

**MELTON DUPLICATION AND ELECTRIFICATION  
INFRASTRUCTURE AUSTRALIA**

**REFORM AND INVESTMENT FRAMEWORK**

**Summary Template  
and  
Templates for Stages 1-6**

October 2009

## Proposal Summary (2 pages, excluding maps)

Initiative Name:	Melton Duplication and Electrification
Location (State/Region(or City)/ Locality):	Melbourne, (Core Scope Benefits Inner Melbourne, Outer Western Melbourne, Ballarat)  (Incremental scope to provide benefits for Geelong, Bendigo Corridors or Wyndham Growth Area at marginal cost under investigation)
Name of Proponent Entity:	Victorian Department of Transport
Contact (Name, Position, phone/e-mail):	Ray Kinnear Director, Strategic Planning and Policy Public Transport Division Tel: 03 9655 6500 Email: <a href="mailto:ray.kinnear@transport.vic.gov.au">ray.kinnear@transport.vic.gov.au</a>
Project Description:	<ul style="list-style-type: none"> <li>• Melbourne @ 5 million forecasts significant population growth for the Melton – Caroline Springs and Wyndham Growth Areas to 2036 and emphasizes the importance of connections to Ballarat. To accommodate this growth, the Victorian Transport Plan (VTP) proposes to upgrade the Melton/ Ballarat Line to overcome the constraints of single track sections, widely spaced passing loops and train passenger carrying capacity constraints to Melton of a diesel hauled passenger train.</li> <li>• The core scope of this project involves a combination of track duplication and electrification between Sunshine and Melton and additional passing loops between Melton and Ballarat. This will enable an improved electrified suburban service to operate from Melton via the suburban network and would also include additional passing loops on the Ballarat corridor beyond Melton to improve the capacity, regularity and reliability of peak and contra-peak Ballarat/ Wendouree services.</li> <li>• A number of potential incremental/ marginal investments that could realize appreciable benefits for services between Geelong, Bendigo and Wyndham Vale and the CBD have also been identified that could be packaged with this project. Upon the implementation of Regional Rail Link and Melbourne Metro One, Melton Rail Upgrade will enable more peak and contra-peak services on these other lines to be provided if there are modest infrastructure upgrades are included in this project's scope. The merit and scope of these upgrades are currently under investigation, but could include:             <ul style="list-style-type: none"> <li>a) additional passing loops and line speed improvements at selected locations on the Bendigo line</li> <li>b) duplication of short sections of remaining single track on the Geelong line</li> <li>c) additional stations and complementing track work between Wyndham Vale and Deer Park to serve the growing Wyndham Growth Area.</li> </ul> </li> <li>• Figure 1 indicates the location of the core scope of the project in context of the Melbourne metropolitan area, whilst Figure 2 focuses on the section between Deer Park and Melton.</li> </ul>

Rail Extensions and Electrifications

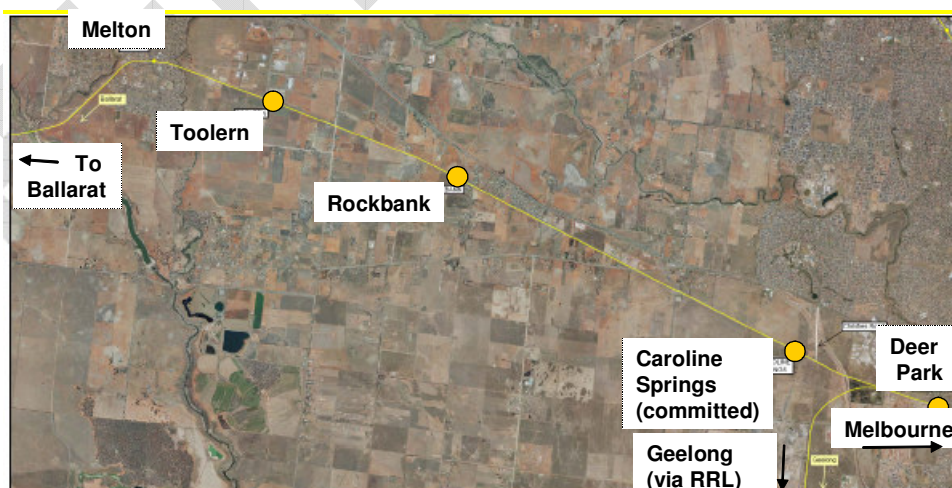


Legend

- New or upgraded railway station
- Railway station
- Railway
- South Morang rail extension
- Cranbourne East extension
- Sunbury electrification
- Melton electrification

Source: Department of Transport 2008

Figure 1: Location of Melton Electrification



**Figure 2: Melton to Deer Park Section**

- Refer to attachment

**Theme alignment**

- **Transforming our cities**

The project will:

- Improves accessibility and provides a greater pool of employees to knowledge-based, nationally important industries in Inner Melbourne;
- Provides those living in Melton- Caroline Springs Growth Area and Ballarat with significantly improved access to employment and education opportunities in Inner Melbourne, thereby improving human capital utilization. This includes benefitting some of the most socially disadvantaged areas in Melbourne. There could also be improved accessibility to those in Geelong, Bendigo and Wyndham Vale Growth Area.
- Enable transit orientated developments in growth areas along a rail service that can meet the demand, including a proposed 60,000 population mixed use development around Toolern station.
- Support urban consolidation and infill in established areas, including supporting the development of Footscray Central Activities District.

- **Competitive International Gateways, and**

- **A National Freight Network**

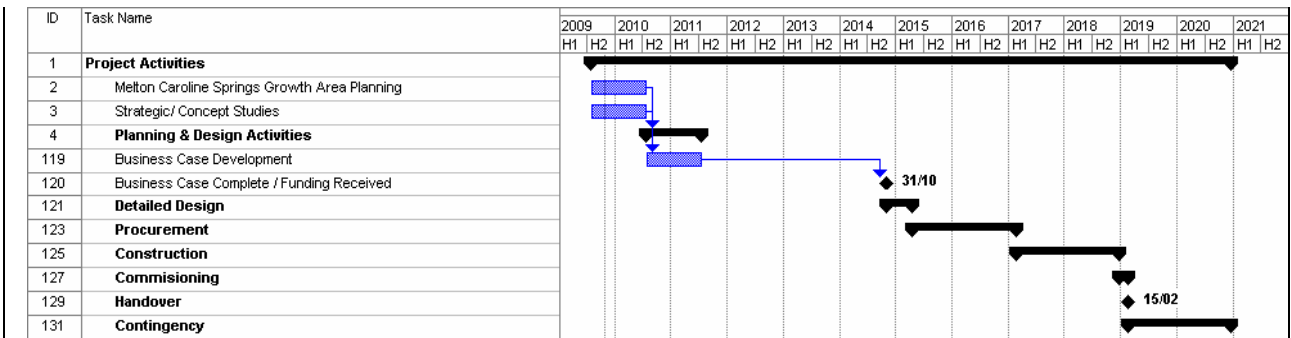
The project will also avoid unacceptable congestion on Melbourne’s busiest traffic corridors serving the port and inner Melbourne including the West Gate Freeway and Footscray, Dynon and Ballarat Roads.

The project will also provide congestion relief to the Western Highway (linking Melbourne to Adelaide) and the Western Ring Road. These roads are on the national road network.

Capital Cost of Initiative by Proponent (\$M, nominal, undiscounted):	(high level cost estimate)
Commonwealth contribution sought by Proponent, and cash flow in financial years (\$M, nominal, undiscounted):	See general statement on Commonwealth and State contributions.
Other funding (source/amount/cash flow) (\$M, nominal, undiscounted):	To be determined
BCR by Proponent excluding Wider Economic Benefits	To be determined

**High level development and implementation program**

A high level program is provided in Figure 3 and is based on delivery milestones identified in the Victorian Transport Plan of construction commencing in 2017/18. However, urban planning and demand forecasting work completed to date indicate that the project, as a stage or in its entirety may need to be brought forward. This will be dependent on the outcome of Growth Area Framework Planning and Staging. The project team is currently undertaking strategic and concept studies to inform this process. Upon better establishing the strategic context, business case development can then proceed. As indicated by the program, there is ample float to bring a stage forward if required.



**Figure 3: Current Program for Melton Rail Upgrade Project**

Confidentiality

See general statement on confidentiality.

Final Draft

# Templates for Individual Stages in the Reform and Investment Framework

Stage 1: Goal Definition	
Goal Statements	<p>Victoria aspires to have an integrated and sustainable transport system that contributes to an inclusive, prosperous and environmentally responsible Victoria and Australia.</p> <p>This vision will be achieved by:</p> <ul style="list-style-type: none"> <li>• Long term reshaping of the city to achieve more sustainable urban development patterns</li> <li>• Managing congestion for all transport modes, particularly in the inner and established areas</li> <li>• Supporting outer urban growth in managed growth areas served by public transport</li> <li>• Supporting economic growth by improving efficiency for freight and commercial traffic</li> <li>• Enabling carbon emission reduction through reduced travel distances, use of more sustainable modes and increased efficiency</li> <li>• Addressing social disadvantage caused by mismatch between housing location, activities/jobs and transport connections</li> <li>• Providing a safer transport system</li> <li>• Increasing the resilience of Victoria's transport system by planning for future challenges</li> </ul> <p>This vision and associated objectives are more fully explained in a number of policy documents which have been development under the direction of the current State government:</p> <p><b>Growing Victoria Together</b> is a vision that articulates what is important to Victorians and the priorities the Government has set to build a better society. The Victorian Government's vision is that by 2010 Victoria will be a state with:</p> <ul style="list-style-type: none"> <li>• A thriving economy</li> <li>• Quality health and education</li> <li>• A healthy environment</li> <li>• Caring communities</li> <li>• A vibrant democracy</li> </ul> <p>This policy set a target to double the proportion of motorised travel in Melbourne that is made by public transport by 2020</p> <p><b><u>Transport – Land Use Goals</u></b></p> <p><b>Melbourne 2030 and Melbourne @ 5 Million</b> together set out the future growth of Melbourne, up to a population growth of five million. Outward growth is being</p>

## Stage 1: Goal Definition

channelled into five growth areas enforced by an Urban Growth Boundary. Four of the growth corridors are along existing rail lines and a rail extension is planned into the fifth corridor. Infill development is directed at Activity Centres in established suburbs, with all but a handful of Centres are based on existing rail stations. Melbourne @ 5 Million outlines the Government's intention to focus on both central Melbourne and six other Central Activities Districts, all serviced by rail, in order to bring employment closer to locations of residential development

**Moving Forward: Making Provincial Victoria the Best Place to Live, Work and Invest** The Victorian Government's provincial economic statement aims to drive further growth and development in regional cities, communities and industries, and attract more people, jobs and investment to regional and rural areas. An important component of this is creating new transport connections and building better freight and supply chain links.

**Victorian Transport Plan** outlines the Government's strategy for integrating transport and land use, developing capacity and addressing key challenges. A significant \$38 billion project pipeline to develop the transport system over the short, medium and long term is detailed. Melton Rail Upgrade has been identified in the Victorian Transport Plan.

**Freight Futures** Freight Futures is the Victorian Government's long-term strategy to shape an efficient and sustainable freight network for Victoria that supports the prosperity and liveability of the State. It designates the Principle Freight Routes and provides commitment to a network of metropolitan freight terminals to actively encourage more efficient freight movements within Melbourne by rail and road. A key element of the strategy is to encourage passenger trips to be undertaken by public transport to reduce congestion and improve reliability and travel times for freight.

**Growth Areas:** Melton-Caroline Springs and Wyndham are designated urban growth areas. Key objectives in planning these growth areas are to provide better transport choices, create highly accessible and vibrant activity centres and to respond to climate change and increase environmental sustainability.

### **Economic/ Industry Development Goals**

**Supply Chain Excellence (SCE) Action Plan 2006-2009** Victoria is Australia's major transport and logistics hub, with the largest container port. Improved efficiency of freight operations and reduced congestion for road and rail freight are essential to the maintenance of this sector.

**Victorian Government Agenda for New Manufacturing** This strategy is designed to make Victoria the key centre of manufacturing excellence in the Asia-Pacific region. Achievement of this agenda relies on development of a highly educated workforce that can be accessed by Victorian manufacturers and the provision of strong transport links between companies and to markets.

**Victorian Biotechnical Strategic Development Plan 2007** The plan aims to develop Victoria as one of the world's top five biotechnology locations. This relies



## Stage 1: Goal Definition

	<p>on part to the effective clustering of activities into high productivity precincts, attraction of highly skilled workers and high quality access between activities.</p> <p><b><u>Environment</u></b></p> <p><b>Greenhouse strategy</b> The Commonwealth Government has set a target to reduce Australia's greenhouse gas emissions by 60% from 2000 levels by the year 2050. An increasing use of rail will both contribute to achieving this target and support communities in adjusting to the cost of carbon. Victoria will shortly release its Climate Change Green Paper, outlining policy options to support these developments at the Commonwealth level, including measures to support emission abatement in the transport sector.</p>
<p>Objective Statements</p>	<p>The project objectives are:</p> <ul style="list-style-type: none"> <li>• Promote the growth of knowledge-based, nationally important industries in Melbourne (National/ State Focus);</li> <li>• Avoid unacceptable congestion on Melbourne's busiest rail corridors and associated traffic corridors, including the West Gate Freeway, Western Highway and Footscray, Dynon and Ballarat Roads (National/ State Focus);</li> <li>• Develop integrated transport and land use plans, including driving urban consolidation and transit orientated development in growth areas along transport corridors (State/ Region/ Location Specific Focus); and</li> <li>• Fully utilise infrastructure, including those of major investments such as Regional Rail Link and Melbourne Metro One (National/ State).</li> </ul> <p>The projects aims to do this by:</p> <ul style="list-style-type: none"> <li>• Meeting patronage demand in the medium and long term by increasing the frequency of services in the peak and off-peak period.</li> <li>• Improving service reliability, punctuality and access to transport services.</li> </ul> <p>These objectives relate to goals presented in the goal statement section, particularly Melbourne 2030/ Melbourne @ 5 million, Victorian Transport Plan, Growth Area Plans, Moving Forward: Making Provincial Victoria the Best Place to Live, Work and Invest and Infrastructure Australia's Priorities.</p>
<p>Goal and Objective Alignment</p>	<p>There is high alignment between the project goals and IA's strategic priorities as illustrated in the matrix below.</p>



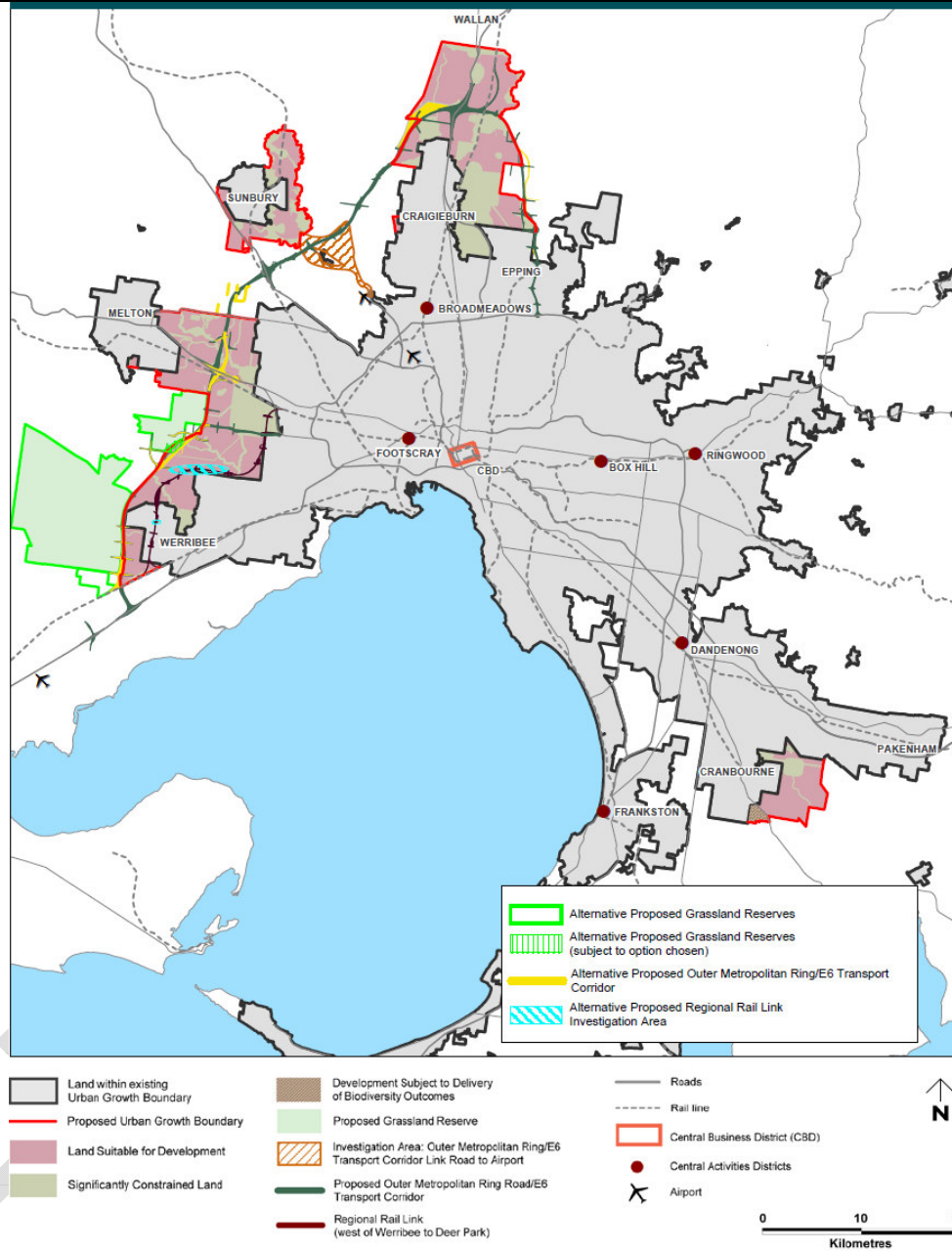
Stage 1: Goal Definition

Infrastructure Australia's Strategic Priorities	Melbourne Metro Project Goal			
	Reduce congestion	Promote knowledge and service based industries	Integrated Transport Land Use Planning – infill and growth areas	Better utilising infrastructure existing/ recent investments
SP1. Expand Australia's productive capacity	High	Medium	Medium	Na
SP2 Increase Australia's productivity	Medium	Medium	Medium	Na
SP3 Diversify Australia's economic capabilities	High	Medium	na	Na
SP4 Build on Australia's global competitive advantages	Medium	Medium	Medium	Na
SP5 Develop our cities and/or regions	High	Medium	High	High
SP6 Reduce green house emissions	High	Na	High	High
SP7 Improve social equity and quality of life	High	na	High	High

## Stage 2: Problem Identification

<p>Problem Identification:</p> <p>Current issue:</p>	<p>The population in the Melton – Caroline Springs area has been growing strongly over recent years, with population growing from 80,000 in 2006 to an estimated 112,000 by 2011 – a growth of over 60%.</p> <p>As this area is in the early stages of development, there are limited employment opportunities in this area. Subsequently, the segment of the workforce employed in non-population related jobs need to travel outside of the region for jobs. Many of these opportunities are located in established employment hubs, of which most of the knowledge based and service sector jobs are located in Inner Melbourne.</p> <p>This is driving rapidly growing demand for trips between Melton/ Caroline and Inner Melbourne. The rail service providing this link as a V/Line diesel hauled regional service that has low passenger carrying capacity. Furthermore, the section from Deer Park to Melton is a single track section that needs to accommodate longer distance express services from Ballarat. This combination of factors constrains the ability to schedule additional services.</p> <p>Whilst Regional Rail Link and Melbourne Metro One will create paths that additional suburban and regional services from Melton and Ballarat could use, the Melton Rail Upgrade project is required to overcome the constraints between Deer Park and Ballarat.</p>
<p>Problem identification:</p> <p>Future scenario:</p>	<p><b>1. Population growth (Socio-demographics)</b></p> <p>Melbourne is the nation's fastest growing capital. Currently at 3.7 million and is expected to reach 5.0 million during the 2030's, which is over a decade earlier than previously forecast in Melbourne2030. Notwithstanding strategies to facilitate increased urban consolidation and significant expansion of the urban area will continue to the foreseeable future. Most (65%) of Melbourne's urban expansion occur in the north and west of the city in areas served by the Northern Rail Group. This includes the population in the City of Melton growing from 80,000 in 2006 to 229,000 residents by 2036, which is equates to an average annual population growth rate of 4.3%.</p>

## Stage 2: Problem Identification



**Figure 3: Location of Growth Areas, including Melton – Caroline Springs Growth Area**

### 2. Access to Employment (Economy)

A consequence of this rapid growth is that a lack of transport, in particular rail capacity into inner Melbourne, will potentially constrain economic growth. This capacity constraint will reduce the ability of employees to access major employment hubs of Melbourne and for employers to access a sufficiently broad and deep pool of appropriately skilled employees.

## Stage 2: Problem Identification

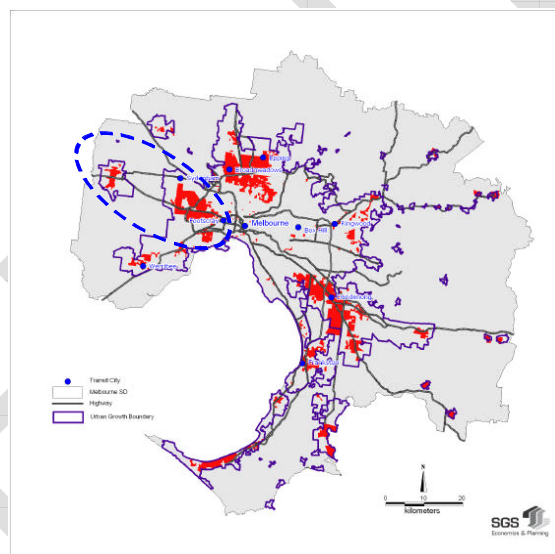
This is a particularly acute issue for the western parts of Melbourne. Currently the population to employment ratio is very low in this area, with knowledge and service based jobs located in Inner Melbourne and to the South East. Whilst there are initiatives to increase local jobs in the west as part of planning new communities and the development of Werribee Employment Precinct and Footscray CAD, it is envisaged that the strength of agglomeration economies in Inner Melbourne will still require a significant proportion of the workforce, particularly the skilled workforce, to access Inner Melbourne.

This reliance on service orientated employment hubs is likely to increase as the Australian economy is becoming increasingly service orientated.

Currently, journey to work rail mode share into the CBD is 60% having significantly increased over the last 5-10 years. Rail share of trips is currently 25%-45% in the immediate surrounding areas, such as Parkville and St Kilda Road, although initiatives such as Regional Rail Link, Melbourne Metro and Tramway Corridors improvement projects will see this market grow and market share potentially increase.

### 3. Energy Prices/ Household Economic Vulnerability

Socio-economically disadvantaged communities are more vulnerable to changes in economic conditions, including petrol prices, inflationary pressures and interest rate increases. These include communities in the Melton Growth Area and between Deer Park and Footscray, which are served by the Melton Corridor (Figure 4).



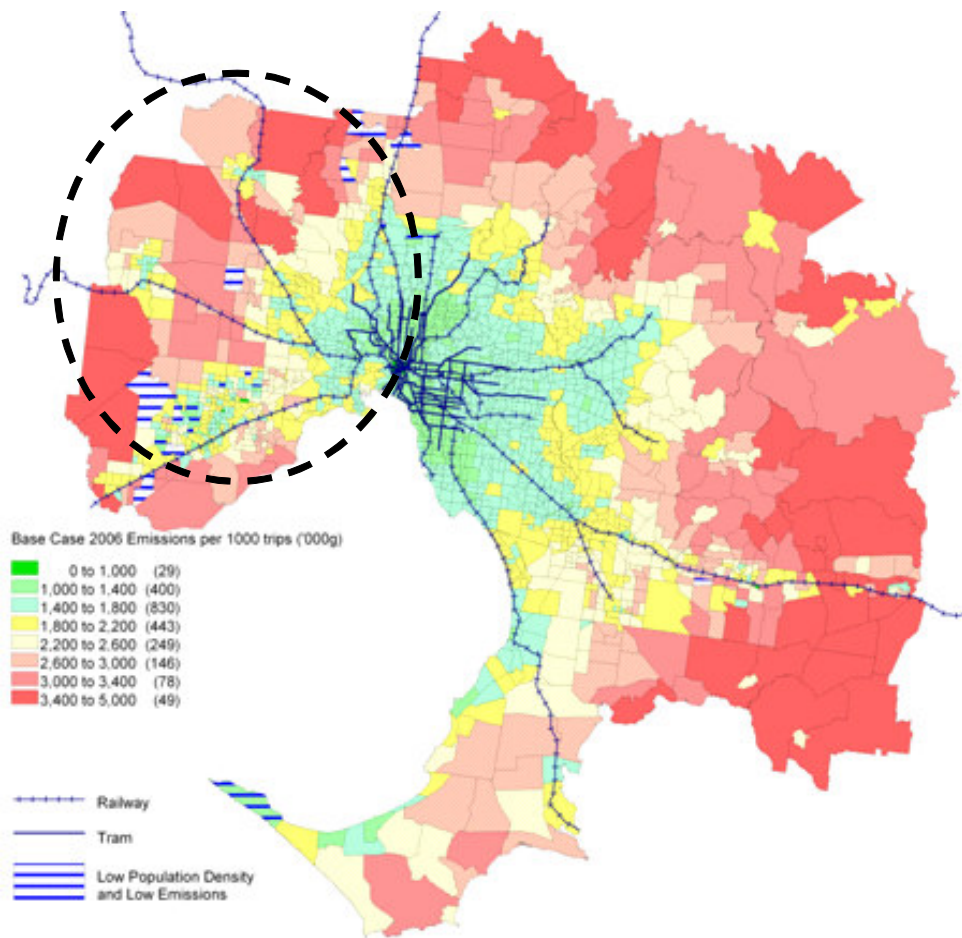
**Figure 4: SEIFA Index – Residential Location of Most Disadvantage Quartile**

### 4. Climate Change

Residents living in outer areas already have higher transport emissions than those in other parts of Melbourne due to their greater dependence on car. A rapidly growing population and limited local/ regional employment opportunities without

## Stage 2: Problem Identification

investment in high capacity public transport to Inner Melbourne will further accentuate car dependency and greenhouse emissions (Figure 5).



**Figure 5: Transport Emissions Generated by Residents Across the Metropolitan Area**

As a result of these trends, future problems are:

- Increasing road congestion as travellers will be “crowded off” the service;
- Dissatisfied rail users as a result of crowding and service unreliability
- Urban development being planned in a manner that is conducive to car as a result of public transport not being able to support a transit orientated land use outcome
- Economic growth in Inner Melbourne being constrained, with a dispersed and less productive employment structure that does not realise

## Stage 2: Problem Identification

agglomeration economies.

Whilst scenario testing needs to be further progressed as part of subsequent stages of project development, the underlying drivers of population growth to the west and accessing knowledge based jobs in Inner Melbourne are strong. Therefore, the need for this project in a range of scenarios appears at this stage to be robust.

Final Draft

## Stage 3: Problem Assessment

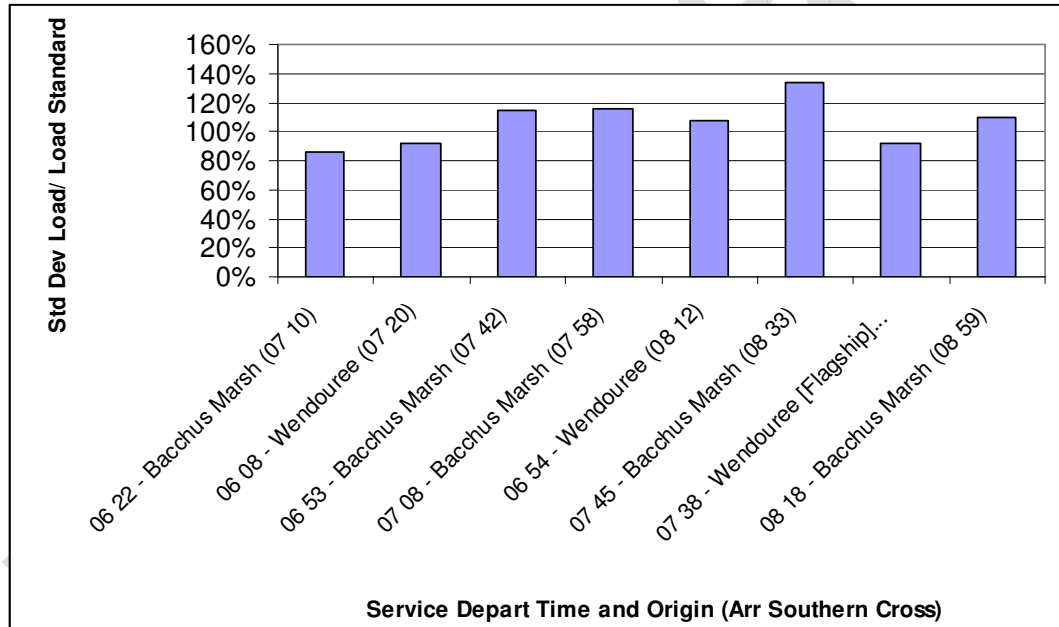
Problem assessment

Melbourne's future development has been based on the availability of sufficient public transport to provide a realistic travel alternative to private motoring. The availability of this capacity is fundamental to the realisation of state's goals.

Current problems

### Overcrowding

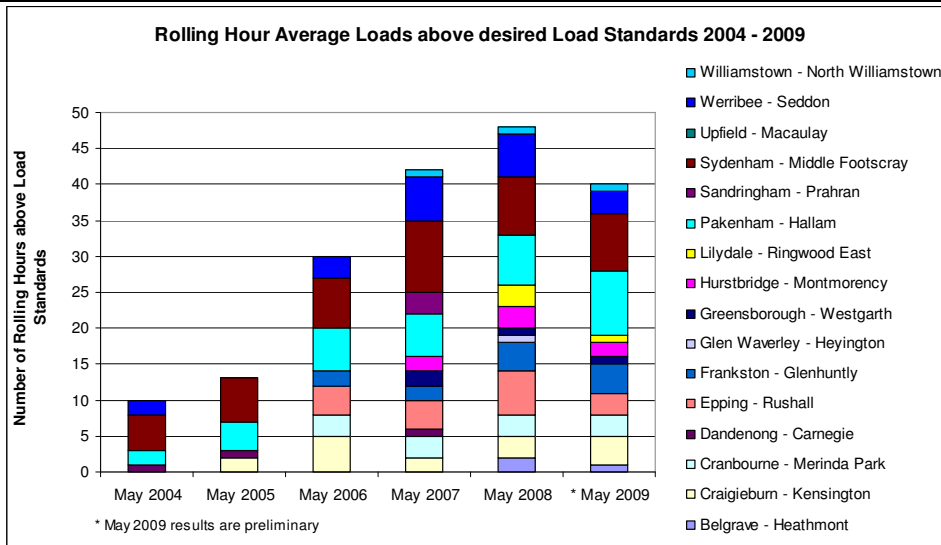
The current problems are best illustrated by the over crowding currently being experienced on the Melton, Bacchus (Figure 6) Marsh and Sydenham (Watergardens) rail services. The Sydenham service is impacted as a proportion of commuters from the Melton area catch the Sydenham service as a result of the Bacchus Marsh/ Melton services being overcrowded. Sydenham services have one of the highest number of services across the network that exceeds desired load standards (Figure 7).



**Figure 6: Comparison of Standard Deviation Actual Loads versus Load Standard – Ballarat/ Bacchus Marsh/ Melton Line (2008/09 – AM Peak Inbound Services)**



## Stage 3: Problem Assessment



**Figure 7: Rolling Hour Average Loads above Desire Load Standards (2004 – 2009)**

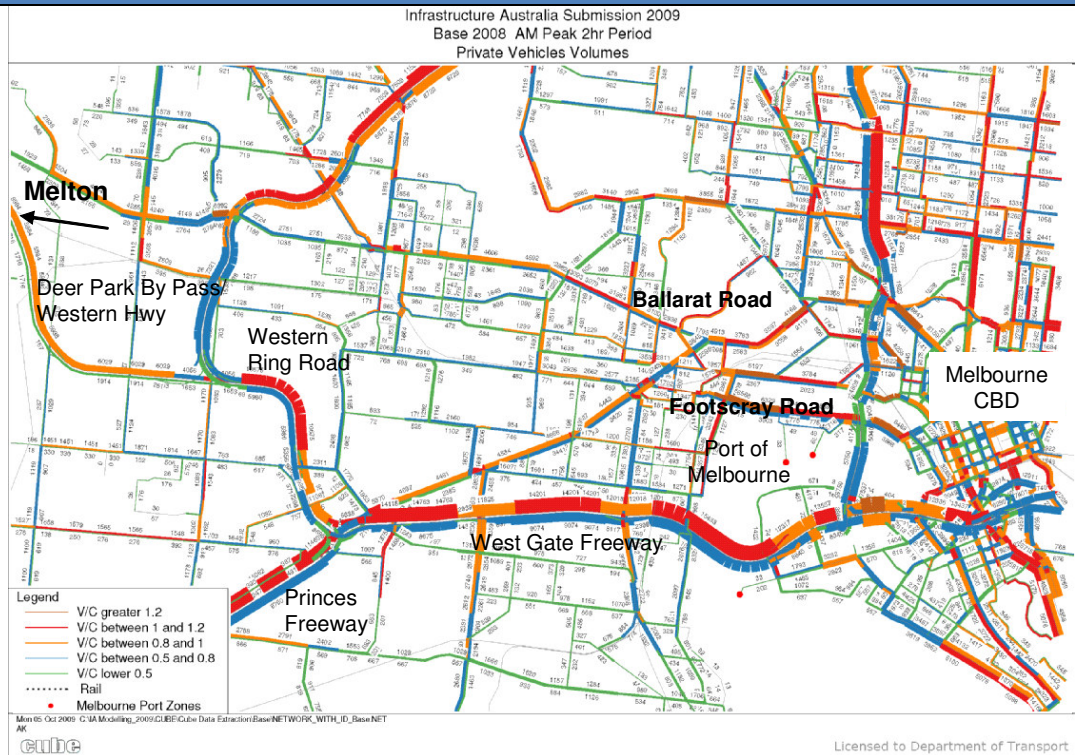
Community concerns about over crowding and passengers being left behind due to over crowding is regularly expressed throughout the media, direct complaints and customer satisfaction surveys. The extent of train overcrowding is shown below. The consequence is that travellers are crowded off rail services onto the road network.

### Road Congestion

Key arterial roads and freeways from the west are highly congested as indicated by the road volume capacity ratio map presented below. In particular, a proportion of traffic from the Melton/ Caroline Springs is congesting the West Gate Freeway, Dynon, Footscray and Ballarat Roads as all of these roads have a ratio in excess of one (Figure 8).

The combination of these two problems reduces accessibility from the west to Inner Melbourne. In particular, this has adverse impacts to freight as roads that access the port are congested. Furthermore, it may deter some people from accessing Inner Melbourne for work or education.

## Stage 3: Problem Assessment



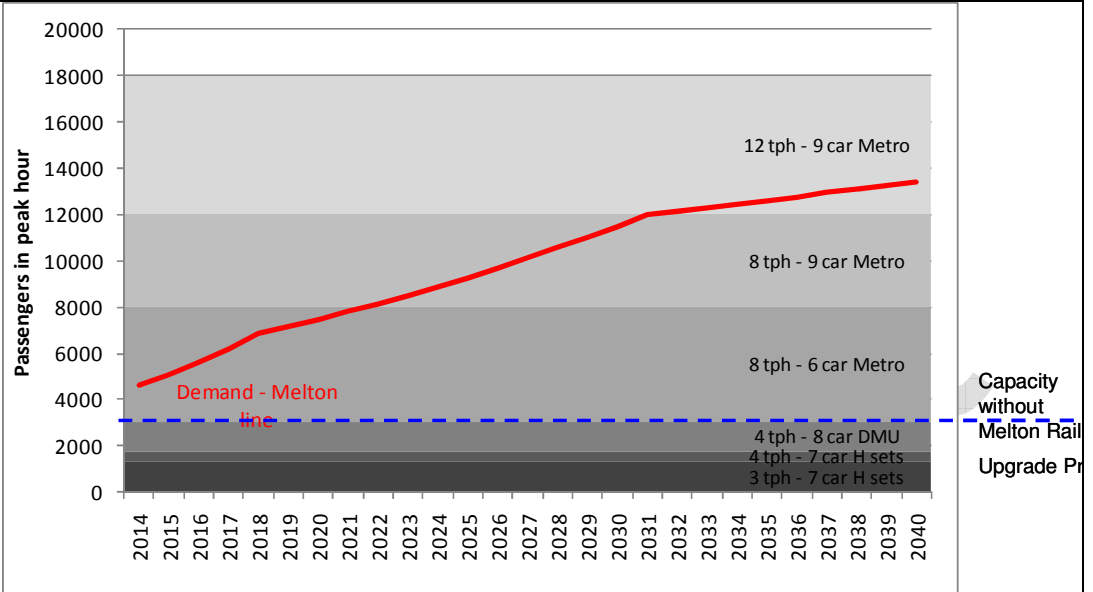
**Figure 8: Modelled 2008 Road Volume – Capacity Ratios**

Future problems

### Rail Capacity Constraint

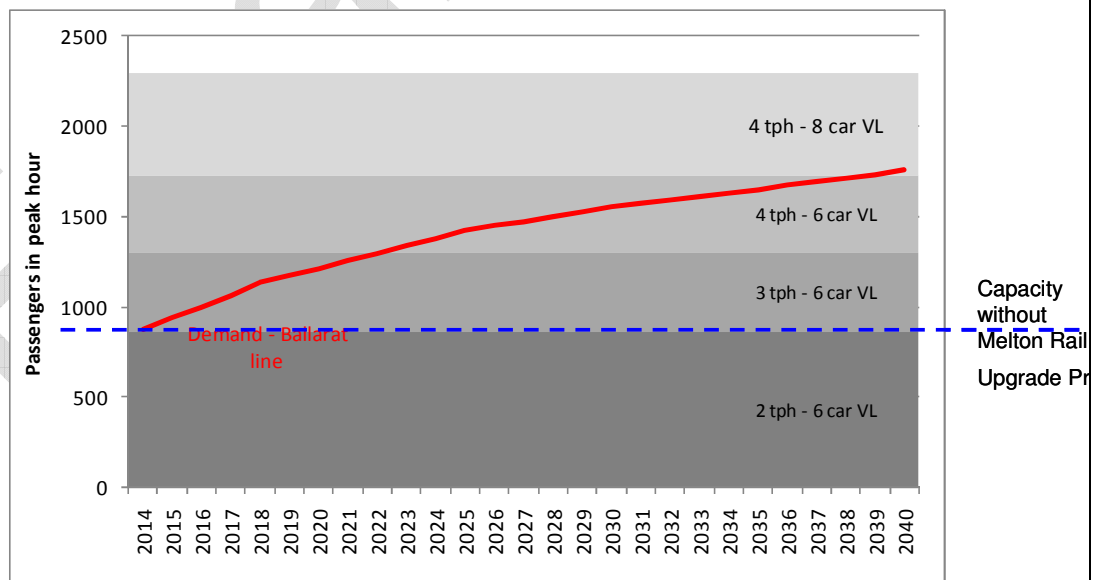
Despite a number of operational initiatives to increase the length of V/Line diesel hauled trains servicing Melton from six to eight cars, preliminary forecasts indicate that this will be insufficient capacity to meet demand. The following figure indicates that the gap between capacity without the project and demand will widen significantly and quickly resulting in travellers diverting to road or the already overcrowded Sydenham line (Figure 9).

Stage 3: Problem Assessment



**Figure 9: Preliminary Critical One Hour AM Peak Demand vs Capacity – Melton Services**

In addition, demand will also exceed capacity for longer distance services on the Ballarat line. Whilst the Regional Rail Link will provide the capacity from Deer Park to the city for additional services, the constraint of a single track with limited passing loops between Ballarat and Deer Park will not enable these additional services to operate (Figure 10).

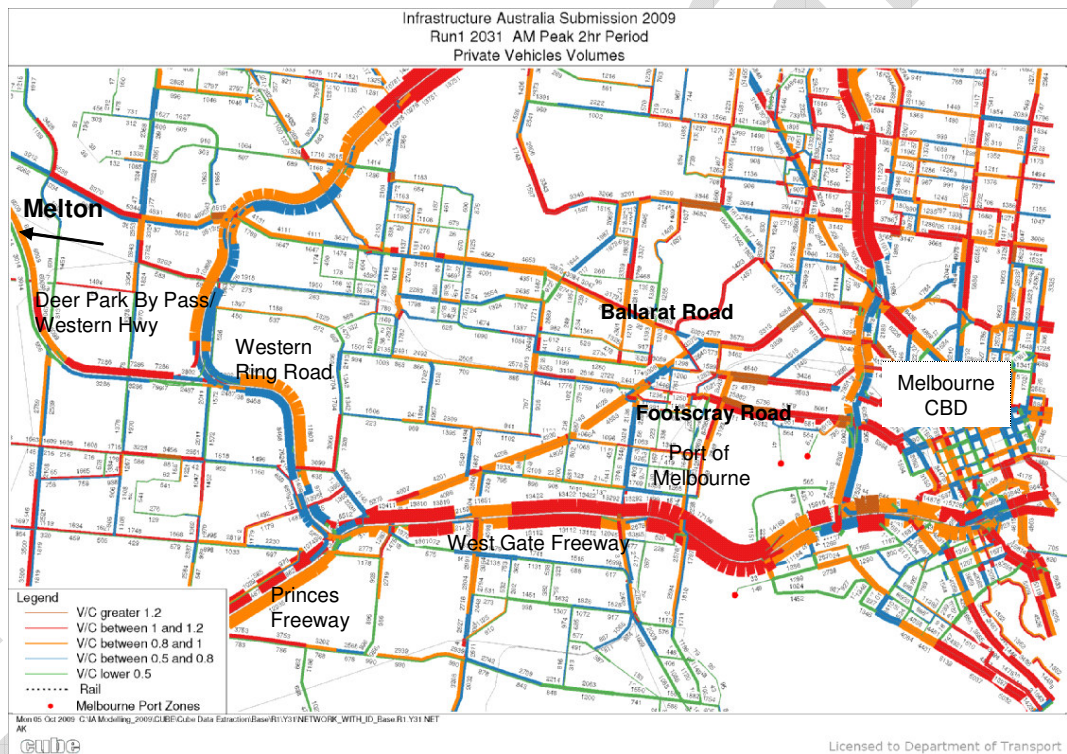


**Figure 10: Preliminary Critical One Hour AM Peak Demand vs Capacity – Ballarat Services**

**Road Congestion**

The cost of road congestion in Melbourne is expected to increase more than four fold by 2036, from \$1.33 billion/year in 2005 to \$5.6 billion/year in 2036 unless action is taken. By 2036 it is estimated that constraints on the public transport network will cost the community an additional \$1.36 billion/year in road congestion. Volume capacity ratios without the project are anticipated to exceed one on a number of major roads (Figure 11).

It is anticipated that the Melton Rail Upgrade will reduce traffic flows on the West Gate Freeway, Deer Park By-Pass, Western Highway and Footscray, Dynon and Ballarat Roads.



**Figure 11: Modelled 2031 2 Hour AM Peak Road Volume – Capacity Ratios**

**Non Realisation of Integrated Land Use and Transport Outcomes**

Planning in growth areas are currently being undertaken on the basis that there will be sufficient rail capacity to accommodate demand induced by land use planning to support public transport. If rail is unable to meet these demands, then the resultant land use and community form will not achieve current planning and sustainability objectives as residents would become more car dependent.

Problem	<i>Identify which are the most pressing problems – i.e. demonstrate which problems are</i>
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### Stage 3: Problem Assessment

Prioritisation *most likely to hinder the achievement of goals and objectives.*

The current prioritisation of problems are:

- a) short term: increasing overcrowding on the Melton line
- b) medium to long term: major overcrowding on the Melton and Ballarat lines
- c) land use planning in growth areas no longer proposes to be integrated with public transport due to rail capacity constraints not being able to accommodate growth in demand
- d) possible operational and overcrowding issues on the Geelong and Bendigo lines; including accommodating growth in Wyndham

## Stage 4: Problem Analysis

Problem  
analysis

For much of its life since 1835, Melbourne has developed as a monocentric city with population growth linked closely to a largely manufacturing based economy. The monocentric city structure comprised a strong central city and a widespread network of significantly smaller lower order activity centres and suburban industrial areas.

This structure was further reinforced in Melbourne's post-war development, which was characterised by sprawling urban development made possible by the low cost private motoring. Initially, private travel was seen an ideal means of opening new suburbs without the high cost of associated with provision of dedicated public transport. Public investment in infrastructure was targeted towards road building. Such was the attraction of private travel that by the mid-70's the viability of public transport was reduced to a point that operations could only be maintained through operating subsidies.

However, private motoring came with significant externality costs. The economic cost of associated with congestion and green house gas emissions are now reasonably well understood. Other costs, such as supporting urban sprawl are recognised but not readily quantifiable. Notwithstanding the existence of these externalities there has been a general reluctance to significantly reform the road pricing. (We note that Dr Ken Henry has flagged the case for road pricing reform as part of the current taxation review.) Instead, governments have responded to these challenges through "second best" pricing strategies through the ongoing subsidy of public transport services.

Since the early-80's public policy recognised the importance of a vibrant public transport as a key element for any successful, globally competitive city. In particular, the Australian economy started to become increasingly service and technology orientated, with the service sector growing faster than traditional labour intensive manufacturing sectors.

However, it has only been in the last decade that government initiatives, community attitudes and the global financial crisis have all aligned to drive significant change in travel demand. Indeed the rapid growth in public transport usage has been faster than the government's ability to respond through the deployment of new services.

In the case of Melbourne, there was sufficient spare capacity within the rail network to accommodate the last two decades of growth. Patronage is at levels not previously seen and further growth can only be accommodated through targeted actions. The current priority is to increase system capacity through relatively low cost initiatives and changed operating practices. However, these gains will soon be exhausted and major investment will be required.

Contemplation of major investment opens the opportunity to expand the rail network into new markets not previously well served by public transport. Improving system coverage and service quality will be key to realising the *Melbourne 2030* goal of 20% mode share by 2020. Specifically, the need for expanded service is two fold:

1. Intense "capital city" type development has expanded beyond the traditional "Hoddle Grid" and now encompasses Parkville, South Bank,



## Stage 4: Problem Analysis

	<p>St. Kilda Rd and Dockland.</p> <ol style="list-style-type: none"> <li>2. Urban growth continues and is directed through <i>Melbourne @ 5m</i> in to growth corridors around the existing rail corridors</li> <li>3. New and existing stations all provide urban renewal opportunities to increase the overall urban density</li> <li>4. Development of Central Activity Centres as part of a transforming the city from a monocentric to polycentric structure.</li> </ol>
<p>Identify fundamental cause, not symptoms, of the problem</p>	<p>The root causes of current problems include:</p> <ul style="list-style-type: none"> <li>• Population growth primarily driven through Commonwealth immigration policy coupled with Melbourne's reputation as one of the world's most liveable cities and strong economy.</li> <li>• A shift in public attitudes towards public transport either in response to the problems associated with car use (e.g. congestion, petrol prices) or as a means to address global challenges such as climate change</li> <li>• An increasingly service orientated economy results in forecast growth in employment occurring at or around existing hubs that are located in Inner Melbourne. This growth occurs due to firms seeking to take advantage of agglomeration economies at these locations. Whilst jobs associated with local population growth will grow in the west, specialised knowledge based employment will be located around existing hubs that makes it difficult to encourage jobs to relocate to the west and growth areas.</li> </ul>



## Stage 5: Option Generation

### REFORM (ESSENTIALLY NON-CAPITAL INVESTMENT) OPTIONS

Option 1	<p><b>Peak/Off Peak Pricing</b></p> <p>In an effort to manage demand; that is encourage demand to shift outside of the peak period, free “early bird” travel was introduced. This has been successful to a limited extent and further opportunities as part of the introduction of the myki smartcard system will be explored.</p> <p>However peak period demand is forecast to continue grow strongly and overwhelm those that are willing to shift their time of travel outside the critical peak. Therefore time based pricing is complementary measure rather than a practical alternative.</p>
Option 2	<p><b>Rail Operational Improvements</b></p> <p>A number of operational improvements have or are being implemented to provide additional capacity on the Melton line. These include providing greater operational consistency across services where possible and extending platforms to enable longer trains (7 trains) to operate.</p> <p>Upon completion of the Sunbury electrification project, rolling stock that was allocated V/Line services to Sunbury will be deployed to run longer trains on the Bacchus Marsh/ Melton line. This will enable additional people to use the service and not divert to car, thereby marginally reducing congestion.</p> <p>However, strong population growth will result in demand overwhelming these marginal capacity gains.</p>
Option 3	<p><i>Short description, etc.</i></p> <p><b>Encourage Employment to Locate in the West</b></p> <p>There are a number of planning investigations underway to determine market appetite and viability of encouraging non population driven jobs to locate in the west. These studies includes:</p> <ol style="list-style-type: none"> <li>a) Werribee Employment Precinct</li> <li>b) Growth Area Framework Planning for Melton – Caroline Springs and Wyndham</li> <li>c) Outer Metropolitan Ring Road Employment Corridor</li> <li>d) Footscray Central Activities District</li> <li>e) Sunshine Principal Activities Centre</li> </ol> <p>Whilst a number of jobs will locate in these areas, knowledge and service orientated firms are expected to locate in or adjacent existing employment</p>

## Stage 5: Option Generation

clusters to take advantage of agglomeration benefits in Inner Melbourne. Underlying demand between Melton and Inner Melbourne is therefore expected to be strong.

Furthermore, a number of the above mentioned site options are along the Melton Rail Corridor, including Footscray, Sunshine and key sites within the Outer Metropolitan Road (Rockbank) and Toolern. Unless the rail is upgraded, the attractiveness of these sites to attract a large potential accessible employment pool may be diminished.

### INVESTMENT OPTIONS

The following is a preliminary overview of options – these options are currently under development and assessment.

Option 1	<p><b>Option 1: Duplication and Electrification to Melton &amp; Passing Loops to Ballarat</b></p> <p>This involves duplicating the existing track between Deer Park West and Melton and electrifying tracks from Sunshine to Melton to enable suburban trains to be introduced. The project also involves providing new or upgrading stations along the corridor, including a new station at Toolern, and providing new stabling and basic maintenance facilities in the vicinity of Melton.</p> <p>This scope will enable all project objectives to be achieved if Regional Rail Link and Melbourne Metro One are in place. If Regional Rail Link is only in place, then appreciable medium term benefits can be realised through track duplication only as it will enable more V/Line diesel hauled services to operate as an interim measure until Melbourne Metro One is completed. A schematic of this option is provided in Figure 12.</p>
Option 2	<p><b>Option 2: Duplication and Electrification to Bacchus Marsh &amp; Passing Loops to Ballarat</b></p> <p>This is similar to Option 1, with the exception that suburban services are provided to Bacchus Marsh which is to the west of Melton. This is shown in Figure 12.</p>
Option 3	<p><b>Option 3: Quadruplication to Melton, Duplication/ Passing Loops to Ballarat.</b></p> <p>This is similar to Option 1, with the exception that this option separates suburban and V/Line regional services between Melton and Deer Park. The additional capacity for V/Line services from Ballarat is realised by duplication or additional passing loops between Melton and Ballarat. This option is shown in Figure 12</p>
Option 4	<p><b>Option 4: New Passing Loops and Speed Improvements on Bendigo Line</b></p>

## Stage 5: Option Generation

	<p>The introduction of Melton suburban services will result in paths being available to run more frequent and higher quality regional services to meet demand for a modest investment. This opportunity is created because V/Line regional services from Melton no longer have to operate.</p> <p>Preliminary investigations have indicated that a more frequent service from Bendigo can be provided with the provision of additional passing loop(s) and track section line speed upgrades. The incremental costs and benefits of this scope and the resultant contribution to wider strategic objectives will be considered as part of this projects' development.</p> <p>This option can overlay options 1 to 3.</p>
Option 5	<p><b>Option 5: New Passing Loop/ Duplication on Geelong Line</b></p> <p>Similar to the Bendigo line, preliminary investigations have indicated that an improvement in service quality on the Geelong line to take advantage of available regional rail paths created by removing Melton V/Line regional rail service at modest cost.</p> <p>This option can overlay options 1 to 3.</p>
Option 6	<p><b>Option 6: Additional Stations/ Capacity for Wyndham Growth Area</b></p> <p>Depending on the outcome of projected growth and development of the Wyndham Growth Area, there may be a need for additional stations or for "short starter" V/Line services to operate. Growth Area Framework Planning is underway, which is underpinned by policies and planning principles that aim to achieve integrated transport and land use outcomes, particularly with respect to encouraging the use of public transport. This will be examined in the next stage of development.</p>



**Figure 12**

Final Draft

## Stage 6: Options Assessment

Infrastructure Australia is not mandating a particular process for moving from a long list of potential options to a short list of lead candidates. The following three-step process is an indicative guide.

Long list	<p>The long list assessment was undertaken in a number of stages:</p> <ol style="list-style-type: none"> <li>1. The Department of Transport has been addressing the system wide need for an expansion strategy since publication of Melbourne 2030 (2000). Early drafts of the Melbourne Train Plan highlighted significant network capacity limitations in the face of patronage growth. The latest plan, the Metropolitan Rail Network Upgrade Program, provides a set by step strategy of system expansion in response to patronage growth, urban growth and freight needs. (Refer to RRL and Melbourne Metro project plan update for details of the Metropolitan Rail Network Upgrade Program).</li> <li>2. The East-West Needs Assessment Study looked specifically at the demand for travel for travel from Melbourne’s growth areas in the west and the CBD and other activity centres to the east. This study concluded that expanding the rail to the west was the most cost effective means to increase the overall capacity of the transport system.</li> <li>3. The Victorian Transport Plan, taking into consideration proposals form the previous two stages, identified that Melton Rail Upgrade was a critical project to enable growth in the Melton – Caroline Springs Growth Area and for Footscray Central Activities District</li> </ol>
Interim list	<p>The Department of Transport, alongside Department of Planning and Community Development and Growth Areas Authority is currently undertaking strategic land use –transport planning for the Melton – Caroline Springs Growth Area. This will assist to define the desirable outcomes for the Melton Rail Corridor, and ensure that it is integrated with the surrounding land use.</p> <p>Further detailed project development for the project will then be undertaken. The current set of options being considered has been described above.</p> <p>The options will be the subject of a comprehensive cost benefits analysis and impact assessment in order to identify a preferred option. The evaluation framework is currently being development taking into consideration requirements of Infrastructure Australia and the State of Victoria.</p>
Short list	<p>The preferred option will then be subject to more detailed assessment and refinement. This will include assessment of sub-options where appropriate. The preferred option will also be assessed against a “do nothing” scenario for inclusion in the project business case.</p>