



11 Landscape and visual effects

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11.1 OVERVIEW

This chapter assesses the landscape and visual impacts associated with the construction and operation of the Mordialloc Bypass (Freeway) (the project). It is based on the impact assessment prepared by Aspect Studios and presented in Appendix D: *Landscape and visual impact assessment*.

The assessment was undertaken to determine the project's potential visual and urban design impacts on the landscape character and visual amenity of the local area.

Legislation, policy, site visits and desktop analyses were used to assess the existing conditions of the study area for its overall landscape character and associated value, and to identify potential sensitive sites.

Nine landscape character areas (LCAs) within the study area were identified as having potential to be impacted by the project. The LCAs combine landscape features, land use, development and history to identify distinctive spatial qualities and their anticipated value to society.

Of the nine LCAs, the impact assessment identified five LCAs that the project would have a low to moderate impact on and three LCAs that it would highly impact, even with best practice project specific mitigation measures being implemented. Key sensitive sites for visual and landscape impacts have also been identified throughout the study area based on their proximity to the project, their cultural or community value and their level and type of public usage. A total of eight views from sensitive sites were identified as having moderate to high impacts even if project specific mitigation measures are applied.

The impact ratings were established by assessing a site's sensitivity to change and the magnitude of the impact. The impacts are mostly due to the project's proximity to residential areas, publicly accessible open space and other identified sensitive sites. Impacts relate to open views, native vegetation, connectivity and recreational space, and are amplified by the project's components that require fill over 2.5m high such as bridges and noise barriers.

An assessment of visual impacts has concluded that high visual impacts would primarily be contained within the local setting (up to 1km from the freeway). These are generally confined to residential houses and parklands immediately adjacent to the freeway. In particular, impacts are greatest in areas where the freeway requires bridging and noise barriers.

A Landscape Concept Plan has been developed by Major Road Projects Authority (MRPA) which identifies mitigation treatments for the entire bypass alignment, including the areas where there are high visual impacts (see Attachment III: *Maps and figures*). Since the freeway is generally at the same level as the existing ground level or slightly elevated, over time the recommended mitigation measures identified in the Landscape Concept Plan would result in a significant reduction of visual impacts as vegetation becomes established and the freeway is gradually screened from view.

Environmental Performance Requirements (EPRs) were also developed to ensure the overarching urban design principles (Table 11.7) are incorporated into the Waterways bridge structure and Detailed Landscape Concept Plans.

11.2 EES OBJECTIVES AND REQUIREMENTS

The draft evaluation objectives for landscape and visual are defined in the *Scoping Requirements for Mordialloc Bypass Environment Effects Statement* (scoping requirements) (DELWP 2018).

Table 11.1 summarises key issues relating to landscape and visual considerations as identified in the scoping requirements.

DRAFT EVALUATION OBJECTIVE

To minimise potential adverse social and land use effects, including impacts on existing infrastructure and open space.

Table 11.1 EES key issues — landscape and visual

Key issues
The potential for effects on the landscape and recreational values of neighbouring open space and residential areas, including the Mordialloc Creek, Waterways and Braeside Park environs from the project, in particular from elevated structures, such as bridges over the Mordialloc Creek, new Freeway interchanges, new ancillary structures such as noise barriers, and new lighting associated with the project.
Potential for changes to the existing infrastructure in the project area and in its vicinity.
Effective integration of the proposed project with local transport networks including public transport and shared bicycle pathways.

11.3 LEGISLATION, POLICY AND GUIDELINES

Key legislation and policies relevant to landscape and visual considerations for the project are outlined in Table 11.2. Full details are provided in Appendix D: *Landscape and visual impact assessment*.

Table 11.2 Legislation and policies — landscape and visual

Legislation/policy	Description
State	
Victorian State Planning Policy Framework (SPPF)	<p>The SPPF informs planning and responsible authorities on the planning policies that must be considered when planning in their respective areas. The SPPF provides guidance to recognise and protect neighbourhood character and sense of place, specifically for built environment and heritage elements, and to protect landscapes and significant open spaces that contribute to character, identity and sustainable environments.</p> <p>Relevant SPPF clauses are:</p> <ul style="list-style-type: none"> • 12.04-2: provides guidance to protect landscapes and open spaces that contribute to character, identity and sustainable environments • 15.01-1: focuses on providing safe and functional environments that reinforce a sense of place and cultural identity • 15.01-2: aims for urban design outcomes that contribute positively to local urban character and minimise negative impacts on neighbouring properties • 18.01-2: aims to set the locations of transport routes in a way that minimises environmental impacts • 18.02-4: regulates transport route designs to achieve visual standards appropriate to the route's importance and refers to landscape treatments • 11.04-1: aims to ensure that the land use and development of adjoining open spaces reduces negative visual and noise impacts, treats wastewater to reduce turbidity or pollution, and preserves vegetation.
Urban Design Guidelines (Victoria), August 2017	<p>The Urban Design Guidelines for Victoria are policy guidelines within the SPPF.</p> <p>The guidelines are for state agencies, local government and professionals to use to deliver functional, enjoyable places for people to live, work and spend leisure time. They aim to create neighbourhoods that foster community interaction and make it easy for people of all ages and abilities to live healthy lifestyles, including regular physical activity.</p>

Legislation/policy	Description
Metropolitan/Regional	
Living Links — Port Phillip and Westernport Catchment Management Authority	<p>Living Links is an ambitious, large-scale program to retain and protect the natural values of the region in the face of continuing development, and to make this area a world-class urban ecosystem.</p> <p>The Living Links projects and corridors intersect the project in the north and middle sub-areas.</p> <p>Living Links projects highlight significant, strategic, region-wide links of biodiversity and open space, which are valued by the community and integral to sustainable development.</p>
Plan Melbourne 2017–2050	<p>Plan Melbourne aims to manage city and suburban growth to the year 2050. It seeks to integrate long-term land use, infrastructure and transport planning, and, in doing so, meet the city's future environmental, population, housing and employment needs.</p> <p>Plan Melbourne contains a range of directions related to population, employment and land use to be considered in planning this project.</p>
Local	
Greater Dandenong Planning Scheme	<p>The Local Planning Policy Framework contains several policy statements and objectives relevant to the landscape and visual assessment south of the project. The planning scheme identifies the South East Green Wedge zone next to the project area in the southern reach which is valued for its landscape and environmental significance, amenity values, productive agricultural potential, recreational opportunities and water management. The green wedge seeks to protect the area's rural landscape character.</p> <p>Relevant project planning scheme objectives include:</p> <ul style="list-style-type: none"> • 21.03-1: aims to provide a city whose green wedge provides a green, spacious relief from the surrounding urban development and supports a range of activities • 21.03-2: focuses on providing strategies that support a sustainable environment • 21.05-1: aims to facilitate high-quality building design and architecture • 21.05-4: seeks to maintain and protect the open, landscape-dominated vistas throughout the Greater Dandenong Green Wedge • 21.06: supports providing a broad area of open space within Melbourne's broader developed urban area.
Kingston Planning Scheme	<p>The Local Planning Policy Framework contains direction on landscape and visual assessment, including:</p> <ul style="list-style-type: none"> • to protect and enhance the amenity of Kingston's residential areas and other sensitive land uses by managing transport networks • to protect and improve the flood storage and water quality treatment functions of existing floodplains and waterways, and to consolidate their habitat and recreation importance. <p>Relevant planning scheme clauses and policies include:</p> <ul style="list-style-type: none"> • 21.09: seeks to improve the aesthetic, cultural and conservation value of the Mordialloc Creek and its surrounding natural landscape • 22.03: the Sandbelt Open Space Project Policy highlights an ongoing desire from the community for more connections to open space and recreational opportunities • 22.04: the South East Non-Urban Area Policy helps to maintain the rural character of the proposed route and limit visual impacts on the Braeside Park area.

Legislation/policy	Description
Kingston Green Wedge Plan, 2012	Identifies the Green Wedge values and features, preferred land uses, and environmental and natural resources that should be protected and that the local community needs. This strategic plan was developed by consultants and local Council with extensive community engagement. It is essential for understanding the local community's values and vision for the area.
Kingston Cycling and Walking Plan 2009–2013	This strategic plan highlights key movement and community connections that local government and community wants for improving connectivity and supporting sustainable and healthy travel modes.

As an MRPA project, the following VicRoads guides also inform the design of specific parts of the project:

- Fauna Sensitive Road Design Guidelines, VicRoads, 2012
- Roadside Management Strategy, VicRoads, 2011
- Integrated Water Management Guidelines, VicRoads, 2013.

Further information on these guidelines can be found in Appendix D: *Landscape and visual impact assessment*.

11.4 METHODOLOGY

The following tasks were undertaken during existing conditions analysis:

- review of other relevant strategic documents
- review of maps and reports prepared for MRPA by various consultants, which identify values important to the assessment
- site investigation and photography
- identification of existing physical features
- identification of natural and cultural values
- identification of the LCAs
- identification of key views and places of public significance and value.

Impacts were identified via two processes:

1. A landscape character impact assessment that:
 - a. identified LCAs and their values
 - b. identified the main sites of visual sensitivity
 - c. determined the project's effects on these areas and sites.
2. A visual amenity impact assessment that:
 - a. analysed visual changes (in views or visual amenity) experienced by individuals and groups of people in both public places (including key sensitive sites) and private residential areas
 - b. used 'photomontages' to digitally introduce proposed project elements into an existing view or photograph to help assess its visual impact.

These impact assessment processes assisted in identifying potential mitigation measures for the project to minimise impacts. The landscape and visual impact assessment (LVIA) methodology is summarised in Figure 11.1.

MRPA has subsequently developed a Landscape Concept Plan based on the outcomes of the LVIA. The Landscape Concept Plan is provided in Attachment III: *Maps and figures*.

11.5 STUDY AREA

The study area and sub-study areas applied to the LVIA investigations includes the project area as defined in Chapter 6: *Project description*, with a 1km buffer zone, as shown in Figure 11.2.

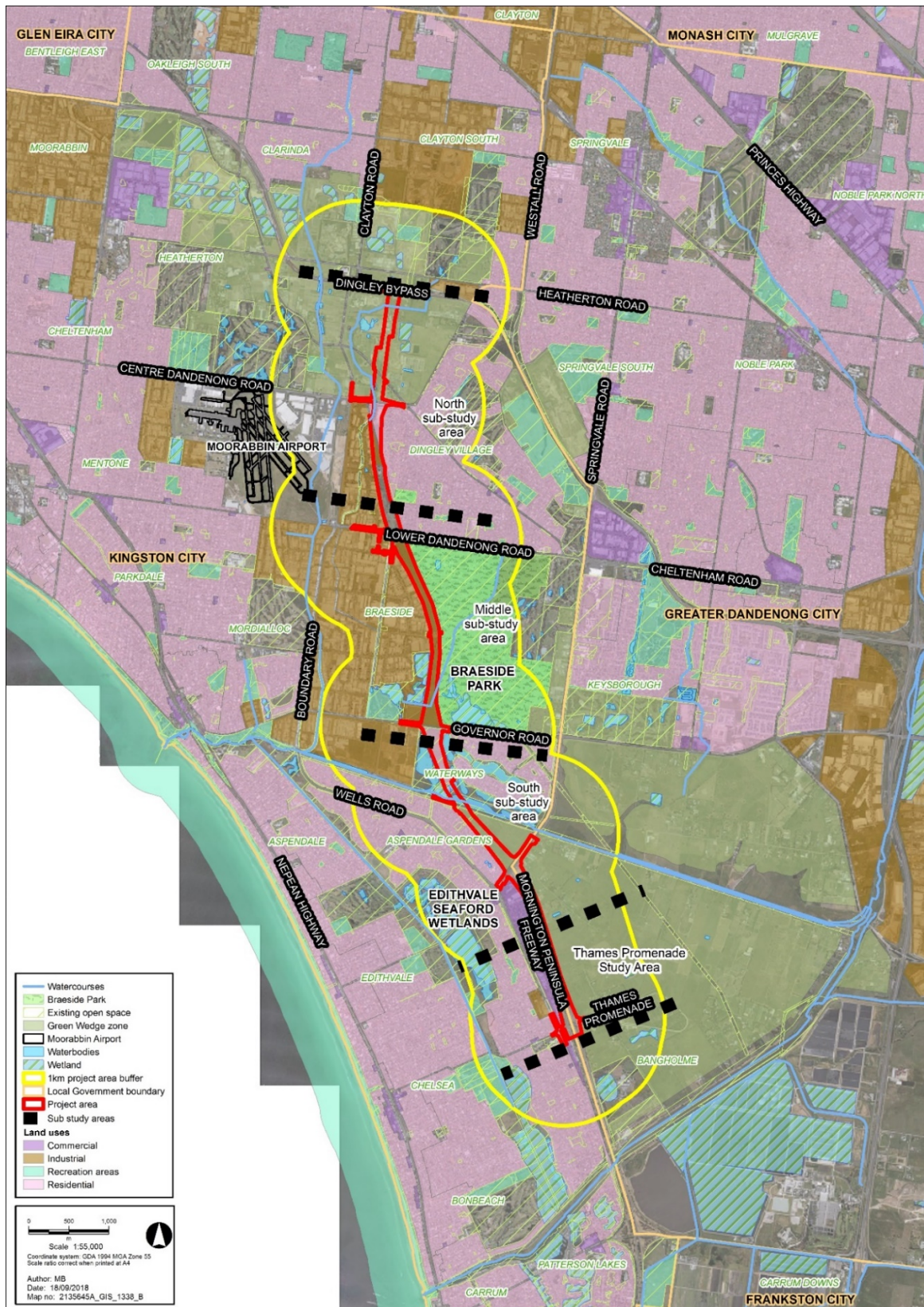


Figure 11.2 Mordialloc Bypass (Freeway) landscape and visual impact assessment (LVIA) sub-study areas

11.6 EXISTING CONDITIONS

The project is situated in the south-eastern suburbs of Melbourne. The road alignment was identified in the Victorian Governments *The 1969 Melbourne Transportation Plan* and *Metropolitan Strategy Implementation Report (1981)* (Vic). This was later formalised in the late 1990's through the placement of a Public Acquisition Overlay (PAO) over the land designated for the project between the Dingley Bypass and Springvale Road, as detailed in the Kingston Planning Scheme.

Key features contribute to the landscape and visual feel of the study area, and can range from access and connectivity to the area, ecological importance, built form and key views. Key features were initially established through desktop review of site history, and policy and legislation review. Some key strategies considered in the study included the City of Kingston Chain of Parks and Living Links strategies.

The project passes through a diverse range of land forms and uses, including areas of light industry, farming and market gardens (green wedge zone), single and double story residential areas (Dingley Village and Aspendale Gardens), industrial areas (Woodlands Industrial Estate and Redwood Gardens Industrial Estate), commercial areas (Chelsea Heights), areas of open parkland (Braeside Park) and important constructed wetland areas (Braeside Park Wetlands, Woodlands Wetlands and Waterways Wetlands).

11.6.1 Landscape character areas (LCAs)

During the site inspections, nine distinct LCAs were identified. The northern extent of the project is dominated by the Green Wedge light industrial and open space area. This area extends to Centre Dandenong Road and is valued for its less urbanised appeal, which is different from other suburbs in the study area. The area is dominated by open spaces, market gardens, and light industrial. Development of the area is controlled through the Green Wedge Zone planning provisions of the Kingston Planning Scheme (refer to Chapter 9: *Land use and planning*). As a result of the industrial and agricultural land uses, the landscape value of the area is considered to be low (LCA1; Figure 11.3).

Dingley Village residential area, south of Centre Dandenong Road (LCA2; Figure 11.3) mainly comprises single storey brick houses with wide roads planted with exotic tree species. Houses in this area are close to the project boundary, mostly with back fences and gardens at the rear of the properties. The area also includes a number of public open spaces. The landscape value of this area is considered to be moderate.

The area between Centre Dandenong Road and Governor Road on the western side of the project is dominated by industrial land uses. Both the Woodlands and Redwood Industrial Estates include predominantly industrial buildings of one to two storeys in height. The roadways are sealed and commonly in a wide boulevard style to allow for truck movements (LCA3; Figure 11.3). The landscape value for this area is considered low to moderate.



Source: Aspect Studios, 2018

Figure 11.3 Representative views of LCA1 (top), LCA2 (middle) and LCA3 (lower)

Braeside Park (LCA4; Figure 11.4) is located between Lower Dandenong Road and Governor Road. Braeside Park is managed by Parks Victoria and provides park land area for the local population and the wider south-eastern Melbourne communities. The park includes dense forested ecological areas and more open picnic areas used by the community. The landscape value of the area is considered to be very high because of its historical, ecological, recreational and scenic values.

In addition to the parklands, Braeside Park also includes a wetland which is used by endangered and threatened bird species. Two more wetlands make up the central wetland LCA (LCA5; Figure 11.4). The area is used for birdwatchers and walkers who enjoy natural views of the wetlands and surrounding environment. The area forms an important open space habitat and recreational links and provides wide open views for residents and visitors. The area is bordered on the north-west by industrial land use, however is not dominated by these views. The landscape value is considered to be very high.

The Waterways neighbourhood (LAC6; Figure 11.4) is dominated by double story residential dwellings surrounded by man-made wetlands. The landscape is generally flat with maturing plantings of indigenous and native plants. Trails and boardwalks cross through the neighbourhood into the neighbouring wetland LCA and street designs were developed to provide views of the various waterways. The area is considered unique due to its integration into the wetlands providing large open views and access to recreational activities. The native vegetation and birdlife associated with the area are considered of very high value to the community. The landscape value is very high.



Source: Aspect Studios, 2018

Figure 11.4 Representative views of LCA4 (top), LCA5 (middle) and LCA6 (lower)

South of the wetlands, Aspendale Gardens and Chelsea Heights residential area (LCA7; Figure 11.5) is dominated by a similar suburban landscape as Dingley Village (LCA2; Figure 11.3). The northern extents of the area have views across open fields to the Waterways wetlands. Similar to LCA2, the landscape value for this area is moderate.

The southern extent of the project is dominated by the Chelsea Heights commercial area (LCA8; Figure 11.5) and the southern green wedge area (LCA9; Figure 11.5). The LCA8 has a low landscape value due to its low lying commercial buildings, exotic planting and limited views. The green wedge area is flat lying farmland with some low density residential areas. The views are across open space to the existing Mornington Peninsula Freeway and has a low to moderate landscape value.



Source: Aspect Studios, 2018

Figure 11.5 **Representative views of LCA7 (top), LCA8 (middle) and LCA9 (lower)**

A summary of the LCA ratings is provided in Table 11.3.

Table 11.3 Landscape character area (LCA) and value rating table

LCA number	LCA	Landscape character value rating
1	Green wedge north	Low to moderate
2	Dingley Village residential	Moderate
3	Industrial business park	Low to moderate
4	Braeside woodlands	Very high
5	Central wetlands	Very high
6	Waterways neighbourhood	Very high
7	Aspendale Gardens residential	Moderate
8	Aspendale Gardens commercial	Low
9	Green wedge south	Low to moderate

11.6.2 Sites of landscape and visual sensitivity

During the on-site investigations, sites of landscape and visual sensitivity were identified for detailed assessment of visual amenity impacts. The sites were a combination of community places and open areas or viewpoints that are more likely to experience a higher impact from changes to landscape and visual amenity. The types of key sites and areas of sensitivity that have been identified as having potential landscape and visual impact effects from the project include:

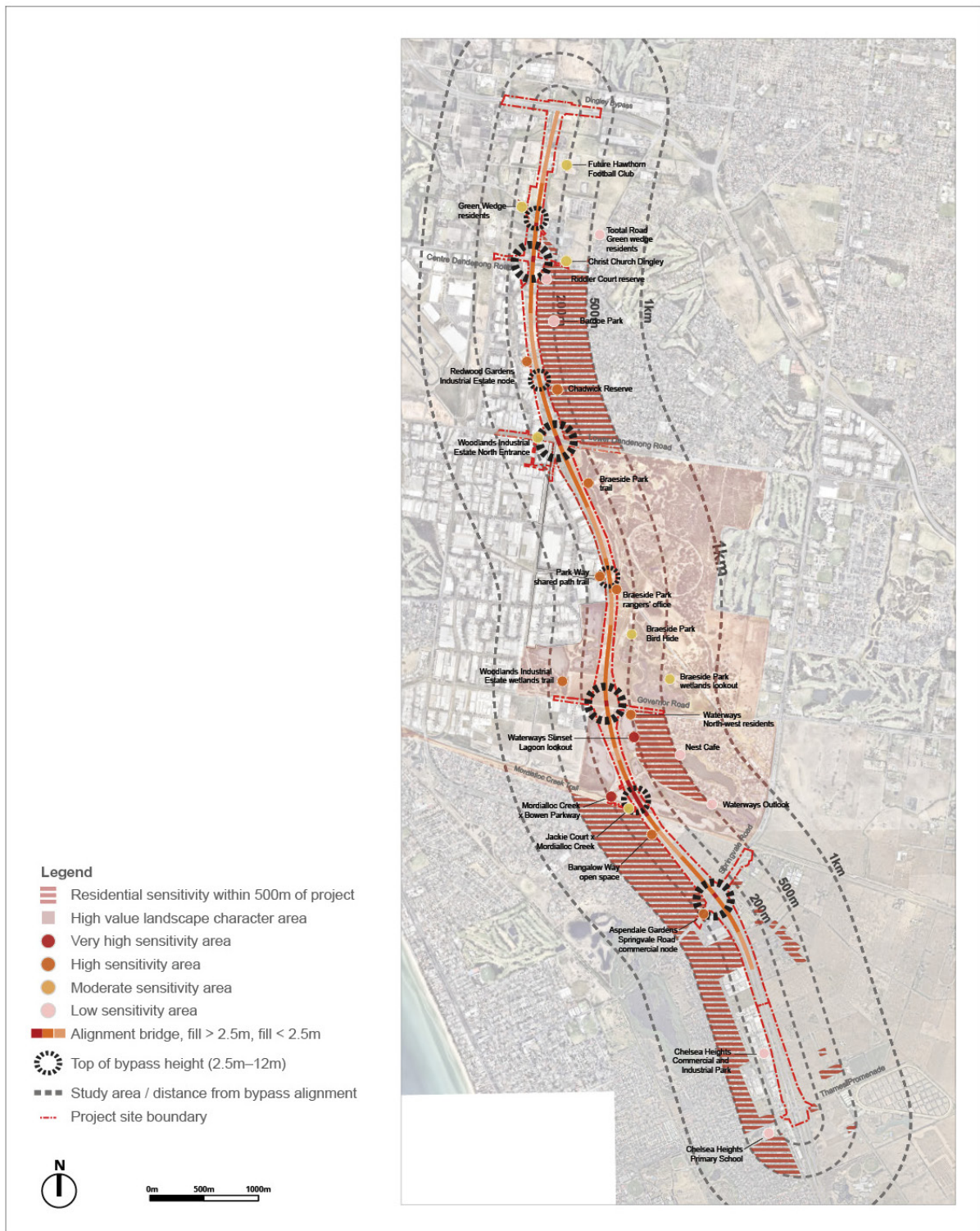
- valued existing LCAs
- valued community and public sites (visual audiences)
- valued open spaces, and pedestrian and community connections
- valued ecological and natural features
- residential areas in close proximity to the project.

Key sensitive sites are generally located within 200m of the project with clear line of sight of the alignment. The area is very flat, so as you move away from the project the view of the road is likely to become much less obvious, as the views will be obstructed by trees and houses. Each site was assessed for a base level of sensitivity to change as shown in Table 11.4.

Twenty three sites were identified along the alignment, eleven of which have a base sensitivity of High or Very High. An additional seven locations have a base sensitivity of Moderate and the remaining locations have a sensitivity rating of Low. For the details of individual sites, refer to Appendix D: *Landscape and visual impact assessment*.

Table 11.4 Sensitive landscape and visual sites within the study area

Community site	Value	Distance from project	Base level of sensitivity
North			
Future Hawthorn Football Club	Very High	0–200m	Moderate
Green wedge north resident cluster	Moderate	0–200m	Moderate
Tootal Road green wedge	Moderate	500–1000m	Low
Christ Church Dingley	Moderate	200–500m	Moderate
Riddler Court Reserve	Moderate	0–200m	Low
Bardoe Park	High	200–500m	Low
Chadwick Reserve	Very High	0–200m	High
Redwood Gardens Industrial Estate activity node	High	0–200m	High
Middle			
Woodlands Industrial Estate north entrance	Moderate	0–200m	Moderate
Braeside Park trail	High	0–200m	High
Braeside Park rangers building	High	0–200m	High
Braeside Park bird hide lookout	High	0–200m	High
Braeside Park wetlands lookout	High	500–1000m	Moderate
Park Way shared path trail	High	0–200m	High
Woodlands Industrial Estate wetlands bushwalking trail	High	200–500m	High
South			
Waterways Barmah Place trail	High	0–200m	High
Waterways Sunset Lagoon lookout	High	0–200m	Very High
Nest Cafe	High	500–1000m	Low
Waterways Outlook	High	200–500m	Low
Bowen Parkway at Mordialloc Creek	High	0–200m	Very High
Jackie Court and Mordialloc Creek Trail informal entrance	Moderate	0–200m	Moderate
Bangalow Way open space at Mordialloc Creek	High	0–200m	High
Aspendale Gardens at Springvale Road	Moderate	0–200m	Moderate



Source: Aspect Studios, 2018

Figure 11.6 Sites of landscape and visual sensitivity

11.7 RISK ASSESSMENT

An environmental risk assessment (ERA) was undertaken to identify environmental risks associated with the construction and operation of the project. Where initial risks were rated as 'medium' or higher (with standard controls in place) these issues were further assessed and investigated in the Landscape and Visual Impact Assessment Report. Where necessary, additional controls were identified as part of the Impact Assessment to reduce the identified risks to acceptable levels. These controls have been incorporated into the environmental performance requirements (EPRs) for the project. The initial risks were then re-assessed following application of the environmental performance requirements to derive the residual risk ratings. The methodology for the risk assessment has been described in Chapter 4: *EES assessment framework and approach*.

The initial risk assessment identified twelve individual primary risks, ten of which have a risk rating of medium and above. Risks with a rating of medium and above are shown in Table 11.5. Primary risks can be divided into three main categories of risk:

- safety of open space and access
- impact on visual amenity of landscape
- impact of landscape form, including habitat connectivity, landscape connectivity and potential impact on vegetation.

The LVIA assessed the project against these risks by defining LCA's, and assessing all aspects of impact as described in Section 11.8.

The two risks were assessed to be of negligible or low risk and are therefore not included in the table below. A full list of landscape and visual risks and further information on potential impacts determined to be low risk are contained in Appendix D: *Landscape and visual impact assessment* and Attachment I: *Environmental risk assessment report*.

Table 11.5 Landscape and visual impact risks

Risk	Impact pathway	Primary impact	Project phase	Initial risk rating	EPR ref.	Residual risk rating
R-VL1	Land access issues for local land users	Poor sightlines and low passive surveillance levels impact on pedestrian/bicycle safety and personal security.	O	High	LV1 LV2 S1	Medium
R-VL3	Visual or physical impact upon key sites	Visual impact of new structures, including overpasses and noise barriers.	O	Extreme	LV1 NV1 S1	High
R-VL4	Land access issues for local land users	Road alignment and design changes established patterns of movement and recreational use (including informal networks).	C, O	High	LV1 LV3 S1 S2	Low
R-VL5	Visual or physical impact upon key sites	Visual and experiential impact of project on highly sensitive sites.	C, O	High	LV1 S1 NV1	High
R-VL6	Impacts upon landscape character types	Direct loss of woodland and wetland landscapes that are critical to the regional landscape character and quality.	C, O	High	LV1 B1 B3 B6	High

Risk	Impact pathway	Primary impact	Project phase	Initial risk rating	EPR ref.	Residual risk rating
R-VL7	Impacts upon landscape character types	Tree removal resulting from construction causes the physical disconnection of existing landscapes and the loss of landscape character values.	C	Medium	LV1 B1 B3 B6	Medium
R-VL9	Impacts upon landscape character types	Loss of habitat or habitat connectivity that is critical to ecological sustainability and overall landscape character.	C, O	High	LV1 B1 B3 B6	Medium
R-VL10	Visual or physical impact upon key views	New works expose views of industrial land uses or other low quality land uses.	C, O	Medium	LV1 LV3	Low
R-VL11	Visual or physical impact upon key views	Disconnection between residents and established landscape views.	O	High	LV1	Medium
R-VL12	Visual or physical impact upon key views	Impacts on visual connection between related landscape elements.	O	High	LV1 LV3 B1 B3	Medium

11.8 IMPACT ASSESSMENT AND MITIGATION

11.8.1 Construction

Risks R-VL3, R-VL4, R-VL5, R-VL6, R-VL7 and R-VL9

Although construction impacts along the alignment have the potential to cause impact to landscape views and character, the LVIA primarily assesses the proposed alignment once construction is complete. Standard mitigations including planting with seven years of growth is considered during the operational impact assessment below.

Construction works are considered temporary in nature and are proposed to be managed through standard controls including a Construction Environmental Management Plan (CEMP). The CEMP will include controls on light spill at the sensitive locations including wetlands and residential properties during construction activities (EPR LV4). In addition, hoardings may be used.

In addition, where temporary works are undertaken or access is restricted, reinstatement of the temporary work site and connection must be completed within 12 months of the completion of works (EPR LV2).

During construction, clearing of native and exotic trees cannot be avoided. Chapter 10: *Biodiversity* includes details on non-planted native vegetation including scattered trees, and describes how these areas will be avoided including the implementation of no-go zones (EPR BHW3). In addition, during design and construction of the project, the contractor should avoid trees where practicable, including planted native and exotic trees to limit the impact on landscape values as much as possible (EPR LV5). Appendix O: *Preliminary tree assessment* provides details of all trees identified within the alignment. The assessment provides information regarding type, quality and retention value of the trees. The contractor will utilise this report to avoid trees in accordance with EPR LV5. In addition, these trees have been incorporated into MRPA's Landscape Concept Plan (provided in Attachment III: *Maps and Figures*).

11.8.2 Operation

Landscape character impacts (Risks R-VL1, R-VL3, R-VL4, R-VL5, R-VL6, R-VL9, R-VL10, R-VL11 and R-VL12)

The level of impact on the LCA was established by assessing the LCAs sensitivity to change, or its ability to absorb change without altering the character of the area, and the magnitude of the change when considering the project. Appendix D: *Landscape and visual impact assessment* provides details on the impact assessment methodology and the consequence tables for establishing the impact ratings.

The impact assessment assumes that mitigation, including planting, has been included in the project. Impacts are assessed seven years after construction is complete, so that any planting has had time to grow and mature. Mitigation measures include on reservation planting and revegetation as shown in the Landscape Concept Plan which is provided in Attachment III: *Maps and figures*. In addition, the impact assessment described design principals to be followed through the detailed design phase (EPR LV1) to ensure that impacts from the project are minimised as much as possible. In addition to identifying where planting is required, the Landscape Concept Plans also shows where trees, native and exotic, are being retained and incorporated in the plan. The location of trees has been taken from Appendix O: *Preliminary tree assessment*.

Of the nine LCAs, seven have the potential for moderate impact or higher. This assumes that standard mitigation measures are applied to the project. Expected impacts affecting the LCAs include visual impact on the identified sensitive locations, impacts to the scenic and distant views of residents and lookout points, impacts to connectivity, impacts on recreation, impacts on heritage sites and impacts on ecological sensitive areas.

Impacts on LCAs are greatest where the road is built up leading to bridge structures and where the LCA is least able to absorb change. This is most evident in LCA5 and LCA6, where the sensitivity is very high, and the magnitude of change is also very high). The sensitivity to change is heavily impacted by the relatively flat nature of this area, and the nature of the views across the wetland environment through ecologically sensitive areas. Clearing of native vegetation is assessed in Chapter 10: *Biodiversity* and clearing of vegetation will be managed through EPR BHW5, however, as discussed above, the contractor should avoid impact on all trees, where practicable, regardless of whether the tree is native or exotic (EPR LV5).

Figure 11.7 shows a view across from Waterways Estate to the bridge over the Waterways Wetlands. This key view shows the existing condition and directly following bridge construction. Planting is proposed to screen the structure with large indigenous trees, planted both within the road reservation and outside of the current road reservation. In addition, the colour of noise barriers is proposed to be neutral, to blend in with the surrounding trees. There is the potential to enhance the natural views through planting appropriate native vegetation as outlined in the Landscape Concept Plan.



Figure 11.7 Before and after view at Waterways Wetlands

The Landscape Concept Plans developed by MRPA for the project indicate that vegetation planting is primarily located outside the sensitive ecosystem areas. The Plans also show screen planting (yellow and red point locations) along the alignment to mitigate the impact of the project. Figure 11.8 shows the proposed planting and the mitigated schematic cross section.

As far as practicable, MRPA undertakes landscape and design treatments as standard mitigation measures for major road projects. The landscape and design treatments are described in VicRoads Contract Shell DC1: Design and Construct, April 2012. They provide a level of mitigation that is required to minimise typical physical impacts on the environment and the community. However, for this project, the additional project-specific mitigation measures have been proposed to reduce the landscape and visual impact of the project and identify potential opportunities to enhance overall project outcomes. These include minimising the thickness and overall mass of the bridge in design. It is noted that the bridge design in this area is very important to reduce the visual impact and MRPA is investigating design improvements to reduce the visual bulk in this area.

Seven years after construction and revegetation has matured, it is expected that the impact rating for the Waterways Wetlands LCA and key location will remain very high.

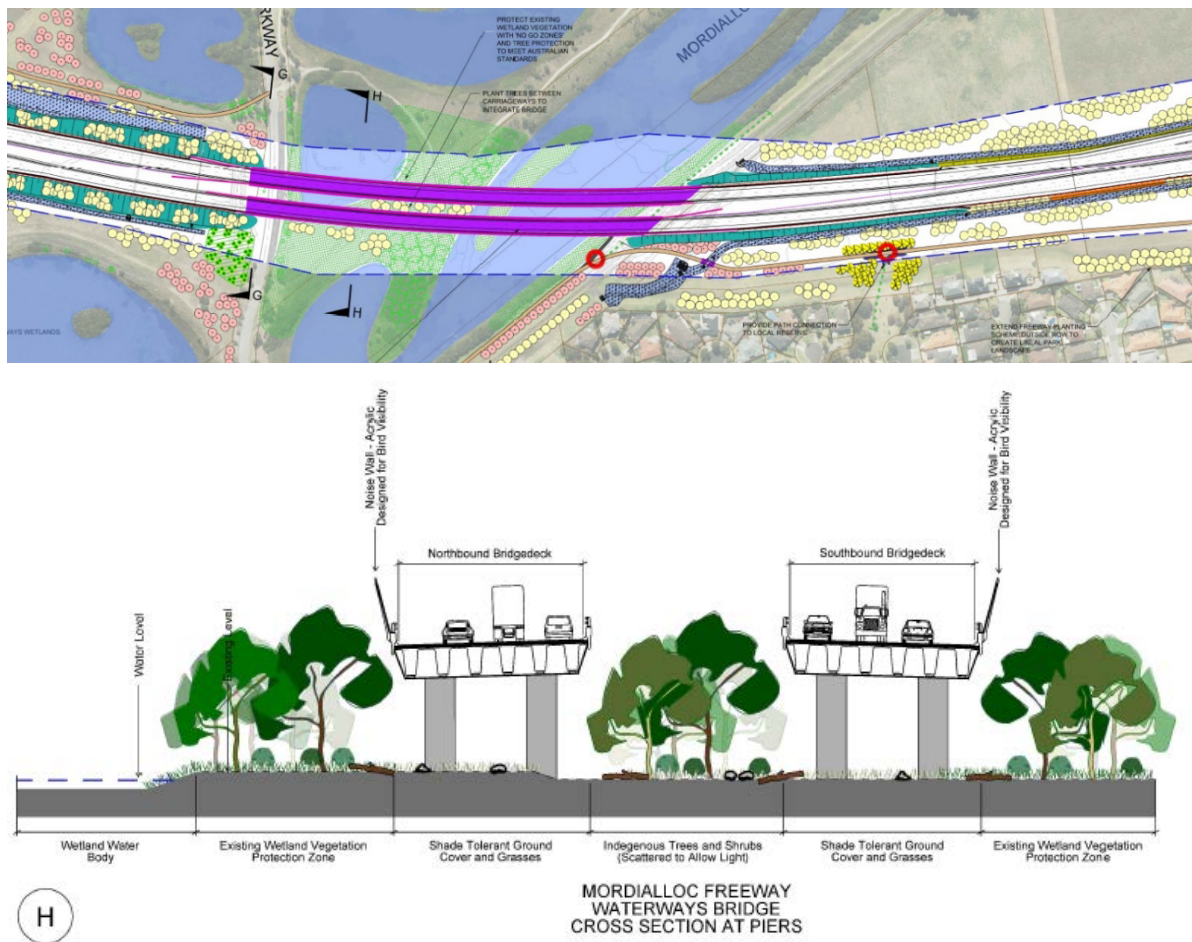


Figure 11.8 Landscape Concept Plan for the Waterways Wetland and associated bridge

LCA2 and LCA7 are very highly sensitive to change, and both have a high magnitude of change resulting from the project. The sensitivity of these areas is based on the use of the alignment for informal access and recreation and the enjoyment and views of open space (specifically at Aspendale Gardens). The magnitude of change is a result of the built form and structures where the bridge crosses over the arterial roads and Mordialloc Creek, impacting on residents in Aspendale. In addition, the visual impact of the proposed noise barriers is expected to affect the visual appeal in both Dingley Village and Aspendale Gardens.

It is also noted that Dingley Village will have informal east-west paths impacted by the project, which will cause some connectivity loss. A pedestrian underpass was recommended in the Landscape and Visual Impact Assessment report. MRPA has not incorporated this connection into the design because:

- community feedback indicated that this connection was not important
- an underpass would require the road to be raised by approximately three meters, which will significantly increase the project cost and change the visual impact for neighbouring stakeholders; and
- the east-west connectivity will generally be improved in this area by adding new shared use paths along Lower Dandenong Road and Centre Dandenong Road.

Vegetation planting within the road reserve to block out the view of noise barriers and the north south SUP will minimise the visual and connectivity impacts, however, the impact rating remains high. There is the potential to partner with local councils to incorporate additional publicly accessible community infrastructure and amenity projects in line with local council strategies and direction, which will lower the impact further by increasing the amenity of the area.

An additional consideration in both areas is the design of the SUP, ensuring that the path is open with clear sightlines to ensure safe passage. This can be achieved by incorporating the principles and guidelines of *Crime Prevention Through Environmental Design* (CPTED) and *Urban Design Guidelines for Victoria* (DELWP 2017) and maximising passive surveillance levels as far as practicable (EPR LV2).

Figure 11.9 shows the existing conditions, and a depiction of what the road may look like once constructed. The third image shows the cross section associated with Chadwick Reserve. The planting in this area will serve two purposes; screen the road from view, and ensure line of site for the shared use path. With standard mitigation measures in place, the LCA impact rating for this area is considered to be high. With additional controls, including sensitive noise barrier design and connection to the SUP, the impact in this area would be moderate.



Figure 11.9 Before and after view at Chadwick Reserve, Dingley Village

Figure 11.10 shows the Landscape Concept Plan response to the mitigation measures outlined above. The concept plan incorporates a lineal screen landscape incorporating connections to Chadwick Reserve and retaining as many existing trees as possible. It is important to note that screening proposed will have the added benefit of screening residents and users of Chadwick Reserve from the Redwood Drive Industrial Estate to the east of Aspendale Gardens.

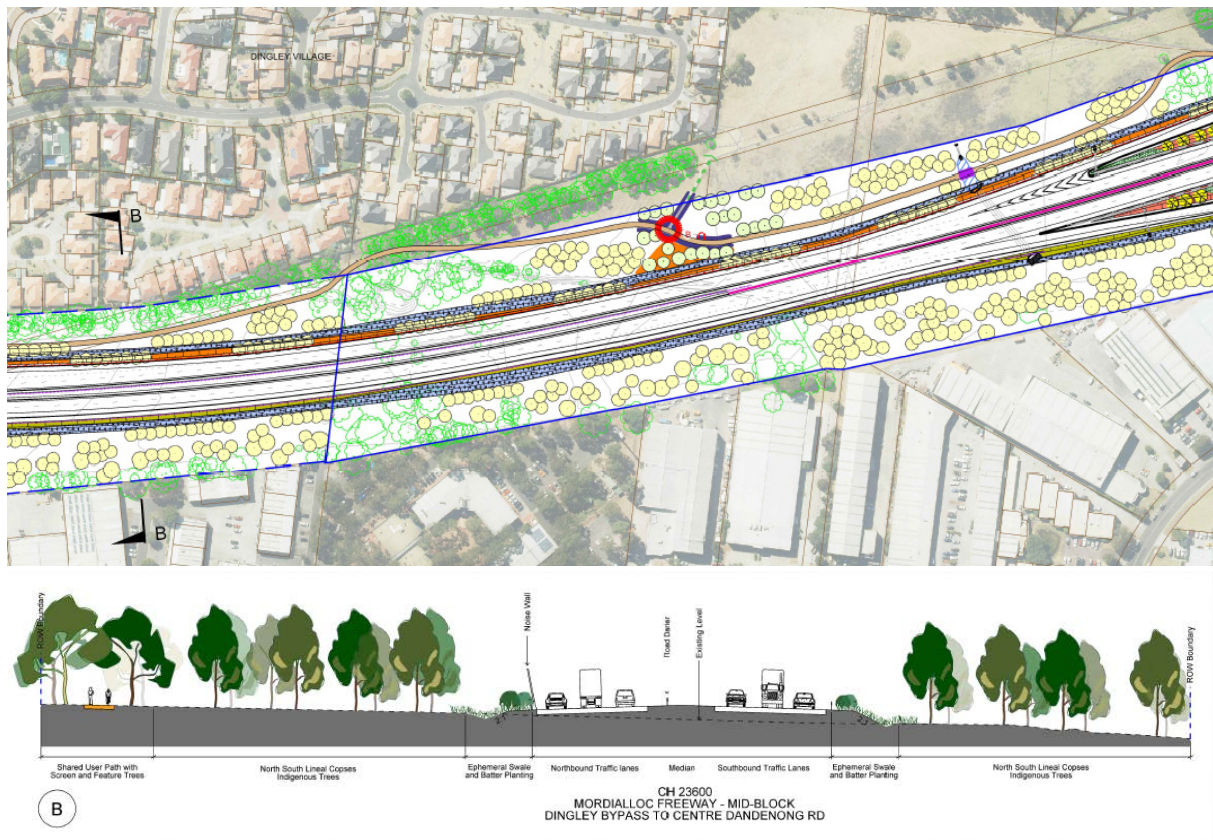


Figure 11.10 Landscape Concept Plan and cross section as mitigation alongside Aspendale Gardens

The remaining five LCAs (LCA1, LCA3, LCA4, LCA8 and LCA9) have a low to moderate impact rating after standard mitigations. Impacts to these areas include changes to vehicle access, changes to gateways to industrial areas and alterations to pedestrian access. Braeside Park (LCA4) has a high level of sensitivity and high magnitude of change, however with standard mitigations it is expected that the level of impact would be moderate. With additional mitigation measures including the proposed multi-purpose fauna barrier in this area and multi-purpose storm water culverts to allow connectivity of animal species, the impact would be medium (refer to Section 10.8.2 and EPR B1 in Chapter 10: *Biodiversity*).

Figure 11.11 shows the view from the bird hide at Braeside Park across the sensitive Braeside wetlands. The top most figure displays the existing conditions and the bottom figure shows the elevated structure over Governor Road in the distance. Elevated structures along the alignment will be designed to minimise bulk and planting on either side will shield the area leading to the bridge. Additional multifunction fauna barriers are proposed to maintain wildlife connectivity between the wetlands. This section of LCA5 is considered to be a moderate impact.



Figure 11.11 Before and after view looking across the Braeside Wetlands

Figure 11.12 provides an example of how the Landscape Concept Plans have incorporated EPRs and mitigation measures to maintain fauna connectivity between Braeside Park and Woodlands Wetlands. It shows storm water retention areas, fauna sensitive planting at the entrance to the culverts and visual screen planting. Significant consultation has taken place with the ecologists to ensure that planting and landscaping designs (including the stormwater retention areas) provided connectivity to the fauna connectivity culverts, and enhance (where possible) the connection across the alignment. In addition, Aboriginal Traditional Owner groups will be consulted during the development of the Landscape Design Plans.

Lighting is proposed on the approach to intersections and will be designed in accordance with the Urban design guidelines for Victoria. It will be designed to minimise impacts on residents and wildlife along the alignment (EPR LV3 and BHW2). In addition, although noise mitigation (noise barriers) will increase the visual bulk of bridge structures, they have the benefit of shielding residents and wildlife at wetlands from light spill from vehicle headlights.

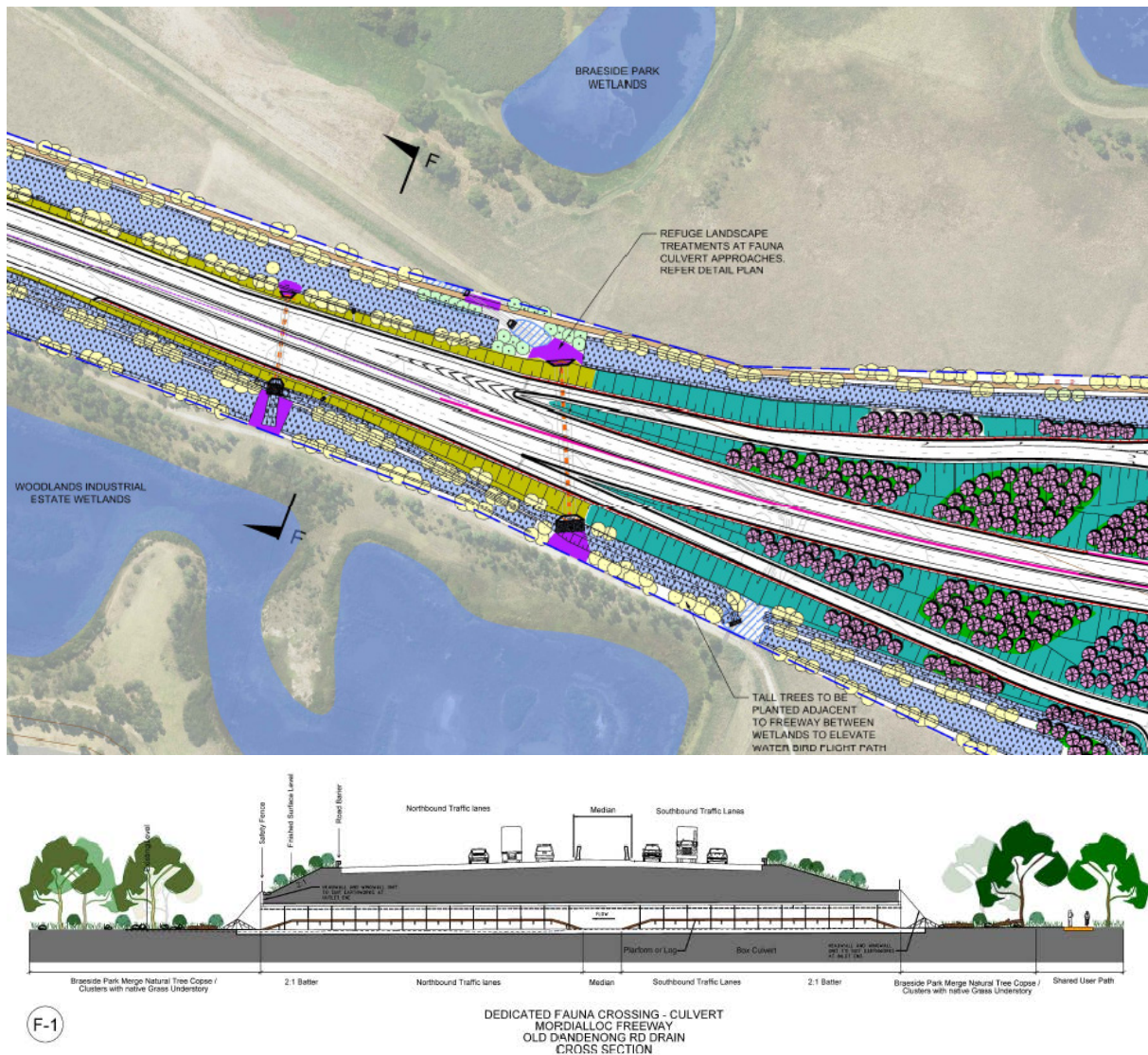


Figure 11.12 Landscape Concept Plan at Braeside Park showing the location of fauna underpasses and cross section of project specific mitigation

Urban design principles

Based on the outcomes of the impact assessment, eight guiding urban design principles were developed for the project. The principles were used by MRPA's urban design team to develop the Landscape Concept Plan discussed above and provided in full in Attachment III: *Maps and figures*. The urban design principles are summarised in Table 11.6.

Table 11.6 Urban design principles

Principle	Description
Principle 1. Identity	A well-defined identity and sense of place are key to creating strong and vibrant communities.
Principle 2. Connectivity and wayfinding	Well-connected and legible places contribute significantly to strong economies and healthy, inclusive communities.
Principle 3. Urban integration	Well-integrated environments provide a sound framework for the successful development of great places.
Principle 4. Resilience and sustainability	Places must be sustainable, enduring and resilient to support and nurture current and future generations.
Principle 5. Amenity	High quality urban amenity associated with access to services and the experience of great public places contributes to successful, equitable and prosperous communities.
Principle 6. Vibrancy	Animation of key civic spaces, and diversity in the experience of urban places support prosperous and healthy communities.
Principle 7. Safety	Safe environments are essential for strong, connected and happy communities.
Principle 8. Accessibility	Highly accessible and inclusive environments encourage positive activation and contribute to prosperity, wellbeing and the perception of care within communities.

To ensure a satisfactory outcome of mitigation measures, specifically planting and maintenance of ecosystems, a five-year extended landscape management strategy will be implemented after construction to ensure that vegetation develops appropriately (EPR LV6).

11.9 ENVIRONMENTAL PERFORMANCE REQUIREMENTS (EPRs)

Table 11.7 outlines the EPRs developed to protect and minimise landscape and visual impacts.

Table 11.7 Environmental performance requirements (EPRs)

EPR reference	Environmental performance requirements (EPRs)	Project phase
LV1	<p>Urban design approach</p> <p>Landscape design plans must be developed prior to the commencement of works (other than preparatory works referred to in the Incorporated Document) and must be based on relevant standards and the best practice principles of the Urban Design Charter for Victoria and the <i>Urban Design Guidelines for Victoria (DELWP 2017)</i>.</p> <p>The landscape design plans must incorporate, where practicable, mitigation measures to minimise the landscape and visual impact associated with the project, including in respect of:</p> <ul style="list-style-type: none"> • open spaces and recreational spaces • community facilities • residential interfaces • industrial interfaces, and • heritage assets. <p>The landscape design plans must:</p> <ul style="list-style-type: none"> • make use of appropriate ecologically sensitive planting • consider existing landscape character and sensitivities • enhance key gateway streetscapes • maintain and enhance existing pedestrian connections, where practicable • be developed in consultation with appropriate Traditional Owner groups to provide direction on appropriate landscape typologies, land management practices and principles • incorporate requirements of EPR LV2, and • make use of advance tree plantings, where appropriate, to reduce the initial visual impact. <p>In consultation with relevant stakeholders, the landscape design plans must include vegetation screening appropriate for visually impacted community spaces, including residential areas and public open spaces, must be designed and implemented.</p> <p>Landscaping in accordance with the landscape design plans must be implemented and maintained (EPR LV7).</p>	Design
LV2	<p>Crime prevention through environmental design</p> <p>Landscape design plans must protect and, where practicable, improve access to, and amenity for, potentially affected residents, open spaces, pedestrian and cyclist networks, social and community infrastructure and commercial facilities, whilst meeting the requirements of EPR B2. This includes implementing the principles and guidelines of <i>Crime Prevention Through Environmental Design (CPTED)</i> and <i>Urban Design Guidelines for Victoria (DELWP 2017)</i> and maximising passive surveillance levels as far as practicable.</p>	All
LV3	<p>Reinstatement works</p> <p>Within 12 months of the commencement of operation, the public open spaces, vegetation cover and facilities disturbed by temporary works must be reinstated to the reasonable satisfaction of the relevant land manager.</p>	Construction, Operation

EPR reference	Environmental performance requirements (EPRs)	Project phase
LV4	Lighting (operation) All lighting of permanent structures must be designed to minimise light spillage and protect the amenity of adjacent land uses to the extent practicable. Lighting in sensitive areas around wetlands and Braeside Park must also comply with EPR B2.	Design, Construction
LV5	Light spillage (construction) All lighting during construction must be managed in such a way as to minimise light spill to surrounding residential land uses, sensitive areas including wetlands and Braeside Park, and neighbourhoods. The strategies and techniques to do so must be included in the CEMP.	Design, Construction
LV6	Tree removal Minimise the removal of mature trees, particularly large amenity trees and those within or connected to public open spaces, that are not currently protected by no-go zones as described in EPR B3.	Construction
LV7	Landscape management strategy A landscape management strategy must be developed and implemented to ensure healthy growth of planted vegetation. The strategy will include weed management.	Operation

11.10 CONCLUSIONS

Nine LCAs within the study area have been identified as having potential to be impacted by the project. The LCAs combine landscape features, land use, and development and history to identify distinctive spatial qualities and their anticipated value to society. Nineteen sensitive sites and associated views were identified as having potential to be impacted by the project.

The impact assessment identified that five LCAs would be low to moderately impacted and three LCAs will be highly impacted by the project, even with project specific mitigation measures.

A total of eight views have been identified to have moderate to high impacts even with project specific mitigation measures (as outlined in Section 11.7) applied. The medium to high risks primarily relate to the visual intrusion of the project structure on the existing landscape, provision of connectivity, adequate surveillance and vegetation or wetland loss.

Construction impacts can be mitigated through the CEMP (EPR LV4). The installation of hoardings in appropriate locations during construction would minimise visual impacts upon sensitive sites and residential areas.

As the project is currently in the design and planning phase, project specific mitigation measures still have potential to be integrated and further developed to minimise potential impacts. Project specific measures and opportunities have been identified in each sub-study area, illustrated in the Landscape and Urban Design Strategy mapping and in the associated landscape treatments and guiding principles. These measures and correlating guidelines and strategy encourage a high quality urban design and landscape outcome for the sensitive sites, the areas surrounding residents and the community generally.