vicroads

SmartRoads
Connecting Communities

keeping victorians connected

Contents

Foreword

VicRoads is changing the way we use and operate our road network so Victoria remains a liveable and sustainable state.

We need a smarter approach to managing our road network – one that helps resolve competing interests for limited available road space, makes the best use of our existing roads and helps people to make smarter choices about what type of transport to use and when.

While new road links play an important role in a growing state, we must also better manage our existing road network.

SmartRoads provides a long-term approach for operating Victoria's road network that makes it more efficient and safer, and supports the development of activity centres as places where people live and work.

By giving particular modes of transport priority on certain roads and at particular times of the day, *SmartRoads* will encourage smarter use of Victoria's road system.

Under the *SmartRoads* plan, certain routes will be managed to work better for cars while other routes will be managed to work better for public transport, cyclists and pedestrians; however, all road users will continue to have access to all roads.

SmartRoads seeks to provide a balance between competing interests for road space and managing congestion and safety on key arterial roads, while supporting the development of a sustainable transport system into the future.

We are committed to continuing to consult and work collaboratively with all stakeholders, particularly local government, relevant government departments, bus and tram operators and other road user groups to ensure that the *SmartRoads* plan continues to meet Victoria's transport and community needs.

Gary Liddle
VicRoads Chief Executive

Victoria's road network

Overview

Victoria's road network is vital for the economic and social development of the state. Our roads connect key transport hubs like our ports and airports, allow us to travel to work and school, connect with family and friends, and access community services.

Road congestion has an impact on people in cars; it affects the reliability of on-road public transport services and the capacity of businesses to move goods and services, in turn challenging our liveability and economic competitiveness.

While there will always be a need to maintain quality roads and increase capacity by building new roads and public transport infrastructure, it is becoming increasingly important to get more out of the existing network.

A smarter and more proactive approach to operating the existing road network across Victoria is required to balance the competing demands for limited road space, reduce the social and economic costs of congestion and minimise impacts on the environment.

VicRoads has developed a framework, in partnership with key stakeholders, for how Victoria's road network will need to operate now and into the future. *SmartRoads* is an integrated tool that aims to better manage the use of our roads and better link transport to adjacent land use.

There are a number of important objectives for an integrated and sustainable transport network – efficiency, coordination, reliability, environmental sustainability, land use integration and safety. *SmartRoads* provides significant support to delivering on these objectives.

SmartRoads shows how to make best use of the network by assigning priority to different modes of transport at particular times of the day.

SmartRoads will play an important role in the development of future road projects and integrating transport and land use planning in a growing state.

Part of an overall plan

SmartRoads has been developed to improve the long-term operational management of arterial roads across Victoria. The plan provides the operational direction that supports broader strategies around land use and transport.

VicRoads and other relevant stakeholders will use SmartRoads to inform decisions that affect the way the arterial road network operates.

SmartRoads will underpin future on-road transport strategies and respond to land use changes and community aspirations in a growing and changing state.

Managing congestion

There is no single or simple solution to managing congestion on our roads. Sustainable management of congestion will require an integrated approach involving better management of the existing network, building new infrastructure, visionary land use planning, encouraging sustainable transport modes, and changes in behaviour by individuals, business and all levels of government.

The key strategies for effectively managing congestion are:

Reducing the overall demand for travel by ensuring that land use planning, and the community objectives it embodies, is coordinated with transport management policies.

Supporting and encouraging higher occupancy and sustainable travel modes, such as trams, buses, cycling and walking in higher density activity centres through allocation of road space, traffic signal priority and information for road users to make smarter travel choices.

Facilitating access and mobility for trucks on appropriate truck routes, particularly at times of the day that reduce the impact on communities.

Increasing the reliability of travel times for road users by the better management of and response to incidents.

Targeting investment in new transport links, such as in growth areas, and addressing key congestion hot spots in built-up areas.

SmartRoads

A new approach to managing our road network

SmartRoads provides a new proactive approach to managing Victoria's arterial road network that strongly links transport decisions with land use planning. This means that decisions that affect arterial roads and road users will better consider the effects on the surrounding community, city structures and the environment.

SmartRoads ensures the most effective use is made of the limited available road space for a more sustainable transport future. It also recognises the importance of activities areas as places to live, work and enjoy. Furthermore, it encourages people to choose sustainable modes of transport whilst maintaining efficient truck movement.

SmartRoads sets out an approach for managing the many competing demands for limited road space. Depending on the time of day, some roads will be given bus or tram priority, while other roads provide an alternative route for through traffic. Under the *SmartRoads* plan, people will be encouraged to walk and cycle by making places more pedestrian-friendly and ensuring cyclists have improved access to activity centres and public transport services.

As a means of resolving the many interests for use of an arterial road, the plan provides a set of guiding principles for road use by transport mode, place of activity and time of day.

Partnerships

For *SmartRoads* to work, partnerships are needed across all levels of government to ensure land use planning and transport decisions support a sustainable vision for Victoria.

SmartRoads has been developed with extensive consultation with local government, government agencies and relevant stakeholders over the past several years.

Guiding principles of the SmartRoads plan for Victoria

SmartRoads recognises the increasing role that buses, trams, trucks and bicycles play in moving people and goods around the network. It also recognises that good access for pedestrians needs to be a key element of the transport system.

Victoria's road network needs to support population growth and the ever increasing demands from a wide range of road users. *SmartRoads* is a more active approach to allocating priority that separates, where possible, many of the resultant conflicts by route, place and time of day.

Road Use Hierarchy

The set of guiding principles that allocates priority road use by transport mode, place and time of day is called the Road Use Hierarchy. These principles are being used to determine the priority use of arterial roads in Victoria.

The Road Use Hierarchy principles are:

By mode

Traditional road hierarchies have categorised roads in terms of their broad function, ie freeways, highways, main roads and local roads. Instead, *SmartRoads* focuses on a hierarchy based on the users of the road network.

Giving each transport mode priority on different roads across a network helps resolve competing demands for road space.

By place

Activity centres are areas that provide a concentration of business, shopping, working and leisure, and are of great importance to the liveability of cities and towns.

SmartRoads applies to a number of different types of activity centres including the large activities areas like Dandenong, Broadmeadows, Frankston, Ringwood, Footscray, Box Hill and Melbourne's CBD. The plan also applies to smaller activity centres, strip-shopping centres and regional centres.

Activity centres in the form of strip-shopping centres present an additional challenge to managing congestion and the competing demands on arterial roads. There are usually conflicts between all modes of transport in these centres and the resulting congestion can detract from the vibrancy, amenity and identity of the area. Providing for larger numbers of pedestrians to safely and easily move across arterial roads in these centres is increasingly important, as is the movement of public transport.

A key objective is to reduce the level of 'through' traffic and promote access to centres via alternative transport modes. This will be achieved by designating and promoting certain arterial roads as the preferred routes for traffic.

Traffic will then be encouraged to use these routes, allowing priority and space to be made available on other roads for other modes like trams, buses, pedestrians and cyclists.

By time

The principle for road use priority may change for different periods of the day depending on travel demand and the adjacent land use and activity. The needs of each mode of transport vary throughout the day and also vary according to the day of the week and time of the year.

The four key time periods for road use are:

- AM peak (morning)
- High off-peak (between AM and PM peak)
- PM peak (afternoon)
- Off peak (evening)

For those commuters in cars, buses and trams, or on bicycles or motorcycles, the morning and afternoon peaks are the more critical periods.

Activity centres and strip-shopping centres along arterial roads generally have higher pedestrian demands in the periods between the morning and afternoon peaks. Time-based management of these different priorities will help to resolve competing demands throughout the day.

Part of the Road Use Hierarchy map for metropolitan Melbourne

Route types

- Preferred traffic route
- Tram priority route
- Bus priority route
- Pedestrian priority area
- Bicycle priority route
- Traffic route

Developing SmartRoads

VicRoads has been working in partnership with a broad range of relevant stakeholders in developing *SmartRoads*.

SmartRoads has been developed in two stages with roads first being assigned a Road Use Hierarchy.

With intersections being the primary control points for the management of the road network, the Road Use Hierarchy is translated into priority movements at intersections. These are referred to as Network Operating Plans.

Network Operating Plans have been developed for each of the 31 local government areas across Melbourne. Plans are also being developed for other towns and cities across Victoria.

Local roads are particularly significant in Victoria and play an equally important role in connecting people to employment and essential services. VicRoads is working with councils to facilitate better outcomes for local roads, where required, to achieve the full benefits of the *SmartRoads* plan.

Implementing SmartRoads

The implementation of *SmartRoads* will be assisted by smarter technologies, both on-road and in vehicles. The ability to track trams, buses and trucks in real-time and link this information to the operation of the traffic signal system will greatly assist the operation of the road network into the future.

The following technologies will help achieve the objectives of *SmartRoads*:

- More effective use of traffic signals including:
  - allowing extra time for trams and buses if they are running behind schedule
  - reducing delays for pedestrians in areas of high pedestrian activity
  - improving traffic signal coordination to assist with traffic flow.
- More responsive intelligent pedestrian crossings including:
  - detection technology that allocates crossing times based on the presence of pedestrians on the crossing.
- Freeway management systems including:
  - technology such as variable message signs to alert road users of hazards ahead and better manage incidents on the freeway
  - freeway ramp signals to also manage the demand and ensure optimal traffic flow.
- Providing real-time traffic information including:
  - information being made available to road users to make smarter travel choices.

Using SmartRoads to assess new projects

SmartRoads will inform the consideration of all new road proposals, from major infrastructure projects to minor works, as well as land use development with implications on the road network.

An assessment process is used to determine whether a proposed land use change or changes to the road operation support the objectives of the Network Operating Plan.

The assessment includes all the roads and intersections that are likely to be affected by the proposal.

The assessment can be conducted for all time periods across the day or for a specific time period that the proposal is targeting (eg AM peak). Based on *SmartRoads*, each transport mode is assessed at each intersection ie trams, buses, freight, bicycles, pedestrians and other general traffic.

The assessment provides decision-makers with information about the trade-offs between transport modes and across a road network.

An example of priority modes at an activity centre

Benefits of SmartRoads

For the road network

SmartRoads is a key planning tool to ensure better decisions are made by considering strategic and wider network objectives in the operation of the road network.

The SmartRoads process will better inform decisions about a number of aspects of the network including:

- allocating public transport priority
- allocating road space to competing transport modes
- improving traffic flow at highly congested intersections
- responding to traffic incidents
- controlling access to and from the arterial network
- supporting events and community activities
- managing parking
- planning for growth areas
- planning for the development of activity centres.

For road users

Over time, road users can expect:

- greater priority being given to trams and buses on designated routes
- more opportunities created for cycling and walking
- improvements to the operation of roads that provide better alternatives for through traffic including trucks around activity centres
- better information about travel choices
- more vibrant, connected activity centres
- a change in the nature of trips and travel, with public transport, walking and cycling being recognised as increasingly important transport modes.

Further information

For more information about SmartRoads visit the VicRoads
website at vicroads.vic.gov.au/SmartRoads