conclusions

The strategy was a first, important step for Victoria to significantly raise the profile and role of cycling as part of a more sustainable transport system. However, serious limitations in its development and implementation compromised its potential to achieve its goal of transforming cycling into a major form of personal transport.

The strategy was developed in haste without sufficient understanding of either current cycling journeys or what was required to 'mainstream' cycling as a form of transport. There was an overemphasis on physical infrastructure solutions, to the relative neglect of other measures essential to achieving the strategy's goal, such as promoting cycling, educating potential cyclists and reducing the incentives to use cars.

In addition, agencies were not well prepared to implement the strategy or evaluate its success, which contributed to the unsatisfactory progress in addressing its limitations. This lack of preparation repeats past audit findings about the department's freight management strategy and metropolitan bus contracts.

## Findings

### The strategy as an effective blueprint for action

The strategy formed a reasonable starting point for 'growing' cycling. However, even in its entirety, it was never likely to achieve the growth needed to transform cycling into a major form of personal transport.

In terms of the strategy's strengths, the department created a logical framework for action that formed the basis for increased investment in cycling infrastructure by:

- developing an effective general understanding of the barriers to cycling and how other jurisdictions had been successful in overcoming these
- recognising that success requires effective coordination between government departments, local government and non-government organisations
- committing to monitor progress and to evaluate the strategy's outcomes regularly.

The strategy, however, had serious limitations because it was:

- not comprehensive—it did not include sufficient measures to effectively protect and educate cyclists, to promote cycling, to invest in facilities and to make car travel less attractive. These measures have been particularly effective in European countries
- based on an insufficient understanding to determine what was needed to 'mainstream' cycling and to establish meaningful targets against which to gauge the success of the strategy.

These limitations were exacerbated by the tight time frame imposed on the development of the strategy. In consequence, the department was not sufficiently well-prepared to implement, monitor and evaluate the strategy's actions.

### Progress towards the strategy's goal

Progress in implementing the strategy and dealing with its limitations was not satisfactory.

While cycling journeys in inner Melbourne have risen over the past four years, the rate of growth is less than that needed if the long-term goal of transforming cycling into a major form of personal transport is to be realised.

The department and VicRoads made satisfactory progress in delivering planned infrastructure, but had not:

- made similar progress in delivering measures to complement and support the government's infrastructure investment
- developed an adequate implementation plan
- evaluated the whole strategy or its individual projects
- gained an adequate understanding of current and potential cycling journeys
- addressed the stakeholder issues missed in the strategy.

The recommendations are designed to assist the department and VicRoads meet the challenge of adequately informing an updated strategy to fit government policy.

## Recommendations

Number	Recommendation	Page
	The Department of Transport and VicRoads should:	
1.	complete implementation plans, when developing future cycling strategies, that describe objectives, time lines, resources and responsibilities and how a strategy will be managed, monitored and reported	33
2.	improve the quality of project plans so that they consistently meet agencies' internal requirements by creating better practice templates	33
3.	finalise evaluation frameworks, when developing future strategies, that describe outcomes, realistic targets, benchmark data and how success will be measured and reported for component projects and for the overall strategy	33
4.	develop a sound basis for informing and implementing government policy through an improved understanding of current and potential cyclists, the journeys they make, the barriers to 'growing' cycling and how to best overcome these	33
5.	apply the mechanisms required to effectively coordinate actions to 'grow' cycling and improve information sharing across the government agencies and non-government organisations involved in cycling	33
6.	in consultation with other managers, review and update guidance on the construction, maintenance, auditing and retrofitting of shared bicycle paths and agree on the maintenance arrangements for the finalised Principal Bicycle Network.	33

## Submissions and comments received

In addition to progressive engagement during the course of the audit, in accordance with section 16(3) of the *Audit Act 1994* a copy of this report was provided to the Department of Transport, VicRoads, Parks Victoria, the City of Melbourne, the City of Yarra, the City of Darebin and the City of Maribyrnong with a request for comments or submissions.

Agency views have been considered in reaching our audit conclusions and are represented to the extent relevant and warranted in preparing this report. Their full section 16(3) comments and submissions, however, are included in Appendix A.

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# 1 Background

## 1.1 Introduction

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Cycling has increased in popularity and offers benefits over other forms of transport because it reduces congestion, is inexpensive, environmentally friendly and improves riders' health and wellbeing. However, cycling remains a minor form of personal transport because it is not perceived as a safe or convenient alternative to motorised travel.

The number of cycling journeys has increased over the past decade:

- national census data shows that the number of journeys where Victorians cycled to work, between 2001 and 2006, increased by 33 per cent to more than 25 000
- data collected by the Australian Sports Commission on recreational cycling shows that the number of regular recreational cyclists increased by 20 per cent between 2001 and 2009.

Cyclists, however, are vulnerable road users because they have little protection when they are involved in a crash. The number of serious injury and fatal cycling accidents reported to police between 2005 and 2010 ranged between six and 14 fatal accidents, and between 369 and 507 serious injury accidents.

Despite recent growth, the first Victorian Survey of Travel and Activity in 2007–08 showed that bicycles were used for only 1.6 per cent, or 184 000, of the 11.6 million journeys made on a typical weekday. This is very low compared to countries where cycling has become a 'mainstream' form of personal transport.

Germany, Denmark and the Netherlands have succeeded in 'growing' cycling, so that it accounts for between 10 and 27 per cent of all journeys, while also improving the safety of cyclists. These changes have been achieved through substantial investment in infrastructure and facilities, extensive promotion and education, legislative change and measures to make car use more expensive and less convenient.

## 1.2 Victorian Cycling Strategy

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The Department of Transport (the department) developed the *Victorian Cycling Strategy* (the strategy) and it was released in March 2009.

The ultimate goal established by the strategy was to 'grow' cycling into a major form of personal transport to:

- reduce traffic congestion
- reduce emissions
- improve people's personal health and fitness, and lower chronic disease
- provide a more affordable transport option
- promote social inclusion
- make public transport more accessible
- reduce crime, with more eyes on the street.

To achieve these outcomes, the strategy included directions that involve:

- building cycling infrastructure to connect communities
- promoting and encouraging cycling as an acceptable and popular form of transport
- reducing conflicts and risks
- better connecting cyclists with public transport
- promoting land use and transport policies that encourage and allow for cycling.

The department prioritised actions that were likely to have the biggest impact on cycling volumes. These actions targeted areas with high demand and high growth potential, focusing on cycling within the inner 10 kilometres of Melbourne and in central activities districts such as Footscray, Box Hill and central Dandenong.

## 1.3 Agency responsibilities

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The department has overall responsibility for cycling policy and the successful implementation of the strategy.

VicRoads is responsible for network planning, including the development of the Principal Bicycle Network (PBN), advising on infrastructure design, delivering cycling infrastructure projects and monitoring cycling demand. VicRoads also has a shared responsibility with Victoria Police, local government and the Transport Accident Commission for the safety of those using Victoria's system of public roads.

Parks Victoria is responsible for coordinating Melbourne's Metropolitan Trail Network (MTN), comprising mainly off-road shared use trails which provide for a diversity of uses. Many of these trails connect with the PBN and a few trails are on both the MTN and PBN. Parks Victoria partners with local government in the delivery of the MTN.

Councils are responsible for applying Victoria's planning provisions and these include strategies to encourage cycling through the provision of cycling infrastructure and storage facilities at cycling destinations. Local councils close to Melbourne's CBD have developed strategies and programs to create and maintain cycling infrastructure away from the arterial road system managed by VicRoads.

The Victorian Bicycle Advisory Council is jointly chaired by VicRoads and the department. It includes government agencies, peak and industry bodies, and rider group representatives, and provides government with advice on cycling issues.

The *Transport Integration Act 2010* was enacted after the strategy's release and strengthened the legislative support for promoting cycling as a sustainable transport mode by:

- explicitly including cycling paths as part of the transport system
- including an objective to promote forms of transport that have least impact on the natural environment
- requiring VicRoads to manage the road system to increase the proportion of cycling, walking and public transport trips as a proportion of all transport trips.

## 1.4 Audit objective and scope

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The audit assessed the development of cycling as a safe and appealing mode of transport, by examining whether agencies had:

- a sound understanding of the barriers to cycling and how best to overcome these
- made satisfactory progress implementing the strategy
- made satisfactory progress towards the strategy's goals.

In keeping with the focus of the strategy, the audit concentrated on cycling for transport within the inner 10 kilometres of Melbourne, and in central activities districts.

The agencies included in the audit were:

- the Department of Transport, VicRoads, and Parks Victoria
- the cities of Melbourne, Yarra, Darebin and Maribyrnong, in particular the Footscray central activities district.

We focused on the department and VicRoads because they developed and applied the strategy. Our work with Parks Victoria and the four councils informed our assessment of the strategy and the level of coordination across government.

The audit was conducted in accordance with Australian Auditing and Assurance Standards.

The cost of the audit was \$390 000.

## 1.5 Structure of the report

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Part 2 reports on whether the strategy formed an effective blueprint to transform cycling into a major form of personal transport.

Part 3 examines the progress agencies have made towards the strategy's goals.

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# 2 The strategy as a blueprint for effective action

## At a glance

### Background

An effective strategy has clear aims, actions based on sound evidence, and frameworks for prioritising actions, measuring their outcomes and reporting progress.

This part examines whether the *Victorian Cycling Strategy* (the strategy) is likely to be effective in 'growing' cycling from a minor to 'mainstream' form of personal transport.

### Conclusion

The strategy formed a reasonable starting point for 'growing' cycling. However, even in its entirety it is not evident that the strategy's actions would be sufficient to achieve the growth needed to transform cycling into a major form of personal transport.

In terms of the strategy's strengths, the Department of Transport (the department) created a logical framework for action that formed the basis for increased investment in cycling infrastructure.

The strategy, however, had serious limitations because it was:

- not comprehensive—it did not include sufficient measures to effectively protect and educate cyclists, promote cycling, invest in facilities and make car travel less attractive. These measures have been particularly effective in European countries
- based on an insufficient understanding to determine what was needed to 'mainstream' cycling and to establish meaningful targets against which to gauge the success of the strategy.

Part of the reason for these limitations was the tight time frame imposed on the development of the strategy. This also meant that the department was not sufficiently well prepared to implement, monitor and evaluate the strategy's actions.

## 2.1 Introduction

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Transforming cycling from a minor to 'mainstream' form of transport is a significant challenge. This part examines whether the *Victorian Cycling Strategy* (the strategy) formed a sound blueprint and foundation for doing this.

An effective strategy requires:

- comprehensive information on the characteristics of current and potential journeys by bicycle and the preferences of those making these journeys
- a clear understanding of the barriers that limit cycling and how to overcome these
- an implementation plan that prioritises actions and organises participants to deliver on the strategy's actions
- an evaluation framework that includes appropriate targets, measures success and helps agencies respond where results fall short of expectations.

## 2.2 Conclusion

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The strategy formed a reasonable starting point for 'growing' cycling. However, in its entirety it is not evident that the strategy's actions would be sufficient to achieve the growth needed to transform cycling into a major form of personal transport.

In terms of the strategy's strengths, the Department of Transport (the department) created a logical framework for action that formed the basis for increased investment in cycling infrastructure by:

- developing an effective general understanding of the barriers to cycling and how other jurisdictions had been successful in overcoming these
- recognising that success requires good coordination between government departments, local government and non-government organisations
- committing to regularly monitor progress and evaluate the strategy's outcomes.

The strategy, however, had serious limitations because it was:

- not comprehensive—it did not include sufficient measures to effectively protect and educate cyclists, promote cycling, invest in facilities and make car travel less attractive. These measures have been particularly effective in European countries
- based on an insufficient understanding to determine what was needed to 'mainstream' cycling and to establish meaningful targets against which to gauge the success of the strategy.

Part of the reason for these limitations was the tight time frame imposed on the development of the strategy. This also meant that the the department was not sufficiently well-prepared to implement, monitor and evaluate the strategy's actions.

## 2.3 The strategy's limitations

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The department created a logical framework for action that formed the basis for increased investment in cycling infrastructure by:

- developing an effective general understanding of the barriers to cycling and how other jurisdictions had been successful in overcoming these
- recognising that success requires good coordination between government departments, local government and non-government organisations
- committing to regularly monitor progress and evaluate the strategy's outcomes.

The strategy, however, was limited because the department had not:

- acquired an adequate understanding of current and potential cycling journeys and developed appropriate growth targets
- determined how the barriers to cycling affected those targeted by the strategy
- included the range of actions that had been used to successfully 'mainstream' cycling in the Netherlands, Denmark and Germany
- adequately prepared to implement the strategy and evaluate its success.

## 2.4 Understanding current and potential journeys

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The department used the available, reliable information to partially understand cycling journeys and the role cycling plays in moving people around Victoria. However, this information was not sufficient to:

- fully understand current or potential cycling journeys
- translate the strategy's goal of 'mainstreaming' cycling into appropriate targets.

If the department is to implement successfully programs and projects that reflect the needs of all current and potential cyclists, it needs to better understand the journeys they make.

### 2.4.1 Information underpinning the strategy's priorities

In forming the strategy, the department relied on:

- census data that provided comprehensive information on work journeys and their characteristics for 2001 and 2006
- the results of surveys for schools involved in its behavioural change programs
- Bicycle Victoria counts of cyclists entering inner Melbourne on a single day each year since 2006.

From this information the department found that:

- in 2006 inner Melbourne was the destination for 55 per cent of work journeys made by bicycle, with the rest of Melbourne accounting for 20 per cent, and the remainder of Victoria 25 per cent of these journeys
- between 2001 and 2006 work journeys made by bicycle to inner Melbourne rose by 62 per cent compared to a 9 per cent rise for the rest of the state
- more journeys converged in close proximity to the CBD, inner Melbourne and central activities districts compared to other parts of Melbourne
- less than one-third of school students walked or cycled to school and this proportion had fallen significantly over the past two decades.

Based on this information, the department prioritised improving cycling infrastructure first for inner Melbourne, second, for Melbourne's central activities districts and third, for Victoria's regional towns. The department also recognised the potential gains from moving more school travel from car to walking and cycling.

## 2.4.2 Information and analysis gaps

When it formed the strategy, the department, did not fully understand either the role of cycling in daily travel, or its growth potential.

Subsequent data demonstrate that the department needs to better understand the significant proportion of cycling journeys on weekdays for purposes other than work.

### Role of cycling in daily travel

The department had good information on journeys to work, partial information on journeys to school and little information on journeys made for other purposes on a typical weekday, or at the weekend. It used this information to set the strategy's priorities, but now needs to address the gaps and review its priorities.

For existing work journeys in 2006 the department determined that:

- cycling was most popular in inner Melbourne
- on average, men cycled 8.2 kilometres and women 6.1 kilometres
- cycling to work was most popular for men aged between 25 and 44, although significant numbers of women and older people also cycled to work.

The department concluded that it should:

- focus its resources on building a network to encourage cycling within 10 kilometres of Melbourne's CBD
- apply a range of initiatives tailored to effectively promote cycling across gender and for all ages and abilities.

The department had not developed up-to-date and comprehensive information for cycling journeys for purposes other than work. The results from the Victorian Integrated Survey of Travel and Activity (VISTA) for 2007–08 started to fill this gap but were not available until after the strategy's release.

The VISTA results illustrate the importance of non-work travel for reasons such as education, shopping, personal business and leisure. Non-work journeys across all modes of travel accounted for:

- 73 per cent of the 11.6 million weekday journeys made in metropolitan Melbourne
- 86 per cent of the 1.5 million journeys where people walked
- 57 per cent of the 184 000 journeys where people cycled.

### Potential for 'growing' cycling as a form of transport

Understanding and realising cycling potential involves:

- identifying motorised journeys that are amenable to a switch to cycling
- understanding the characteristics of people making these journeys, what prevents them from cycling and how best to overcome these barriers
- prioritising actions in light of this knowledge to apply the available resources to have the greatest impact on cycling and the strategy's outcomes.

The department had a partial understanding of cycling potential when setting the strategy's priorities. It did not make full use of the journey to work data, nor did it have sufficient information on other types of journeys to fully understand cycling potential.

The department prioritised developing cycling networks first for inner Melbourne, and then for central activities districts in Melbourne's suburbs and for larger regional towns. The department expected inner Melbourne to offer the greatest potential because it had established infrastructure and the largest share of cycled work journeys.

However, it had not analysed the location and characteristics of car-based journeys to better understand cycling potential and inform the strategy's actions and priorities.

The VISTA results shed further light on cycling potential. To illustrate this we selected journey distance as the indicator of cycling potential assuming that:

- if travelling less than 1 kilometre, people would choose walking over cycling
- cycling is likely to be most competitive for short journeys of between two and three kilometres and mid-length journeys of up to 10 kilometres
- time and fitness requirements make cycling less competitive for longer journeys over 10 kilometres.

Figure 2A shows the number of car journeys by distance for Melbourne's inner, middle and outer suburbs together with the distances of journeys made using other modes.

**Figure 2A**  
**Weekday car, walking and cycling journeys by distance 2007–08**

Area of Melbourne	Journeys ('000s) by distance (kilometres)				Total
	Up to 1 km	2–4 km	4–10 km	10+ km	
<b>Car journeys</b>					
Inner Melbourne	149	468	630	447	1 694
Middle Melbourne	238	815	1 163	931	3 146
Outer Melbourne	306	882	1 301	1 428	3 917
<b>Car sub-total</b>	<b>693</b>	<b>2 165</b>	<b>3 094</b>	<b>2 806</b>	<b>8 757</b>
<b>Other modes</b>					
Public transport	4	63	383	607	1 057
Walk	1 016	445	55	1	1 517
Bicycle	28	56	73	28	185
Other	15	16	27	34	93
<b>All journeys</b>	<b>1 756</b>	<b>2 745</b>	<b>3 632</b>	<b>3 476</b>	<b>11 609</b>

Source: Victorian Auditor-General's Office based on Victorian Integrated Survey of Travel and Activity 2007–08

Of the 8.8 million car journeys happening each day in Melbourne, only 2.8 million, or 32 per cent, covered more than 10 kilometres. Of the 6 million that travelled less than 10 kilometres:

- 693 000 travelled less than 1 kilometre
- 2.2 million travelled up to 3 kilometres
- 3.1 million travelled between 4 and 10 kilometres.

These figures emphasise the current peripheral role of cycling and its growth potential even if a small share of short car journeys switch to cycling. Cycling accounts for approximately 56 000, or 2 per cent, of the 2.75 million journeys between 2 and 4 kilometres. In the Netherlands, cycling accounts for 35 per cent of these journeys.

The majority of short car journeys happen in middle and outer Melbourne. Overall, 78 per cent of the 2.9 million journeys up to 4 kilometres, and 80 per cent of the 3.1 million journeys between 4 and 10 kilometres, are in middle and outer Melbourne.

Cycling potential depends on more than journey distance. Personal preferences about travel, the availability of cycling facilities, and constraints that mean people need to link journeys, all influence choices about travel mode.

However, the location, purpose and distance of journeys are an important indicator of potential and the strategy was not based on a comprehensive understanding of these attributes. The department could have completed this analysis for work journeys, but did not have reliable information at that time for non-work journeys.

### 2.4.3 Target setting

The department did not include appropriate targets that took account of current levels of cycling and the strategy's ultimate goal, objectives and expected impact. The department did not have sufficient information to set realistic targets and the targets it did set were inconsistent with the strategy's goal.

The strategy included targets for:

- increasing the number of walking and cycling trips in inner Melbourne by 15 000 per day by 2020
- 'growing' cycling in the rest of the state by 2020.

The 15 000 target for walking and cycling journeys dilutes the focus on cycling, and the strategy did not include an explanation of this target. Our analysis of the VISTA survey for 2007–08 shows that the target is inconsistent with the aim of making cycling a major personal travel mode.

The survey estimated that there were approximately 2.8 million journeys within, to or from inner Melbourne on a typical weekday in 2007–08. People walked or cycled for 25 per cent or 700 000 of these journeys. The strategy's target of a 15 000 increase in walk and cycle journeys represents only a 2.1 per cent increase over a decade. This is significantly less than the growth rates in cycle use prior to the strategy and its achievement would not justify the investment.

The department did not know enough about cycling in middle and outer Melbourne and regional Victoria to set meaningful targets. The absence of informed targets means there is no reference to gauge the success of the strategy.

In reviewing the actions in the strategy the department should develop specific targets consistent with updated policy goals.

## 2.5 Overcoming the barriers to cycling

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The department developed an effective general understanding of the barriers that prevent people from cycling based on overseas experience and local research. However, the strategy did not address all of these barriers nor explain how actions had been tailored to address the specific needs of different types of potential cyclists.

### 2.5.1 Understanding how to address the barriers to cycling

The department clarified its understanding of the barriers to cycling by:

- reviewing the international literature on how best to increase walking and cycling as forms of personal transport
- surveying councils and interviewing council officers about the barriers to cycling and walking, and what was needed to overcome these
- completing focus groups to understand the important barriers for different types of people across a wide range of walking and cycling experience.

## Findings from the international literature review

The review found that the most important measure for 'growing' cycling was investing in a network that potential cyclists perceive as a safe and convenient way to access popular destinations. However, for this investment to be effective it recommended:

- applying complementary measures to develop cycling facilities, promote cycling as a normal and acceptable form of transport, and restrict car use
- tailoring measures to address the perceptions and preferences of a wide range of potential cyclists.

It concluded that, 'The most compelling argument, particularly for cycling, is that only via an integrated range of environmental features (including infrastructure and facility improvements), pricing policies, or education programs will substantive changes result. This is what has been occurring in the Netherlands, Denmark, and parts of Germany.'

The 2008 article—*Making Cycling Irresistible*—summarised how the Netherlands, Denmark and Germany achieved cycling shares of between 10 and 27 per cent by:

- promoting safe and convenient cycling by:
  - creating extensive systems of separate cycling facilities
  - modifying intersections and providing traffic signal priority
  - traffic calming so a wide range of people felt safe riding with motorised traffic
  - investing in secure and extensive bike parking facilities
  - making it easier to use bicycles and public transport
  - investing in promoting cycling and educating motorists and training cyclists
  - modifying traffic laws to provide cyclists with greater protection
- making car use less convenient and more expensive.

Achieving major change required agencies to understand and address in the strategy the needs of people who don't regularly cycle. New or inexperienced cyclists are likely to require infrastructure and road conditions that provide a high degree of separation and protection from traffic, education about cycling basics and encouragement to take up cycling.

## Local research on the barriers and solutions

The department's focus groups and interviews with council officers reinforced the findings of the literature review. Figure 2B summarises these findings.

The research confirmed that transforming cycling into a 'mainstream' mode of transport requires a combined package of infrastructure investment and complementary measures to promote cycling as a safe and convenient mode.



The research provided valuable insight about the infrastructure-related issues that should be addressed to make further investment effective for a wide range of potential cyclists. The strategy needed to:

- better link existing cycling paths and lanes
- address conflicts and delays where cyclists cross road intersections and between different types of cyclists and pedestrians on shared paths
- update the engineering standards for bicycle paths and lanes and apply consistent and minimum standards for signage, markings and lighting.

Councils also identified the following institutional constraints:

- poor coordination of policy and programs across government
- absence of appropriate guidelines for path design and maintenance
- difficulties in funding and maintaining new infrastructure.

In April 2008 the coroner recommended that the government:

- review guidelines for shared cycle paths so that land managers have suitable guidance on the path construction, maintenance, auditing and retrofitting
- consider extra funding to councils to help them develop, maintain and, if necessary, retrofit shared pathways to make them safe.

VicRoads agreed to lead a working group to review standards and guidelines, develop a more comprehensive risk assessment and clarify responsibilities and funding.

### Summary of the department's understanding

The department had identified and understood the barriers to cycling and the type and scale of measures that had worked in Europe to overcome these.

However, the department had not defined what was specifically required to overcome the barriers needed to persuade inexperienced cyclists to take up cycling.

It did not, for example, fully understand cycling safety risks, how these were perceived by current and potential cyclists and how best to address these issues. The strategy included a priority action to review crash patterns to identify counter measures.

**Figure 2B**  
**Barriers identified by the Department of Transport’s local research**

Type of barrier	Description	Focus groups	Councils
<b>Physical barriers</b>			
Time and distance	<ul style="list-style-type: none"> <li>unlikely to spend more than 45 minutes travelling</li> </ul>	✓	✓
Land-use integration and planning	<ul style="list-style-type: none"> <li>greater densities and proximity to destinations makes cycling more likely for residents of inner Melbourne</li> </ul>		✓
	<ul style="list-style-type: none"> <li>integration of land-use and transport planning</li> </ul>		✓
Weather	<ul style="list-style-type: none"> <li>cold, wet and extreme heat limit cycling</li> </ul>	✓	✓
Pathways	<ul style="list-style-type: none"> <li>lack of dedicated cycling paths or lanes</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>poor road or path surfaces and poor lighting</li> </ul>	✓	✓
<b>Emotional barriers</b>			
Safety and anxiety	<ul style="list-style-type: none"> <li>fear of personal injury from collisions or falls</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>parents’ fears for children’s safety and security</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>ignorance of road rules and fear of doing the wrong thing—need to better communicate and enforce regulations</li> </ul>	✓	
Boredom	<ul style="list-style-type: none"> <li>from travelling the same route</li> </ul>	✓	
Inferiority	<ul style="list-style-type: none"> <li>cycling considered inferior to car as a form of transport</li> </ul>	✓	✓
<b>Practical barriers</b>			
Need for flexibility	<ul style="list-style-type: none"> <li>running multiple errands on the same journey</li> </ul>	✓	
	<ul style="list-style-type: none"> <li>carrying bulky items or shopping</li> </ul>	✓	
	<ul style="list-style-type: none"> <li>difficult to combine cycling with public transport travel</li> </ul>	✓	✓
Changing and storage	<ul style="list-style-type: none"> <li>lack of these facilities makes cycling less attractive</li> </ul>	✓	✓
Infrastructure	<ul style="list-style-type: none"> <li>ideal would be to separate bikes from cars and pedestrians</li> </ul>	✓	
	<ul style="list-style-type: none"> <li>realise that costs limit this but existing paths and lanes have poor signage, lighting and inconsistent markings</li> </ul>	✓	
	<ul style="list-style-type: none"> <li>shared paths do not have enforceable good practice guidelines to control pedestrian and cyclist behaviour</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>engineering standards for paths are out of date</li> </ul>		✓
	<ul style="list-style-type: none"> <li>bicycle paths and lanes are often not well linked together</li> </ul>	✓	✓
	<ul style="list-style-type: none"> <li>congestion on popular cycle paths and shared paths</li> </ul>		✓
	<ul style="list-style-type: none"> <li>traffic signal settings do not prioritise bicycles</li> </ul>		✓
<ul style="list-style-type: none"> <li>paths do not cater for different types of cyclists</li> </ul>		✓	
Promotion	<ul style="list-style-type: none"> <li>not enough done to promote behavioural change</li> </ul>	✓	✓
Community support	<ul style="list-style-type: none"> <li>workplaces, government, community organisations and places of education should do more to encourage cycling</li> </ul>	✓	
Policy and coordination	<ul style="list-style-type: none"> <li>poor coordination across government and within agencies</li> </ul>		✓
Funding and resourcing	<ul style="list-style-type: none"> <li>difficult for councils to access sufficient funding</li> </ul>		✓
	<ul style="list-style-type: none"> <li>lack of coordination across multiple funding programs</li> </ul>		✓

Source: Victorian Auditor-General’s Office based on Department of Transport reports.

## 2.5.2 Developing a strategy based on better practice

The strategy represented only a partial application of the measures that had been successful in 'mainstreaming' cycling as a form of transport in Europe. While the strategy is likely to increase bicycle journeys, it is not evident that the strategy would 'mainstream' cycling.

### Assessment against better practice for 'mainstreaming' cycling

The strategy included priority and future actions under the following directions:

- building networks to connect communities
- promoting and encouraging a culture of cycling
- reducing conflicts and risks for cyclists
- better integrating cycling with public transport
- integrating cycling into land-use planning.

The strategy's strengths were that it:

- followed better practice in focusing on building a better cycling network
- recognised the need to complement infrastructure investment with other actions to promote cycling, reduce conflict and perceived risk, and better integrate cycling with public transport and land-use planning.

Figure 2C assesses the strategy against the better practice measures applied in Europe. The department did not:

- include actions to modify traffic laws to better protect cyclists or increase the attractiveness of cycling by making cars less convenient and more expensive
- include actions to calm traffic so cyclists feel safer when sharing roads with motor vehicles, other than a future direction to investigate such measures
- apply measures of the same scale and breadth used in Europe to promote cycling, educate cyclists and create a network and facilities so that large numbers of new cyclists would find them safe and convenient to use.

Furthermore, the strategy did not adequately address significant issues raised in focus groups and council interviews, and by the coroner including:

- addressing conflicts and delays where cyclists cross road intersections and where cyclists and pedestrians use shared paths
- reviewing and providing updated guidance on the construction, maintenance, auditing and retrofitting of shared bicycle paths
- resolving poor coordination of policy and programs across government
- addressing difficulties in funding path construction and maintenance.

Applying the strategy is likely to increase cycling but it is not evident that the impact would be of the scale of change required to 'mainstream' cycling as a form of personal transport. The proposed measures are unlikely to attract large numbers of people with little cycling experience and this will put a cap on cycling growth.

**Figure 2C**  
**Assessment of the strategy against better practice**

Best practice measures	Will the strategy deliver on these measures?	
	Answer	Comments
<b>1. Promoting safe and convenient cycling by:</b>		
<ul style="list-style-type: none"> <li>creating extensive separate cycling networks</li> </ul>	<b>In part</b>	<ul style="list-style-type: none"> <li>priority investment to create a linked network for inner Melbourne</li> <li>strategy proposes a mix of separate and shared-use paths and on-road lanes</li> <li>did not demonstrate how improvements will meet the needs of potential cyclists</li> <li>was not based on a full understanding of cycling safety but committed to review crashes and recommend appropriate counter measures</li> </ul>
<ul style="list-style-type: none"> <li>modifying intersections and traffic signal priority</li> </ul>	<b>In part</b>	<ul style="list-style-type: none"> <li>three priority improvement projects</li> <li>future action to investigate new ways of providing cyclists with priority</li> </ul>
<ul style="list-style-type: none"> <li>traffic calming</li> </ul>	<b>No</b>	<ul style="list-style-type: none"> <li>no priority projects</li> <li>future project to investigate improving safety through traffic calming</li> </ul>
<ul style="list-style-type: none"> <li>secure and extensive bike parking facilities</li> </ul>	<b>In part</b>	<ul style="list-style-type: none"> <li>develop planning guidelines and tools and work to strengthen requirements</li> <li>investigate facilities for new state funded developments</li> <li>no commitment to the scale and scope of facilities seen in Europe</li> </ul>
<ul style="list-style-type: none"> <li>integrating bicycles with public transport</li> </ul>	<b>In part</b>	<ul style="list-style-type: none"> <li>continue with bicycle cage program and implement Melbourne bike hire scheme</li> <li>future actions for more secure parking at stations</li> <li>no actions to make it easier to carry bikes on trains, trams and buses, other than investigating options</li> </ul>
<ul style="list-style-type: none"> <li>promoting cycling and educating travellers</li> </ul>	<b>In part</b>	<ul style="list-style-type: none"> <li>continue school promotion projects, develop a promotional campaign and a route planning website sponsor events</li> <li>lower priority actions to improve cycling education, promote cycling in workplaces and investigate incentives</li> </ul>
<ul style="list-style-type: none"> <li>modifying traffic laws to better protect cyclists</li> </ul>	<b>No</b>	<ul style="list-style-type: none"> <li>no actions in the strategy</li> </ul>
<b>2. Making cars less competitive</b>		
	<b>No</b>	<ul style="list-style-type: none"> <li>no actions in the strategy</li> </ul>

Source: Victorian Auditor-General's Office analysis of the *Victorian Cycling Strategy*.

## Consulting on the strategy

The department did not fully consult relevant agencies and stakeholders because government was concerned that details of the strategy and its parent, the *Victorian Transport Plan*, should remain confidential until released.

This meant that while the department fully consulted stakeholders such as VicRoads, Parks Victoria, other government agencies, Bicycle Victoria and the Cycling Promotion Fund, it was not able to fully engage with local government and the Victorian Bicycle Advisory Council (VBAC) to find out whether the strategy addressed their concerns and suggestions. It did, however, consult the Municipal Association of Victoria and the Victorian Local Governance Association, which represent local government and are members of VBAC.

In the strategy, the department:

- had not addressed Bicycle Victoria's and the Cycling Promotion Fund's views that the document should describe the monitoring and evaluation arrangements
- missed the opportunity to verify that the strategy covered off local government's most important concerns.

The department recognised the importance of involving Bicycle Victoria and the Cycling Promotion Fund and intended to incorporate their advice to the 'maximum extent possible'. There are examples of the department working closely with these organisations across a range of issues.

However, we found no documentation explaining why the department had not addressed these reasonable suggestions that the strategy include specific targets, measures of success, and detailed implementation plans.

The department consulted council officers through interviews and a survey that preceded the strategy's development. This gave the department a good idea about council concerns. However, important issues raised by councils were not adequately addressed in the strategy. For example, the costs of managing and maintaining the parts of Principal Bicycle Network that would be councils' responsibility.

## Role of recreational cycling

In focusing on cycling for transport the strategy did not address cycling for recreation, health and leisure. As a result the strategy did not address the major conflicts generated through the use of roads and shared-use trails, such as along Beach Road, which is a high-volume recreational cycling route with both on and off-road usage.

While the strategy focused on cycling for transport, it acknowledged the importance of cycling for recreation. However, recreational cycling deserved more attention in the strategy because of the number of journeys and the opportunities this type of cycling provides for inexperienced cyclists to take up cycling for transport.

The VISTA survey results showed that social and recreational walking and cycling accounted for a third of all walking and cycling journeys on a typical weekday and over 50 per cent of these journeys at the weekend.

The issues around the use of Beach Road by recreational cyclists were well known before the department developed the strategy. Addressing these issues is complex because of the competing and conflicting needs of the different types of cyclists using the route, as well as local residents and visitors who want to park on the route and access residences or the beach. By 2005 more than 7 000 cyclists were using Beach Road each weekend. Their numbers continued to grow, increasing the conflicts between cyclists, motorists, pedestrians and residents.

VicRoads has worked with the three councils along Beach Road to address the issues associated with the on-road use. Between April and November 2010 two councils started a one-year trial of no parking along Beach Road on weekend mornings as a means of reducing conflict and improving safety.

The department commissioned initial research into understanding the relationship and conflicts between drivers and riders and included recreational cycling. However, it was a preliminary study that recommended further research.

A revised cycling strategy should include measures to promote recreational cycling and deal with conflicts and safety risks between cyclists, motorists and other path users, as well as residents and visitors on roads, bike paths and shared-use trails.

## 2.6 Departmental preparedness

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### 2.6.1 Readiness to implement the strategy

The department did not adequately prepare for the strategy's implementation by the time it was released. After the release, the department developed, but did not finalise, a framework to clarify priorities and responsibilities. The department has since acknowledged that a more fully developed implementation plan would have made the strategy more effective.

The department recognised that for the strategy to be effective, it needed to:

- monitor and review progress
- coordinate effort across government agencies to deliver complementary programs and consistent messages
- develop arrangements that allowed contributions from the range of government and non-government organisations that were important to the strategy's success.

At the time the strategy was released the department had not developed a detailed implementation plan or set up the arrangements needed to translate the strategy into effective action. The strategy described priorities and future actions but was not precise about the timelines or accountabilities for these actions.

Together with other agencies, the department should have developed:

- a plan that clarified priorities and, for each action, allocated agency responsibilities and defined the time frames, outputs and the planning, monitoring and reporting requirements
- arrangements for coordinating the efforts of government agencies and other stakeholders in achieving the strategy's intended outcomes.

The department acknowledged that earlier implementation planning and the execution of these plans would have made the strategy more effective. The explanations for not doing this were the tight time lines for the strategy development and a lack of resources because the department's focus was on finalising the *Victorian Transport Plan*.

VAGO has made similar, past criticisms of the department's lack of preparedness for implementing the freight management strategy (2010) and the revised metropolitan bus contracts (2009).

Thorough implementation planning is essential, especially where a strategy relies on coordinating actions across multiple agencies. Without timely planning and a clear framework, there is a risk that actions that are important to the strategy's goals become delayed or are poorly coordinated. In future the department needs to be ready to effectively implement a strategy from the time of its launch.

## 2.6.2 Readiness to evaluate the strategy

At the time the strategy was published, the department had not adequately prepared to evaluate it. It had not determined how to measure outcomes or collected the baseline information needed to benchmark the strategy's achievements.

Adequate performance measurement and reporting is critical. It helps the government and the community understand the effectiveness of a strategy. The department needs this information so that it can advise government as it sets its policy goals and works out how to achieve them.

An evaluation framework should describe how agencies will measure the impacts of individual projects, and the combined effect of all the strategy's actions on the outcomes resulting from raising the overall level of cycling.

The department understood the importance of setting clear objectives and measuring performance. The decision in 2009, to mandate that all project business cases include plans to measure project outcomes, recognised that evaluation frameworks should be set up before implementing plans. This kind of preparation focuses attention on outcomes and collects the benchmark information needed to measure success.

The department did not complete this type of preparation by the time the strategy was published. It had not agreed with its partners on an approach to individual project evaluation and had not worked out how to measure and report on the strategy's progress towards its intended outcomes. Again, in its audits of the freight management strategy and the revised metropolitan bus contracts, VAGO found a similar lack of preparedness to evaluate.

The department should document an evaluation framework and collect the benchmark data needed to measure success before finalising future strategies. The evaluation framework should include:

- the intended strategy outcomes
  - appropriate and reliable measures of overall performance
  - agencies' approach to individual project evaluation
  - a costed program of data collection and analysis
  - description of how the outcomes will be reported.
-



# 3 Progress towards the strategy's goals

## At a glance

### Background

This part examines the progress made in the 20 months the Department of Transport (the department) and VicRoads had to apply the *Victorian Cycling Strategy* (the strategy).

### Conclusion

While cycling journeys in inner Melbourne have risen over the past four years, the rate of growth is less than that needed if the long-term goal of transforming cycling into a major form of personal transport is to be realised.

Progress in implementing the strategy and dealing with its limitations was not satisfactory. The department and VicRoads made satisfactory progress delivering planned infrastructure, but had only completed two of the 12 non-infrastructure priorities and had not:

- developed an adequate implementation plan
- evaluated individual projects or the whole strategy
- improved their understanding of current and potential cycling journeys
- addressed stakeholder issues missed in the strategy.

### Recommendations

The Department of Transport and VicRoads should:

- complete adequate implementation plans, when developing future cycling strategies, and improve the quality of project plans
- finalise evaluation frameworks when developing future strategies
- develop a sound basis for informing and implementing government policy through an improved understanding of current and potential cyclists, the journeys they make, the barriers to 'growing' cycling and how to best overcome these
- apply the mechanisms required to effectively coordinate actions to 'grow' cycling and improve information sharing
- update guidance on shared bicycle paths and agree on the maintenance arrangements for the finalised Principal Bicycle Network.

## 3.1 Introduction

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This part examines the progress made in the 20 months the Department of Transport (the department) and VicRoads had to apply the *Victorian Cycling Strategy* (the strategy).

We examined whether agencies had addressed the strategy's limitations and had:

- effectively managed the strategy's implementation
- evaluated the impacts of individual projects and the strategy's outcomes
- addressed the information gaps about current and potential cycling journeys and the barriers to cycling for different types of potential cyclists
- acted on stakeholder concerns not addressed in the strategy.

## 3.2 Conclusion

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While cycling journeys in inner Melbourne have risen over the past four years, the rate of growth is less than that needed if the long-term goal of transforming cycling into a major form of personal transport is to be realised.

The department and VicRoads made satisfactory progress delivering planned infrastructure, but had only completed two of the 12 non-infrastructure priorities and had not:

- developed an adequate implementation plan and the mechanisms needed to effectively prioritise and coordinate actions across government
- measured the outcomes for individual projects or developed a way of measuring the impact of the whole strategy
- adequately addressed weaknesses in their understanding of current and potential cycling journeys and how the barriers affect potential cyclists
- addressed concerns about the need for consistent and minimum standards for the design, operation and maintenance of bicycle paths and lanes.

## 3.3 Managing the strategy's implementation

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Agency performance in implementing the strategy was mixed because they:

- were slow to develop a framework to clarify priorities and responsibilities and provide an effective way of working across government and stakeholders
- did not repeat their achievement in delivering infrastructure for other important priorities including cycling promotion and education
- did not develop project plans that fully met their own standards.

### 3.3.1 Applying an effective framework

The department had not adequately prepared for the strategy's implementation during its development, and subsequently did not satisfactorily address this lack of preparation.

This limited the strategy's effectiveness because agencies had not:

- finalised a full set of priorities, responsibilities and time lines
- monitored and reviewed progress
- developed the mechanisms needed to work effectively across government agencies and stakeholders to deliver on the strategy's priorities and address its limitations.

#### Progress in developing an implementation framework

The department was slow to address the absence of an implementation plan after the strategy was released. It started working on this framework 16 months into the implementation and had not finalised the framework when the new government was elected four months later in November 2010.

This delay made the strategy less effective because the department had not:

- refined and confirmed the broad priorities set out in the strategy
- allocated responsibilities and set specific time lines for priority actions
- tracked and reported on progress
- worked out how to evaluate the ongoing success of the strategy
- set up mechanisms for working effectively across government and with stakeholders.

The department agreed to set up a steering committee to oversee the strategy and a working group to manage the day-to-day implementation. The membership of these groups was drawn from the department and VicRoads.

However, these arrangements were rarely used:

- the working group met once only, in July 2010, and recommended revised priorities, responsibilities, time lines and budgets for the steering committee's approval
- the steering committee met once only, in March 2011, but did not consider the working group's recommendations. It considered the strategy inactive since the change in government in November 2010 and disbanded the committee.

#### Working across government and with other stakeholders

The department and VicRoads have not been fully effective in the way they have worked across government and with other stakeholders.

The strategy recognised that a cooperative approach across a range of government and non-government organisations required an appropriate structure. However, the department did not achieve this during the strategy's implementation. Information sharing and coordination have happened at the initiative of individual agencies rather than within a well designed structure.

On a positive note, VicRoads has taken account of the views of councils and Parks Victoria in updating Melbourne's Principal Bicycle Network (PBN). Councils and Parks Victoria raised significant concerns with VicRoads' first draft of the revised network:

- Parks Victoria was concerned about conflicts between cyclists and the other users of shared paths incorporated into the PBN.
- The councils included in this audit, with the exception of the City of Melbourne, were concerned about the maintenance arrangements if their bicycle paths and roads were included in the PBN.

VicRoads listened to these concerns, and the ongoing review of the PBN partly addressed Parks Victoria's and councils' issues. Responsibilities under the *Road Management Act 2004* for maintenance are clear. However, concerns about how maintenance will be funded, and to what standards, still remain.

The department and VicRoads need to improve information sharing and coordination:

- Councils were not aware of, or involved in, research to which they might have contributed and from which they might have benefited. For example, councils were unaware of, but very interested in, VicRoads work on a draft data strategy and its study of cyclists' risk-taking behaviour.
- We found examples where new or upgraded bike paths had been delayed because completion required agreement across multiple agencies.

Councils suggested that the department and VicRoads could help by:

- taking a lead role in coordinating good data collection
- providing advice and guidance to councils, for example, by making case studies of past infrastructure treatments available
- providing templates for strategies and project plans and guidelines for the design, operation and maintenance of bicycle lanes and different types of bicycle paths.

In March 2011, the department and VicRoads disbanded the steering committee and the working group responsible for implementing the strategy. In their review of cycling actions, the department and VicRoads should recommend a structure that will best support a coordinated and cooperative approach to 'growing' cycling.

### 3.3.2 Progress on the strategy's actions

The strategy's priorities were based on a package of infrastructure together with supporting measures to make the most of the infrastructure investment. However, the focus of the strategy narrowed during implementation.

Agencies had made reasonable progress on the infrastructure projects because VicRoads had started all 22 projects that were meant to start in 2009–10 and had completed 18 of them. However, progress on the non-infrastructure projects meant to complement this infrastructure investment had been unsatisfactory.

This happened because the department and VicRoads secured funding through the *Victorian Transport Plan* (VTP) for cycling infrastructure projects and had to use available, limited resources to advance non-infrastructure cycling priorities.

The VTP was launched three months before the cycling strategy and included \$115 million for cycling infrastructure projects. Under the plan, \$100 million over 10 years was allocated for the cycling package, \$10 million over three years for the cycling rail trails and \$5 million over three years for the Public Bike Hire Scheme.

The strategy contained 59 priority projects. VicRoads was responsible for 49 projects and, of these, 43 required building or upgrading cycling infrastructure. The department was responsible for the remaining 10 priority projects, and all of these involved non-infrastructure cycling projects.

Figure 3A summarises the progress made by VicRoads and the department on the strategy's priority projects.

**Figure 3A**  
**Progress on priority projects**

Type of project	Total	Completed	In progress	Not started
<b>VicRoads infrastructure</b>				
Projects planned to start 2009–10	22	18	4	–
Network within 10 kms of CBD	17	1	1	15
Network within central activities districts and regional towns	7	–	1	6
<b>VicRoads non-infrastructure</b>				
Reduce risks	2	1	1	–
Melbourne bike share scheme	1	1	–	–
<b>All VicRoads projects</b>	<b>49</b>	<b>21</b>	<b>7</b>	<b>21</b>
<b>Department of Transport non-infrastructure</b>				
Cycling in other infrastructure projects	2	1	–	1
Promote a culture of cycling	5	–	3	2
Integrate with public transport	1	–	1	–
Integrate with land use planning	2	–	1	1
<b>All Department of Transport projects</b>	<b>10</b>	<b>1</b>	<b>5</b>	<b>4</b>

Source: Victorian Auditor-General's Office based on Department of Transport and VicRoads data.

The department and VicRoads had:

- completed 18 of the 22 infrastructure projects that were scheduled to start in 2009–10 and started the remaining four projects
- completed one and started two of the next 24 infrastructure projects
- completed two and started six of the 12 non-infrastructure projects.

### 3.3.3 Project planning

Effective action requires realistic plans that include information on the problems being addressed, the project objectives and how and when these will be achieved and success measured.

The project plans varied in their quality and coverage:

- the department had not documented plans in line with the requirements of its *Project Management Framework*
- VicRoads had completed plans for its cycling infrastructure projects but the sample we examined fell short of its internal requirements for documenting objectives, strategic fit, expected benefits and evaluation criteria.

#### The department's project planning

The department's *Project Management Framework* sets out good practice for developing and delivering projects. The department had not developed plans for the actions it was responsible for and so did not follow its own internal requirements for project planning.

The department needs to document project plans that meet its internal requirements for all projects that form part of the government's forward program to promote cycling.

#### VicRoads project planning

VicRoads requirements are documented in its *Project Management Guidelines* dated August 2008. These describe the information that should be included in the project business cases used to justify a project. While the information categories apply to all projects, the level of detail will depend on the scale and complexity of each project.

Figure 3B shows that for the eight plans reviewed, three were expected to cost more than \$2 million, three between \$500 000 and \$1 million, and two less than \$500 000.

**Figure 3B**  
**Sample of VicRoads projects examined**

Sample project business cases	Date prepared	Approved cost (\$)
Cecil Street bicycle lanes	Aug 2010	79 000
Royal Parade bicycle lanes	Jun 2010	280 000
Balwyn Road	Nov 2009	533 000
St Kilda on-road bicycle lanes	Dec 2009	720 000
Bulleen Road off-road bicycle lanes (Stage 2)	Nov 2009	955 000
Bulleen Road on-road bicycle lanes (Stage 1)	Oct 2008	2 028 000
Merri Creek pipe bridge, Buckley Street and Hyde Street	Jan 2009	2 111 420
Federation Trail Section 1 (Stage 1)	Feb 2009	9 200 000

Source: Victorian Auditor-General's Office from VicRoads data.

These plans adequately documented projects' scope, design and capital costs but did not adopt a consistent approach to the inclusion of maintenance costs. Two of the eight projects estimated annual maintenance costs and only one, the Federation Trail, included these in its total cost.

Except for the Federation Trail, no sampled projects adequately describe the:

- **problem being addressed**—information on road traffic and reported injuries was included, but no information on cycling or consideration of unreported crashes was included
- **objectives**—none stated for two projects, and intended outputs rather than outcomes were used to frame objectives for a further four projects
- **expected benefits and evaluation criteria**—expected benefits were not adequately quantified for any of the projects, and only one project had adequately described evaluation criteria.

VicRoads should improve its business case documentation for cycling projects by:

- estimating and including maintenance costs
- developing better practice business case templates for small and large cycling projects to raise the standard of project documentation.

## 3.4 Measuring the strategy's success

The department and VicRoads did not make satisfactory progress in evaluating the strategy's outcomes or those of the individual projects completed since March 2009.

### 3.4.1 Applying an effective framework

The department and VicRoads completed work to define a proposed evaluation framework and document the type of information the framework would need. However, they did not finalise the framework or define the program of work and resources needed to make it operational.

The strategy recognised that evaluation was vital to its successful implementation. It stated that, 'The Department of Transport will work with stakeholders to determine key measures of success' and, 'The evaluation plan will be regularly reviewed to ensure it remains relevant through the life of the strategy'.

The strategy flagged the following proposed measures:

- volumes of cyclists and proportional mode share
- cycle trip purposes and frequencies
- the quality and quantity of cycling infrastructure
- risks to cyclists including the risk of crashing and user perceptions
- the attitudes and perceptions of cyclists and non-cyclists.

In terms of progress:

- the department completed the first stage of a walking and cycling evaluation project that defined an evaluation plan, but did not commence the second stage to develop and apply this plan because of a lack of resources
- VicRoads documented a draft strategy on how it could cost-effectively expand its data collection to monitor and evaluate cycling policies and projects.

These efforts, while demonstrating progress, fell short of what was required. The department and VicRoads need to finalise a cycling evaluation framework and cost the data collection and analysis needed to make the framework operational. They then need to determine how to measure the other intended outcomes of the strategy—reduced congestion, less pollution and improved health.

### 3.4.2 Project evaluation

Agencies have not adopted a systematic and consistent approach to evaluating the strategy's projects. The department and VicRoads need to develop a consistent and sustainable approach to evaluation and apply most effort to evaluating those projects that are expected to have the largest impact on cycling.

Agencies need to determine the impact of investments on the number, type and characteristics of cycling journeys and how these changes affect congestion, safety and health. Every project should have a scaleable evaluation plan to measure outcomes and embed the lessons learnt into future projects.

### 3.4.3 Information on outcomes

Agencies have not reliably measured how their actions have affected levels of cycling nor the outcomes connected to an increase. However, the available, partial information shows that cycling journeys have risen in inner Melbourne and the CBD by approximately 50 per cent over the past four years.



The factors that have influenced this change include:

- higher petrol prices—these rose by 34 per cent between March 2007 and September 2008 before falling by 12 per cent to March 2011
- public transport overcrowding—metropolitan train patronage rose by 33 per cent and tram patronage by 17 per cent between 2006–07 and 2010–11
- the promotion of healthier lifestyles and a greater awareness of the impact of motorised travel on the environment
- investment in cycling infrastructure and facilities and campaigns to promote greater cycling.

The department and VicRoads did not know the relative importance of these factors, nor how much difference agencies' actions have made to cycling levels. However, it is likely that these actions, in combination with the actions of local government, have helped to 'grow' cycling.

If the 50 per cent increase was replicated across the state and overall travel remained static, cycling's share would have risen from 1.6 to 2.4 per cent. This is solid progress but represents less than a 1 per cent gain over four years. Furthermore only part of this change can be attributed to government action because rising petrol prices and more crowded public transport have also influenced cycling levels.

It is not evident that agencies' actions together with the strategy's future actions would be sufficient to transform cycling into a major form of personal transport.

## 3.5 Addressing information and analysis gaps

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The department and VicRoads have not made sufficient progress towards addressing these information and analysis gaps by acquiring a better understanding of:

- current cyclists, their characteristics, where and why they travel and the barriers and difficulties they face
- the travel and personal characteristics of potential cyclists and the barriers that prevent them from cycling
- what is needed to increase cycling, together with the costs and benefits of different levels of intervention and change.

Greater London's approach to understanding cycling potential offers an example of better practice.

### 3.5.1 Understanding current and potential journeys

VicRoads draft data strategy is evidence of progress towards a better understanding. Its proposed approach of collecting quantitative data on cycling volumes and interviewing cyclists and potential cyclists to understand their characteristics and perceptions is sound.

VicRoads and the department now need to agree to, and apply, a detailed data plan describing how they will assemble and analyse the information needed to inform future policy and an updated strategy. The data plan should include:

- scope, objectives and specific outcomes
- tasks and responsibilities and management
- time lines and costs.

The process should involve councils and stakeholders that collect and would make use of this information. The councils we interviewed in inner Melbourne were very interested in contributing to, and benefiting from, work to gain an improved understanding of cycling.

### 3.5.2 Understanding how barriers affect cycling

The department and VicRoads have not achieved an adequate understanding of how the barriers to cycling affect current and potential cyclists.

VicRoads made progress on better understanding crashes and cyclists' attitudes to risk taking. However, it has not understood how crashes and perceptions about safety affect the travel behaviour of current and potential cyclists.

#### Safety

VicRoads completed research that:

- analysed cycling crashes, their causes and recommended how to improve safety
- segmented cyclists based on their attitudes to cycling and risk-taking behaviour and assessed how best to communicate safety messages to these segments.

This research found that cycling injuries were significantly under-reported and had been 'growing' at about 9 per cent per annum between 2004 and 2008.

Under-reporting meant that little was known about a significant number of cycling crashes in Victoria and the report therefore could not provide a comprehensive set of countermeasures.

The research recommended further work to:

- better understand the risk factors for the significant number of unreported injury crashes as a basis for recommending appropriate countermeasures
- reliably determine bicycle use as a measure of risk exposure.

Based on the information about reported crashes the research recommended:

- promoting helmet use especially for young riders
- expanded educational programs
- separating cyclists on roads with speed limits over 60 kph
- considering a 30 kph speed limit for residential roads with significant pedestrian and cyclist activity
- increasing bicycle-friendly intersection treatments.

The segmentation divided cyclists into three segments based on their risk-taking behaviour to inform the development of appropriate road safety programs. The research was not intended to improve VicRoads understanding of how the barriers to cycling affect the behaviour of existing cyclists.

### Understanding other barriers to cycling

The department and VicRoads have not improved their understanding about how other barriers to cycling influence the behaviour of different types of current and potential cyclists. This type of understanding is important in combining measures that will be most effective in 'growing' cycling.

## 3.5.3 London's approach to estimating cycling potential

The Mayor of London set a target of increasing cycling journeys by 400 per cent by 2026 compared to 2001 so that people used bicycles for 5 per cent of all journeys. Transport for London completed *An Analysis of Cycling Potential* to inform decisions about how best to achieve this challenging target.

This is a good example of how to combine intelligence on people's journeys, personal characteristics and preferences to form a sound basis for decision making. Figure 3C summarises the approach and the results.

**Figure 3C**  
**Analysing cycling potential for London**

This approach involved three steps:

- Identifying current trips that could reasonably be cycled using the results of a travel demand survey, similar to Melbourne's VISTA survey. The selection criteria reflect the characteristics of trips that were currently cycled.
- Classifying people in each postcode into seven segments based on their propensity to cycle at present and how amenable they are to cycle in future. The classification was informed by travel and demographic data, and surveys on attitudes and perceptions.
- Combining information on journeys that could be cycled with the segmentation analysis to understand the distribution and nature of cycling potential.

This analysis is a very useful tool for:

- quantifying cycling potential and setting informed targets
- understanding the 'near market' for cycling—cyclable journeys made by people that are most amenable to switching to cycling
- developing measures that are likely to be effective for the areas and groups targeted.

Source: Victorian Auditor-General's Office summary of *An Analysis of Cycling Potential*, 2010.

## 3.6 Addressing stakeholder issues

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The department and VicRoads have not:

- addressed conflicts and delays where cyclists cross road intersections and where cyclists and pedestrians use shared paths
- provided updated guidance on the construction, maintenance, auditing and retrofitting of shared bicycle paths
- acted to improve policy and program coordination across government
- adequately addressed the concerns of councils regarding how maintenance will be funded.

VicRoads has not reviewed and improved guidance for land managers on the design, development, auditing and maintenance of shared user paths. In 2008 VicRoads agreed to establish a working group to coordinate this across the state government and take account of the inputs of Bicycle Victoria, the Municipal Association of Victoria, Parks Victoria and councils.

VicRoads needs to complete this action and agree with land managers a set of updated guidelines that cover the areas specified in the coroners report.

VicRoads and the department are both members of an inter-departmental committee on shared use tracks set up by the Department of Planning and Community Development to focus on delivering the government's election commitments. The committee met in March and May 2011 and is scheduled to meet one more time in August 2011 to discharge its responsibilities.

## 3.7 Lessons for effectively promoting cycling

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'Growing' cycling to reduce congestion, benefits the environment, improves people's health, and remains a policy goal of government. However, the *Victorian Cycling Strategy* no longer represents the government's approach and the department and VicRoads need to reshape the actions to reflect the government's updated policy.

This audit has identified important lessons that the department and VicRoads need to apply if they are to effectively inform government about how best to 'grow' cycling. These lessons have been described in this section and include:

- improving how strategies and plans are implemented and evaluated
- gaining a better understanding of current and potential cycling to fully inform government about the options for 'growing' cycling and their expected impacts
- addressing stakeholder issues not covered in the *Victorian Cycling Strategy*.

The department and VicRoads were not adequately prepared to implement and evaluate the strategy and this affected its progress and effectiveness. They need to be adequately prepared to do these things in the future.

The challenge facing the department and VicRoads is to develop a sound basis for informing the government's policy decisions. They need to better understand:

- current cyclists, their characteristics, travel patterns and the barriers they face
- the travel and personal characteristics of potential cyclists and the barriers that prevent them from cycling
- what is needed to achieve different levels of cycling, together with the costs and benefits of doing this.

The department and VicRoads need to effectively coordinate action and information sharing across the organisations with a role in 'growing' cycling and address the specific issues raised by stakeholders.

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## Recommendations

The Department of Transport and VicRoads should:

1. complete implementation plans, when developing future cycling strategies, that describe objectives, time lines, resources and responsibilities and how a strategy will be managed, monitored and reported
  2. improve the quality of project plans so that they consistently meet agencies' internal requirements by creating better practice templates
  3. finalise evaluation frameworks, when developing future strategies, that describe outcomes, realistic targets, benchmark data and how success will be measured and reported for component projects and for the overall strategy
  4. develop a sound basis for informing and implementing government policy through an improved understanding of current and potential cyclists, the journeys they make, the barriers to 'growing' cycling and how to best overcome these
  5. apply the mechanisms required to effectively coordinate actions to 'grow' cycling and improve information sharing across the government agencies and non-government organisations involved in cycling
  6. in consultation with other managers, review and update guidance on the construction, maintenance, auditing and retrofitting of shared bicycle paths and agree on the maintenance arrangements for the finalised Principal Bicycle Network.
-



# Appendix A.

## *Audit Act 1994* section 16— submissions and comments

### Introduction

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In accordance with section 16(3) of the *Audit Act 1994* a copy of this report was provided to the Department of Transport, VicRoads, Parks Victoria, the City of Melbourne, the City of Yarra, the City of Darebin and the City of Maribyrnong with a request for submissions or comments.

The submissions and comments provided are not subject to audit nor the evidentiary standards required to reach an audit conclusion. Responsibility for the accuracy, fairness and balance of those comments rests solely with the agency head.

**RESPONSE provided by the Secretary, Department of Transport and the Chief Executive, VicRoads**



**Department of Transport**

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Ref: DOC/11/239337  
File: FOL/10/57088

Mr D D R Pearson  
Auditor-General  
Victorian Auditor-General's Office  
Level 24, 35 Collins Street  
**MELBOURNE VIC 3000**

Dear Mr <sup>de s</sup> Pearson

**PROPOSED AUDIT REPORT – DEVELOPING CYCLING AS A SAFE AND APPEALING MODE OF TRANSPORT**

We refer to the above proposed report enclosed with your letter of 22 July 2011.

We note the agreed changes made to the proposed report prior to tabling.

We confirm the Department has adopted procedures to develop and finalise implementation plans and evaluation frameworks earlier in the development process of subsequent strategies, and will strive to improve in this regard.

The report's recommendations provide positive and constructive guidance for the Department and VicRoads to continue to develop cycling as a safe and appealing mode of transport for Victorians, and to this end we accept all six of your recommendations.

Yours sincerely

**JIM BETTS**  
Secretary  
Department of Transport

5 / 8 / 2011

**GARY LIDDLE**  
Chief Executive  
VicRoads

5 / 8 / 2011





**RESPONSE provided by the Chief Executive, Parks Victoria**



4 August 2011

Mr D D R Pearson  
Auditor-General  
Victorian Auditor-General's Office  
Level 24, 35 Collins Street  
MELBOURNE 3000

**Bill Jackson**  
Chief Executive  
Director, National Parks

Level 10  
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Melbourne Victoria 3000 Australia  
(Executive Assistant - Dianne Kinsey)  
**Telephone 03 8627 4878**  
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Dear Mr Pearson

**Performance Audit: Developing Cycling as a Safe and Appealing Mode of Transport**

Thank you for your letter of 22 July 2011 regarding the Audit Report *Developing cycling as a safe and appealing mode of transport* and your invitation to Parks Victoria to provide submissions or comments for inclusion in the report, consistent with section 16(3)(b) of the *Audit Act 1994*.

Parks Victoria was consulted as a stakeholder in the preparation of the report and provided oral and written submissions to the Victorian Auditor-General's Office. Our interest in this matter relates to our role in planning the Metropolitan Trail Network (MTN) for Melbourne and assisting in the development of the network through grant funding and coordination of the delivery of government funded shared trail projects.

The Metropolitan Trail Network has a recreational focus providing opportunities for cyclists, walkers and other trail users to recreate in pleasant open space settings. The network also provides routes for cycling as a mode of transport and overlaps with the Principal Bicycle Network. The motivations for cycling need to be understood as a complex of transport, recreational, lifestyle and other factors and the role of infrastructure and settings is important to achieving multiple outcomes for health, wellbeing, sustainability, liveability, transport and recreation. Parks Victoria has championed the Healthy Parks Healthy People connection in pursuit of these goals.

Parks Victoria notes and supports Recommendation 6: that the *Department of Transport and VicRoads should in consultation with other managers, review and update guidance on the construction, maintenance, auditing and retrofitting of shared paths and agree on the maintenance arrangements for the finalised Principal Bicycle Network*. We look forward to participating in such a review.

Thank you again for the opportunity to provide a response to the report.

Yours sincerely

A handwritten signature in black ink, appearing to read "Bill Jackson".

Bill Jackson  
Chief Executive

**Healthy Parks**  
Healthy People

**RESPONSE provided by the Director City Planning and Infrastructure, City of Melbourne**



**CITY OF MELBOURNE**

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3 August 2011

D D R Pearson  
Auditor-General  
Level 24  
35 Collins St  
MELBOURNE VIC 3000

Dear Auditor-General

**PERFORMANCE AUDIT DEVELOPING CYCLING AS A SAFE AND APPEALING MODE OF TRANSPORT**

I refer to your letter dated 22 July 2011 and your proposed report on Developing Cycling as a Safe and Appealing mode of Transport.

Thank you for the opportunity to participate in the Audit. Cycling is an important and growing means of transport in and to the City of Melbourne and your investigations are timely.

I believe that your report covers the issues well and I am particularly pleased to see the issue of safety given a high prominence.

I expect that your recommendations will make an important contribution to progression of cycling as a respected means of travel within Melbourne.

Yours sincerely

**Geoff Lawler**  
Director City Planning and Infrastructure  
CoM reference 6578539 SR 1611288

**RESPONSE provided by the Directory City Works and Development, City of Darebin**



In reply please quote A1119459  
Enquiries -  
Your reference

5 August 2011

Mr Ray Winn  
Victorian Auditor General's Office  
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Dear Ray

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**PROPOSED AUDIT REPORT: 'DEVELOPING CYCLING AS A SAFE AND APPEALING MODE OF TRANSPORT'**

Thank you for providing the draft of 'Developing cycling as a safe and appealing mode of transport Report' to us for comment. We do not have any further comments to make on the content of the report other than that we support the conclusions and recommendations contained within the document.

I would also like to take the opportunity to thank the project team for consulting with local government in a meaningful way. We also thank the project team for engaging with, and seeking comments from, Darebin City Council.

Yours sincerely

Michael Ballock  
Director City Works and Development

Northland Customer Service Centre: Northland Shopping Centre, Murray Road, Preston  
Northcote Customer Service Centre: 32-38 Separation Street, Northcote  
Reservoir Customer Service Centre: Reservoir Civic Centre, 23 Edwardes Street, Reservoir



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