Appendix B
M2 Urban Design Strategy

LUD 001
Version 01

Purpose:	The purpose of this Appendix is to support LUD 001 - Guideline for the development of an Urban Design Strategy.
Document context:	To be read in conjunction with LUD 001 - Guideline for the development of an Urban Design Strategy.

M2 CITYLINK - TULLAMARINE FREEWAY

URBAN DESIGN STRATEGY

APRIL 2015

gateway to melbourne

Victoria
The Place To Be

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Acknowledgements

M2 Citylink - Tullamarine Freeway
Urban Design Strategy

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VICTORIA State Government | Department of Transport and Planning

Table of Contents

1.0
Executive Summary

Report Structure

The Urban Design Strategy has been organised into five chapters:

1.0 Executive Summary
This chapter provides a summary of the key findings, recommendations and overall urban design vision for the Tullamarine Freeway.

2.0 Introduction
This chapter outlines the background, purpose, vision and key government policies that inform the project, specifically focusing on such matters as – integrated transport, urban design, liveability, climate change and sustainability.

3.0 Urban Design Principles & Objectives
This chapter presents four urban design principles that provide the overarching framework for the urban design response. The four principles are supported by a series of objectives which provide for more detailed specific actions.

4.0 Corridor Analysis
This chapter analyses the freeway corridor and its surrounds to understand the existing site conditions and how this can inform the study. Key attributes and findings are outlined for the twelve corridor analysis topics, including – municipal boundaries; existing and future land uses; view analysis; urban design elements; noise wall types; planting & vegetation zones; open space, waterways & shared user path; geology, soils and climate; advertising; landscape character zones and concluding with a summary of key findings.

5.0 Urban Freeway Elements
This chapter outlines issues/constraints and design opportunities for each of the thirteen urban freeway elements associated with the freeway corridor and its interface. Guidance is provided on design quality and areas where improvements can be implemented as the freeway is upgraded into the future, along with precedent examples.

Executive Summary

The Urban Design Strategy (UDS) has been prepared to provide an overall urban design vision and framework for the future development of the Tullamarine Freeway corridor, similar to recent strategies for the M1 and M80 retrofit upgrades. One important aim is to achieve a higher level of consistency over the length of the freeway given its current diversity, different delivery methods, management and maintenance structures.

The overall urban design vision is to deliver

- An international gateway to Melbourne for domestic and overseas travellers
- Clear way-finding and a unique identity
- Consistent integration with the surrounding urban fabric
- A memorable journey reflecting something of the character of Melbourne as a great Australian city

The UDS has been developed on an understanding of the current policy context. Melbourne continues to undergo significant population growth, particularly in the western and northern regions of the city, which is served by the Tullamarine Freeway.

The UDS proposes four urban design principles that are supported by a series of objectives which outline specific actions. The four urban design principle headings are:

- Identity
- Wayfinding
- Consistency
- Urban Integration

The UDS has been informed by the analysis of the existing freeway corridor and its surrounding context, with key attributes and key findings being identified for twelve topics – municipal boundaries; existing and future land uses; view analysis; urban design elements; noise wall types; planting & vegetation zones; open space, waterways & shared user path; geology, soils and climate; advertising and landscape character zones. The key findings are;

- There will be significant change to the scale and density of the urban fabric abutting the freeway in key development locations, like Fisherman's Bend, E-Gate, Essendon Fields and Melbourne Airport
- High quality urban design elements at major interchanges contributes to the identity of the freeway
- There is an overall lack of urban design consistency as the freeway has been built in many stages
- The road edge interface along the corridor is uneven and variable with few buildings or spaces engaging with the freeway
- The overall visual quality of the planting design and maintenance is inconsistent and below the standard expected as a 'gateway experience to Melbourne'
- Much of the existing landscape buffer and space for trees will be progressively removed with the addition of new traffic lanes
- There are significant areas of parkland and creek reserves adjoining the freeway which contribute to the overall corridor landscape character
- The level of advertising along the freeway is relatively high compared to other freeways and is often poorly integrated
- There is need for a whole of corridor way-finding and advertising strategy to better integrate with the freeway management and signage systems
- There is need for a coordinated colour palette for the whole corridor
- There are important relationships to be coordinated and maintained with key stakeholders, like Essendon Fields and Melbourne Airport

The UDS propose a series of urban freeway elements that anticipate various future development scenarios. Guidance is provided on design quality and areas where improvements can be implemented as the freeway is upgraded into the future, along with precedent examples for each of the following thirteen urban freeway elements:

- noise walls; bridges, barriers & railings; retaining walls; landscape treatments; road edge improvements; gantries, signage & managed motorway; colour themes; inter-change treatments; shared user path; road & feature lighting; water sensitive road design; fences, barriers & screen elements and advertising.

2.0
Introduction

2.1 Background

The M2 Citylink Tullamarine Freeway is a 23 kilometre freeway connecting the M1 West Gate Freeway to the Melbourne Airport with major interchanges at the M79 Calder Freeway and the M80 Ring Road. The freeway is divided into the CityLink section from the M1 Interchange to Bulla Road and the VicRoads section beyond Bulla Road to the Melbourne Airport. The Tullamarine Freeway has been developed in stages over many years with various upgrades to make it one of the most heavily trafficked roads in Melbourne.

Given the next major stage of development is about to occur through the CityLink Tullamarine Widening Project there is a need for an overarching Urban Design Strategy to provide a coordinated urban design vision for the corridor, similar to the recent strategies for the M1 & M80 upgrade projects.

The CityLink Tullamarine Widening Project (CTWP) was announced by government in late 2014 and will significantly increase the road capacity with extra lanes each way and the introduction of a managed motorway, among other initiatives. The project now extends from the M1 Freeway, Burnley/Domain Tunnels all the way to the Melbourne Airport.

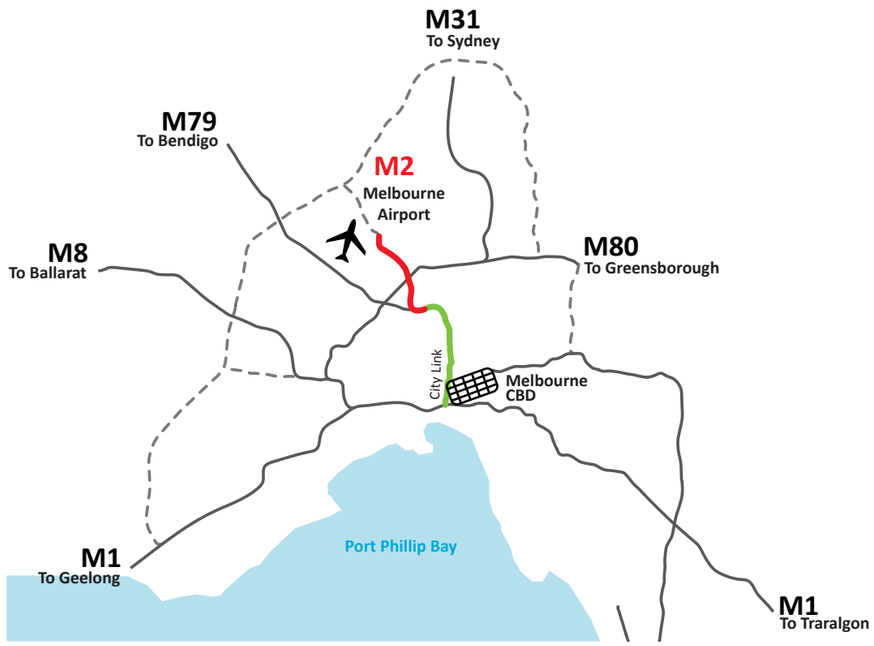
The CityLink Tullamarine Widening (CTW) upgrade project has the following objectives:

- Improve travel time and reliability
- Improve road safety
- Optimise network integration objectives
- Maximise throughput of people and goods
- Improve freeway resilience

2.2 Purpose

The purpose of the Urban Design Strategy (UDS) is to provide an overall urban design vision and framework for the future development of the Tullamarine Freeway corridor. The UDS will guide all designers and decision makers on how the urban design elements will integrate with the overall whole of corridor objectives. The UDS is an aspirational document which draws on the experiences of recent similar strategies for the M1 and M80 Freeway upgrade projects.

The urban design principles and objectives seek to deliver a consistent and high quality approach to architectural, landscape and urban design across the corridor. The principles and objectives are supported by detailed corridor analysis and a set of guidelines for urban freeway elements. The urban freeway elements provide guidance with reference to future design opportunities and precedent benchmark examples. One important aim is to achieve a higher level of consistency over the length of the freeway given its current diversity, different delivery methods, management and maintenance structures.



2.3 Vision

The overall urban design vision for the Tullamarine Freeway is to deliver:

- **An international gateway to Melbourne for domestic and overseas travellers**
- **Clear way-finding and a unique identity**
- **Consistent integration with the surrounding urban fabric**
- **A memorable journey reflecting something of the character of Melbourne as a great Australian city**

Large scale urban freeway up-grade projects like the M2 are very complex in the way they have to negotiate all of the existing constraints and still achieve a high quality outcome.

The challenge for the M2 upgrade will be how to maintain a balance between road infrastructure, high quality landscape, urban design and freeway interface, which abuts local communities.

In the long term, the M2 will increasingly become a highly urban freeway with limited opportunities for landscape given the narrowness of the right of way corridor.

The overall vision needs to include the interface with all of the adjoining freeway users to maximise the urban integration of the road with its setting.

Greater benefits are gained for all stakeholders with an integrated approach. Such benefits include the important contribution of borrowed landscapes, which adjoin the corridor by expanding the apparent visual field of vegetation and built form.

2.4 Policy Context

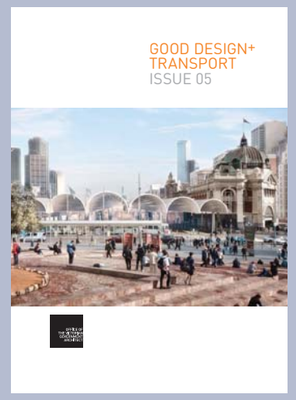
The UDS has been developed based on an understanding of the current policy context. Melbourne continues to undergo significant population growth, particularly in the western and northern regions of the city, which is served by the M2 Tullamarine Freeway.

Key challenges include:

- Population growth and the impacts on major transport networks, particularly freight
- Climate change and depletion of resources
- Community expectations for Melbourne to be a connected city with high liveability values and a quality public realm

The UDS draws in particular upon the Transport Integration Act (2010), Plan Melbourne, OVGA Good Design & Transport, VicRoads Sustainability & Climate Change Strategy (2010) and the Victorian Urban Design Charter (2009). In addition there are various government policy and planning provisions relating to Federal, State and local municipalities covering the area.

In summary the key policy initiatives provide guidance on integrated transport and land use, quality urban design outcomes and environmental sustainability as core values in the design of transport infrastructure.



GOOD DESIGN + TRANSPORT

AUTHOR: Victorian Government Office of the Victorian Government Architects

YEAR: 2012

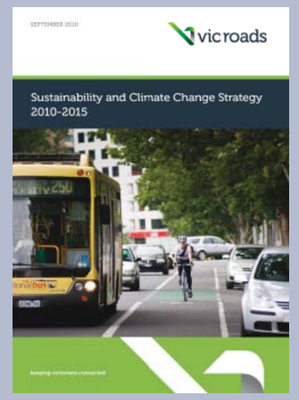
KEY DIRECTIONS:

Functional: Well planned and constructed with appropriate materials and technology that works well for all users.

Sustainable: Promote positive environmental, social, cultural and economic values; assess the long term life cycle implications and future urban renewal opportunities.

Enduring: Relevant across life-spans of many generations; representative of its time and of a high quality.

Enjoyable: Create a desire to experience the journey rather than just pass through.



SUSTAINABILITY AND CLIMATE CHANGE STRATEGY 2010 -2015

AUTHOR: VicRoads

YEAR: 2010

KEY DIRECTIONS:

Direction 1: Reducing environmental and climate change impacts from the built environment.

Direction 2: Protecting and enhancing the natural and cultural environment.

Direction 3: Fostering a culture of leadership and best practice on sustainability and climate change.

PLAN MELBOURNE

AUTHOR: Department of Transport, Planning and Local Infrastructure

YEAR: 2014

KEY DIRECTIONS:

3.0 A more connected Melbourne:
Provide an integrated transport system connecting people to jobs and services, and goods to market.

4.0 Liveable Communities and Neighbourhoods:
Create healthy and active neighbourhoods and maintain Melbourne's identity as one of the world's most liveable cities.

TRANSPORT INTEGRATION ACT 2010

AUTHOR: Regulation, Governance and Law Division, Victorian Department of Transport

YEAR: 2010

KEY DIRECTIONS:

Vision:
Victoria aspires to have an integrated and sustainable transport system that contributes to an inclusive, prosperous and environmentally responsible state.

Objectives:

- Social and economic inclusion
- Economic prosperity
- Environmental sustainability
- Integration of transport and land use
- Efficiency, coordination and reliability
- Safety, health and wellbeing.

3.0
Urban Design Principles & Objectives

A series of urban design principles and objectives have been developed to inform future works to the M2 Tullamarine Freeway & CityLink tollway corridor. The M2 is one of the oldest freeways in Melbourne having been constructed in various stages from the mid 1960's. The existing freeway corridor has developed incrementally over a 50 year period, resulting in many urban design inconsistencies. The freeway remains the principal link from the city to Melbourne Airport and as such is a pivotal part of the road network with ongoing pressures to increase capacity.

Design excellence, identity, legibility and integrated consistency underpin the urban design principles and objectives. The principles and objectives have developed from a broad visual and site analysis assessment along the corridor as well as reference to other key Urban Design Strategies like the recent, M1 and the M80 Upgrades. The M1, M80 and M2 upgrades share common issues and opportunities being complex retrofits of busy working freeways in highly urban environments.

Principle One
IDENTITY

Provide a distinctive identity to the freeway corridor that creates an engaging and memorable experience for road users and local communities.

Objective 1.1
Enhance the identity of the Tullamarine Freeway as an international gateway and principal link to the Melbourne Airport.

Objective 1.2
Maintain the distinct identity of the major interchanges located along the freeway corridor.

Objective 1.3
Provide a distinctive freeway identity as an unfolding journey through the Australian landscape.

Principle Two
WAYFINDING

Provide a legible and distinctive freeway corridor that assists with navigation, orientation and wayfinding.

Objective 2.1
Improve freeway legibility by reinforcing identifiable elements that assist drivers navigate their journey.

Objective 2.1
Provide a coordinated signage and information system that improves wayfinding and reduces driver distraction.

Objective 2.3
Provide a colour coding palette that reinforces wayfinding through the use of strong colours at interchanges and mute greys and silvers in zones between.

Objective 2.4
Provide a coordinated landscape planting palette that reinforces wayfinding through the use of distinctive Australian plants.

Principle Three
CONSISTENCY

Provide high quality urban design and landscape treatments that brings consistency to each of the distinct freeway corridor zones.

Objective 3.1
Provide a consistent freeway treatment of landscape and urban design elements between the major interchanges.

Objective 3.2
Establish and protect landscape qualities through innovative planting practice suited to the local conditions.

Objective 3.3
Maintain the series of existing high quality freeway interchanges and feature elements as a benchmark for future developments.

Principle Four
URBAN INTEGRATION

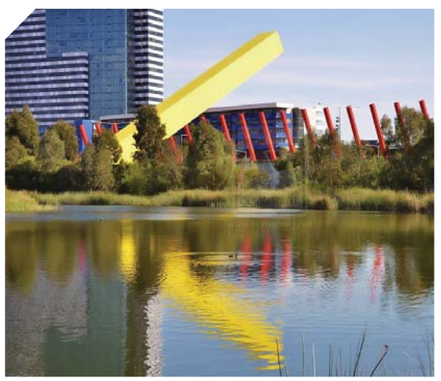
Consider the freeway corridor concurrently with the surrounding urban and open space fabric to provide a better integrated environment serving both road users and the community.

Objective 4.1
Work closely with adjacent stakeholders and the community to enhance the freeway corridor's relationship to the surrounding context.

Objective 4.2
Provide an integrated freeway corridor that better balances the competing demands of an increasingly intensified urban environment.

Objective 4.3
Integrate with local initiatives to improve connectivity across the freeway for all transport modes.

Objective 4.4
Support environmentally sustainable design to reduce climate change impacts and protect and improve the natural and built environment.



IDENTITY

The Tullamarine Freeway upgrade and widening project offers the opportunity to improve the overall identity and legibility of this important freeway. The Tullamarine freeway provides the principal link between the city and Melbourne Airport and therefore is a pivotal part of the urban road network. The Melbourne Airport Master Plan 2013, indicates that the Melbourne Airport currently receives 30 million visitors per year, the vast majority of whom use this freeway to reach the city. Future forecasts predict a substantial growth in visitors to 38 million visitors per year by 2018 and 64 million by 2033.

The Tullamarine Freeway is effectively the front door to our city and provides visitors and Melbournians arriving and departing from the airport with their first and last impressions of Melbourne. It has the potential to become an international gateway experience that enhances Melbourne's identity.

Melbourne has been recognised as one of the most liveable cities in the world and a place which is internationally renowned for design excellence. The current freeway has been described as uninviting and lacking consistency and where a 'forest' of billboards greets the visitor. The Urban Design Strategy encourages a holistic approach for the entire corridor. It advocates for good urban design for the array of freeway elements including bridges, retaining walls, noise walls, gantries, fences and landscape plantings. These elements and the way they respond to the urban context of the freeway will contribute to an improved identity for the road and its surrounding communities.

WAYFINDING

The Tullamarine Freeway upgrade project provides an opportunity to enhance the driver experience through improved legibility, navigation and wayfinding. The driver's freeway experience is conveyed through a multitude of visual cues including, freeway signage and management systems, surrounding urban elements, landmarks, landscape and other natural features. These visual cues and features can be located either within or outside the freeway corridor, all to assist the driver in decision making and wayfinding.

Upgrade projects during the last 15 years linking the M1 and M2 freeways has resulted in the construction of a number of highly recognisable architectural elements that assist wayfinding. These elements help the driver better navigate and anticipate freeway entries and exits. These urban elements primarily occur at the major interchanges with the M80, Calder, Flemington Road international gateway, Bolte Bridge and the M1. Given the success and prominence of the existing interchange treatments, the freeway corridor does not need new major elements as this could compromise its clarity and legibility.

Some sections of Tullamarine Freeway, though, are more nondescript and lack a consistent identity. This mostly occurs where the freeway corridor is visually enclosed due to the close location of noise walls and embankments which restrict views and thus a sense of location.
The Urban Design Strategy proposes a more consistent and enhanced driver experience in the zones between the major interchanges. This should assist drivers to identify their position along the journey and improve visual interest and concentration.

CONSISTENCY

The Tullamarine Freeway upgrade project provides an opportunity to improve the consistency of the freeway corridor and the urban elements and landscape treatments that define its identity. The overall lack of consistency is largely due to the freeway being constructed in many stages over a long period of time by different design teams. The M2 Urban Design Strategy provides a good opportunity to review the existing freeway and recommend new strategies for its improvement. The strategy has been conducted as a whole of corridor review and as such will provide more seamless guidance to future changes.

The existing freeway analysis conducted as part of the strategy has been a valuable exercise in recording the various freeway elements, attributes and opportunities. The M2 corridor has some high quality components, particularly at major interchanges and the desire is to improve the zones in between. For instance, the site analysis has revealed 17 different noise wall treatments and an inconsistent landscape that lacks a clear design theme.

The strategy recommends where new freeway elements are introduced they should be based upon existing high quality elements, with the aim to achieve more consistency. Any major new interchange, like the potential connection between the M2 and M3 freeways, will have their own Urban Design Strategy which will integrate with the M2 approach. In addition there is a good opportunity to provide a more consistent and engaging soft plantings based around a journey through the Australian landscape.

URBAN INTEGRATION

The Tullamarine Freeway passes through a variety of urban contexts in its journey from the CBD to the Melbourne Airport and back. The in-bound and out-bound driver experiences are quite different due to the changing terrain and settlement patterns.

Melbourne will continue to grow and expand along the M2 corridor with a number of long-term major development sites in key locations potentially impacting both on the freeway itself and the surrounding open space and urban fabric. Overall the trip to the airport and back is one of constantly changing vistas through an increasingly urban environment. As the freeway widens it reduces the amount of space available for landscape which has a significant visual and environmental impact. Increasingly the M2 corridor will rely on the borrowed landscape contribution from the adjoining open space and land uses. In the zones where landscape is not possible, there should be a suite of high quality urban freeway elements integrated within the corridor.

New developments adjoining the M2 corridor should be encouraged to engage with the freeway as a point of address and identity rather than a back door or a place for more advertising. Likewise the arrival and departure experience at the Melbourne Airport should be memorable. The airport is changing as their operation expands along with hectares of open grade car parking. There is an opportunity to improve the interface between the freeway and the open carparks with high quality landscaped zones.

The M2 freeway corridor follows sections of the Moonee Ponds Creek with significant impacts. The shared user path follows the creek rather than the freeway as it winds its way northward. Long sections of the path track along the rear side of high noise walls and the concreted creek, while other sections are located in well landscaped open spaces in more natural settings.

The strategy recommends minimising the further intrusion of the freeway on the creek valley by observing the findings of the Moonee Ponds Creek Strategic Plan (2011), prepared for the Moonee Ponds Creek Coordination Committee.

4.0
Corridor Analysis

Introduction

This section of the report describes findings from analysis of M2 and M1 corridors, as well as the abutting interfaces. This has involved collating and analysing data on existing conditions, which will inform the outcomes, described in the Urban Freeway Elements. This part of the report is divided into twelve areas of specific consideration related to the freeway corridor.

4.1 Context

History

1964 Work begins in sections on the route around Essendon Airport (known as Lancefield Rd)

1968 Construction of the Tullamarine Freeway from Essendon Airport to Melbourne Airport

1970 Construction of the Tullamarine Freeway from Flemington Rd to Essendon Airport (Calder Hwy Interchange)

1972 Connection of the Tullamarine Freeway to the then newly built Calder Freeway opened

1976 English Street interchange at Airport West / Essendon Fields constructed

1979 Tullamarine Freeway between Essendon Airport and Calder Freeway upgraded to freeway standards

1989 Introduction of Metropolitan Route 43

1996 May 1996: Construction begins on CityLink

1999 August 1999: The Western Link section of CityLink and widening of Tullamarine Freeway (to 8 lanes) between Bulla Road and Flemington Road opened

2006 October 2006: Stage 1 of the Tullamarine Freeway / Calder Freeway interchange upgrades open to traffic

2013 May 2013: TSA, M80 and M2 Interchange upgrade completed

Statistics

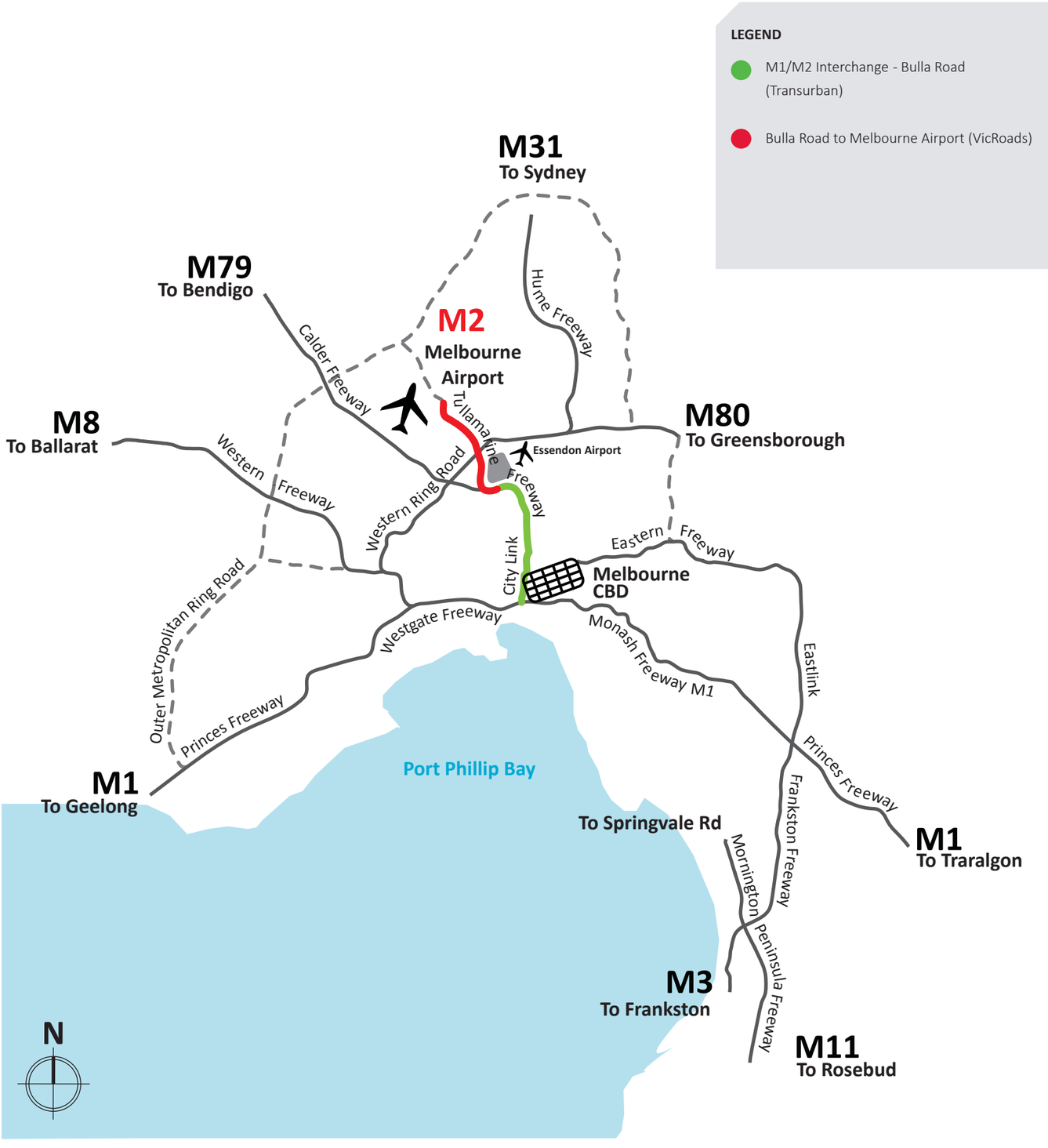
M2 Length: 23 km

Location: located in the western and inner western suburbs of Melbourne and connects the Melbourne CBD with Melbourne Airport in the city's northwest. It is a full freeway route and partially tolled, using passes and e-tags, from Pascoe Vale to Port Melbourne.

Northern Terminus: Airport Drive, Melbourne Drive and Sunbury Road (C743) at Melbourne Airport

Southern Terminus: West Gate Freeway (M1) at Port Melbourne

Suburbs Along the Route: Melbourne Airport, Westmeadows, Tullamarine, Gladstone Park, Gowanbrae, Airport West, Essendon Fields, Essendon North, Strathmore, Pascoe Vale, Pascoe Vale South, Brunswick West, Moonee Ponds, Ascot Vale, Travancore, Kensington, Parkville, Flemington, North Melbourne, West Melbourne, Docklands, Port Melbourne

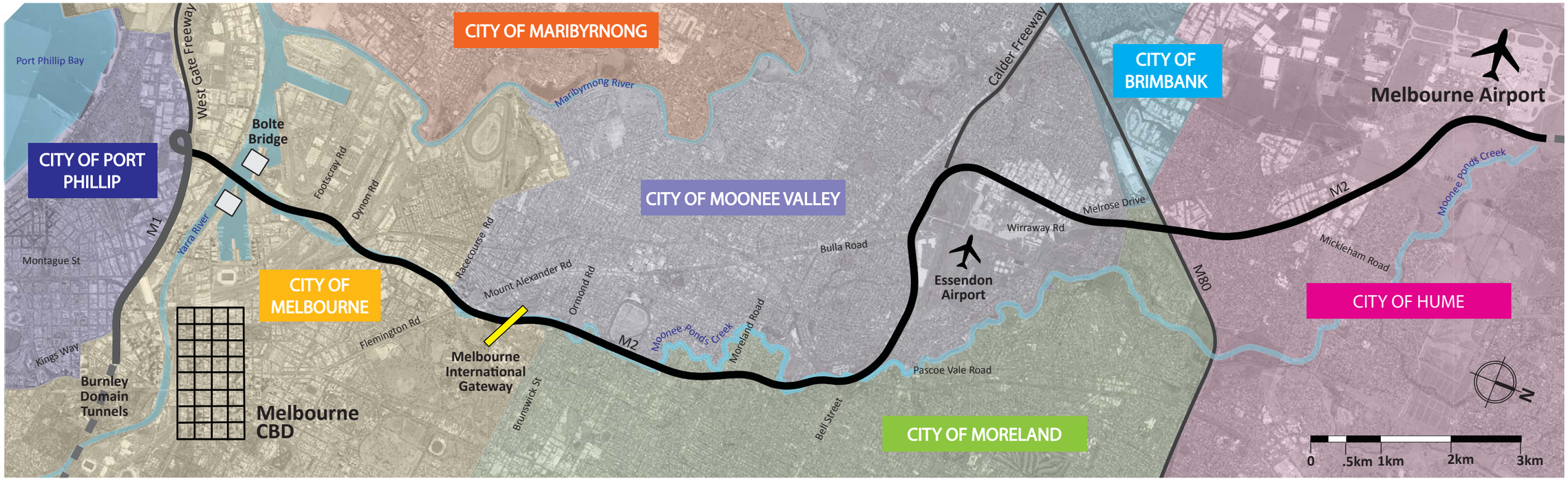


4.2 Municipal Boundaries

The freeway crosses through five municipalities, which have a keen interest in the future development of the road corridor. All municipalities have their own planning schemes, which map out long-term directions on transport, land use, built form and the environment. The progressive upgrade of the corridor has the potential to assist local Councils achieve some of their objectives and act as a catalyst for improvements of areas adjacent to the freeway reservation. Community expectations are high regarding the quality of urban design and will require significant levels of stakeholder engagement.

The local municipalities include:

- City of Port Phillip
- City of Melbourne
- City of Moonee Valley
- City of Moreland
- City of Hume



4.3 Existing Land Use

Key Attributes

The freeway crosses through numerous land use zones, with abutting uses including commercial, industrial, residential and special use zones. Many areas are subject to re-zoning and re-development, resulting in increasing urban intensity along the freeway corridor.

M1/M2 freeway interchange to Melbourne International Gateway

- The adjacent land use is dominated by the extensive port and rail infrastructure to the west, high voltage power distribution, the Yarra River and Docklands to the east. As the freeway is elevated, land uses have no direct relationship to the road and are only visible in the distance
- Large industrial buildings with simple built forms line the freeway reservation, some of which are of a poor quality.
- Buildings are usually set back from the freeway reservation.
- The Moonee Ponds Creek below the elevated bridge includes the shared user path.

Melbourne International Gateway to Pascoe Vale Road

- The Moonee Ponds Creek Valley adjoins the freeway and includes the shared user path.
- Predominantly residential areas border the freeway alignment with low rise buildings ranging from 1-2 storeys. Noise walls effectively separate residential areas from the freeway.

Pascoe Vale Road to Melbourne Airport

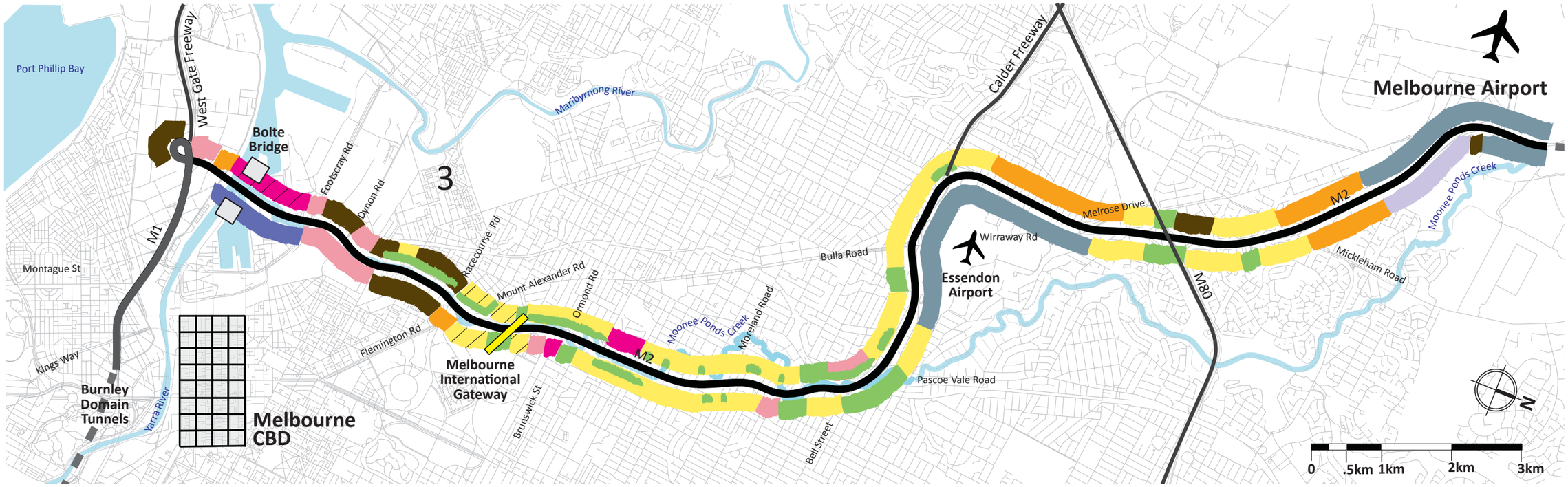
- Residential areas border the freeway for approximately half of this section, with low rise buildings ranging from 1-2 storeys. Noise walls effectively separate residential areas from the freeway.
- Major commercial and industrial zones are mostly located around the Melbourne and Essendon airports. These large scale commercial developments service the aviation industry as well as support the commercial and retail sectors. The built form facing the freeway reserve ranges from large to medium scale commercial buildings and industrial sheds, some of which occupy a large footprint and vary in built form quality. Some of the buildings have turned their backs to the freeway while others, such as The Age printing facility, engage with the freeway. The buildings are usually set back from the freeway with varying standards of landscape
- Other adjacent land use includes tram and train public transport corridors along with high voltage power line easements.
- The Melbourne Airport precinct is expanding with increasingly prominent car parking and road infrastructure

Key Findings

- The road edge interface along the freeway corridor is uneven and variable in quality
- Some built elements along the edge of the road corridor do not engage with the freeway and present poorly
- The overall driver experience is not commensurate with an international gateway, although there are some strong highlights at major interchanges
- Noise walls, retaining walls and fencing along the corridor have little consistency and vary in quality from poor to good
- Advertising signage is prominent along the corridor which contributes to the visual clutter
- Some adjacent built form contributes positively to the quality of the journey – for example The Age building near Melbourne Airport. Future developments should be encouraged to achieve high quality built form and landscaping and positively engage with the freeway.
- There are significant areas of parkland and creek reserves adjoining the freeway which contribute to the overall corridor landscape. This varies from highly urban zones under viaducts and bridges to more open parkland and recreational spaces

Legend

- Commonwealth (Includes Aviation, Commercial and Retail development)
- Residential (Low-rise housing ranging from 1-2 storeys)
- Residential (High-rise housing above 3 storeys)
- Industrial (Medium to large industrial developments)
- Commercial (Medium to small commercial developments)
- Public Open Space (Generally parks)
- Rural (Large open paddocks)
- Special Use (Varies from medium to large scale developments)
- Special Use (Shipping yards)
- Public Use (Include service, utility and rail infrastructure)
- Docklands (Generally large scale commercial and residential developments)



4.4 Future Land Use

The future land use of a number of areas adjoining the freeway alignment will change dramatically as Melbourne expands. This is especially in the vicinity of the Melbourne CBD, Essendon Airport and Melbourne Airport. Planned urban renewal, supported and endorsed by both Local and State Government through planning policies, will see new communities emerge along the freeway.

As Melbourne continues to grow, so will the demand for new high density residential, office, business and retail development .This will result in higher density redevelopment through re-zoning in previously industrial and commercial along the freeway. The most significant, large scale developments expected alongside the freeway reservation include:

Fishermans Bend
One of the largest urban renewal projects in Australia, this will transform the inner city industrial precinct into an extension of Melbourne CBD- the city centre will double in size and will be directly connected to Port Phillip Bay. It is anticipated that the area will be mixed use with residential, employment and retail development. A significant intensification of land use via high density built form, particularly housing is proposed. A CBD scale commercial business district is envisaged towards the east, taking advantage of accessibility and proximity to CBD. The current strategic framework plan for Fisherman's Bend shows preferred heights for buildings which range from 15 – 100m (4-30 storeys).

E-Gate
This inner city, underutilised 20 hectare rail yard site sits on the edge of Melbourne CBD. A new mixed use suburb will be created including residential, retail, commercial and community facilities. The options for this site include a town square and higher density development at the southern end, closer to the CBD.

Arden Macaulay
Primarily an industrial area, which is currently occupied by manufacturing and production facilities will be developed in the future as a new extension of the CBD. The area will transition into a mixed use inner city suburb while protecting key industrial sites and will include commercial, residential, retail and educational developments. The structure plans for this area propose high density development with a maximum height limit ranging from 20-30 m with heights increasing south of Gracie St and Shiel St.

Essendon Airport and Essendon Fields
Redevelopment plans for Essendon Airport propose seven precincts for a range of aviation and non-aviation related uses, five of which will have a high level of exposure towards the freeway. Proposed expansion of the airport land encourages a mix of uses within its large holdings including retail, showrooms, offices, hotels, car parks, warehouses and light industry. The built form will range from large to medium scale commercial buildings. Existing hangers and large commercial buildings which have already been converted to service the retail sector and commercial facilities will be retained.

Airport West
Essendon Technology Precinct
New business, retail, research and technology precinct with an aviation focus.
Matthews Avenue with a high level of exposure to Tullamarine Freeway is to be promoted as a 'trade suppliers and office precinct', distinguished from the 'bulky goods precincts' at Keilor Rd. The key objective for the built form along the Matthews Avenue is to establish a strong urban frontage (Airport West Activity Centre Structure Plan, June 2008). The structure plan also proposes a preferred height limit of three storeys and 12m.

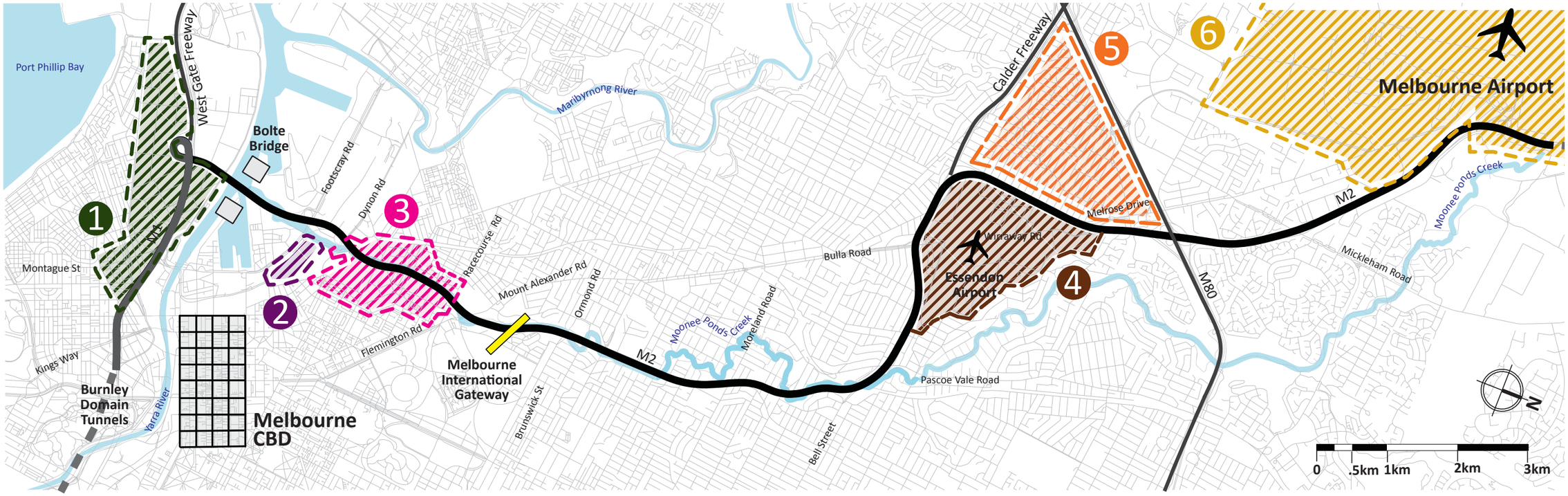
Melbourne Airport
A major expansion of Melbourne airport proposes development of five precincts for a range of aviation and non-aviation related uses. Two of these precincts will be in close proximity to the Tullamarine freeway and will be used for a range of activities including freight, hotel accommodation, warehousing and retail outlets. Buildings will range in scale between three and nine levels. The long term car park will continue to occupy a prominent location at the entry to the airport.

Key Findings

- There will be a significant change to the scale and density of the urban fabric abutting the freeway in key locations into the future.
- Much of the buffer space within the freeway right of way will be removed with the addition of new traffic lanes. This will increase the reliance on borrowed landscapes adjoining the freeway for visual amenity.
- Near and distant views will contain more large scale buildings up to 20-30 metres high.
- Many developments will result in new built form hard to the edge of the road corridor.
- Roadside advertising is likely to increase with denser commercial developments
- The design of high quality buildings, open space and car parks facing the freeway should be encouraged through planning controls and other agreements to enhance the freeway's role as the international gateway to Melbourne.
- The potential for growing visual clutter emphasises the need for bold and consistent themes in the road and infrastructure design to assist with way-finding and road safety.
- The Moonee Ponds Creek valley and open space environs is vital to the amenity of the corridor and its residential communities. A coordinated approach between various stakeholders is required to preserve the valleys natural features, remnant vegetation, and to prevent further deterioration of the creek system.

LEGEND

1. Fishermans Bend
2. E Gate
3. Arden Macauley
4. Essendon Airport + Essendon Fields
5. Airport West - Essendon Technology Precinct
6. Melbourne Airport



4.5 View Analysis

Key Attributes

The landscape context, together with near and distant views shape the visual experience of the traveller. This analysis categorises the views from the freeway into four types: Enclosed, Partly Enclosed, Open and Expansive.

The visual analysis clearly demonstrates that the journey between M1/M2 Interchange and the Melbourne Airport comprises two distinct zones, separated by the Melbourne International Gateway. The zones are largely defined by the freeway's position within the landscape. The southern city zone is almost entirely elevated and the zone beyond the Melbourne International gateway is mostly at grade or in cut within the Moonee Ponds Creek valley.

Views from the surrounding neighbourhoods tend to be dominated by the road when it is elevated, and are more contained when at grade.

Zone one - M2/M2 Interchange to Melbourne International Gateway

Views from the freeway

- As the M1 and M2 freeways are predominantly elevated on structure they offer spectacular open and expansive views of the city and distant horizon. Views from the elevated structures, some of which are twenty five meters high, look towards to the Melbourne CBD, Yarra River, the silver towers of the Bolte Bridge, Docklands, Port Phillip Bay, Westgate Bridge and the industrial and shipping environment of the Port of Melbourne.
- Some views are partially blocked by concrete bridge barriers obscuring the near landscape below and forward views can be interrupted by the gantry infrastructure and the ascending road pavement.
- For small parts of the journey, around the M1/M2 interchange, views are constrained by embankments and nearby buildings.

Views towards the freeway

- Near and distant views towards the freeway are dominated by the large scale of the elevated concrete road structures that snake their way through the landscape.
- The sheer scale and visibility of the elevated freeway provides a major visual cue for navigation across large areas of the urban landscape.
- Users of the Capital City trail weave along the Moonee Ponds Creek valley underneath the dominating structure of the freeway above.

Zone two - Melbourne International Gateway to the Melbourne Airport

Views from the freeway

- For much of this section views are contained largely within the freeway corridor by embankments, buildings, freeway structures and noise walls, located within or immediately adjacent to the freeway.
- Most of the views in this section fall in the enclosed or partially enclosed category, most notably in the section through the Moonee Ponds Creek Valley, where adjoining residential and parkland areas cannot be seen.
- Although the views from the freeway corridor are generally constrained on both sides, due to the road width, there are interesting forward views into the distance and the sky beyond.
- The journey in both directions contains a series of significant views that come and go with the changing road geometry and locations of noise walls and other structures. Some memorable views include the Melbourne International Gateway, Essendon Airport precinct, the distant CBD skyline and the Dandenong Ranges. Glimpses of the surrounding suburbs are found at the Tullamarine Calder Interchange.
- The most dramatic view experienced by the in-bound traveller is the distinctive city skyline of high rise towers as framed by the Melbourne Gateway at Flemington Road, signalling that the traveller has arrived at the threshold of the city.

Views towards the freeway

- Generally, the views from residential areas towards the freeway reservation are screened by noise walls, noise mounds and other structures.
- There are prominent views into the road corridor in the vicinity of the Pascoe Vale Road and Bell Street hilly terrain.
- Views from the Moonee Ponds Creek valley open spaces, local roads and shared trails are often to the blank rear faces of noise walls and other freeway structures.

Key Findings

- The views for approximately two thirds of the journey along the freeway are contained within the freeway corridor. In these areas the form of noise walls, batter planting and borrowed landscape shapes the road experience.
- It is likely with the scale of future development of the freeway and the surrounding land uses, open views will diminish, thereby reducing the traveller's awareness of the surrounding landscape.
- Some views to important vistas are currently obscured by noise wall structures (like the Mascoma St overpass) which could be opened up and revealed through the use of transparent materials
- The residential side of noise walls and the open spaces underneath elevated freeway structures are highly visible to residents and recreational users and rely on high quality landscape to mitigate their overall visual impacts.

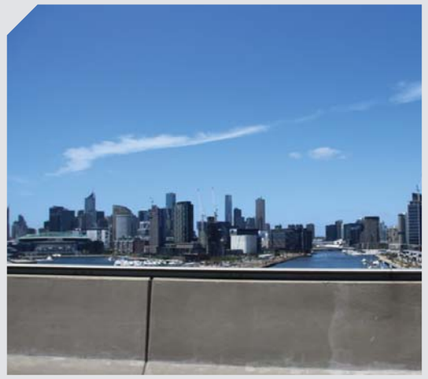
Enclosed Views:

Enclosed
Side views blocked by noise walls and structures which are hard up against the edge of the freeway (no or negligible landscape).

Partially Enclosed
Side views constrained by noise walls, embankments and structures which are either within the Right of Way boundary, or immediately adjacent to the freeway corridor (with some landscape areas near the road side).

Open Views:

Open
Unobstructed views beyond the road corridor into the distance.



Expansive
Long distance views, usually elevated, often towards the horizon.

LEGEND

Significant views from the freeway

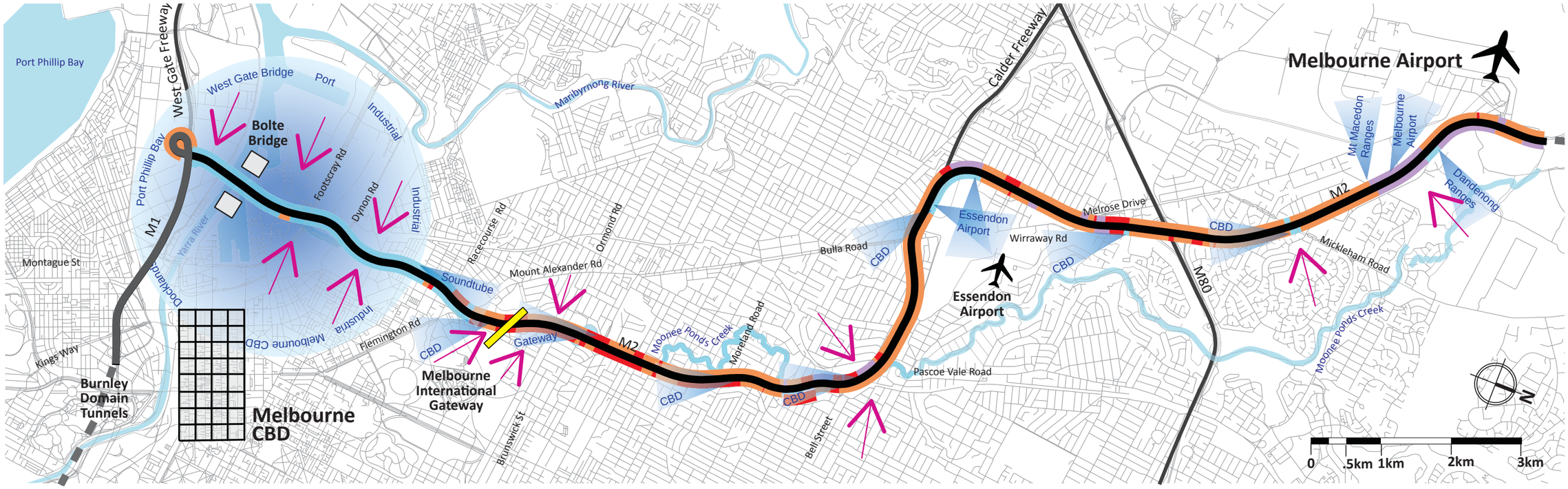
Views towards the freeway from public open spaces and residential zones.

ENCLOSED
Views blocked by noise walls, embankments, structures/buildings which are hard up against the freeway

PARTIALLY ENCLOSED
Views constrained by noise walls, embankments, structures/buildings which are located either within the ROW boundary, or immediately adjacent to the freeway corridor

OPEN
unobstructed views beyond the road corridor into the distance

EXPANSIVE
View to the horizon usually elevated



4.6 Urban Design Elements

Key Attributes

Urban design elements typically include large scale sculptural features often located at key interchanges. They provide impressive visual markers both for the road user as well as local communities

A number of major urban design elements within the road reservation mark the journey for visitors to Melbourne as they travel along the Tullamarine Freeway. These elements improve way-finding, create a sense of identity and engage the road user.

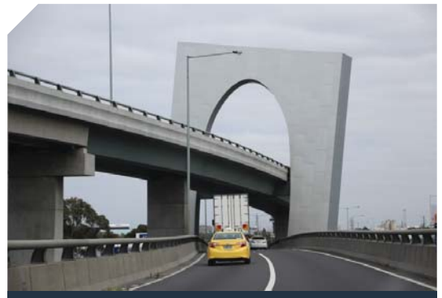
Major and incidental urban design elements include:

- M1 silver arches and yellow wedges
- Bolte Bridge, spanning the Yarra River and Victoria Harbour, with tall twin silver towers (built in 1999)
- Melbourne International Gateway is a suite of urban design elements consisting of series of red poles, a yellow tilted beam and a noise attenuation sound tube, which announces arrival at the entrance to the city (built in 2000).
- Calder Tullamarine Freeway Interchange with silver noise fins and yellow solar wall
- M80 Interchange with sweeping coloured retaining walls and noise walls

A suite of smaller incidental urban design elements are located along the corridor, which further assist the driver in way-finding.

Key Findings

- The freeway hierarchy is well defined by high quality urban design elements typically located at major interchanges.
- Any additional urban design elements should be considered relative to existing elements and be of a visual quality commensurate with the freeway's role as an international gateway to Melbourne.



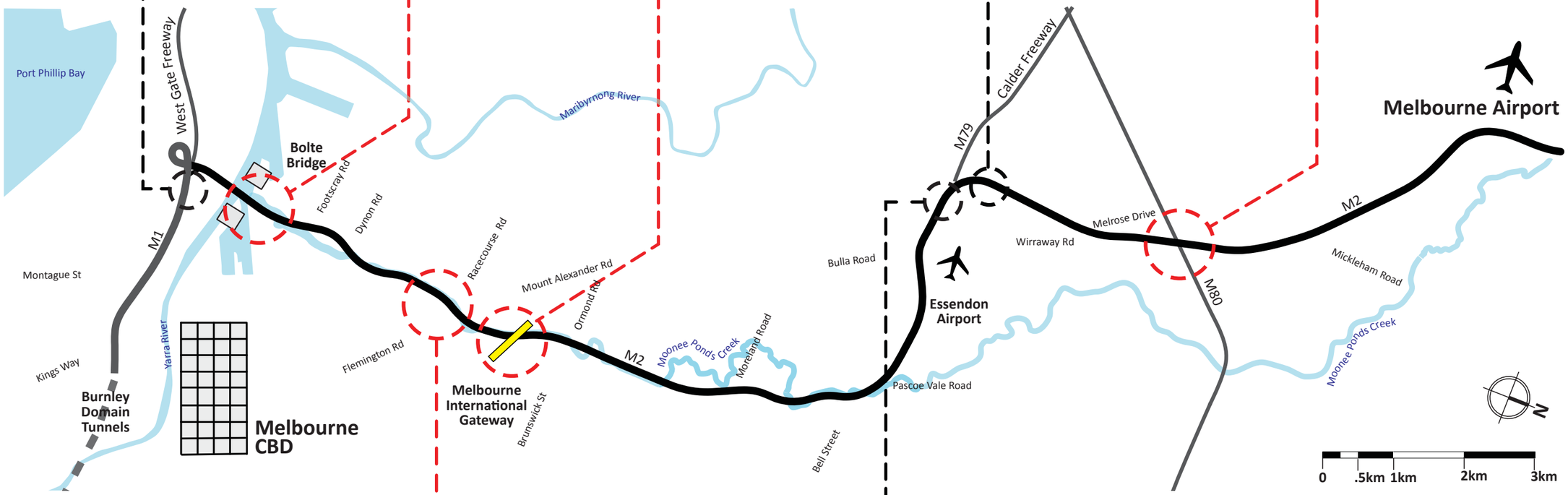
West Gate Freeway / Montague Street Arch

Bolte Bridge Towers

Melbourne International Gateway

M2/M79 - Yellow Noise Wall

M80 Interchange Retaining Walls and Noise Walls



LEGEND

- Major elements
- Incidental elements

Soundtube

M2 / M79 - Metal Fin

4.7 Noise Wall Types

Key Attributes

A range of noise wall types have been constructed along the Tullamarine Freeway in residential areas as part of numerous extensions and upgrades over the last 50 years. These noise walls are highly visible to both the road user and residents and have an impact on the amenity of the abutting open space. In some locations they block important views to local features. For instance the Mickleham Road timber noise walls block elevated views to Melbourne's CBD.

Approximately half of the freeway alignment is lined with noise walls on both sides. Noise walls west of Pascoe Vale Rd are typically highly visible and are located immediately behind or on barriers. Whereas, noise walls east of Pascoe Vale Rd (apart from Calder and M80 interchanges) are located at the top of embankments or are set back further from the road and are masked by vegetation.

The visual amenity and quality of the noise walls varies considerably. The walls range from poor quality and nearing the end of their lifespan, to "state of the art" architectural elements. Some include innovative technology, such as the solar panel noise wall constructed in 2006 during the upgrade of the Tullamarine/Calder Freeway interchange.

At least 17 noise and retaining wall types have been used along the corridor, mostly with no overarching theme. Some sections of the freeway have intentionally used several different noise wall types to create visual variety.

The noise walls have been constructed from concrete, light weight concrete, acrylic, metal or timber. The predominant colour palette is mostly hues of grey with highlights of yellow. Colour is used as a theme to highlight major urban design elements, while the muted shades of grey colour are applied to the noise walls linking between interchanges.

Key Findings

- There is no consistent or coordinated overall design theme for noise walls for the whole corridor. There is need to balance the desire for visual variety as well as consistency.
- There are sections of high quality coloured noise walls as part of the major interchange elements which serve as a reference standard
- Some noise walls are reaching the end of their lifespan and will require replacement
- There is a loosely established colour theme with a palette of muted greys and yellows
- Some noise walls block important views to cultural or natural features
- Noise walls have a considerable visual impact on adjacent communities, including residents, open space users and cyclists.

LEGEND

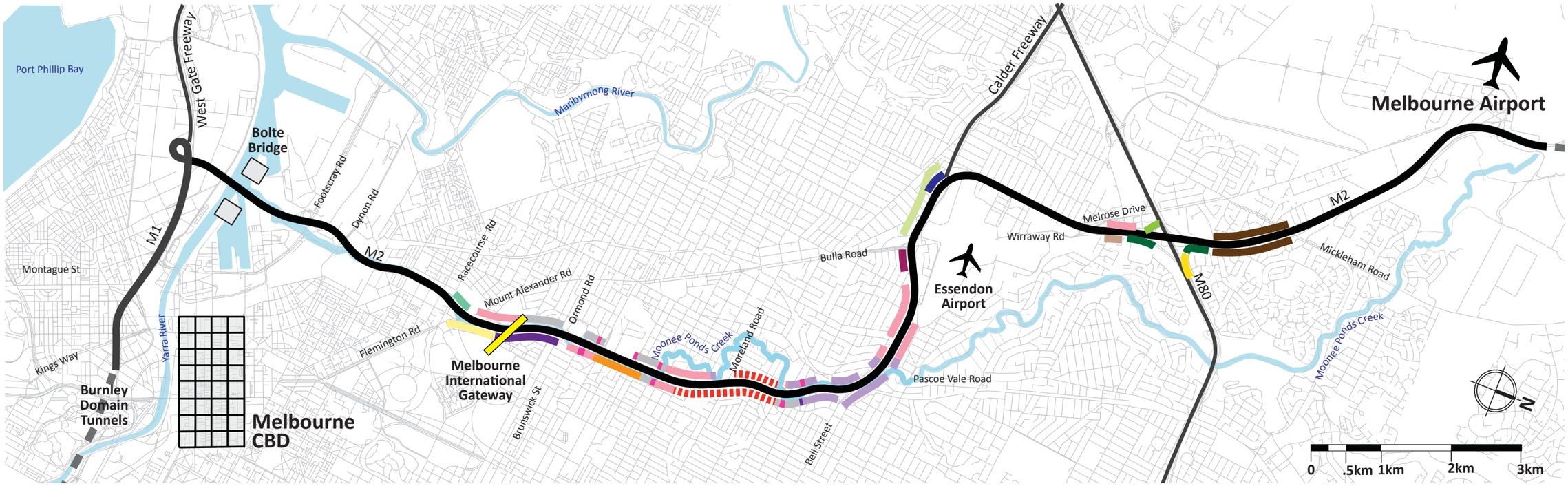
Concrete
- C1- Full height concrete panel- Brown/Grey
- C2- Full height concrete panel- Grey patterned
- C3- Full height concrete panel- Yellow with solar
- C4- Full height concrete panel- Yellow

Concrete Lightweight
- CL1- Plain rectangular- Grey
- CL2- Ribbed rectangular pattern- Grey
- CL3- Plain rectangular- Black
- CL4- Plain rectangular with planting frame- Grey
- CL5- Plain square - Black
- CL6- Plain rectangular with post on roadside- Grey
- CL7- Honeycomb rectangular - Grey
- CL8- Wave pattern rectangular- Grey

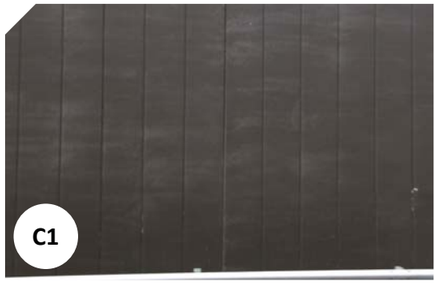
Metal / Steel
- ME1- Metal fin
- ME2- Metal soundtube

Timber
- T1- Timber planks
- T2- Plywood panels with planting frame

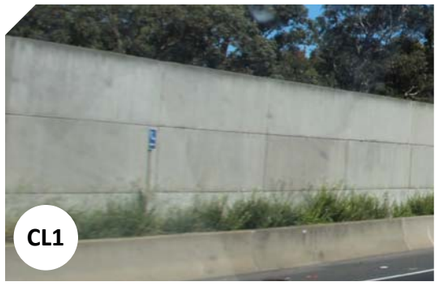
Acrylic
- A1- Perspex - Yellow

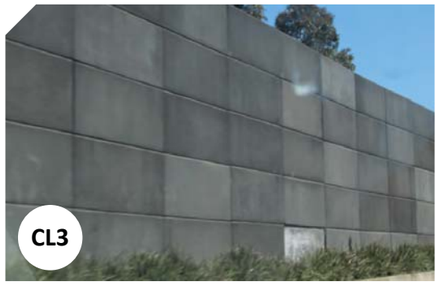


Concrete



Concrete Lightweight





Metal

Timber

Acrylic

4.8 Planting and Vegetation Zones

Key Attributes

Since works started in 1964, there have been numerous upgrades to the Tullamarine Freeway and the roadside landscape. The existing planting design reflects planting themes, patterns and species selection from these different periods. Each upgrade incorporated additional planting reflective of the planting design trends at that time. Typically the scale of investment for renovation projects was minor. With each road upgrade the planting space along the corridor has reduced. Progressive changes over the past 50 years have shaped the landscape amenity of the freeway corridor, which is lacking in consistency and quality. While VicRoads invests a little more in the maintenance of the Tullamarine Freeway roadside compared with other freeways in the network, the standard is still low compared with other privately managed toll roads and equivalent international freeways.

The conditions that affect plant performance are explained fully in the section on Geology and Natural Soils. In summary, challenges to vegetation establishment and performance include:

- Effective rainfall – relatively low rainfall combined with warm and windy conditions can lead to evaporation exceeding rainfall in most months of the year. On north and west facing slopes these conditions are worse, and most plants struggle to survive or grow.
- Soil texture and compaction – the heavy volcanic clays of the north and west are easily compacted during construction. This means extremes of drying, waterlogging and deoxygenation compound the problem of small root zones. Trees may be stunted to less than 0.5 m under extreme conditions, and plant performance is often poor.
- Soil chemistry – the heterogeneous (mixed up) soils resulting from construction often mean little topsoil (and associated organic matter) is present, and that high pH subsoils may be prominent in the root zone of new plantings.

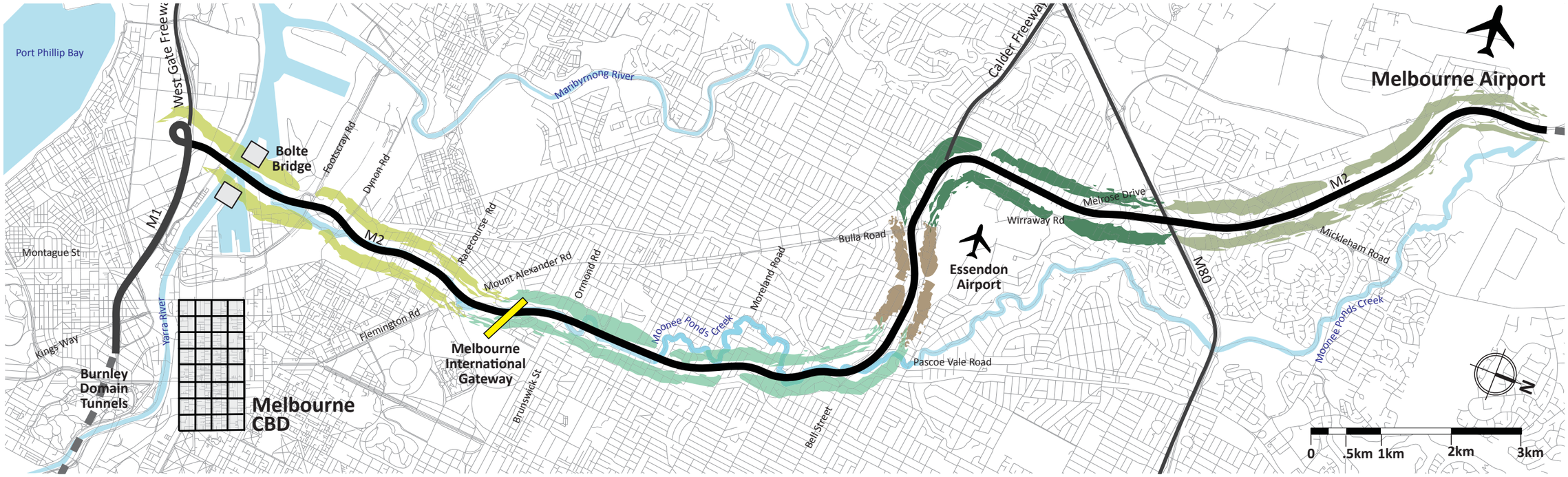
These challenges can readily be resolved through improved site preparation and species selection, although VicRoads continues to struggle to achieve consistently reliable results.

Whilst there is no distinctive planting theme along the Tullamarine Freeway corridor, the route can be broadly categorised into the following five zones:

- Zone A
  M1 / M2 Interchange to Melbourne International Gateway
- Zone B
  Melbourne International Gateway to Pascoe Vale Rd
- Zone C
  Pascoe Valle Rd to Bulla Rd
- Zone D
  Bulla Rd to M80 Interchange
- Zone E
  M80 Interchange to Melbourne Airport

Key Findings

- Freeway planting typically lacks consistency and there is no established theme which guides the design of the landscape.
- The existing mature Eucalypts located within freeway reservation provide high visual amenity for the driver and the adjoining local communities and every attempt should be made to retain them and or replace them with similar
- Space available for planting within the corridor is limited and will become even more so into the future as the road widens.
- Plant establishment and growth along the freeway corridor is compromised by modified soils and low available soil moisture. A limited suite of plants will perform adequately in these site conditions.
- The success of inter planting within established planting areas has been variable, with competition for water with the existing vegetation being a significant cause of plant failure.
- Current VicRoads maintenance and surveillance regimes are incompatible with lasting high quality results.
- The role of borrowed landscapes adjoining the freeway improves the overall amenity of the corridor.



ZONE A
M1 / M2 Interchange to Melbourne International Gateway

- As the road in this section is primarily on elevated structure, the freeway planting is minimal and barely visible to the road user
- Large mounds at the M1/M2 interchange are vegetated with native eucalypts which vary in performance and quality.
- The Moonnee Ponds Creek follows along under the elevated freeway and provides a varied landscape setting to the surrounding interface.

ZONE B
Melbourne International Gateway to Pascoe Vale Rd

- The construction of CityLink in the late 1990's to eight lanes resulted in a significant reduction of planting areas with most of the road aligned with noise walls or structures hard up against the edge of the freeway. Tussocks, such as native Lomandras and exotic Dietes are growing in narrow planting beds.
- Extensive climbers on planting frames attached to large noise walls are also a dominant feature of this section. Species include Black Kennedia, Dusky Correa Pea, Bower of Beauty and Gum Vine.
- Native and indigenous vegetation is planted where space permits with conspicuous stands of mature exotic Cypress Pines from a bygone era, which are dotted either side of the noise walls
- 'Borrowed' landscape of the Moonee Ponds Creek Valley assists in bringing landscape to the freeway.

ZONE C
Pascoe Vale Rd to Bulla Road

- There are extensive Melaleuca plantings from the 1970's on large, steep cut embankments. Whilst the foliage provides a visual screen to the recent retail shopping developments at DFO and City Link noise walls, the trees are senescing. Recent replanting has resulted in an inconsistent planting pattern, particularly along the north facing batters.
- The road edge conditions are particularly unsightly with bare soils and little or no planting

ZONE D
Bulla Road to M80 Interchange

- Patchy stands of native trees dominate the freeway alignment between the M80/M2 interchange and English St.
- Irregular rows of Dwarf Sugar Gums, along the western frontage of Essendon Airport provides high visual amenity and offer filtered views towards the airport hangers and other commercial buildings
- Largely senescent understorey is found on the English St bridge abutments. Establishing infill planting amongst these planting beds of mature Dwarf Sugar Gums has proven difficult.
- The Essendon Airport environs contain extensive areas of low groundcovers due to flight path and advertising restrictions on plant height. Extensive areas of native trees have recently been coppiced and lopped in the central median and in front of the yellow solar panel noise wall.

ZONE E
M80 Interchange to Melbourne Airport

- Well established Australian native Eucalypts align both sides of the road for most of this section. The trees, including Dwarf Sugar Gums and Swamp Mallet, were most likely planted in the late 1960's as part of the original freeway works from Melbourne Airport to Essendon Airport. These visually dominant stands of Eucalypts have a high visual amenity and provide visitors from the airport travelling inbound with their first impression of Australian vegetation. The Dwarf Sugar Gums have a very distinctive form similar to a large Mallee and display the unique nature of some of Australia's flora.
- Recent extensive plantings of native trees (Iron Bark, Lemon Scented Gum and Smooth-barked Apple) at M80 interchange further reinforce the Australian native planting theme along the Tullamarine Freeway
- Native tree planting of Sugar Gums is also reinforced at the recently constructed Apac Drive bridge into the long term car park at Melbourne Airport

4.9 Open Space, Waterways & Shared User Paths

Key Attributes

The open space network abutting the freeway is primarily important for local residents, commuters and other users of these recreational spaces. These adjoining open spaces also contribute to the visual character of the freeway corridor.

The open space visible from the freeway can be summarised as:

- utility corridors (M2/M80 freeway reservation, transmission easements)
- linear parks (Moonee Ponds Creek Valley parks)
- Council parks (Royal Park, Woodlands Historic Park)
- privately owned/leased land (Essendon Airport)

The open space allocation between the northern and southern leg of the journey differ significantly, with Pascoe Vale Road being the point of transition.

North of Pascoe Vale Road there is a negligible formal open space adjacent to the freeway corridor as infrastructure facilities dominate, like power line and transport easements along with airport land. South of Pascoe Vale Rd, an extensive chain of linear parks stretches alongside the freeway alignment, all the way to the Melbourne CBD. Although these parklands are mostly screened by the noise walls with limited direct views into them from the freeway, emergent vegetation from the parks is visible above the walls. The parklands contribute a vital component to the overall borrowed landscape experience along the freeway corridor

Approximately half of the Tullamarine Freeway alignment follows the Moonee Ponds Creek Valley. This creek valley is a major public asset providing for open space for recreation and habitat. The corridor plays an important role in linking various recreational assets such as parklands and local sporting fields. While the creek system was once perceived only as a major drainage reserve, in last decade an extensive rehabilitation programme has reinvigorated the corridor. The recent 'Moonee Ponds Creek Strategic Plan' (2011) prepared for the Moonee Ponds Creek Coordination Committee has also been developed with various stakeholders to create 'a framework for planning, development and management of the creek environs'.

In addition to ecological and recreational aspects, the open space of the creek valley creates a green buffer between the freeway, park users and residents. Furthermore the 'borrowed' landscape of the Moonee Ponds Creek Valley, typified by the silhouettes of indigenous tree tops, plays an essential part in screening the freeway noise walls.

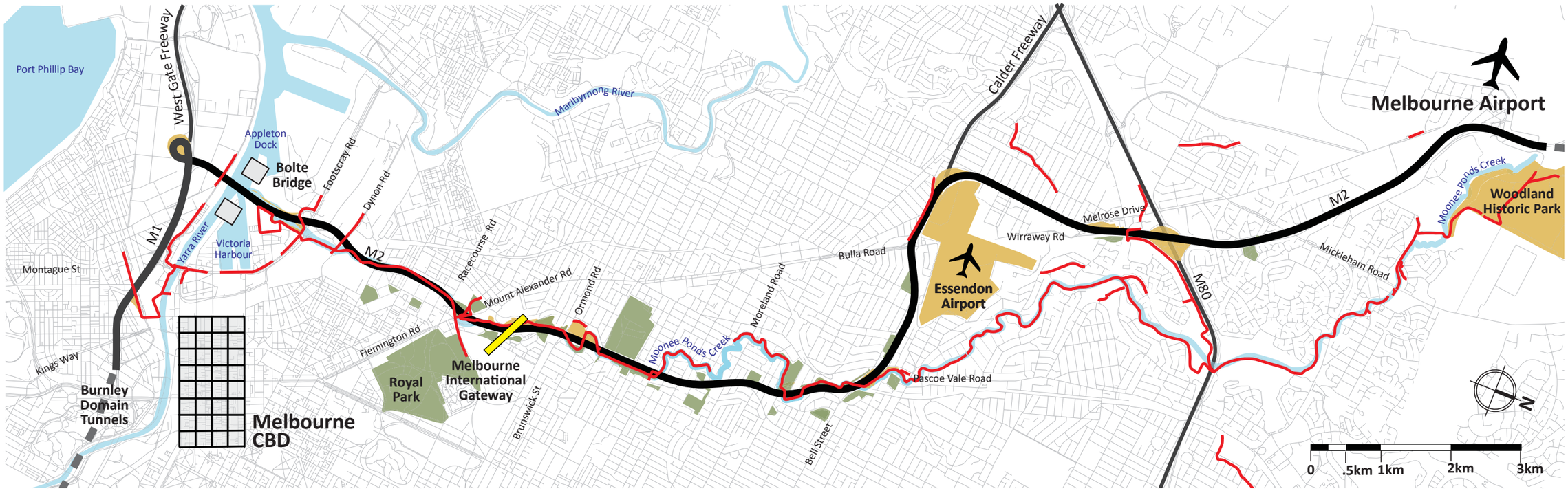
The open space also features the popular Moonee Ponds Creek Trail which generally runs parallel to the freeway alignment all the way from the city and Docklands to Pascoe Vale Rd. At this point the trail continues to follow the creek corridor which deviates well away from the freeway reservation, eventually arriving at Woodlands Historic Park and onto Melbourne Airport. Sections of the trail are highly urban and dominated by freeway elements, whereas other sections are more pleasant and set within a mix of natural and manmade landscapes. Parts of the trail lack signage and clear way-finding but overall it is popular and well used.

Though not directly abutting the freeway corridor, other significant parks are visible from the freeway and contribute positively towards the 'driver experience'. These include Woodlands Historic Park, located near Melbourne Airport and Royal Park near Flemington Road.

LEGEND

- Open Space
- Enclosed Open Space
- Existing waterways
- Existing shared user path

Note:
This plan excludes minor freeway vegetation



Key Findings

- The Tullamarine Freeway abuts the sensitive environs of Moonee Ponds Creek Valley. Minimising the intrusion of the freeway, through environmental protection and restoration and ensuring corridor connectivity and visual amenity, is vital for this corridor.
- Future freeway upgrades which have potential to impact the Moonee Ponds Creek Valley should observe the recommendations outlined in the strategic document titled 'Moonee Ponds Creek Strategic Plan' (2011)
- The open space and large parklands adjacent to the freeway have a significant influence on the amenity of the corridor and should be maintained and strengthened.

Open Space

Waterways

Shared User Paths

4.10 Geology & Natural Soils

Key Attributes

Geology and Natural Soils

The distribution of soils in greater Melbourne is closely related to the underlying geological material on which they have formed. Most of the Tullamarine Freeway alignment is on one of three surface geologies, Alluvial flats to the south, Alluvial terraces in the middle section and recent basalts to the north (Figure 1). The surface soil for each of these areas is likely to be medium to heavy textured clay with some sand, silt and shallow heavy textured clay respectively (Table 1). In general the natural soils are fine textured.

Actual soils are likely to be highly variable due to extensive modifications of the surface soil with extensive areas of cut and fill associated with road construction and other development works. However, the northern section of Tullamarine Freeway is relatively less developed and the planting conditions may reflect the natural soils more. These areas have shallow, heavy clay soils from recent volcanic basalts. In low lying areas, these soils may become waterlogged and species that have a good tolerance of poor drainage will perform best. These soils can benefit from the addition of organic matter and soil structure can be improved through the addition of gypsum.

Soil Compaction

Soil compaction is a common issue contributing to poor plant performance in roadside landscapes. Compacted soils have slower water infiltration rates, lower soil oxygen levels and can limit plant root growth. The fine textured, clay soils, like those along the Tullamarine Freeway are particularly susceptible to compaction. The advantage of the high water holding capacity of these clay soils can be lost if they are heavily compacted.

Alleviation of compaction caused by heavy road construction machinery is important, particularly in tree planting areas. Only certain species are able to tolerate compacted soils. The existing trees along the Tullamarine Freeway have generally performed quite well, which may reflect the selection of species which have a higher tolerance of soil compaction and possibly planting areas with uncompacted soils.

Batter Slopes

Batter steepness and aspect affect plant establishment and performance. Vigorous and dense vegetation cover can be difficult to establish on north and west facing batters, even more so if the batters are steep. The main driver for reduced vegetation performance on north and west facing, steep batters is limited soil moisture availability due to:

- North and west facing batters are exposed to more direct sunlight and experience higher temperatures.
- More rainfall runoff and less infiltrates into the soil when batters are steep rather than shallow.

Iron Deficiency (Mundulla Yellows)

Heavy basalt clays appear to have affected the health of some tree species in Melbourne. Yellowing of young foliage and eventually mature leaves and observed on a number of Australian native trees and is consistent with the phenomenon of Mundulla Yellows. It is thought that the effect is an iron deficiency, presumably caused by high soil pH and poor soil drainage may also contribute. Many of the large statured Australian native trees that are common and significant components of urban landscapes appear to be prone to iron deficiency. These species are likely to be important components of any future Tullamarine Freeway plantings and soil pH testing may be important to avoid any poor performance of these species in areas.

Species that are most prone to showing this effect are *Angophora costata* and *A. hispida, Corymbia citriodora* and *C. ficifolia* and *Eucalyptus sideroxylon* *C. maculata* does not seem to be as prone to this problem as related species but it is recommended that observations are kept of its performance. Along the Tullamarine Freeway some *C. citriodora* and *E. sideroxylon* have been killed by this syndrome. The young *A. costata* planted at the Mickleham Road interchange however are healthy and not displaying any signs of iron chlorosis.

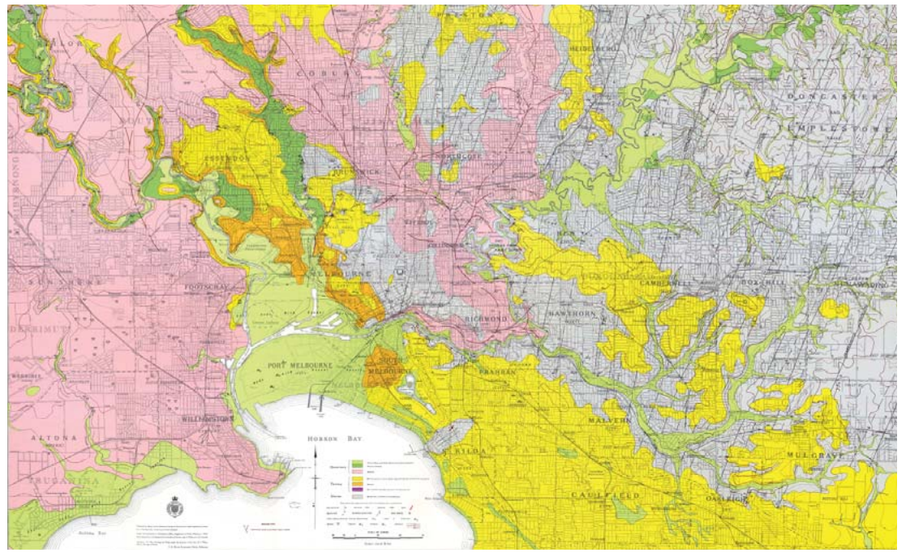


Figure 1 Dominant Geology and likely natural soils along Tullamarine freeway alignment

Corridor section	Geology	Soils
South (M1/M2 Interchange to Flemington Rd)	Alluvial flat (Quaternary)	Medium to heavy textured clay with some sand
Mid (Flemington Rd to Pascoe Vale)	Alluvial terraces (Quaternary)	Silt
North (Pascoe Vale Rd to the Melbourne Airport)	Basalt new volcanic (Quaternary)	Shallow heavy textured clay

Table 1

Rainfall And Evaporation
The general rainfall distribution trend in Melbourne decreases from east to west (Figure 2). The rainfall is relatively low along the Tullamarine Freeway alignment compared to the greater Melbourne area. The long term average (median) rainfall at Melbourne Airport is 558mm compared with 645mm at Melbourne CBD

A measure that considers both rainfall and evaporation more accurately reflects the growing environment for vegetation. Hydric grade, which is the relationship between rainfall and evaporation, was calculated using a modified Waite index.

A hydric grade of around 2 is needed to keep grass relatively green and the number of months with a value below this was used as a measure of aridity. The northern section of the Tullamarine Freeway is considerably more arid (Melbourne Airport = 10 months <2) than the southern end (Melbourne CBD = 5 months <2).

Future Climate
Compared to now, Melbourne's future climate is expected to be hotter and drier. In about 50 years (by 2070), Melbourne's rainfall may be similar to that of current day Seymour, and temperatures similar to Echuca, under a higher emissions growth scenario climate change model.

Exploiting Road Runoff For Use By Trees (WSRD)
Urbanisation has altered the movement of water in the landscape (Figure 3). Water sensitive road design measures provide opportunities to increase the retention of water with the landscape and provide soil moisture for vegetation. Improving soil moisture retention will also benefit the health of local waterways by reducing the volume of runoff water and pollutants that are discharged in to these systems. Alleviation of soil compaction is important for improving infiltration and soil moisture retention.

Key Findings:

- The natural soils along the freeway corridor are predominantly fine textured soils which are susceptible to compaction and likely to have low infiltration rates.
- The combination of highly modified soils, low effective rainfall and forecast climate change mean a limited range of species are suitable for the Tullamarine Freeway.
- Site preparation, particularly soil compaction alleviation, and batter design are critical for good plant establishment and performance.
- Retaining walls can be used to create more favourable areas for plant growth, by increasing the volume of loose soil for root growth and flattening batter steepness.
- Soil pH testing is likely to be important to ensure large Corymbia and Eucalyptus species perform well and are not prone to iron deficiency.
- Explore all opportunities to passively irrigate landscapes with stormwater and in areas where there is limited available land in the ROW investigate whether adjacent land holders are interested in harvesting water for re-use on their land.

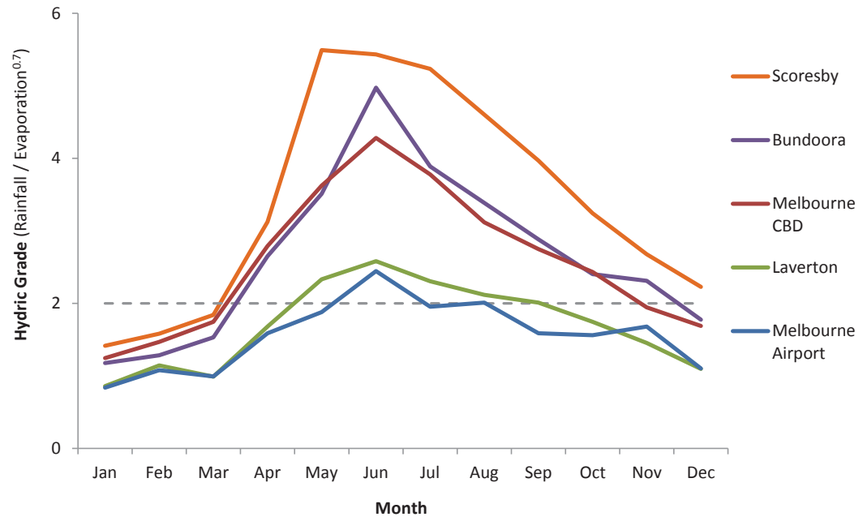


Figure 3 The hydric grade for various locations across Melbourne, note that the values for Melbourne Airport are much lower than Melbourne CBD

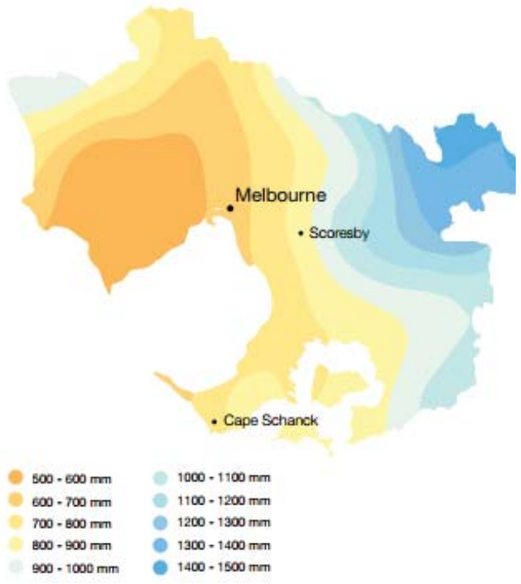


Figure 2 Average annual rainfall variation (1961 to 1990) across Greater Melbourne

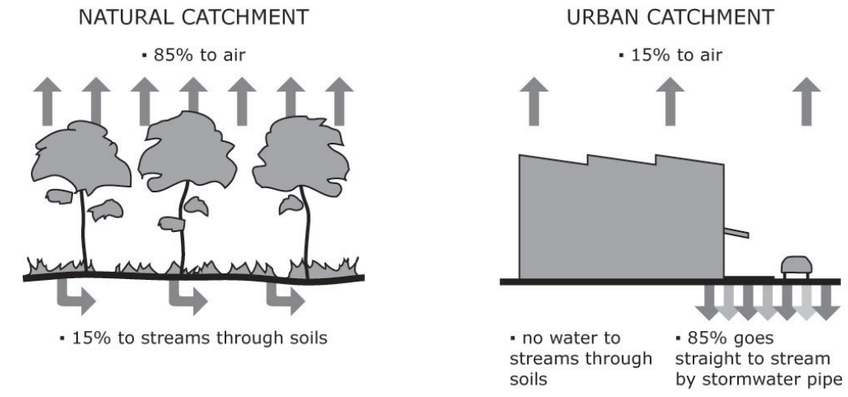


Figure 4 Urban development significantly affects the movement of water in the landscape

4.11 Advertising

Key Attributes

As the freeway carries traffic from the M31 (Hume Freeway), M80 (Western Ring Road), M79 (Calder Freeway) and over 30 million passengers from the Melbourne Airport each year, it is frequently congested. Large traffic volumes and slow peak travel times creates exceptional conditions for advertising.

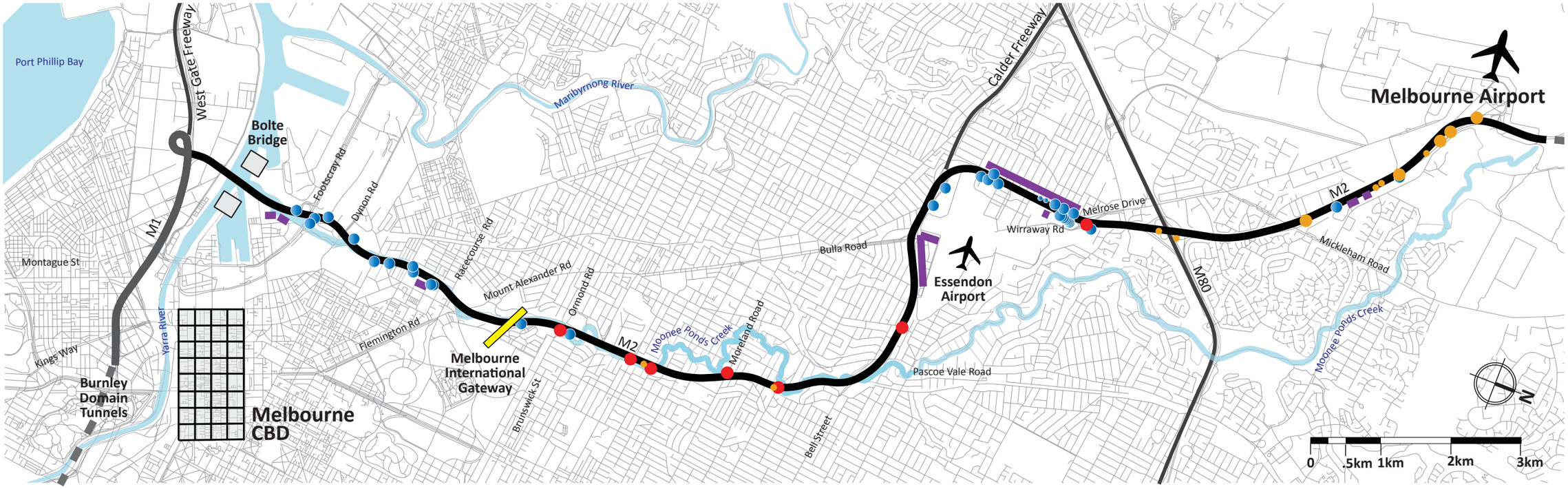
Tullamarine Freeway has more than 50 large scale billboards located between the Melbourne Airport and M1/M2 Interchange, which are owned by numerous vendors, including the government. These billboards are located either within the freeway reservation or in close proximity to it. They range from freestanding to building advertising, vary in shape and size and some are attached to bridges crossing the alignment. Cluster advertising, which is characterised by prolific combination of the above add to the mix.

Sections of the freeway already have a high level of visual clutter and inappropriate sign clustering. The interfaces with the Essendon Airport/Essendon Fields and Matthews Avenue are dominated by advertising signage in various modes along the freeway frontage. The proliferation of signs and messages, combined with lack of established vegetation, creates a harsh visual environment. Increasing visual clutter also contributes to the driver's visual work load, particularly at critical locations like exit and entry ramp lane merging. It is important that the location and frequency of advertising be considered with a whole of corridor approach which is currently lacking.

The advertising has a significant effect on woody vegetation planted along the freeway corridor. Over recent years VicRoads has received numerous requests to remove roadside vegetation to provide views to advertising billboards. This vegetation removal has a negative visual impact on the amenity of the freeway environment.

Key Findings

- The concentration of large scale advertising billboards along Tullamarine Freeway is relatively high compared to other Melbourne freeways.
- The visual intrusion of advertising is most prominent around the Essendon Airport environs and on the approach to the Bolte Bridge outbound.
- Advertising can detract from the amenity of the freeway and can distract drivers, particularly when it is positioned near road safety signs like in the vicinity of Essendon Airport environs
- Advertising can have an adverse impact on landscapes, resulting in removal/coppicing of mature vegetation and an associated high maintenance cost, like at the Calder Freeway Interchange
- Advertising on some of the bridges is not well integrated with the bridge structures contributing to a lower visual amenity
- There is a need for a whole of corridor advertising and way-finding strategy to confirm if and where any new advertising can be located.



Bridge Advertising

Freestanding outside the Freeway

Freestanding within the Freeway

Building Advertising

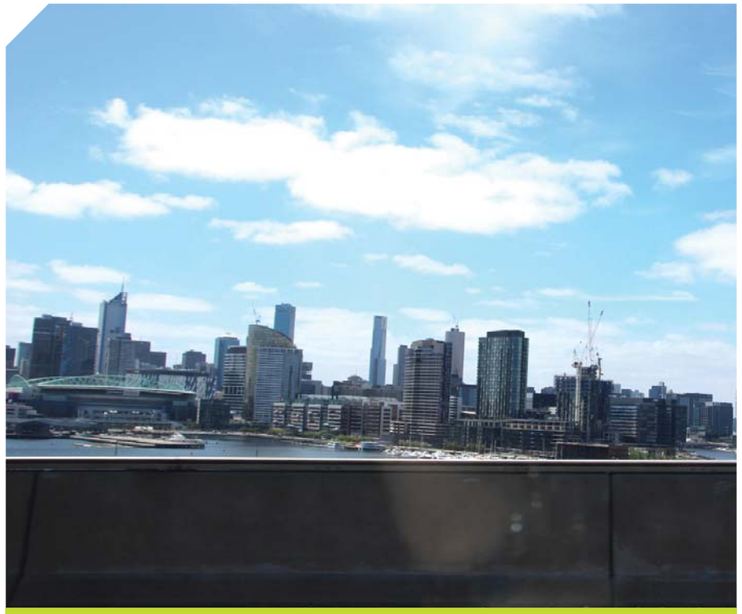
4.12 Landscape Character Zones

The Landscape Character Zones are the synthesis of the earlier corridor analysis. These zones reflect physical landscape elements such as landform, geology, infrastructure and vegetation. They also take into account a visual assessment of the quality of views from the freeway environs.

The M1 and M2 freeways traverse through a rich variety of natural and constructed environments and land use zones. The landscape character along the freeway falls into six broad types, which include:

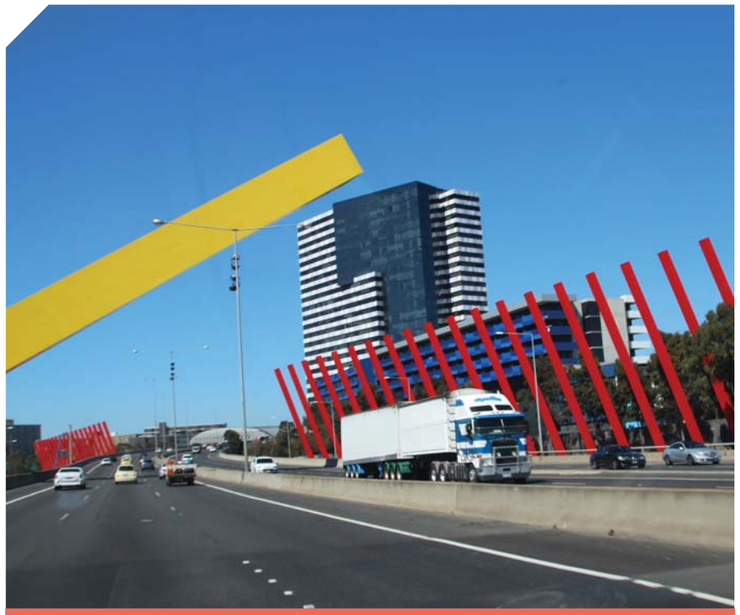
LEGEND

- ZONE 1
  City / Bolte
- ZONE 2
  Melbourne International Gateway
- ZONE 3
  Moonee Ponds Creek Valley
- ZONE 4
  The Cutting
- ZONE 5
  Essendon Airport
- ZONE 6
  Melbourne Airport



ZONE 1 - CITY / BOLTE

PLANTING	No planting next to the freeway as it is on elevated structure, mainly indigenous planting along Moonee Ponds Creek running parallel to the freeway corridor.
MAJOR VIEWS	Elevated long distance views to Melbourne CBD, Docklands, Port Phillip Bay, Bolte Bridge towers, Westgate Bridge and port environs.
LANDFORM	Flat surrounding terrain. Freeway on elevated structure.
ADJACENT LAND USE INTERFACE	Commercial, Special Use, Public Use , Docklands, Industrial, Residential, Public Open Space.
ADJACENT BUILT FORM	Large scale industrial and commercial buildings and port related infrastructure.
ADVERTISING	No advertising within the freeway alignment, extensive freestanding and roof and building advertising outside the freeway.
NOISE WALLS & MAJOR FREEWAY INFRASTRUCTURE	Extensive system of concrete barriers, high voltage towers running parallel to the freeway alignment, Bolte Bridge infrastructure.
OPEN SPACE	Capital City Trail along Moonee Ponds Creek
GEOLOGY/SOIL CHARACTERISTICS	Alluvial flat / Medium and heavy textured clay with some sand.



ZONE 2 - MELBOURNE INTERNATIONAL GATEWAY

PLANTING	Native groundcovers and Eucalypts along ramps only.
MAJOR VIEWS	Melbourne CBD, gateway sculptural elements.
LANDFORM	Flat surrounding terrain. Freeway elevated on high fill and bridge.
ADJACENT LAND USE INTERFACE	Residential, Public Open Space with some Commercial pockets.
ADJACENT BUILT FORM	Primarily medium density housing and high rise apartments.
ADVERTISING	No adverting
NOISE WALLS & MAJOR FREEWAY INFRASTRUCTURE	High quality sculptural noise walls and Melbourne Gateway architectural elements.
OPEN SPACE	Moonee Ponds Creek environs and Debneys Park visible from freeway, Royal Park in the distance.
GEOLOGY/SOIL CHARACTERISTICS	Alluvial terraces / Silt

ZONE 3 - MOONEE PONDS CREEK VALLEY

PLANTING	Extensive planting of climbers and groundcovers in narrow planting beds, mainly native trees and shrubs where space permits.
MAJOR VIEWS	Views to the surrounds generally blocked noise walls. Framed views to Melbourne CBD and Melbourne Gateway.
LANDFORM	Generally freeway in cut, surrounded by embankments which vary in height. Moonee Ponds Creek Valley abuts the road.
ADJACENT LAND USE INTERFACE	Residential and Open Space, small pockets of Special Use.
ADJACENT BUILT FORM	Immediately adjacent to the freeway - noise walls, low density, low rise residential buildings behind them.
ADVERTISING	Highest level of bridge advertising compared to other zones. Minimum level of advertising outside the freeway reservation.
NOISE WALLS & MAJOR FREEWAY INFRASTRUCTURE	Tall noise walls (sometimes over 5 m high) align almost the entire freeway on both sides. Noise walls in close proximity to freeway or on concrete barriers along the freeway edge. Highest concentration of bridges and pedestrian bridges, compared to other zones.
OPEN SPACE	Extensive system of parklands along the Moonee Ponds Valley corridor. Royal Park in the distance.
GEOLOGY/SOIL CHARACTERISTICS	Alluvial terraces / Silt

ZONE 4 - THE CUTTING

PLANTING	Native, senescent vegetation (especially Melaleuca plantings) with some infill planting.
MAJOR VIEWS	Views blocked by large cut embankments and noise walls.
LANDFORM	Freeway in cut, surrounded by large scale steep embankments.
ADJACENT LAND USE INTERFACE	Pockets of Open Space, primarily Residential to the south and Commercial/Retail to the north
ADJACENT BUILT FORM	Low density, low rise residential buildings generally screened by tall noise walls to the south. Prominent strip of large commercial/retail buildings to the north.
ADVERTISING	Prominent, large scale building adverting outside the freeway boundary, however well structured (same size, angle and spacing), minimal bridge advertising.
NOISE WALLS & MAJOR FREEWAY INFRASTRUCTURE	Generally tall noise walls set back from the freeway, Bulla Rd bridge infrastructure, dominant concrete barriers and noise walls in the vicinity of Pascoe Vale Rd.
OPEN SPACE	Minimum abutting freeway- not visible from freeway corridor, apart from planted freeway batters.
GEOLOGY/SOIL CHARACTERISTICS	Basalt new volcanic/ Shallow heavy textured clay

ZONE 5 - ESSENDON AIRPORT

PLANTING	Mainly native trees between M2/M80 interchange and English St. Primarily shrubs/ groundcovers and coppiced trees around Essendon Airport- flight path restrictions on plant height apply
MAJOR VIEWS	Essendon Airport environs
LANDFORM	Generally flat terrain with road interchanges on a build up fill.
ADJACENT LAND USE INTERFACE	Commercial/Aviation and Residential.
ADJACENT BUILT FORM	Essendon Airport side- Large commercial and airport hanger buildings well set from freeway boundary, Matthews Avenue side- continuous strip of low scale commercial and retail buildings close to road, low density residential buildings.
ADVERTISING	Highest level of advertising (outside the freeway corridor), compared to other zones. Advertising dominates the visual field at all scales- foreground mid and background. Minimal level of bridge advertising.
NOISE WALLS & MAJOR FREEWAY INFRASTRUCTURE	Prominent architecturally designed noise walls in close proximity to freeway and ramps, M79 interchange (Calder Freeway) and English St bridge infrastructure, dominant concrete barriers and guard fences, poor quality interface with tram tracks along Matthews Ave
OPEN SPACE	Essendon Airport environs only.
GEOLOGY/SOIL CHARACTERISTICS	Basalt new volcanic/ Shallow heavy textured clay

ZONE 6 - MELBOURNE AIRPORT

PLANTING	Typically stands of mature Eucalypts of high landscape amenity.
MAJOR VIEWS	Melbourne Airport environs, Dandenong Ranges and Woodlands Historic Park.
LANDFORM	Flat landscape, gently undulating in the distance
ADJACENT LAND USE INTERFACE	Industrial, Commercial, Aviation developments and Rural- open paddocks in the vicinity of Melbourne Airport, primarily Residential (low density, low rise) between Mickleham Rd and M80 interchange.
ADJACENT BUILT FORM	Medium size industrial buildings set back from freeway reservation, low density residential buildings
ADVERTISING	Moderate level of freestanding advertising, primarily located within the freeway boundary, sporadic building advertising on commercial buildings abutting the freeway reservation.
NOISE WALLS & MAJOR FREEWAY INFRASTRUCTURE	Noise walls set back from freeway in residential area, dominant M80 interchange with ramps, barriers and architecturally designed bridges and noise walls.
OPEN SPACE	Minimum abutting the freeway, mainly at M80 interchange and Woodlands Historic Park in the distance.
GEOLOGY/SOIL CHARACTERISTICS	Basalt new volcanic/ shallow heavy textured clay

4.13 Summary of Key Findings

A review of relevant policies and strategies combined with a detailed analysis of the existing freeway conditions has highlighted the following key findings:

1. There will be significant change to the scale and density of the urban fabric abutting the freeway in key development locations as Melbourne grows into the future. Other areas along the freeway, particularly the low scale residential zones, are expected to remain relatively unchanged in the short to medium term.

2. The standard and hierarchy of urban design elements at major interchanges is of a high quality and contributes to the identity of the freeway as well as assisting with way-finding

3. Given that the freeway has been constructed and added to in many stages, there is an overall lack of urban design consistency, particularly with key elements like noise walls and retaining walls of which there are a large number of types

4. The road edge interface along the freeway corridor is uneven and variable with very few buildings engaging with the freeway. The overall driver experience is below that expected of an international gateway to Melbourne.

5. The overall visual quality of the planting design is inconsistent. The level of maintenance is below the standard expected as a 'gateway experience to Melbourne', as financial and other constraints hinder landscape performance.

6. Much of the landscape buffer and space available for trees within the freeway right of way will be progressively removed with the addition of new traffic lanes. This will increase the reliance on borrowed landscapes adjoining the freeway for visual amenity.

7. There are significant areas of parkland and creek reserves adjoining the freeway which contribute to the overall corridor landscape character. In particular, the Moonee Ponds Creek Valley has important environmental and recreational values for commuters and the local community.

8. The existing level of advertising along the Tullamarine Freeway is relatively high compared to other freeways and is often poorly integrated. Large expanses of advertising contributes to visual clutter particularly around the Essendon Airport precinct

9. There is a need for a whole of corridor advertising and way-finding strategy to confirm suitable locations for advertising relative to other freeway information systems

10. There is no overall consistent or coordinated colour palette for the whole corridor, although there are some strong themes which can be built upon

11. There are important relationships to be maintained and coordinated with key stakeholders along the corridor including, Essendon Fields, Melbourne Airport, local Councils, the State Government and various statutory organisations

5.0
Urban Freeway Elements

Introduction

The M2 Freeway & CityLink upgrade is a retrofit project to provide additional traffic lanes along with new freeway management systems and other related improvements. The upgrade project will have a number of impacts on the existing corridor including widening into existing landscape embankments, loss of established landscape, alterations to noise walls, retaining walls and some bridges. Overall the freeway corridor will become more urban with additional built structures and reduced areas for landscape. This is a similar situation to the recent upgrade works on the M1 and M80 corridors. There are also opportunities to improve the visual consistency of the freeway along with improved planting practices and better interfaces with the corridor boundary.

Given that this is a retrofit upgrade, there are a relatively modest number of new urban freeway elements. Overall the visual changes will be location specific rather than transforming the whole freeway corridor. This section makes no reference to the former East West Link project.

In a similar way to the urban design principles and objectives, the urban freeway elements that follow concentrate on scenario conditions that anticipate the possible future road design as it unfolds.

5.1 Noise Walls

Issues/constraints

- The M2 has a large number (17) of different types of noise walls of varying quality
- Existing noise walls will be generally retained
- Some existing noise walls will be altered to match existing where impacted by new traffic lanes
- Noise walls are usually highly visible to both the road user, adjoining residences and open space users and therefore need to be carefully considered to mitigate their impact
- New noise walls will be required on some new bridge structures which will need careful integration given their visual prominence
- Some noise walls are masked or partly masked by vegetation which is to be encouraged

Design Opportunities

- In select locations some noise walls should be transparent walls to open up views to local features, like creek valleys, vistas to distant and nearby landmarks and other natural features
- New noise walls and developer funded noise walls should adopt the higher quality precedent types already located within the freeway corridor, like sheet metal and painted precast vertical concrete panels. Timber noise walls are not recommended
- New noise wall types should relate to their immediate context for consistency
- Generally noise walls will adopt mute colours in the range of charcoals through to silver
- Where noise walls are being replaced or altered the adjoining landscape needs to be concurrently improved
- Rehabilitate and add new landscaping to improve the visual amenity of noise walls

5.2 Bridges, Barriers & Railings

Issues/constraints

- Some existing bridges may require alteration including widening which may compromise bridge forms and aesthetics
- Some existing road and pedestrian bridges will require replacement with new bridges due to freeway widening impacts
- Numerous types of bridge parapet, barriers and railings occur along the M2 adding to an inconsistent identity
- Some bridges are visually altered by the later addition of large advertising signs, freeway signs and management systems
- Some bridge barriers and structures impede significant views to and from the freeway
- New bridge pier forms and span structures will be affected by the method of construction and the amount of space available within the corridor
- New or altered pedestrian bridges, ramps, stairways and approach pathways need to be well designed to provide safe and legible access and to minimise vandalism and graffiti

Design Opportunities

- Altered bridges should seamlessly integrate with the form of the existing structures and materials
- Design integrated barriers with railings to achieve maximum visual permeability and to retain views
- Bridge railings should generally be galvanised steel rather than painted
- New bridges should apply good bridge design principles and be well proportioned to complement and enhance the setting
- New bridges in highly visible locations should be developed as significant markers as part of an improved legibility of the freeway corridor
- Ensure the form of new bridge structures is visually compatible with the site context and minimise impacts to natural topographic and landscape features
- Minimise the extent of added on structures to new and existing bridges, including advertising signs, traffic signs and freeway management systems. When adding such structures, they should be carefully integrated with the bridge elements
- New pedestrian bridges have the opportunity to contribute to the legibility of the freeway with memorable and innovative structures
- New pedestrian bridge railings have an opportunity to provide visual interest and higher pedestrian and cycling amenity through the use of perforated panels or similar edge treatments
- Anti-throw screens if required should be integrated with the bridge design. This includes perforated metal panels and other woven metal fabrics with good visual permeability.

5.3 Retaining Walls

Issues/constraints

- The M2 has a large number of different types of retaining walls and abutments of varying quality
- Steep batter slopes above retaining walls and abutments result in poor plant establishment and erosion problems
- Existing 2:1 batters adjacent to the roadside prove difficult to maintain, present poorly and have OH&S issues
- Some retaining walls have unsightly safety fences and or noise walls on top which are not well integrated
- Retaining walls facing the freeway often are poorly integrated with the land form or landscape treatment
- Some retaining wall types are not well resolved with poor alignments, material finish and integration

Design Opportunities

- Minimise new retaining wall types to achieve more overall consistency and improved design quality
- New retaining walls should utilise precast concrete construction to increase longevity and minimise on-going maintenance
- Careful design consideration required when matching into existing walls
- Walls should have well resolved vertical and horizontal alignments and avoid unnecessary stepping
- Walls should carefully integrate with the land form, batter slopes and other localised structures
- Consider the introduction of concrete traffic barriers as retaining walls to improve road edge conditions and to create flatter batters for better plant establishment and safer maintenance
- Walls should generally have a mute colour palette in the range of charcoals to silver
- Safety barriers need to be carefully integrated with the retaining wall design to minimise their visual impact. Walls can be extended vertically in specific locations to reduce the need for separate barriers

5.4 Landscape Treatments

Issues/constraints

- The existing planting design lacks consistency along the freeway corridor
- Landscape conditions are hostile to plant establishment and growth
- In general the natural soils are typically fine textured and susceptible to compaction
- Soils are highly modified and heavily compacted on road cut and fill areas
- Topsoils are shallow to absent
- Basaltic soils containing rocks near the surface are difficult to rip and cultivate
- Some batters are too steep to sustain good quality plant performance
- Annual rainfall is approximately 600mm which is lower than the eastern areas of Melbourne and higher evaporation to the north (near Melbourne Airport) results in less water available for plants
- Planting zones are often severely constrained due to the relatively narrow ROW corridor and the location of overhead power lines and in-ground services
- Tree planting is determined by clear zone restrictions and location of traffic barriers
- The success of infill planting within existing areas has been generally poor and landscape maintenance resources are limited

Design Opportunities

- Develop a distinctive freeway identity as an unfolding journey through the Australian landscape
- Ensure that only locally native (indigenous) species are planted within environmentally sensitive areas, such as creek corridors
- Maximise the community benefits provided by planting particularly along creek corridors, shared user paths and within open spaces adjacent to the freeway alignment
- Maximise the opportunity for tree planting along streets adjoining the freeway corridor like Matthews Avenue Airport West to improve amenity and interface
- Maximise the potential for tree planting within clear zones by extending traffic barrier locations
- Use planting as an effective graffiti mitigation measure
- Establish a robust planting palette specifically selected for the context
- Explore all opportunities for providing passive irrigation through water sensitive road design techniques
- Explore opportunities to provide retaining walls to reduce steep batters and allow for additional topsoil depth
- Integrate learnings from recent successful and failed freeway planting in the west and north of Melbourne.
- Ensure high quality site preparation techniques are implemented including adequate ripping, mulching and top soil
- Remove plants that are stunted or in poor condition and replant, including in areas not disturbed by construction works disturbed by construction works.
- Investigate alternative funding models for freeway maintenance linked to specific locations, including private philanthropic sponsorship, revenue through advertising and joint ventures with adjoining land owners.

5.5 Road Edge Improvements

Issues/constraints

- Sections of the freeway have poor visual road edge conditions
- Typical issues are the lower and upper sections of earth berms and cut and fill embankments which are bare and untidy or too steep to sustain planting
- Industrial and commercial areas along sections of the freeway are often unsightly and present poorly
- Sections of the freeway have obscured view lines to local and distant features due to the close proximity of vertical noise walls and retaining walls
- The M2 is part of a major urban growth area and it is expected there will be increased building densities in close proximity to the road corridor over time
- Some developments along the road edge have turned their backs to the freeway and create a poor interface with little or no consideration of built form or amenity
- Ongoing issue with graffiti on walls, bridges and other structures

Design Opportunities

- Create flatter batter slopes (3:1 or flatter) for improved planting and maintenance practices
- Consider concrete traffic barriers as retaining walls to create flatter batters for planting
- Consider barriers (wire rope, concrete) for protection for existing and new tree planting within clear zones
- Consider visual masking with screen fencing or other devices to improve unsightly sections of the road corridor interface
- Consider removing visual blockages in selected locations to increase transparency and views. This may include replacing sections of solid noise walls and other screening elements with transparent ones
- Consider planting locations and types to protect views including to advertising signs as approved with VicRoads
- Consider integrated land forming with benching and low retaining walls to create better planting conditions
- Encourage integrated design approaches, including through local planning schemes, that address the freeway with higher quality built form and landscaping developments like The Age Printing complex, among others
- Encourage complimentary land uses adjacent to the road corridor
- Consider the issue of graffiti through the design process and implement measures to mitigate the problem

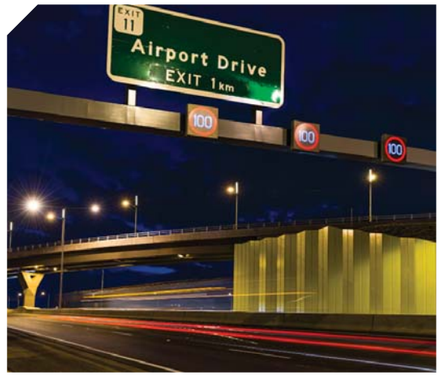
5.6 Gantries, Signage & Managed Motorway

Issues/constraints

- The existing freeway only has a partial management system which requires upgrading along with signage
- Some gantries will require replacement due to traffic widening and related works

Design Opportunities

- The M2 freeway will be upgraded to become a Managed Motorway which will require additional gantries, similar to the M1 and M80 freeways
- Implement consistent standard gantry structures with specific form, shape and colour
- Consider the careful integration of new gantries along the freeway corridor
- Consider minimising the number of gantries to reduce visual clutter
- Minimise the installation of signs and Managed Motorway elements on pedestrian bridges and other key bridges
- Confirm that all new gantry locations do not interfere with key vistas, including views of the city and other urban design elements like the Melbourne International Gateway



5.7 Colour Themes

Issues/constraints

- Some sections of the freeway have well considered colour palettes whilst other sections are undeveloped
- There is no overall colour palette guidelines for the freeway

Design Opportunities

- The strategic use of colour on the freeway corridor can contribute to improved legibility and identity for road users and the adjoining local communities
- Colour can be used thematically to define distinct sections of the freeway, particularly at major interchanges
- There is a well-established colour palette already in key places at major interchanges which should not be diminished by the introduction of more colour
- The colour palette should reinforce a consistent treatment for the whole freeway, particularly in the zones between major interchanges where mute colours in the range of charcoals, greys and silvers should be used
- Consider the use of colour on selected structures such as pedestrian bridges where fitting into a whole of corridor approach
- Utilitarian structures shall be in muted greys

5.8 Interchange Treatments

Issues/constraints

- Some established interchanges may require upgrading which could impact on the original urban design concept
- Various new structures and other freeway elements may diminish the visual clarity and legibility of the interchanges
- The entrance to Melbourne Airport is in a stage of ongoing redevelopment and has so far not been considered as a major interchange

Design Opportunities

- There is an existing suite of high quality major interchanges and bridges which underpins the identity of the Tullamarine Freeway, including the Bolte Bridge, Melbourne International Gateway and sound tube, the Calder Freeway and M80
- Should new bridges and other freeway structures be built, they should be considered concurrently for their contribution to the whole corridor and not diminish the major treatments already in place. They should be equal or higher quality to transform the freeway into an international gateway to Melbourne
- Improve the interface at the Melbourne Airport - including screening of car parks, high quality landscape and possible major public art

5.9 Shared User Path

Issues/constraints

- The existing shared user path has a complex and circuitous route with large sections not within the freeway ROW
- Where the existing path is within or near the ROW it is often in tight and semi enclosed spaces against noise walls, creek and drainage culverts and other built structures with poor amenity
- Sections of the path are confusing, lack legibility and connectivity with poor sight lines and signage
- Most of the path system lies within local government controlled open spaces and road reservations of varying quality
- Some freeway widening works may impact on the existing path requiring realignment and other remedial treatments

Design Opportunities

- Consult with local councils to assist in the implementation of coordinated improvements to the path system and to foster new patronage
- Consult with stakeholders to improve connectivity of the network
- Rationalise and upgrade fencing, path surface, path edge conditions and plantings to improve amenity
- Adopt the recommendations regarding the SUP, outlined in the strategic document prepared for the Moonee Ponds creek valley - Moonee Ponds Creek Strategic Plan (2011)

5.10 Road & Feature Lighting

Issues/constraints

- Upgrading and widening works may affect the road lighting infrastructure requiring new poles and fixtures
- Sections of the freeway already have dramatic feature lighting which contributes to its identity , like the Bolte Bridge and Melbourne International Gateway
- There are different lighting poles and fixtures along the freeway with differing technologies and design standards
- Essendon Airport has special poles and fittings due to flight path restrictions

Design Opportunities

- Provide an integrated lighting scheme to achieve a consistent visual effect, legibility and sustainability outcome
- Explore opportunities for the provision of new feature lighting to selected urban freeway elements
- Maintain the existing feature lighting to major elements and upgrade to energy efficient technologies

5.11 Water Sensitive Road Design

Issues/constraints

- The freeway corridor typically has a very narrow ROW with limited opportunities for WSRD initiatives
- Existing ground conditions may impact treatment opportunities
- Proximity of treatment areas to the roadside needs to consider maintenance and safety

Design Opportunities

- Integrate WSRD into the landscape and the urban design to achieve sustainable water and ecological resource management
- Consider treatment of water through swales and bio filtration systems
- Consider removal of sections of kerb and channel to redistribute road run-off passively into roadside swales and planting zones

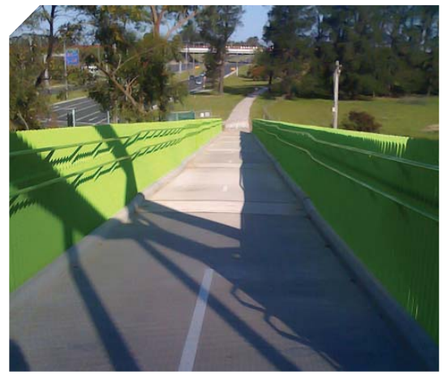
5.12 Fences, Barriers & Screen Elements

Issues/constraints

- There are a large number of different fence and safety barrier types along the freeway corridor in varying conditions
- The location of safety fences and barriers can look unsightly when not carefully integrated with landscape and urban design elements, in particular on top of retaining walls and bridge abutments
- There are sections of the freeway that have unsightly adjoining land uses that contribute to low quality driver and local community perceptions, like at Matthews Avenue
- There are sections of the freeway where cyclists and pedestrians are in very close proximity to the traffic lanes in hostile circumstances requiring some form of visual screening to improve amenity and safety

Design Opportunities

- Provide a set of robust, standard fence and barrier types to improve maintenance safety aspects and visual integration along the freeway
- Coordinate with landscape and urban design elements to minimise the visual impact of safety fences in prominent locations
- Provide masking screen elements in selected locations to enhance the road user experience and to improve safety and amenity for cyclists, pedestrians and maintenance workers. This includes some pedestrian/cycling paths and bridges in close proximity to hostile traffic conditions and other hazards



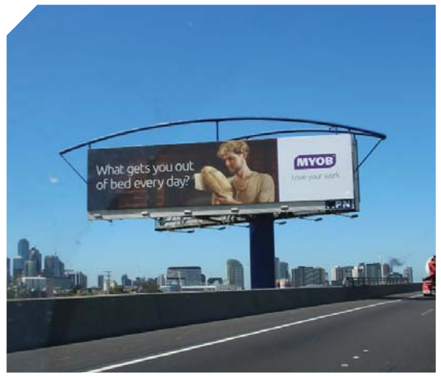
5.13 Advertising

Issues/constraints

- Sections of the M2 are dominated by various forms of advertising from large freestanding billboards and bridge billboards to long stretches of uncontrolled signs on buildings lining the freeway
- The current extent of advertising signage both within the freeway ROW and adjoining it is unsightly and contributes to visual clutter and potential driver distraction
- The location of advertising signs impacts on the extent of tree planting possible, due to sight line restrictions

Design Opportunities

- Liaise with external stakeholders to encourage a process for the control of the extent and type of advertising along the freeway corridor
- Consider the development of advertising exclusion zones as part of the whole freeway experience, particularly at major interchanges and other locations requiring driver concentration and decision making.
- Minimise the impacts of advertising on the location and extent of landscaping, in particular signs should be located to avoid the removal of established trees and potential new tree planting given the limited zones in which this can occur
- There is a need for a whole of corridor advertising and wayfinding strategy to confirm if and where any new advertising can be located. This may also recommend relocating some signs as part of the assessment process.
- Consider innovative new programs, that directly link advertising income to improve freeway maintenance in specific locations of high merit.



6.0
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