

Environment
Effects Statement

Technical Report H

Landscape and visual





North East Link Project

North East Link Environment Effects Statement

Technical report H - Landscape and visual

Prepared for North East Link

April 2019

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Appendices

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Appendix B – Legislation, policy and guidelines

Appendix C – Photomontages

Appendix D – Risk assessment

Appendix E – Existing conditions maps

Appendix F – Zone of theoretical visibility maps

Executive summary

This technical report is an attachment to the North East Link Environment Effects Statement (EES). It has been used to inform the EES required for the project, and defines the Environmental Performance Requirements (EPRs) necessary to meet the EES objectives.

Overview

North East Link ('the project') is a proposed new freeway-standard road connection that would complete the missing link in Melbourne's ring road, giving the city a fully completed orbital connection for the first time. North East Link would connect the M80 Ring Road (otherwise known as the Metropolitan Ring Road) to the Eastern Freeway, and include works along the Eastern Freeway from near Hoddle Street to Springvale Road.

The Major Transport Infrastructure Authority (MTIA) is the proponent for North East Link. The MTIA is an administrative office within the Victorian Department of Transport with responsibility for overseeing major transport projects.

North East Link Project (NELP) is an organisation within MTIA that is responsible for developing and delivering North East Link. NELP is responsible for developing the reference project and coordinating development of the technical reports, engaging and informing stakeholders and the wider community, obtaining key planning and environmental approvals and coordinating procurement for construction and operation.

On 2 February 2018, the Minister for Planning declared North East Link to be 'public works' under Section 3(1) of the *Environment Effects Act 1978*, which was published in the *Victorian Government Gazette* on 6 February 2018 (No. S 38 Tuesday 6 February 2018). This declaration triggered the requirement for the preparation of an EES to inform the Minister's assessment of the project and the subsequent determinations of other decision-makers.

The EES was developed in consultation with the community and stakeholders and in parallel with the reference project development. The reference project has been assessed in this EES. The EES allows stakeholders to understand the likely environmental impacts of North East Link and how they are proposed to be managed.

GHD and XURBAN were commissioned to undertake a landscape and visual impact assessment for the purpose of the assessment.

Landscape and visual impact context

The scoping requirements for the EES issued by the Minister for Planning set out the specific environmental matters to be investigated and documented in the project's EES, which informs the scope of the EES technical studies. The scoping requirements include a set of evaluation objectives. These objectives identify the desired outcomes to be achieved in managing the potential impacts of constructing and operating the project.

This report considers the landscape and visual impacts of the project to inform the preparation of the EES required for the project. This landscape and visual impact assessment has been prepared in response to the scoping requirements for the project. The assessment included review of previous investigations and relevant legislation, consideration of the existing conditions and an impact assessment to determine the scale of effects as a direct result of the project. The report identifies the impacts of the project and defines the EPRs necessary to reduce or minimise the identified impacts.

The impacts of shading and light spill directly related to the project were also assessed to inform the overall landscape and visual impact assessment.

The evaluation objective relevant to this assessment is as follows:

- **Landscape and visual impact** – to minimise adverse effects on landscape values, visual amenity, recreational and open space values and to maximise the enhancement of these values where opportunities exist.

Existing conditions

A study area for the landscape and visual impact assessment was established. The boundaries of the study area were based on the assumed height of constructed elements in the reference project.

Commonwealth, state and local legislation and policies relevant to the protection of landscape character and views within the study area are identified in this assessment. The key landscape values and features for the study area as reflected in relevant legislation and policy include the river corridors, established vegetation, ridgelines and views to and from significant landscapes.

These key values, along with a comprehensive desktop analysis, stakeholder consultation (refer to Appendix A for more details on stakeholder consultation) as well as extensive site visits have informed the existing conditions assessment. This information in conjunction with professional judgement has informed the designation of three distinct landscape character areas within the study area:

- Yarra River Valley
- Koonung Creek Valley
- Ridgeline.

These character areas as described in detail in Section 7.2 of this report.

Impact assessment

To address the scoping requirement evaluation objective above, the assessment of the potential impacts on landscape value and visual amenity was undertaken from viewpoints within the public domain and from private domain properties. Sixty-nine public domain viewpoints and 12 private domain were assessed.

The impact assessment found that viewpoints with the highest sensitivity to the proposed project are within close proximity to the project and are not specific to one specific landscape character area.

High impacts were identified where residential properties and open spaces are in close proximity, or directly adjacent to ventilations stations, noise walls and viaducts. Residential properties to the south of the M80 Ring Road, the M80 Ring Road interchange, adjacent to the Grimshaw Street interchange, the northern and southern portals, to the south of the Eastern Freeway interchange, and along the Eastern Freeway were identified as having high to medium landscape and visual impacts. These impacts decrease as distance from the project increases.

The areas adjacent to the Eastern Freeway road corridor, although highly modified, would have a high to medium impact due to the increase in the road corridor width reducing or removing the available space for landscaping. This would significantly alter the landscape value and visual amenity.

The highest impacts were found to be south of the M80 Ring Road corridor, south-west of the M80 Ring Road interchange and south of the Eastern Freeway from the east of Bulleen interchange where noise walls would increase in height or move closer to viewpoints due to the increase in width of the corridor, and around the southern portal where open space and sports fields would be in close proximity to the proposed ventilation structure.

It is noted that many residential properties abutting the current freeway have extensive vegetative screening due to planting between the residence and the existing freeway. This vegetation can and does provide a pleasant aspect from residential courtyards and private open space. Vegetative overshadowing may on balance be perceived as a positive outcome. If however, the increased shading is a result of noise walls, this would exacerbate a negative visual outcome.

Potential light spill impacts were identified in locations where there would be increased street lighting infrastructure or the existing landscape would be highly modified. Key locations include the M80 Ring Road interchange, Eastern Freeway and at the northern and southern tunnel portals. In these locations overhead street lighting and intersection lighting could have the potential to cause light spill into adjacent properties.

With the implementation of the project's EPRs, the identified impacts could be further reduced before construction and operation. EPRs LV1 would influence the landscaping outcomes and noise wall design which could reduce landscape, visual and shading impacts. EPR LV2 would see the use of temporary landscape treatments and features or screening during construction which could reduce construction impacts. EPRs LV3 and LV4 would ensure lighting designs for operation and light spill impacts during construction are minimised and in accordance with local council requirements and relevant standards.

Structure of the EES

Summary Report

EES main report

- | | | |
|----------------------------------|----------------------------------|--|
| 1. Introduction | 11. Surface noise and vibration | 21. Ground movement |
| 2. Project rationale | 12. Tunnel vibration | 22. Groundwater |
| 3. Legislative framework | 13. Land use planning | 23. Contamination and soil |
| 4. EES assessment framework | 14. Business | 24. Surface water |
| 5. Communications and engagement | 15. Arboriculture | 25. Ecology |
| 6. Project development | 16. Landscape and visual | 26. Greenhouse gas |
| 7. Urban design | 17. Social | 27. Environmental management framework |
| 8. Project description | 18. Human health | 28. Conclusion |
| 9. Traffic and transport | 19. Historical heritage | |
| 10. Air quality | 20. Aboriginal cultural heritage | |

Technical reports

- | | | |
|--------------------------------|---------------------------------|---------------------------|
| A. Traffic and transport | G. Arboriculture | M. Ground movement |
| B. Air quality | H. Landscape and visual | N. Groundwater |
| C. Surface noise and vibration | I. Social | O. Contamination and soil |
| D. Tunnel vibration | J. Human health | P. Surface water |
| E. Land use planning | K. Historical heritage | Q. Ecology |
| F. Business | L. Aboriginal cultural heritage | R. Greenhouse gas |

Attachments

- | | | |
|----------------------------|-------------------------------------|--------------------------------|
| I. Sustainability approach | IV. Stakeholder consultation report | VI. Works Approval Application |
| II. Urban design strategy | V. Draft Planning Scheme Amendment | |
| III. Risk report | | |

EES Map Book

Abbreviations

Term	Definition
3D	Three dimensional
EES	Environment Effects Statement
EPBC Act	Environment Protection and Biodiversity Conservation Act
EPR	Environmental Performance Requirement
GIS	Geographic information systems
km	Kilometres
LCA	Landscape character area
M80 Ring Road	M80 Ring Road (otherwise known as the Metropolitan Ring Road)
m	Metre
m ²	Square metres
mm	Millimetre
MTIA	Major Transport Infrastructure Authority
NELP	North East Link Project
TBM	Tunnel boring machine
TRG	Technical Reference Group
UD	Urban design
Yarra MCA	Yarra Ministerial Advisory Committee
ZTV	Zone of theoretical visibility

Glossary of terms

Term	Definition
Culturally significant landscapes	For the purpose of this report, culturally significant landscapes are those that have cultural or historical characteristics such as Bolin Billabong, Yarra Flats and Heide Museum of Modern Art.
Department of Transport	The Victorian Department of Transport is responsible for delivering the government's transport infrastructure agenda. It was formed on 1 January 2019 when the former Victorian Department of Economic Development, Jobs, Transport and Resources transitioned into the Department of Transport and the Department of Jobs, Precincts and Regions.
Flora	The plant life occurring in an area.
Footprint	An outline or indentation left by the project on the surface.
Landscape character area	The characteristics that assist in defining the landscape character areas include geology, vegetation, topography and drainage patterns, as well as the extent of modifications and urban development.
Landscape feature	A component, part or feature of the landscape that is prominent or eye-catching, eg hills, buildings, vegetation.
Landscape impact	Changes in to the characteristics that contribute to the landscape character of the area, as a result of development. This can be positive (ie beneficial or an improvement) or negative (ie adverse or a detracting).
Landscape sensitivity	The extent to which landscape can accept a change of a particular type and scale without unacceptable adverse impacts on its character.
Landscape value	The relative value that is attached to different landscapes by society. Landscape characteristics the community considers are significant for reasons such as their aesthetic (predominantly visual), social, environmental and heritage values. (LI & IEMA 2013. WAPC 2007)
Major Transport Infrastructure Authority	The Major Transport Infrastructure Authority is the proponent for North East Link. The MTIA is an administrative office within the Victorian Department of Transport with responsibility for overseeing major transport projects.
National Environmental Significance (NES)	Matters of NES as listed under the <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i> which include World/National Heritage properties, Ramsar wetlands, nationally threatened species and ecological communities, migratory species, Commonwealth marine areas, nuclear actions and national heritage places.
North East Link Project	North East Link Project is an organisation within MTIA that is responsible for developing and delivering North East Link. NELP was formerly known as the North East Link Authority prior to 1 January 2019. NELP is responsible for developing the reference project and coordinating development of the technical reports, engaging and informing stakeholders and the wider community, obtaining key planning and environmental approvals and coordinating procurement for construction and operation.

Term	Definition
Open Space	Public land that provides outdoor recreation, leisure and/or environmental benefits and/or visual amenity.
Rare landscapes	Uncommon, unusual or exceptional landscapes.
Significant landscape	For the purposes of this assessment a significant landscape is defined as an area considered to be significant for a combination of historic, aesthetic, scientific, social and cultural reasons
Study area	The study area is a boundary defined for the purposes of this project to set an area in which the impact assessment has been undertaken, refer Section 5.
The project	North East Link
Viewpoints	Viewpoints are used in this report to typify the views experienced by sensitive visual receptors throughout the visual catchment of the project. Viewpoints in this report often represent a viewing area, rather than one exact point.
Visual amenity	The value of a particular area or view in terms of what is seen.
Visual impact	Changes in the appearance of the landscape or in the composition of available views as a result of development, to people's responses to these changes, and to the overall impacts in regard to visual amenity. This can be positive (ie beneficial or an improvement) or negative (ie adverse or a detraction).
Zone of visual influence (ZVI)	The ZVI defines the differing zones of visual impact based upon the distance of the viewer to the largest visual component of the project within the study area.
Zone of theoretical visibility (ZTV)	A ZTV is the area around a designated point in the landscape from which that point is theoretically visible. It is calculated using elevation data within a Digital Terrain Model.

1. Introduction

North East Link ('the project') is a proposed new freeway standard road connection that would complete the missing link in Melbourne's ring road, giving the city a fully completed orbital connection for the first time. North East Link would connect the M80 Ring Road (otherwise known as the Metropolitan Ring Road) to the Eastern Freeway, and include works along the Eastern Freeway from near Hoddle Street to Springvale Road.

The Major Transport Infrastructure Authority (MTIA) is the proponent for North East Link. The MTIA is an administrative office within the Victorian Department of Transport with responsibility for overseeing major transport projects.

North East Link Project (NELP) is an organisation within MTIA that is responsible for developing and delivering North East Link. NELP is responsible for developing the reference project and coordinating development of the technical reports, engaging and informing stakeholders and the wider community, obtaining key planning and environmental approvals and coordinating procurement for construction and operation.

On 2 February 2018, the Minister declared the works proposed for North East Link as Public Works and issued a decision confirming that an Environment Effects Statement (EES) is required for the project due to the potential for significant environmental effects.

Similarly, the project was referred to the Australian Government's Department of the Environment and Energy on 17 January 2018. On 13 April 2018 the project was declared a 'controlled action', requiring assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Separate to this EES, a Public Environment Report (PER) is required to be prepared to satisfy the EPBC Act requirements, and assess the impacts of the project on Commonwealth land and matters of national environmental significance (MNES).

1.1 Purpose of this report

The purpose of this report is to assess the potential landscape and visual impacts associated with North East Link and to define the Environmental Performance Requirements (EPRs) necessary to meet the EES objectives.

1.2 Broad project description

The North East Link alignment and its key elements assessed in the Environment Effects Statement (EES) include:

- **M80 Ring Road to the northern portal** – from the M80 Ring Road at Plenty Road, and the Greensborough Bypass at Plenty River Drive, North East Link would extend to the northern portal near Blamey Road utilising a mixture of above, below and at surface road sections. This would include new road interchanges at the M80 Ring Road and Grimshaw Street.
- **Northern portal to southern portal** – from the northern portal the road would transition into twin tunnels that would connect to Lower Plenty Road via a new interchange, before travelling under residential areas, Banyule Flats and the Yarra River to a new interchange at Manningham Road. The tunnels would then continue to the southern portal located south of the Veneto Club.

- **Eastern Freeway** – from around Hoddle Street in the west through to Springvale Road in the east, modifications to the Eastern Freeway would include widening to accommodate future traffic volumes and new dedicated bus lanes for the Doncaster Busway. There would also be a new interchange at Bulleen Road to connect North East Link to the Eastern Freeway.

These elements are illustrated in Figure 1-1

The project would also improve existing bus services from Doncaster Road to Hoddle Street through the Doncaster Busway as well as pedestrian connections and the bicycle network with connected shared use paths from the M80 Ring Road to the Eastern Freeway.

For a detailed description of the project, refer to EES Chapter 8 – Project description.

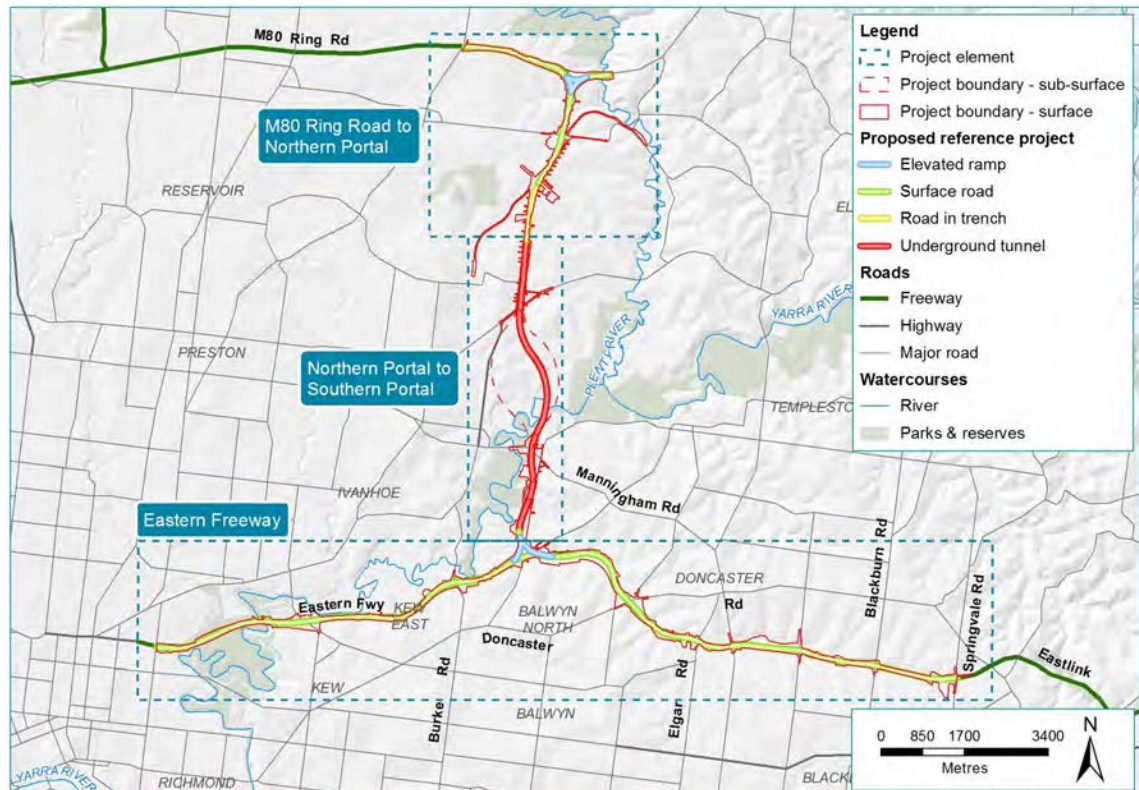


Figure 1-1 Overview of the project

1.3 Construction

Key construction activities for North East Link would include:

- General earthworks including topsoil removal, clearing and grubbing vegetation
- Relocation, adjustment or installation of new utility services
- Construction of retaining walls and diaphragm walls including piling
- Ground treatment to stabilise soils
- Tunnel portal and drive shaft construction
- Storage and removal of spoil
- Construction of cross passages, ventilation outlets and access shafts
- Installation of drainage and water quality treatment facilities
- Installation of a Freeway Management System
- Tunnel construction using TBMs, mining and cut and cover techniques

- Installation of noise barriers
- Restoration of surface areas.

1.4 Operation

Following construction of North East Link, the key operation phase activities would include:

- Operation and maintenance of new road infrastructure
- Operation and maintenance of Freeway Management System
- Operation of North East Link motorway control centre
- Operation and maintenance of the tunnel ventilation system
- Operation and maintenance of water treatment facilities
- Operation and maintenance of the motorways power supply (substations)
- Maintenance of landscaping and Water Sensitive Urban Design (WSUD) features.

2. EES scoping requirements

The scoping requirements for the EES issued by the Minister for Planning set out the specific environmental matters to be investigated and documented in the project's EES, which informs the scope of the EES technical studies. The scoping requirements include a set of evaluation objectives. These objectives identify the desired outcomes to be achieved in managing the potential impacts of constructing and operating the project.

2.1 EES scoping requirements

The aspects from the scoping requirements relevant to the landscape and visual evaluation objective are identified below.

2.1.1 Urban design approach

Section 3.4 of the scoping requirements sets out the urban design approach as:

*The urban design approach should explain how the function and character of the evolving urban environment, including **built form**, **landscape** and **public realm** within the immediate and broader context of the project, will be **protected** and **enhanced**. (bolding added).*

The description of the visible elements including built form and landscaping are discussed in Section 4.

2.1.2 Landscape, visual and recreational values

Section 4.5 of the scoping requirements defines the requirements for the '**Landscape, visual and recreational values**'. These are reproduced in Table 2-1 and each section is further cross-referenced to the section in this report where each of the issues is discussed.

Table 2-1 Scoping requirements relevant to landscape and visual impact assessment

Aspect	Scoping requirement	Section addressed
Evaluation objective	To minimise adverse effects on landscape values, visual amenity, recreational and open space values and to maximise the enhancement of these values where opportunities exist.	Existing conditions: Section 7 Impact assessment: Section 9
Key issues	Potential adverse effects on urban landscapes that provide a range of functions (eg visual amenity, drainage, flood storage, cooling from vegetation and shade).	Existing conditions: Section 7 Impact assessment: Section 9 Shading impacts: Section 9.5
	Potential adverse effects on recreational opportunities (passive and active).	Existing conditions: Section 7 Impact assessment: Section 9
	Potential adverse effects on views from key receptors during the day and night resulting from construction phase works and operations.	Construction: Section 4.8 Existing conditions: Section 7 Impact assessment: Section 9
	Potential temporary or permanent effects on public realm and recreational facilities, affecting the use of open space and the enjoyment of recreational opportunities.	Impact assessment: Sections 9.1 to 9.3

Aspect	Scoping requirement	Section addressed
	Potential loss of landscape values and visual amenity (such as visual, shading, tree canopy cover) from direct and indirect impacts to vegetation within the project boundary and the broader urban environment.	Impact assessment: Section 9
Priorities for characterising the existing environment	Identify key landscape features and visual amenity values including urban landscape character, form, appearance, aesthetics and function.	Existing conditions: Section 7 Impact assessment: Section 9
	Identify public realm and residential viewing points from which project components will be visible.	Impact assessment: Sections 9.1 to 9.4
	Identify condition and uses of existing and planned public open space and recreational facilities that could be occupied or otherwise adversely affected by project construction and operation.	Construction: Section 4.8 Impact assessment: Sections 9.1 to 9.3
	Characterise existing lighting and shading conditions.	Shading: Section 9.5 Light spill impacts: Section 9.6
Design and mitigation measures	Describe design, management or offset measures to enhance or alternatively avoid or minimise adverse effects on landscape, visual amenity and recreational and open space values, especially with regard to long-term effects.	Environmental Performance Requirements: Section 10
Assessment of likely effects	Assess likely extent and duration of residual adverse effects on, or improvements to, landscape aesthetics and functions.	Impact assessment: Sections 9.1 to 9.4
	Assess likely effects on visual amenity values, including through use of photo-montages, sections and analysis drawings or other suitable methods for depicting predicted landscape changes, particularly from key viewing points.	Impact assessment: Sections 9.1 to 9.4
	Undertake a shading analysis and assess the extent and nature of residual shading and light spill impacts on residential properties and public realm arising from the permanent project infrastructure with due regard to local planning provisions for shading and light spill.	Shading: Section 9.5 Light spill impacts: Section 9.6
	Identify and assess likely temporary and permanent effects on use and enjoyment of open space and recreational facilities, including public land to be used or occupied for project works.	Impact assessment: Sections 9.1 to 9.3
	Assess consistency with any relevant built-form frameworks or urban plans.	Landscape regional context: Section 7

Aspect	Scoping requirement	Section addressed
Approach to manage performance	Describe the environmental performance requirements to set landscape, visual amenity, recreational and open space values outcomes that the project must achieve.	Environmental Performance Requirements: Section 10

2.1.3 Linkages to other reports

This report is closely linked with the project's Urban Design Strategy. The Urban Design Strategy contains the performance requirements for the built form and landscape elements of the project. The findings from this landscape and visual impact assessment have informed the development of the Urban Design Strategy.

While not a technical impact assessment, the Urban Design Strategy provides the design guidelines to inform the urban design project requirements and establishes performance outcomes and benchmarks for which the project would be assessed. The approach to Urban Design can influence the siting, location, scale, landscape and aesthetic of the project to minimise and/or reduce impacts. It can increase the ability of the project to integrate with the surrounding landscape character and visual environment. The Urban Design Strategy has been considered in the preparation of this landscape and visual impact assessment.

This report also relies on or informs the technical assessments as indicated in Table 2-2.

Table 2-2 Linkages to other technical reports

Specialist report	Relevance to this impact assessment
Technical report L – Aboriginal cultural heritage	<p>Provides an assessment of the potential effects of the project on Aboriginal cultural heritage values.</p> <p>Information from the Aboriginal cultural heritage report has assisted in the preparation of the existing conditions section of this report, and also informed the impact assessment on public domain viewpoints in particular.</p>
Technical report K – Historical heritage	<p>Provides an assessment of the potential effects of the project on post settlement heritage values.</p> <p>Information from the historical heritage report has assisted in the preparation of the existing conditions section of this report, and also informed the impact assessment on public domain viewpoints in particular.</p>

Specialist report	Relevance to this impact assessment
Technical report E – Land use and planning	<p>Provides an assessment of the potential effects of the project on land use, and how it aligns with policy.</p> <p>Information from the land use and planning report has assisted in the review of relevant planning policy outcomes, existing conditions, and analysis of shading impacts in relation to planning provisions. Linkages to land use planning include impacts on landscape values and views, light spill, shading and built form. This has informed the impact sections of this report.</p>
Technical report Q – Ecology	<p>Provides an assessment of the potential effects of the project on flora and fauna.</p> <p>Findings from the ecology report has assisted in the preparation of the existing conditions section of this report, and also informed the impact assessment on the Yarra River, Koonung Creek and river corridors in particular.</p>
Technical report G –Arboriculture	<p>Provides an assessment of the potential effects of the project on vegetation, specifically trees.</p> <p>Findings from the arboriculture report have assisted in the preparation of the existing conditions section of this report, and also informed the impact assessment on native and exotic, existing and planted vegetation in particular.</p>
Technical report I – Social	<p>Provides an assessment of the potential social and community impacts of the project.</p> <p>Information from the social report has assisted in the preparation of the existing conditions section of this report, and informed the impact assessment on community values, facilities and shading impacts on public open space.</p>
Technical report C – Surface noise and vibration	<p>Provides an assessment of the potential effects of the project on noise levels and noise barrier placement.</p> <p>Information from the surface noise and vibration report has assisted in the preparation of the existing conditions section of this report, and informed the impact assessment on noise walls in particular.</p>

3. Methodology

The methodology used for this landscape and visual assessment of the project includes the following steps.

3.1 Project description

The project description is based on the current proposed reference project, which sets out the minimum standards for the project.

This section describes the proposed visual components of the project. These include, but are not limited to, the noise walls, tunnel portals, ventilation structures, viaducts and overpasses as well as the landscape treatments in line with the requirements set out in EES Attachment II – Urban Design Strategy

3.2 The study area

A study area for the landscape and visual impact assessment was established. The boundaries of the study area were based on the assumed height of constructed elements in the reference project (which identifies that noise walls may measure from three to 10 metres high). The study area was calculated as if these noise walls were 10 metres high. Similar calculations were applied to other built form elements as appropriate. These conservative project component heights are used to define just the study area boundary; more detailed project component heights have been used in the impact assessment.

The extent of the study area for this impact assessment is based on the parameters of human vision. The central field of view in human vision is approximately 10° (15° while sitting). An object which takes up less than 5 per cent of this 10° cone of view may be discernible. However, it is noted this calculation does not take into account intervening topography, vegetation or built form and so is a conservative study area boundary.

Figure 3-1 is based on a diagram from *Human Dimension and Interior Space* (Julius Panero & Martin Zelnik, Witney Library of Design, 1979). Similar data can be found in the more recent publication, *The Measure of Man and Woman* (revised edition, Henry Dreyfuss Associates, John Wiley & Sons, 2012).

The field of view of human vision is shown in Figure 3-1.

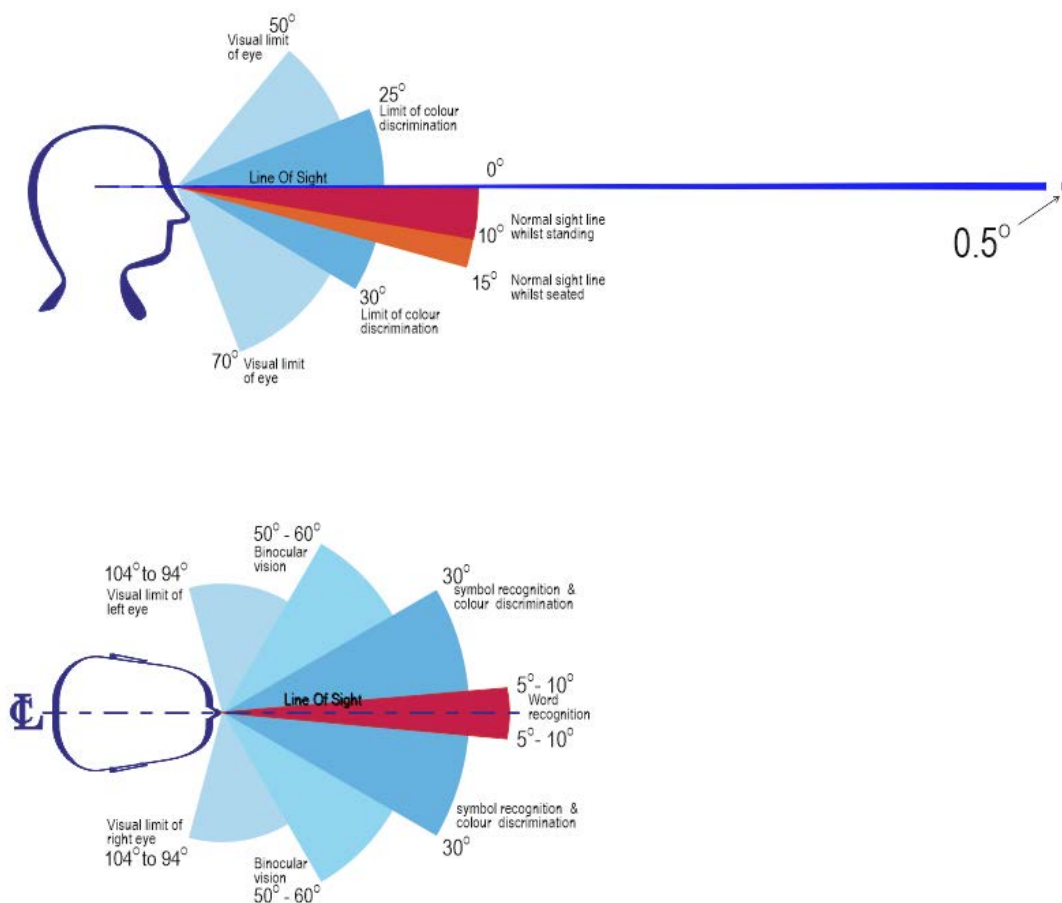


Figure 3-1 Parameters of human vision (viewshed) definition

3.3 Landscape character areas and sensitivity

Landscape character areas for the project are based on the physical characteristics within the study area. The characteristics that assist in defining the landscape character areas include geology, vegetation, topography and drainage patterns, as well as the extent of modifications and urban development. Desktop research has also informed these character areas, including a comprehensive review of local council policies and strategies. More detail on the desktop research is provided in Section 6 and Appendix E.

Landscape sensitivity is defined as the extent to which the landscape can accept a change of a particular type and scale without unacceptable adverse impacts on its character. Generally, the greater the extent of existing modifications within the landscape, the lesser its sensitivity to change.

The scoping requirements seek to “*Identify and assess likely residual effects on use and enjoyment of open space and recreational activities, including public land to be used or occupied for project works.*” Landscape character areas, where appropriate, have been defined on their open space characteristics.

3.4 Zone of theoretical visibility

Geographical Information Systems (GIS) software can provide a zone of theoretical visibility (ZTV) which illustrates those areas the project could be visible from, as a whole or in part.

A detailed assessment of potential visibility within the study area was calculated using topographical data. A ZTV is the area around a designated point in the landscape, within which the point is theoretically visible from. It is calculated using elevation data within a Digital Elevation Model with a spatial resolution of 10 metres.

The ZTV does not take account existing buildings and vegetation that may screen views. The ZTV is therefore a conservative approach.

3.5 Viewpoint assessment

The assessment of the potential visual impact is undertaken from viewpoints within the public domain and from residential properties.

The selection of viewpoints was based on the requirement to describe potential visual impacts within each landscape character area and to give a conservative assessment of the visual impact of the project. The following process was undertaken when selecting viewpoints:

1. Identify locations where project components may be visible (considering tunnel portals, ventilation structures, viaducts, noise walls and shared use overpasses)
2. Considering terrain, vegetation and buildings, identify representative locations showing this project infrastructure (as identified in 1 above)
3. Identify locations considered as being important landscape and views through feedback from local councils and via community consultations
4. Identify a variety of locations reflecting the various viewers and landscape located through the study area.

3.5.1 Public domain viewpoints

In assessing the visual impact of the project from the public domain, the assessment of visual impact is undertaken from a range of publicly accessible viewpoints and is based on four criteria:

- **Visibility:** The visibility of the project can be affected by intervening topography, vegetation and buildings.
- **Distance:** The distance of the viewer from the proposed nearest component of the project. The level of visual impact decreases as distance increases.
- **Landscape character and viewer sensitivity:** The character of the surrounding landscape around the project and adjacent to the viewing location must be considered. Generally, a modified landscape is considered to have a low sensitivity and a pristine landscape is considered highly sensitive. Typically, landscapes seen from a residential property or parkland would be given high sensitivity. Local roads and other public places would be given a medium sensitivity, with freeways and industrial precincts given a low sensitivity. Landscape and viewer sensitivity are linked. A viewer in a pristine natural environment has a greater sensitivity than when the same viewer is situated in an industrial area. Public open space viewpoints are assessed as reflecting a high or medium rating for landscape and viewer sensitivity. Public open space viewpoints that are located in a natural setting, such as Bolin Bolin Billabong, would have a high rating and modified open spaces such as sporting fields would have a medium rating, as the main focus of the landscape or viewer is not the landscape setting.

- **Number of viewers:** The level of visual impact decreases where there are fewer people able to view the project. Alternatively, the level of visual impact increases where views are from a recognised vantage point. Viewer numbers from a recognised vantage point would be rated as high. The categories for the assessment of viewer numbers from viewpoints in the public domain is set out in Table 3-1.

While these four criteria need to be considered in the assessment of visual impact, the ratings of each are not numerically based and cannot be simply added together and averaged to arrive at an overall rating. This is illustrated in Figure 3-2.

Table 3-1 Viewer numbers – public domain

Viewer numbers	Definition
High	<p>Neighbourhood shopping centres or activity centres where people regularly frequent to access goods and services during all hours of the day.</p> <p>Shared use paths that are main commuter routes (primary trails) to the city and provide access to adjacent sporting and recreational facilities, and public open space including natural areas.</p> <p>Train stations, schools or tourist destinations such as galleries or museums where people frequent in large numbers during certain times of the day consistently over the week and on weekends.</p> <p>Freeways, highways and large-scale connector roads where traffic is frequent, public transport routes with bus stops are present and footpaths provide key pedestrian connections.</p>
Medium	<p>Sporting fields used during evenings and on weekends, playgrounds that are used intermittently throughout the week and frequently on the weekends.</p> <p>Shared use paths that are commuter routes (secondary trails) into the city and between activity centres.</p> <p>Residential streets where residents frequent and pedestrians, drivers and cyclists travel through and around to adjacent areas.</p> <p>Passive open spaces where people intermittently frequent throughout the day with higher numbers on the weekend.</p>
Low	<p>Low order residential streets such as courts where limited number of residents frequent and no through pedestrian access is present.</p> <p>Utilities easements where there a few facilities or key pedestrian routes do not pass through.</p>

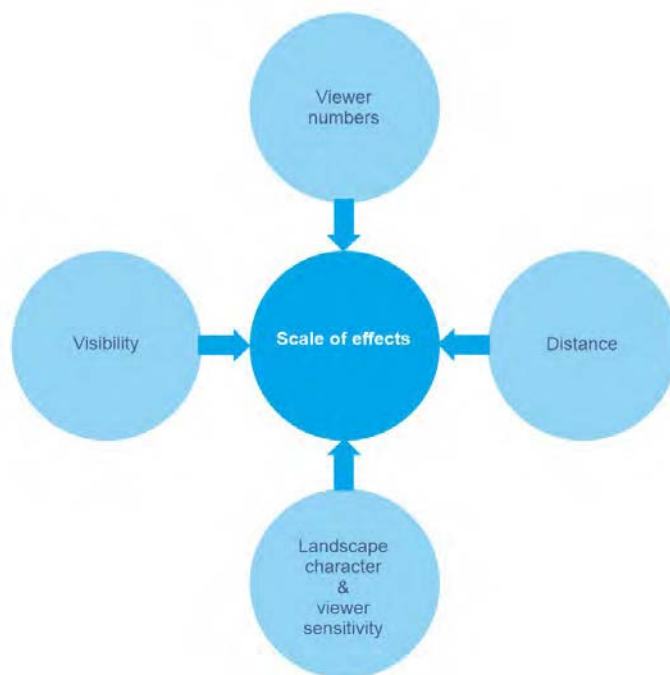


Figure 3-2 Visual impact – publicly accessible viewpoints

The overall assessment, based on these ratings, can also change with time. For example, as landscape adjacent to the noise walls matures, the visibility and visual impact of the walls may reduce significantly.

3.5.2 Private domain viewpoints

The assessment of visual impact from residential properties or viewpoints in the private domain is slightly different to one undertaken from publicly accessible viewpoints. An assessment of viewer numbers is not relevant, and the landscape sensitivity is always rated as 'high', as it must be recognised that people feel most strongly about the view from their house and from their outdoor living spaces. This is illustrated in Figure 3-3.

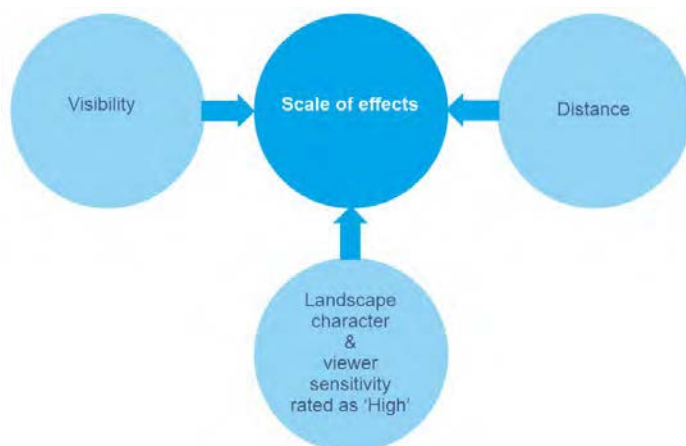


Figure 3-3 Visual impact – private domain viewpoints

The visibility of the project and the distance between the residential location and the project are the two criteria that vary in an assessment of the visual impact from a residential property. Viewer sensitivity is always rated as 'high'.

The same 'scale of effects' is used for the assessment of the visual impact from publicly accessible viewpoints as well as from residential locations.

3.5.3 Scale of effects

The scale of effects for rating the overall visual impact of the project from publicly accessible and private domain viewpoints range from no impact (**Nil**) to a **Positive** visual impact. Negative visual impacts are graded from **Negligible** to **High**.

- **Nil** – there would be no perceptible visual change
- **Positive** – would be a visual change that improves the outlook or view
- **Negligible** – minute level of effect that is barely discernible over ordinary day-to-day effects. The assessment of a ‘negligible’ level of visual impact is usually based on distance. That is, the project elements would either be at such a distance that when visible in good weather, these elements would be a minute element in the view within a modified landscape, or they would be predominantly screened by intervening topography and vegetation.
- **Low** – visual impacts that are noticeable but would not cause any significant adverse impacts. The assessment of a ‘low’ level of visual impact would be derived if the rating of any one of four criteria is assessed as low; that is visibility, distance, viewer numbers and landscape sensitivity. Therefore, the project in a landscape which is modified and which already contains many buildings or other similar built form may be rated as a low level of visual impact. Similarly, if the distance from which it is viewed means that its scale is similar to other elements in the landscape it would also be assessed as a low level of visual impact.
- **Medium** – visual impact occurs when significant effects may be able to be mitigated/remedied. The assessment of a ‘medium’ visual impact will depend on all four assessment criteria being assessed as higher than ‘low’.
- **High or adverse effect** – extensive adverse effects that cannot be avoided, remedied or mitigated. The assessment of a ‘high or adverse effect’ from a publicly accessible viewpoint requires the assessment of all four factors to be high. For example, a highly sensitive landscape, viewed by many people, with the project in close proximity and largely visible would lead to an assessment of an adverse effect.

3.5.4 Photomontages

Photomontages have been produced for a number of viewpoints that reflect the various impacts throughout the study area. They generally represent the views in that immediate area and cover off on key project elements. Photomontages have not been produced for every viewpoint; where there is no photomontage an illustrative section has been produced. The following process was undertaken when selecting viewpoints that would have a photomontage:

- Viewpoint is adjacent to a key project element such as a ventilation structure, viaduct, noise wall or shared use overpass
- Viewpoints that represent a variety of impacts with the landscape character area
- Viewpoints that represent views generally experienced in that immediate area
- Viewpoints where a visual representation of the project would assist in communicating the impacts at that location.

Photomontages can assist with the assessment of the visual impact at selected viewpoints by illustrating the scale and location of the project in the existing landscape. The urban design and landscape treatments shown in the photomontages have been guided by the project’s Urban Design Strategy. The photomontages do not represent the final design and are subject to change.

The photomontages are intended to show the change brought about by the project from different distances and to different project elements. For public domain viewpoints, the photomontages have been prepared at Year 0 and for Year 10. It is recognised that residential properties can change ownership frequently and the short-term impact may be more important. For these reasons, an additional photomontage has been prepared for residential viewpoints showing the impact of the project (including proposed landscape) for Year 3.

This assessment is partly based on photomontages which typically show the changes in an 80 horizontal field of view. This horizontal field of view represents the central cone of view in which symbol recognition and colour discrimination can occur. The vertical field of view is between 22 to 27.

The horizontal and vertical field of view of human vision is shown in Figure 3-1.

The photomontages appended to this report are shown at 80 (Refer to Appendix C for A3-size photomontages) although some areas have a smaller field of view due to the confined nature of the view. It is recognised the small photographs and A3 photomontages included in this assessment while technically accurate, may not be perceptually accurate, as objects in smaller images do not appear to be of the correct scale. The A3 images in Appendix C of this report are clearer than the smaller images in the text, as these are larger.

Camera data

The photography used in the photomontages were taken with a 50 millimetre lens on a Canon 6D full frame digital camera. This lens has a vertical angle of view of 26.5 and a horizontal angle of view of approximately 39.6.

Photomontage Production

The computer modelling of the project was based on the 3D model prepared by Urban Circus.

Software packages used:

- Global Mapper
- Autodesk AutoCAD 2017
- Autodesk 3D Studio Max 2016
- Adobe Photoshop CC
- Adobe InDesign CC.

Datasets used:

- Aerometrex supplied reality capture photomesh Feb 2018
- NEL supplied feature survey Oct 2018
- NEL supplied Road Design Data – EES Reference design version Aug 2018
- NEL supplied Noisewall Design Data – EES Reference Design version Dec 2018
- Other Design input for vegetation and treatments from Urban Design team guided by Urban Design strategy
- Other Design input for Road Design clarification from NEL Technical team.

Urban Circus Photomontage Methodology:

- Received site photos from GHD.
- In all instances per location a Primary Photo was identified. Depending on the photos supplied, in some instances Photoshop was used to combine multiple photos to form a wider angled view. This image is referred to as the Source Photo.

- Initial photo positions were derived from the Primary Photo referencing the embedded GPS data in the Primary Photo file and position mapped in “Global Mapper” (GM).
- Positions were exported in Autocad format and these positions were then translated to local working coordinates in Autocad and then imported into 3d Studio Max.
- The GPS positioning data allowed for an initial camera position to be established and to refine and improve this, reference objects in the form of photomesh data and feature survey data were used as additional reference of the current conditions. Adjustments to the camera position, orientation and pitch were made until a suitable camera match was achieved. The Source photo was added as a backplate to allow for final cross reference.
- The Road Design Data and Noisewall Design Data was used to construct a 3d model representing the provided design. With Urban Design and Technical team input, refinements to the model were made including the addition of vegetation and specific treatments were added to elements of the road design (eg Noisewalls).
- 3D Renders were generated from the 3d scene within the application 3D Studio Max, at each camera position to give an image which represented the view from that position of the project design. In most cases multiple passes (versions) of the Renders were required to show the different stages of vegetation.
- These 3D Renders were then taken into Photoshop and positioned in relation to the Source Photo and composited into a single Photomontage image per location.
- The final Photomontage image was then integrated into a page layout in InDesign which shows a map, compass bearing and other technical information about the specific location.
- A PDF file for all of the Photomontage images was compiled and supplied to the GHD Landscape and Visual Impact team.

3.6 Shading impacts

Technical report E – Land use planning identifies and assesses the shading impacts on existing land uses. This information has been used in this landscape and visual impact assessment for discussing the project’s shadowing impacts at particular viewpoints.

3.7 Light spill impacts

The proposed lighting would be installed in accordance with AS 4282-1997 *Control of the obtrusive effects of outdoor lighting*. The impacts of light spill would partly depend on the light selected and the degree it can potentially overspill into adjacent residential areas.

There is currently no lighting design for the project however, locations have been identified for future assessment where there would be increased street lighting or where the existing landscape would be highly modified. Refer to Section 9.6 for additional information.

3.8 Construction impacts

During construction and commissioning there would be a number of works that would cause temporary disruption to the area. This includes the area of cut and cover construction, which initially may have a high visual impact, but after completion of construction the pre-construction landscape, or even an improved landscape would be the desired outcome.

This assessment is based on a reference project which shows the indicative locations of the construction compounds.

3.9 Risk assessment

An environmental risk assessment has been completed to evaluate the potential impacts of North East Link. The risk assessment is provided in in Appendix D.

3.10 Limitations, uncertainties and assumptions

Limitations uncertainties and assumptions associated with this assessment are:

- The impact assessment is based on a reference project. The reference project is not the final design. To assess the built form and landscape visual implications in accordance with the scoping requirements, assumptions have been made as to the urban design and landscape proposals that would eventuate. The urban design and landscape proposals are based on the guidance and requirements outlined in the project's Urban Design Strategy and are further refined in Section 4.
- The soft landscape proposed would change over time as planting matures. To illustrate this change, viewpoint assessments have been made immediately after construction (Year 0) and Year 10, once the project (including the landscaping) is completed. For residential viewpoints the assessment has also been made at Year 3 as discussed in Section 3.5.4.
- Growth rates for proposed landscaping have been assumed as one metre per year based on best practice plant installation methods such as selection of healthy plant stock, soil preparation (deep ripping, rotary hoe and harrow), best practice planting and allowance for a 12-month maintenance period including watering.
- During construction and commissioning a number of works would cause temporary disruption to specific areas. The assessment of the construction compounds is based on the indicative locations shown in the reference project.

4. Project description

The following project description is based on the reference project. The reference project for the project is described in Chapter 8 – Project description and the EES Map book. The reference project has been designed to reduce impacts on the existing landscape where possible, with particular consideration to:

- Minimising the construction footprint, with one of the key objectives of the project being to minimise impacts to private properties and open space where practicable.
- Locating project infrastructure to avoid, minimise or reduce impacts. The project generally follows existing arterial roads or freeway routes. Where North East Link diverts from existing roads through part of the Ridgeline and Yarra character area this section has been placed in twin tunnels to avoid large areas of residential and ecological significant areas.
- Reducing surface impacts through part of the Ridgeline with the use of a trench between Watsonia railway station and Blamey Road and incorporating land bridges that connect the existing landscape on either side.
- Micro-siting and design of project infrastructure, with the Urban Design Strategy providing guidance to avoid adverse landscape and visual impacts.

The project has three distinct aspects or appearances when viewed from locations outside the road corridor. These three precincts are:

- Above natural ground level (in a viaduct) with associated noise walls in some locations
- On grade, but with associated walls and screens
- In a tunnel or trench.

The descriptions below refer to the built form attributes and design characteristics of visible elements in each of these three precincts.

4.1 Above natural ground level

Parts of the project would be elevated above the natural ground line. Apart from ventilation structures and noise walls, these elevated sections of the project would be the most visible and include viaducts and shared use path overpasses. The elevated height of these parts of the project has landscape and visual implications.

These elevated structures may adjoin different landscape areas. The examples in Figure 4-1 and Figure 4-2 are taken from the project's Urban Design Strategy (Refer to EES Attachment II) and show an elevated roadway adjoining another road at grade.



(Source GHD)

Figure 4-1 Above ground roadway example – South Road Superway, Adelaide



(Source VicRoads)

Figure 4-2 Above ground roadway example – Western Freeway, Warrenheip

The underside of these elevated roadways are approximately five to eight metres above the ground line. Noise walls and the structural edge increase the overall height to approximately 18 metres above the natural ground line.

4.2 On grade or within a cutting

Parts of the project are at grade or approximately match the natural ground line or are below grade in a cutting. The visible elements of the project that would be most apparent from adjoining areas outside the project would be noise and flood walls—where the project is at grade, and the anti-throw screens—where the project is within a cutting.

4.3 Noise walls and flood walls

While noise walls would be generally towards the apparent edge of the project, different edge conditions could be designed. Figure 4-3 shows two examples of noise walls used in Melbourne, taken from the project's Urban Design Strategy. The proposed noise walls would be approximately five to 10 metres above the ground line.

The flood walls would be located around the tunnel portals, generally towards the edge of the project. Flood walls, like the noise walls, could be screened with vegetation and reduced through mounding. The flood walls would be approximately 1.5 to nine metres above the ground line.



(Source: GHD)

Figure 4-3 On-grade noise wall examples – Eastern Freeway

4.4 Within a tunnel

Parts of North East Link would be within tunnels. The only visible and above ground elements of the project in tunnelled sections post-construction that would be apparent from adjoining areas outside the project corridor would be the tunnel portals, ventilation structures and associated buildings and electricity substations.

However, two distinctly different forms of tunnel construction would be used which have different visual implications in the short term.

The first and least visually prominent would be the tunnels excavated with an underground tunnel boring machine (TBM) or a road header. This would retain all the existing landscape above the tunnel apart from the tunnel portal sites.

The second construction method is termed 'cut and cover'. As the name suggests, this involves cutting a slot into the existing landscape, which by necessity requires the removal of all existing landscape within the area to be tunnelled. At the completion of the tunnel construction, the land would then be filled over the tunnel and the pre-existing landscape setting can be re-created or a modified landscape can be planted over the tunnel. The impact of the cut and cover construction method is a short to medium term.

The tunnel portals and ventilation structures would be the only permanent visible element. Figure 4-4 and Figure 4-5 show two examples of tunnel portals, sourced from the project's Urban Design Strategy.



(Source GHD)

Figure 4-4 CityLink tunnel portal



(Design Cino Zucchi Architetti)

Figure 4-5 Vedeggio-Cassarate Tunnel Development, Switzerland

4.5 Ventilation structures

Two tunnel ventilation structures are proposed: one in the vicinity of the northern tunnel portals and one at the southern tunnel portals. Each ventilation structure would include a ventilation outlet, ventilation building and an electrical substation. The ventilation outlets would be approximately 40 metres high above the local surface level.

At the southern tunnel portal, the ventilation building would be approximately 15 m high, 25 m wide and 67 m long. At the northern tunnel portal, the ventilation building would be approximately 8 m high, 47 m wide and 94 m long. The electrical substation at each tunnel portal would be approximately 6 m high, 22 m wide, 30 m long.

Emergency smoke exhaust system would consist of exhaust points at the northern portal, Manningham Road interchange and at the southern portal. This would operate only in the case of an emergency.

All stations would be designed in accordance with Environment Protection Authority (EPA) Victoria requirements and the urban design principles, objectives, guidelines and detailed requirements for North East Link. Refer to EES Attachment II – Urban Design Strategy.

The ventilation structure could be designed as either a sculptural piece, or a recessive design that is intended to blend in with the surrounding landscape. Regardless of the approach the expectation is that it would include high quality architecture and landscape design. Figure 4-6 taken from the project's Urban Design Strategy shows an example of a sculptural ventilation outlet.



(Source VicRoads)

Figure 4-6 Ventilation structure example – Mullum Mullum tunnel

4.6 Elevated shared use overpasses

Elevated shared use overpasses would cross the road corridor at various locations along the project. They would generally replace existing overpasses.

4.7 Landscape treatments

While the extent and type of vegetation used for the project would not be determined until detailed design, a planting regime has been adopted for the viewpoint assessment and indicative schematic sections have also been adopted where there is no photomontage, the viewpoint is within close proximity to the project boundary and there would be a change to the visual environment. The photomontages have provided the basis for the year 3 assessments for residential viewpoints and the year 10 assessments and the sections provided for the year 10 assessment. The landscape treatment varies according to the amount of land available adjacent to project elements.

Each of these indicative sections illustrate the mitigation that landscape can provide in the assessment of the visual impact of the noise wall and other built form components.

The sections are indicative and are generally meant to show the project and surrounding context in the area of the viewpoint, the most relevant section that applies to each viewpoint has been used. All cross-sections are set up in the same way; along the north-south corridor all sections look south and along the east-west corridor all sections look east.

Landscape treatments of the noise walls would be improved when they can be multi-layered. For example, there may be creepers proposed on the noise wall (self-adhering or supported by wires) with evergreen trees planted in the area immediately adjacent to the sound wall with differing species (either evergreen or deciduous) planted in the foreground of the view. This landscape would mimic vegetation in many adjacent streetscapes and parks in the area. The intention of this landscape is not to create a distinct or different landscape, but rather to blend with the neighbourhood character of the area. It is noted that EPR AR3 requires a plan to be prepared that shows the location, size and species of replacement trees and also specifies the requirements to support the long-term viability of plantings. EPR AR1 requires tree retention to be maximised through detailed design to minimise canopy loss and requires arboricultural assessments to inform the detailed design.

4.8 Ancillary elements

Ancillary elements such as overhead gantries, signage, lighting, power lines etc have not been designed for the reference project and therefore these items have not been included in this landscape and visual impact assessment. However, the project's Urban Design Strategy contains benchmarks and requirements around the design and siting of these elements to ensure their design minimises landscape and visual impacts.

4.9 Construction

During the project's construction a number of construction compounds would be located adjacent to the works as well as construction hoarding or fencing that is not visually permeable to the project boundary. Construction compounds would be generally located on existing public open space which would restrict the views into those spaces for the length of construction. Visible elements of the construction compounds would include construction fences that would restrict views into the compounds, site offices and storage sheds, construction machinery and equipment as well as construction materials and spoil stockpiles, which could be visible from surrounding elevated viewpoints.

For the purpose of this assessment, the indicative construction compound locations have been assessed for visual and landscape impacts.

5. The study area

The overall height of the visible components would vary across the project. A conservative height of 10 metres has been adopted for the portions of the project at grade and where the visibility of noise walls would be the project element that is most conspicuous. A height of 18 metres has been adopted to define the study area of the elevated portions of the project, and a height of 40 metres has been adopted to define the study area based on ventilation outlets.

The study area of the project extends to a point where these elements would take up less than 5 per cent of the normal vertical field of view (that is, 0.5°) (refer to the methodology in Section 3.2).

5.1 Zones of visual influence

Within the study area, differing zones of visual influence can be determined based upon the distance of the viewer to the largest visual component of the project. The visual impact of the project at 2.1 kilometres is obviously less than the visual impact of the project seen from a distance of 210 metres, as the apparent height and scale of the noise walls or other visible components changes as a person moves nearer or farther away.

At 2.1 kilometres, a fully visible face of the elevated portion of the project would be approximately 18 metres in height which would be approximately 0.5° in vertical angle. This is defined as the limit of the viewshed. At 210 metres, project components of this scale (that is, 18 metres in height) would take up 5° or 50 per cent of the vertical field of view and the visual impact would be assessed as dominant.

For the purposes of assessing the effect of distance, intervening bands are also defined, which are illustrated in Figure 5-1.

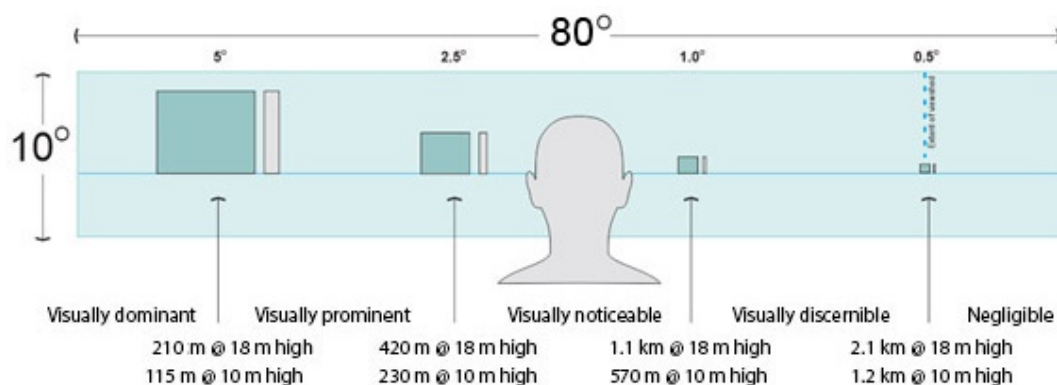


Figure 5-1 Diminution of visual influence based on distance

5.2 The study area based on the height of noise walls

A conservative estimate of the height of the noise walls is 10 metres (refer to Section 4.3 for more detail on noise walls). Figure 5-1 shows the zones of visual influence within the study area for a 10 metre-high project component. The noise walls are the most common and obvious built form element when viewed from the surrounding neighbourhoods.

Table 5-1 Zones of visual influence (10-metre high object)

Distance from an observer	Visual impact of a 10 metre high component
>1.2 km	The extent of the viewshed would occur when the visual impact is negligible. At a distance greater than 1.2 km, a 10 m high visible component is no longer an easily recognisable element in a man-modified landscape. This 1.2 km distance is adopted as the edge of the viewshed in areas where 10 m is the highest component visible.
1.2 km to 570 m	In the band between 1.2 km to 570 m, a 10 m component would be a visually discernible element in the landscape that would be visible in most lighting conditions. At the outer edge of this range, in all but exceptionally clear lighting conditions, the built form would become increasingly imperceptible.
570 m to 230 m	Visually noticeable visual impact would occur between the range of 570 m to 230 m where the project component would be visible in the landscape in most lighting conditions. The landscape between the viewer and the component can reduce visual impact, more so if vegetation is closer to the viewer.
230 m to 115 m	Visually prominent visual impact occurs at distances between 230 m to 1,150 m where the project component has increased visibility and is visually prominent in the landscape. Vegetation is more effective at screening the project, when it is proximate to the viewer.
< 115 m	Visually dominant visual impact would occur when a viewer is 115 m or less from the 10 metre high project component. The component of the project visible at this distance could dominate the landscape. Vegetation, to be effective as a screen in the short term, must be located immediately adjacent to the viewer.

5.3 The study area based on the height of noise walls on a viaduct

The height of elevated noise walls placed on the side of an elevated section of road way, could be 18 metres in height.

Figure 5-2 shows the zones of visual influence based on the proportion to which an 18-metre built form is apparent within the vertical field of view.

These bands or zones of visual influence provide a guide to the potential visual impact of an 18-m high project component, based solely on distance.

Table 5-2 Zones of visual influence (18 metre high object)

Distance from an observer	Visual impact of an 18-metre high component
>2.1 km	The extent of the viewshed would occur when the visual impact is negligible. At a distance greater than 2.1 km, an 18 m high visible component is no longer an easily recognisable element in a man-modified landscape.
2.1 km to 1.1 km	In the band between 2.1 km and 1.1 km, an 18 m component would be a visually discernible element in the landscape that would be visible in most lighting conditions. At the outer edge of this range, in all but exceptionally clear lighting conditions, the built form would become increasingly imperceptible.
1.1 km to 420 m	Visually noticeable visual impact would occur between the range of 1.1 km to 420 m where the project component would be visible in the landscape in most lighting conditions. The landscape between the viewer and the particular component can reduce visual impact, more so if vegetation is closer to the viewer.
420 m to 210 m	Visually prominent visual impact occurs at distances between 420 m to 210 m where the project component has increased visibility and is visually prominent in the landscape. Vegetation is more effective at screening the project, when it is proximate to the viewer.
< 210 m	Visually dominant visual impact would occur when a viewer is 210 m or less from the 18 m high project component. The component of the project visible at this distance could dominate the landscape. Vegetation, to be effective as a screen in the short term, must be located immediately adjacent to the viewer.

5.4 The study area based on the height of ventilation outlets

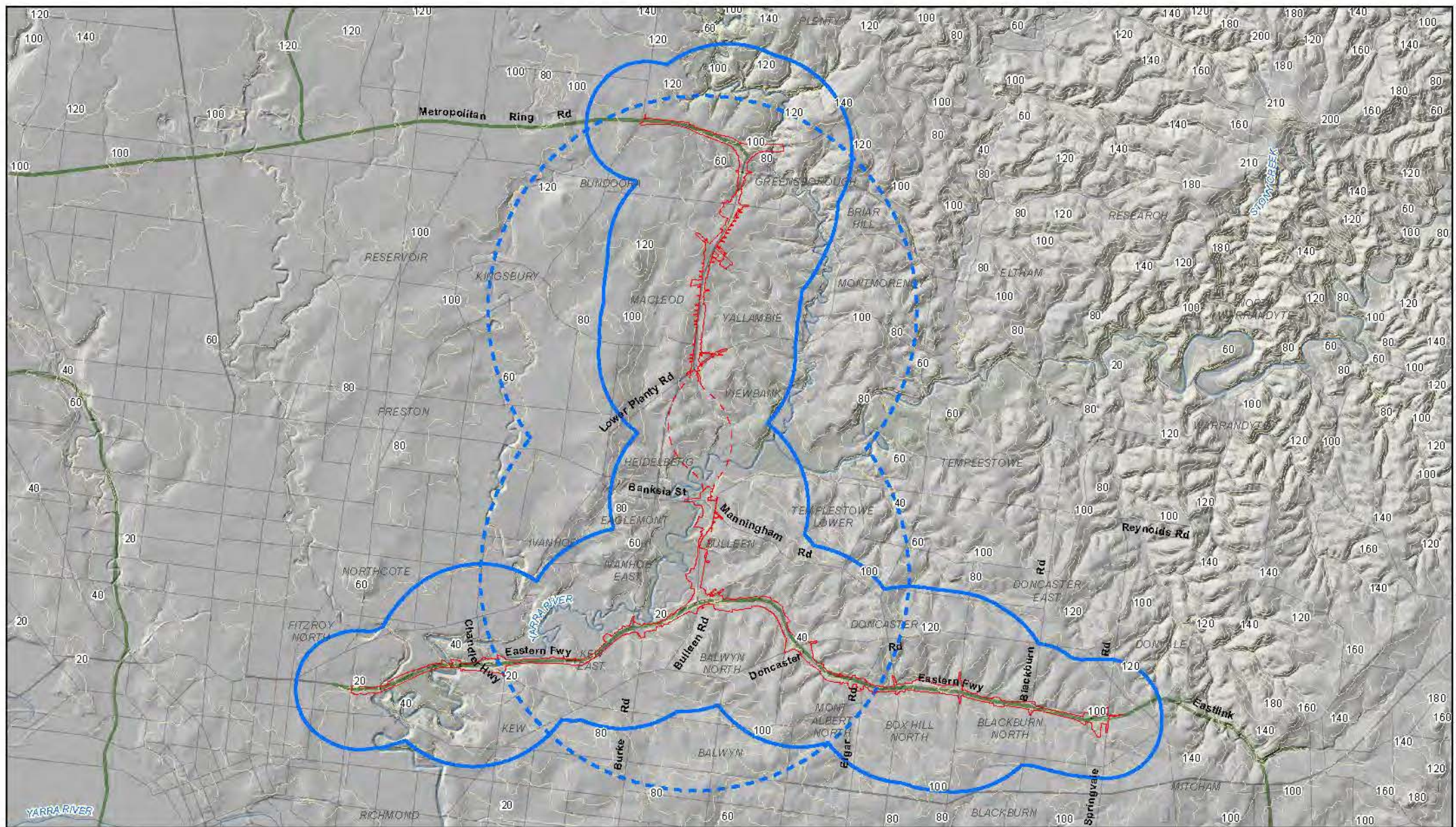
The height of ventilation outlets could be up to 40 metres. Table 5-3 shows the zones of visual influence based on the proportion to which a 40 metre built form is apparent within the vertical field of view. There are only two ventilation outlets proposed for the project.

Table 5-3 Zones of visual influence (40 metre high object)

Distance from an observer	Visual impact of a 40-metre high component
>4.5 km	The extent of the viewshed would occur when the visual impact is negligible. At a distance greater than 4.5 km, a 40 m high visible component is no longer an easily recognisable element in a man-modified landscape.
4.5 km to 2.3 km	In the band between 4.3 km and 2.3 km, a 40 m component would be a visually discernible element in the landscape that would be visible in most lighting conditions. At the outer edge of this range, in all but exceptionally clear lighting conditions, the built form would become increasingly imperceptible.
2.3 km to 1 km	Visually noticeable visual impact would occur between the range of 2.3 km to 1 km where the project component would be visible in the landscape in most lighting conditions. The landscape between the viewer and the particular component can reduce visual impact, more so if vegetation is closer to the viewer.
1 km to 0.5 km	Visually prominent visual impact occurs at distances between 1 km to 0.5 km where the project component would have increased visibility and be visually prominent in the landscape. Vegetation would be more effective in screening, when it is proximate to the viewer.
< 0.5 km	Visually dominant visual impact would occur when a viewer is less than 0.5 km from the 40 m high project component. The component of the project visible at this distance could dominate the landscape. To be effective as a screen in the short term, vegetation must be located immediately adjacent to the viewer.

5.5 The combined study area

By combining the study area for the noise walls, the raised viaduct and the ventilation outlets the overall study area for the project can be defined based upon these visual parameters. The overall study area is shown in Figure 5-2. The review of planning policy, controls and relevant guidelines as well as the selection of viewpoints is partly based on this study area



6. Legislation, policy and guidelines

There are no Australian or Victorian government legislation or policies specifically relevant to landscape and visual impacts. However, there are environmental, heritage and planning legislation and government policies which indirectly relate to landscape and visual impacts.

A detailed review of government policies was undertaken to inform and identify key objectives for the landscape and visual impact assessment. This review and the policies relevant to this impact assessment are provided in Appendix B, with a summary of the findings below.

6.1 Summary of findings

The assessment of relevant legislation, policies and guidelines has identified that the project study area's existing landscape character and views are valued and some areas are protection.

A review of these key values informed the understanding of the existing landscape and the overall impact assessment.

A key reoccurring value was the protection of the natural character of river corridors, particularly the Yarra River and Koonung Creek. Protection of the waterways, including their vegetation and heritage, are legislated by the Victorian Government and local councils.

Victorian Government strategies relating to transport planning require the protection of landscape values and visual standards such as such as buffer zones and landscaping. Victorian Government and authority strategies regarding environment and landscape values identify significant open space, the Yarra River corridor and the retention of dominant tree canopy as requirements for the protection of the existing landscape character and views.

These strategies include:

- Metropolitan Planning Strategy 2017–2050
- Yarra Strategic Plan
- Urban Design Charter for Victoria.

Culturally and socially significant landscapes such as Bolin Bolin Billabong, the Heide Museum of Modern Art and Simpson Barracks and their views to and from, are considered valuable and some require protection under local policy.

Banyule and Whitehorse councils identify views and vistas of ridgelines, across and along valleys as important contributing factors to the existing landscape character that should be protected. The topography and existing vegetation are identified as key contributing factors to the overall landscape character and backdrop to many views within the study area. Local policy in particular identifies vegetation as an important asset to screen existing and new development.

Public Park and Recreation Zone as well as Public Conservation and Recreation Zone have objectives relevant to landscape and visual protection that apply to new development.

Four overlays are used to protect landscape character and views within the study area.

These include Environmental Significance Overlay, Significant Landscape Overlay, Vegetation Protection Overlay, and Design and Development Overlay.

The following overlays have informed the character areas as described in Section 7:

- Design and Development Overlay Schedule 1 Yarra (Brirung) River Corridor Protection
- Design and Development Overlay Schedule 2 (Manningham) Yarra (Brirung) River Corridor Protection
- Design and Development Overlay Schedule 31 (Boroondara) Yarra (Brirung) River Corridor Protection
- Environmental Significance Overlay Schedule 1 (Banyule) Yarra, Plenty River and Darebin Creek
- Environmental Significance Overlay Schedule 2 (Manningham) Sites of Biological Significance
- Environmental Significance Overlay Schedule 3 (Manningham) Buffer Conservation Areas Supporting Sites of Biological Significance
- Significant Landscape Overlay Schedule 1 (Banyule, Boroondara) Yarra (Birrurung) River Corridor Environs
- Significant Landscape Overlay Schedule 2 (Manningham) Yarra (Birrurung) River Corridor Environs
- Significant Landscape Overlay Schedule 5 (Manningham) Watercourse Areas
- Vegetation Protection Overlay Schedule 1 (Boroondara) Willsmere Vegetation Protection Area
- Vegetation Protection Overlay Schedule 3 (Banyule) Eaglemont, Ivanhoe East and Ivanhoe Area
- Vegetation Protection Overlay Schedule 5 (Banyule) Substantial Tree Protection Area.

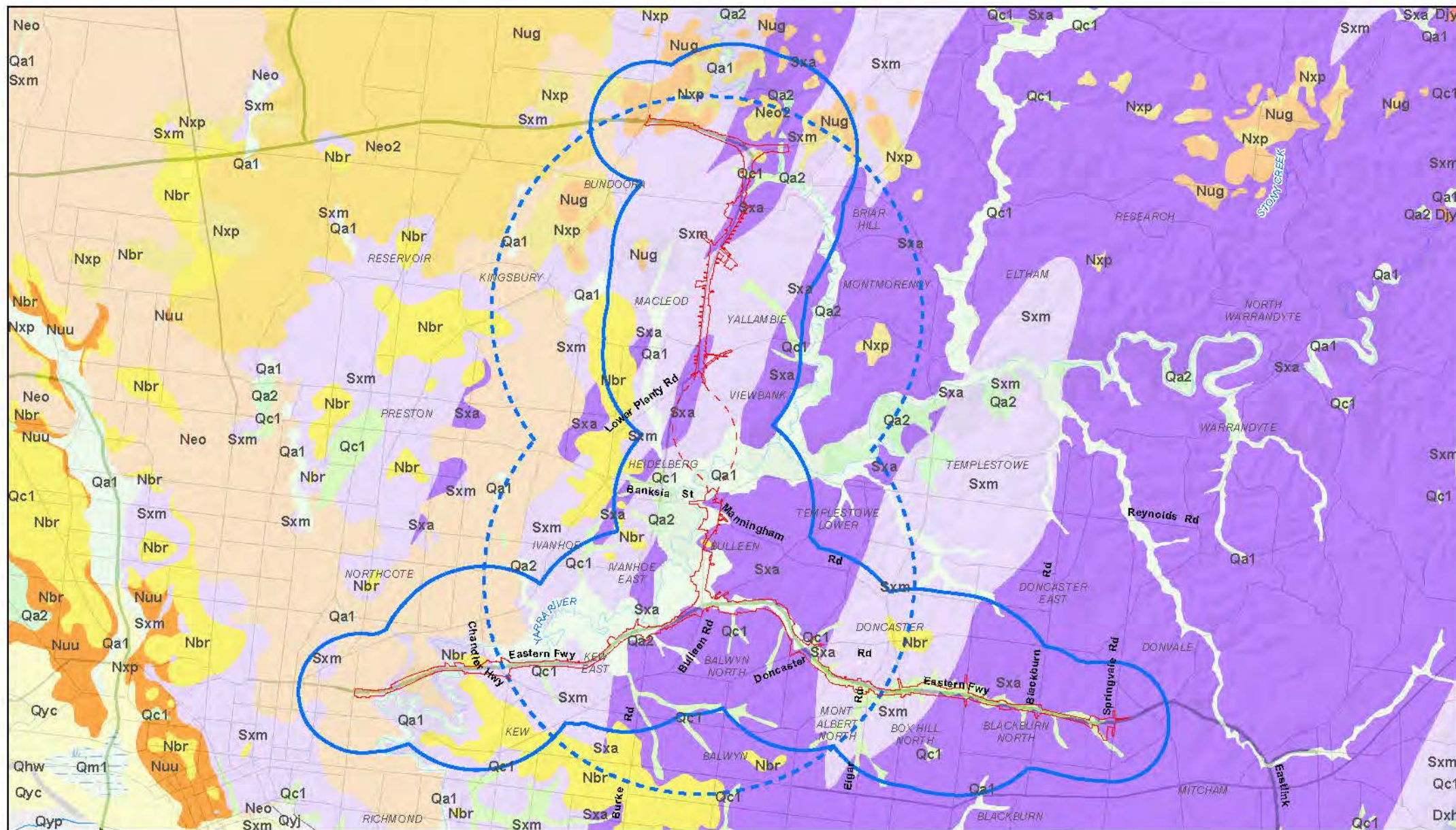
7. Existing conditions

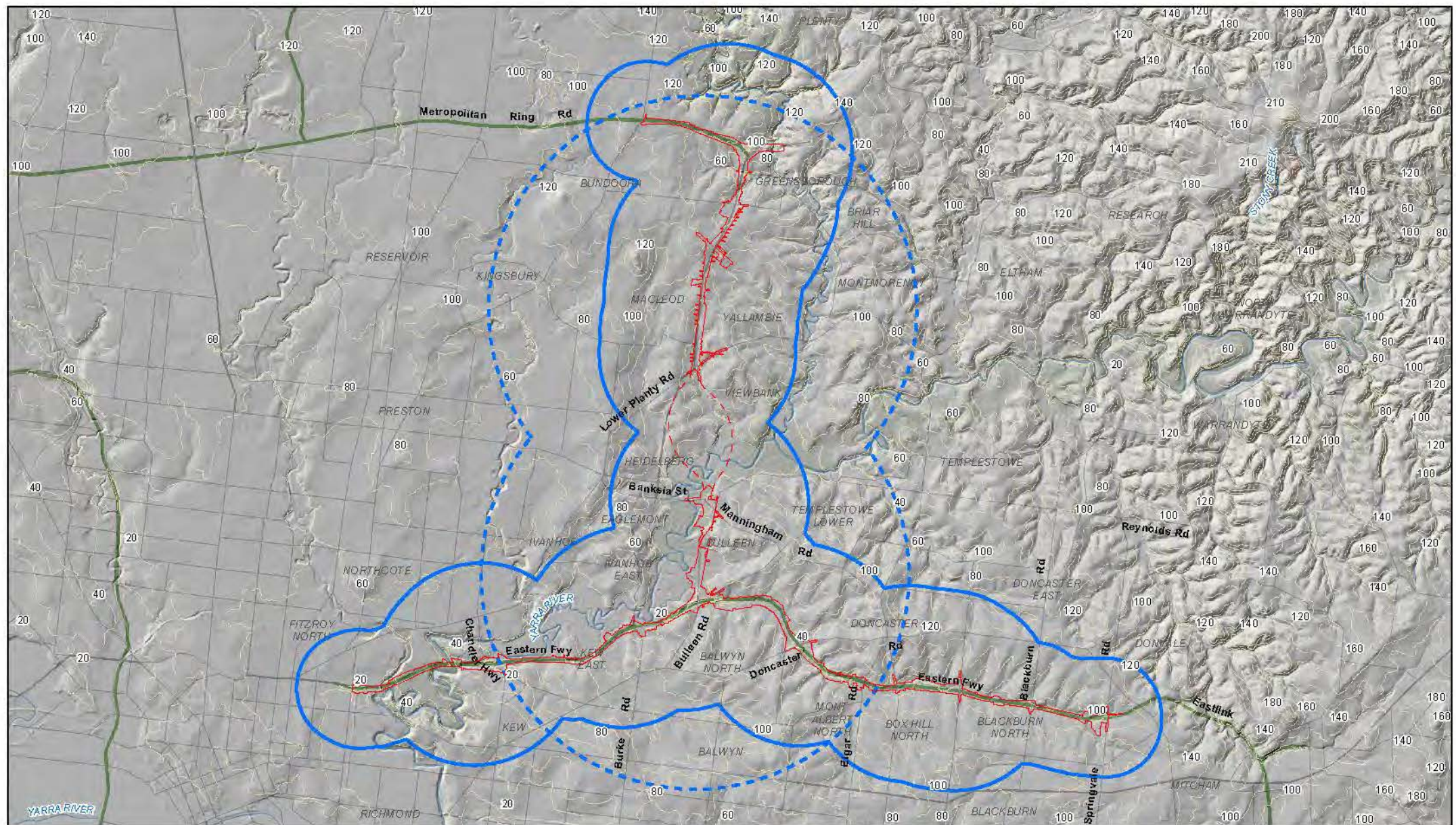
The existing conditions of the landscape and visual environment in the study area are described in the following sections.

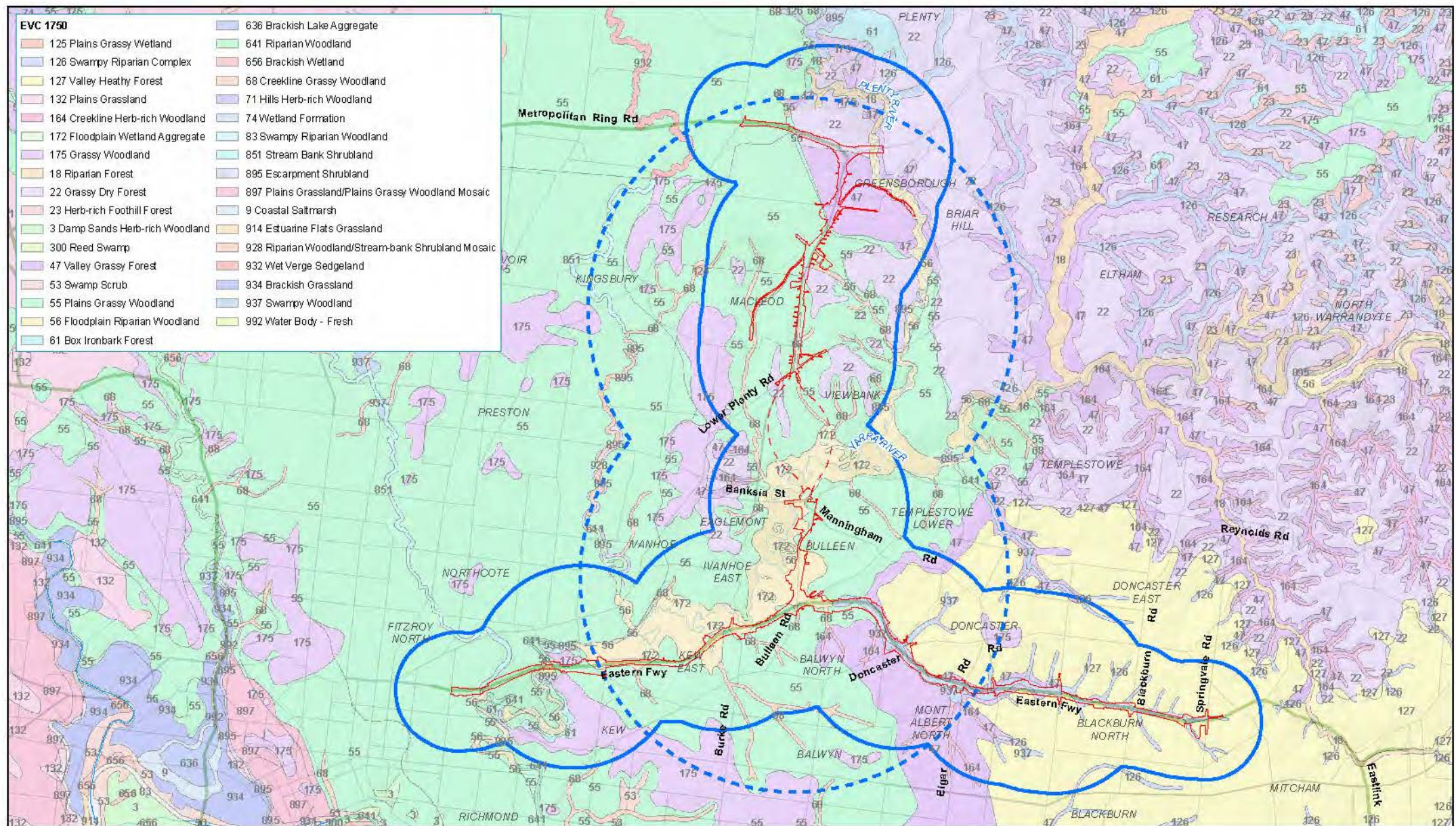
As part of this assessment, various layers of information have been considered to help inform the identification of landscape character areas. This has included a review of planning policy, controls and relevant guidelines, and key studies as discussed in Section 6. These include local neighbourhood character assessments, ridgeline studies and Yarra River Corridor studies.

7.1 Review of existing conditions

Geology, topography and waterways, vegetation coverage and land use were identified to help form the Landscape Character Areas and this analysis also informed the Design Character Areas in the project's Urban Design Strategy. This analysis is shown in Figure 7-1 to Figure 7-6 and larger maps are shown in Appendix E.





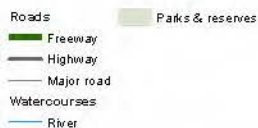
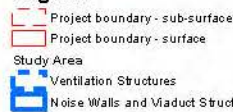


Paper Size A4
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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



Legend

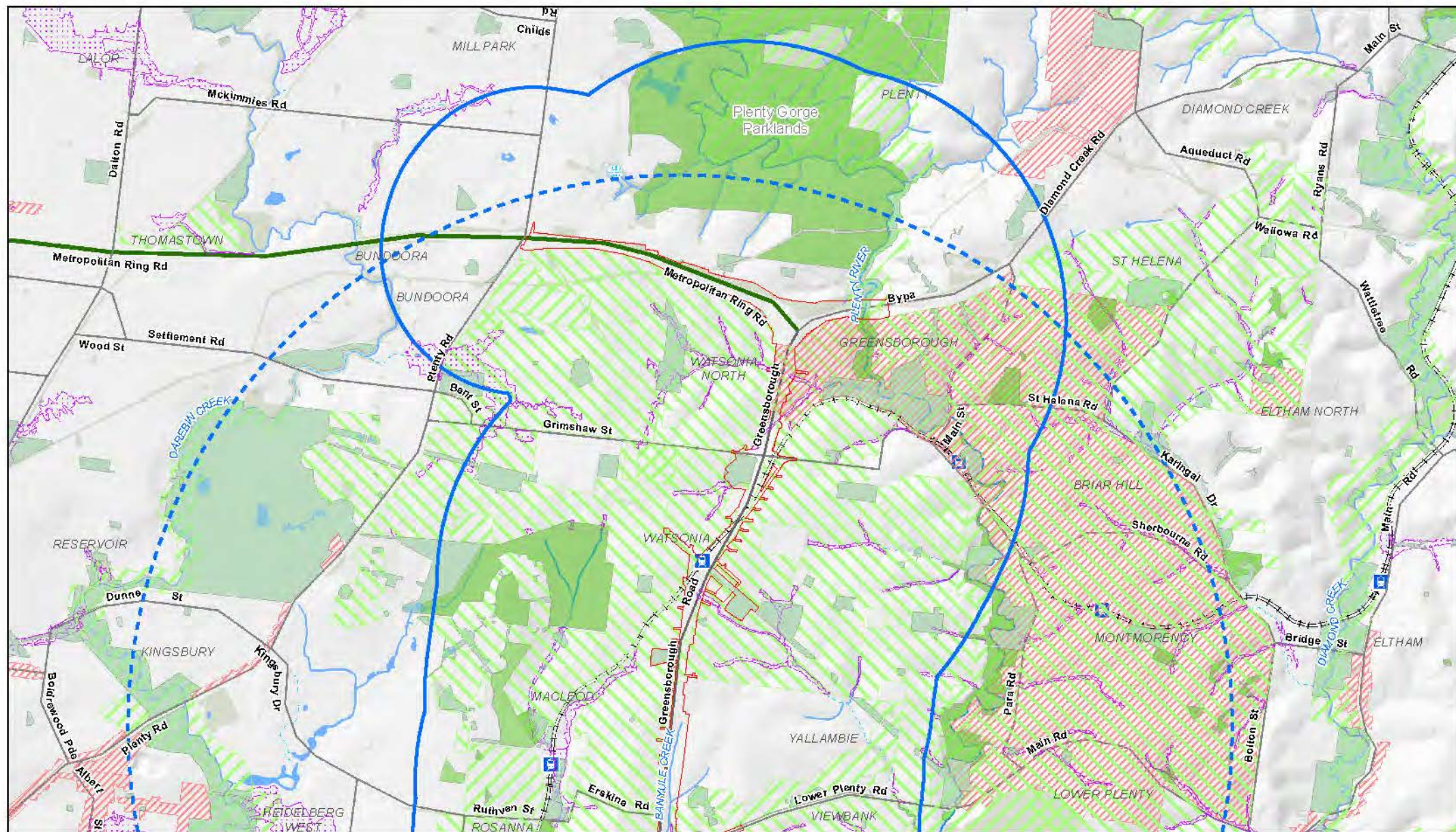


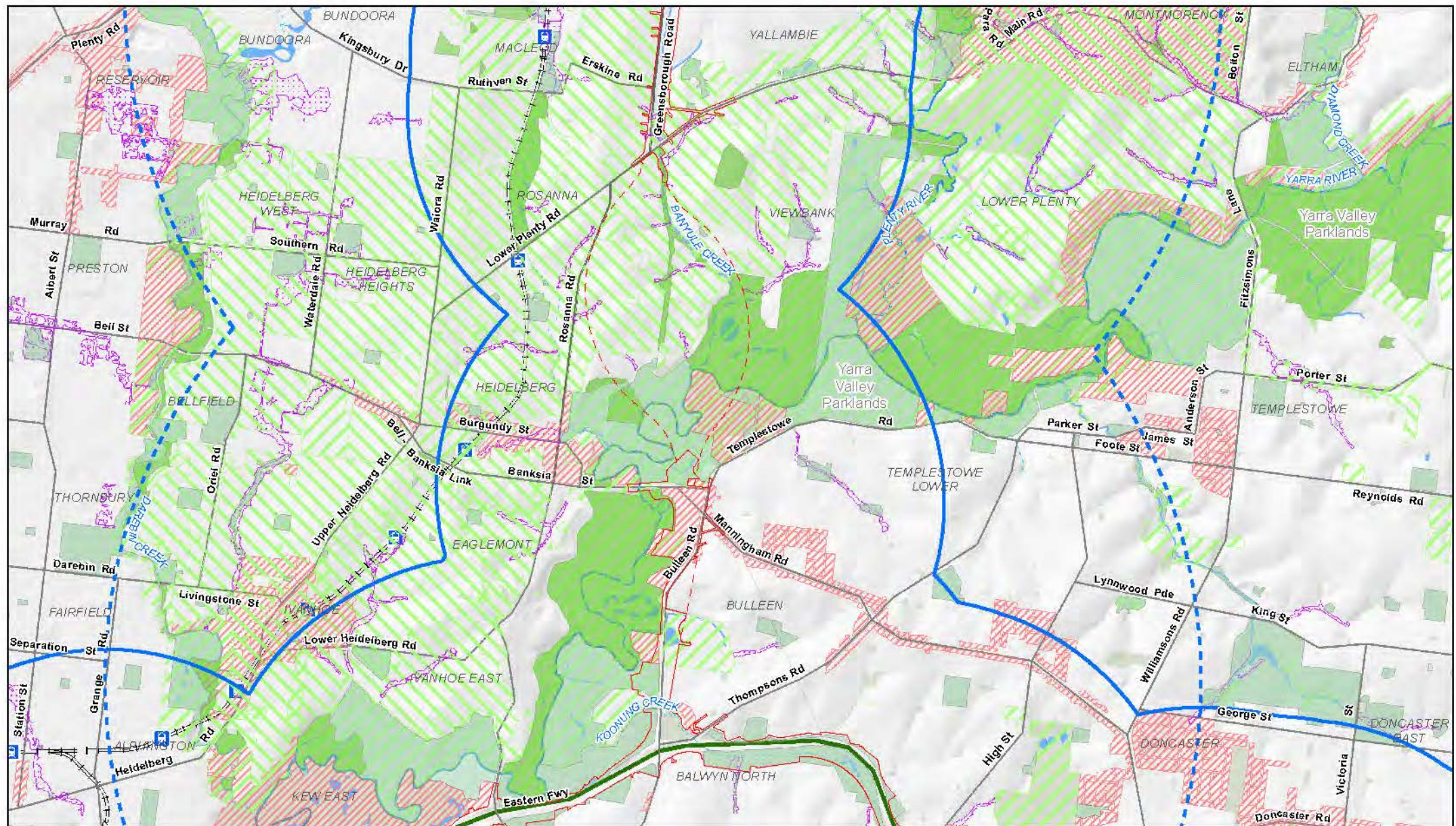
North East Link Project
Environment Effects Statement (EES)

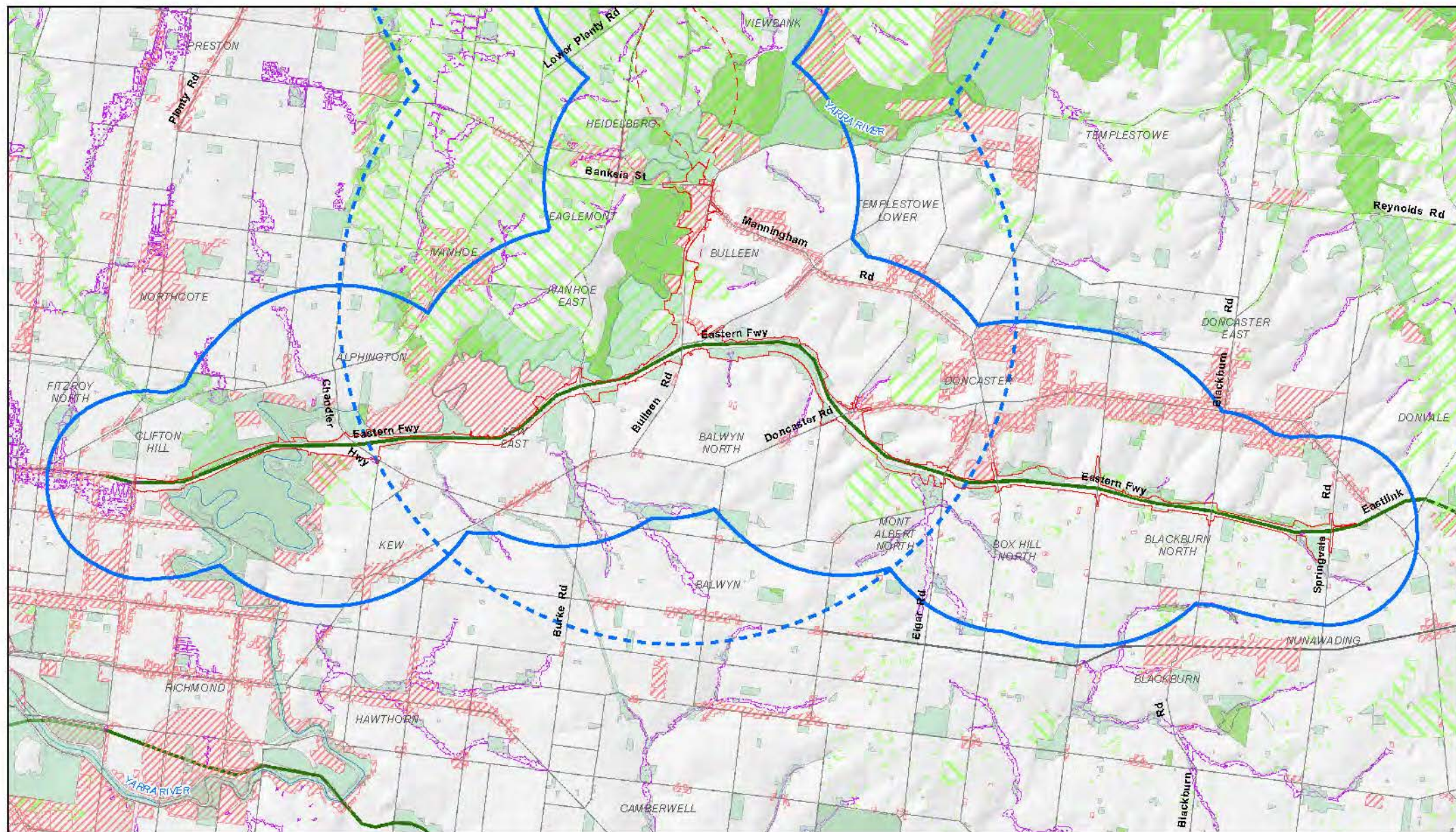
Job Number 31-35006
Revision L
Date 25/02/2019

Vegetation coverage map

Figure 7-3







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0 460 920 1,840
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Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



Legend

- | | | | |
|---|---|---|---|
| <ul style="list-style-type: none"> Project boundary - sub-surface Project boundary - surface Planning zone Public Conservation & Resource Public Park and Recreation | <ul style="list-style-type: none"> Planning Overlay Vegetation Protection Environmental Significance Design And Development Special Building | <ul style="list-style-type: none"> Study Area Ventilation Structures Noise Walls and Viaduct Structures Roads Freeway Highway | <ul style="list-style-type: none"> Major road Watercourses River Parks & reserves |
|---|---|---|---|



North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision L
Date 25/02/2019

Planning zones and overlays
Landscape - Eastern Freeway upgrades

Figure 7-6

7.2 Landscape regional context

Three landscape character areas were identified within the study area: Ridgeline, Yarra River Valley and Koonung Creek Valley. Each is described below.

7.2.1 Ridgeline

The Ridgeline character area dominates the northern part of the study area around the M80 Ring Road, Watsonia and Yallambie. It has a distinct suburban residential character set in an elevated topography with schools and aged care facilities. Long views are provided to and from treed ridgelines, with multiple ridgelines present throughout the character area. Vegetation is generally a mix of established native and exotic species on a Silurian siltstone geology. The M80 Ring Road runs east-west in the northern part of this character area, with a multi-lane freeway set amongst densely vegetated embankments screening the road corridor from surrounding residential. Simpson Barracks is located along one of the key ridgelines within the character area and the dense established vegetation within the barracks provides visual relief from the surrounding urban environment.

7.2.2 Yarra River Valley

The Yarra River Valley character area is the largest of the three zones in the study area. It follows the river from Viewbank, the Banyule Flats, Warringal Parklands, the Yarra River Parklands, and west through Kew and Fairfield. This area consists of low-lying floodplains with high cultural heritage significance. The low-lying topography allow flat open areas for sporting fields which are scattered along the river corridor. This character area is open, vegetated and naturalistic in character. Vegetation is mostly floodplain riparian woodland on alluvial soils. The wide green valley corridor of the Yarra River is a distinct feature with residential areas adjoining either side, overlooking the vegetated corridor. Views range from short enclosed views, dictated by vegetation and topography to medium expansive views over open grassed areas. Borrowed views to and across the densely vegetated Yarra River corridor are a key feature of this character area. This character area is defined by the presence of culturally significant landscapes such as Bolin Bolin Billabong, Yarra Flats and the Heide Museum of Modern Art. Multiple golf courses and sports fields abut the Eastern Freeway and river's edge throughout the character area.

7.2.3 Koonung Creek Valley

The Koonung Creek Valley character area dominates the south-eastern part of the study area, defined by suburban residential, following the Koonung Creek west along Balwyn North, Doncaster, Blackburn North, Nunawading and Box Hill North. Koonung Creek is a small and highly modified tributary of the Yarra River that runs through a narrow upper valley. The Eastern Freeway follows the valley floor with suburban residential rising up out of the valley to the north and south. Open space is typically passive linear open space and follows the alignment of Koonung Creek with a focus on shared use. The open space alternates between the north and south side of the freeway road corridor. Vegetation is established and dense and the vegetation along Koonung Creek and the Eastern Freeway provides a dense green corridor along the valley floor on alluvial and colluvial soils. Views to and across the dense vegetation are key features of this character area.

Figure 7-7 shows the extent of each of these character areas.

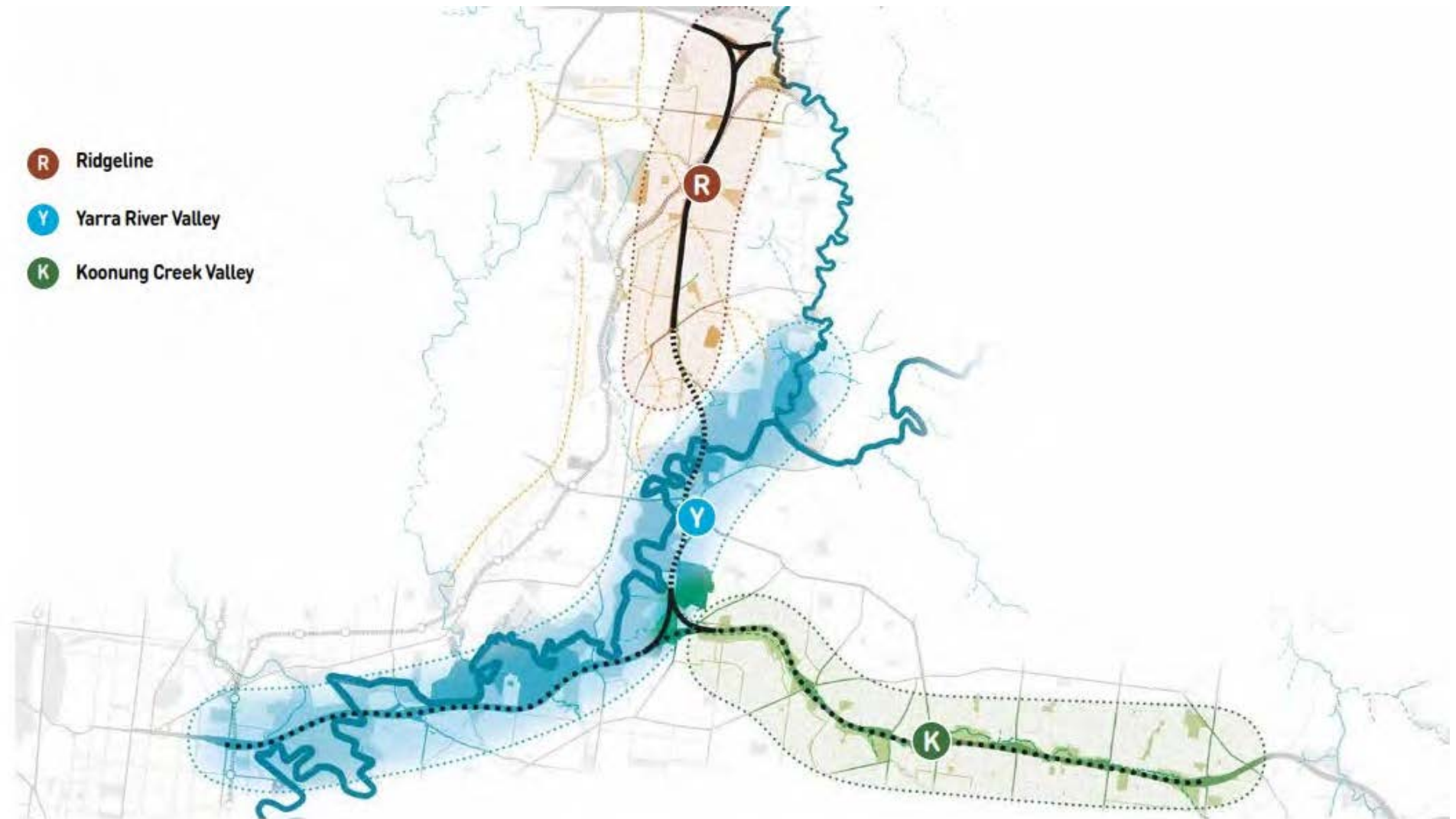


Figure 7-7 Landscape character areas

7.2.4 Landscape sensitivity

These landscape character areas have differing sensitivities to change. While change is an integral part of any landscape, human-induced changes can be considered significantly different to the natural processes that occur in a landscape. The sensitivity of viewers to change within the landscape surrounding the project would depend on a number of factors, such as:

- **Location:** The sensitivity of a potential viewer varies according to location. For example, visitors at a viewpoint where the view appears untouched or pristine would be very sensitive to the juxtaposition of new human-made elements on that landscape. The same visitor travelling along a highway, which already contains many examples of human modifications, would be less sensitive to the presence of new elements.

The lack of natural vegetation, as well as the visibility of roads, urban development, fences and road corridor infrastructure decreases the sensitivity of a landscape.

- **The rarity of a particular landscape:** The community values 'rare landscapes' more highly.
- **The scenic qualities of a particular landscape:** Landscapes that are considered scenic because of dramatic topographical changes, the presence of water, coastlines, escarpments etc. Therefore, viewers have greater sensitivity to alterations within these high-quality scenic landscapes.

Table 7-1 rates the sensitivity of the various character areas within the visual catchment of the project. These sensitivity ratings will be used as part of the viewpoint assessments in the following section on impact assessment.

Table 7-1 Sensitivity and landscape character areas

Landscape character area	Sensitivity
Yarra River Valley	High – medium The landscape values of the Yarra River and intersecting creek and drain age areas are held in high regard, particularly those that appear 'natural' with fewer obvious signs of man-made alterations. These locations would have a high degree of sensitivity. The landscape sensitivity is rated as medium where the character area is heavily modified to create sporting facilities or where suburban residential occurs.
Koonung Creek Valley	High – medium The Koonung Creek Valley character is characterised by suburban residential areas. As this is an area with substantial obvious human modifications, while of a smaller scale than proposed in the project, the landscape sensitivity is assessed as medium. The landscape sensitivity is greater where the character area is of a more natural setting along the open space adjoining the Koonung Creek. In these areas, the sensitivity would be rated as high.
Ridgeline	Medium The Ridgeline character is characterised by suburban residential areas and undulating topography. As this is an area with substantial obvious human-made modifications, while of a smaller scale, the landscape sensitivity is assessed as medium.

8. Zone of theoretical visibility

Geographical Information Systems software can provide a ZTV which illustrates those areas from which the project could be visible, as a whole or in part.

An assessment of potential visibility within the study area was calculated using topographical data. A ZTV is the area around a designated point in the landscape from which that point is theoretically visible. It is calculated using elevation data from VicMAP DEM 10, a Digital Elevation Model with a spatial resolution of 10 metres.

The ZTV does not take account existing buildings and vegetation that may screen views. The ZTV is therefore a conservative approach.

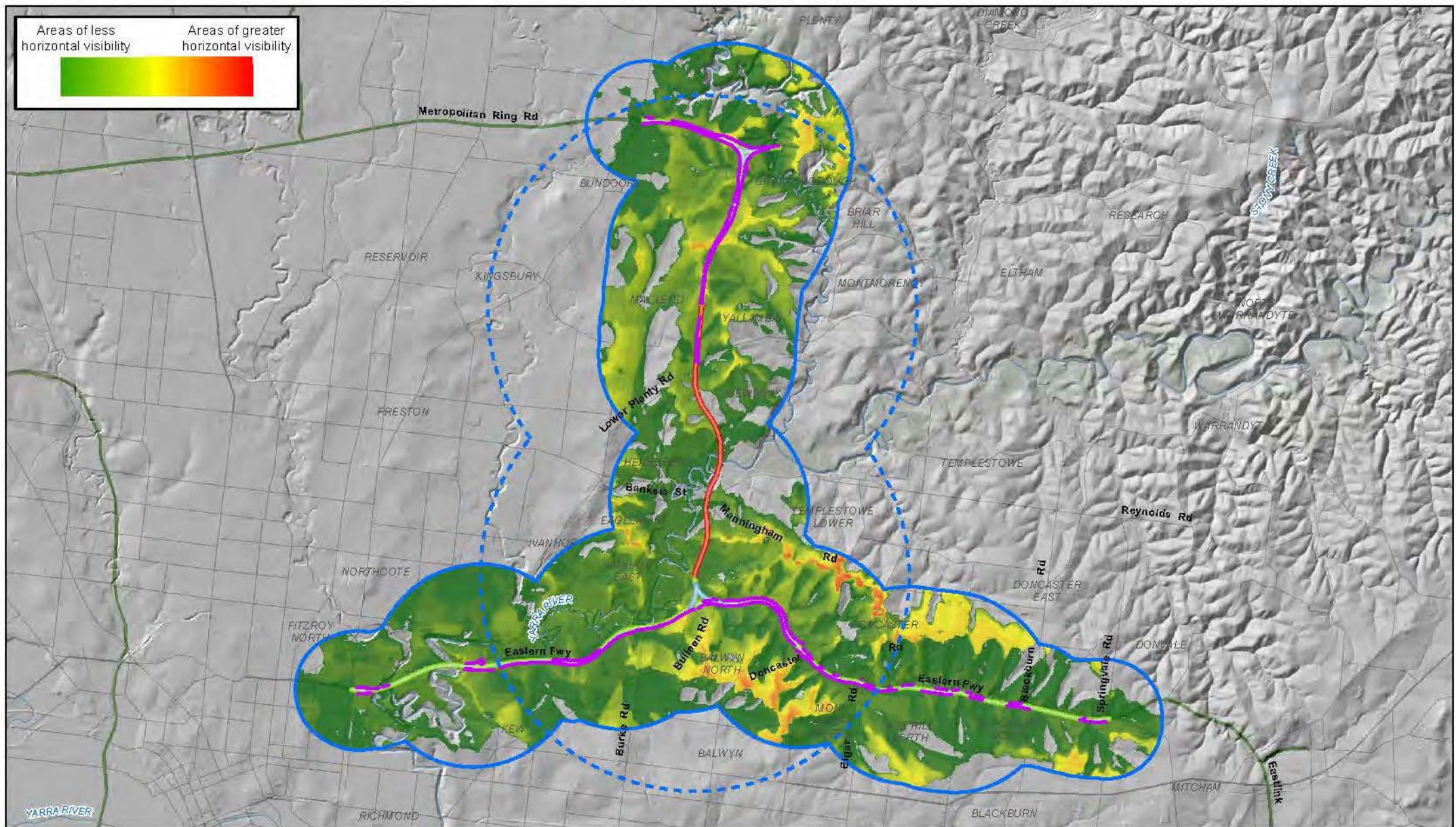
The ZTV has been calculated on the following parameters:

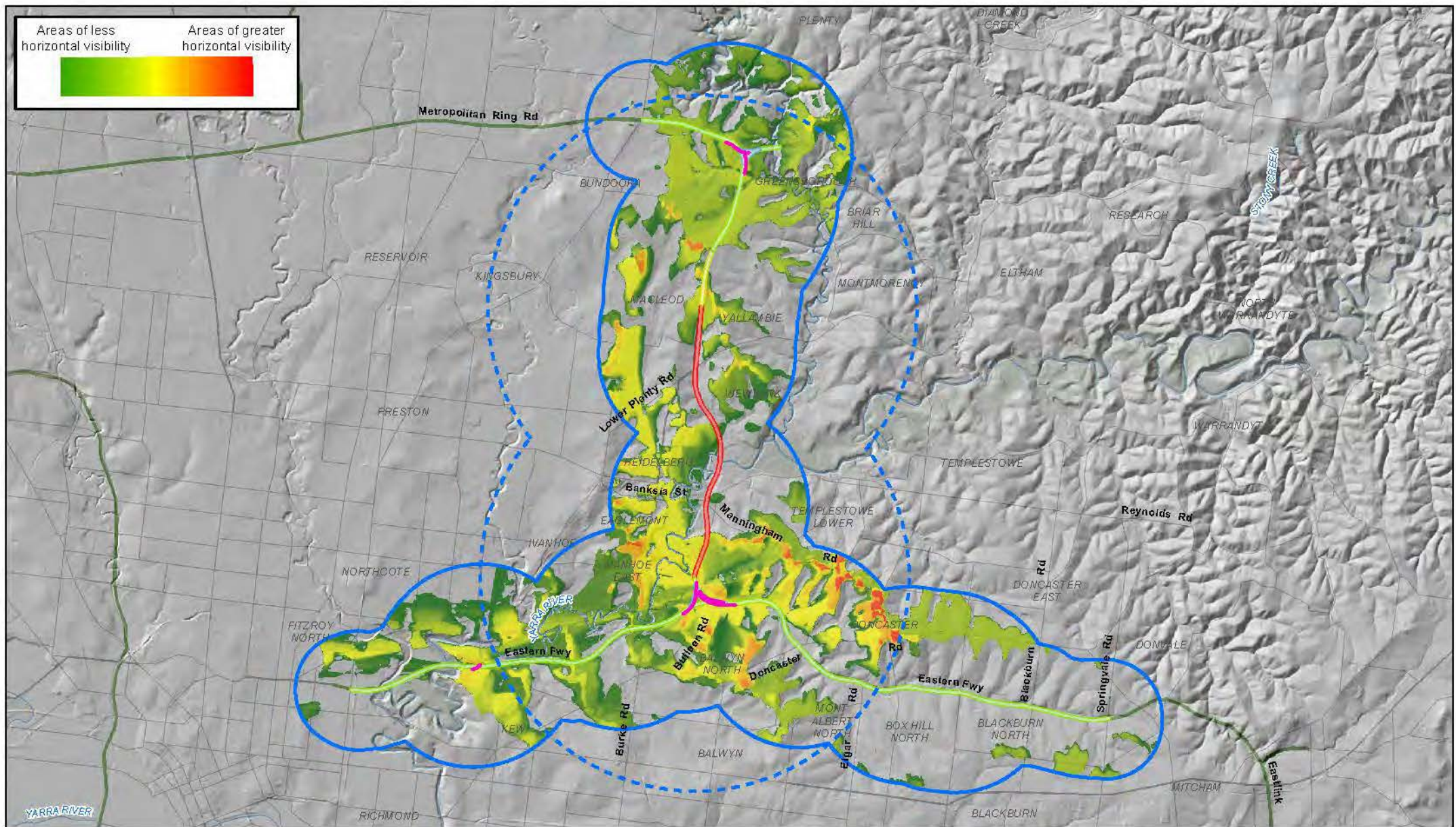
- Ventilation outlet at 30 metres (75 per cent of the design height)
- Noise walls at 50 per cent of the design height for all new walls
- Viaduct structures at 10 metres (55 per cent of the design height).

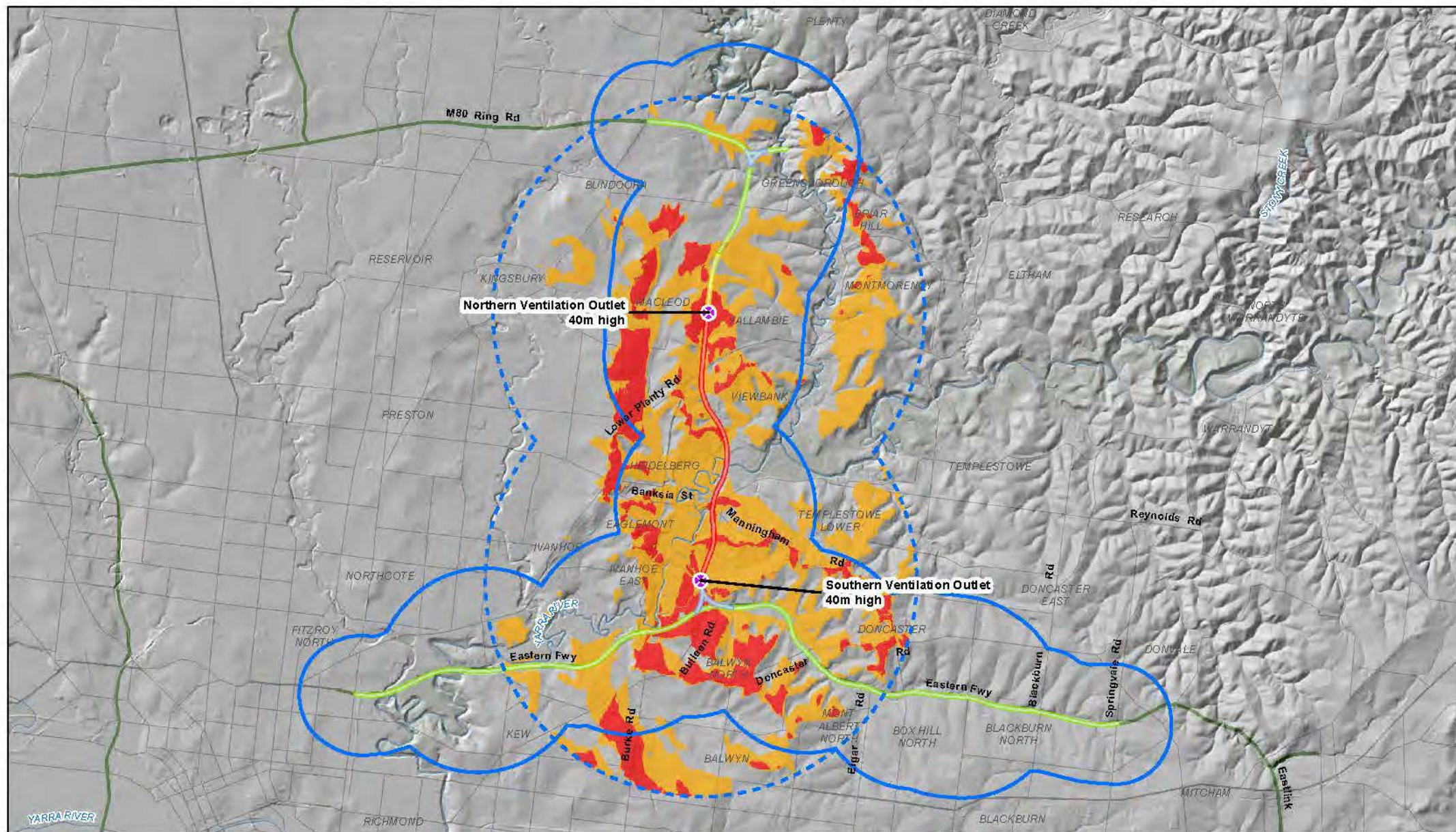
As each of the noise walls has a different height, the visibility calculation was run of half of the height. Showing the ZTVs as either the entire wall being visible (that is, if 100 millimetres is obscured then it is not included) or the top of wall (that is, if only 100 millimetres is visible then it is included) is too simplistic and gives a widely divergent results. The halfway mark is just a guide which provides a realistic mapping of the areas from which a significant proportion of the project (be it noise walls, viaduct or towers) can be seen.

Figure 8-1, Figure 8-2 and Figure 8-3 shows the ZTV (as defined previously in Section 3.4 and attached in Appendix F), overlaid with those areas from which the proposed perimeter noise walls, ventilation outlets, viaducts respectively are visible.

However, it is stressed this visibility is solely based on topography. It does not reflect the screening provided by vegetation and built form.







Paper Size A4
0 700 1,400 2,800
Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



Legend

- Ventilation outlet
- 1 ventilation outlet visible
- 2 ventilation outlets visible
- Study Area
- Ventilation Structures
- Noise Walls and Viaduct Structures

- Open cut
- Surface
- Underground
- Viaduct structure

- Freeway
- Highway
- Major road
- Watercourses
- River

- Parks & reserves



North East Link Project
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Zone of Theoretical Visibility
Ventilation outlets

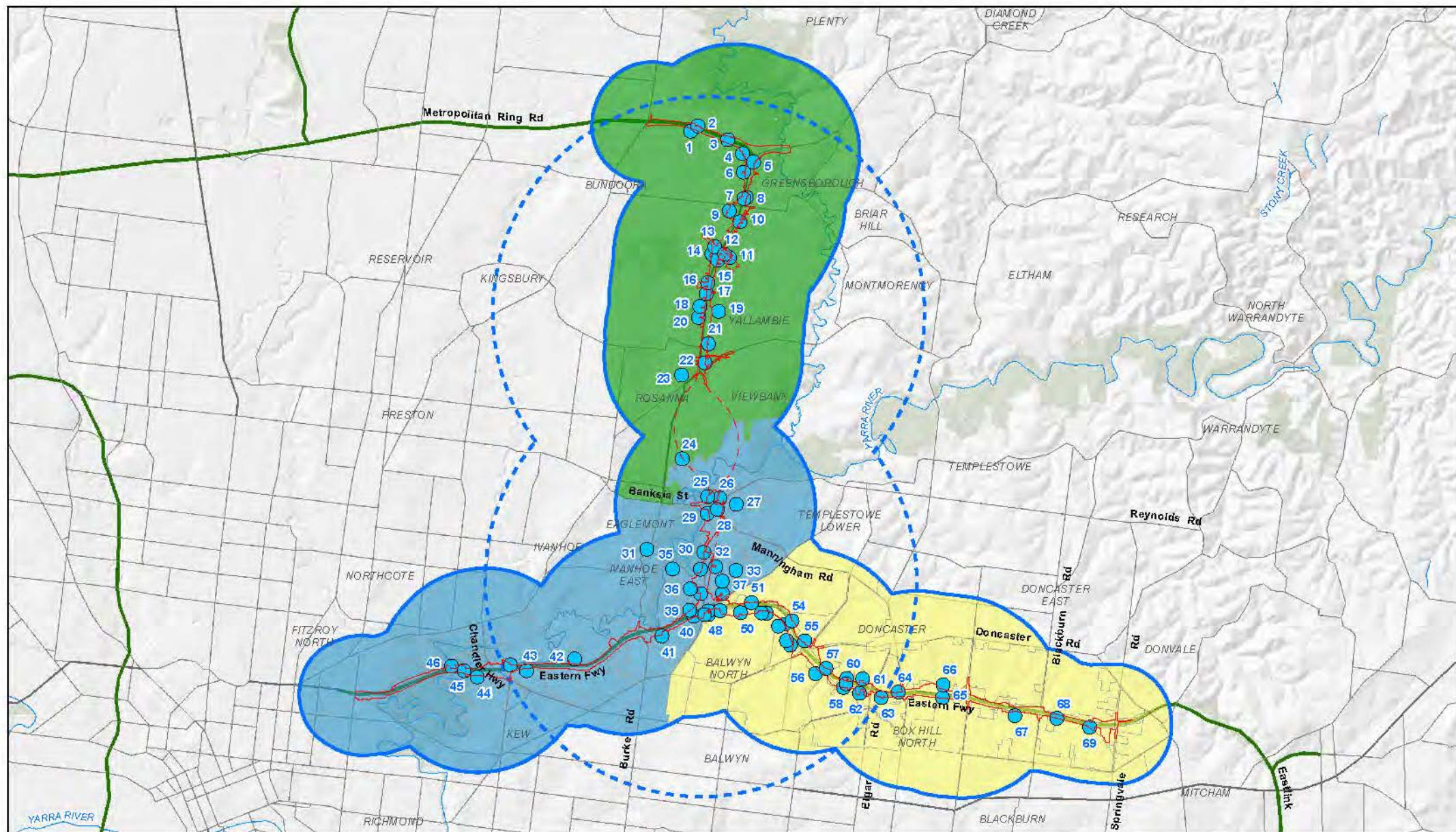
Figure 8-3

9. Impact assessment

The impact assessment has been undertaken for each character area, namely:

- Yarra River Valley
- Koonung Creek Valley
- Ridgeline.

Viewpoints within each character area are shown in Figure 9-1.



Paper Size A4
0 700 1,400 2,800
Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



Legend

- Viewpoints**
Public
Project boundary - sub-surface
Project boundary - surface
Study Area
Ventilation Structures

- Character Areas**
Koonung Creek Valley
Ridgeline
Yarra River Valley

- Noise Walls and Viaduct Structures**
Freeway
Highway
Major road
Watercourses
River
Parks & reserves



North East Link Project
Environment Effects Statement (EES)

Job Number | 31-35006
Revision | L
Date | 25/02/2019

Character areas
Overview

Figure 9-1

9.1 Landscape character area – Yarra River Valley

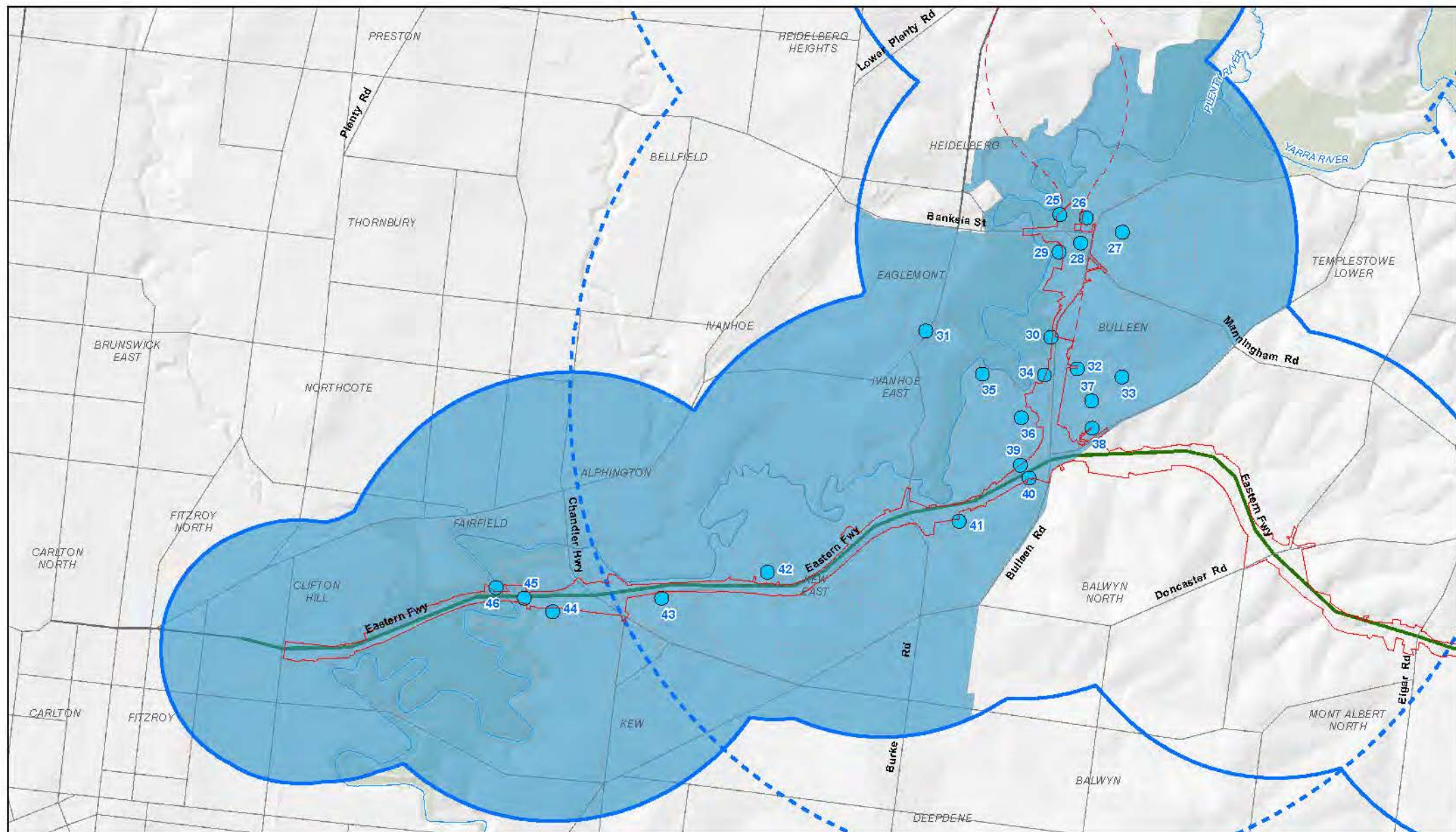
Twenty-two viewpoints in the public domain have been selected within the Yarra River Valley landscape character area.

A list of each viewpoint and their location within the Yarra River Valley character area is provided in Table 9-1.

Table 9-1 Viewpoint locations

Viewpoint number	Location	Distance to the project boundary
VP25	Banksia Park, Bulleen	0 m
VP26	Heide 1, Heide Museum of Modern Art	54 m
VP27	Helene Street at intersection of England Street and Helene Street, Bulleen	274 m
VP28	Manningham Road, Bulleen	0 m
VP29	Yarra River embankment adjacent to Kim Close Reserve	28 m
VP30	Bolin Bolin Billabong	8 m
VP31	Outlook Drive, Eaglemont	1,140 m
VP32	Trinity Grammar School Sporting Complex, Bulleen	10 m
VP33	Barak Street, Bulleen	449 m
VP34	Veneto Club, Bulleen	6 m
VP35	Bulleen Park playground	450 m
VP36	Carey Bulleen Sports Complex	180 m
VP37	Marcellin College, Bulleen	380 m
VP38	Sandra Street, Bulleen	11 m
VP39	Freeway Public Golf Course, Bulleen	20 m
VP40	Columba Street, Balwyn North	0 m
VP41	Musca Street Reserve, Balwyn North	28 m
VP42	Elm Grove, Kew East	102 m
VP43	Kellett Grove, Kew	63 m
VP44	Vaughan Crescent, Kew	37 m
VP45	Yarra Boulevard overpass	0 m
VP46	River Circuit Trail (Yarra River)	33 m

A majority of these landscapes are within a landscape that has a medium or high level of sensitivity. The location of each viewpoint is identified in Figure 9-2.



Paper Size A4
0 325 650 1,300
Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



Legend

Viewpoints

Public

Project boundary - sub-surface

Project boundary - surface

Study Area

Ventilation Structures

Noise Walls and Viaduct Structures

Character Areas

Yarra River Valley

Roads

Freeway

Highway

Major road

Watercourses

River

Parks & reserves



North East Link Project
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Revision L
Date 25/02/2019

Yarra River Valley character area
and viewpoint map

Figure 9-2

G:\3135006\GIS\Maps\Working\BMEES_PER_Technical_Report\BMEES_Technical_Report_A4L_TR.mxd

180 Lonsdale Street Melbourne VIC 3000 Australia T 61 3 8687 8000 F 61 3 8687 8111 E mel@mail@ghd.com W www.ghd.com

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Data source: CIP Imagery - DEUWP - 2018 | roads, watercourses, parks, rail, localities - Vicmap - 2019 | project infrastructure, viewpoints, character areas, study areas - GHD, AECOM - 2019 Created by: trighetti

9.1.1 Viewpoint 25 – Banksia Park, Bulleen

Viewpoint 25 is located within Banksia Park adjacent to the playground as shown in Figure 9-3.



Figure 9-3 VP25 – Location plan

The current view from this location is of the industrial buildings along Banksia Street and the Ned Kelly sculpture in the background with established trees and a grassed open space in the foreground, as shown in Photo 9-1.



Photo 9-1 VP25 – Existing view looking south-east

This is a parkland setting where the built form of the industrial precinct is a minor element.

Proposed change

This viewpoint is located approximately 245 metres from the proposed substation, approximately 315 metres from the proposed emergency smoke duct and approximately 145 metres from the proposed shared use path. All built form within the existing industrial precinct from Banksia Street south would be removed. The existing vegetation within Banksia Park would be retained.

Assessment

As a result of the project, the existing built form would be removed due to the cut and cover tunnel works at the Manningham Road interchange. The view would be of a substation, shared use path and new road with an emergency smoke duct and open space surrounding. The retained existing vegetation within Banksia Park would screen views to the emergency smoke duct and shared use path and filter views to the substation.

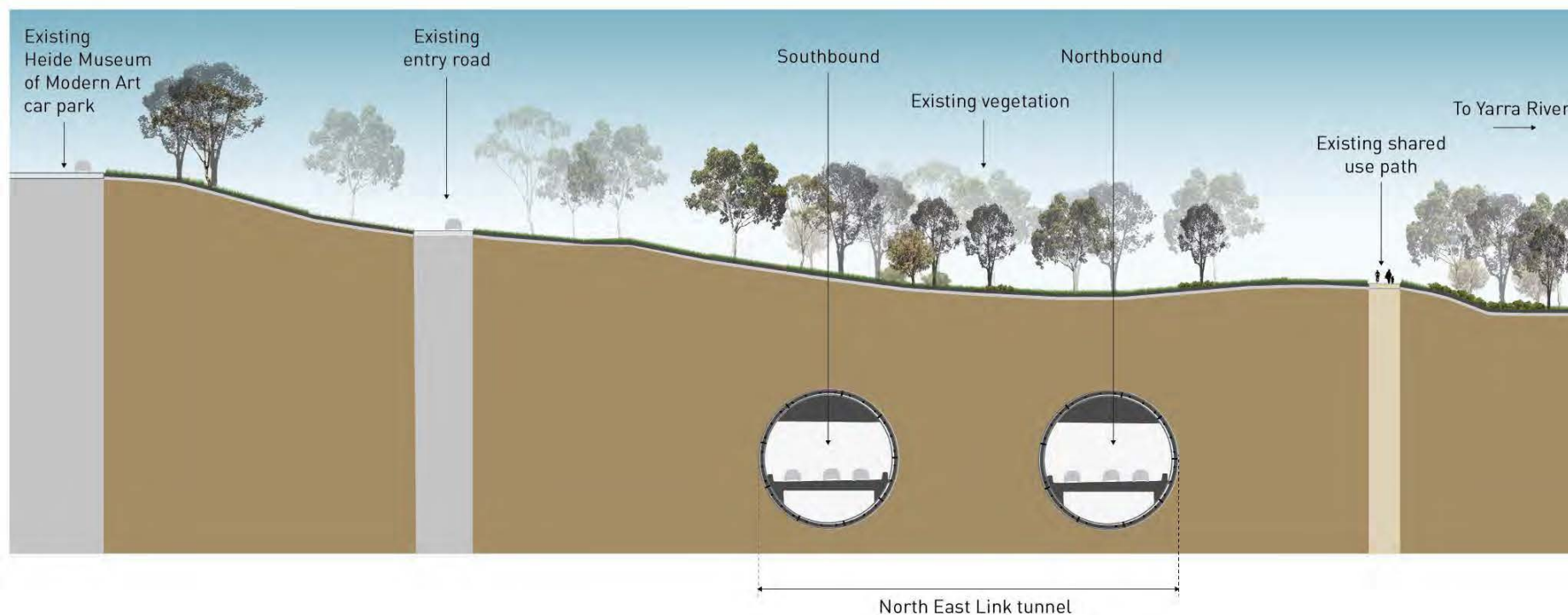


Figure 9-4 VP25 – Landscape treatment section view south

At this distance, the visual impact is assessed as:

- Year 0 and year 10 – **Low to negligible**, as the built form would be removed and replaced by a substation and open space and would be partially screened by the retained vegetation. There would be minor visual change to the landscape.

9.1.2 Viewpoint 26 – Heide 1, Heide Museum of Modern Art

Viewpoint 26 is located within the grounds of Heide 1 overlooking the car park at the Heide Museum of Modern Art, Templestowe Road, Bulleen. This viewpoint is located approximately 137 metres from Bridge Street as shown in Figure 9-5.

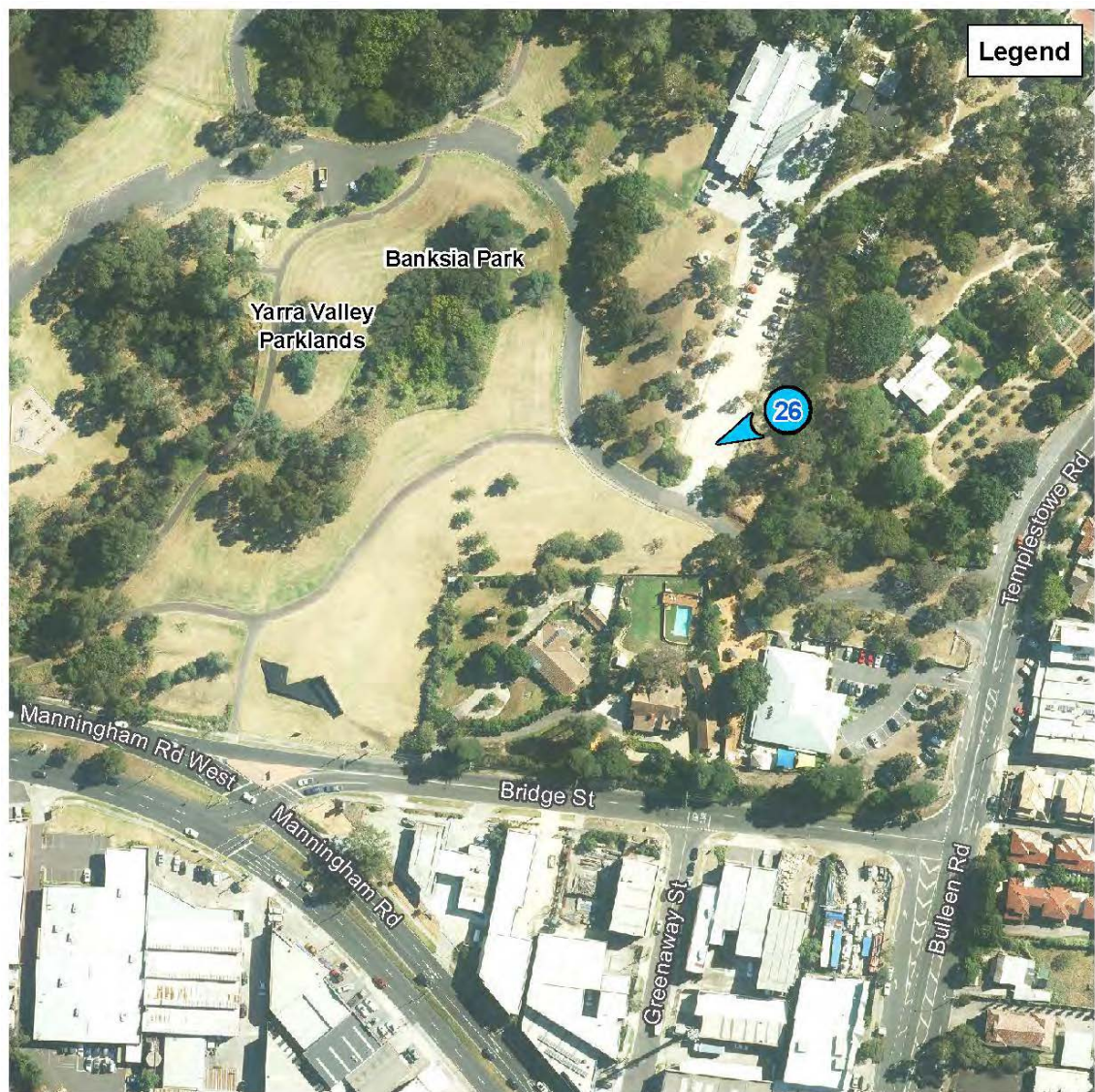


Figure 9-5 VP26 – Location plan

The current view in this location is of established vegetation in the background with glimpses of buildings located in the industrial precinct below Banksia Road and a gravel car park with vegetated embankments in the foreground as shown in Photo 9-2.



Photo 9-2 VP26 – Existing view south-west

This is a landscape where vegetation is the dominant feature and the built form of existing buildings is a minor element.

Proposed change

The proposed substation and emergency smoke duct would be located approximately 150 metres from this viewpoint. The existing industrial buildings would be removed. The proposed substation in this location would be approximately 9 metres high.

Assessment

As a result of the project, the industrial buildings and surrounding vegetation would be removed. The existing houses and dense vegetation would screen the proposed substation and emergency smoke duct from view as shown in Figure 9-6.



Figure 9-6 VP26 – Photomontage Year 0

At year 10, the existing houses and vegetation would continue to screen the proposed substation and emergency smoke duct as shown in Figure 9-7.



Figure 9-7 VP26 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10– **Negligible**, as the proposed substation and emergency smoke duct would be screened by the retained existing vegetation.

9.1.3 Viewpoint 27 – Helene Street at intersection of England Street, Bulleen

Viewpoint 27 is located at the intersection of Helene Street and England Street, Bulleen. This viewpoint is located approximately 285 metres from Bulleen Road as shown in Figure 9-8.

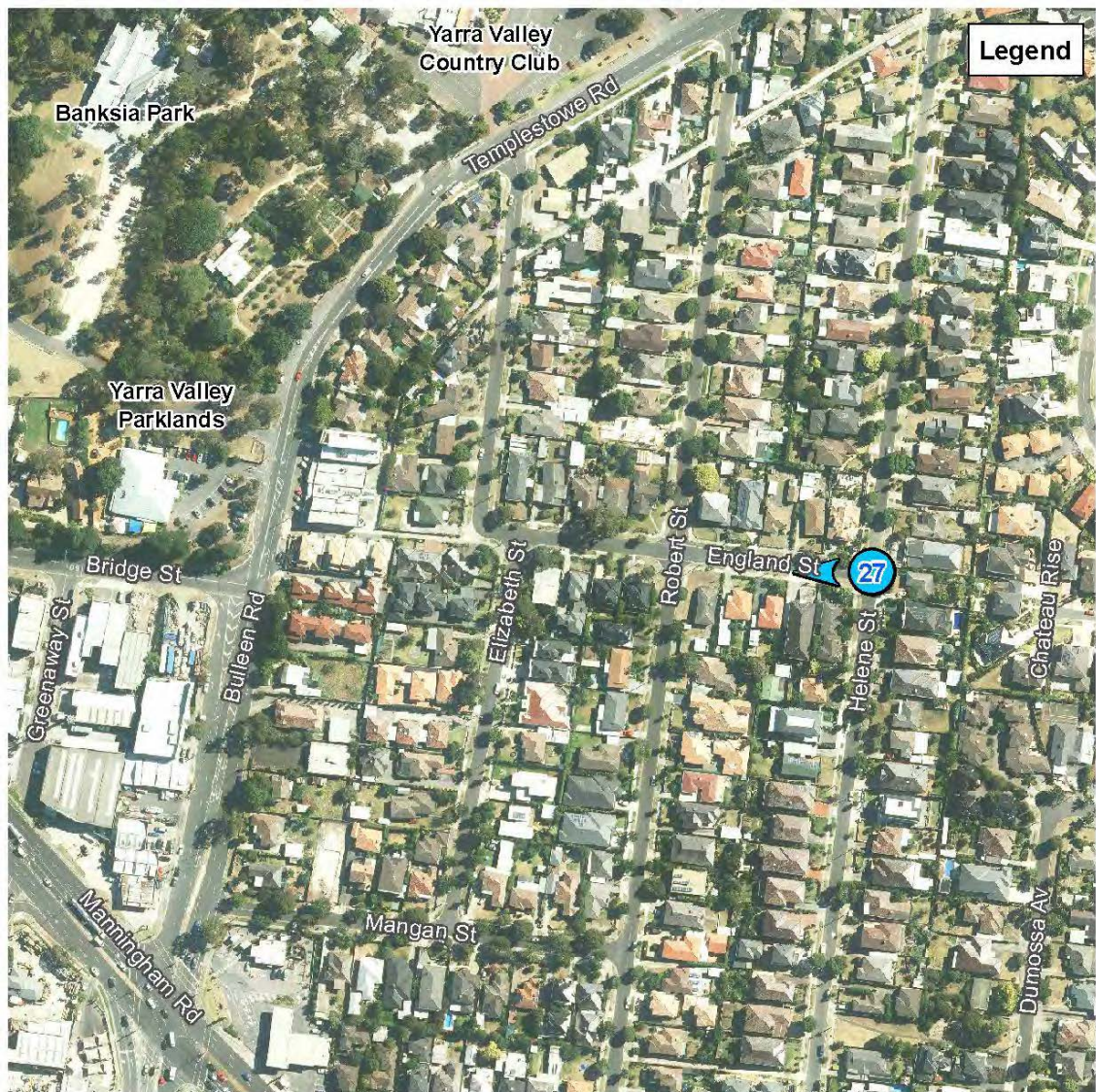


Figure 9-8 VP27 – Location plan

The current view in this location is of commercial buildings in the background with a residential tree lined street in the foreground as shown in Photo 9-3.



Photo 9-3 VP27 – Existing view looking west

This is a residential landscape where the established vegetation is a major element.

Proposed change

The viewpoint is located approximately 390 metres from the proposed substation and approximately 530 metres from the proposed emergency smoke duct. The proposed substation in this location would be approximately nine metres high.

Assessment

As a result of the project, the view would be towards the proposed nine metre high substation and proposed emergency smoke duct that would be partially screened by the existing vegetation and residential properties.

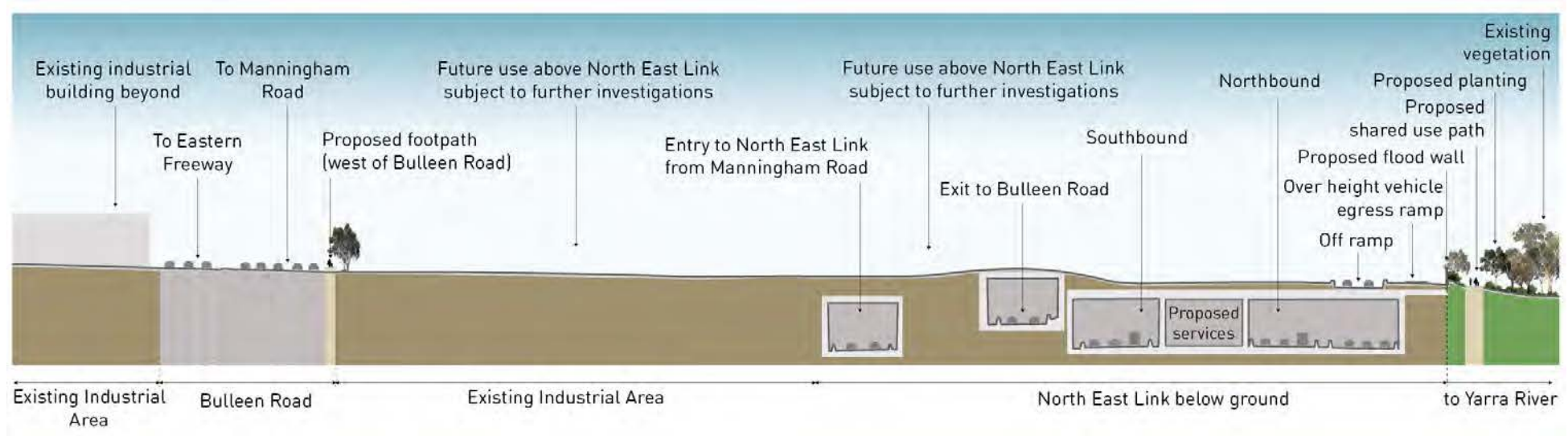


Figure 9-9 VP27 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Low**, as the proposed emergency smoke duct and proposed nine metre high substation would be visually prominent and partially screened behind the existing vegetation and residential properties and the landscape setting would be similar to the existing.

9.1.4 Viewpoint 28 – Manningham Road

Viewpoint 28 is located at the footpath adjacent to Manningham Road in Bulleen as shown in Figure 9-10.

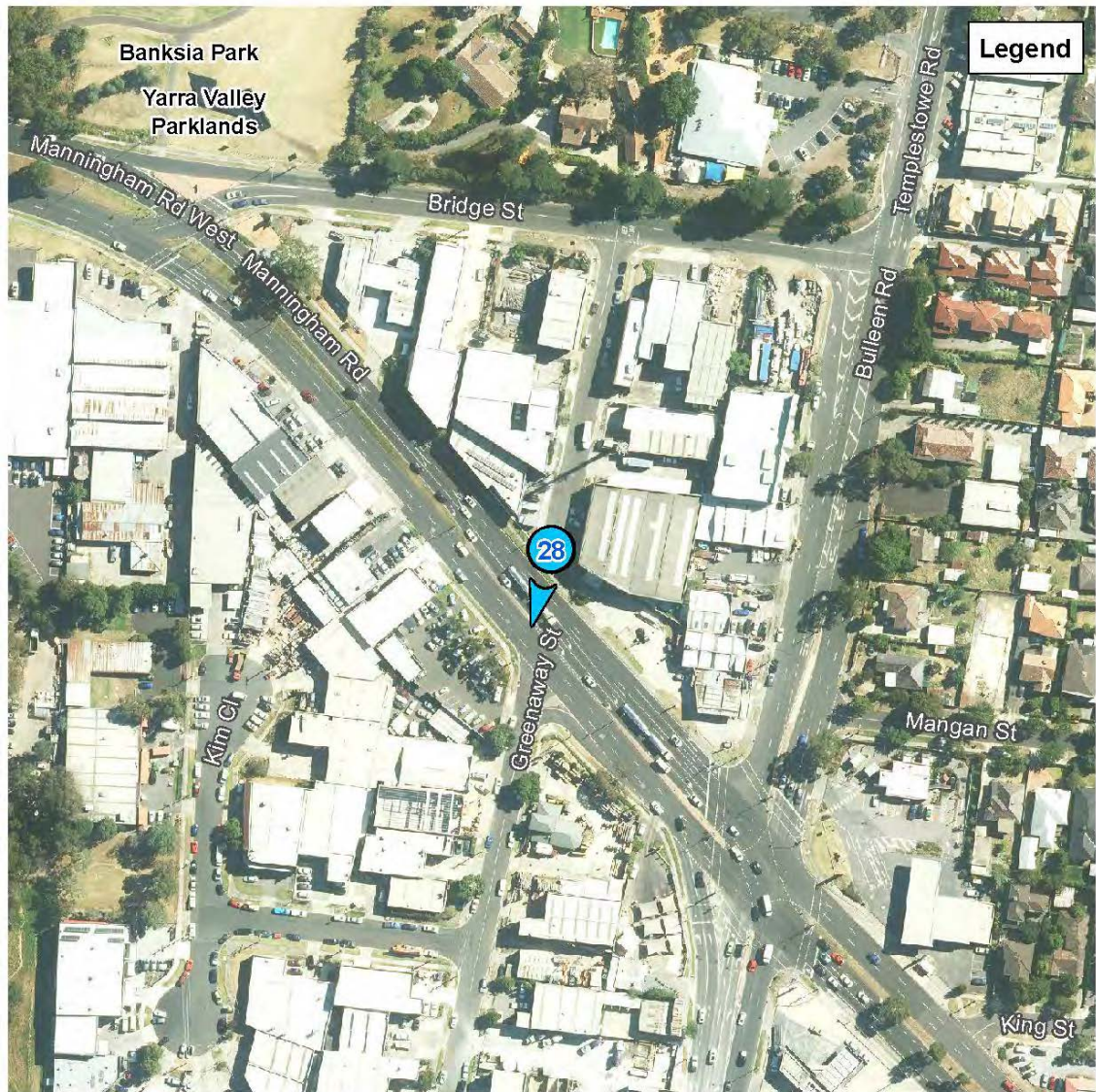


Figure 9-10 VP28 – Location plan

The current view from this location is of a car yard and timber supplies store with grassed nature strips and scattered established trees in the background and a main road in the foreground, as shown in Photo 9-4.



Photo 9-4 VP28 – Existing view looking south-west

This is a popular activity centre where brightly coloured bulky buildings with signage and overhead power lines and street lights dominate the view. The established street trees partially filter views of the buildings.

Proposed change

This viewpoint is located approximately 117 metres from the proposed emergency smoke duct and approximately four metres from the proposed shared use path. All built form and existing vegetation would be removed. Open space would be proposed in this location.

Assessment

As a result of the project, all built form would be removed due to the cut and cover tunnel works. The view would be of a shared use path and new road with an emergency smoke duct and open space surrounding.

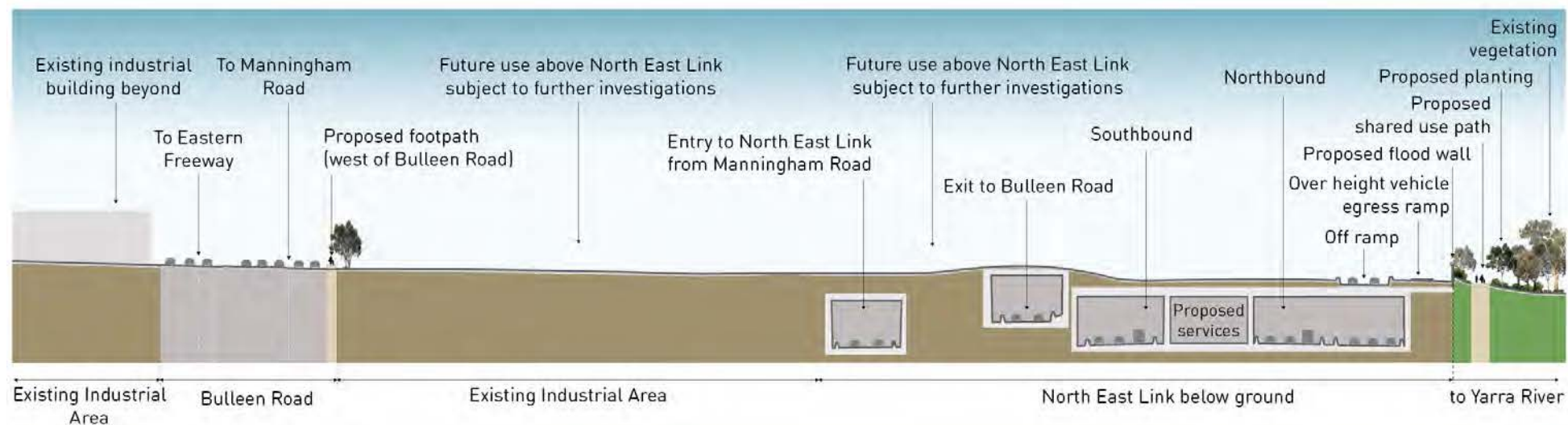


Figure 9-11 VP28 – Landscape treatment section view south

At this distance, the visual impact is assessed as:

- Year 0 and year 10 – **Negligible**, as the built form would be removed and replaced by open space, and there would be significant visual change to the landscape.

9.1.5 Viewpoint 29 – Yarra River

Viewpoint 29 is located at the walking trail along the Yarra River corridor, adjacent to Kim Close Reserve in Bulleen. This viewpoint is located approximately 20 metres from the existing adjacent industrial precinct as shown in Figure 9-12.



Figure 9-12 VP29 – Location plan

The current view is of a large industrial building in the background with dense native vegetation and a walking trail in the foreground as shown in Photo 9-5.



Photo 9-5 VP29 – Existing view north-east

This is a natural landscape setting where the built form is a minor element.

Proposed change

The proposed flood walls would be located approximately 47 metres from the viewpoint with a shared use path in front. The existing industrial buildings would be removed. The proposed floodwalls in this location would be approximately nine metres high.

Assessment

As a result of the project, the view would be towards the proposed nine metre high flood wall with landscaping establishing between the flood wall and shared use path as shown in Figure 9-13.



Figure 9-13 VP29 – Photomontage Year 0

The landscaping would continue to establish and filter views to the proposed noise wall as shown in Figure 9-14.



Figure 9-14 VP29 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed nine metre high flood wall would be visually dominant, seen by users of the shared use path and there would be a significant visual change in the landscape. The existing pedestrian access from the industrial area down to the Yarra River would be restricted by the presence of the proposed flood walls, this is compensated by the provision of a new shared use path connection from Banksia Street to Bulleen Road. There is an opportunity for open space in the area above the cut and cover on the eastern side of the flood wall.
- Year 10 – **Low**, as the landscaping would filter views to the flood wall.

9.1.6 Viewpoint 30 – Bolin Bolin Billabong

Viewpoint 30 is located at the walking trail within the Bolin Bolin Billabong. This viewpoint is located approximately 11 metres from the existing Bulleen Road edge as shown in Figure 9-15.

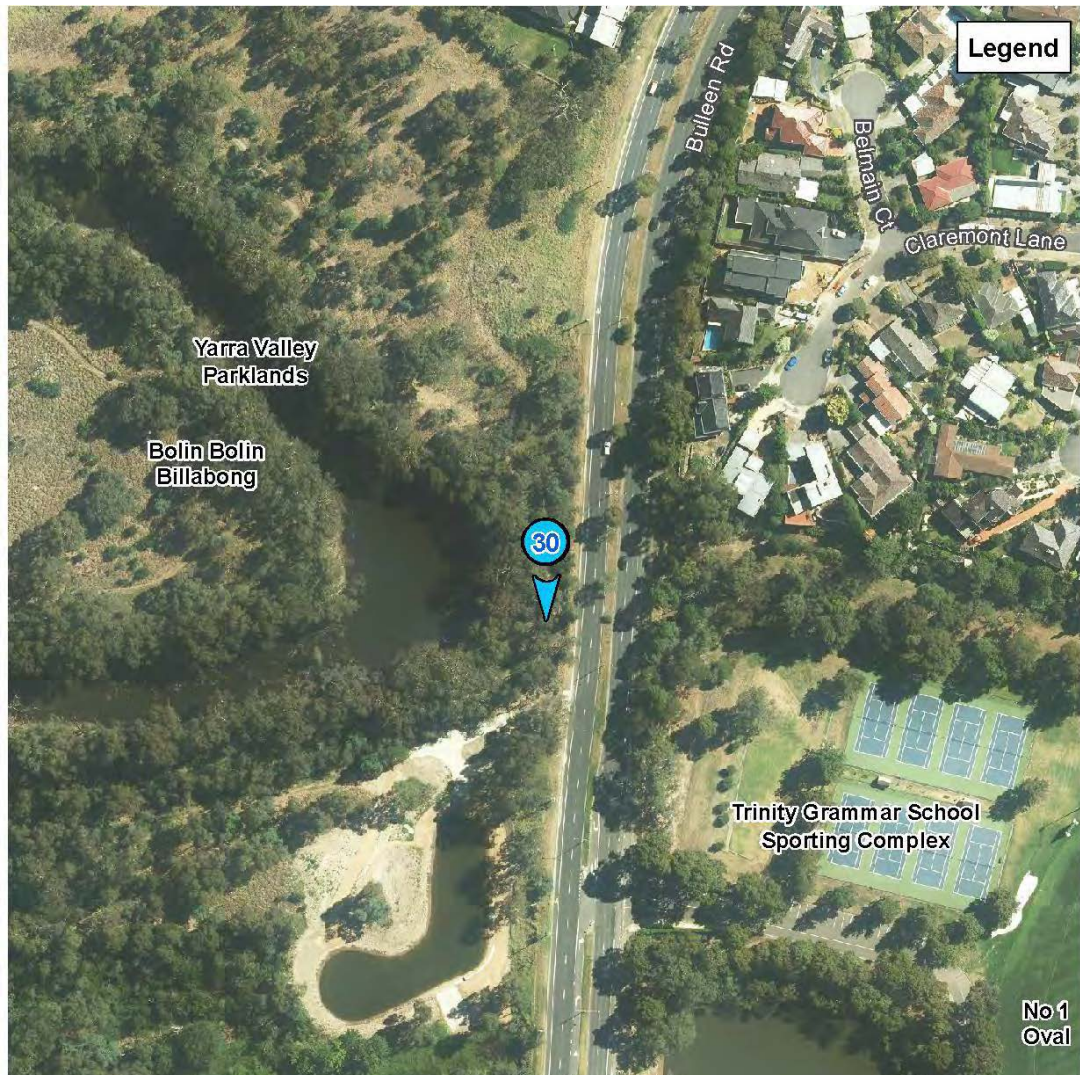


Figure 9-15 VP30 – Location plan

The current view from this location is of dense established native vegetation surrounding a walking trail as shown in Photo 9-6.



Photo 9-6 VP30 – Existing view to the south

This is a naturalistic landscape setting where the established vegetation is a major element.

Proposed change

The proposed shared use path would be located approximately nine metres from the viewpoint and the proposed ventilation structure would be approximately 570 metres from the viewpoint. There would be minor vegetation loss directly adjacent to the proposed shared use path. The proposed ventilation outlet in this location would be approximately 40 metres high and the proposed ventilation building would be approximately 15 metres high.

Assessment

As a result of the project, the view would be similar to the existing as the dense vegetation would screen the ventilation structure from view. Minor vegetation loss would occur directly adjacent to the shared use path, but existing foreground vegetation would filter this from view as shown in Figure 9-16.



Figure 9-16 VP30 – Photomontage Year 0



Figure 9-17 VP30 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Negligible**, as the dense existing vegetation would screen the proposed 40 metre high ventilation outlet and associated 15 metre high ventilation building, and the landscape setting would be similar to the existing.

9.1.7 Viewpoint 31 – Outlook Drive, Eaglemont

Viewpoint 31 is located on a ridgeline at Outlook Drive in Eaglemont. This viewpoint is located approximately 1.2 kilometres from the edge of Bulleen Road as shown in Figure 9-18.

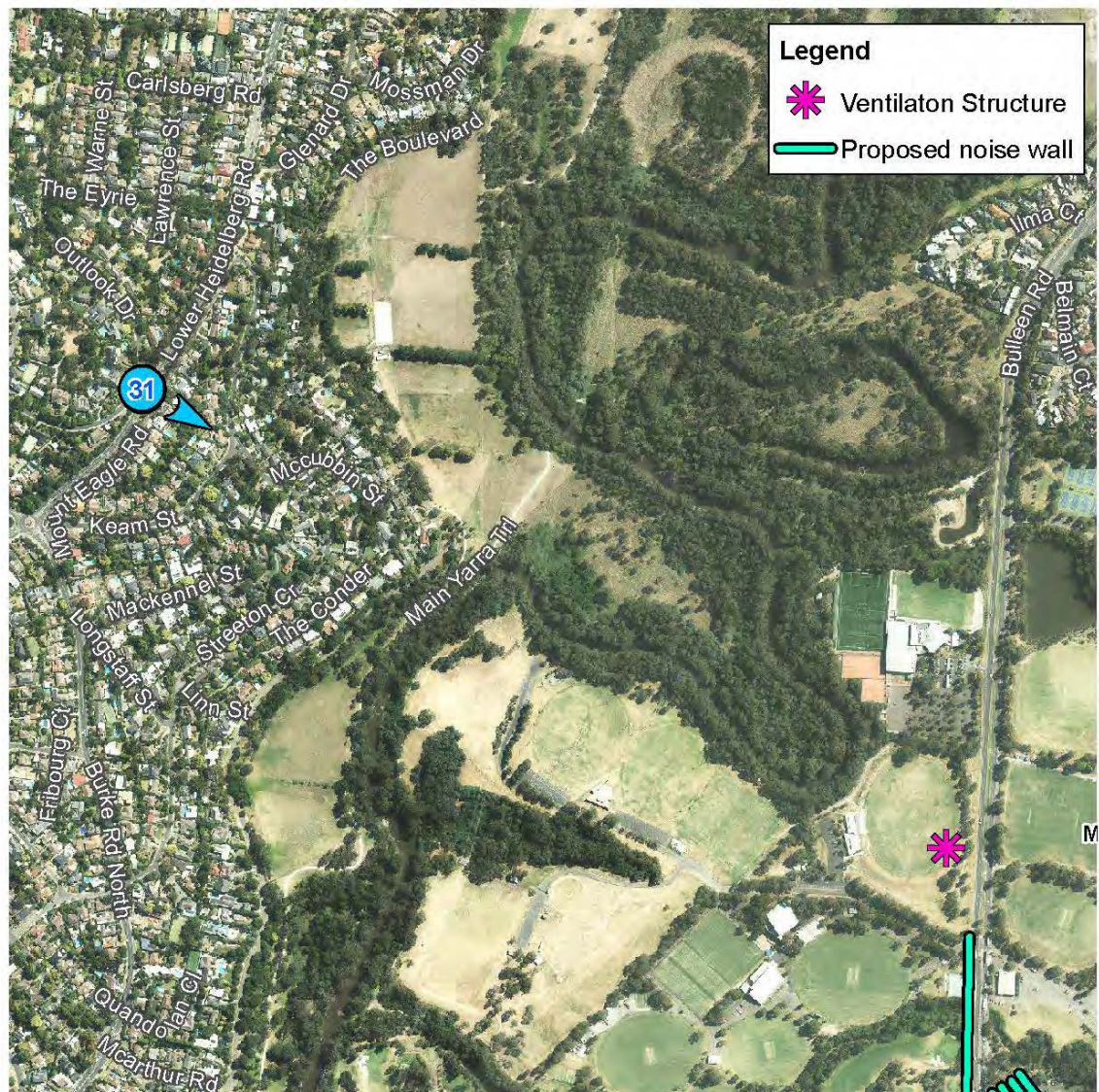


Figure 9-18 VP31 – Location plan

The current view from this location is of established vegetation and residential properties in the background and in the foreground as shown in Photo 9-7.



Photo 9-7 VP31 – Existing view south-east

This is a residential landscape setting where the vegetation is a major element.

Proposed change

The proposed ventilation structure would be located approximately 1.2 kilometres from the viewpoint and the proposed noise walls 1.3 kilometres. The proposed ventilation outlet in this location would be approximately 40 metres high, proposed ventilation building approximately 15 metres high and the proposed noise walls approximately four metres high.

Assessment

As a result of the project, the view would be towards the proposed 40 metre high ventilation outlet and proposed four metre noise walls.

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Negligible**, as the existing landscape is characterised by built form scattered throughout existing vegetation in the distance. Part of the ventilation outlet would be visibly discernible above the existing vegetation in the distance although if the Urban Design Strategy objectives are fulfilled some viewers may see the ventilation outlet as a positive element in the landscape. The noise walls would be visibly negligible from at this distance.

9.1.8 Viewpoint 32 – Trinity Grammar School Sporting Complex

Viewpoint 32 is located within the playing fields of the Trinity Grammar School Sporting Complex at the edge of the existing lake adjacent to the ovals and approximately 235 metres from the edged of Bulleen Road as shown in Figure 9-19.

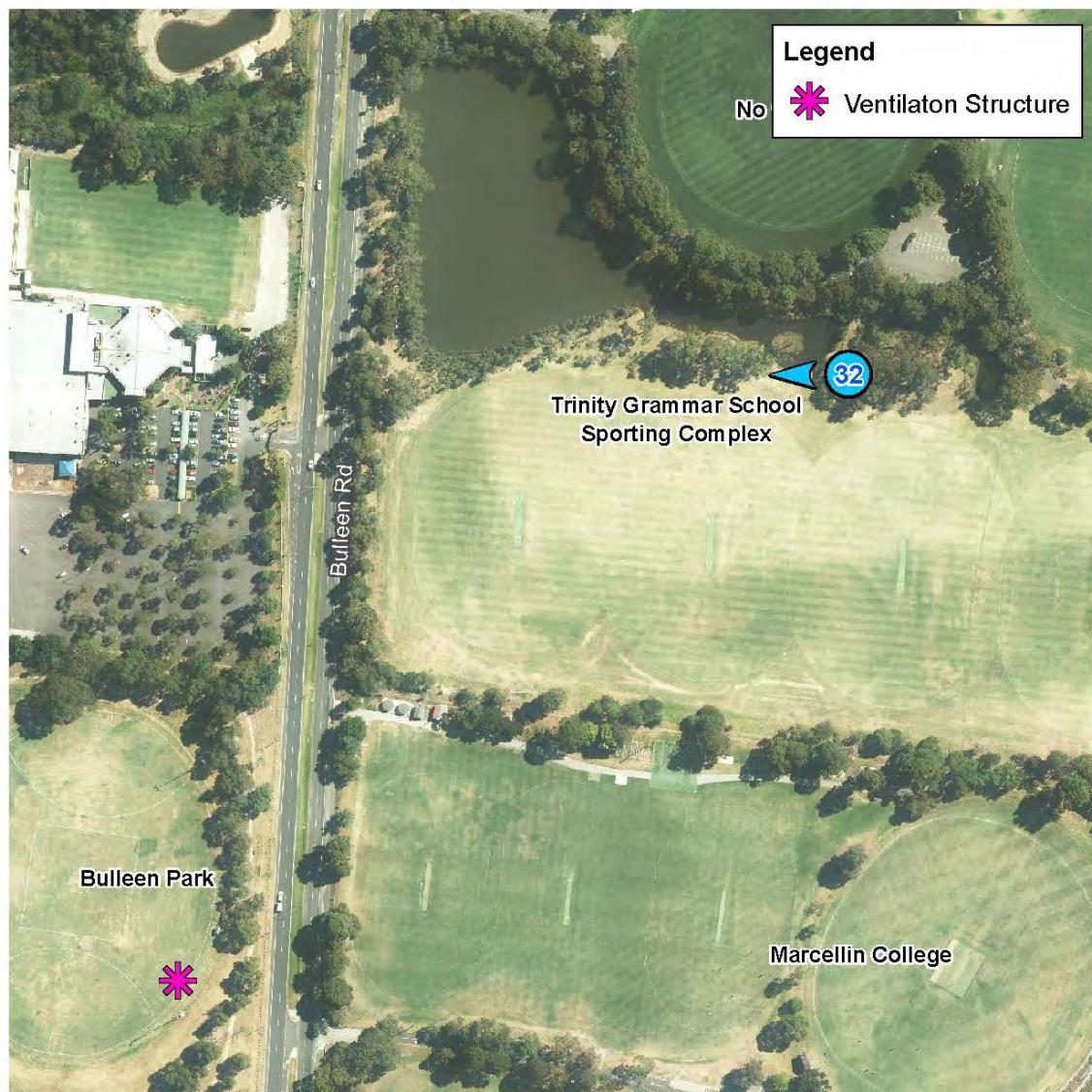


Figure 9-19 VP32 – Location plan

The existing view in this location is towards established vegetation in the background with open grassed sports fields in the foreground to the left, and a water body surrounded by vegetation to the right, as shown in Photo 9-8. Views to Bulleen Road can be glimpsed through the existing vegetation.



Photo 9-8 VP32 – Existing view looking west

This is a parkland setting where the open space and vegetation are major elements.

Proposed change

This viewpoint is located approximately 235 metres from the proposed shared use path and approximately 405 metres from the proposed ventilation structure. The existing vegetation along Bulleen Road would be removed. The ventilation outlet would be approximately 40 metres high and the associated ventilation building would be approximately 15 metres high. Landscaping would be proposed between the shared use path and the sports fields.

Assessment

As a result of the project, the view would be towards the shared use path and road corridor to the west, and towards the proposed 40 metre high ventilation outlet to the south-west as shown in Figure 9-20.

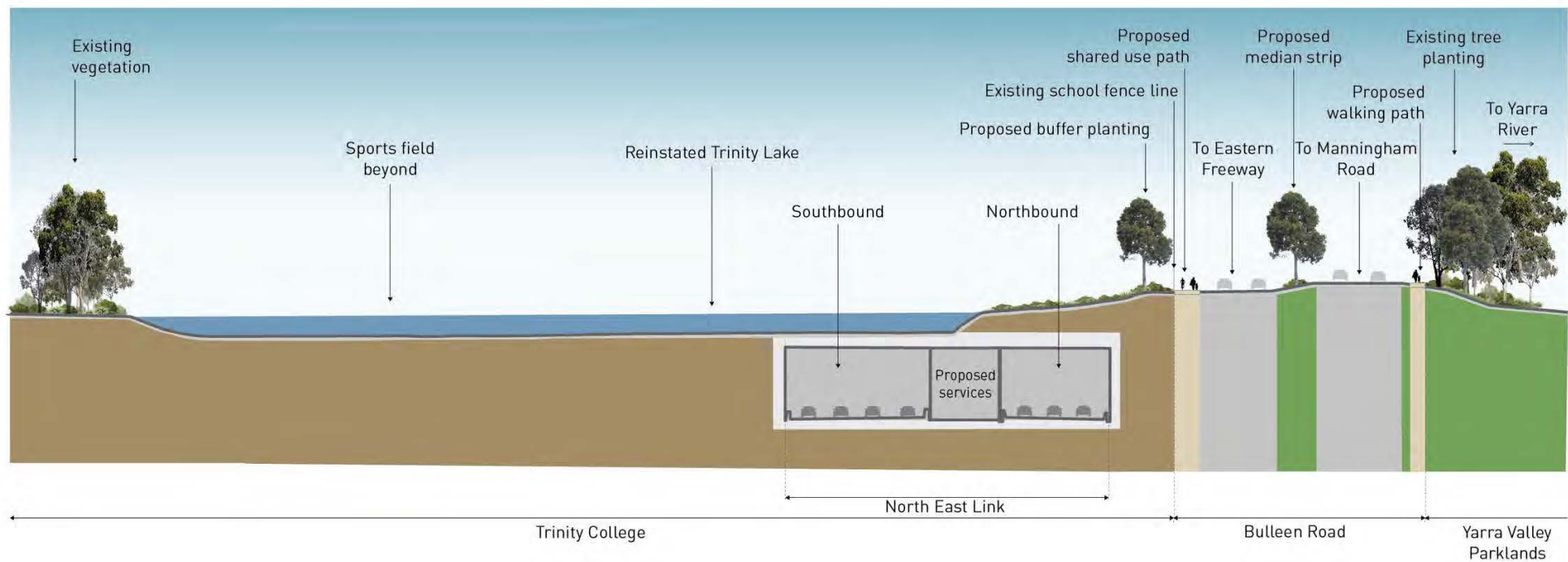


Figure 9-20 VP32 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High to medium**, as the proposed ventilation outlet would be visually dominant. The existing vegetation along Bulleen Road would be removed. Viewer numbers would be high and viewer sensitivity would be medium.
- Year 10 – **Medium to low**, as the landscaping between the shared use path and playing field would have established, and filter views to the lower half of the ventilation outlet and the landscape would be similar to the existing landscape.

9.1.9 Viewpoint 33 – Barak Street, Bulleen

Viewpoint 33 is located at the footpath of Barak Street, adjacent to Trinity Grammar School Sporting Complex in Bulleen. This viewpoint is located approximately 675 metres from the existing Bulleen Road edge as shown in Figure 9-21.



Figure 9-21 VP33 – Location plan

The current view in this location is of established native vegetation in the background, grassed sporting fields surrounded by scattered established trees in the middle ground with footpath and low mesh fence in the foreground as shown in Photo 9-9.



Photo 9-9 VP33 – Existing view looking west

This is a naturalistic landscape setting where the established vegetation provides a backdrop to the sports fields.

Proposed change

The proposed ventilation structure would be approximately 770 metres from the viewpoint. The cut and cover tunnel works adjacent to Bulleen Road would result in the loss of vegetation in the background. The proposed ventilation outlet would be approximately 40 metres high and the associated ventilation building would be approximately 15 metres high.

Assessment

As a result of the project, the view would be towards the landscaping establishing along Bulleen Road. The existing vegetation and built form would screen the proposed 40 metre high ventilation outlet and proposed 15 metre high ventilation building as shown in Figure 9-22 and the visual impact would be negligible.



Figure 9-22 VP33 – Photomontage Year 0



Figure 9-23 VP33 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 and Year 10 – **Negligible**, as the existing built form and vegetation would screen the proposed ventilation outlet, ventilation building and the landscape setting would be similar to the existing.

9.1.10 Viewpoint 34 – Veneto Club

Viewpoint 34 is located within the Veneto Club car park at the southern end of the covered walkway. This viewpoint is located approximately 50 metres from the edge of Bulleen Road as shown in Figure 9-24.

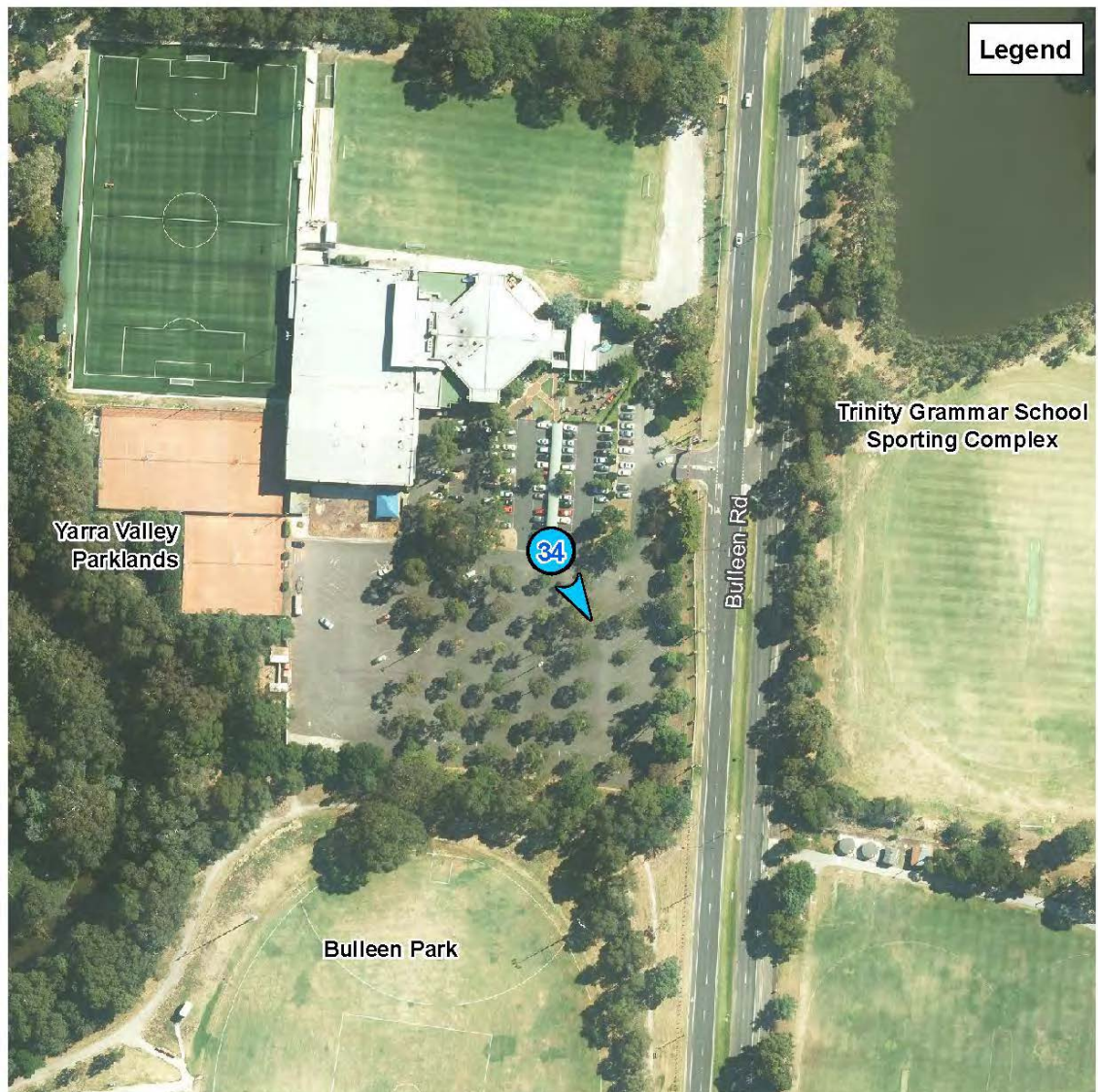


Figure 9-24 VP34 – Location plan

The current view in this location is established vegetation in the background with the sealed car park in the foreground as shown in Photo 9-10. The established vegetation filters views to Bulleen Road and Bulleen Park sports fields.



Photo 9-10 VP34 – Existing view looking south-east

This is a highly modified urban environment with a densely vegetated backdrop.

Proposed change

This viewpoint is located approximately 50 metres from the footpath adjacent to the proposed road corridor and approximately 200 metres from the proposed ventilation structure. The existing vegetation in the background would be removed and the existing sealed car park reduced in size. The oval to the south would be removed. The proposed ventilation outlet would be approximately 40 metres high and the proposed ventilation building approximately 15 metres high. Landscaping would be proposed between this viewpoint and the road corridor as shown in Figure 9-25.

Assessment

As a result of the project, the existing vegetation would be removed due to the cut and cover tunnel works. The view to the east would be of the proposed road corridor and the view to the south-east would be towards the proposed road corridor, 40 metre high ventilation outlet and associated 15 metre high ventilation building as shown in Figure 9-25.



Figure 9-25 VP34 – Photomontage Year 0

The landscaping would continue to establish and filter views to the proposed road corridor and the ventilation outlet and associated ventilation building as shown in Figure 9-25.



Figure 9-26 VP34 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High to medium**, as the proposed 40 metre high ventilation outlet and associated ventilation building would be visually dominant, seen by visitors of the Vento Club and there would be significant visual change
- Year 10 – **Medium to low**, as the landscaping would filter views to the proposed ventilation outlet and associated ventilation building.

9.1.11 Viewpoint 35 – Bulleen Park playground, Bulleen

Viewpoint 35 is located at the carpark in Bulleen Park, adjacent to the playground in Bulleen. This viewpoint is located approximately 670 metres from Bulleen Road as shown in Figure 9-27.



Figure 9-27 VP35 – Location plan

The current view from this location is of established native trees in the background with grassed sports fields in the middle ground and a playground with BBQ in the foreground as shown in Photo 9-11.



Photo 9-11 VP35 – Existing view south-east

This is a multi-use reserve where the vegetation creates a natural setting for the sports fields.

Proposed change

This viewpoint is located approximately 645 metres from the proposed noise wall and approximately 630 metres from the proposed ventilation structure. The proposed noise wall in this location would be approximately four metres high, the proposed ventilation outlet would be approximately 40 metres high and the proposed ventilation building would be approximately 15 metres high.

Assessment

As a result of the project, the view would be towards the 40 metre high ventilation outlet with the lower half screened by existing dense vegetation. The existing vegetation would screen the proposed four metre noise wall and proposed 15 metre high ventilation building.



Figure 9-28 VP35 – Photomontage Year 0



Figure 9-29 VP35 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Low to negligible**, as the existing landscape is characterised by large light poles around the oval and tall high voltage towers behind this viewpoint. Part of the project's ventilation outlet would be visible above the existing vegetation in the middle distance. It would be perceived as being lower than the existing light poles and if the Urban Design Strategy objectives are fulfilled some viewers may see the ventilation outlet as a positive element in the landscape.

9.1.12 Viewpoint 36 – Carey Bulleen Sports Complex

Viewpoint 36 is located within Carey Bulleen Sports Complex at the western end of Dunshea Oval. This viewpoint is located approximately 260 metres from the edge of Bulleen Road as shown in Figure 9-30.



Figure 9-30 VP36 – Location plan

The existing view in this location is towards established vegetation, tennis courts and Bulleen Road in the background with open grassed sports field in the foreground as shown in Photo 9-12.



Photo 9-12 VP36 – Existing view looking east

This is an active open space setting where the grassed open space surrounded by vegetation is a major element.

Proposed change

This viewpoint is located approximately 210 metres from the proposed noise wall with proposed elevated road corridor behind, and approximately 250 metres from the proposed ventilation structure. The existing vegetation and tennis courts would be removed. The proposed noise wall in this location would be approximately four metres high, the proposed ventilation outlet would be approximately 40 metres high and the proposed ventilation building would be approximately 15 metres high. Landscaping would be proposed between the proposed road corridor and existing oval.

Assessment

As a result of the project, the view would be towards the proposed four metre high noise wall to the east with elevated road corridor behind and the proposed 40 m high ventilation outlet to the north-east. The retained existing vegetation would filter views to the proposed 15 metre high ventilation building as shown in Figure 9-31.



Figure 9-31 VP36 – Photomontage Year 0

The landscaping would continue to establish and filter views to the proposed road corridor, noise wall and lower half of the ventilation outlet as shown in Figure 9-32.



Figure 9-32 VP36 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High to medium**, as the proposed four metre high noise wall and elevated road corridor would be visually prominent, the proposed 40 metre high ventilation outlet would be visually dominant and there would be a significant visual change in the landscape and a loss of open space.
- Year 10 – **Medium**, as the established landscaping would filter views to the proposed noise wall, road corridor and lower half of the ventilation outlet, and there would be a visible loss of open space.

9.1.13 Viewpoint 37 – Marcellin College

Viewpoint 37 is located within Marcellin College on the edge of the elevated car park beside the eastern oval. This viewpoint is located approximately 390 metres from the edge of Bulleen Road as shown in Figure 9-33.



Figure 9-33 VP37 – Location plan

The existing view in this location is towards established vegetation in the background with open grassed sports fields in the foreground as shown in Photo 9-13. Established trees are scattered around the sports fields.



Photo 9-13 VP37 – Existing view looking west

This is an active open space setting where the grassed open space surrounded by vegetation is a major element.

Proposed change

This viewpoint is located approximately 390 metres from the proposed shared use path, and approximately 445 metres from the proposed ventilation structure. The existing vegetation along Bulleen Road would be removed. The ventilation outlet would be approximately 40 metres high and the proposed ventilation building approximately 15 metres high. Landscaping would be proposed between the shared use path and sports fields.

Assessment

As a result of the project, the view would be towards the proposed 40 metre high ventilation outlet and associated 15 metre high ventilation building as shown in Figure 9-34. The existing vegetation within Marcellin College would partially screen the proposed ventilation structure.



Figure 9-34 VP37 – Photomontage Year 0

The landscaping would continue to establish and filter views to the ventilation outlet and associated ventilation building as shown in Figure 9-35.



Figure 9-35 VP37 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed ventilation outlet and associated ventilation building would be visually dominant and the existing vegetation along Bulleen Road would be removed. Viewer numbers would be high although viewer sensitivity would be medium.
- Year 10 – **Medium**, as the landscaping between the shared use path and sports field would have established, and filter views to the lower half of the ventilation outlet and the landscape would be similar to the existing landscape.

9.1.14 Viewpoint 38 – Sandra Street, Bulleen

Viewpoint 38 is located along Sandra Street looking south-west. This viewpoint is located approximately 450 metres from the existing Bulleen Road overpass as shown in Figure 9-36.

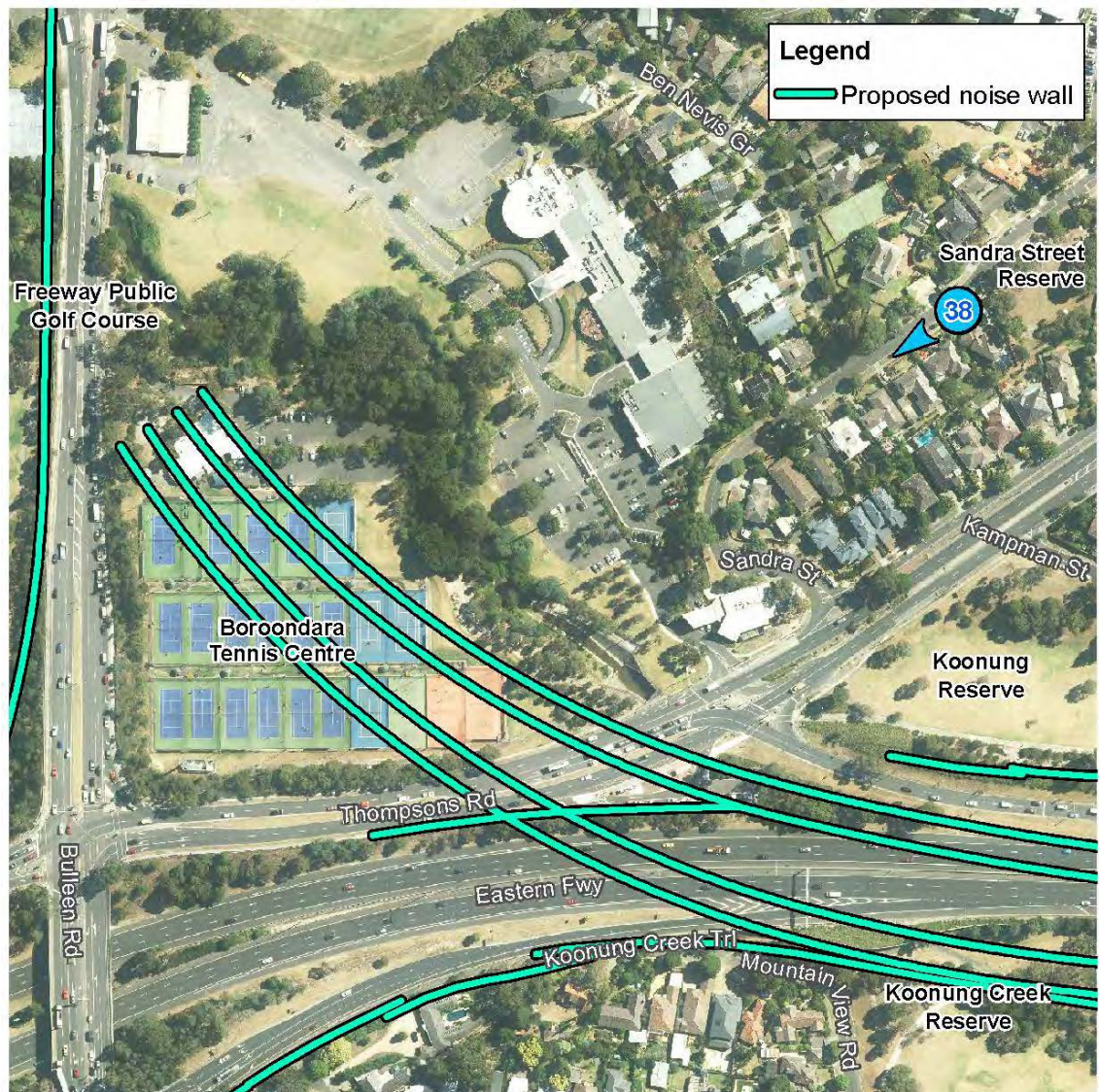


Figure 9-36 VP38 – Location plan

The current view in this location is of established native vegetation and tennis courts in the background, and a residential street with grassed nature strips, established native trees and overhead power lines in the foreground as shown in Photo 9-14.



Photo 9-14 VP38 – Existing view looking south-west

This is a suburban residential landscape setting in which the vegetation is a major element.

Proposed change

The proposed viaduct with noise walls is located approximately 290 metres from the viewpoint and the proposed Doncaster Busway interchange approximately 280 metres from the viewpoint. The tennis courts and some of the existing vegetation around Bulleen Road would be removed. The noise wall in this location would be four metres high on top of the viaduct. There would be multiple viaducts in this location.

Assessment

As a result of the project, the view would be towards multiple viaducts with four metre high noise walls on top and the Doncaster Busway interchange in front as shown in Figure 9-37.



Figure 9-37 VP38 – Photomontage Year 0

At year 10 the viaducts and Doncaster Busway interchange would still be visible as shown in Figure 9-38.



Figure 9-38 VP38 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Low**, as the viaducts and viaduct noise walls would be partially screened by the existing vegetation and there would be visual change in the landscape, although the vegetated ridgeline in the background would be retained and viewer numbers would be low.

9.1.15 Viewpoint 39 – Freeway Public Golf Course

Viewpoint 39 is located within the Freeway Public Golf Course at the sixth green. This viewpoint is located approximately as shown in Figure 9-39.

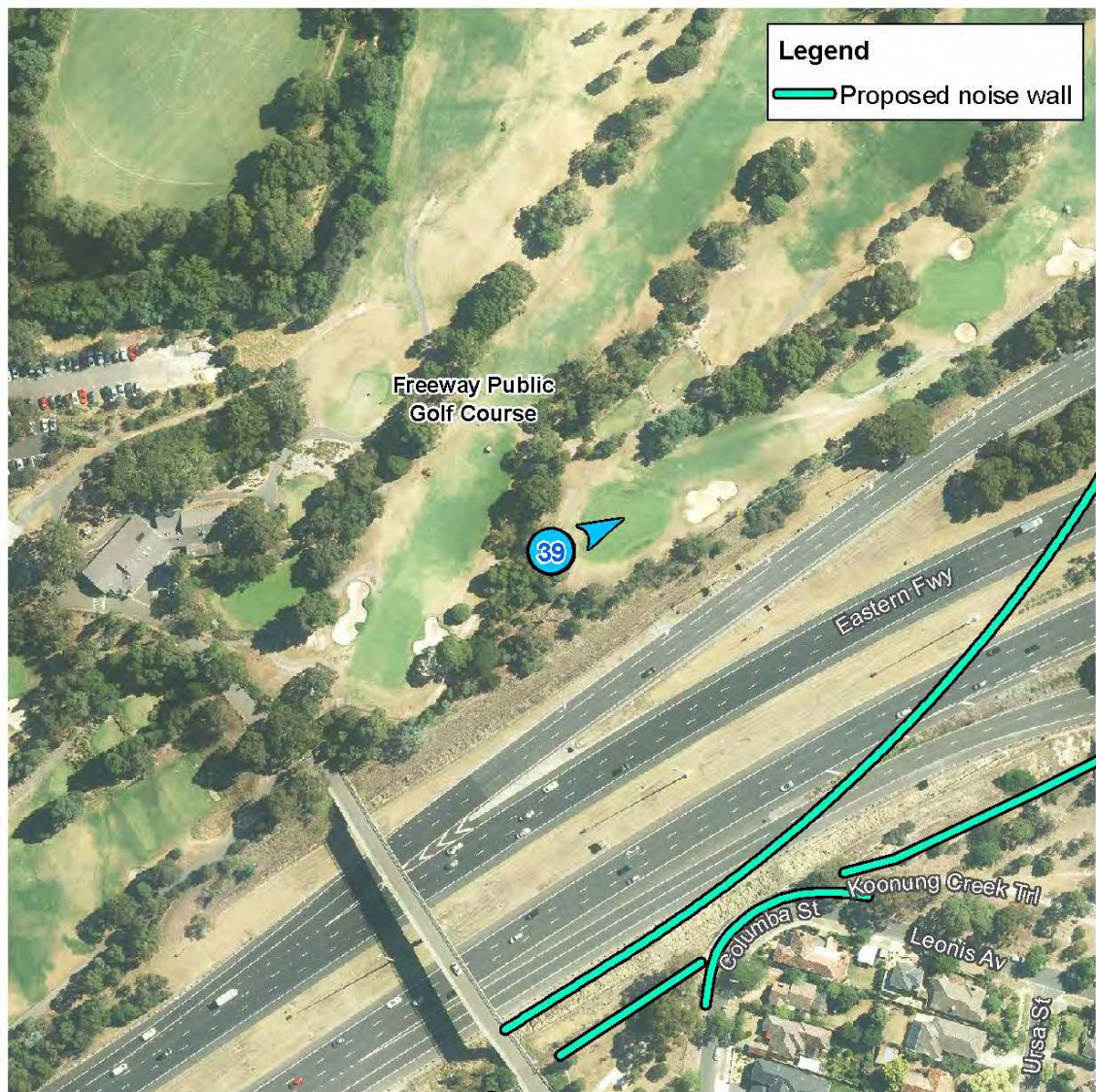


Figure 9-39 VP39 – Location plan

The existing view in this location is towards established vegetation along the edge of the hole with the open grassed areas, paths and sand bunkers of the sixth green in front, as shown in Photo 9-15. The view to the south is of a high chain mesh fence with established vegetation of the Eastern Freeway in the background. The light poles of the Eastern Freeway are visible in this location.



Photo 9-15 VP39 – Existing view looking east

This is a recreational open space setting where the vegetation is a major element.

Proposed change

The existing fence, vegetation to the south, sand bunker and part of the green would be removed with the proposed widening of the Eastern Freeway road corridor and addition of the Doncaster Busway. The proposed viaduct at the Eastern Freeway and North East Link interchange would be located approximately 115 metres from the viewpoint.

Landscaping would be proposed between this viewpoint and the edge of the Doncaster Busway as shown in Figure 9-40.

Assessment

As a result of the project, the view would be towards the viaducts at the Eastern Freeway and North East Link interchange with the landscape treatment in front.

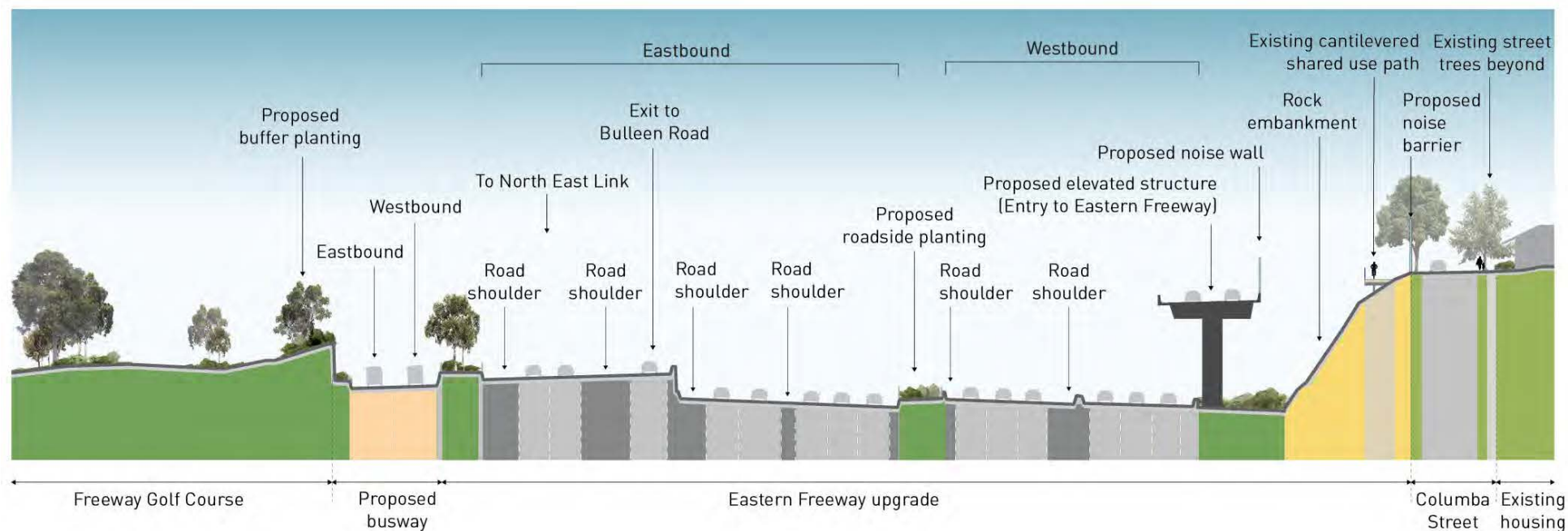


Figure 9-40 VP39 – Landscape treatment section view east

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High**, as the proposed interchange and viaducts would be visually dominant, the existing vegetation to the south and part of the hole would be removed resulting in an obvious change to the landscape
- Year 10 – **Medium to low**, as the proposed landscaping would have established and filter views towards the proposed interchange. The landscape setting would be similar to the existing.

9.1.16 Viewpoint 40 – Columba Street, Balwyn North

Viewpoint 40 is located at the corner of Columba Street and Leonis Avenue on the footpath adjacent to residential properties in Balwyn North as shown in Figure 9-41.

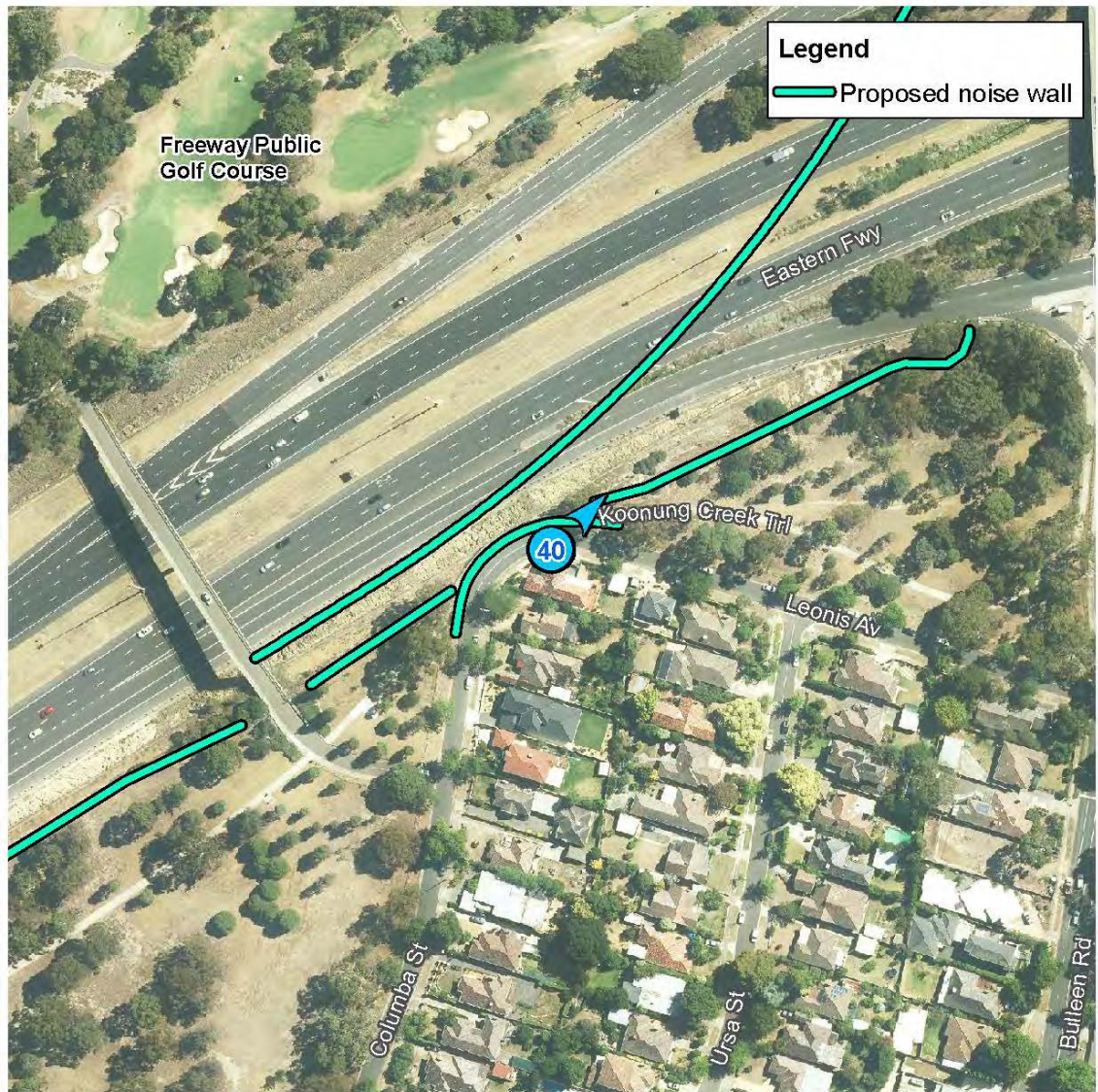


Figure 9-41 VP40 – Location plan

The current view from this location is of residential properties in the background, the Eastern Freeway and established trees in the middle ground and a transparent noise wall in the foreground as shown in Photo 9-16. The existing noise wall in this location is approximately 1.9 metres high.



Photo 9-16 VP40 – Existing view looking north-east

This is a residential area where the established trees and existing noise wall screen filter views of the Eastern Freeway and there are views to adjacent ridgelines.

Proposed change

This viewpoint is located approximately 10 metres from the proposed noise wall abutting the Eastern Freeway. The some of the vegetation between the existing noise wall and the Eastern Freeway would be removed. The proposed noise wall at this location would be approximately nine metres high and the existing noise wall would be replaced with an approximately six metre high noise wall.

There would be no room for landscape.

Assessment

As a result of the project, the view would be towards a higher noise wall, with limited views beyond the wall as shown in Figure 9-42.



Figure 9-42 VP40 – Photomontage Year 0

At year 10 the view would be similar to year 0 as shown in Figure 9-43.



Figure 9-43 VP40 – Photomontage Year 10

At this distance, the visual impact is assessed as:

- Year 0 and Year 10 – **Medium**, as the new nine metre high noise wall would be higher and would enclose and limit views beyond the wall, dominating the view although viewer numbers would be medium. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.1.17 Viewpoint 41 – Musca Street Reserve, Balwyn North

Viewpoint 41 is located at the grassed area within Musca Street Reserve in Balwyn North. The viewpoint in this location would be approximately 94 metres from the existing noise wall as shown in Figure 9-44.



Figure 9-44 VP41 – Location plan

The current view from this location is of established native vegetation on a grassed embankment in the background with a shared use path and open grassed area in the foreground as shown in Photo 9-17.



Photo 9-17 VP41 – Existing view looking west

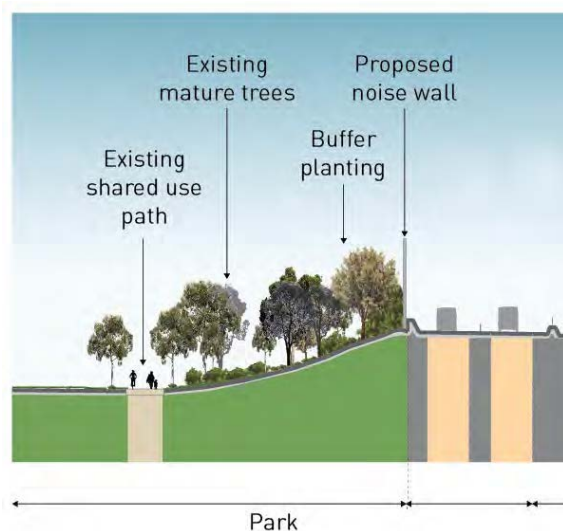
This is a parkland landscape setting where the vegetation is a major element.

Proposed change

The proposed noise wall would be located approximately 94 metres from the viewpoint. The existing vegetation directly adjacent to the proposed noise wall would be removed. The proposed noise wall in this location is approximately five metres high.

Assessment

As a result of the project, the view would be of existing retained vegetation and embankments screening the proposed five metre high noise wall.



At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Negligible**, as the proposed five metre high noise wall would be screened by the existing vegetation and embankments, and the landscape setting would be the same as existing.

Figure 9-45 VP41 – Landscape treatment section view west

9.1.18 Viewpoint 42 – Elm Grove, Kew East

Viewpoint 42 is located adjacent to 22 Elm Grove in Kew East. This viewpoint is located approximately 119 metres from the existing noise wall as shown in Figure 9-46.

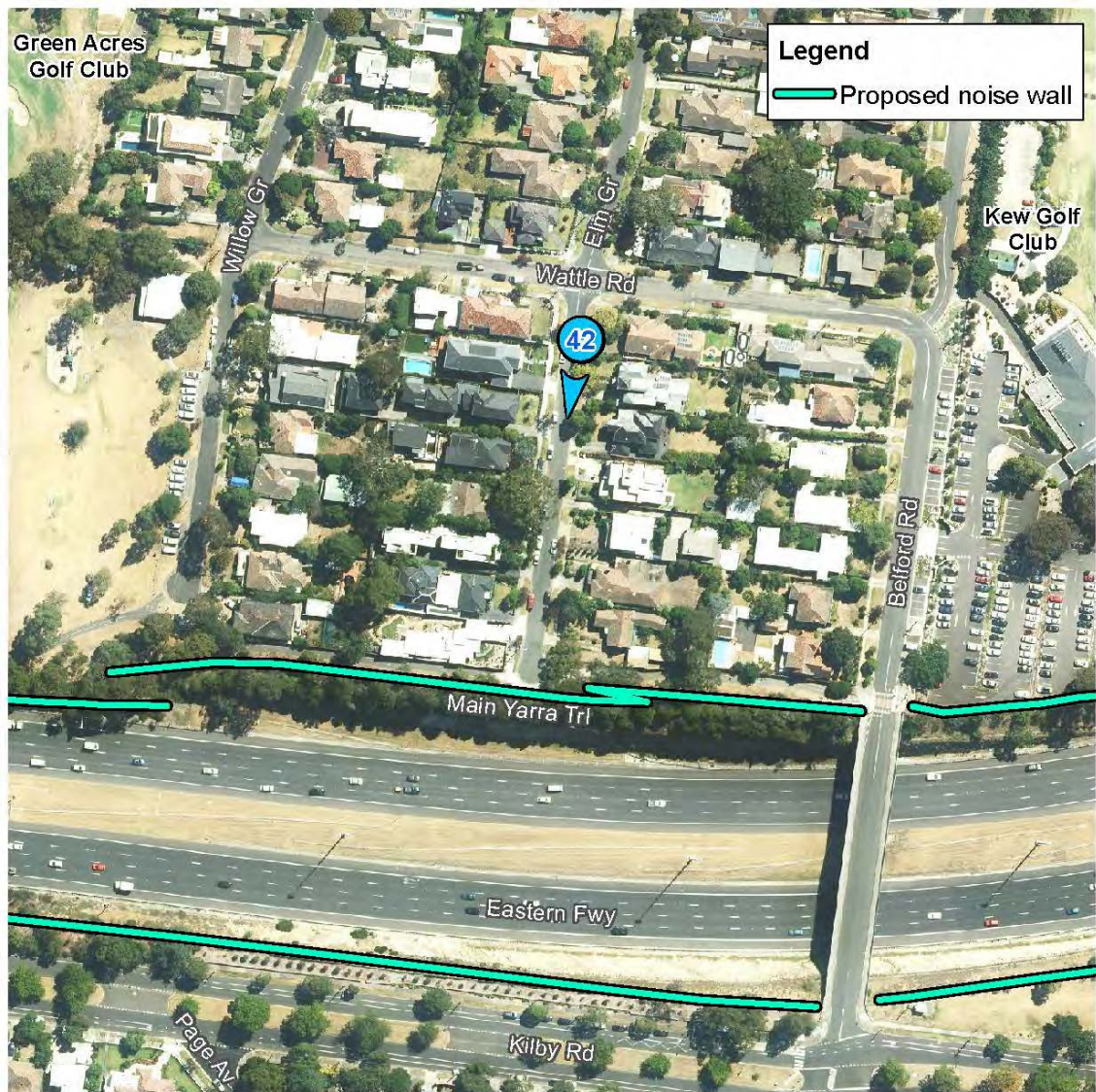


Figure 9-46 VP42 – Location plan

The current view in this location is of established vegetation with a timber noise wall in the background and a residential street with grassed nature strips and established street trees in the foreground as shown in Photo 9-18. The existing noise wall in this location is approximately four metres high.



Photo 9-18 VP42 – Existing view south

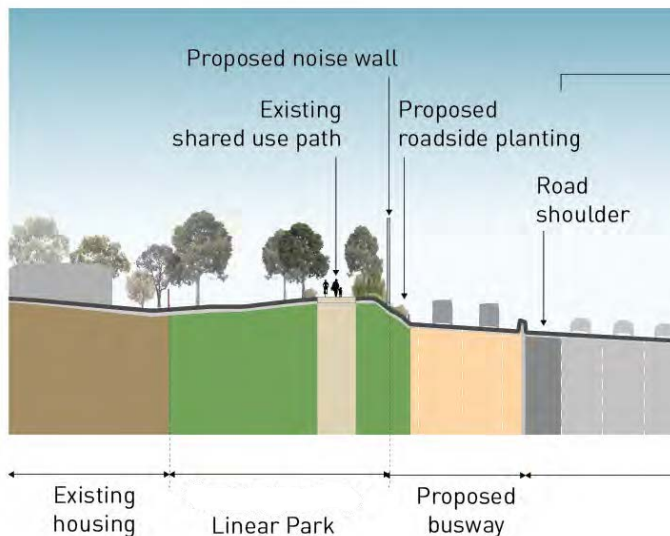
This is a suburban residential landscape setting where the noise wall is an obvious, but minor element.

Proposed change

The proposed noise wall would be located in the same location as the existing noise wall, approximately 119 metres from the viewpoint, as shown in Figure 9-47. The existing vegetation behind the noise wall would be removed. The proposed noise wall in this location would be approximately eight metres high.

Assessment

As a result of the project, the view would be towards the proposed eight metre high noise wall.



At this viewpoint, the visual impact is assessed as:

- Year 0 and Year 10 – **Low**, as the proposed eight metre noise wall would be visually prominent but the landscape setting would be visually similar to the existing and viewer numbers would be low.

Figure 9-47 VP42 – Landscape treatment section view east

9.1.19 Viewpoint 43 – Kellett Grove, Kew

Viewpoint 43 is located at the corner of Kellett Grove and Peel Street adjacent to Kate Campbell Reserve. This viewpoint is located approximately 65 metres from the existing noise wall as shown in Figure 9-48.



Figure 9-48 VP43 – Location plan

The current view in this location is of a timber noise wall with established native vegetation in the background. Dense established vegetation in the middle ground with open grassed reserve and gravel car park in the foreground as shown in Photo 9-19. The existing noise wall in this location is approximately 4.6 metres high.



Photo 9-19 VP43 – Existing view looking north

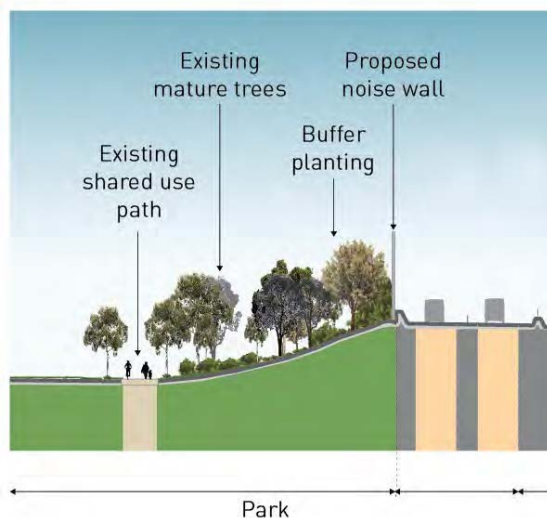
This is parkland landscape setting where the noise wall is an obvious, but not dominant element.

Proposed change

The proposed noise wall would be located in the same location as the existing noise wall, approximately 65 metres from the viewpoint. The existing vegetation behind the noise wall and some vegetation in front would be removed. The proposed noise wall in this location would be approximate seven metres high.

Assessment

As a result of the project, the view would be towards the proposed seven metre noise wall with landscaping establishing in front, as shown in Figure 9-49.



At this viewpoint, the visual impact is assessed as:

- Year 0 – **Low**, as the proposed seven metre noise wall would be visually dominant, there would be visual change in the landscape due to the removal of some vegetation and viewer numbers would be low.
- Year 10 – **Negligible**, as the landscaping would screen the noise wall and the landscape would be similar to the existing.

Figure 9-49 VP43 – Landscape treatment section view west

9.1.20 Viewpoint 44 – Vaughan Crescent, Kew

Viewpoint 44 is located along Vaughan Crescent on the western side of the crescent. This viewpoint is located approximately 36 metres from the existing timber fence as shown in Figure 9-50.

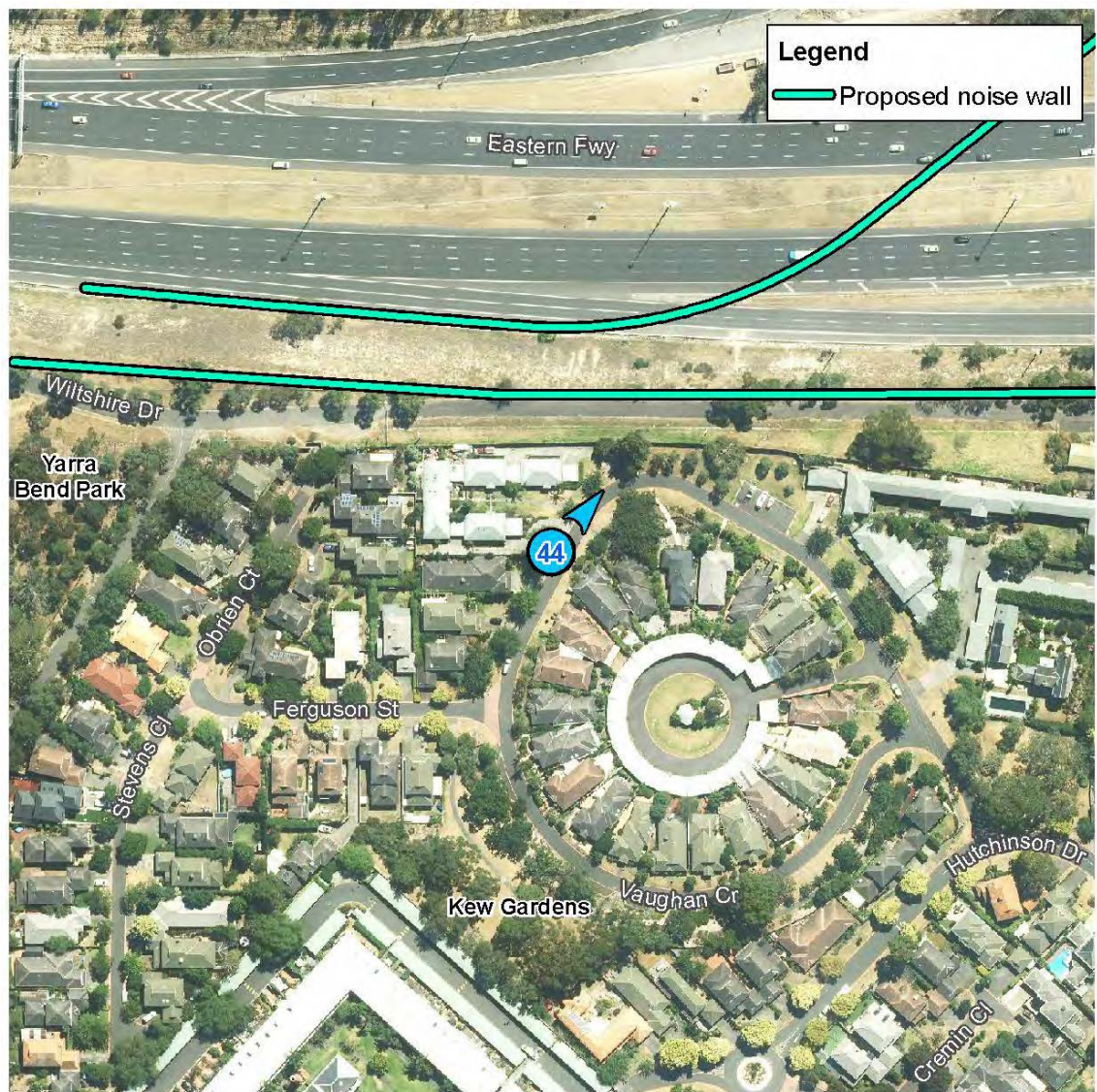


Figure 9-50 VP44 – Location plan

The current view in this location is of established vegetation in the background, a timber fence in the middle ground with a residential street in the foreground with established trees and grassed nature strips as shown in Figure 9-51. The existing timber fence in this location is approximately 2.5 metres high.



Figure 9-51 VP44 – Existing view looking north-east

This is a suburban residential landscape setting where the existing timber fence is an obvious, but minor element.

Proposed change

The proposed noise wall in this location would be approximately 52 metres from the viewpoint. The existing vegetation behind the existing timber fence would be removed. The proposed noise wall in this location would be approximately five metres high.

Assessment

As a result of the project, the view would be towards the proposed five metre high noise wall partially screened by the existing retained vegetation and timber fence in Vaughn Street as shown in Figure 9-52.



Figure 9-52 VP44 – Photomontage Year 0

At year 10 the view would remain the same as shown in Figure 9-53.



Figure 9-53 VP44 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 to Year 10 – **Low to negligible**, as the proposed five metre high noise wall would be partially screened by the existing timber fence and vegetation in Vaughn Crescent.

9.1.21 Viewpoint 45 – Yarra Boulevard overpass along Eastern Freeway in Kew

Viewpoint 45 is located on the Yarra Boulevard overpass overlooking the Eastern Freeway. This viewpoint is located directly over the Eastern Freeway as shown in Figure 9-54.



Figure 9-54 VP45 – Location plan

The current view in this location is of established vegetation and an overpass in the background with a multi-lane freeway road corridor in the foreground. The freeway road corridor has a wide grassed centre median with feature light poles and vehicle barriers. There are steep exposed rock embankments either side with dense vegetation on top as shown in Photo 9-20.



Photo 9-20 VP45 – Existing view looking east

This is a major road corridor landscape where the road infrastructure is an obvious and major element.

Proposed change

The proposed busway viaduct with noise walls would be located approximately 255 metres from the viewpoint and the proposed noise walls would be located on top of the embankments to the north and south of the road corridor approximately 155 metres from the viewpoint.

The proposed shared use path would be located along the top of the northern embankment.

The existing embankment either side would be reduced with the addition of the busway on the north and south of the road corridor. The existing vegetation along the top of the embankments and adjacent to the existing off ramp would be removed. The proposed viaduct noise wall would be approximately four metres high, and the noise wall on the southern embankment would be approximately five metres high and on the northern embankment approximately six metres high in this location.

Assessment

As a result of the project, the view would be towards the busway viaduct with four metre high noise walls and the proposed widened road corridor to accommodate the busway with proposed five metre and six metre noise walls on top of the lowered embankments with a shared use path in front.

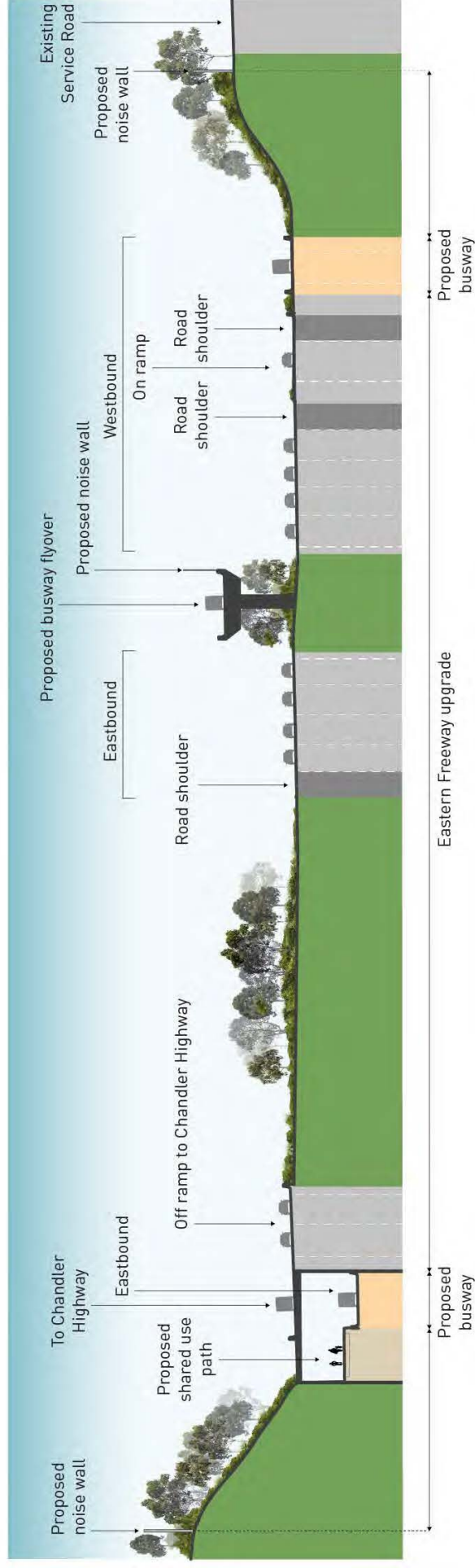


Figure 9-55 VP45 – Landscape treatment section view east

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Low**, as the proposed noise walls and viaduct with noise walls would be visually prominent but the road users have short-term transient views and low viewer sensitivity.

9.1.22 Viewpoint 46 – River Circuit Trail (Yarra River)

Viewpoint 46 is located at the River Circuit Trail, along the Yarra River, adjacent to the Eastern Freeway. This viewpoint is located approximately 49 metres from the edge of the Eastern Freeway as shown in Figure 9-56.

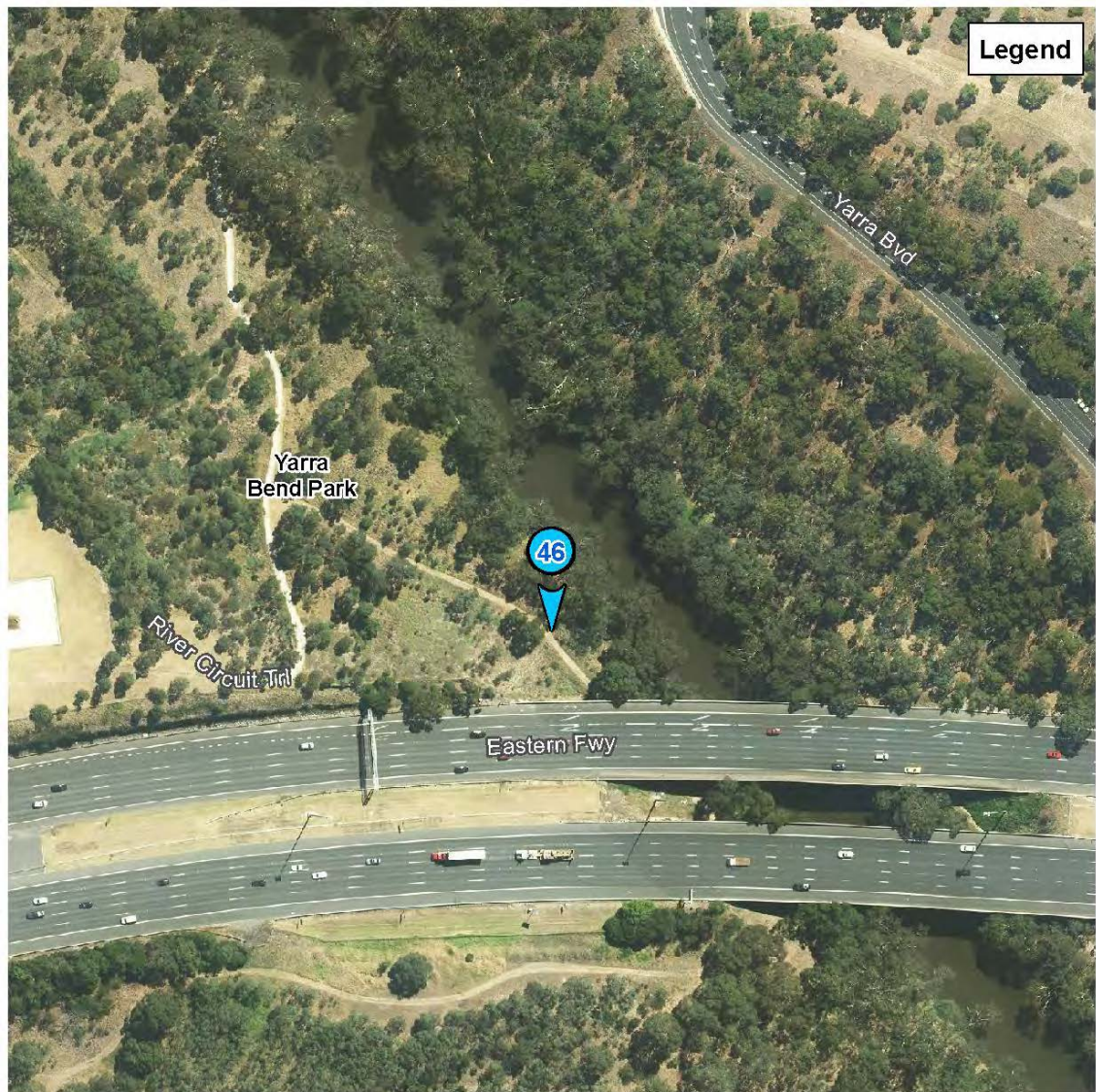


Figure 9-56 VP46 – Location plan

The current view in this location is of the existing Eastern Freeway viaducts in the background with established native vegetation and a walking trail in the foreground as shown in Photo 9-21.



Photo 9-21 VP46 – Existing view south

This is a naturalist landscape setting where the viaduct is an obvious, but minor element.

Proposed change

The proposed shared use bridge would be located approximately 40 metres from the viewpoint. The proposed shared use bridge in this location would be approximately 14 metres high.

Assessment

As a result of the project, the view would be towards the proposed 14 metre high shared use bridge partially screened by existing vegetation as shown in Figure 9-57.



Figure 9-57 VP46 – Photomontage Year 0

At year 10, the view would be similar to year 0 as shown in Figure 9-58.



Figure 9-58 VP46 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Medium**, as the proposed 14 metre high shared use bridge would be visually dominant but not out of place with the existing landscape setting. In addition, the design of the shared use bridge would be guided by the project's Urban Design Strategy which requires structures to be well designed, complement the surrounding area, and consider sensitive interfaces.

9.1.23 Construction impact on the Yarra River Valley landscape character area

Construction impacts within the Yarra River Valley character area would consist of site compounds located within the drive in site adjacent to Bulleen Road, at the Manningham Road interchange, Marcellin College and Trinity Grammar School Sporting Complex, Bulleen Oval and Musca Street Reserve. There would be construction fencing along the boundary of the project works area. Viewers located directly adjacent to the construction compounds would have their views to open space interrupted. Due to the steep topography within the Yarra River Valley character area viewers from streets and properties located further away, but elevated above the project would have views into the construction compounds. These views would typically have been of vegetated parkland and now would be interrupted by views of machinery, storage sheds, spoil stockpiles, construction materials and access routes. Through implementation of EPR LV2 temporary landscaping could be installed to soften and filter views to construction compounds.

The proposed alternative TBM retrieval site (refer to Chapter 8 – Project description) would occur within the Yarra River Valley character area. This would add to the construction activity and visual clutter around Banksia Park, with views from within the park and the adjacent Heide Museum of Modern Art grounds interrupted by piling equipment, cranes and machinery. The impact associated with this alternative TBM retrieval site would be temporary and the area returned to open space.

The amount of open space that may be potentially impacted within the Yarra River Valley landscape character area varies from construction to operation. Open space in this context includes all public passive and active spaces.

During construction, approximately 311,200 square metres of open space would be temporarily impacted. Key open spaces within this area that would be potentially impacted include Banksia Park, Bulleen Park and Yarra Bend Park (works within Yarra Bend Park would be contained to the construction of a shared use path).

These areas may be occupied for up to seven years and views would be impacted for the duration of this period. The visual impact within the Yarra River Valley character area would be rated as medium for the construction period due to the number of adjacent residences with long viewing periods. Any future impacts would be reduced further via implementation of EPR LV2 Minimise landscape impacts during construction.

9.1.24 Summary of impacts on the Yarra River Valley landscape character area

The Yarra River Valley landscape character area is located in the southern section of the study area from the Manningham Road interchange to Hoddle Street. The existing landscapes within this character area generally have a medium to high level of sensitivity and the landscape and visual impact ranges from negligible to high. Within the Yarra River Valley landscape character area the public reserves and sporting facilities would have medium viewer numbers and the residential areas would have medium to low viewer numbers.

In locations where new infrastructure would be located directly adjacent to the viewpoint, the landscape and visual impacts are medium to high. This is due to the close proximity of the views to the new elements, the limited space for landscaping and the isolation of existing open space.

In locations where new infrastructure would be located at a distance from the viewpoint and where there is space available for landscaping, the impacts are low to negligible.

During operation, the open space impacts would be significantly reduced from the construction impacts, only approximately 34,700 square metres of open space would be permanently impacted. This is largely within Bulleen Park and the unnamed reserve behind the Boroondara Tennis Centre, bordered by Dan Murphy's and the Bulleen Swim Centre.

The area around the interchange (previously the industrial area) and the former Bulleen Drive-in theatre site would have new opportunities to be converted to open space.

Due to the significant extent of open space impacted, the area surrounding the Manningham Road interchange and the Bulleen interchange is considered to have a significant impact on landscape character during construction and operation. This is because the use of the open spaces (such as Bulleen Park) would be permanently changed. However, there would be a significant amount of open space impacted during construction, this is not considered to be a significant visual impact as the majority of the open space would be returned once the project was constructed. Where open space could not be returned, vegetation buffers would largely maintain the visual amenity and landscape character of the area.

The widening of the Eastern Freeway road corridor would impact the road users with the removal of vegetation, increased lanes and reduced space for landscaping. The Eastern Freeway upgrades would also greatly alter the existing freeway landscape character. Road users would have a low sensitivity to this type of change as they have a transient experience of the landscape and their primary focus is on driving. Although the freeway landscape character would be altered and the road users experience impacted, a key objective for the project is to minimise impacts on communities therefore the widening of the Eastern Freeway has been limited to protect the adjoining public open space which is valued by the community. In addition the project's Urban Design Strategy outlines detailed requirements which would reduce the landscape and visual impacts on the Eastern Freeway road corridor, these include:

- Optimising the existing open space functions and upgrade the open spaces that run parallel to the Eastern Freeway
- Maximise views towards borrowed landscape from the Eastern Freeway
- Respect the original architectural and landscape design of the Eastern Freeway
- Reinststate and enhance buffer vegetation to filter views to freeway infrastructure and blend interfaces with surrounding treed neighbourhood character.

The Yarra River Valley landscape character area is valued for its natural landscape features such as the vegetated appearance, the Yarra River and the culturally significant landscapes such as Bolin Bolin Billabong, the Yarra River and the Heide Museum of Modern Art. Whilst overall the landscape character would not be impacted by the project, the introduction of the ventilation structure at the southern portal would introduce a new element into the natural, low-lying floodplain environment which is characterised by a treed outlook and currently devoid of large scale built form. The ventilation structure should be sensitively sited and could be designed to act as sculptural piece, or a recessive design that is intended to blend in with the surrounding landscape. The project would be unlikely to have an overall impact on the landscape value of the Yarra River Valley landscape character area as the characteristics it is valued for such as established vegetation, the Yarra River and its associated character, and culturally significant landscapes would be either retained or enhanced.

Overall, the proximity of new infrastructure and availability of space for landscaping have the greatest influence on the visual impacts of the Yarra River Valley character area. Any future impacts would be reduced further via implementation of EPRs LV1 Design to be generally in accordance with Urban Design Strategy and LV2 Minimise landscape impacts during construction. EPR LV1 would see the design of permanent above-ground works, to the extent practicable, avoid or minimise landscape and visual, and shading impacts in accordance with the project's Urban Design Strategy and LV2 would minimise visual impacts during construction.

The landscape and visual impacts for the two Manningham Interchange options would be the same during construction and operation.

9.2 Landscape character area – Koonung Creek Valley

Twenty-three viewpoints in the public domain have been selected within the Koonung Creek Valley landscape character area.

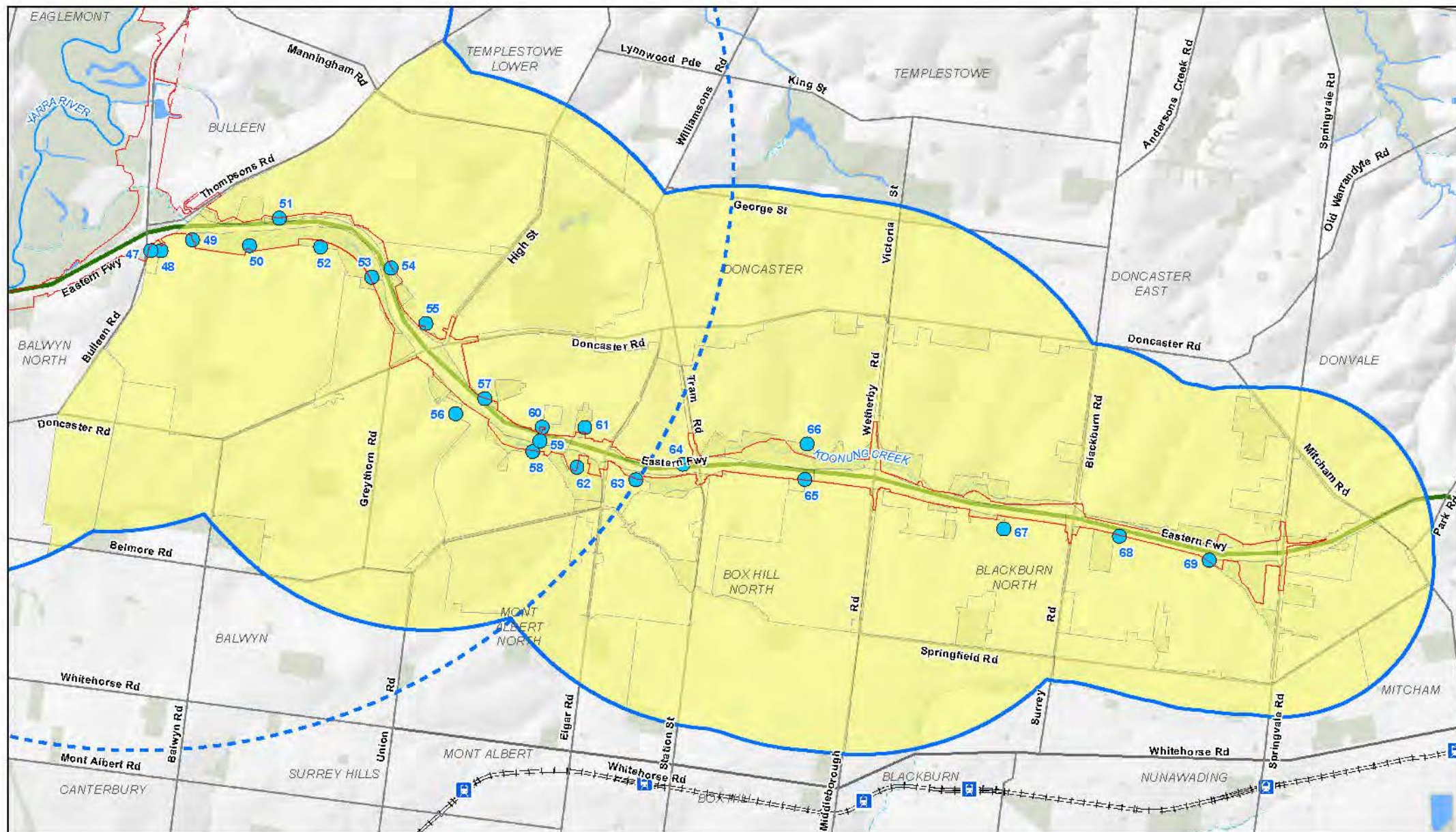
A list of each viewpoint and their location within the Koonung Creek Valley landscape character area is provided in Table 9-2.

A majority of these locations are within a landscape that has a medium level of sensitivity.

The location of each viewpoint is identified in Figure 9-59.

Table 9-2 Viewpoint locations

Viewpoint number	Location	Distance to the project boundary
VP47	Belle Vue Primary School	0 m
VP48	Highview Road, Balwyn North	41 m
VP49	Mountain View Road, Balwyn North	0 m
VP50	Koonung Creek Reserve (Larbert Avenue), Balwyn North	0 m
VP51	Estelle Street, Bulleen	0 m
VP52	Koonung Creek Reserve (Carron Street)	51 m
VP53	Koonung Creek Reserve (Wandeen Street Playground)	0 m
VP54	Outhwaite Avenue, Doncaster	0 m
VP55	Paul Street, Doncaster	20 m
VP56	Sweyn Street, Balwyn north	104 m
VP57	Massey Street, Doncaster	0 m
VP58	Koonung Creek Wetlands, Mont Albert North	10 m
VP59	Koonung Creek wetlands overpass along the Eastern Freeway, Doncaster	0 m
VP60	Corner of Stanton Street and Heyington Avenue, Doncaster	0 m
VP61	Katrina Street Reserve, Doncaster	40 m
VP62	Elgar Park, Mont Albert North	0 m
VP63	Frank Sedgeman Reserve, Box Hill North	8 m
VP64	Koonung Creek Trail, adjacent to Michael Close	0 m
VP65	Koonung Creek Trail, adjacent to Eram Road, Box Hill North	0 m
VP66	Koonung Creek Linear Park, Doncaster	90 m
VP67	Middlefield Drive and Koonung Road, Blackburn North	98 m
VP68	Slater Avenue, Blackburn North	10 m
VP69	Eastern Freeway Linear Reserve, Nunawading	0 m



Paper Size A4
0 262.5 525 1,050
Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



Legend

- Viewpoints**
Public
Project boundary - sub-surface
Project boundary - surface
Study Area
Ventilation Structures

- Noise Walls and Viaduct Structures
Character Areas
Koonung Creek Valley
Roads
Freeway
Highway

- Major road
Railway
Train station
River
Stream
Drain or channel
Lake
Swamp
Watercourse
Parks & reserves



North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision L
Date 25/02/2019

Koonung Creek Valley character
area and viewpoint map

Figure 9-59

9.2.1 Viewpoint 47 – Belle Vue Primary School

Viewpoint 47 is located within Belle Vue Primary School in Balwyn North. This viewpoint is located approximately 40 metres from the existing timber wall as shown in Figure 9-60.



Figure 9-60 VP47 – Location plan

The existing view in this location is of established vegetation in the background with a timber noise wall, established vegetation and an open grassed area in front as shown in Photo 9-22. There are filtered views to the traffic on the Eastern Freeway off ramp. The existing noise wall in this location is between 1.3 and two metres high.



Photo 9-22 VP47 – Existing view looking north

This is an open space setting where the vegetation is a major element.

Proposed change

The proposed noise wall would be located approximately 40 metres from the viewpoint in this location. The existing vegetation and timber wall in the foreground would be removed. The proposed noise wall in this location would be approximately eight metres high.

Assessment

As a result of the project, the view would be towards the proposed eight metre high noise wall with landscaping establishing in front of the noise wall as shown in Figure 9-61.

9.2.2 Viewpoint 48 – Highview Road, Balwyn North

Viewpoint 48 is located adjacent to 27 Highview Road and Belle Vue Primary School in Balwyn North. This viewpoint is located approximately 90 metres from the existing noise wall as shown in Figure 9-62.



Figure 9-62 VP48 – Location plan

The current view from this location is of established native and exotic trees in the background between the Eastern Freeway and concrete noise wall, and Belle Vue Primary School and established native vegetation in the foreground, as shown in Photo 9-23. The existing noise wall in this location is approximately four metres high.



Photo 9-23 VP48 – Existing view north-west

This is a residential area where the noise wall screens views to the Koonung Creek Trail and the Eastern Freeway. The rock retaining wall and grassed embankment provide a partial screen to the noise wall.

Proposed change

This viewpoint is located approximately 91 metres from the proposed noise wall on the south side of the Eastern Freeway and approximately 116 metres to the proposed shared use path. The existing vegetation directly adjacent to the noise wall would be removed. The proposed noise wall at this location would be nine metres high.

Assessment

As a result of the project, the view would be towards the proposed nine metre high noise wall and the proposed shared use path as shown in Figure 9-63.



Figure 9-63 VP48 – Photomontage Year 0

At year 10 the would be similar to year 0 as shown in Figure 9-64.



Figure 9-64 VP48 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 and Year 10 – **Medium to low**, as the noise wall would dominate the view, although the landscape setting would be similar to existing. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.2.3 Viewpoint 49 – Mountain View Road, Balwyn North

Viewpoint 49 is located along Mountain View Road opposite Koonung Creek Reserve. This viewpoint is located approximately 59 metres from the existing noise wall as shown in Figure 9-65.

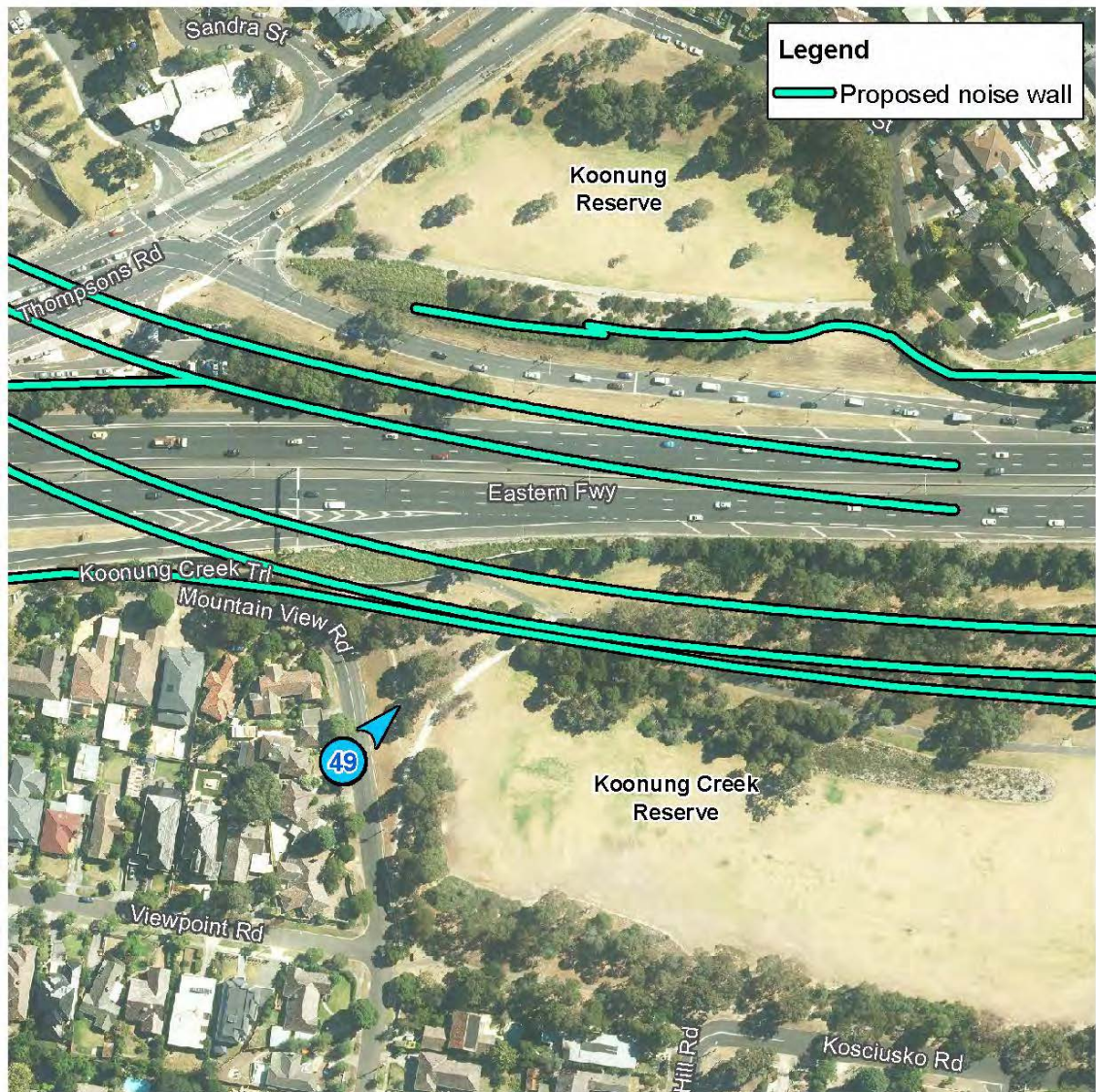


Figure 9-65 VP49 – Location plan

The current view from this location is of scattered established native trees and grassed embankment in the background, a concrete noise wall in the middle ground and a grassed embankment in the foreground, as shown in Photo 9-24. The existing noise wall in this location is approximately four metres high.



Photo 9-24 VP49 – Existing view looking north east

This is a residential area where the existing noise wall, embankment and established trees screen views to Eastern Freeway. The embankment and established trees filter views to Koonung Creek Reserve.

Proposed change

This viewpoint is located approximately 49 metres from the proposed shared use path, 53 metres from the proposed noise wall and approximately 57 metres from the proposed viaduct and viaduct noise wall on the southern side of the Eastern Freeway. The existing vegetation directly adjacent to the existing noise wall and the Eastern Freeway would be removed. The noise wall at this location would be approximately 10 metres high and the viaduct noise wall approximately four metres high.

Assessment

As a result of the project, the view would be towards a new viaduct and four metre high viaduct noise wall in the background with a new 10 metre high noise wall in the foreground. Some established trees would remain in the foreground and filter views to the proposed noise wall and viaduct, as shown in Figure 9-66.

The proposed noise wall would increase in height from the existing, but the area is currently covered by existing vegetation which would shade a similar area to the noise wall.



Figure 9-66 VP49 – Photomontage Year 0

The landscaping would establish at year 10 and filter the view to the noise wall as shown in Figure 9-67.



Figure 9-67 VP49 – Photomontage Year 10

At this distance, the visual impact is assessed as:

- Year 0 – **Medium**, as the landscaping would be insignificant in part of the view, the proposed noise wall and viaduct would be visually prominent and the viewer sensitivity would be medium.
- Year 10 – **Low**, as the growth of existing trees and re-establishment of vegetation would improve the landscape setting and filter views of the noise wall and viaduct in some areas.

9.2.4 Viewpoint 50 – Koonung Creek Reserve (Larbert Avenue)

Viewpoint 50 is located within Koonung Creek Reserve adjacent to Larbert Avenue, Balwyn North. This viewpoint is located approximately 122 metres from the existing Eastern Freeway road edge as shown in Figure 9-68.

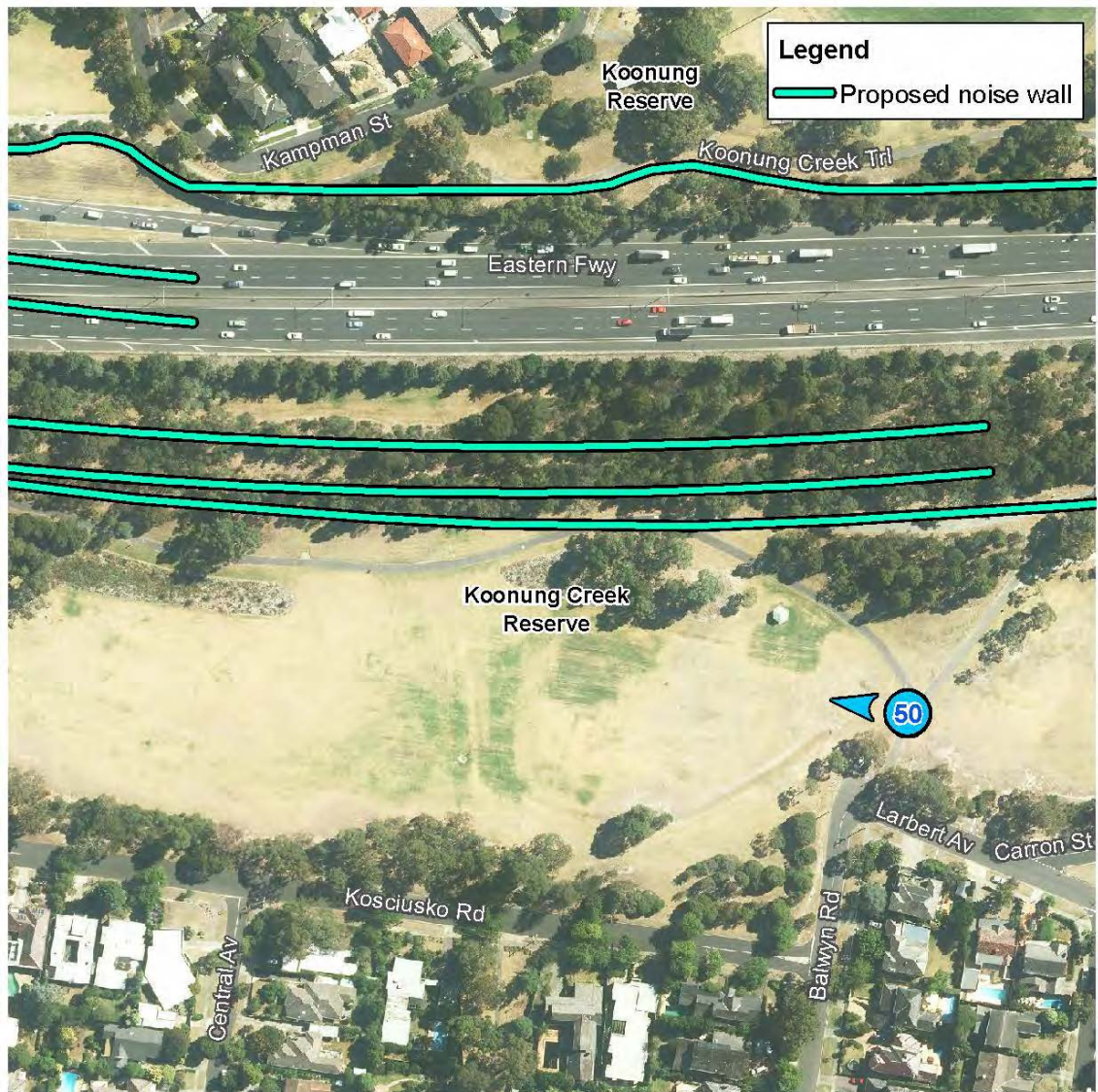


Figure 9-68 VP50 – Location plan

The current view from this location is of established native trees in the background with an open grassed reserve in the foreground as shown in Photo 9-25.



Photo 9-25 VP50 – Existing view looking west

This is an open parkland landscape setting where the vegetation is a major feature.

Proposed change

The proposed noise wall would be located approximately 65 metres from the viewpoint with a proposed shared use path in front. The existing vegetation and open space to the north would be removed. The noise wall in this location would be approximately nine metres high.

Landscaping is proposed between this viewpoint and the proposed noise wall as shown in Figure 9-69.

Assessment

As a result of the project, the view would be towards the proposed nine metre noise wall with landscaping establishing between the shared use path and noise wall as shown in Figure 9-69.

The proposed noise wall would increase in height from the existing wall, but the area is currently covered by existing vegetation which would shade a similar area to the noise wall.



Figure 9-69 VP50 – Photomontage Year 0

At year 10 the landscaping would establish and screen views to the proposed noise wall as shown in Figure 9-70.



Figure 9-70 VP50 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High to medium**, as the proposed nine metre high noise wall would be visually dominant, there would be significant visual change in the landscape and a loss of open space.
- Year 10 – **Medium**, as the landscaping would screen the proposed noise wall, the landscape would be similar to the existing, but there would be a visible loss of open space. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.2.5 Viewpoint 51 – Estelle Street, Bulleen

Viewpoint 51 is located along Estelle Street opposite the Koonung Creek Trail (shared use path). This viewpoint is approximately as shown in Figure 9-71.



Figure 9-71 VP51 – Location plan

The current view from this location is of established native and exotic trees in the background, a timber noise wall in the middle ground and a grassed embankment, scattered native and exotic trees and shrubs and a shared use path in the foreground. This is shown in Photo 9-26. The existing noise wall in this location is approximately two metre high.



Photo 9-26 VP51 – Existing view looking south-west

This is a residential area where the noise wall and established vegetation screen views to Eastern Freeway. The vegetation on the embankment provide a partial screen to the noise wall.

Proposed change

This viewpoint is located approximately 15 metres from the proposed noise wall on the north side of the Eastern Freeway. The existing vegetation between the existing shared use path and the Eastern Freeway would be removed and in some areas the noise wall would be directly adjacent to the existing shared use path. The proposed noise wall at this location would be approximately 10 metres high.

Landscaping is proposed in some areas between this viewpoint and the proposed noise wall; where there is sufficient space.

Assessment

As a result of the project, the view would be towards a new 10 metre high noise wall, the existing shared use path and proposed landscaping.



Figure 9-72 VP51 – Photomontage Year 0



Figure 9-73 VP51 – Photomontage Year 10

At this distance, the visual impact is assessed as:

- Year 0 – **High**, as the new 10 metre high noise wall would dominate the view, the landscaping would be insignificant and the project would remove the existing open space adjacent to the shared use path.
- Year 10 – **Medium**, as the landscaping would establish and filter views to the new noise wall. If creepers were established on the noise wall these would soften but not reduce the impact. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.2.6 Viewpoint 52 – Koonung Creek Reserve (Carron Street)

Viewpoint 52 is located at the shared use path within Koonung Creek Reserve that leads from Carron Street to the Eastern Freeway in Balwyn North, as shown in Figure 9-74.



Figure 9-74 VP52 – Location plan

The current view from this location is of dense established native and exotic vegetation, and grassed areas on either side of the existing shared use path. This is shown in Photo 9-27.

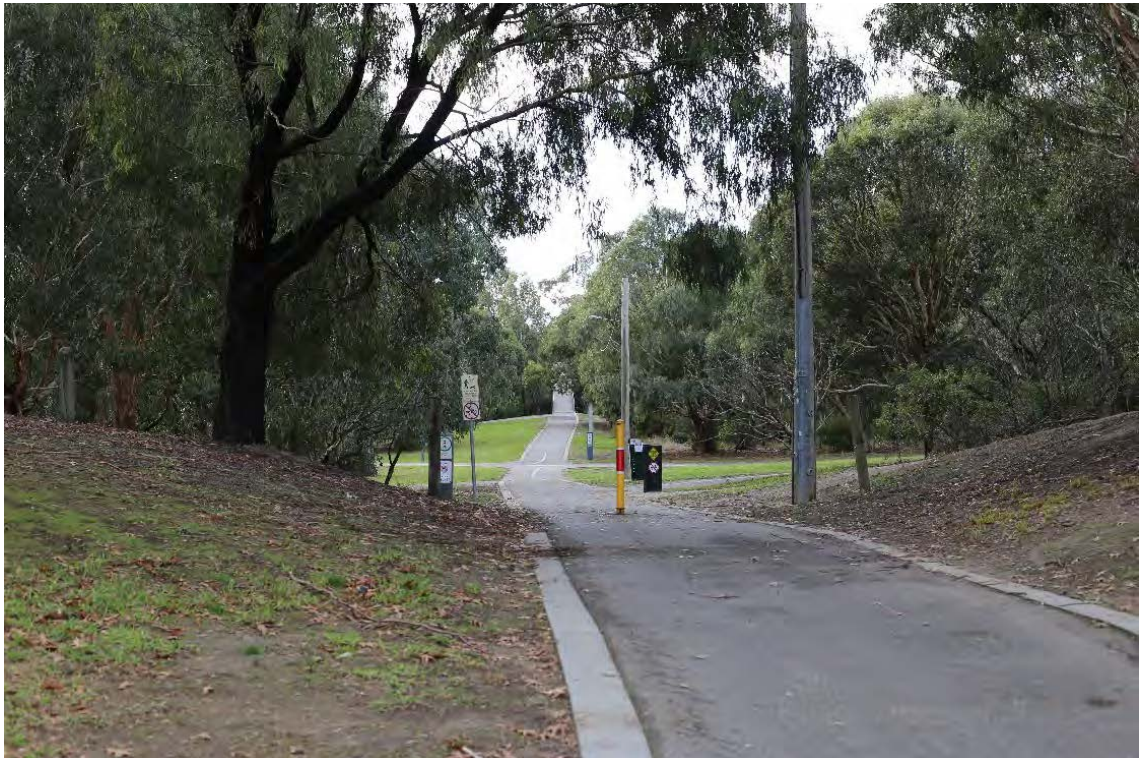


Photo 9-27 VP52 – Existing view looking north

Although this is a modified landscape, it is within a natural setting where established vegetation screen views to the Eastern Freeway.

Proposed change

This viewpoint is located approximately 74 metres from the proposed shared use overpass and approximately 145 metres from the proposed noise wall abutting the Eastern Freeway. Some of the existing vegetation between this viewpoint and the proposed shared use overpass and noise wall would be removed. The proposed noise wall would be nine metres high.

Assessment

As a result of the project, the view would be towards a new nine metre high noise wall in the background, a new shared use path and shared use overpass in the middle ground with existing trees in the foreground.

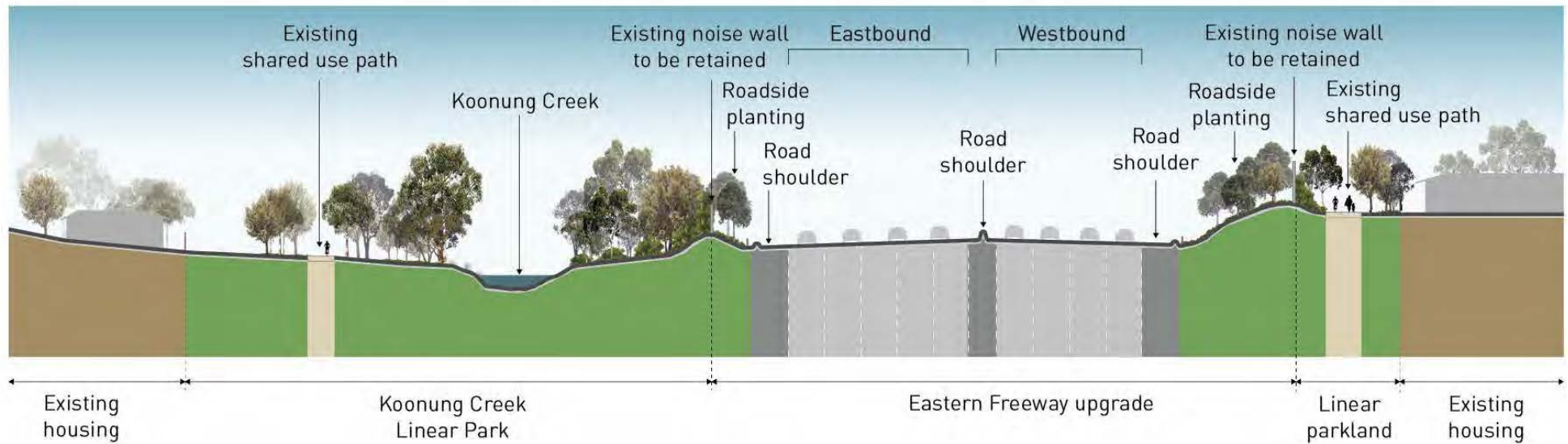


Figure 9-75 VP52 – Landscape treatment section view west

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Low**, as the removal of existing vegetation in the foreground would be minor and the retained vegetation would screen views of the shared use overpass and noise wall.
- Year 10 – **Negligible**, as the established landscape would add to the existing retained vegetation and would screen the shared use overpass, noise wall and potentially improve the existing view.

9.2.7 Viewpoint 53 – Koonung Creek Reserve (Wandeen Street Playground)

Viewpoint 53 is located at the grassed area of the Koonung Creek Reserve in Balwyn North as shown in Figure 9-76.



Figure 9-76 VP53 – Location plan

The current view from this location is of densely vegetated mounding in the background, a grassed embankment in the middle ground and a shared use path in the foreground, as shown in Photo 9-28.



Photo 9-28 VP53 – Existing view looking north-east

This is a recreational reserve within a natural setting where the existing dense vegetation screen views of the Eastern Freeway.

Proposed change

This viewpoint is located approximately 63 metres from the proposed noise wall abutting the Eastern Freeway. Existing vegetation directly adjacent to the existing noise wall would be removed. The noise wall at this location would be approximately eight metres high.

Assessment

As a result of the project, the noise wall would be closer to this viewpoint and replaced by an eight metre high noise wall with existing vegetation and establishing landscape in the foreground. This is shown in Figure 9-77.

Due to the noise walls moving into the park and an increase in height there would be increased shading in the area.



Figure 9-77 VP53 – Photomontage Year 0

The proposed landscaping would establish at year 10 and screen the proposed noise wall as shown in Figure 9-78.



Figure 9-78 VP53 – Photomontage year 10

At this distance, the visual impact is assessed as:

- Year 0 – **High**, as the landscape would not have established and the noise wall would dominate, the viewer numbers would be high and there would be a loss of open space.
- Year 10 – **Medium**, as the establishing landscape would partially screen the noise wall, although the open space would not be replaced.

9.2.8 Viewpoint 54 – Outhwaite Avenue, Doncaster

Viewpoint 54 is located at the corner of Outhwaite Avenue and Park Avenue opposite the Koonung Creek Trail as shown in Figure 9-79.

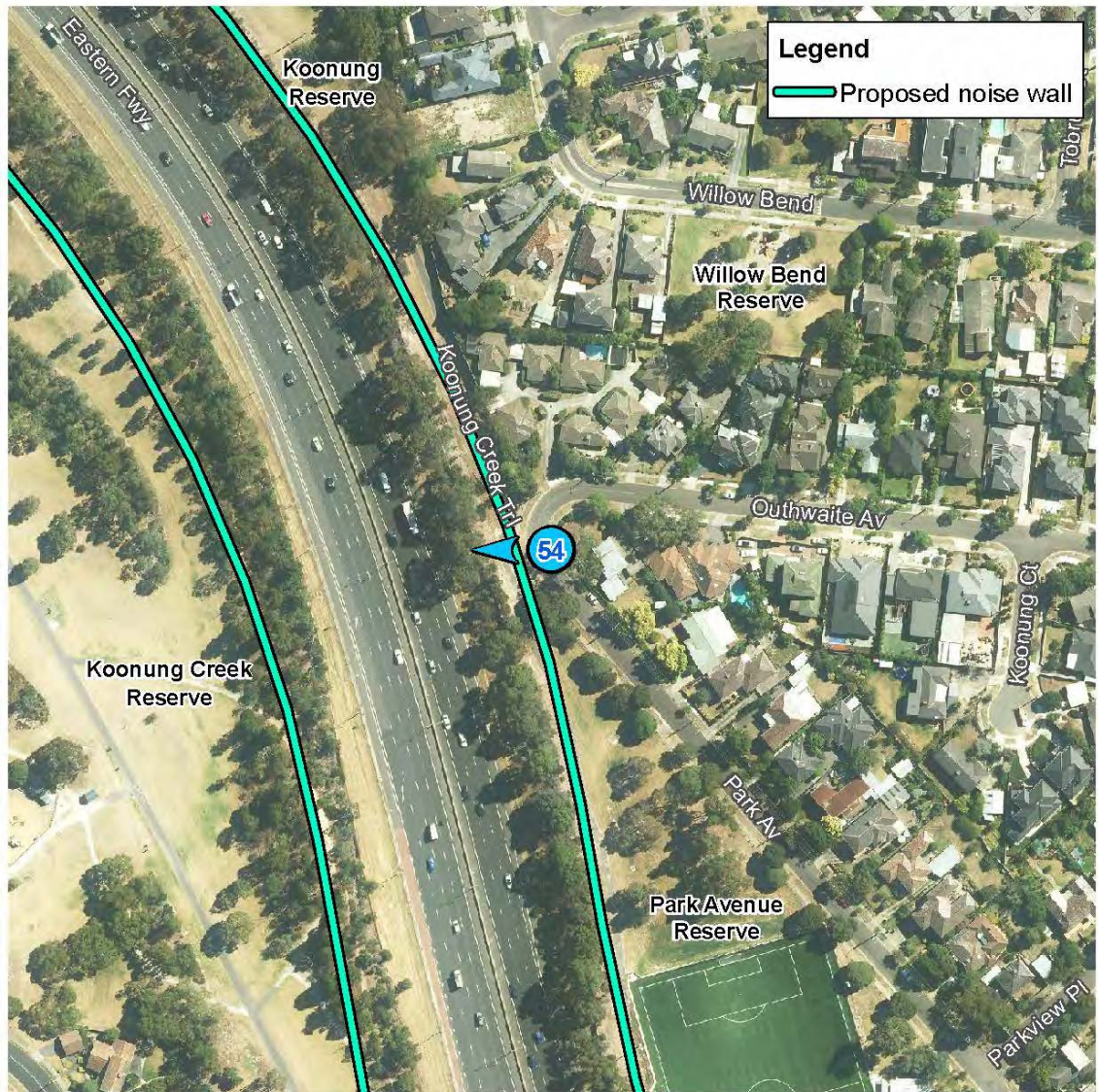


Figure 9-79 VP54 – Location plan

The current view from this location is of established native and exotic trees in the background, a timber noise wall at the top of an embankment with scattered native and exotic trees and shrubs and a shared use path in the foreground. This is shown in Photo 9-29. The existing noise wall in this location is approximately two metres high.



Photo 9-29 VP54 – Existing view looking west

This is a residential area where the existing noise wall and established vegetation screen views to Eastern Freeway.

Proposed change

This viewpoint is located approximately 12 metres from the proposed noise wall and eight metres from the proposed shared use path adjacent to the Eastern Freeway. The embankment and existing vegetation between the existing noise wall and Eastern Freeway would be removed. The new noise wall at this location would be approximately eight metres high.

Landscaping is proposed between this viewpoint and the proposed noise wall as shown in Figure 9-80.

Assessment

As a result of the project, the view would be towards a new eight metre high noise wall in place of the existing timber noise wall with a shared use path in front and landscaping established between the noise wall and shared use path.

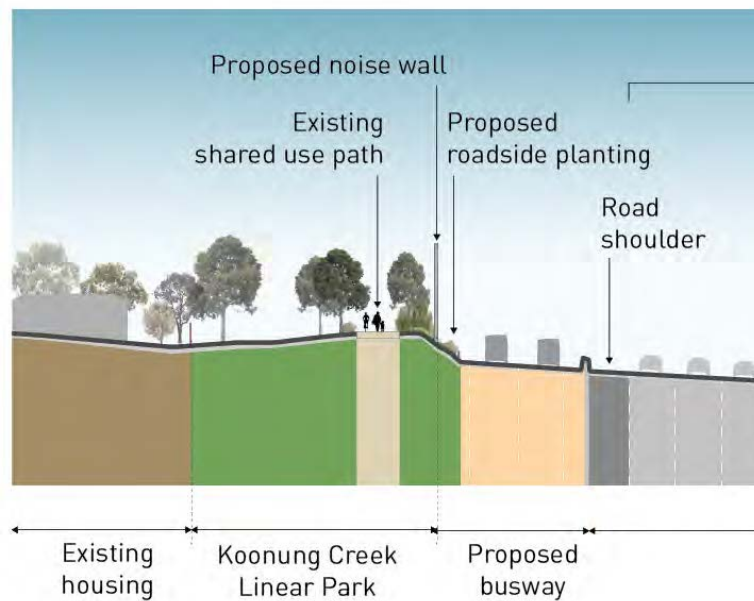


Figure 9-80 VP54 – Landscape treatment section view east

At this distance, the visual impact is assessed as:

- Year 0 – **Low**, as the new eight metre high noise wall would dominate the view although viewer numbers would be low.
- Year 10 – **Low to negligible**, as the establishment of vegetation would filter views of the eight metre high noise wall. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.2.9 Viewpoint 55 – Paul Street, Doncaster

Viewpoint 55 is located at the corner of Kingston Street and Paul Street opposite the Koonung Creek Trail as shown in Figure 9-81.



Figure 9-81 VP55 – Location plan

The current view from this location is of established native and exotic trees in the background, a timber noise wall at the top of a low vegetated embankment in the middle ground, and a shared use path in the foreground. An electricity substation is located to the north-east of this view and consists secure fencing, brick buildings and transformers. This is shown in Photo 9-30. The existing noise wall in this location is approximately three metres high.



Photo 9-30 VP55 – Existing view looking south-west

This is predominately a residential viewpoint where the established vegetation in the Koonung Creek Trail narrow linear reserve forms a buffer to the Eastern Freeway. The substation forms part of the existing landscape character.

Proposed change

This viewpoint is located approximately 67 metres from the proposed noise wall adjacent to the Eastern Freeway. Established vegetation between the existing noise wall and Eastern Freeway would be removed. The new noise wall at this location would be approximately eight metres high.

Landscaping is proposed between this viewpoint and the proposed noise wall as shown in Figure 9-82.

Assessment

As a result of the project, the view would be towards a new eight metre high noise wall in place of the existing timber noise wall with landscaping established between the noise wall and the existing shared use path.

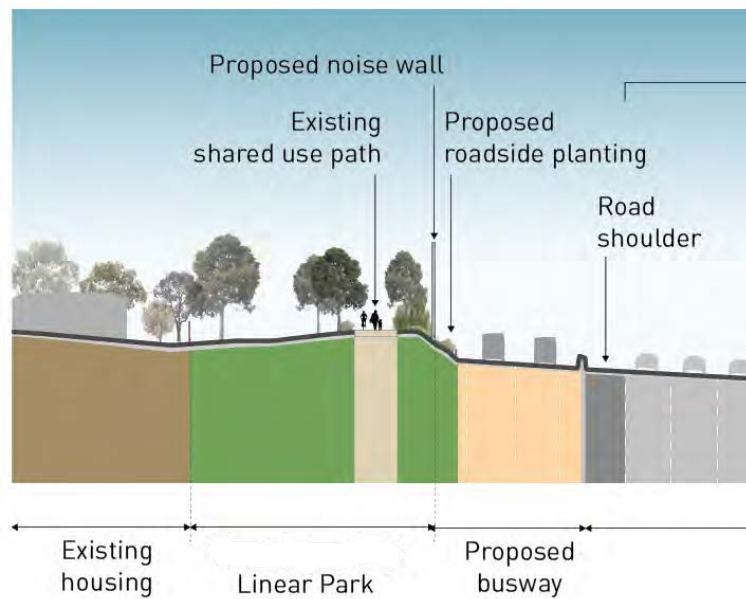


Figure 9-82 VP55 – Landscape treatment section view east

At this distance, the visual impact is assessed as:

- Year 0 – **Low**, as the new eight metre high noise wall would dominate the view although viewer numbers would be low.
- Year 10 – **Negligible**, as the establishment of vegetation between the noise wall and shared use path would filter views of the eight metre high noise wall and potentially improve the view. In addition, the design of the noise wall would be guided by with the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.2.10 Viewpoint 56 – Sweyn Street, Balwyn North

Viewpoint 56 is located along Sweyn Street, north of Winfield Road as shown in Figure 9-83.



Figure 9-83 VP56 – Location plan

The current view from this location is of a mix of single and double-storey houses with established native and exotic trees on a ridgeline in the background and acrylic and concrete noise walls in the middle ground define the edges of the Eastern Freeway. Koonung Creek Trail (a shared use path) and single and double-storey houses with established native and exotic trees are in the foreground, as shown in Photo 9-31. The existing noise wall in this location is approximately seven metres high.



Photo 9-31 VP56 – Existing view looking north-east

This is a residential viewpoint where the existing noise walls form part of the view and established vegetation forms a buffer to the Eastern Freeway.

Proposed change

The viewpoint in this location is approximately 140 metres from the proposed noise wall adjacent to the Eastern Freeway. Some established vegetation between the existing noise wall and shared use path would be removed and Koonung Creek would be enclosed in a culvert at this location. The new noise wall at this location would be approximately 10 metres high.

Landscaping is proposed between this viewpoint and the proposed noise wall as shown in Figure 9-84.

Assessment

As a result of the project, the view would be towards a new 10 metre high noise wall in place of the existing acrylic noise wall with landscaping established between the noise wall and shared use path.

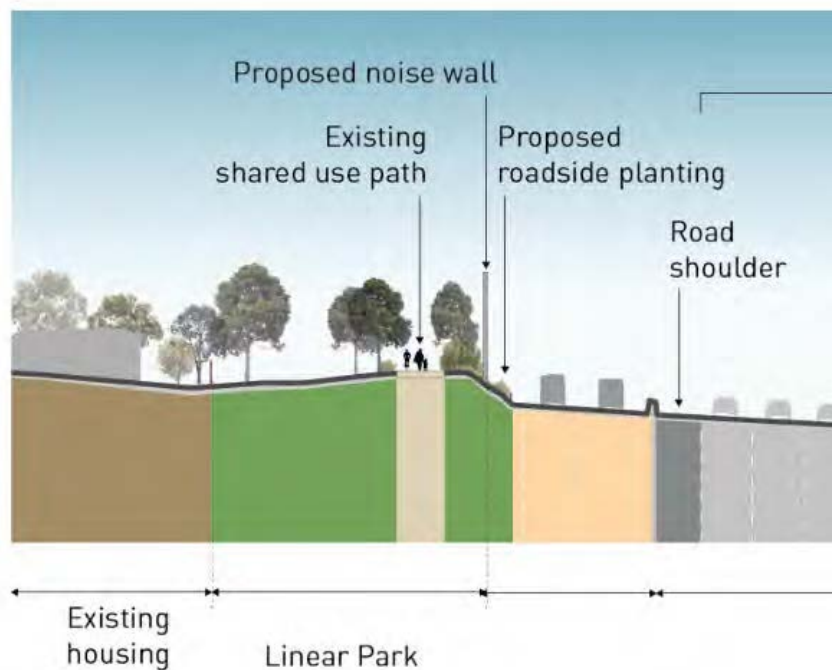


Figure 9-84 VP56 – Landscape treatment section view west

At this distance, the visual impact is assessed as:

- Year 0 – **Low**, as the new 10 metre high noise wall would be similar to the existing view, existing vegetation would filter views of the noise wall and viewer numbers would be low
- Year 10 – **Negligible**, as the establishing vegetation between the noise wall and shared use path would further screen views of the 10 metre high noise wall, potentially improving the view.

9.2.11 Viewpoint 57 – Massey Street, Doncaster

Viewpoint 57 is located on the Koonung Creek Trail at the southern end of Massey Street as shown in Figure 9-85.



Figure 9-85 VP57 – Location plan

The current view from this location is of the Koonung Creek Trail (shared use path) in the background, a concrete noise wall in the middle ground and single and double-storey residential properties in the foreground. Dense and established native and exotic vegetation form the view between the noise wall and the shared use path, as shown in Photo 9-32. The existing noise wall in this location is approximately 7.5 metres high.



Photo 9-32 VP57 – Existing view looking north-west

This is a residential and shared use path viewpoint where the established vegetation screens the existing noise wall forming a buffer to the Eastern Freeway.

Proposed change

Some established vegetation would be removed as a result of the project between the existing noise wall and the Eastern Freeway.

Assessment

As a result of the project, the view would remain the same.

At this distance, the visual impact is assessed as:

- Year 0 and Year 10 – **Negligible**, as the view would be similar to the existing view.

9.2.12 Viewpoint 58 – Koonung Creek Wetlands

Viewpoint 58 is located at the shared use path adjacent to Koonung Creek Wetlands, Valda Avenue in Mont Albert North, as shown in Figure 9-86.

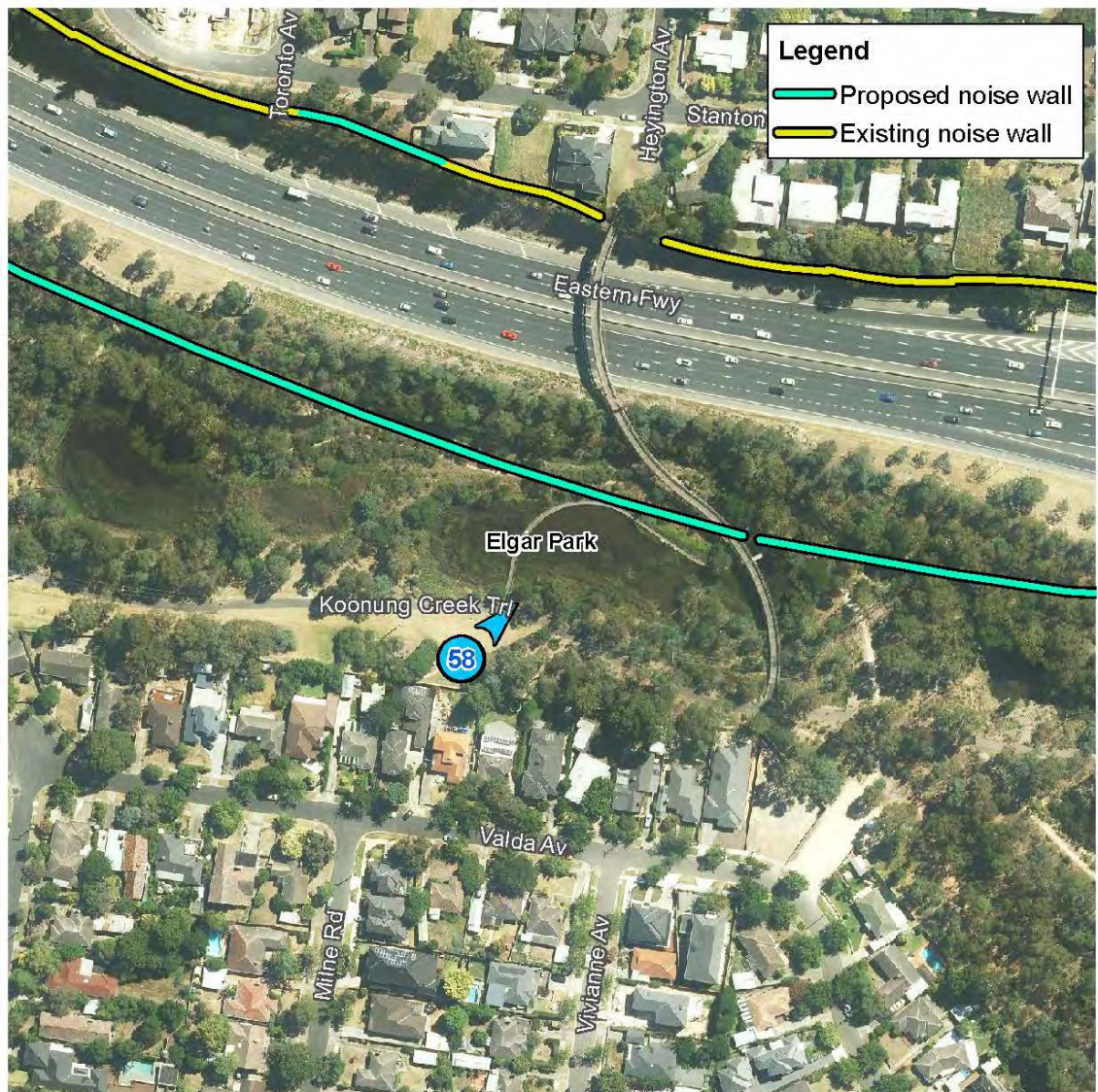


Figure 9-86 VP58 – Location plan

The current view from this location is of a densely vegetated wetland and suspension bridge shared use overpass in the background, densely vegetated wetland in the middle ground and a shared use path in the foreground. This is shown in Photo 9-33.



Photo 9-33 VP58 – Existing view north-east

This is a recreational reserve within a natural setting where the existing dense vegetation screen views of the Eastern Freeway and the shared use overpass forms part of the existing view.

Proposed change

This viewpoint is located approximately 66 metres from the proposed noise wall directly adjacent to the Eastern Freeway and 87 metres from the proposed shared use overpass in the background of this view. All existing vegetation between the proposed noise wall and Eastern Freeway would be removed. The proposed noise wall in this location would be approximately nine metres high and the proposed shared use overpass would be approximately 14 metres high.

Landscaping is proposed between this viewpoint and the proposed noise wall.

Assessment

As a result of the project, the noise wall and shared use overpass would be closer to the viewpoint, with the existing noise wall replaced by a nine metre high noise wall and a 14 metre high shared use overpass in the background. The view would include existing vegetation and landscape establishing in front of the noise wall, as shown in Figure 9-87.

Due to the increased width of the highway, height of walls and the proposed shared use overpass there would be increased shading in the area.



Figure 9-87 VP58 – Photomontage Year 0

At year 10 the landscaping would establish and partially screen the proposed noise wall as shown in Figure 9-88.



Figure 9-88 VP58 – Photomontage Year 10

At this distance, the visual impact is assessed as:

- Year 0 – **High**, as the new nine metre high noise wall and replacement of the shared use overpass would remove large amounts of existing vegetation, the landscaping would not be established, and the noise wall and shared use overpass would dominate the view. The project would reduce the amount of open space. In addition, the design of the shared use overpass would be guided by the project's Urban Design Strategy which requires structures to be well designed, complement the surrounding area, and consider sensitive interfaces.
- Year 10 – **High**, as although the established landscape would filter and partially screen the noise wall and shared use overpass, these elements would remain visually dominant and there would be reduced open space. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.2.13 Viewpoint 59 – Koonung Creek wetlands overpass along Eastern Freeway in Doncaster

Viewpoint 59 is located on the Koonung Creek wetlands overpass, overlooking the Eastern Freeway in Doncaster. This viewpoint is located approximately nine metres from the existing Eastern Freeway road edge as shown in Figure 9-89.



Figure 9-89 VP59 – Location plan

The current view in this location is of established vegetation and concrete noise walls in the background and the Eastern Freeway road corridor with vegetated embankments in the foreground as shown in Photo 9-34. The existing noise walls in this location is approximately 6.5 metres high.



Photo 9-34 VP59 – Existing view looking east

This is a major road corridor landscape where the road infrastructure is an obvious element.

Proposed change

The relocated shared use overpass would be approximately 13 metres from the viewpoint and the proposed noise wall would be approximately 35 metres from the viewpoint on the southern side of the road corridor. The existing vegetation would be removed to allow for the widened road corridor and the existing noise wall on the northern side of the road corridor would be retained. The proposed noise wall in this location would be approximately eight metres high.

Assessment

As a result of the project, the view would be towards the relocated shared use overpass with the proposed eight metre high noise wall to the south and a widened road corridor. The section in Figure 9-90 below is located where the shared use overpass will cross the Eastern Freeway at an angle, the portion of the bridge that is further east is dashed in.

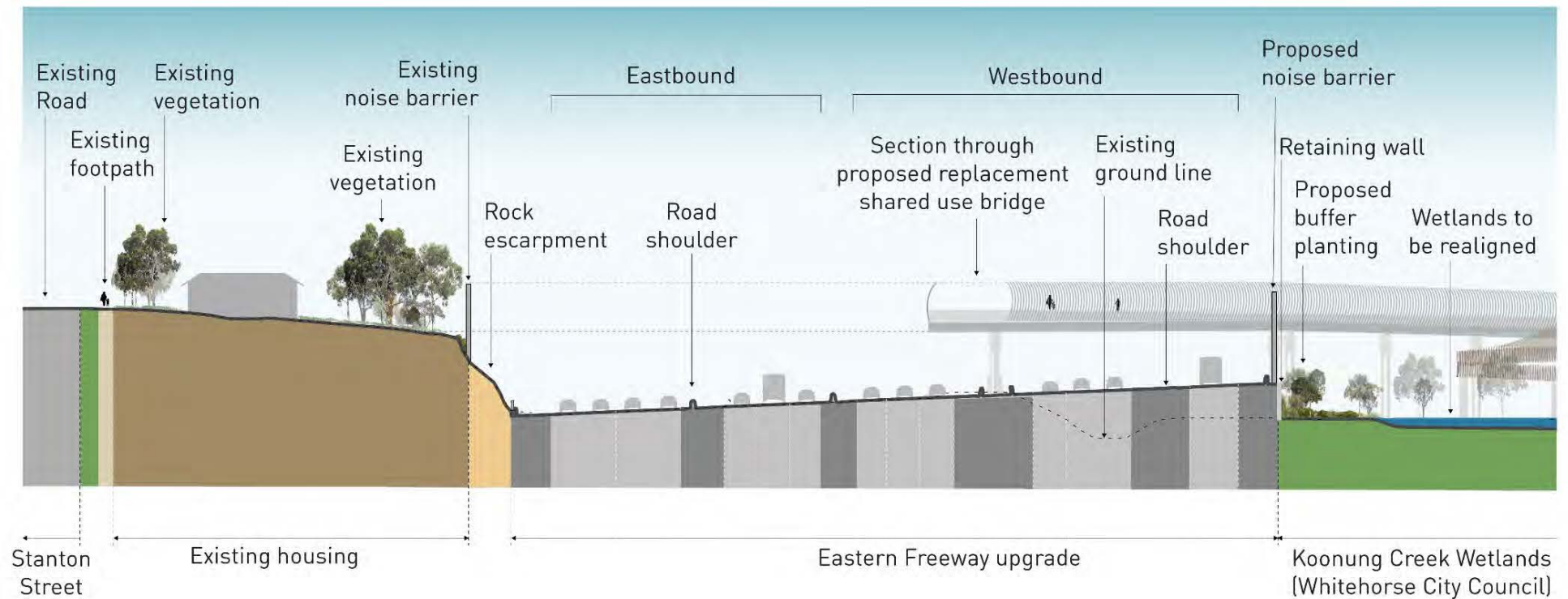


Figure 9-90 VP59 – Landscape treatment section view east

At this distance, the visual impact is assessed as:

- Year 0 and year 10 – **Low**, as the proposed eight metre noise wall and widened road corridor would be visually dominant, and there would be a significant change to the landscape and the viewers would have a low sensitivity to the proposed visual change.

9.2.14 Viewpoint 60 – Corner of Stanton and Heyington Avenue, Doncaster

Viewpoint 60 is located on the corner of Stanton Street and Heyington Avenue, opposite the existing shared use overpass as shown in Figure 9-91.



Figure 9-91 VP60 – Location plan

The current view from this location is of dense and established native and exotic trees and shrubs, and residential properties on a steep ridgeline in the background. A shared use overpass crosses over the Eastern Freeway in the middle ground and connects Stanton Avenue Reserve in the foreground. This is shown in Photo 9-35.



Photo 9-35 VP60 – Existing view looking south

This is predominately a residential viewpoint where the established vegetation in the view forms a buffer to the Eastern Freeway and filters views of the shared use overpass.

Proposed change

This viewpoint is located approximately 45 metres from the proposed shared use overpass and the barrier would be approximately three metres high. Minimal vegetation would be removed for the re-aligned shared use overpass and the overpass would be at grade with Stanton Street.

Assessment

As a result of the project, the view would be similar to the existing view.

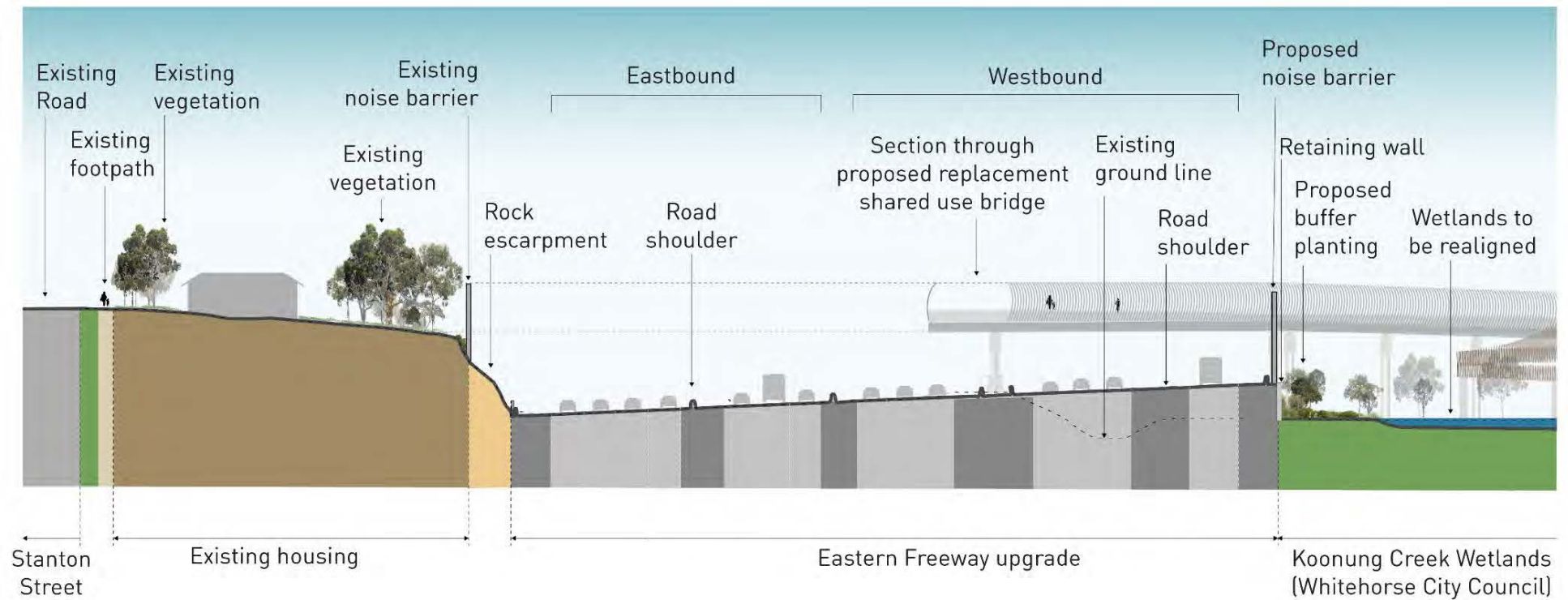


Figure 9-92 VP60 – Landscape treatment section view east

At this distance, the visual impact is assessed as:

- Year 0 and Year 10 – **Negligible**, as the view would be similar to the existing view.

9.2.15 Viewpoint 61 – Katrina Street Reserve

Viewpoint 61 is located at the entry to the Katrina Street Reserve, adjacent to the playground in Doncaster as shown in Figure 9-93.

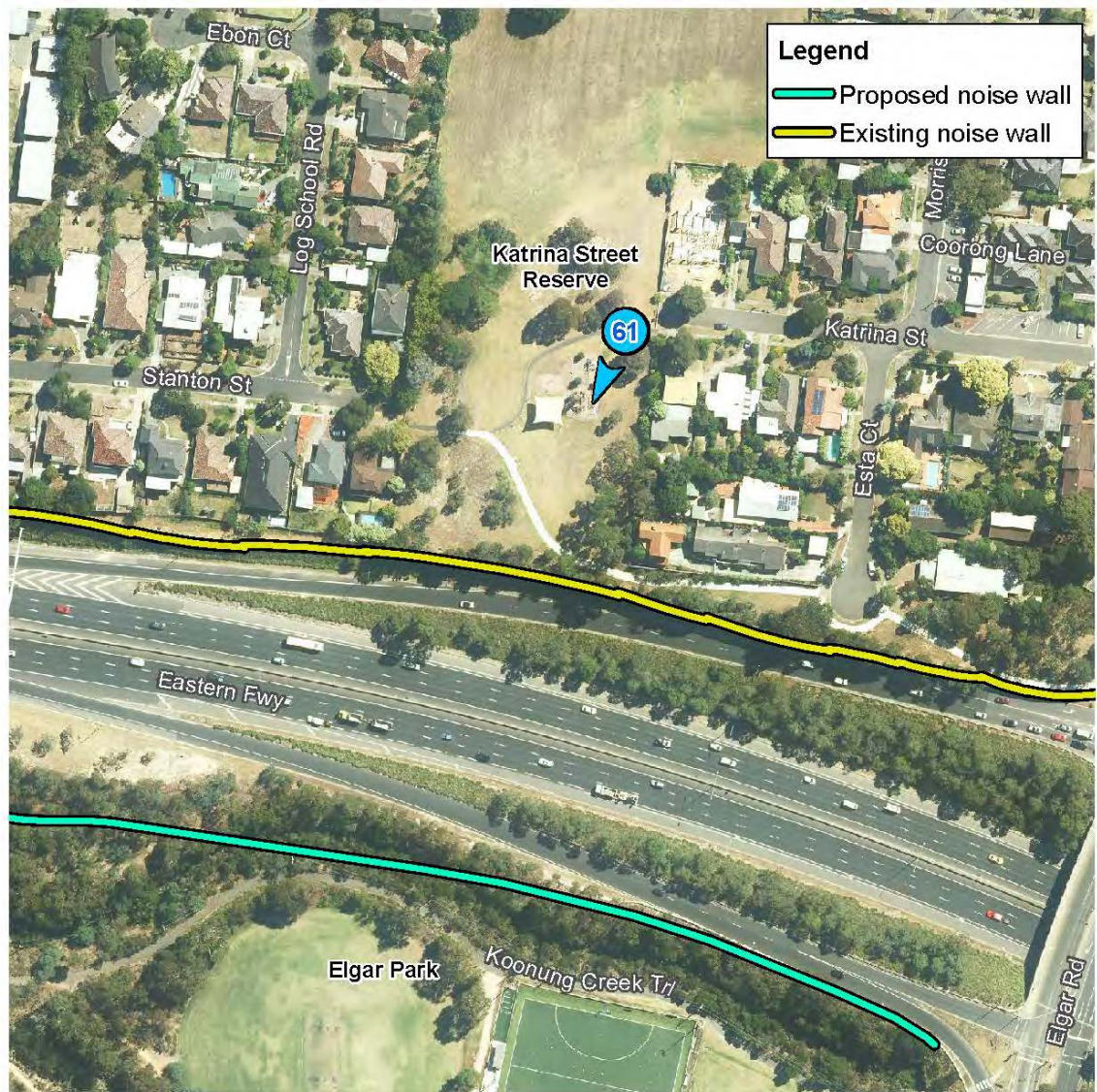


Figure 9-93 VP61 – Location plan

The current view from this location is of a ridgeline with scattered established trees and residential properties in the background, a grassed reserve sloping down to the south in the middle ground, and a playground, basketball half court and shared use path in the foreground. This is shown in Photo 9-36.



Photo 9-36 VP61 – Existing view looking south-west

Although modified, this is recreational reserve with a natural landscape setting where the existing vegetation screen views of the Eastern Freeway.

Proposed change

There are no proposed changes to this viewpoint.

Assessment

As a result of the project, the view would be similar to the existing view.

At this distance, the visual impact is assessed as:

- Year 0 and Year 10 – **Negligible**, as the view would be similar to the existing view.

9.2.16 Viewpoint 62 – Elgar Park, Mont Albert North

Viewpoint 62 is located within Elgar Park, Mont Albert North. This viewpoint is located approximately 130 metres from the existing Eastern Freeway road edge as shown in Figure 9-94.



Figure 9-94 VP62 – Location plan

The current view in this location is of a vegetated embankment with established native trees and shrubs in the background that filters views to the Eastern Freeway noise walls and residential beyond. There is a sunken grassed oval in the foreground with scattered established native trees around the edge, as shown in Photo 9-37



Photo 9-37 VP62 – Existing view looking north-west

This is a reserve where sporting ovals are the major focus and the surrounding vegetation contributes to the natural character of the landscape.

Proposed change

The proposed noise wall would be located approximately 120 metres from the viewpoint. The existing vegetation and open space would be removed to the north of the proposed noise wall, and Koonung Creek would be enclosed in a culvert at this location. The proposed noise wall would be approximately seven metres high. Existing vegetation in front of the existing shared use path to the south of the noise wall would be retained.

Assessment

As a result of the project, the view would be towards the proposed seven metre noise wall with landscaping establishing between the shared use path and noise wall. The retained existing vegetation would filter views to the proposed noise wall as shown in Figure 9-95.



Figure 9-95 VP62 – Photomontage Year 0



Figure 9-96 VP62 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed seven metre noise wall would be visually prominent and there would be a loss of open space and Koonung Creek would be in culvert, although viewer numbers would be medium
- Year 10 – **Medium to low**, as the landscaping would establish and filter view to the proposed seven metre noise wall. The open space would not be replaced.

9.2.17 Viewpoint 63 – Frank Sedgeman Reserve

Viewpoint 63 is located at the shared use path within the Frank Sedgeman Reserve, adjacent to Koonung Creek in Box Hill North as shown in Figure 9-97.

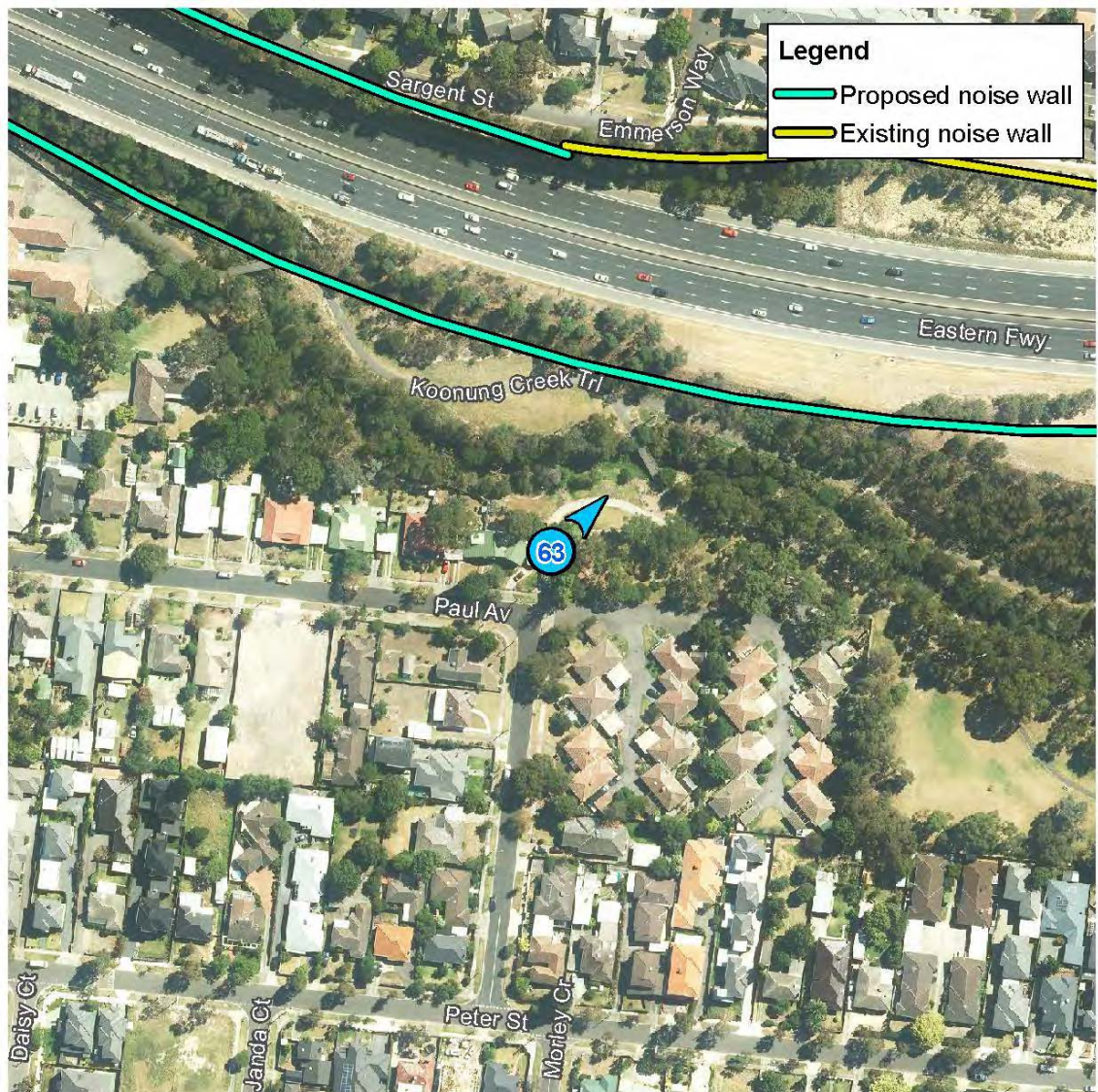


Figure 9-97 VP63 – Location plan

The current view from this location is of dense established vegetation in the background, a noise wall and gravel shared use path separated by dense vegetation in the middle ground, and grassed embankments and Koonung Creek in the foreground. This is shown in Photo 9-38.



Photo 9-38 VP63 – Existing view looking north

This is Frank Sedgeman Reserve, within a residential setting where Koonung Creek and the established vegetation contribute to the natural character.

Proposed change

This viewpoint is located approximately 62 metres from the proposed noise wall directly adjacent to the Eastern Freeway. All existing vegetation between the proposed noise wall and Eastern Freeway would be removed as well as some of the vegetation in front of the noise wall. The proposed noise wall in this location would be approximately five metres high.

Assessment

As a result of the project, the view would be towards the proposed five metre high noise wall, with landscape establishing between the noise wall and shared use path, as shown in Figure 9-98. The existing vegetation in the foreground would be retained.



Figure 9-98 VP63 – Photomontage Year 0

At year 10 the landscaping would establish and filter views to the noise wall as shown in Figure 9-99.



Figure 9-99 VP63 – Photomontage Year 10

At this distance, the visual impact is assessed as:

- Year 0 – **Medium**, as the new five metre high noise wall and widened road behind would result in the loss of existing vegetation and open space. The landscape would be unestablished and the noise wall would dominate the view although viewer numbers would be medium and the existing retained vegetation would filter views to the noise wall.
- Year 10 – **Low**, as the established vegetation would filter views of the noise wall and would be similar to the existing view. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.2.18 Viewpoint 64 – Koonung Creek Trail, adjacent to Michael Close

Viewpoint 64 is located along the Koonung Creek Trail, adjacent to Michael Close in Doncaster. This viewpoint is located approximately four metres from the existing noise wall as shown in Figure 9-100.

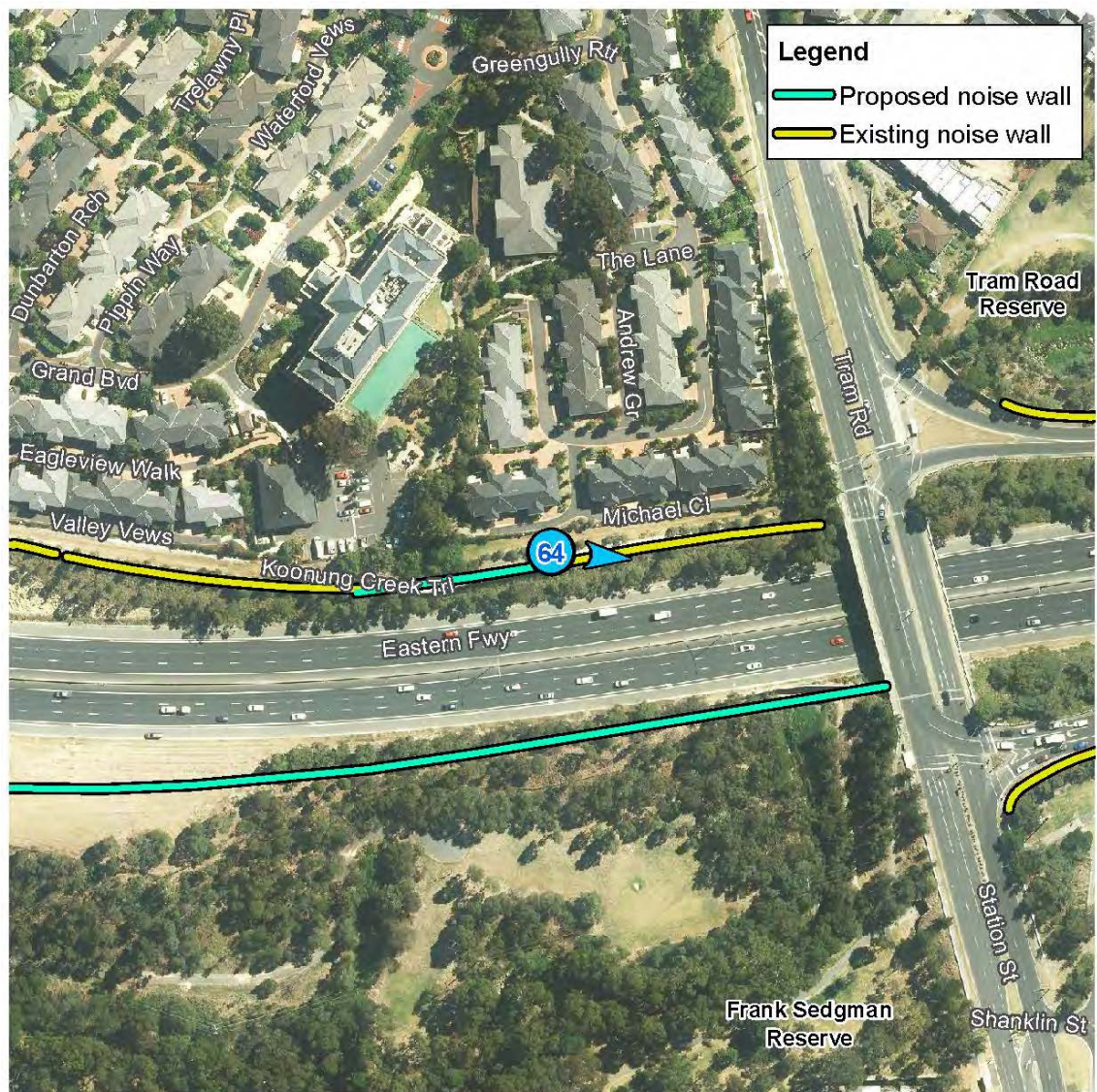


Figure 9-100 VP64 – Location plan

The current view from this location is of established native vegetation in the background with a narrow reserve and a shared use path in the foreground. A concrete and acrylic noise wall is located to the south of the shared use path and residential houses to the north as shown in Photo 9-39. Immature native trees are planted along the shared use path and climbers planted against the noise wall. The existing noise wall in this location is approximately three metres high.



Photo 9-39 VP64 – Existing view south-east

This is a linear reserve landscape where the noise wall is an obvious, but minor element.

Proposed change

The proposed widening of the Eastern Freeway road corridor would see the removal of existing vegetation between the existing noise wall and the Eastern Freeway. The existing noise wall would be retained.

Assessment

As a result of the project, the view would be towards the existing landscape with the loss of vegetation behind the existing noise wall.

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Low to negligible**, as the removal of vegetation behind the existing noise wall would be a minor visual change and the landscape setting would be similar to the existing.

9.2.19 Viewpoint 65 – Koonung Creek Trail, adjacent to Eram Road, Box Hill North

Viewpoint 65 is located along the Koonung Creek Trail (a shared use path) adjacent to the connection to Eram Road. This viewpoint is located approximately five metres from the existing noise wall as shown in Figure 9-101.



Figure 9-101 VP65 – Location plan

The current view from this location is of established vegetation in the background with a shared use path in the foreground. A concrete noise wall is located to the north of the shared use path and a timber residential fence to the south as shown in Photo 9-40. The existing noise wall in this location is approximately three metres high.



Photo 9-40 VP65 – Existing view looking east

Proposed change

The proposed noise wall would be approximately two metres closer to the viewpoint and finish in line with the existing residential side boundary, opening views north to the road corridor. A second proposed noise wall would run along the rear boundary of the residential properties, to the south of the shared use path. The existing vegetation between the back fence and existing noise wall would be removed. Both the proposed noise walls in this location would be approximately eight metres high. This is an area of transition where the shared use path changes from being on the south of the proposed noise wall to being on the north of the proposed noise wall adjacent to the freeway.

Landscaping would be proposed between the shared use path and proposed noise wall as shown in Figure 9-102.

Assessment

As a result of the project, the view would be towards the proposed eight metre high noise walls to the north and south of the shared use path, with landscaping establishing between the shared use path and proposed noise wall. Views to the north would open up to the proposed widened road corridor once adjacent to the residential property.

Due to the noise walls moving closer to the property and increasing in height there would be increased shading in the area.

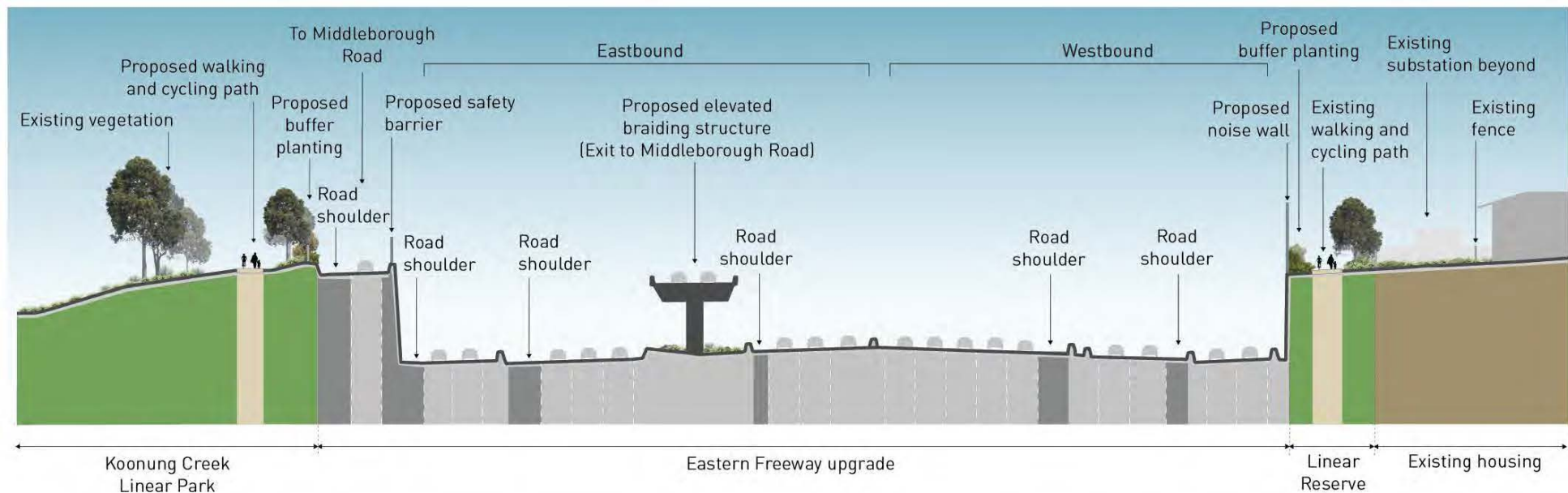


Figure 9-102 VP65 – Landscape treatment section view east

At this viewpoint, the visual impact is assessed as:

- **Year 0 – Medium**, as the proposed eight metre high noise wall would be visually dominant, seen by users of the shared use path and there would be significant visual change. The viewer numbers in this location would be medium and therefore the visual impact rating is medium.
- **Year 10 – Medium**, as the landscaping would establish but due to limited space would only screen the lower portion of the noise wall and the landscape setting would be visually different to the existing. Due to medium viewer numbers, the visual impact rating would remain at medium. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.2.20 Viewpoint 66 – Koonung Creek Linear Park

Viewpoint 66 is located at the shared use path within the Koonung Creek Linear Park, in Doncaster. This viewpoint is located approximately 188 metres from the existing noise wall as shown in Figure 9-103.



Figure 9-103 VP66 – Location plan

The current view in this location is of established vegetation and houses in the background, a concrete noise wall in the middle ground and open space with overhead power lines, established vegetation and a shared use path in the foreground, as shown in Photo 9-41. The existing noise wall in this location is approximately 3.5 metres high.



Photo 9-41 VP66 – Existing view looking south

This is a parkland landscape setting where the noise wall is a minor element and the power lines are an obvious element.

Proposed change

The proposed noise wall would be approximately 27 metres closer to the viewpoint and only extend into part of the view. The Eastern Freeway road corridor would be widened and the existing noise wall removed. The existing vegetation adjacent to the existing noise wall would be removed. The proposed noise wall in this location would be approximately four metres high with a proposed shared use path in front.

Landscaping would be proposed between this viewpoint and the proposed noise wall as shown in Figure 9-104.

Assessment

As a result of the project, the view would be towards the proposed four metre high noise wall and Eastern Freeway road corridor with landscaping establishing between the shared use path and the proposed noise wall and road corridor.

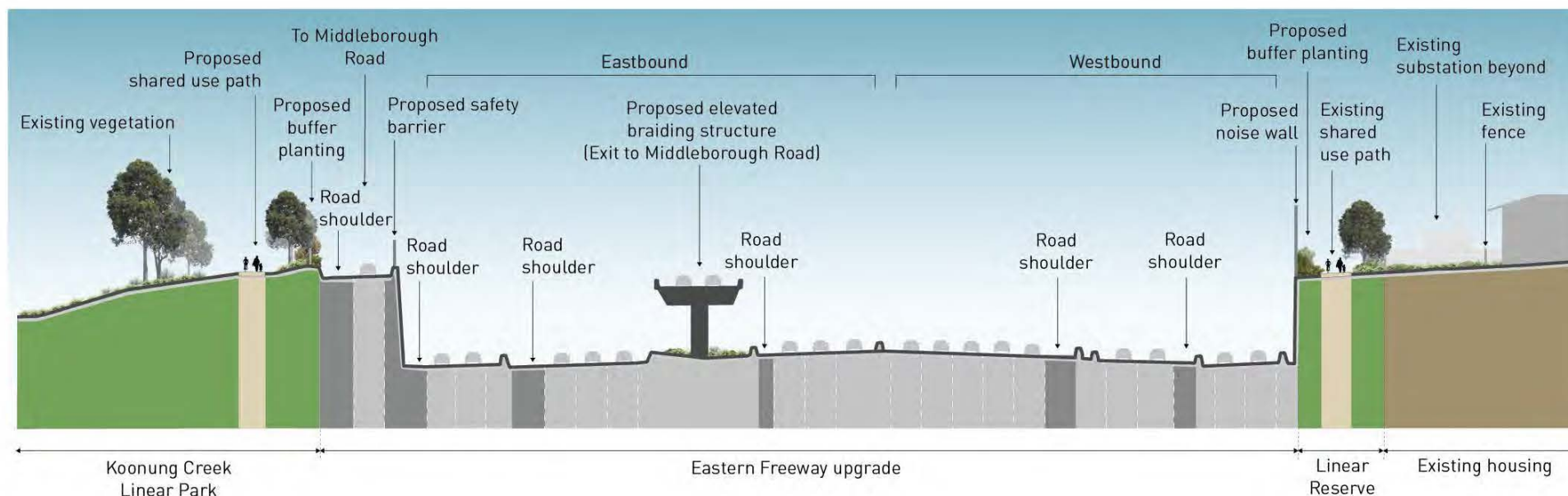


Figure 9-104 VP66 – Landscape treatment section view east

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed four metre high noise wall and Eastern Freeway road corridor would be visually prominent, there would be significant visual change in the landscape and a loss of open space although viewer numbers would be medium
- Year 10 – **Low**, as the landscaping would screen the proposed noise wall and freeway and the landscape setting would be similar to existing although the open space would not be replaced.

9.2.21 Viewpoint 67 – Middlefield Drive and Koonung Road, Blackburn North

Viewpoint 67 is located at the intersection of Middlefield Drive and Koonung Road in a residential area. This viewpoint is located approximately 120 metres from the existing noise wall as shown in Figure 9-105.



Figure 9-105 VP67 – Location plan

The current view from this location is of established trees in the background and a residential street with established street trees and densely vegetated private gardens in the foreground as shown in Photo 9-42. The existing noise wall in this location is approximately four metres high.



Photo 9-42 VP67 – Existing view looking north

This is a suburban residential landscape where the established vegetation is a major element.

Proposed change

The proposed noise wall would be approximately five metres closer to the viewpoint. Some of the existing vegetation would be removed. The proposed noise wall in this location would be approximately eight metres high.

Landscaping would be proposed between the viewpoint and proposed noise wall as shown in Figure 9-106.

Assessment

As a result of the project, the view would be towards the proposed eight metre high noise wall with landscaping establishing between the noise wall and existing shared use path.

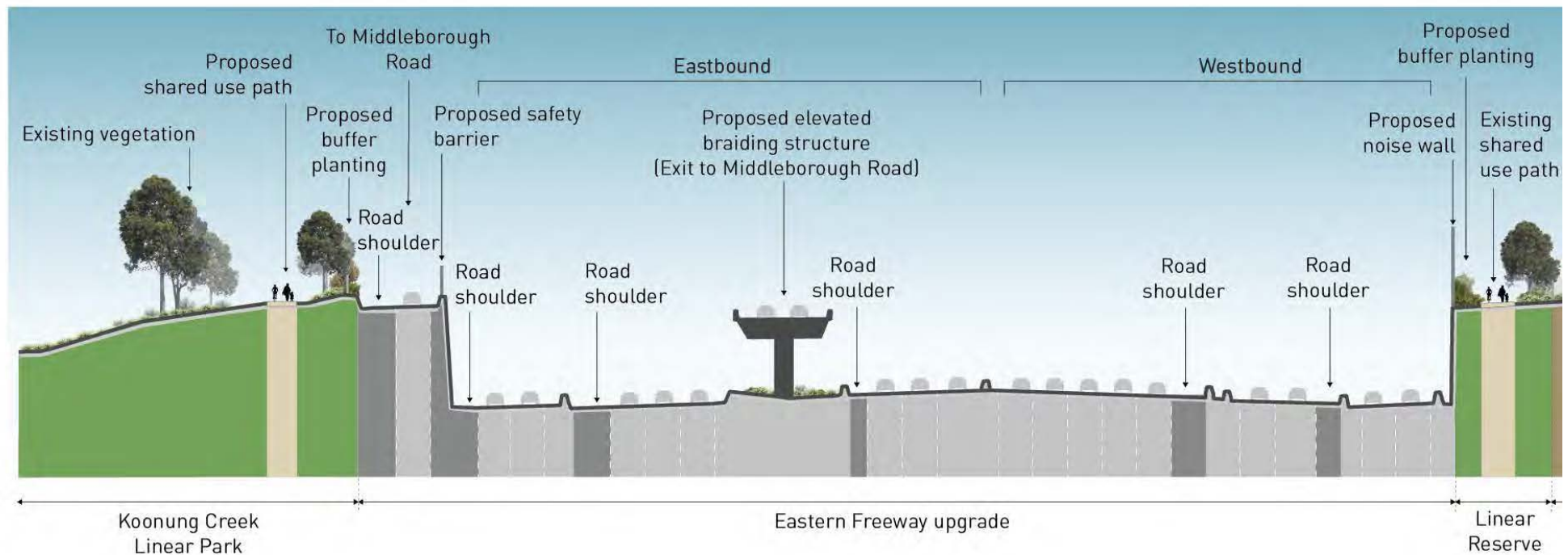


Figure 9-106 VP67 – Landscape treatment section view east

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Low**, as the proposed eight metre high noise wall would be visually dominant, there would be visual change in the landscape, although viewer numbers would be low
- Year 10 – **Negligible**, as the landscaping would screen the noise wall and the landscape setting would be similar to the existing.

9.2.22 Viewpoint 68 – Slater Avenue, Blackburn North

Viewpoint 68 is located at the northern end of Slater Avenue adjacent to residential properties in Blackburn North. This viewpoint is located approximately 24 metres from the existing noise wall as shown in Figure 9-107.



Figure 9-107 VP68 – Location plan

The current view from this location is of a concrete noise wall in the background with established native trees and a shared use path in the foreground as shown in Photo 9-43. The existing noise wall in this location is approximately five metres high.



Photo 9-43 VP68 – Existing view looking north-east

This is a suburban residential landscape setting where the noise wall is an obvious, but minor element.

Proposed change

The proposed widening of the Eastern Freeway road corridor would require the removal of vegetation between the existing noise wall and the Eastern Freeway.

Assessment

As a result of the project, the view would be towards the existing noise wall with vegetation behind removed.

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Negligible**, as the existing noise wall would be retained, there would be some minor vegetation loss behind the existing noise wall and the landscape setting would be similar to the existing.

9.2.23 Viewpoint 69 – Eastern Freeway Linear Reserve

Viewpoint 69 is located at the shared use path with the Eastern Freeway Linear Reserve, adjacent to the Eastern Freeway and Kett Street in Nunawading. This viewpoint is located approximately 38 metres from the existing noise wall as shown in Figure 9-108.

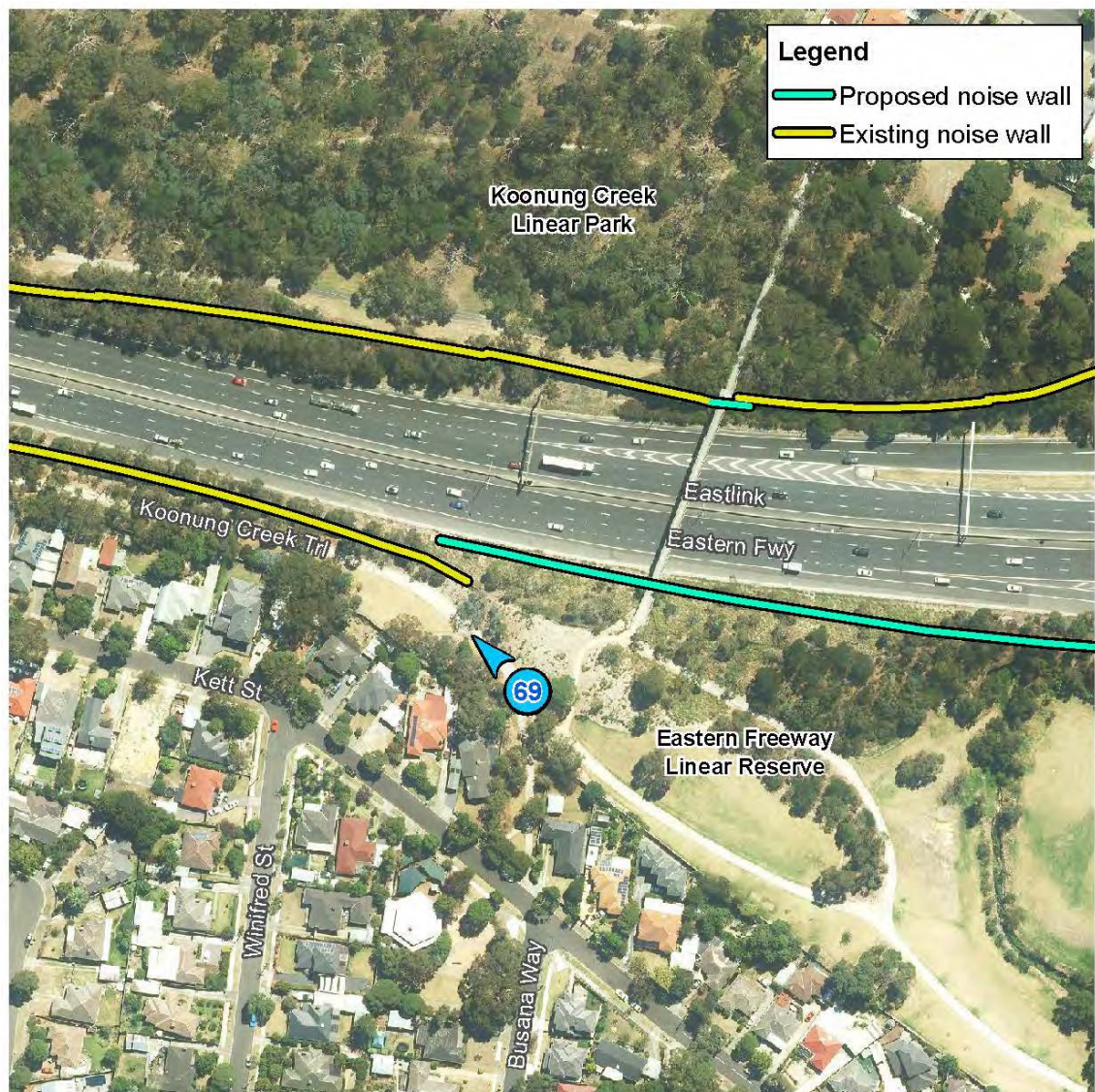


Figure 9-108 VP69 – Location plan

The current view from this location is of a low noise wall in the background with established native vegetation bordering a gravel shared use path in the foreground as shown in Photo 9-44.



Photo 9-44 VP69 – Existing view looking north-west

This is a linear park landscape setting where the noise wall is a minor element.

Proposed change

The proposed widening of the Eastern Freeway road corridor would require the removal of vegetation behind the existing noise wall.

Assessment

As a result of the project, the view would be towards the existing noise wall with vegetation behind removed.

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Negligible**, as the existing vegetation behind the noise wall would be removed and the landscape setting would be similar to the existing.

9.2.24 Construction impact on the Koonung Creek Valley landscape character area

Construction impacts within the Koonung Creek Valley landscape character area would consist of site compounds, the widening of the Eastern Freeway and noise wall construction. There are seven construction compounds spread across the character area including the new park and ride access facility in the north-east corner of the Doncaster Road/Eastern Freeway interchange.

The site compounds would be located within Koonung Creek Reserve, Doncaster Park and Ride, Katrina Street Reserve, Elgar Park and the Eastern Freeway Linear Reserve. There would be construction fencing along the boundary of the project works area. Viewers located directly adjacent to the construction compounds would have their views to open space interrupted. Viewers from streets and properties located further away, but elevated above the project would have views into the construction compounds. These views would typically have been of vegetated parkland and now would be interrupted by views of machinery, storage sheds, spoil stockpiles, construction materials and access routes. Through implementation of EPR LV2 temporary landscaping could be installed to soften and filter views to construction compounds.

The amount of open space that may be potentially impacted within the Koonung Creek Valley landscape character area varies from construction to operation.

During construction, approximately 795,800 square metres of open space would be temporarily impacted. Key open spaces within this area that would be potentially impacted include the Eastern Freeway Linear Reserve, Elgar Park, Koonung Creek Linear Park, Koonung Creek Reserve and Koonung Reserve.

These areas may be occupied for up to seven years and views would be impacted for the duration of this period. The visual impact within the Koonung Creek Valley landscape character area would be rated as medium to high for the construction period. Any future impacts would be reduced further via implementation of EPR LV2 Minimise landscape impacts during construction.

9.2.25 Summary of impacts on the Koonung Creek Valley landscape character area

The Eastern Freeway section of the project, from Bulleen Road eastward, makes up all of the Koonung Creek Valley landscape character area. The existing landscapes within this character area generally have a medium level of sensitivity and the landscape and visual impact ranges from negligible to high. Within the Koonung Creek Valley landscape character area the Eastern Freeway would have high viewer numbers, the public reserves and Koonung Creek Trail would have medium to high viewer numbers, and the residential areas would have medium to low viewer numbers.

In this character area where noise walls would be new to the view or replace the existing view of noise walls, the impact would be the greatest. Over time, views to the noise walls would be filtered or screened with the established landscape along the corridor where space allows.

During operation, the open space impacts would be significantly reduced from the construction impacts and approximately 127,000 square metres of open space would be permanently impacted. This is largely within Elgar Park and Koonung Creek Reserve.

Overall, due to the significant extent of open space impacted, this landscape character area is considered to have a significant visual impact during construction, and a minor impact during operation as the majority of the open space would be returned during operation. Where open space could not be returned, vegetation buffers would largely maintain the visual amenity and landscape character of the area.

The widening of the Eastern Freeway road corridor would impact the road users with the removal of vegetation, increased lanes and reduced space for landscaping. The Eastern Freeway upgrades would also greatly alter the existing freeway landscape character. Road users would have a low sensitivity to this type of change as they have a transient experience of the landscape and their primary focus is on driving. Although the freeway landscape character would be altered and the road users experience impacted, a key objective for the project is to minimise impacts on communities therefore the widening of the Eastern Freeway has been limited to protect the adjoining public open space which is valued by the community. In addition the project's Urban Design Strategy outlines detailed requirements which would reduce the landscape and visual impacts on the Eastern Freeway road corridor, these include:

- Optimising the existing open space functions and upgrade the open spaces that run parallel to the Eastern Freeway
- Maximise views towards borrowed landscape from the Eastern Freeway
- Respect the original architectural and landscape design of the Eastern Freeway
- Reinstate and enhance buffer vegetation to filter views to freeway infrastructure and blend interfaces with surrounding treed neighbourhood character.

The Koonung Creek Valley landscape character area is valued for the linear open space associated with the Koonung Creek and the vegetated appearance of the general character area. The project would be unlikely to have an impact on the landscape value of the Koonung Creek Valley landscape character area as the characteristics it is valued for such as established vegetation and the linear open space would be either retained or enhanced.

Overall, the proximity of new infrastructure and availability of space for landscaping would have the greatest influence on the visual impacts of the Koonung Creek Valley character area. Any future impacts would be reduced further via implementation of EPRs LV1 Design to be generally in accordance with Urban Design Strategy and LV2 Minimise landscape impacts during construction. EPR LV1 would see the design of permanent above-ground works, to the extent practicable, avoid or minimise landscape and visual as well as shading impacts in accordance with the project's Urban Design Strategy and LV2 would minimise visual impacts during construction.

9.3 Landscape character area – Ridgeline

Twenty-four viewpoints in the public domain have been selected within the Ridgeline landscape character area.

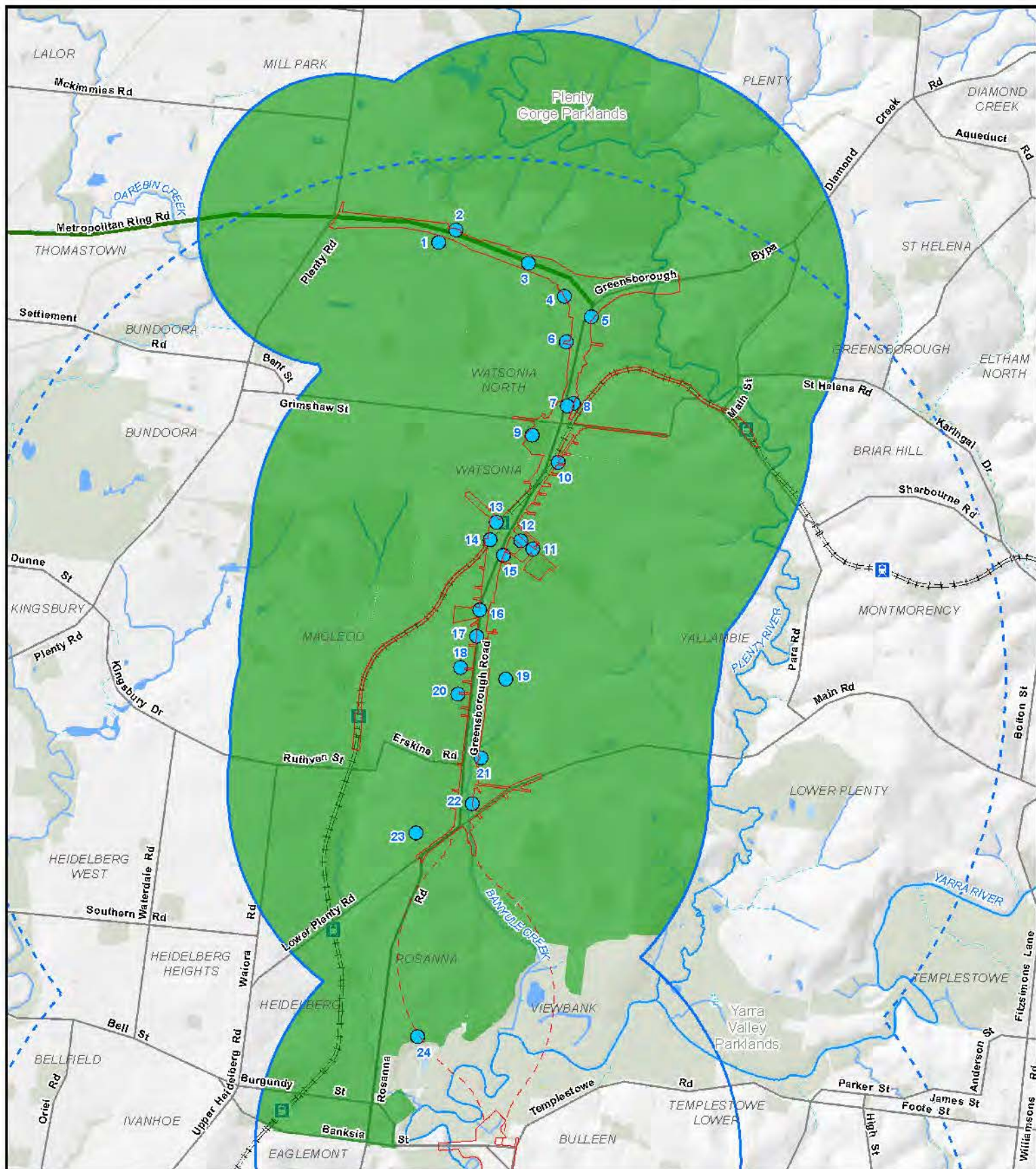
A list of each viewpoint and their location within the Ridgeline landscape character area is provided in Table 9-3.

Table 9-3 Viewpoint locations

Viewpoint number	Location	Distance to the project boundary
VP1	Healy Court, Bundoora	56 m
VP2	Killarney Ridge, Greensborough	0 m
VP3	M80 pedestrian overpass, approximately 660 m from Greensborough Bypass interchange.	0 m
VP4	Gillingham Street, Watsonia North	0 m

Viewpoint number	Location	Distance to the project boundary
VP5	Greensborough Bypass shared use path adjacent to M80 Ring Road interchange.	0 m
VP6	Open space adjacent to Sellars Street, Watsonia North	0 m
VP7	Greensborough Bypass approximately 150 m north of Grimshaw Street intersection.	0 m
VP8	Corner of Hamlet Street and Saxon Court, Greensborough	0 m
VP9	AK Lines Reserve, south-west of the junction between Grimshaw Street and Greensborough Road	0 m
VP10	Greensborough Road, north of Teresa Street	0 m
VP11	Intersection of transmission line corridor and Frensham Road, Watsonia	0 m
VP12	Power line easement, Watsonia	0 m
VP13	Watsonia railway reserve	0 m
VP14	Watsonia Road north of the Watsonia Road/Lambourne Road/Devonshire round-about	0 m
VP15	Service Road, Watsonia	0 m
VP16	Greensborough Road adjacent to Winsor reserve, south of Somers Avenue and Greensborough Road intersection	0 m
VP17	Greensborough Road, adjacent to Simpson Barracks, Macleod	0 m
VP18	Fairlie Avenue, Macleod	37 m
VP19	Simpson Barracks	152 m
VP20	Strathallan Road, McLeod	17 m
VP21	Kay Court, Yallambie	11 m
VP22	Borlase Street, Yallambie	0 m
VP23	Interlaken Parade, Rosanna	344 m
VP24	Dalvey Street, Heidelberg	955 m

A majority of these locations are within a landscape that has a medium level of sensitivity. The location of each viewpoint is identified in Figure 9-109.



Legend

- | | | | | |
|--|--|---|---|---|
| <ul style="list-style-type: none"> Viewpoints Project boundary - sub-surface Project boundary - surface Study Area Ventilation Structures | <ul style="list-style-type: none"> Noise Walls and Viaduct Structures Character Areas Ridgeline Roads Freeway | <ul style="list-style-type: none"> Highway Major road Railway Train station | Watercourses <ul style="list-style-type: none"> River Stream Drain or channel | Waterbodies <ul style="list-style-type: none"> Lake Swamp Watercourse Parks & reserves |
|--|--|---|---|---|

Paper Size A4
0 295 590 1,180
Metres



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



North East Link Project
Environment Effects Statement (EES)
Job Number 31-35006
Revision L
Date 25/02/2019

Ridgeline character area
and viewpoint map

Figure 9-109

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Data source: CIP Imagery - DEWLP - 2018 | roads, watercourses, parks, rail, localities - Viomap - 2019 | project infrastructure, viewpoints, character areas, study areas - GHD, AECOM - 2019 Created by: trighetti

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9.3.1 Viewpoint 1 – Healy Court, Bundoora

Viewpoint 1 is located at Healy Court adjacent to the M80 Ring Road in Bundoora.

This viewpoint is located approximately 100 metres from the M80 Ring Road edge as shown in Figure 9-110.

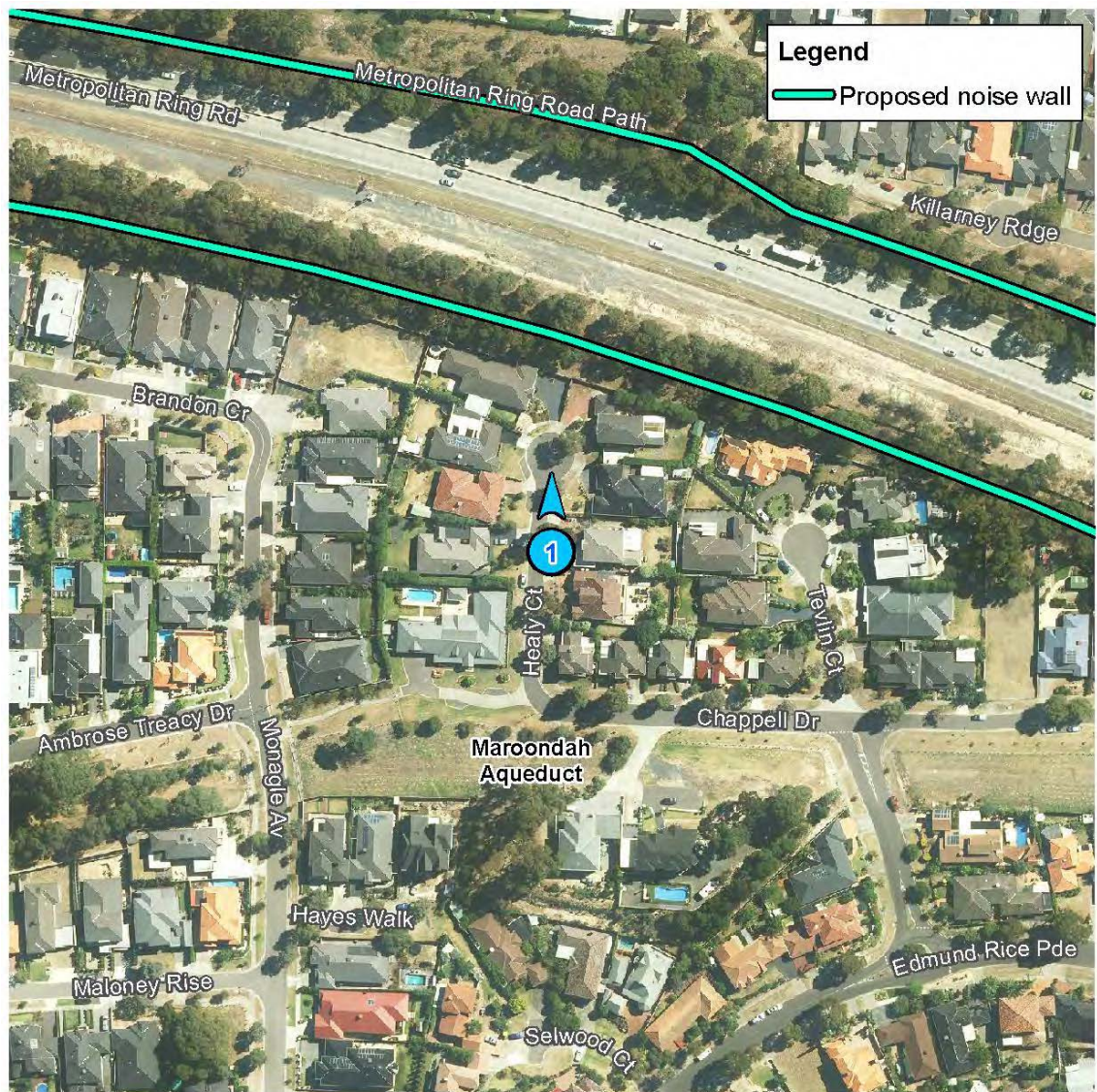


Figure 9-110 VP1 – Location plan

The current view from this location is of established native trees on the embankment in the background between property fence lines and the M80 Ring Road with single and double-story houses in the foreground as shown in Photo 9-45.



Photo 9-45 VP1 – Existing view looking north

This is a residential area in which the established native trees along the M80 Ring Road corridor provide a natural setting.

Proposed change

This viewpoint is located approximately 70 metres from the proposed noise wall on the south side of the M80 Ring Road. The existing vegetation and embankment would be removed. The proposed noise wall at this location would be approximately 10 metres high and in the short term would be a dominant element.

Landscaping would be proposed between this viewpoint and the proposed noise wall as shown in Figure 9-111.

Assessment

As a result of the project, the view would be towards the proposed 10 metre high noise wall with landscaping established between the property boundary and noise wall.

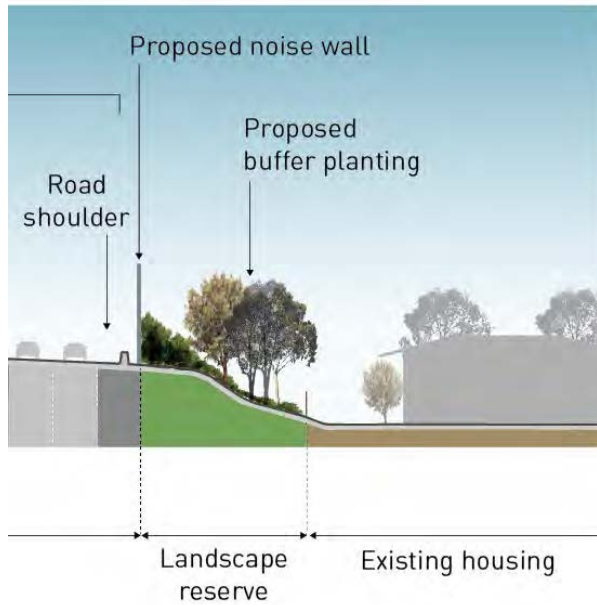


Figure 9-111 VP1 – Landscape treatment section view east

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Low**, as the proposed 10 metre high noise wall would be visually dominant and there would be a significant visual change, although viewer numbers would be low. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.
- Year 10 – **Low – Negligible**, as the landscaping would screen views of the 10 metre high noise wall and the landscape setting would not be dissimilar to the existing.

9.3.2 Viewpoint 2 – Killarney Ridge, Greensborough

Viewpoint 2 is located at the footpath along Killarney Ridge, adjacent to the M80 Ring Road in Greensborough. This viewpoint is located approximately 22 metres from the existing timber noise wall as shown in Figure 9-112.

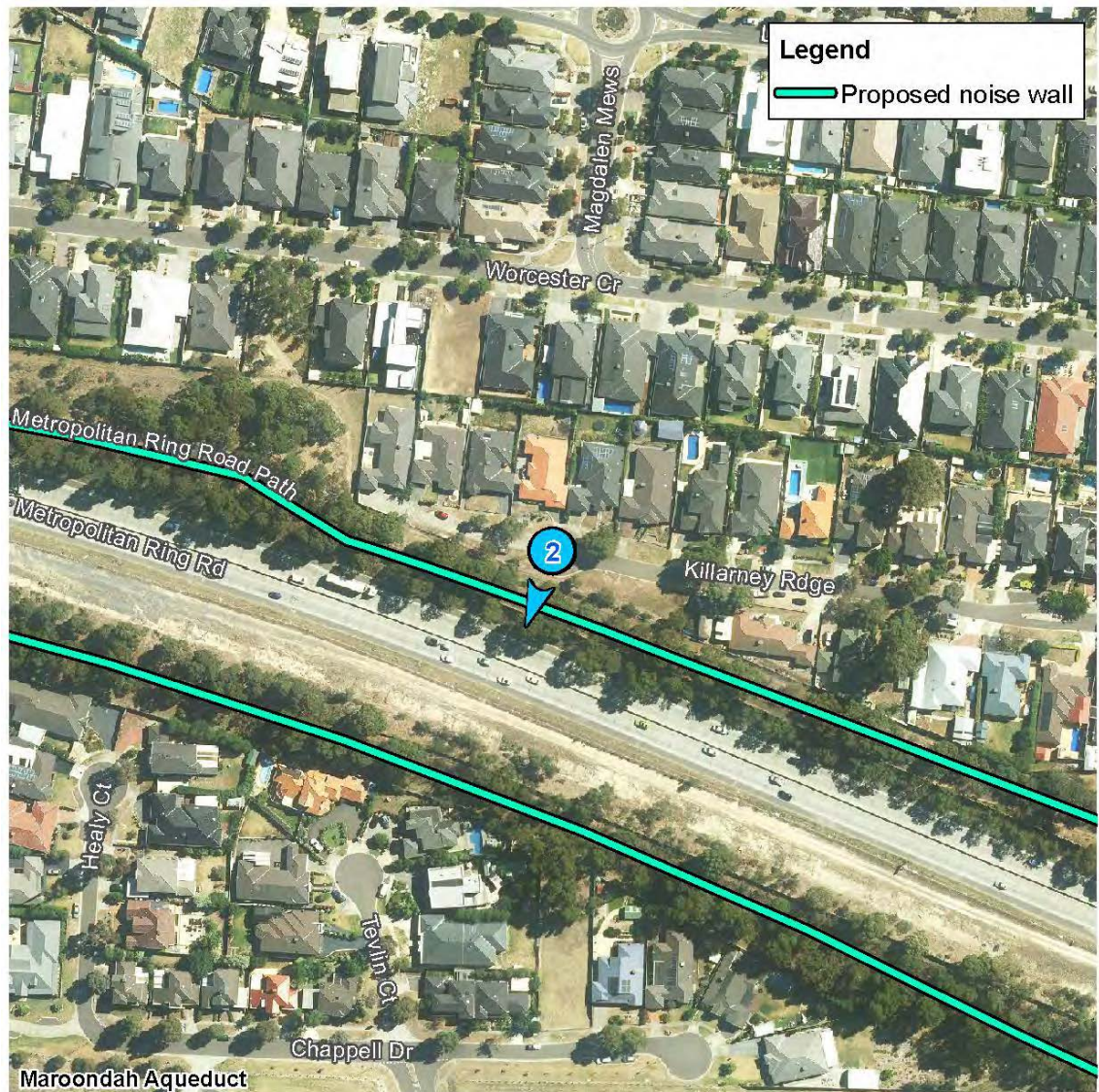


Figure 9-112 VP2 – Location plan

The current view from this location is of a timber noise wall in the background, grassed and vegetated embankments in the middle ground and a chain mesh fence in the foreground as shown in Photo 9-46. The existing noise wall in this location is approximately three metres high.



Photo 9-46 VP2 – Existing view looking south

Proposed change

The noise wall would be located approximately five metres closer to the viewpoint with the shared use path in front. The new noise wall at this location would be approximately seven metres high. The existing vegetation within the road corridor and between Killarney Ridge would be removed.

Landscaping would be proposed between this viewpoint and the proposed noise wall as shown in Figure 9-113.

Assessment

As a result of the project, the view would be towards the proposed seven metre high noise wall with landscaping establishing between the shared use path and noise wall.

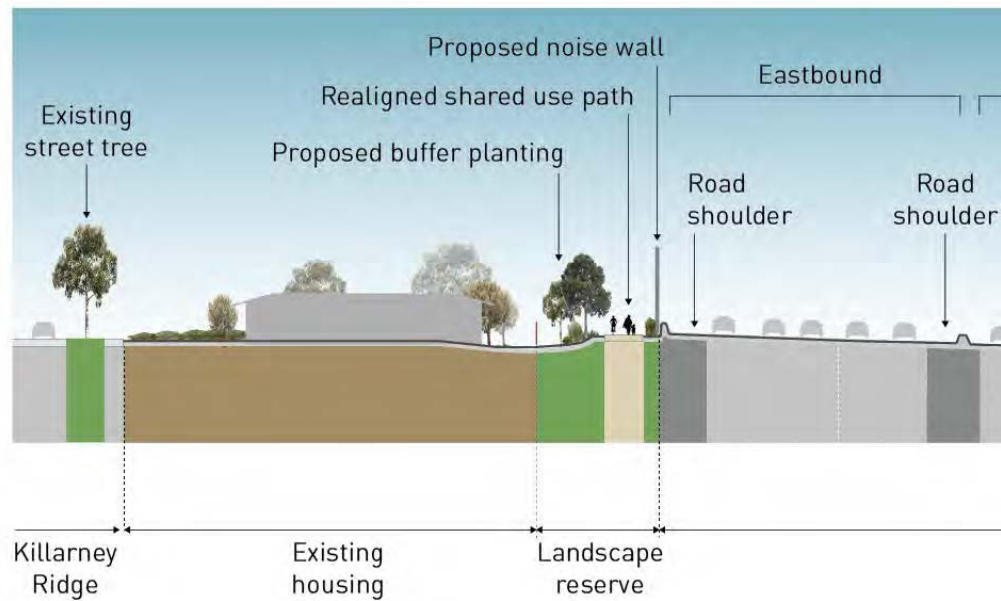


Figure 9-113 VP2 – Landscape treatment section view east

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed seven metre high noise wall would be visually dominant and viewer numbers would be medium.
- Year 10 – **Low**, as the landscape would screen views of the seven metre high noise wall and the landscape setting would be similar to the existing landscape.

9.3.3 Viewpoint 3 – M80 Ring Road pedestrian overpass, approximately 660 metres from Greensborough Bypass interchange

Viewpoint 3 is located along the existing M80 Ring Road shared use overpass adjacent to Macorna Street, Greensborough. This viewpoint is located directly over the existing M80 Ring Road as shown in Figure 9-114.



Figure 9-114 VP3 – Location plan

The current view from this location is of the Dandenong Ranges in the background, established native trees in the middle ground and the M80 Ring Road corridor in the foreground with two lanes in either direction and vegetated embankments along the sides as shown in Photo 9-47.



Photo 9-47 VP3 – Existing view looking south-east

This is a major road corridor landscape setting in which the existing road corridor is an obvious element.

Proposed change

This viewpoint is located approximately 120 metres from the Greensborough interchange with viaducts and approximately 50 metres from the proposed noise walls to the north and the south of the road corridor. The existing vegetated embankments within the road corridor would be removed. The proposed noise walls at this location would be approximately eight metres high to the south and approximately seven metres high to the north.

On the north side of the proposed road corridor there would be the potential for landscaping. On the south side, the edge of the road would be directly adjacent to the eight metre high noise wall.

Assessment

As a result of the project, the view would be towards the new Greensborough Bypass interchange with viaducts and seven metre high noise walls to the north, and eight metre high noise walls to the south. The view would be of increased lanes on the M80 Ring Road, the removal of the median and a reduced vegetated embankment. Landscaping would establish on the north side of the road.



Figure 9-115 VP3 – Landscape treatment section view east

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Low**, as the proposed viaducts, noise walls and widened road corridor would add a new noticeable built elements to the existing view although the viewer sensitivity would be low.
- Year 10 – **Low**, as the landscaping would only occur on the northern embankment partially screening the northern noise wall. The road corridor, viaducts and the southern noise walls would be visually prominent.

9.3.4 Viewpoint 4 – Gillingham Street, Watsonia North

Viewpoint 4 is located at the footpath along Gillingham Street, adjacent to the M80 Ring Road in Watsonia North. This viewpoint is located approximately 25 metres from the existing timber noise wall as shown in Figure 9-116.

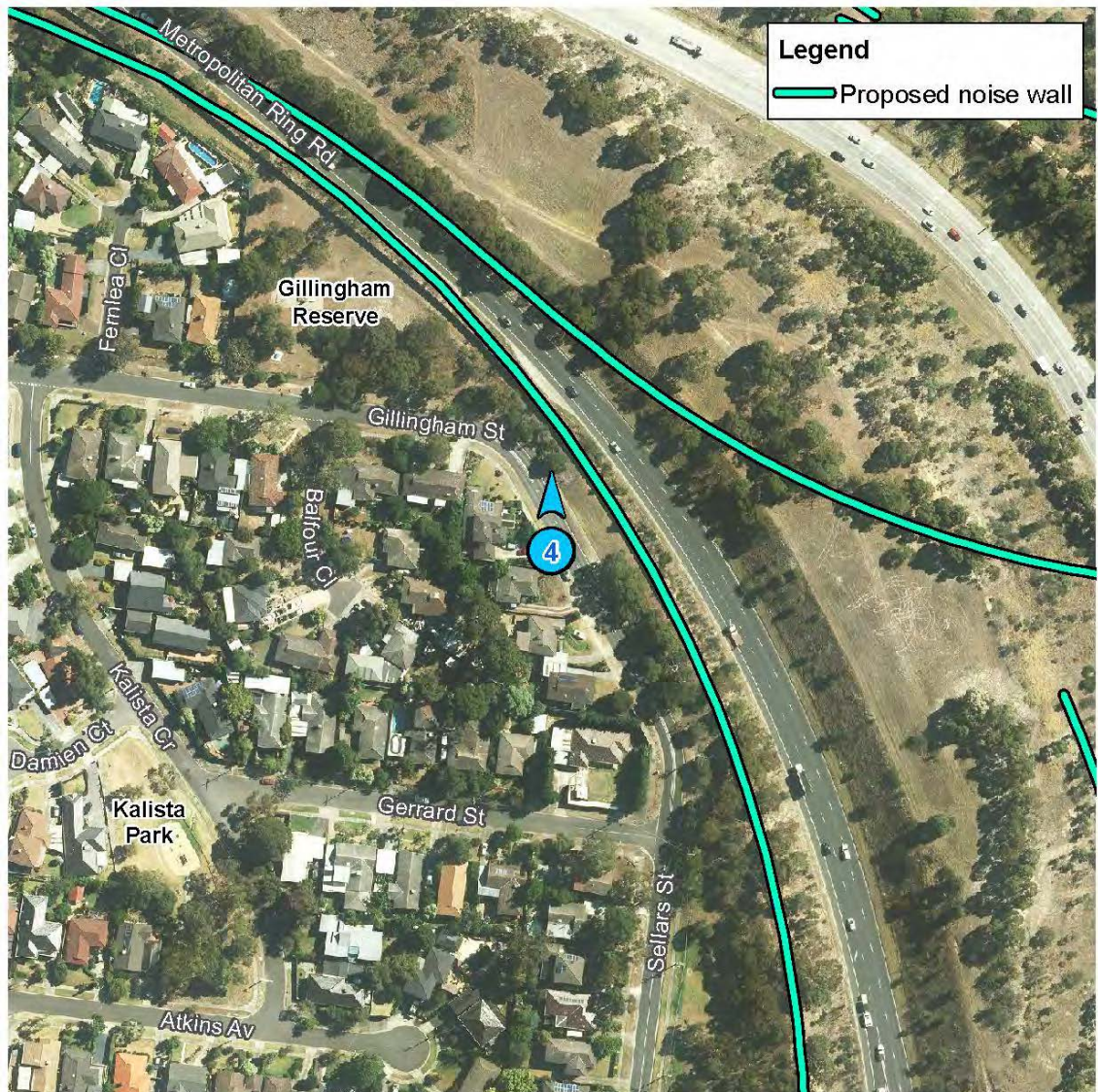


Figure 9-116 VP4 – Location plan

The current view from this location is of a timber noise wall in the background, with a vegetated embankment in the foreground as shown in Photo 9-48. The existing noise wall in this location is approximately 2.5 metres high.



Photo 9-48 VP4 – Existing view looking north

This is a suburban residential landscape setting in which the existing noise wall is an obvious element. Existing landscaping and landscape opportunities along the embankment create a relatively soft edge to this existing roadside.

Proposed change

The proposed noise wall would be located in the same location as the existing noise wall, with a shared use path in front. The existing vegetation and embankment would be removed. The proposed noise wall at this location would be approximately seven metres high.

Assessment

As a result of the project, the view would be towards the proposed seven metre high noise wall with landscaping establishing between the shared use path and the proposed noise wall as shown in Figure 9-117.

Due to the proposed noise walls increase in height there would be increased shading in the area.



Figure 9-117 VP4 – Photomontage Year 0

By year 10 the tree planting along the nature strip would be more mature and would filter views to the proposed noise wall as shown in Figure 9-118.



Figure 9-118 VP4 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed seven metre high noise wall would be visually dominant, there would be significant visual change in the landscape and viewer numbers would be medium.
- Year 10 – **Low to Negligible**, as the landscaping would filter views to the seven metre noise wall and the landscape setting would not be dissimilar to the existing.

9.3.5 Viewpoint 5 – Greensborough Bypass shared use path adjacent to M80 Ring Road interchange

Viewpoint 5 is located on the Greensborough Bypass shared use path to the south of Greensborough Bypass. This viewpoint is located approximately 25 metres from the existing road edge of the Greensborough Bypass as shown in Figure 9-119.

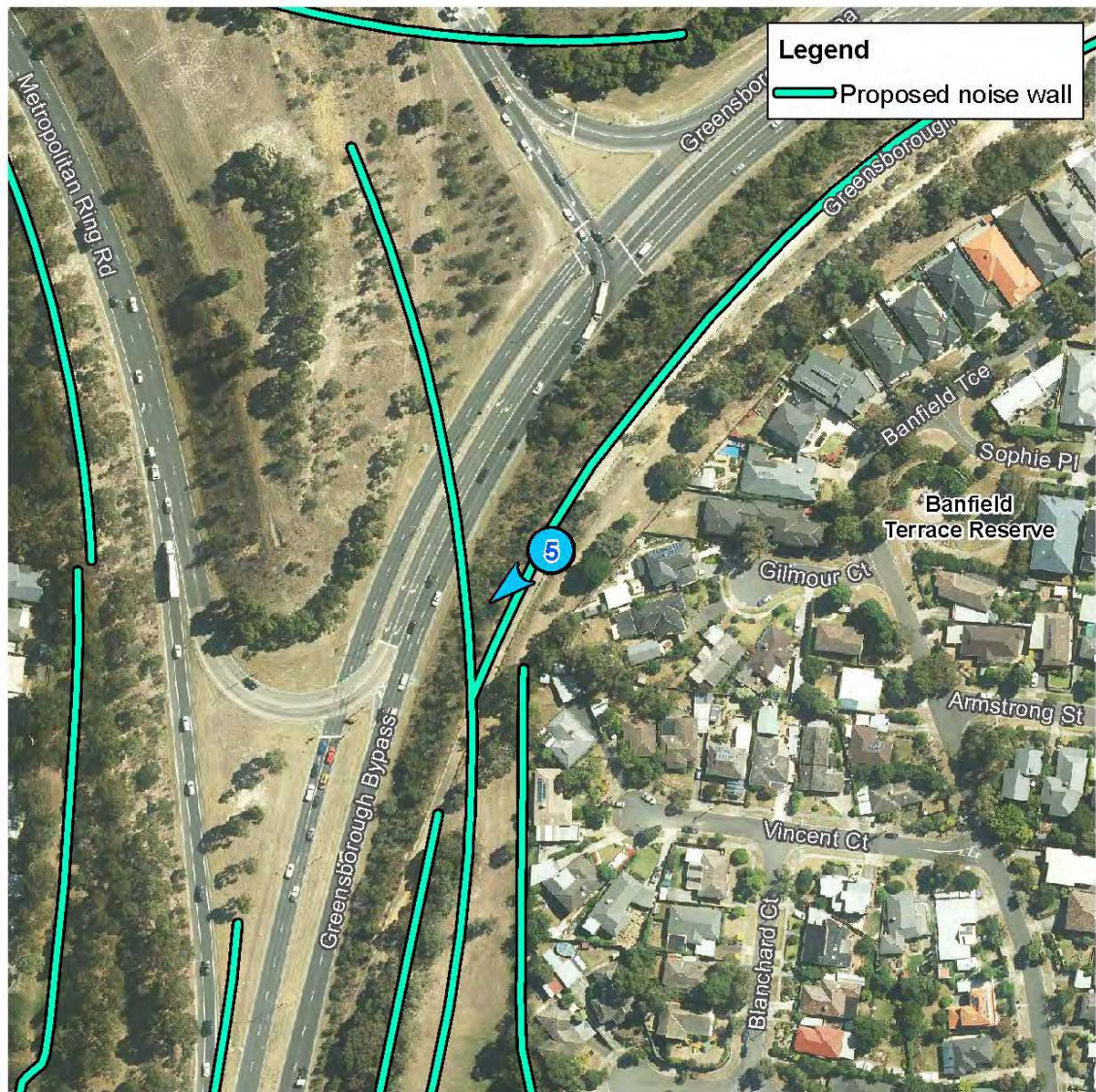


Figure 9-119 VP5 – Location plan

The current view from this location is of established native trees in the background, a steep vegetated embankment filtering views to the Greensborough Bypass in the middle ground and a shared use path in the foreground as shown in Photo 9-49.



Photo 9-49 VP5 – Existing view looking south-west

This is a road edge landscape setting in which the established vegetation is an obvious feature.

Proposed change

The proposed noise wall would be located approximately three metres from the viewpoint. The existing vegetation would be removed on the roadside of the shared use path. The noise wall at this location would be approximately eight metres high.

Landscaping would be proposed between this viewpoint and the proposed noise wall as shown in Figure 9-120.

Assessment

As a result of the project, the view would be towards the proposed eight metre high noise wall with landscaping establishing between the shared use path and the proposed noise wall.

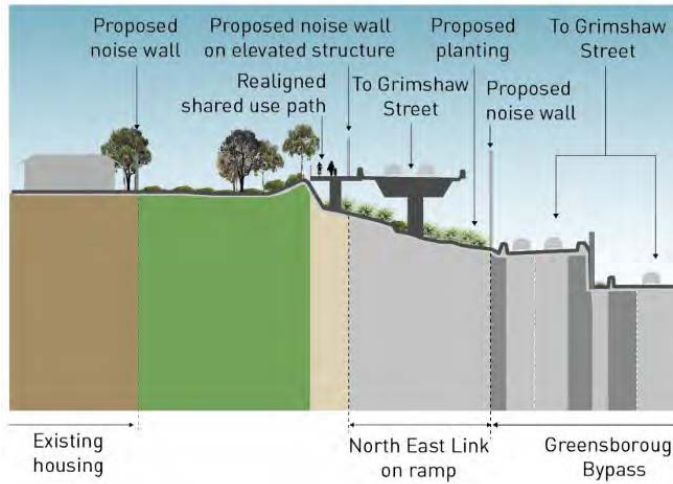


Figure 9-120 VP5 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed eight metre high noise wall would be visually dominant, seen by shared use path users and there would be a significant visual change in the landscape, although viewer numbers would be medium.
- Year 10 – **Medium to low**, as the landscaping would screen the proposed noise wall and the landscape setting would be visually different from the existing landscape.

9.3.6 Viewpoint 6 – Open space adjacent to Sellars Street, Watsonia North

Viewpoint 6 is located at the reserve on the western side of the Greensborough Bypass, adjacent to the existing Yando Street underpass under the Greensborough Bypass.

This viewpoint is located approximately 95 metres from the existing road edge as shown in Figure 9-121.

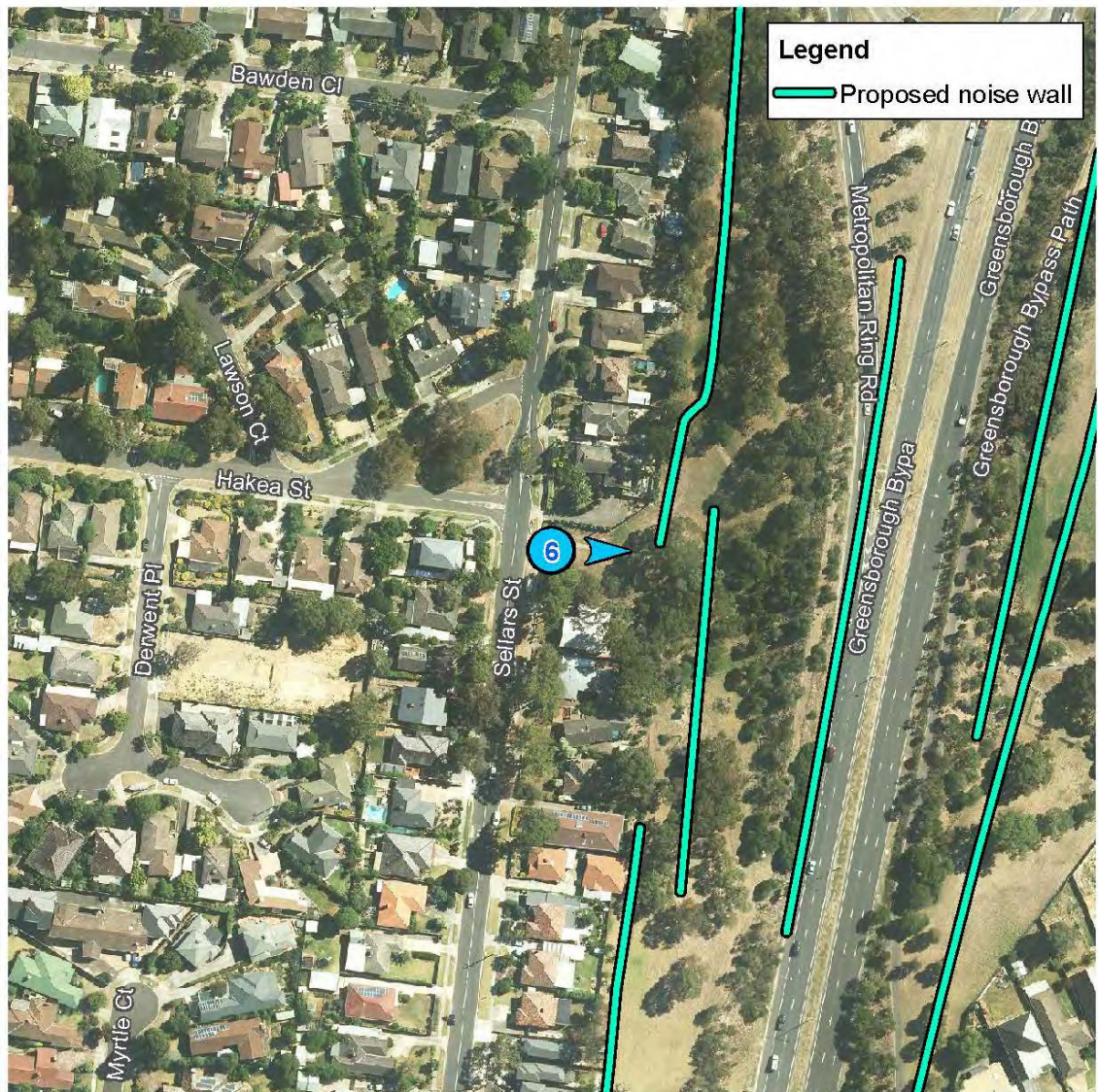


Figure 9-121 VP6 – Location plan

The current view from this location consists of dense native vegetated embankments in the background and a concrete drain that forms the Yando Street underpass with a shared use path in the foreground as shown in Photo 9-50.



Photo 9-50 VP6 – Existing view looking east

This is a natural reserve landscape setting in which the existing concrete pedestrian underpass is an obvious but minor element.

Proposed change

The proposed noise wall would be located approximately 50 metres from the viewpoint. The existing vegetation would be removed. The noise wall in this location would be approximately 10 metres high. The proposed shared use path would run north-south in front of the noise wall.

Landscaping would be proposed between this viewpoint and the proposed noise wall as shown in Figure 9-122.

Assessment

As a result of the project, the view would be towards a new 10 metre high noise wall with landscaping establishing between the shared use path and proposed noise wall. The below section is in the vicinity of this viewpoint.

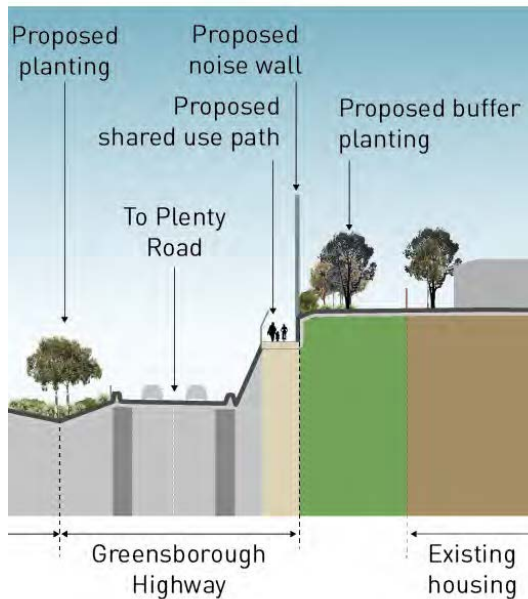


Figure 9-122 VP6 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed 10 metre high noise wall would be visually dominant, there would be a significant visual change in the landscape and viewer numbers would be medium. The open space in the foreground is retained and affords additional landscape opportunities.
- Year 10 – **Low**, as the landscaping would screen the proposed noise wall and the landscape setting would be similar to the existing landscape.

9.3.7 Viewpoint 7 – Greensborough Bypass approximately 150 metres north of Grimshaw Street intersection

Viewpoint 7 is located on the Greensborough Bypass between the Kempston Street overpass and Grimshaw Street. The viewpoint in this location is located approximately two metres from the existing Greensborough Bypass road edge as shown in Figure 9-123.

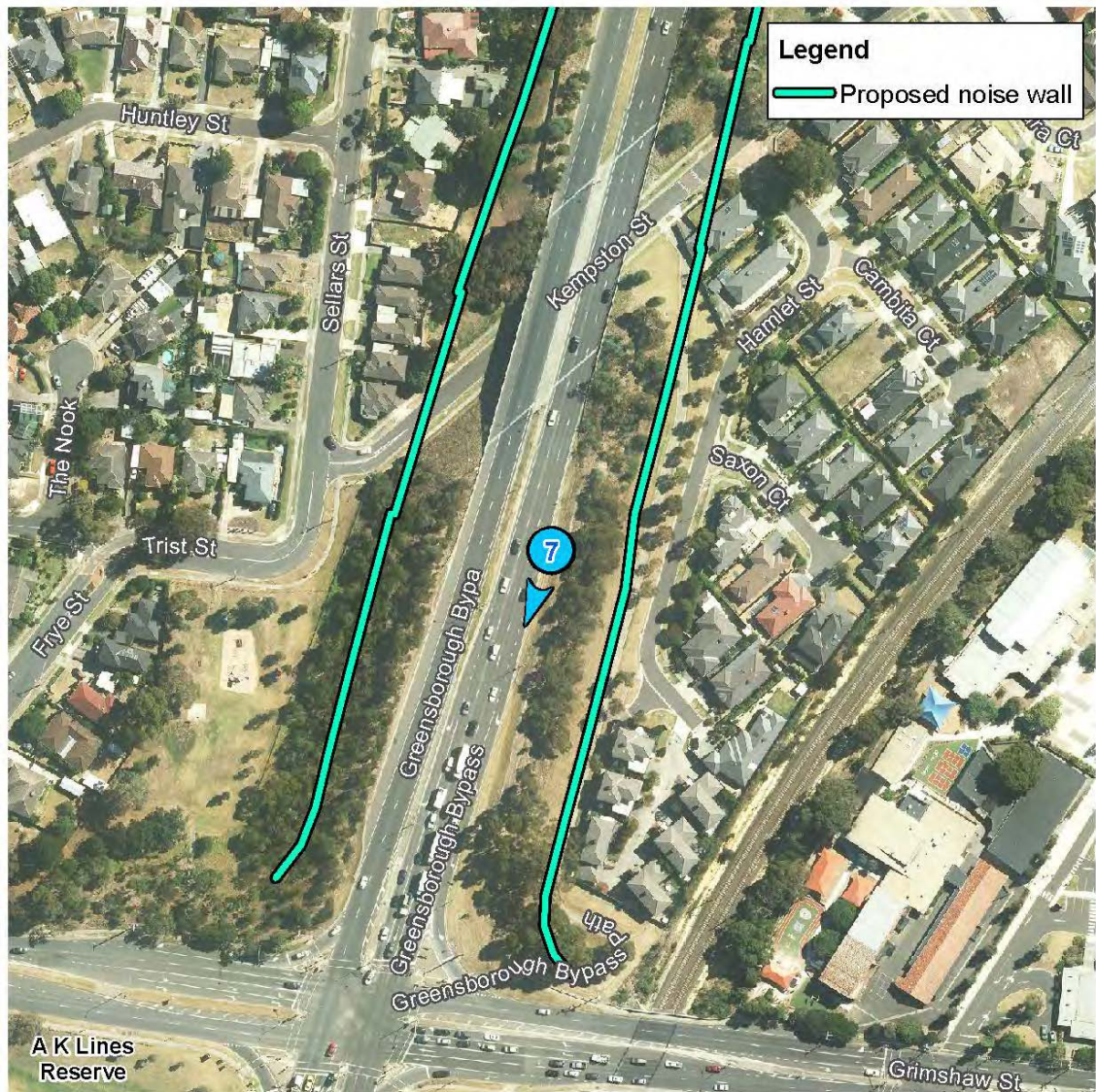


Figure 9-123 VP7 – Location plan

The current view from this location is of established native shrubs located either side of the road corridor on grassed embankments, three lanes of traffic in each direction with a grassed median as shown in Photo 9-51.



Photo 9-51 VP7 – Existing view looking south-west

This is a major road corridor where the road infrastructure is an obvious element.

Proposed change

This viewpoint is located approximately 140 metres from the proposed Grimshaw Street interchange and approximately 25 metres from the proposed noise walls. The road corridor would be widened and the vegetation and embankments removed. The proposed noise walls in this location would be approximately seven metres high.

Assessment

As a result of the project, the view would be towards the new Grimshaw Street interchange, additional lanes in each direction, an elevated interchange over Greensborough Bypass with proposed seven metre high noise walls both sides.

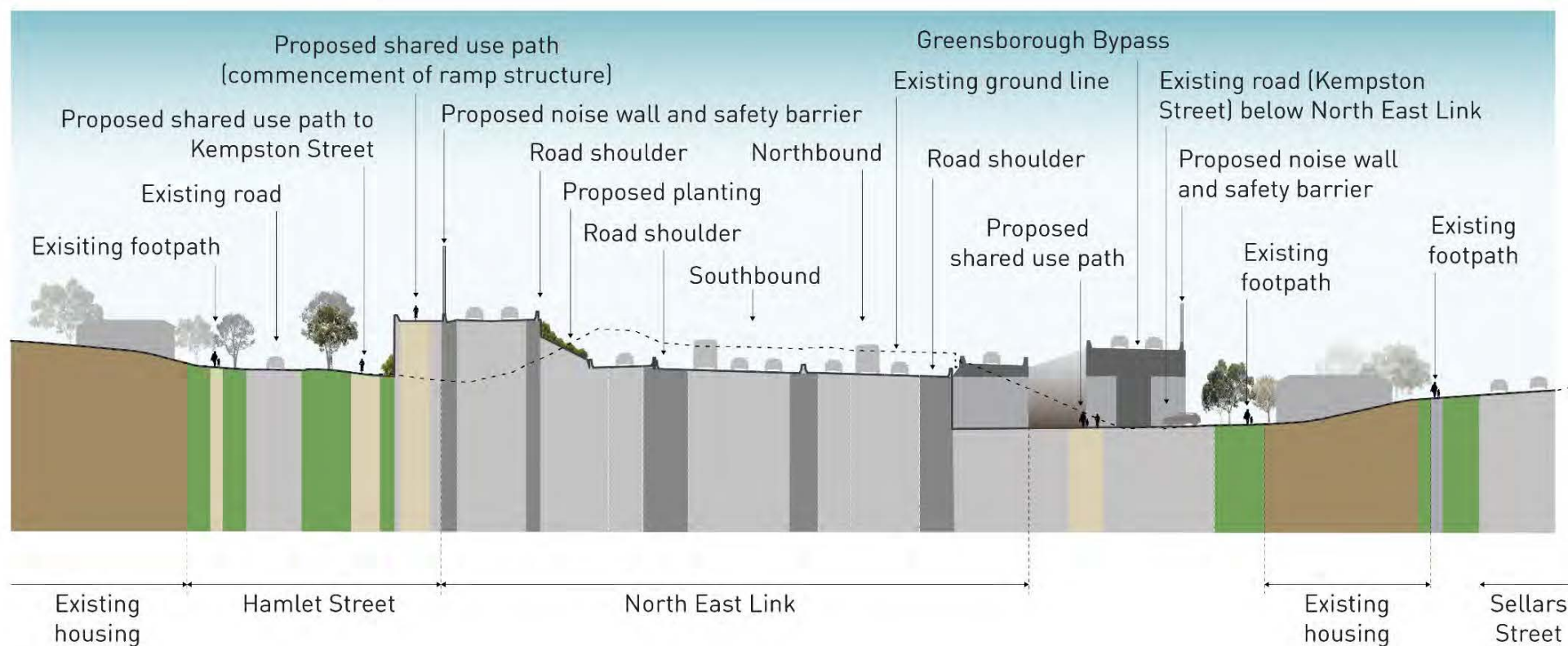


Figure 9-124 VP7 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Low**, as the proposed 10 metre high noise wall would be visually dominant and there would be significant visual change in the landscape although the viewer sensitivity of the driver is assessed as low.

9.3.8 Viewpoint 8 – the Corner Hamlet Street and Saxon Court, Greensborough

Viewpoint 8 is located at the corner of Hamlet Street and Saxon Court in Greensborough. This viewpoint is located approximately 50 metres from the existing road edge as shown in Figure 9-125.



Figure 9-125 VP8 – Location plan

The current view from this location is of established native vegetation and residential properties in the background, and shared use path and semi-mature street trees in the foreground as shown in Photo 9-52.



Photo 9-52 VP8 – Existing view looking south-west

Proposed change

The proposed noise wall would be located approximately 20 metres from the viewpoint. The existing vegetation would be removed. The proposed noise wall at this location would be approximately seven metres high with a shared use path in front.

Landscaping would be proposed between this viewpoint and the proposed shared use path as shown in Figure 9-127.

Assessment

As a result of the project, the view would be towards a new seven metre high noise wall with landscaping establishing between the shared use path and the existing road.



Figure 9-126 VP8 – Photomontage Year 0



Figure 9-127 VP8 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed seven metre high noise wall would be visually dominant and there would be a significant visual change in the landscape although viewer numbers would be medium in this location.
- Year 10 – **Medium**, as the proposed seven metre high noise wall would be partially screened by the established vegetation, however if creepers were to be established on and along the noise wall the appearance would be softened but visually prominent. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.3.9 Viewpoint 9 – AK Lines Reserve, south-west of junction between Grimshaw Street and Greensborough Road

Viewpoint 9 is located at the carpark of AK Lines Reserve adjacent to the playing field. This viewpoint is located approximately 185 metres from the existing road edge as shown in Figure 9-128.



Figure 9-128 VP9 – Location plan

The current view from this location is of established native trees in the background, Greensborough Road on a grassed embankment in the middle ground and a grassed oval in the foreground as shown in Photo 9-53.



Photo 9-53 VP9 – Existing view looking north-east

Proposed change

The proposed noise wall would be located approximately 160 metres from the viewpoint. The existing vegetation would be removed. The proposed noise wall would be approximately five metres high in this location with a shared use path in front.

Landscaping would be proposed between this viewpoint and the shared use path where there is space as shown in Figure 9-130.

Assessment

As a result of the project, the view would be towards the proposed five metre high noise wall with landscaping establishing in front of the noise wall, where there is space, and shared use path as shown in Figure 9-129.



Figure 9-129 VP9 – Photomontage Year 0

At year 10 the landscaping would establish and filter views to the proposed noise wall as shown in Figure 9-130.



Figure 9-130 VP9 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed five metre high noise wall would be visually prominent, seen by users of the reserve and there would be a significant visual change in the landscape. Viewer sensitivity would be rated as medium.
- Year 10 – **Medium to low**, as the landscaping would filter views to the proposed noise wall where there is space available for landscaping.

9.3.10 Viewpoint 10 – Greensborough Road, north of Teresa Street

Viewpoint 10 is located at the footpath along Greensborough, 10 metres north of Teresa Street in Greensborough. This viewpoint is located approximately 77 metres from the edge of Greensborough Bypass as shown in Figure 9-131.

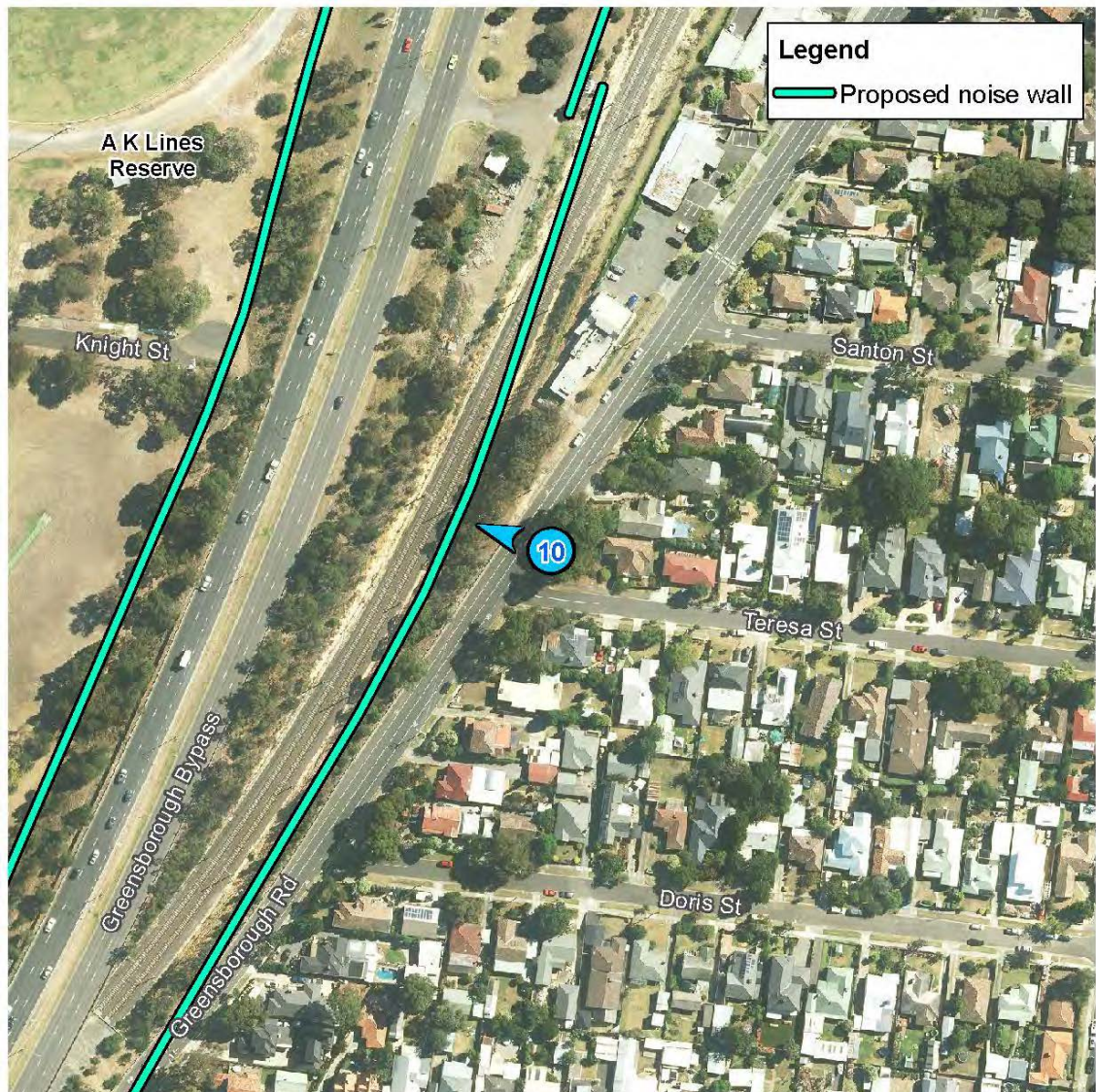


Figure 9-131 VP10 – Location plan

The current view from this location is of established native trees and shrubs along the rail corridor in the background and Greensborough Road in the foreground as shown in Photo 9-54.



Photo 9-54 VP10 – Existing view looking north-west

Proposed change

The proposed shared use overpass with switchback would be located approximately 15 metres from the viewpoint with a proposed noise wall behind. The existing vegetation would be removed. The proposed shared use overpass in this location would be approximately 10 metres high and the proposed noise wall would be approximately seven metres high. There is no room for landscaping in this location.

Assessment

As a result of the project, the view would be towards the proposed 10 metre high shared use overpass with a seven metre high noise wall behind.

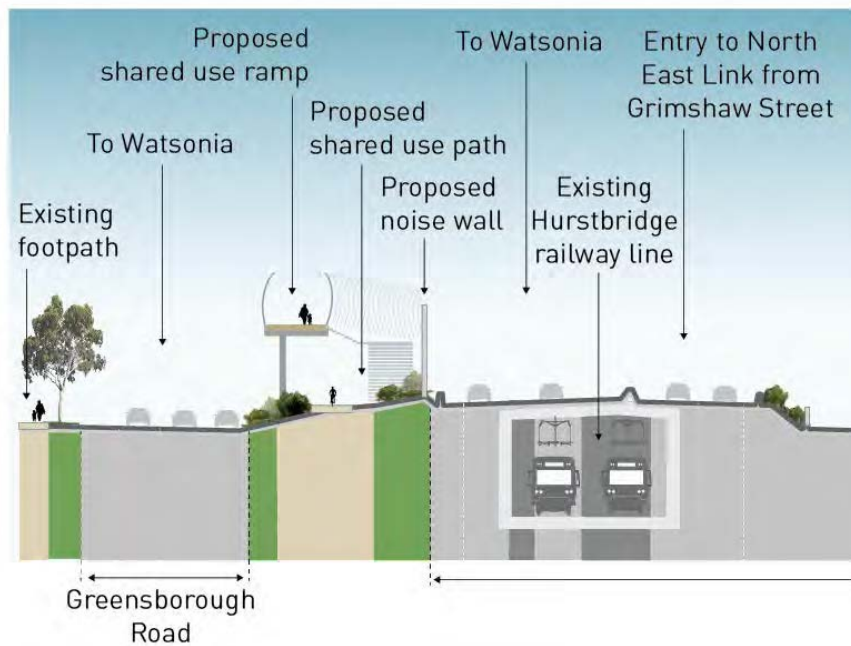


Figure 9-132 VP10 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Medium**, as the new 10 metre high shared use overpass with switchback would be visually dominant and there would be significant visual change in the landscape, although viewer numbers would be rated as medium. In addition, the design of the shared use overpass would be guided by the project's Urban Design Strategy which requires structures to be well designed, complement the surrounding area, and consider sensitive interfaces.

9.3.11 Viewpoint 11 – Intersection of transmission line corridor and Frensham Road, Watsonia

Viewpoint 11 is located at the intersection of a transmission line corridor and Frensham Road, Watsonia. This viewpoint is located approximately 245 metres from the existing timber noise wall as shown in Figure 9-133.

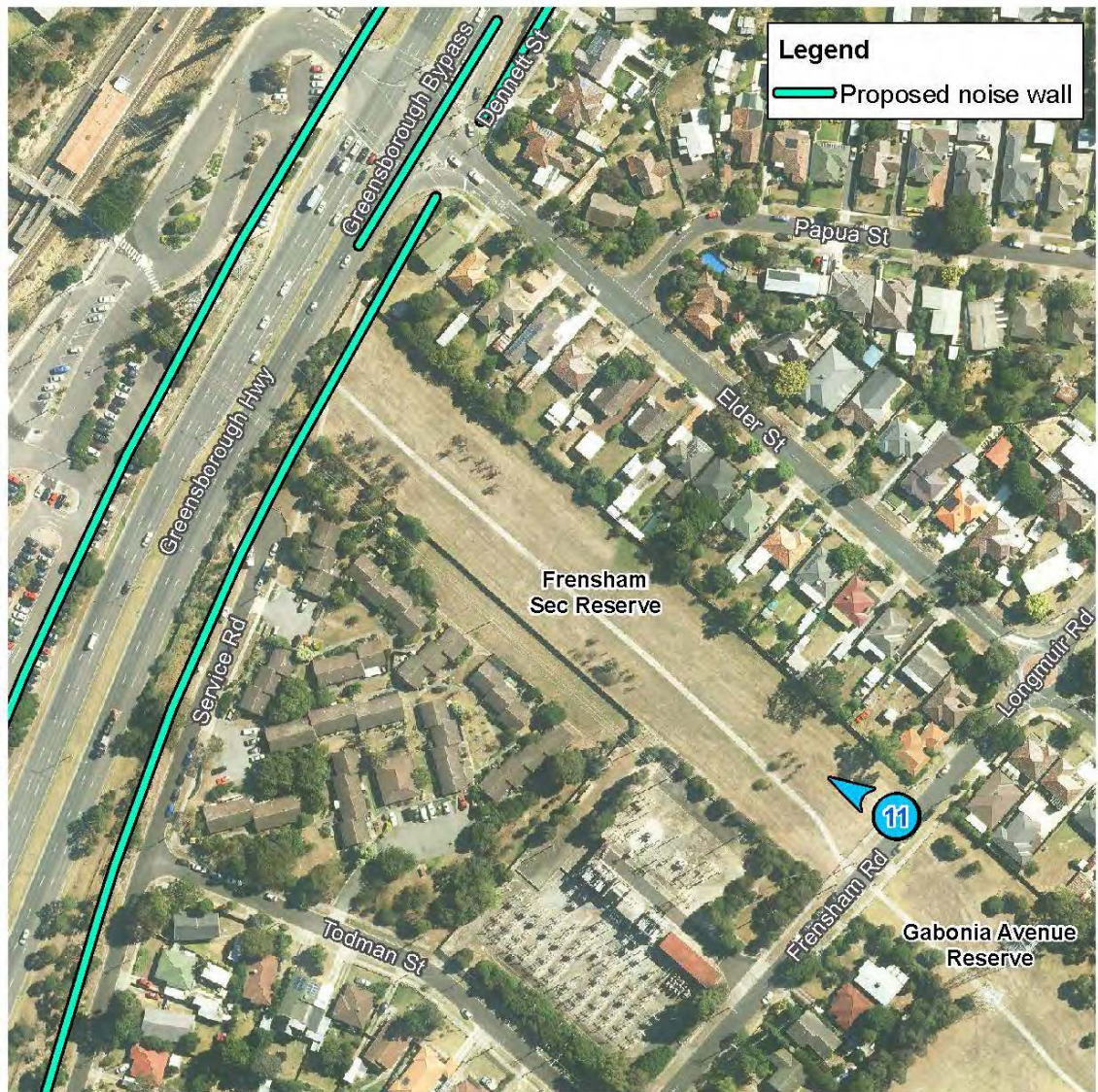


Figure 9-133 VP11 – Location plan

The current view from this location is of a timber noise wall and large shrubs in the background, overhead transmission lines and towers in the middle ground and open space with shared use path and low scattered trees in the foreground as shown in Photo 9-55. The existing noise wall in this location is approximately 2.5 metres high.



Photo 9-55 VP11 – Existing view looking north-west

This is a reserve setting where the transmission towers are an obvious and dominant element.

Proposed change

The proposed shared use overpass would be located approximately 125 metres from the viewpoint. Two transmission towers would be relocated adjacent to the existing towers with a proposed noise wall behind. The proposed shared use overpass in this location would be approximately 10 metres high and the proposed noise wall would be approximately eight metres high.

Landscaping would be proposed to the north and south of the reserve along the existing residential fence lines.

Assessment

As a result of the project, the view would be towards the proposed 10 metre high shared use overpass to the south of the reserve and relocated transmission towers with an eight metre high noise wall behind. Landscaping would be establishing behind the shared use overpass and along the northern boundary of the reserve.

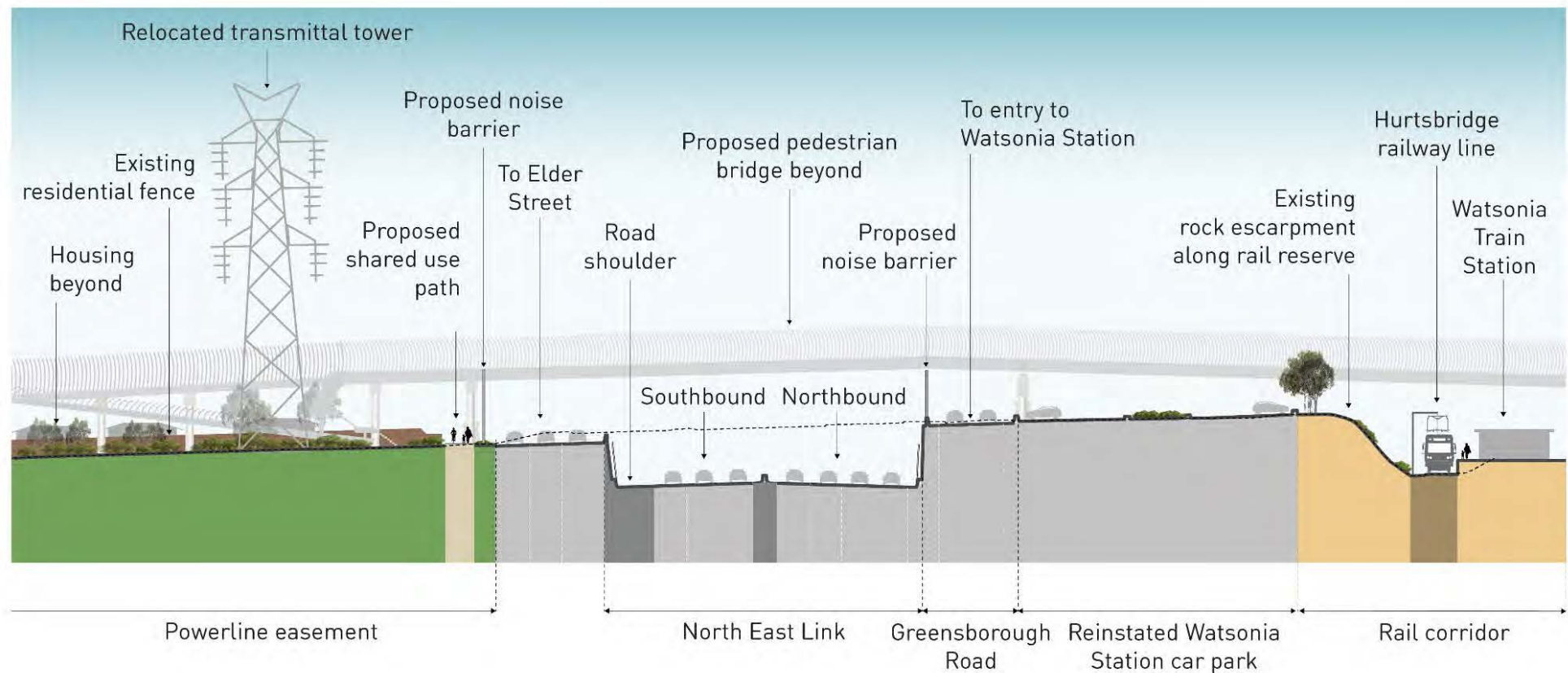


Figure 9-134 VP11 – Landscape treatment section view south

At this distance, the visual impact is assessed as:

- Year 0 – **High to medium**, as the proposed 10 metre high shared use overpass, relocated closer to this viewpoint transmission towers and proposed eight metre high noise wall would be visually prominent and there would be a significant visual change.
- Year 10– **Medium**, as the landscaping would partially screen the noise walls and the shared use overpass, and the transmission towers would remain dominant elements in the landscape. In addition, the design of the shared use overpass would be guided by the project's Urban Design Strategy which requires structures to be well designed, complement the surrounding area, and consider sensitive interfaces.

9.3.12 Viewpoint 12 – Power line easement, Watsonia

Viewpoint 12 is located along the shared use path within the power line easement reserve, Watsonia. This viewpoint is located approximately 115 metres from the existing timber noise wall as shown in Figure 9-135.

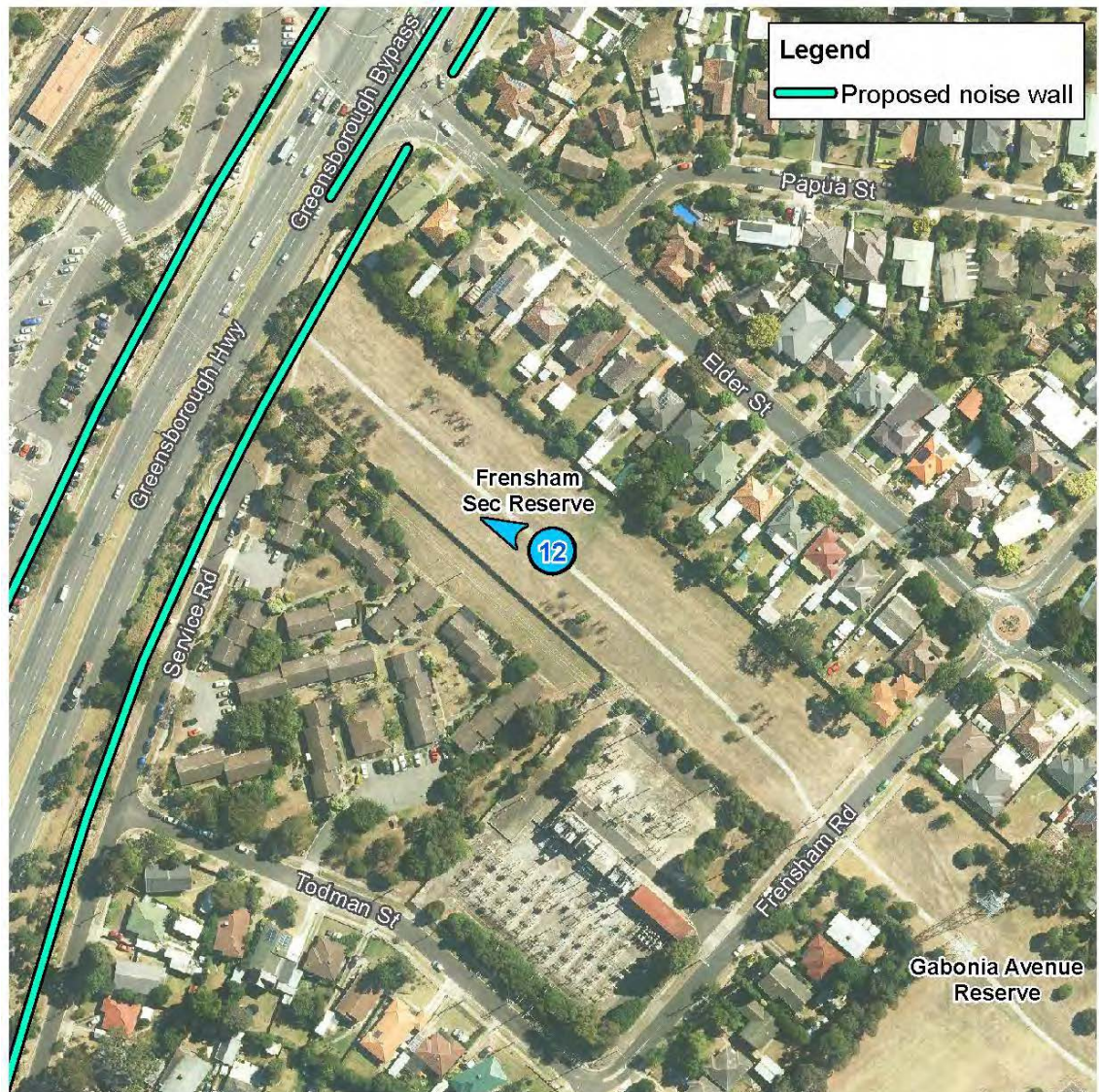


Figure 9-135 VP12 – Location plan

The current view from this location is of transmission towers in the background, dense native shrubs in the middle ground with a shared use path running through an open grassed reserve in the foreground. There are scattered small deciduous trees throughout the reserve. There is an existing timber fence to the south of the reserve as shown in Photo 9-56.



Photo 9-56 VP12 – Existing view looking north-west

This is a utility/public reserve where the transmission towers are an obvious element.

Proposed change

The proposed shared use overpass would be located approximately 17 metres from the viewpoint and the relocated transmission towers would be located approximately 85 metres from the viewpoint. The proposed noise wall would be located approximately 108 metres from the viewpoint. The existing vegetation would be removed. The shared use path in this location would be approximately 10 metres high and the noise wall approximately eight metres high.

Landscaping would be proposed adjacent to the existing fence lines to the north and south of the reserve.

Assessment

As a result of the project, the view would be towards the proposed 10 metre high shared use path, relocated transmission towers and proposed eight metre noise wall behind with landscaping establishing either side as shown in Figure 9-136.

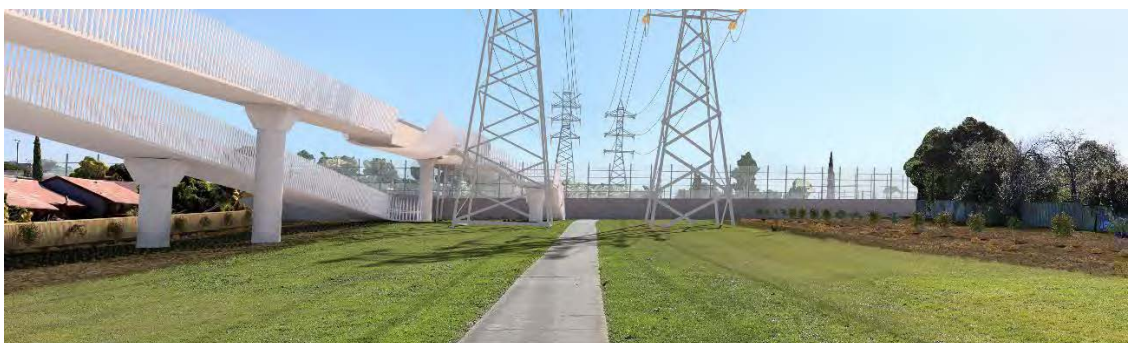


Figure 9-136 VP12 – Photomontage Year 0

At year 10 the proposed landscaping would partially screen the noise walls as shown in Figure 9-137.



Figure 9-137 VP12 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High to medium**, as the proposed shared use overpass, transmission towers relocated closer to the viewpoint and proposed eight metre high noise wall would be visually dominant, seen by users of the shared use path and there would be significant visual change in the landscape.
- Year 10 – **Medium**, as the landscaping would partially screen the noise walls, and the shared use path and transmission towers would remain dominant elements in the landscape. In addition, the design of the shared use overpass would be guided by the project's Urban Design Strategy which requires structures to be well designed, complement the surrounding area, and consider sensitive interfaces.

9.3.13 Viewpoint 13 – Watsonia railway reserve

Viewpoint 13 is located within the Watsonia railway reserve at the western end of the existing pedestrian overpass. This viewpoint is located approximately 115 metres from the existing Greensborough Bypass road edge as shown in Figure 9-138.

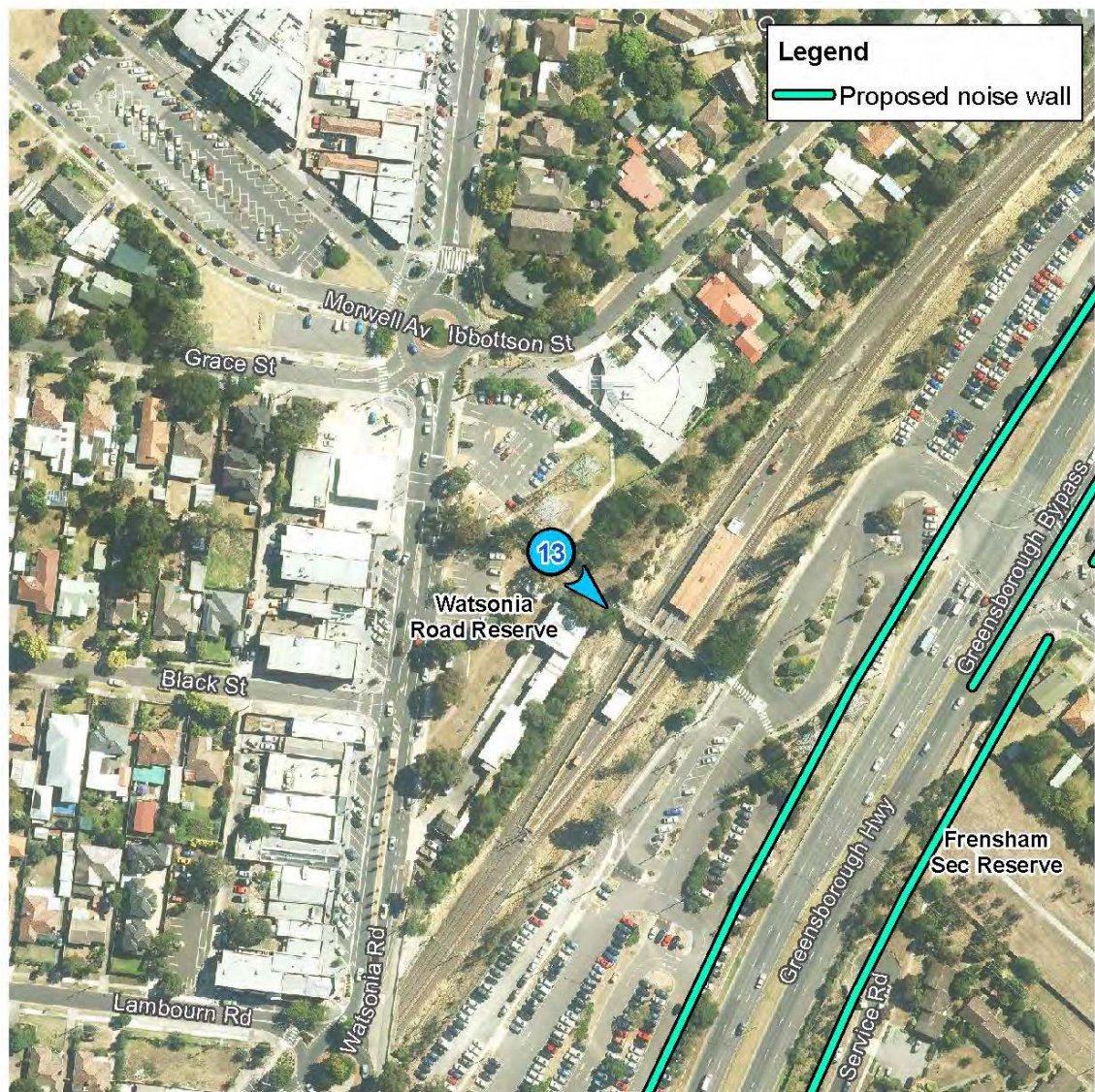


Figure 9-138 VP13 – Location plan

The current view from this location is of large transmission towers in the background with a shared use bridge over the rail line in the foreground surrounded by established vegetation as shown in Photo 9-57.



Photo 9-57 VP13 – Existing view looking south-east

This a modified landscape where the transmission towers are an obvious element.

Proposed change

The proposed shared use overpass would be located approximately four metres from the viewpoint and the proposed noise wall approximately 110 metres from the viewpoint, as shown in Figure 9-139. The transmission towers would be relocated behind the noise wall and there would be some vegetation loss in the foreground. The shared use overpass would be approximately eight metres high and the noise wall in this location would be approximately five metres high.

Assessment

As a result of the project, the view would be towards the proposed eight metre high shared use overpass and the five metre high noise wall.

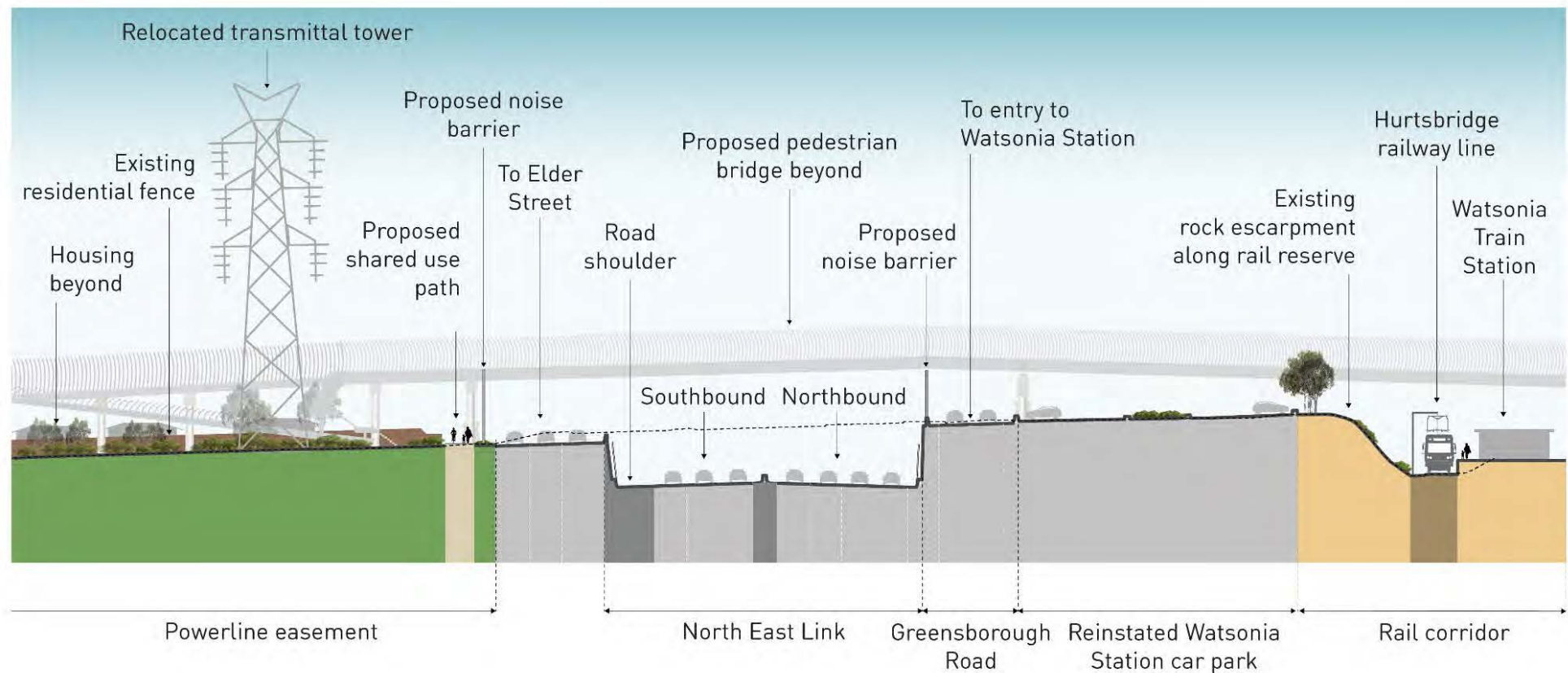


Figure 9-139 VP13 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Medium to low**, as the proposed five metre high noise wall and shared use overpass would create additional built form however this would be balanced by the relocation of the transmission towers to the east. In addition, the design of the shared use overpass would be in accordance with the project's Urban Design Strategy which requires structures to be well designed, complement the surrounding area, and consider sensitive interfaces.

9.3.14 Viewpoint 14 – Watsonia Road north of the Watsonia Road/Lambourne Road/Devonshire

Viewpoint 14 is located at the Watsonia railway station overpass in Watsonia, adjacent to Watsonia Road shopping precinct. This viewpoint is located approximately 15 metres from the existing railway station car park as shown in Figure 9-140.

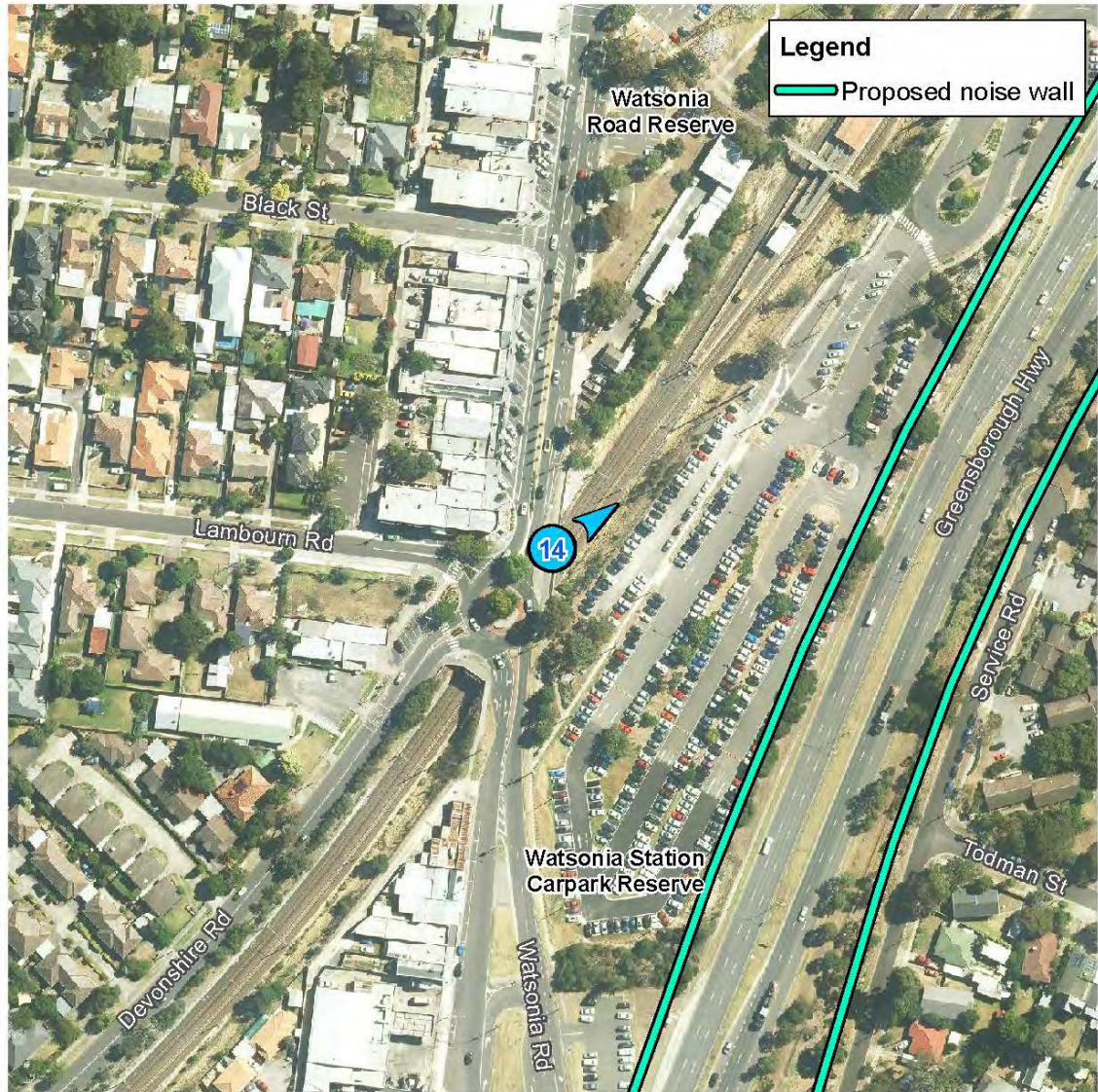


Figure 9-140 VP14 – Location plan

The current view from this location is of establish trees and residential properties in the background, transmission towers, overhead power lines and car park in the middle ground and a train line and steep bare earth embankment in the foreground as shown in Photo 9-58.



Photo 9-58 VP14 – Existing view looking north-east

This is an urban landscape where the built form and infrastructure are obvious elements.

Proposed change

This viewpoint is located approximately 45 metres from the proposed Watsonia railway station car park (given the commitment made to maintaining existing levels of car parking it has been assumed a multi-level car park would be required) and approximately 135 metres from the proposed shared use overpass. The existing transmission towers would be relocated to the south-east, as shown in Figure 9-141. The multi-level car park has been assumed to be two levels with an approximate height of seven metres.

Assessment

As a result of the project, the view would be towards the proposed multi-level carpark and shared use overpass.

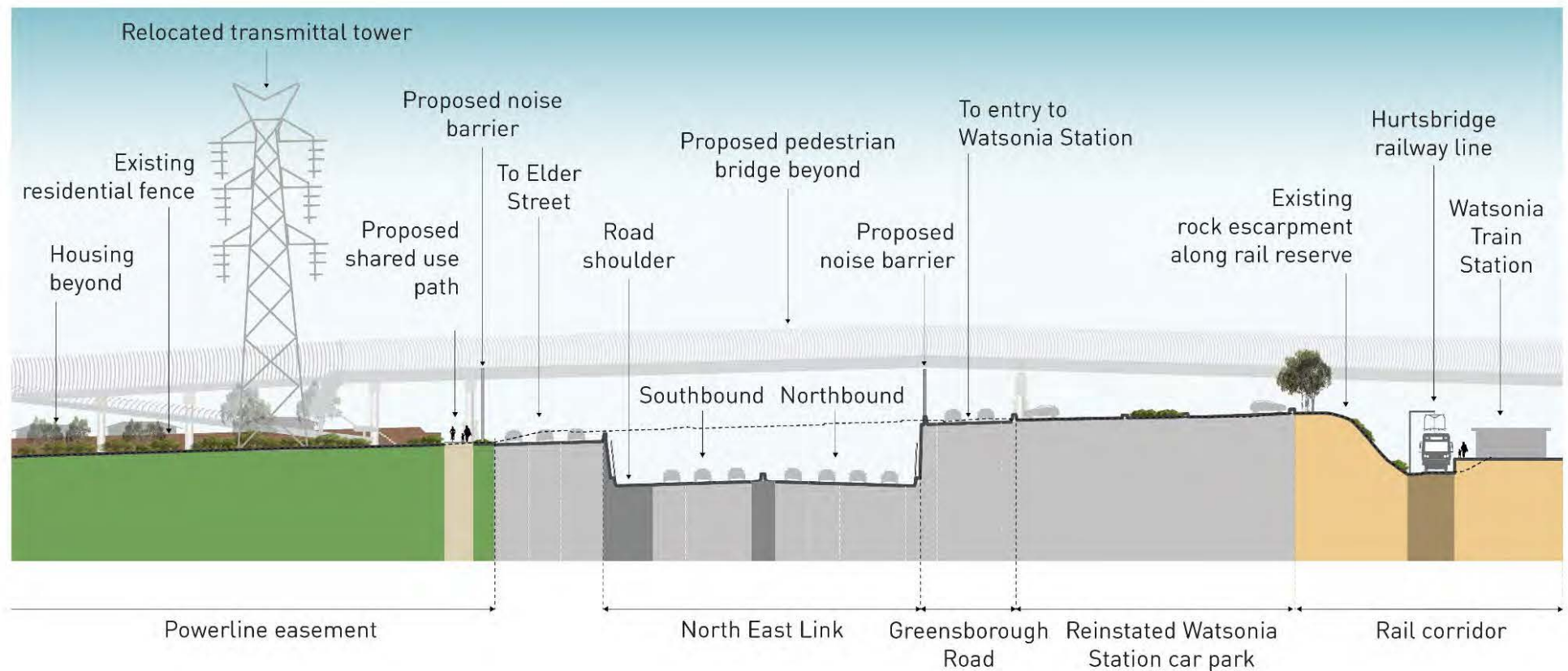


Figure 9-141 VP14 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Low**, as the proposed multi-level car park would be visually dominant but would not be out of place in the existing visually cluttered landscape setting. In addition, the design of the shared use overpass would be guided by the project's Urban Design Strategy which requires structures to be well designed, complement the surrounding area, and consider sensitive interfaces.

9.3.15 Viewpoint 15 – Service Road, Watsonia

Viewpoint 15 is located at the footpath along Service Road, adjacent to Greensborough Road, Watsonia. This viewpoint is located approximately 30 metres from the existing Greensborough Bypass road edge as shown in Figure 9-142.

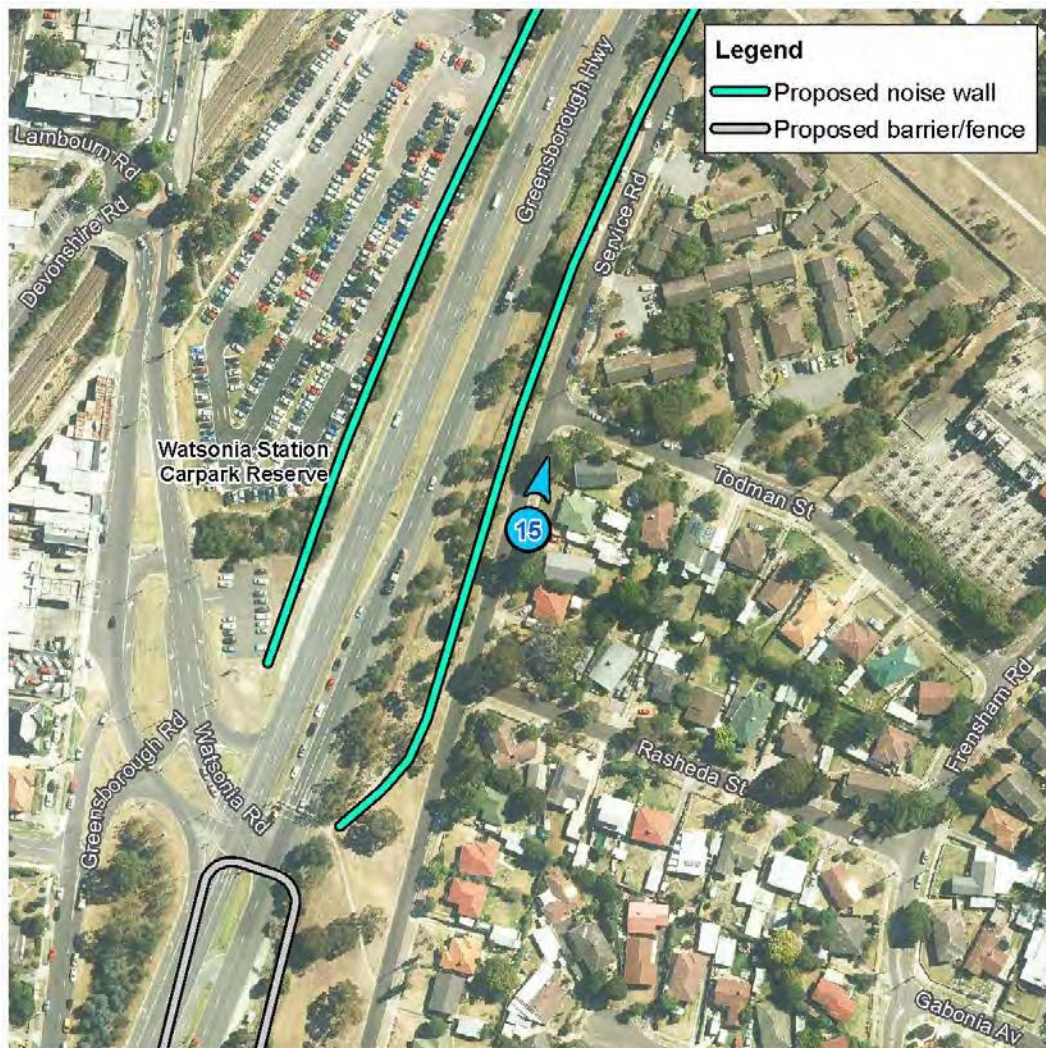


Figure 9-142 VP15 – Location plan

The current view from this location is of established native shrubs in the background with a vegetated embankment on the west, and suburban residential properties on the east in the foreground as shown in Photo 9-59.



Photo 9-59 VP15 – Existing view looking north-east

This is a suburban residential setting with the vegetated embankment a major element.

Proposed change

The proposed noise wall would be located approximately 15 metres from the viewpoint adjacent to Greensborough Bypass with a proposed shared use path in front, as shown in Figure 9-143. The existing vegetated embankment would be removed. The proposed noise wall in this location would be approximately six metres high. The proposed shared use overpass would be located approximately 185 metres from this viewpoint at the end of Service Road. The existing vegetation would be removed. The proposed shared use overpass would be approximately 10 metres high in this location.

Landscaping would be proposed between this viewpoint and the proposed noise wall.

Assessment

As a result of the project, the view would be towards the proposed six metre high noise wall with landscaping establishing between the shared use path and the proposed noise wall.



Figure 9-143 VP15 – Photomontage Year 0



Figure 9-144 VP15 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed noise wall would be visually dominant, and there would be significant visual change in the landscape although viewer numbers would be medium.
- Year 10 – **Medium to low**, as the landscaping would partially screen the lower half of the wall. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.3.16 Viewpoint 16 – Greensborough Road adjacent to Winsor reserve, south of Somers Avenue and Greensborough Road intersection

Viewpoint 16 is located at the footpath along Greensborough Road adjacent to Winsor reserve, south of Somers Avenue and Greensborough Road intersection. The viewpoint in this location is located directly adjacent to the existing Greensborough Road edge as shown in Figure 9-145.

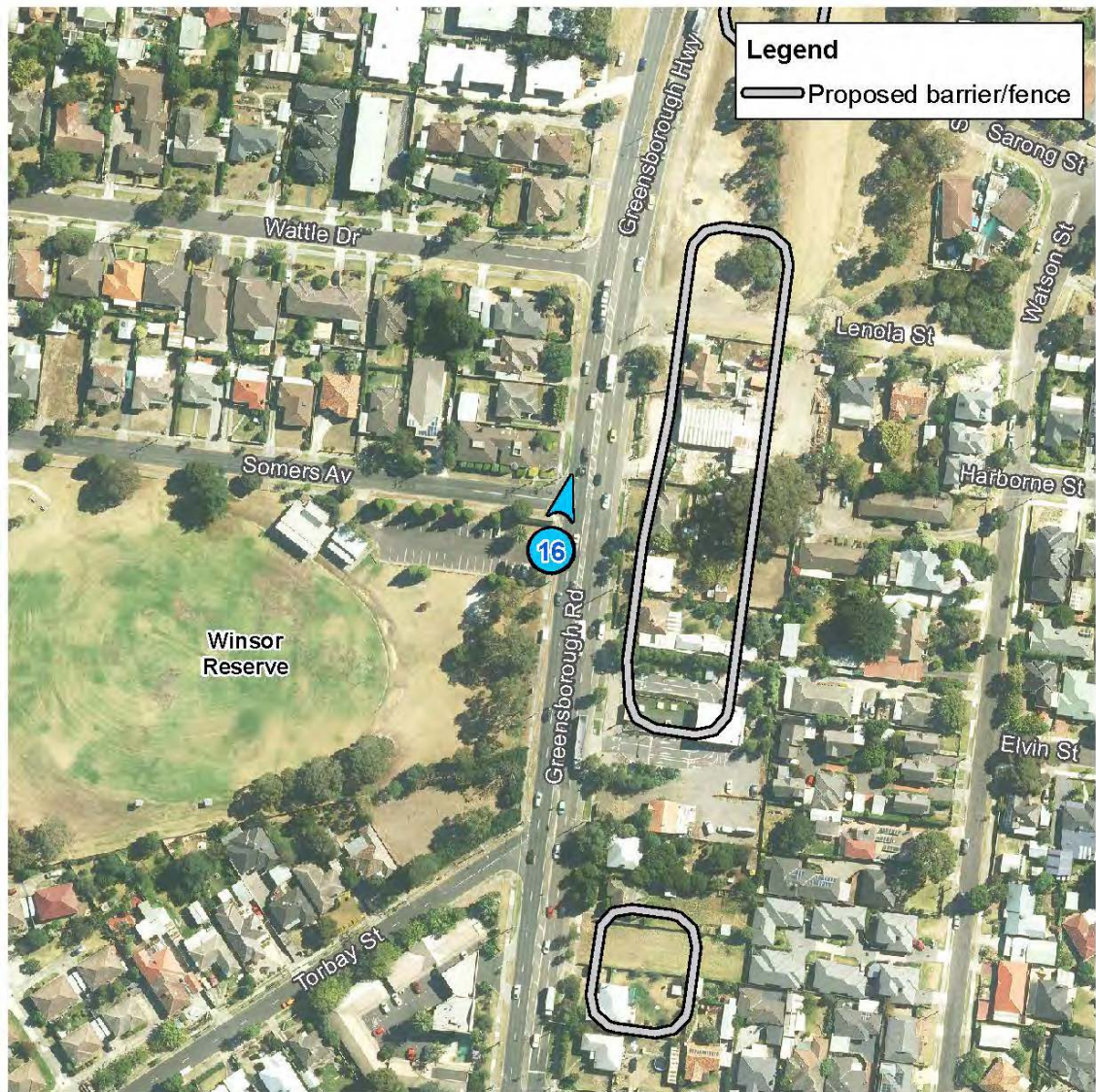


Figure 9-145 VP16 – Location plan

The current view from this location is of Greensborough Road with two lanes in each direction and suburban residential properties either side as shown in Photo 9-60.



Photo 9-60 VP16 – Existing view looking north-east

This is a major road corridor where the road infrastructure is an obvious element.

Proposed change

This viewpoint is located approximately 29 metres from the proposed anti-throw screen with the proposed shared use path in front, as shown in Figure 9-146. The existing properties on the east side of Greensborough Road would be removed. The anti-throw screen in this location would be approximately four metres high.

Assessment

As a result of the project, the view would be towards the proposed shared use path and four metre high anti-throw screen with landscaping establishing between the shared use path and proposed anti-throw screen.

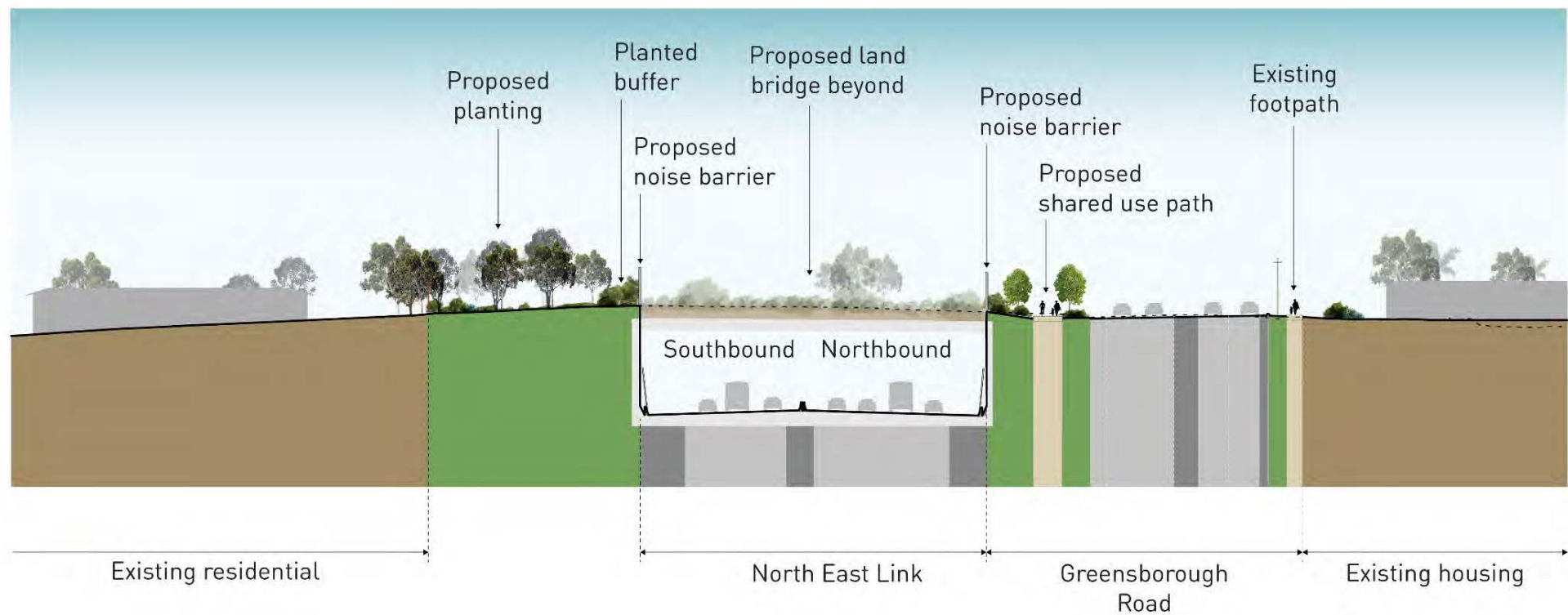


Figure 9-146 VP16 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Low**, as the proposed four metre high anti-throw screen would be visually dominant and there would be significant visual change in the landscape although the viewer sensitivity of the driver is assessed as low.
- Year 10 – **Negligible to positive**, as the landscape would screen the four metre anti-throw screen and the landscape setting would be improved.

9.3.17 Viewpoint 17 – Greensborough Road, adjacent to Simpson Barracks, Macleod

Viewpoint 17 is located at the footpath along Greensborough Road, adjacent to Simpson Barracks, Macleod. This viewpoint is located approximately two metres from the existing Greensborough Road edge as shown in Figure 9-147.

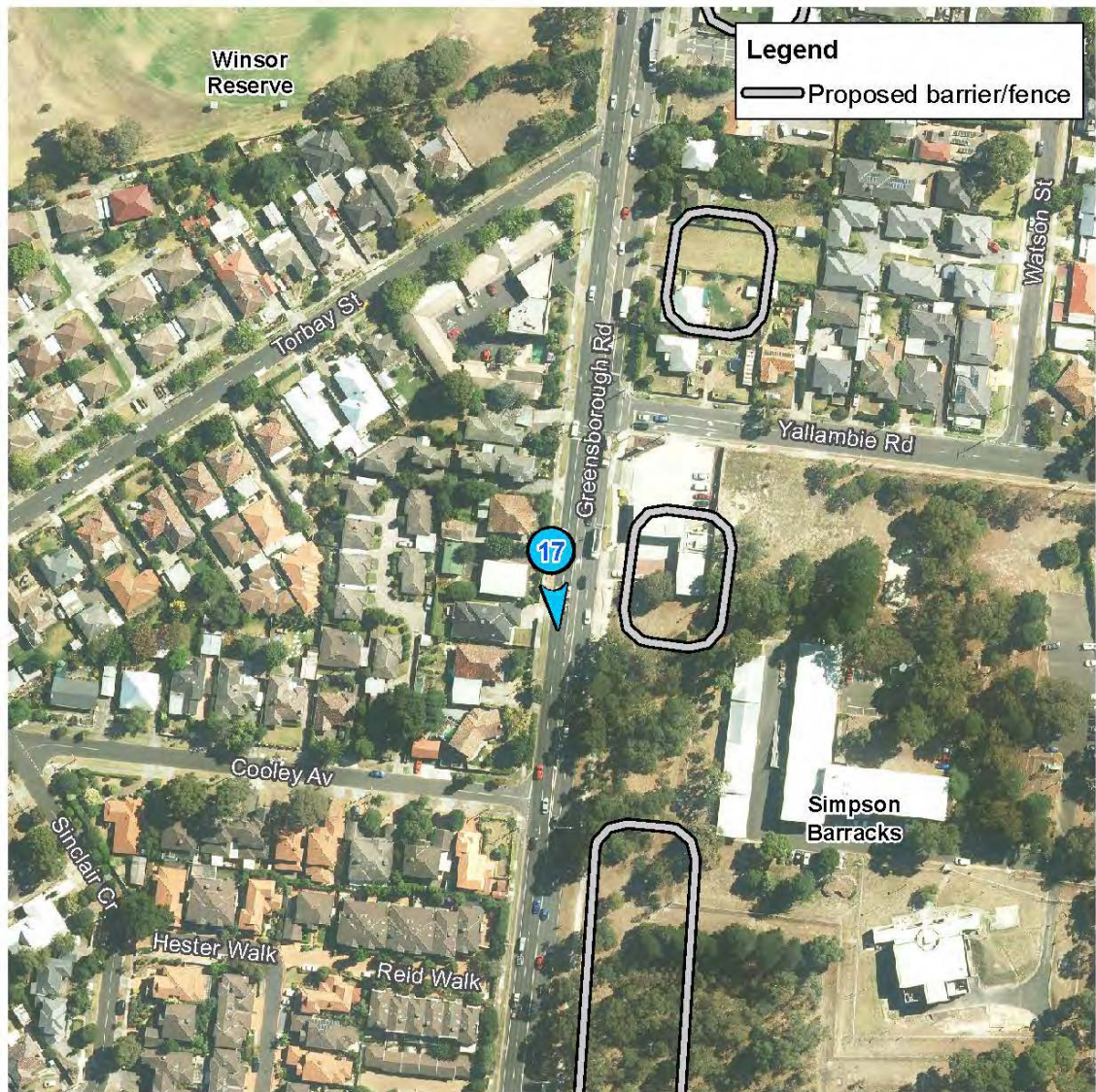


Figure 9-147 VP17 – Location plan

The current view from this location is of established native trees in the background and the four-lane Greensborough Road in the foreground adjacent to residential properties as shown in Photo 9-61.



Photo 9-61 VP17 – Existing view looking south-east

This is an urban landscape where the established vegetation and road corridor are obvious elements.

Proposed change

The proposed anti-throw screen would be located approximately 24 metres from the viewpoint and the proposed ventilation structure would be located 355 metres from the viewpoint. The existing vegetation would be removed. The anti-throw screen at this location would be approximately four metres high with a shared use path in front. The ventilation outlet at this location would be approximately 40 metres high and the ventilation building would be approximately 8 metres high.

Assessment

As a result of the project, the view would be towards the proposed four metre high anti-throw screen, 8 metre high ventilation building and 40 metre high ventilation outlet with landscaping establishing between the shared use path and anti-throw screen as shown in Figure 9-148.



Figure 9-148 VP17 – Photomontage Year 0

The proposed landscaping would filter views to the ventilation outlet at year 10 as shown in Figure 9-149.



Figure 9-149 VP17 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium**, as the proposed four metre high anti-throw screen, 8 metre high ventilation building and 40 metre high ventilation outlet would be visually dominant and require the removal of existing vegetation. This significant visual change would be given a low impact rating if only seen by road users. However as the footpath is also used by pedestrians and cyclists the sensitivity is increased and therefore given a medium level of visual impact. In addition if the Urban Design Strategy objectives are fulfilled some viewers may see the ventilation outlet as a positive element in the landscape.
- Year 10 – **Low to negligible**, as the landscaping would partially screen the anti-throw screen and filter views to the ventilation outlet and associated ventilation building.

9.3.18 Viewpoint 18 – Fairlie Avenue, Macleod

Viewpoint 18 is located along Fairlie Avenue looking towards Greensborough Road. This viewpoint is located approximately 115 metres from the edge of Greensborough Road as shown in Figure 9-150.



Figure 9-150 VP18 – Location plan

The current view from this location is of established exotic and native trees in the background, a concrete and chain mesh fence with signage in the middle ground and Greensborough Road in the foreground as shown in Photo 9-62.



Photo 9-62 VP18 – Existing view looking east

This is a suburban residential setting where the established trees in the nature strip are a major element and merge with the existing landscaping in the frontage of the residential properties. The established vegetation in Simpson Barracks is visible in the background.

Proposed change

The existing vegetation would be removed from the roadside and partially within Simpson Barracks.

Assessment

As a result of the project, the view would be towards landscape establishing between the shared use path and Simpson Barracks, as shown in Figure 9-151.

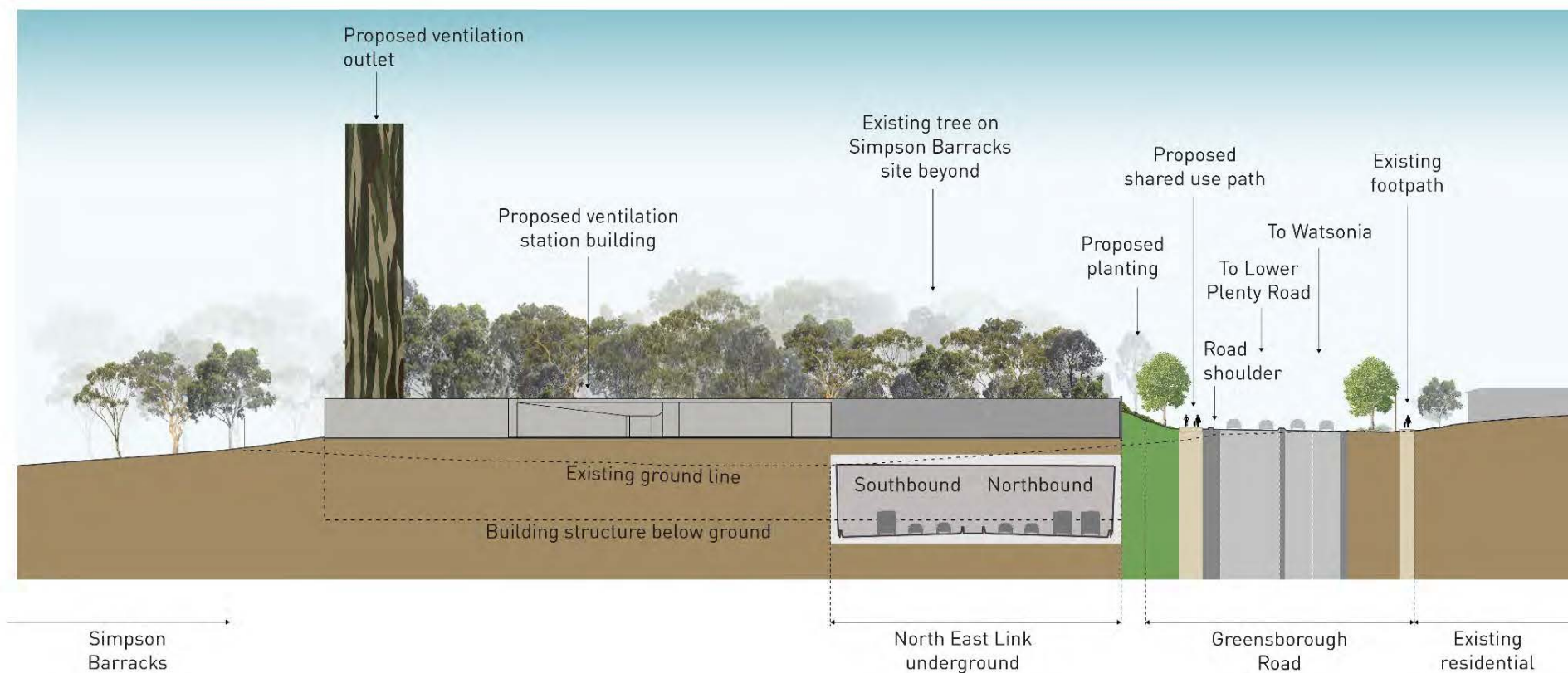


Figure 9-151 VP18 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Low**, as the removal of existing vegetation from Simpson Barracks would not be a significant visual change in the landscape from this distance and viewer numbers would be low. It is noted that from viewing locations closer to Simpson Barracks the visual impact would be higher.
- Year 10 – **Negligible**, as the landscape would have established and similar to the existing landscape.

9.3.19 Viewpoint 19 – Simpson Barracks

Viewpoint 19 is located on the footpath at the corner of Savage Road and Stevens Street within Simpson Barracks. This viewpoint is located approximately 274 metres from the existing Greensborough Road edge as shown in Figure 9-152.



Figure 9-152 VP19 – Location plan

The current view consists of established native trees on a grassed area sloping down in the background and a t-intersection and overhead power lines in the foreground as shown in Photo 9-63.



Photo 9-63 VP19 – Existing view looking west

This appears as a naturalistic landscape setting in which the existing vegetation is a major element.

Proposed change

The proposed ventilation structure would be approximately 160 metres and the proposed substation would be approximately 192 metres to the viewpoint, adjacent to the ventilation structure. The existing vegetation and some of the grassed area in the background would be removed. The proposed ventilation outlet would be approximately 40 metres high and the proposed ventilation building would be approximately eight metres high in this location. The ventilation outlet would be a long-term visually dominant element.

Assessment

As a result of the project, the view would be towards the 40-metre high ventilation outlet, eight metre high associated ventilation building and a substation with existing vegetation retained in the foreground, as shown in Figure 9-153.

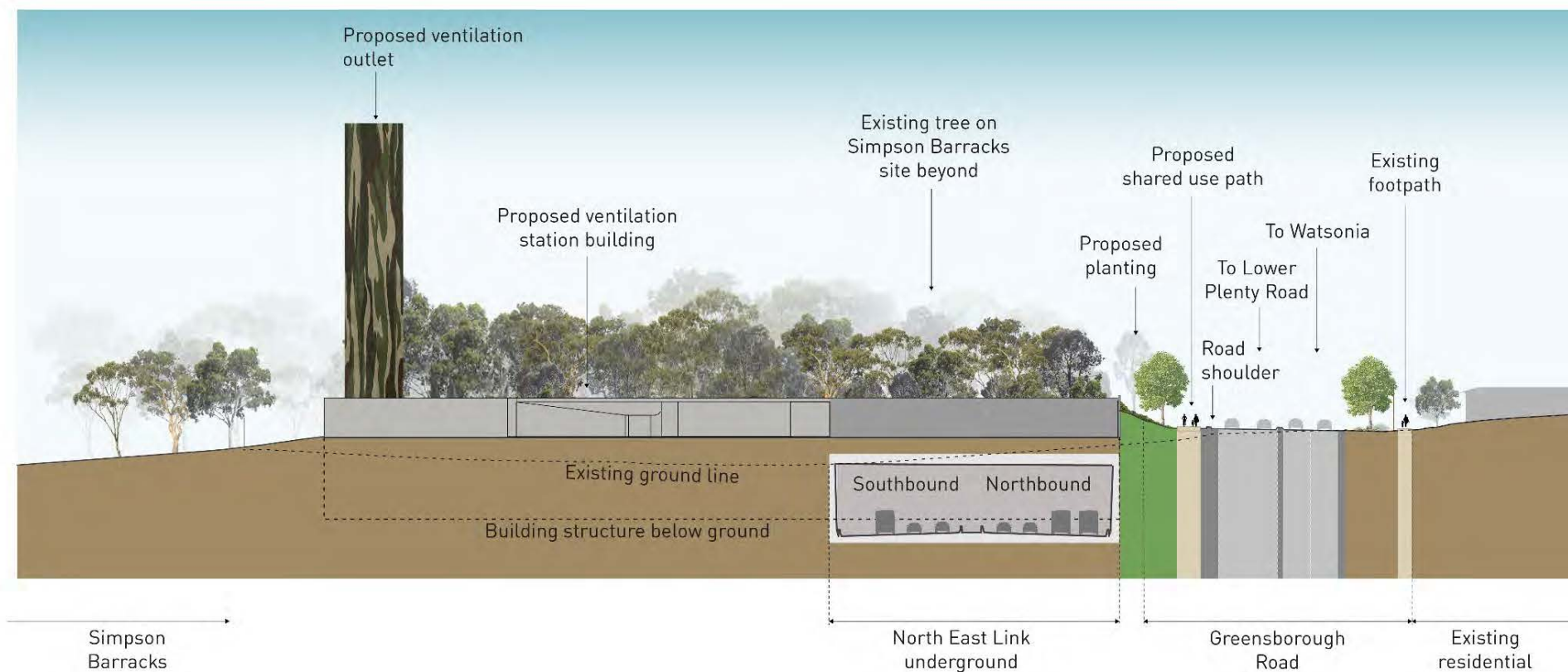


Figure 9-153 VP19 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Medium**, as the 40 metre high ventilation outlet would be visually dominant element and would significantly alter the existing viewpoint although viewer sensitivity would be medium. The existing vegetation in the foreground would screen the lower half of the ventilation outlet and associated ventilation building. In addition if the Urban Design Strategy objectives are fulfilled some viewers may see the ventilation outlet as a positive element in the landscape.

9.3.20 Viewpoint 20 – Strathallan Road, McLeod

Viewpoint 20 is located at the footpath of Strathallan Road, MacLeod, adjacent to Greensborough Road. This viewpoint is located approximately 110 metres from the existing Greensborough Road edge as shown in Figure 9-154.



Figure 9-154 VP20 – Location plan

The current view from this location is of established native vegetation in the background, Greensborough Road in the middle ground and a residential street grassed nature strips in the foreground as shown in Photo 9-64.



Photo 9-64 VP20 – Existing view looking east

This is a suburban residential landscape where the existing road corridor is a minor element.

Proposed change

The proposed road barrier and intersection would be located approximately 145 metres from the viewpoint and the proposed ventilation structure would be located approximately 190 metres from the viewpoint. The existing vegetation would be removed where the proposed intersection would be located. The road barrier in this location would be approximately 0.9 metres high, the proposed ventilation outlet would be approximately 40 metres high and the proposed ventilation building would be approximately eight metres high. Landscaping is proposed between the intersection and this viewpoint.

Assessment

As a result of the project, the view would be towards the proposed intersection with 0.9 metres high road barriers and the proposed 40 metre ventilation outlet as shown in Figure 9-155. The existing vegetation would screen the proposed eight metre ventilation building and would partially screen the proposed 40 metre ventilation outlet.



Figure 9-155 VP20 – Photomontage Year 0

At year 10 the proposed intersection and road barriers would still be visible and the landscaping would establish to soften the view to the intersection as shown in Figure 9-156.



Figure 9-156 VP20 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Low**, as the proposed intersection and road barriers would be visible at the end of the street and the proposed ventilation outlet would be partially screened by existing vegetation although the existing vegetated ridgeline behind remains unchanged and the sense of enclosure that this imparts remains unaltered.

9.3.21 Viewpoint 21 – Kay Court, Yallambie

Viewpoint 21 is located along Kay Court in Yallambie. The viewpoint in this location is located approximately 140 metres from the existing Greensborough Road edge as shown in Figure 9-157.

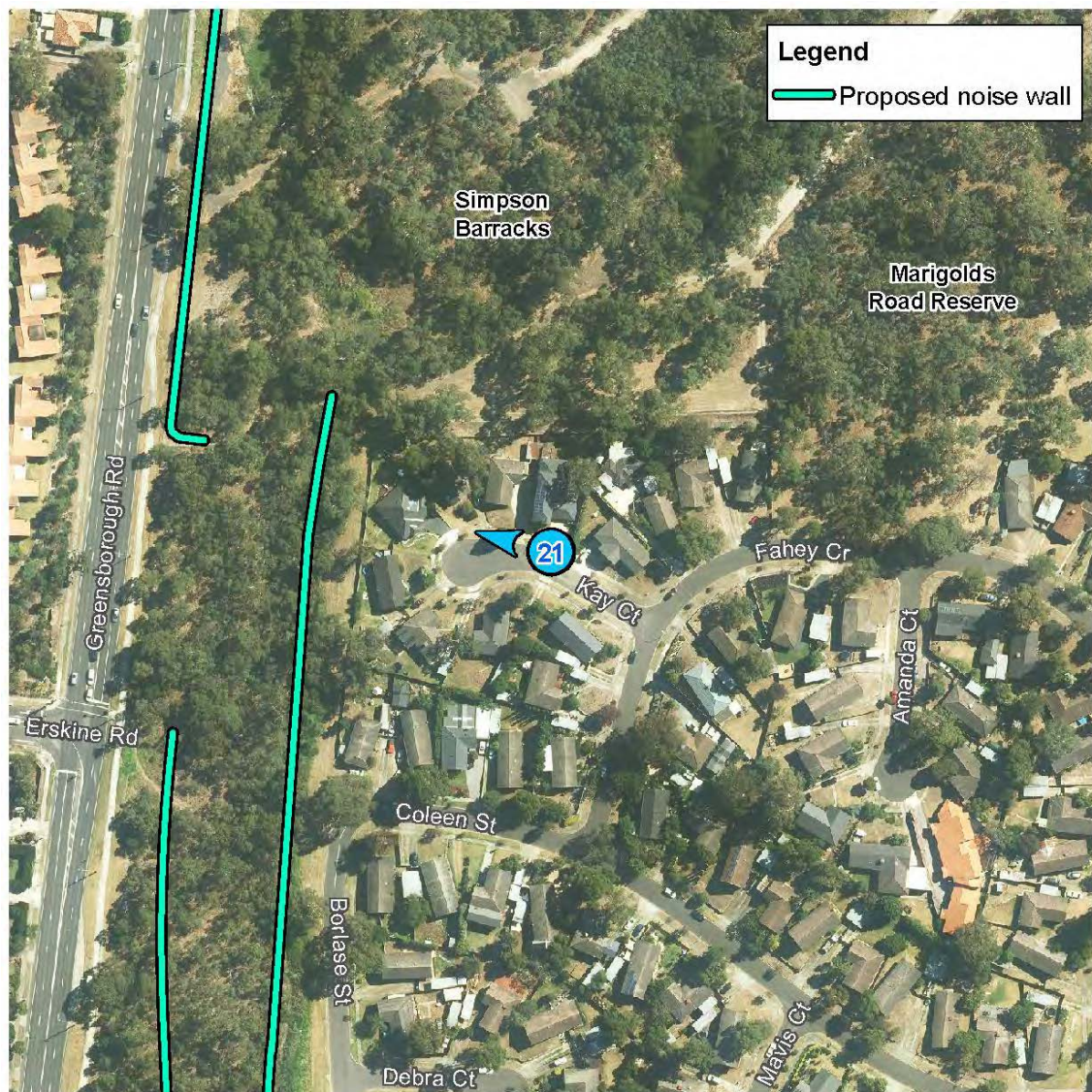


Figure 9-157 VP21 – Location plan

The current view from this location is of multistorey residential in the background, established native vegetation in the middle ground and suburban residential street with established street trees in the foreground as shown in Photo 9-65.



Photo 9-65 VP21 – Existing view looking north-west

This is a suburban residential landscape setting where the vegetation is a major element.

Proposed change

The proposed noise wall would be located approximately 80 metres from the viewpoint with a proposed shared use path in front, as shown in Figure 9-159. It has been assumed the existing residential properties in the foreground and vegetation in the background would be removed. The noise wall in this location would be approximately five metres high.

Assessment

As a result of the project, the view would be towards the proposed five metre noise wall with landscaping establishing between the noise wall and shared use path.



Figure 9-158 VP21 – Photomontage Year 0



Figure 9-159 VP21 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – Medium to **Low**, as the proposed five metre noise wall would be visually dominant and there would be a significant visual change in the landscape although viewer numbers would be low.
- Year 10 – **Low**, as the landscaping would filter views of the five metre high noise wall and the landscape setting would be similar to the existing.

9.3.22 Viewpoint 22 – Borlase Street, Yallambie

Viewpoint 22 is located at the footpath along Borlase Street, adjacent to Banyule Creek Reserve in Yallambie. This viewpoint is located approximately 105 metres from the existing Greensborough Road edge as shown in Figure 9-160.

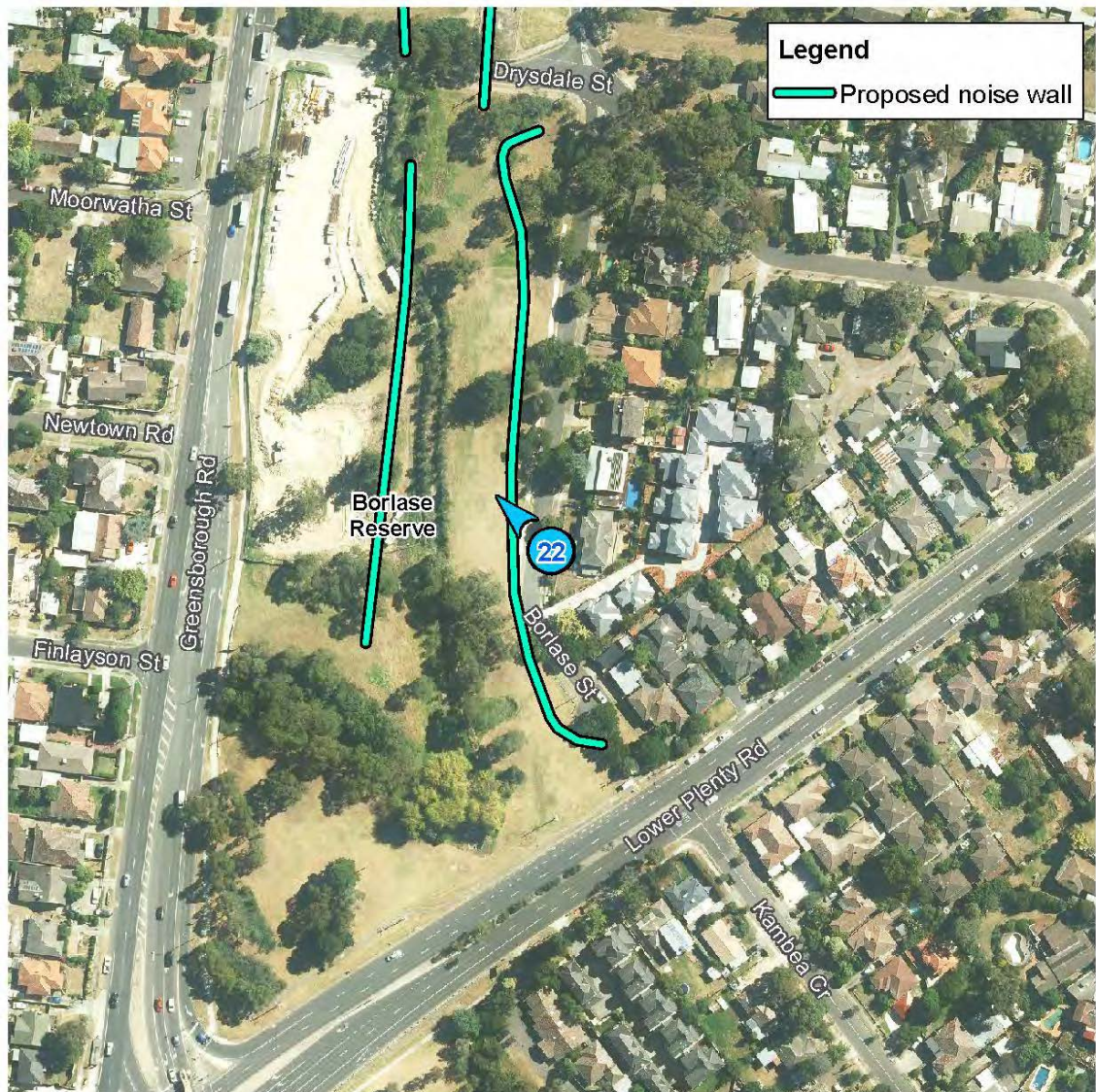


Figure 9-160 VP22 – Location plan

The current view in this location is of established native vegetation in the background with open grassed reserve in the foreground as shown in Photo 9-66.



Photo 9-66 VP22 – Existing view looking north-west

This is a natural landscape setting where the vegetation is a major element.

Proposed change

The proposed noise wall would be located approximately 14 metres from the viewpoint. The existing vegetation would be removed. The noise wall in this location would be approximately four metres high.

Assessment

As a result of the project, the view would be towards the proposed four metre high noise wall with landscaping establishing in front of the proposed noise wall as shown in Figure 9-161.



Figure 9-161 VP22 – Photomontage Year 0

At year 10 the noise wall would be partially screened by landscaping as shown in Figure 9-162.



Figure 9-162 VP22 – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High**, as the proposed four metre high noise wall would be visually dominant and there would be significant visual change in the landscape and the open space would be removed
- Year 10 – **Medium**, as the landscaping would partially screen the proposed noise wall and the open space would not be replaced. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.3.23 Viewpoint 23 – Interlaken Parade, Rosanna

Viewpoint 23 is located on Interlaken Parade, adjacent to Rosanna Golf Links Primary School in Rosanna. This viewpoint is located approximately 355 metres from the existing Greensborough Road edge as shown in Figure 9-163.



Figure 9-163 VP23 – Location plan

The current view from this location is of established trees in the background with suburban residential properties in the foreground as shown in Photo 9-67.



Photo 9-67 VP23 – Existing view east

This is a suburban residential landscape setting where the vegetation is a major element.

Proposed change

The proposed road corridor would require the removal of vegetation from the background at this viewpoint.

Landscaping would be proposed along the widened road corridor as shown in Figure 9-164.

Assessment

As a result of the project, the view would be towards landscaping establishing within the proposed road corridor.

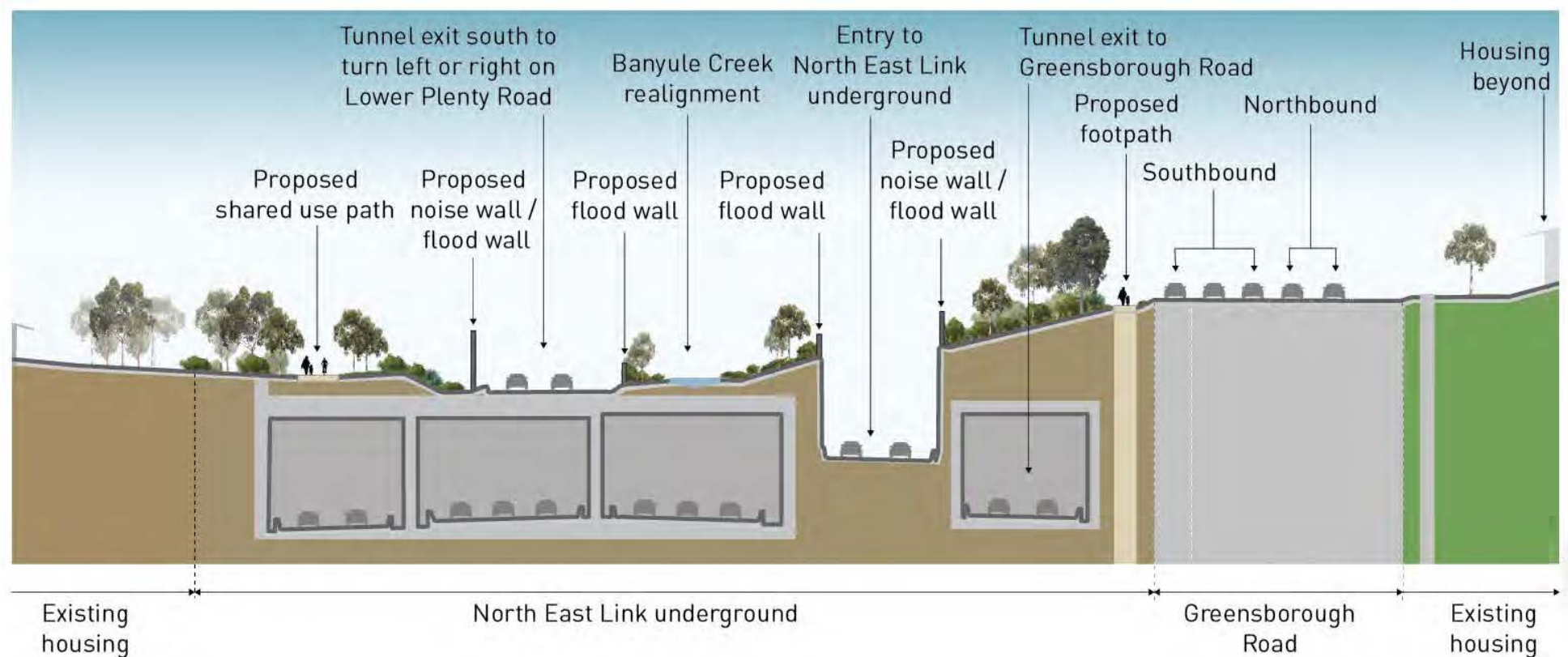


Figure 9-164 VP23 – Landscape treatment section view south

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Low**, as the proposed road corridor would see the removal of some vegetation and there would be a minor visual change in the landscape.
- Year 10 – **Negligible**, as the landscaping would be established and the landscape setting would be similar to the existing.

9.3.24 Viewpoint 24 – Dalvey Street, Heidelberg

Viewpoint 24 is located on Dalvey Street in Heidelberg. This viewpoint is located approximately 990 metres from Manningham Road as shown in Figure 9-165.

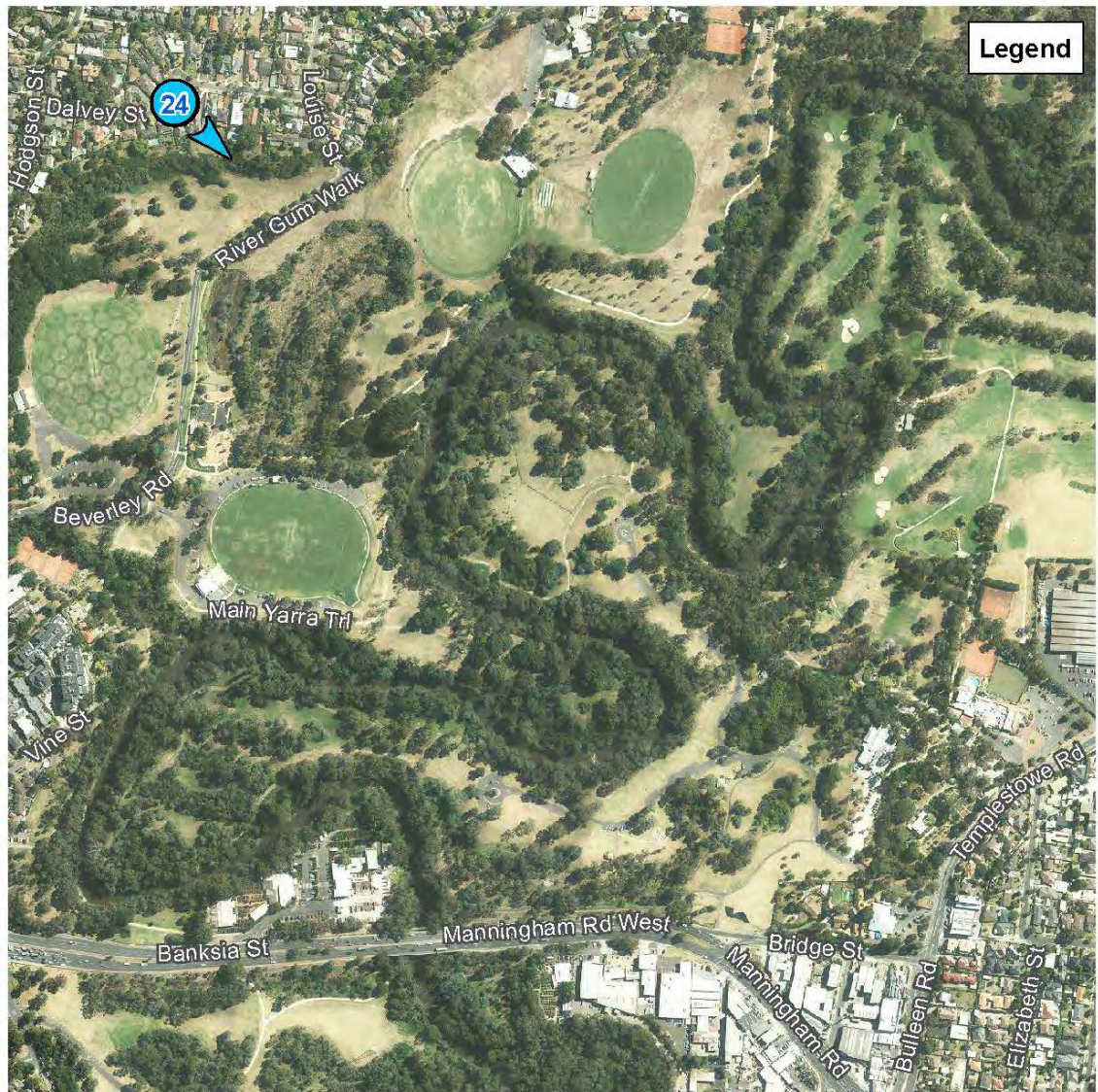


Figure 9-165 VP24 – Location plan

The current view from this location is of the Dandenong Ranges in the background, established vegetation and residential properties in the middle ground and densely vegetation suburban residential properties in the foreground as shown in Photo 9-68.



Photo 9-68 VP24 – Existing view south-east

This is a suburban residential landscape setting where the long distance views and vegetation are major elements.

Proposed change

The proposed Manningham Road interchange with emergency smoke duct would be located approximately one kilometre from the viewpoint. The proposed ventilation structure would be located approximately 2.5 kilometres from the viewpoint. The ventilation outlet in this location would be 40 metres high and the ventilation building approximately 15 m high.

Assessment

As a result of the project, the view would be of the emergency smoke duct and 40 metre high ventilation outlet.

At this viewpoint, the visual impact is assessed as:

- Year 0 and year 10 – **Low**, as the proposed emergency smoke duct and ventilation outlet and associated ventilation building would be visually noticeable and there would be a visual change in the landscape although viewer numbers would be low.

9.3.25 Construction impacts on the Ridgeline landscape character area

Construction impacts within the Ridgeline character area would consist of site compounds located within AK Lines Reserve, Gabonia Avenue Reserve, Winsor Reserve, Simpson Barracks and Borlase Reserve. There would be construction fencing along the boundary of the project works area. Viewers located directly adjacent to the construction compounds would have their views to open space interrupted. Due to the undulating topography within the Ridgeline character area viewers from streets and properties located further away, but elevated above the project would have views into the construction compounds. These views would typically have been of vegetated parkland and now would be interrupted by views of machinery, storage sheds, spoil stockpiles, construction materials and access routes. Through implementation of EPR LV2 temporary landscaping could be installed to soften and filter views to construction compounds.

The proposed alternative TBM launch site (refer to Chapter 8 – Project description) would occur within the Ridgeline character area. This would add to the construction activity and visual clutter around Borlase Reserve and Simpson Barracks, with adjacent residences views interrupted by workshops, storage facilities and an acoustic shed.

The amount of open space that may be potentially impacted within the Ridgeline landscape character area varies from construction to operation.

During construction approximately 162,700 square metres of open space would be temporarily impacted. Key open spaces within this area would potentially be impacted include AK Lines Reserve, Borlase Reserve and Gabonia Avenue Reserve.

These areas may be occupied for up to seven years and views would be impacted for the duration of this period. The visual impact within the Ridgeline character area would be rated as medium to high for the construction period due to the number of adjacent residences with long viewing periods. Any future impacts would be reduced further via implementation of EPR LV2 Minimise landscape impacts during construction.

9.3.26 Summary of impacts on the Ridgeline landscape character area

The Ridgeline landscape character area is located in the northern section of the study area from Lower Plenty Road up to the M80 Ring Road. The existing landscapes within this character area generally have a medium level of sensitivity and the landscape and visual impact ranges from positive to high. Within the Ridgeline landscape character area the M80 Ring Road and Greensborough Bypass would have high viewer numbers, the public reserves would have medium viewer numbers and the residential areas would have medium to low viewer numbers.

In locations where new infrastructure would be located directly adjacent to the viewpoint, the landscape and visual impacts are medium to high. This is due to the close proximity of the views to the new elements and the limited space for landscaping.

In locations where new infrastructure would be located at a distance from the viewpoint and there is space available for landscaping, the impacts are low to negligible.

In locations adjacent to the proposed land bridges the impacts are negligible to positive due to the improved landscape and visual amenity and provision of additional open space.

During operation, the open space impacts would be significantly reduced from the construction impacts and approximately 20,600 square metres would be permanently impacted. This is largely within Borlase Reserve.

The land bridges are also proposed to run through this landscape character area, which would add an additional 8,450 square metres to the level of open space.

Overall, due to the extent of open space impacted, this area is considered to have a significant impact on landscape character during construction, as the use of the open spaces (including AK Lines Reserve) would be impacted for this period. However, while a significant amount of open space would be impacted during construction, this is not considered to be a significant visual impact as the majority of the open space would be returned to its original use once the project was completed. Furthermore, the landscape character of this area would not be significantly impacted for operation as the use of open spaces would be retained and vegetation buffers would largely maintain the visual amenity and landscape character.

The Ridgeline landscape character area is valued for the prominent vegetated ridgelines and views to and from them. The project would be unlikely to have an impact on the landscape value of the Ridgeline landscape character area as the characteristics it is valued for would be either retained or enhanced.

Overall, the proximity of new infrastructure and availability of space for landscaping would have the greatest influence on the visual impacts of the Ridgeline character area. Any future impacts would be reduced further via implementation of EPRs LV1 Design to be generally in accordance with Urban Design Strategy and LV2 Minimise landscape impacts during construction. EPR LV1 would see the design of permanent above-ground works, to the extent practicable, avoid or minimise landscape and visual, and shading impacts in accordance with the project's Urban Design Strategy and LV2 would minimise visual impacts during construction.

9.4 Private domain viewpoints

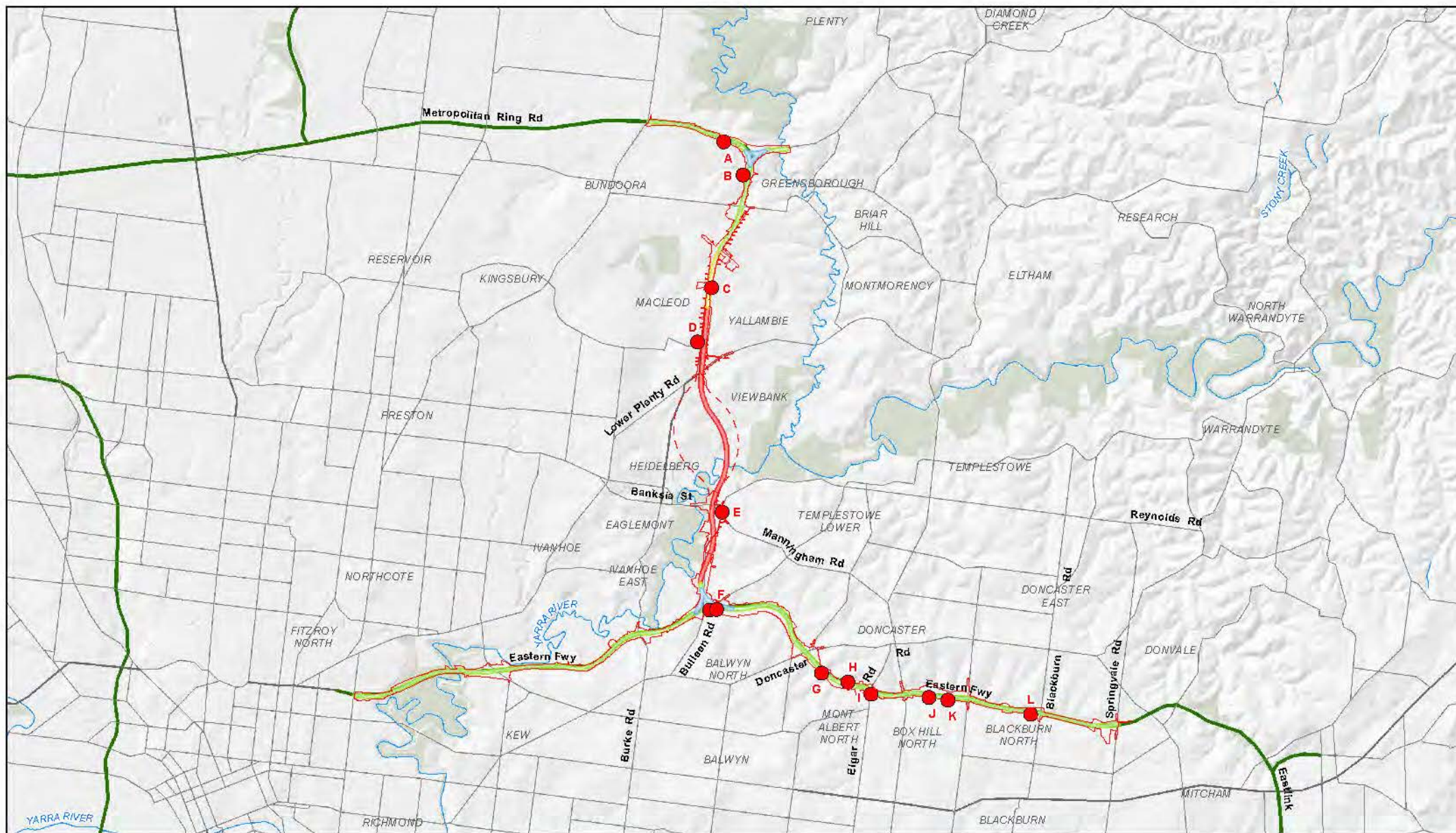
Twelve viewpoints have been selected within the private domain to represent views of the project from residential properties.

A list of each viewpoint and their location to the project boundary is provided in Table 9-4.

Table 9-4 Viewpoint locations

Viewpoint number	Location	Distance to the project boundary (m)	Note
VP A	Marcorna Street, Watsonia North	3 m	Directly adjacent to property boundary
VP B	Sellars Street, Watsonia North	29 m	Directly adjacent to property boundary
VP C	Watson Street, Macleod	20 m	Directly adjacent to property boundary
VP D	Baptcare Strathalan, Upper Boronia Crescent, Macleod	67 m	Directly adjacent to property boundary
VP E	Bulleen Road, Bulleen	12 m	Directly adjacent to property boundary
VP F	Mountain View Road, Balwyn North	18 m	Directly adjacent to property boundary
VP G	Jocelyn Avenue, Balwyn North	25 m	Directly adjacent to property boundary
VP H	Stanton Street, Doncaster	4 m	Directly adjacent to property boundary
VP I	Presbyterian Theological College, Elgar Road, Box Hill North	52 m	Directly adjacent to property boundary
VP J	Lyndhurst Crescent, Box Hill North	6 m	Directly adjacent to property boundary
VP K	Eram Road, Box Hill North	13 m	Directly adjacent to property boundary
VP L	Douglas Street, Blackburn North	21 m	Directly adjacent to property boundary

The locations of these viewpoints are identified in Figure 9-166. Each location is within a landscape that has a high level of sensitivity. The level of sensitivity directly relates to the visibility of the project and the proximity to the project.



9.4.1 Viewpoint A – Marcorna Street, Watsonia North

Viewpoint A is located in the back yard of a property along Marcorna Street, adjacent to the M80 Ring Road in Bundoora. This viewpoint is located approximately 55 metres from the M80 Ring Road edge as shown in Figure 9-167 and Figure 9-110.

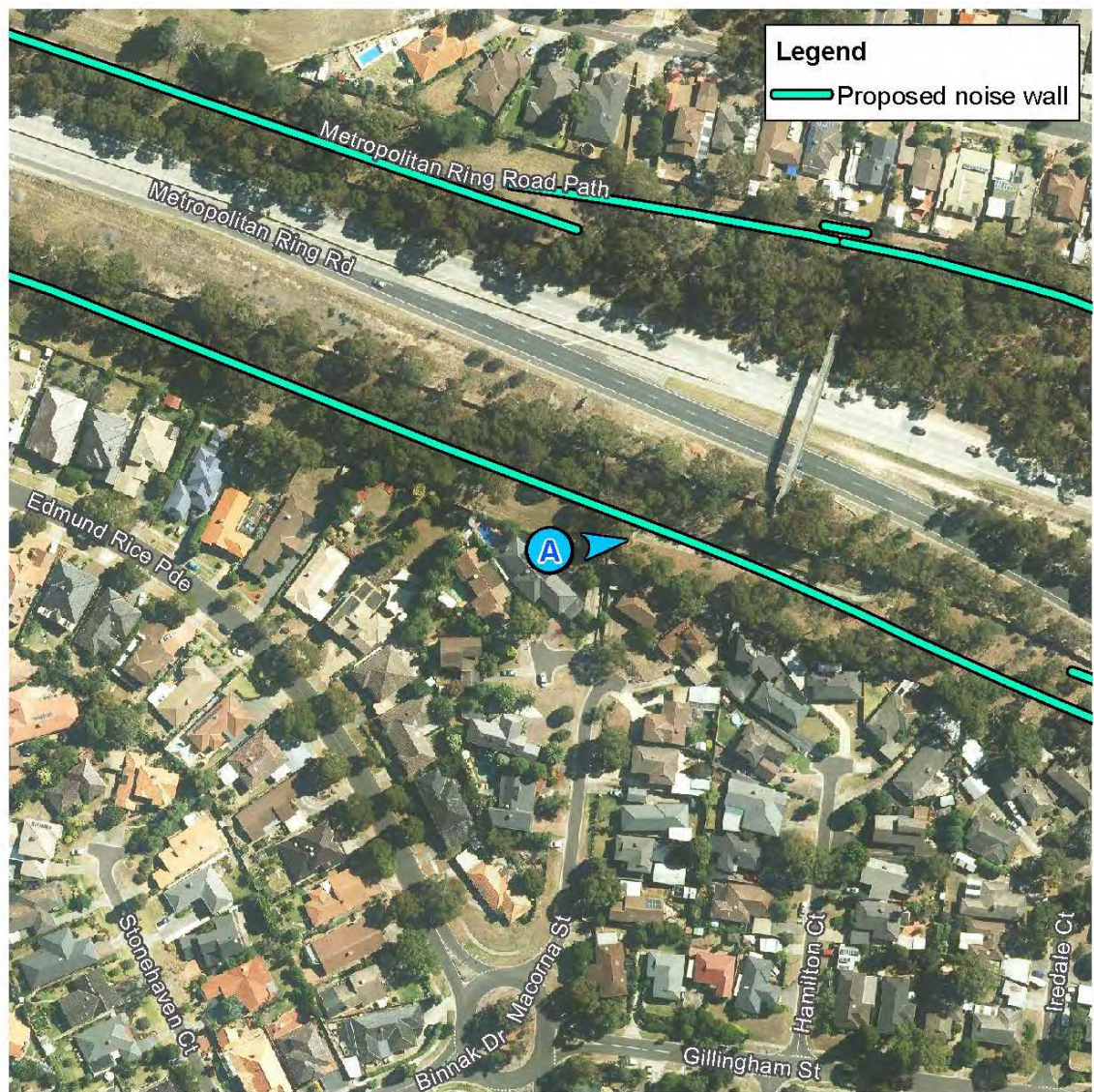


Figure 9-167 VPA – Location plan

The current view from this location is of established native trees on the embankment in the background between property fence lines and the M80 Ring Road with wire fence line on the property boundary as shown in Photo 9-69.



Photo 9-69 VPA – Existing view looking east

This is a residential area in which the established native trees along the M80 Ring Road corridor provide a natural setting.

Proposed change

The proposed noise wall would be located approximately 15 metres from the viewpoint and the proposed shared use overpass would be 10 metres from the viewpoint. The existing vegetation and embankment would be removed. The proposed noise wall in this location would be approximately seven metre high. The existing chain mesh fence would be removed and replaced with a new timber fence.

Assessment

As a result of the project, the view would be towards a shared use overpass, the proposed seven metre high noise wall with landscaping established between the new timber fence and the shared use overpass.

The shading from the proposed seven metre high noise wall would intensify the visual impacts in this location.



Figure 9-168 VPA – Photomontage Year 0



Figure 9-169 VPA – Photomontage Year 3



Figure 9-170 VPA – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High**, as the proposed seven metre high noise wall and shared use overpass would be visually dominant and there would be a significant visual change
- Year 3 – **High**, as the landscaping would still be establishing and the proposed seven metre noise wall and shared use overpass would remain visually dominant
- Year 10 – **High to medium**, as the landscaping would partially screen views of the seven metre noise wall. In addition, the design of the shared use overpass would be guided by the project's Urban Design Strategy which requires structures to be well designed, complement the surrounding area, and consider sensitive interfaces.

9.4.2 Viewpoint B – Sellars Street, Watsonia North

Viewpoint B is located in the side garden of a property along Sellars Street adjacent to the M80 Ring Road in Watsonia North. This viewpoint is located approximately 80 metres from the M80 Ring Road edge as shown in Figure 9-171.

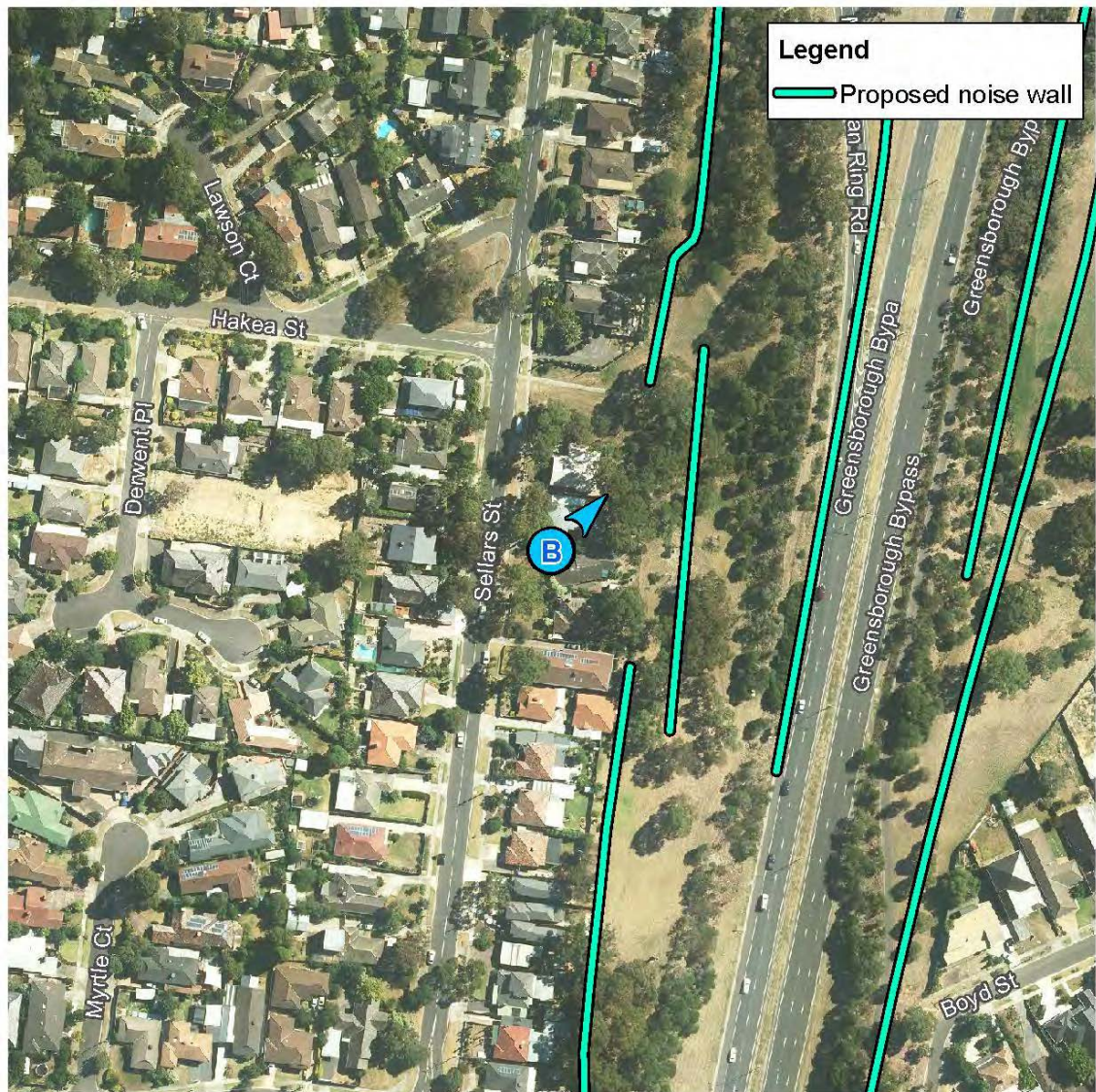


Figure 9-171 VPB – Location plan

The current view from this location is of dense established native vegetation in the background, open grassed reserve in the middle ground and neighbouring residential roofs and native established trees in the foreground as shown Photo 9-70.



Photo 9-70 VPB – Existing view looking north-east

This is a residential area in which the established native trees and open grassed reserve provide a natural setting.

Proposed change

The proposed noise wall would be located approximately 40 metres from the viewpoint and the proposed shared use overpass would be 35 metres from the viewpoint. The existing vegetation in the grassed reserve would be removed and the reserve would be significantly reduced in size. The proposed noise wall in this location would be approximately 10 metres high.

Assessment

As a result of the project, the view would be towards the shared use overpass, a new 10 metre high noise wall with landscaping established between the property boundary and noise wall. This is shown in Figure 9-172.



Figure 9-172 VPB – Photomontage Year 0



Figure 9-173 VPB – Photomontage Year 3



Figure 9-174 VPB – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High**, as the proposed 10 metre high noise wall and shared use overpass would be visually dominant and there would be a significant visual change in the landscape. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.
- Year 3 – **High to medium**, as the landscaping would be establishing and begin to screen the shared use overpass and noise wall but they would remain dominant elements in the view.
- Year 10 – **Medium**, as the landscaping would partially screen the noise wall and shared use overpass.

9.4.3 Viewpoint C – Watson Street, Macleod

Viewpoint C is located in the back yard of a property along Watson Street, Macleod. This viewpoint is located approximately 35 metres from the Greensborough Road edge as shown in Figure 9-175.

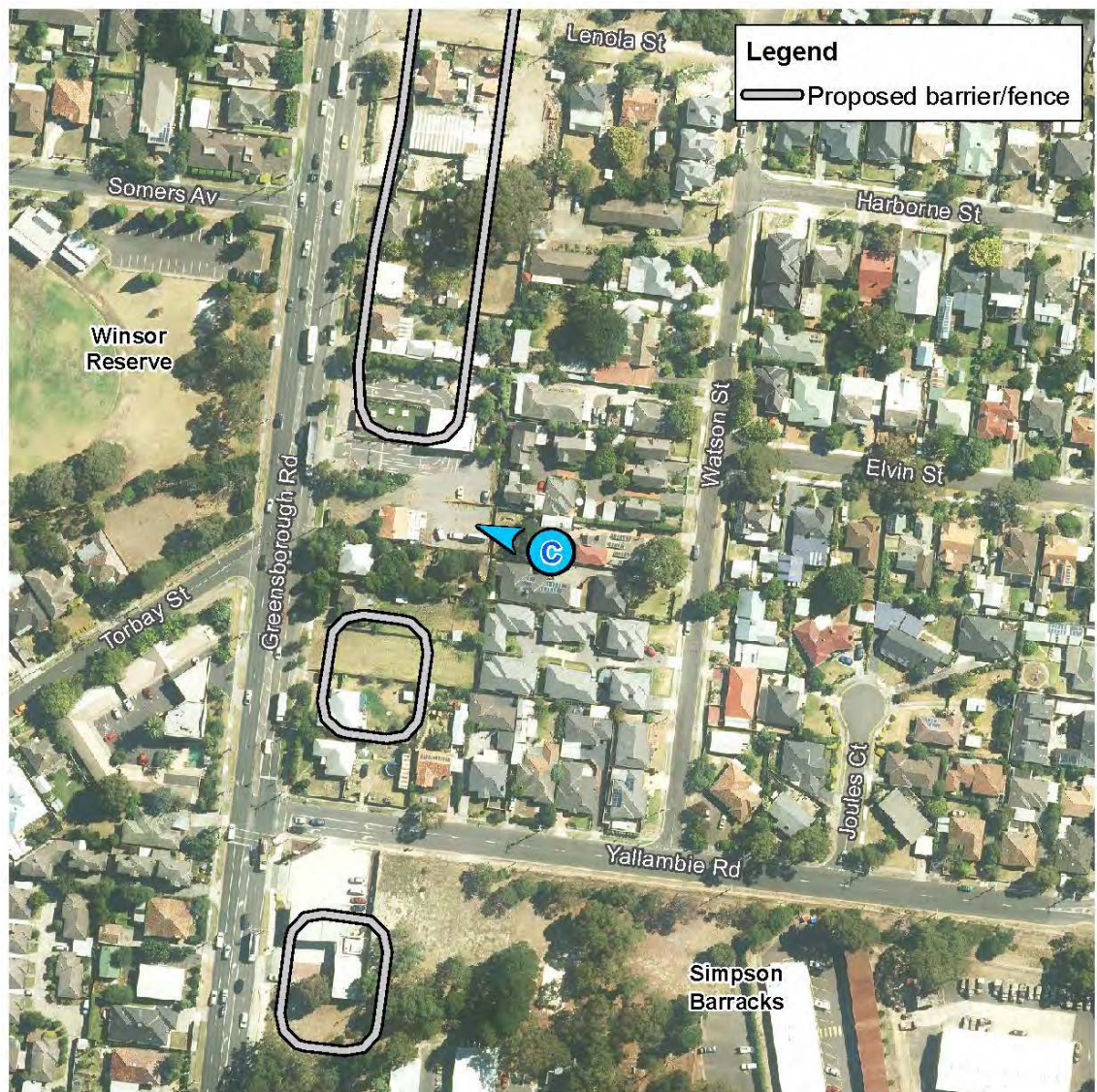


Figure 9-175 VPC – Location plan

The current view from this location is of established vegetation and roof in the background, timber residential fence in the middle ground with a large deciduous tree and picket fence and shed in the foreground as shown in Photo 9-71.



Photo 9-71 VPC – Existing view looking west

This is a suburban residential area where the adjacent residence is a minor built form element in a back garden setting.

Proposed change

The proposed anti-throw screen would be located approximately 40 metres from the viewpoint. The proposed anti-throw screen in this location would be approximately four metres high. The neighbouring house and vegetation in the background would be removed.

Landscaping would be proposed between the anti-throw screen and back fence as shown in Figure 9-178.

Assessment

As a result of the project, the view would be towards the new four metre high anti-throw screen with landscaping established between the property boundary and noise wall. The existing rear boundary fence would screen views to the proposed anti-throw screen.



Figure 9-176 VPC – Photomontage Year 0



Figure 9-177 VPC – Photomontage Year 3



Figure 9-178 VPC – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium to low**, as the proposed four metre high anti-throw screen would replace the existing built form and vegetation, and there would be a visual change in the landscape, although the existing rear boundary fence would screen views to the proposed noise wall
- Year 3 – **Low to negligible**, as the landscaping would begin to screen the anti-throw screen
- Year 10 – **Negligible to positive**, as the landscaping would screen the anti-throw screen and the landscape setting possibly improved.

9.4.4 Viewpoint D – Baptcare Strathalan, Upper Boronia Crescent, Macleod

Viewpoint D is located in the Baptcare Strathalan retirement community adjacent to Greensborough Road in Macleod. This viewpoint is located approximately 70 metres from the Greensborough Road edge as shown in Figure 9-179.

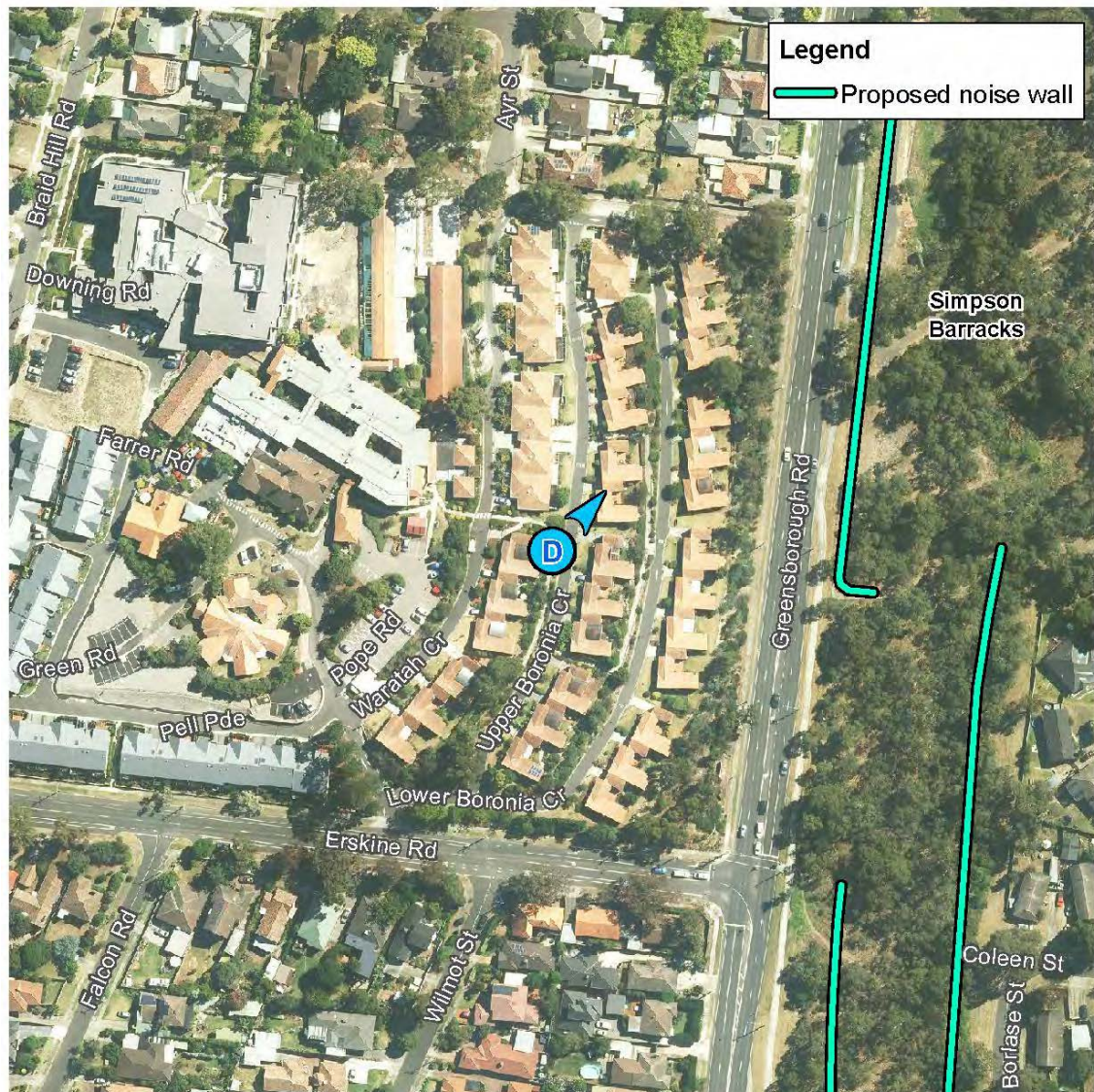


Figure 9-179 VPD – Location plan

The current view from this location is of dense established native trees in the background and of single storey residential buildings with some exotic vegetation in the foreground as shown in Photo 9-72.



Photo 9-72 VPD – Existing view looking north-east

This is a suburban residential area in which the established native trees along Simpson Barracks provide a natural backdrop.

Proposed change

Some of the existing vegetation in the background would be removed. The proposed noise wall with a widened road corridor behind would be 95 metres away would be three metres high.

Assessment

As a result of the project, the view towards the proposed three metre high noise wall and a widened road corridor would be screened by the existing established vegetation within the residential area and the road corridor.

At this viewpoint, the visual impact is assessed as:

- Year 0, year 3 and year 10 – **Negligible**, as the existing vegetation and built form would filter views of the proposed three metre high noise wall and the landscape setting would be similar to the existing.

9.4.5 Viewpoint E – Bulleen Road, Bulleen

Viewpoint E is located in the front porch of a property along Bulleen Road, Bulleen. This viewpoint is located directly adjacent to Bulleen Road Industrial Precinct as shown in Figure 9-180.

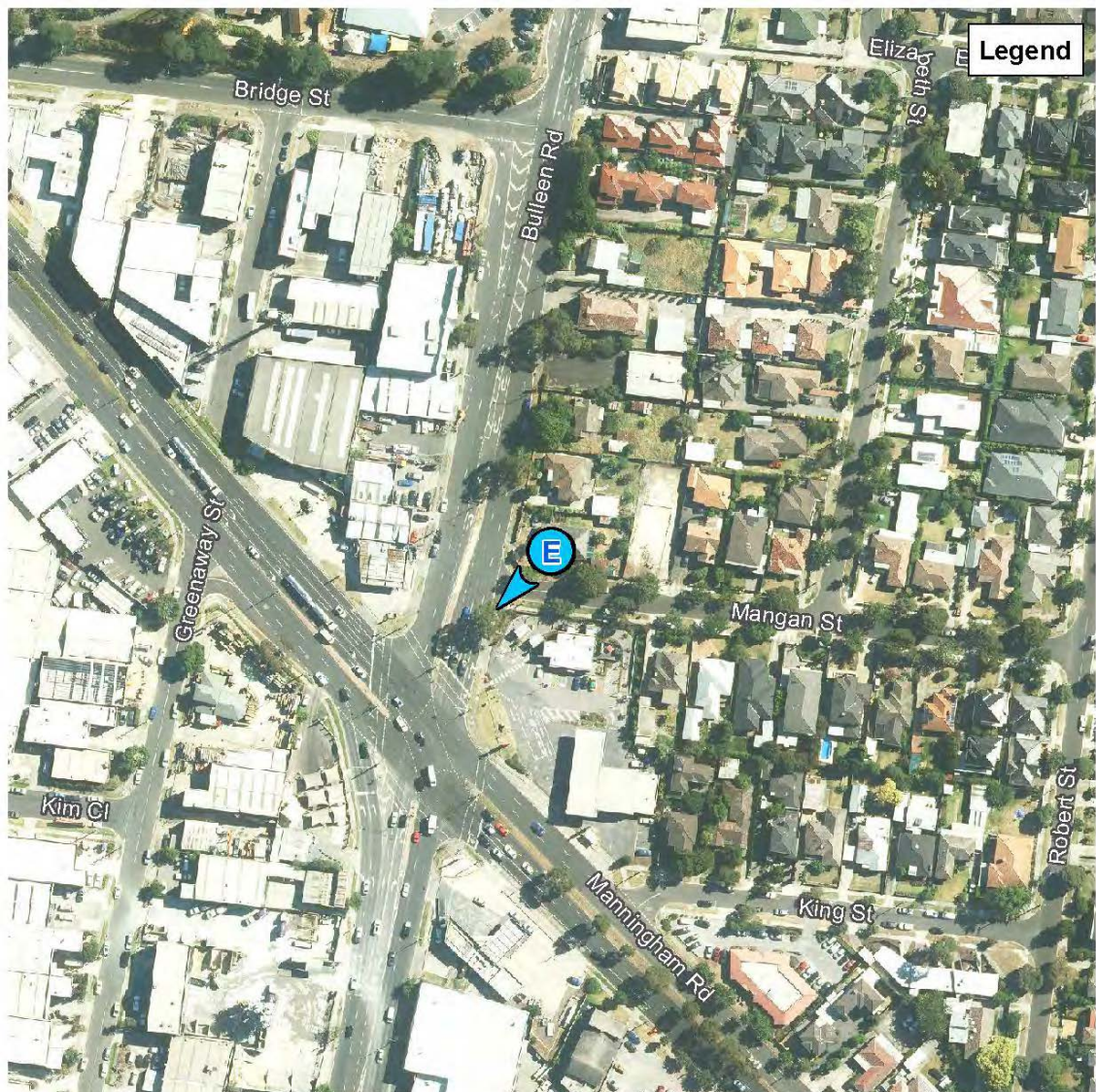


Figure 9-180 VPE – Location plan

The current view from this location is of low rise commercial and light industrial buildings in the background, with a road intersection and power lines in the middle ground and a brick property fence in the foreground along some native street trees and exotic landscaping within the property boundary as shown in Photo 9-73.



Photo 9-73 VPE – Existing view looking north

This is a popular activity centre where brightly coloured bulky buildings with signage, overhead power lines and street lights dominate the view. The established street trees partially filter views of the buildings.

Proposed change

This viewpoint is located approximately 210 metres from the proposed emergency smoke duct. All built form and existing vegetation within the commercial and light industrial activity centre would be removed.

Assessment

As a result of the project, the view would be towards the proposed emergency smoke duct, as shown in Figure 9-181. The existing vegetation within the residential property would filter views to the proposed emergency smoke duct.



Figure 9-181 VPE – Photomontage Year 0



Figure 9-182 VPE – Photomontage Year 3



Figure 9-183 VPE – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0, year 3 and year 10 – **Low**, as the built form would be removed and there would be significant change to the landscape.

9.4.6 Viewpoint F – Mountain View Road, Balwyn North

Viewpoint F is located in the front yard of a property along Mountain View Road adjacent to the Eastern Freeway. This viewpoint is located approximately 25 metres from the existing noise wall as shown in Figure 9-184.

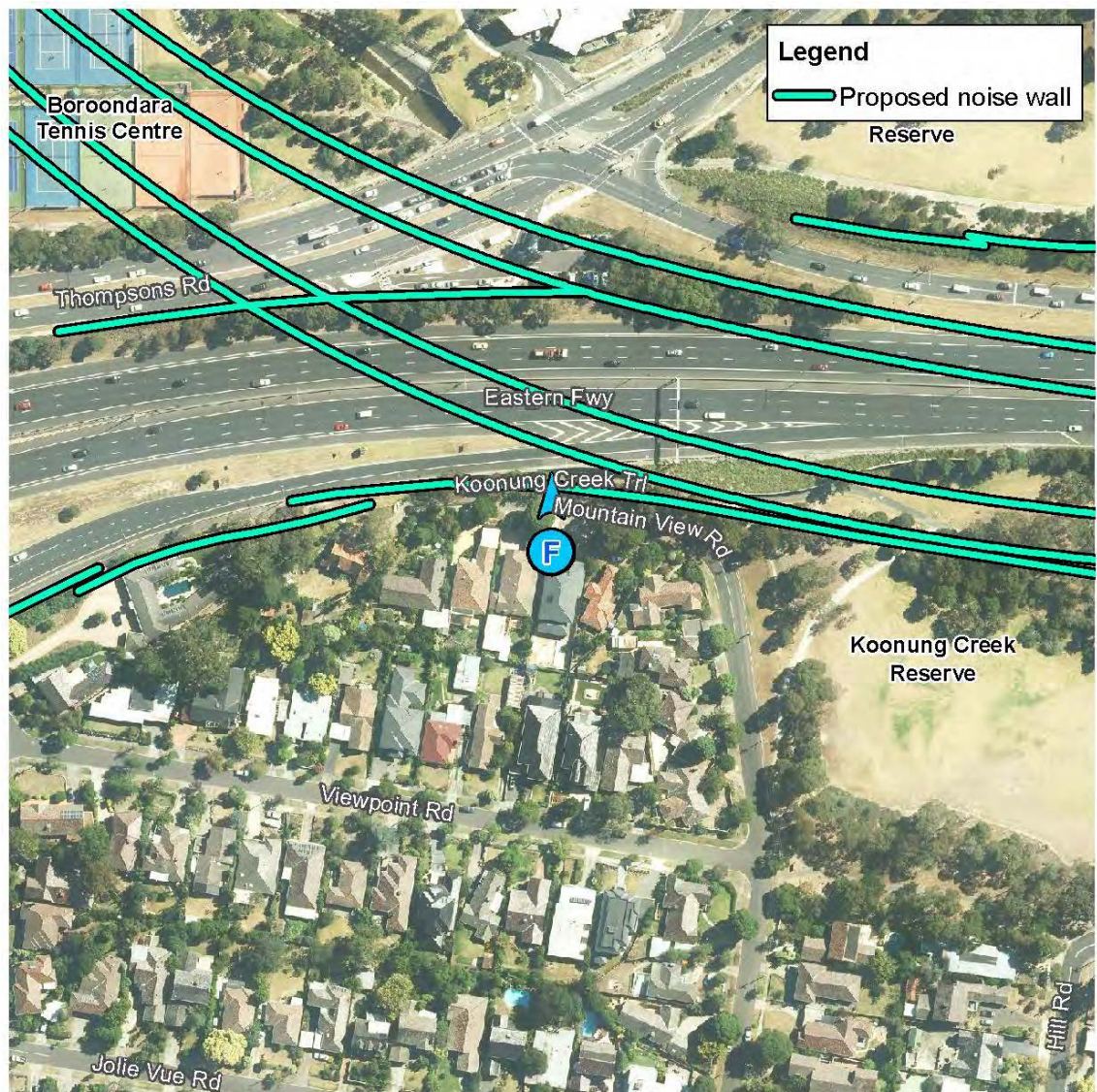


Figure 9-184 VPF – Location plan

The current view from this location is of a low timber fence to the front of the property with a local road, a shared use path and an existing noise wall behind. Vegetation partially screens the existing concrete noise wall as shown in Photo 9-74. The existing noise wall in this location is approximately four metres high and the existing vegetation with the road corridor is visible above the top of the noise wall.



Photo 9-74 VPF – Existing view looking north

This is a residential street landscape setting where the existing noise wall is a major element.

Proposed change

The proposed noise wall would be five metres closer to the viewpoint in this location with a shared use path in front and proposed viaduct with viaduct noise wall behind. The existing noise wall, shared use path and vegetation would be removed. The proposed noise wall in this location would be approximately 10 metres high and the proposed viaduct noise wall would be approximately four metres. Landscaping would be proposed between the shared use path and existing road surface as shown in Figure 9-185.

Assessment

As a result of the project, the view would be towards the proposed 10 metre high noise wall with the shared use path and landscaping establishing in front as shown in Figure 9-186 and Figure 9-187. The proposed viaduct with viaduct noise wall would be visible above the noise wall.



Figure 9-185 VPF – Photomontage Year 0



Figure 9-186 VPF – Photomontage Year 3



Figure 9-187 VPF – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High**, as the proposed 10 metre high noise wall, proposed viaduct with viaduct noise wall would be visually dominant and the existing vegetation would be removed
- Year 3 – **High to medium**, as the proposed landscaping would still be establishing and the noise wall and viaduct behind would continue to dominate the view
- Year 10 – **High to medium**, as the proposed landscaping would only partially screen some sections of the proposed noise wall and the proposed noise wall would be significantly higher and closer than the existing wall. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.4.7 Viewpoint G – Jocelyn Avenue, Balwyn North

Viewpoint G is located within the back yard of a property along Jocelyn Avenue adjacent to the Eastern Freeway within Balwyn North. This viewpoint is located approximately 40 metres from the existing noise wall as shown in Figure 9-188.

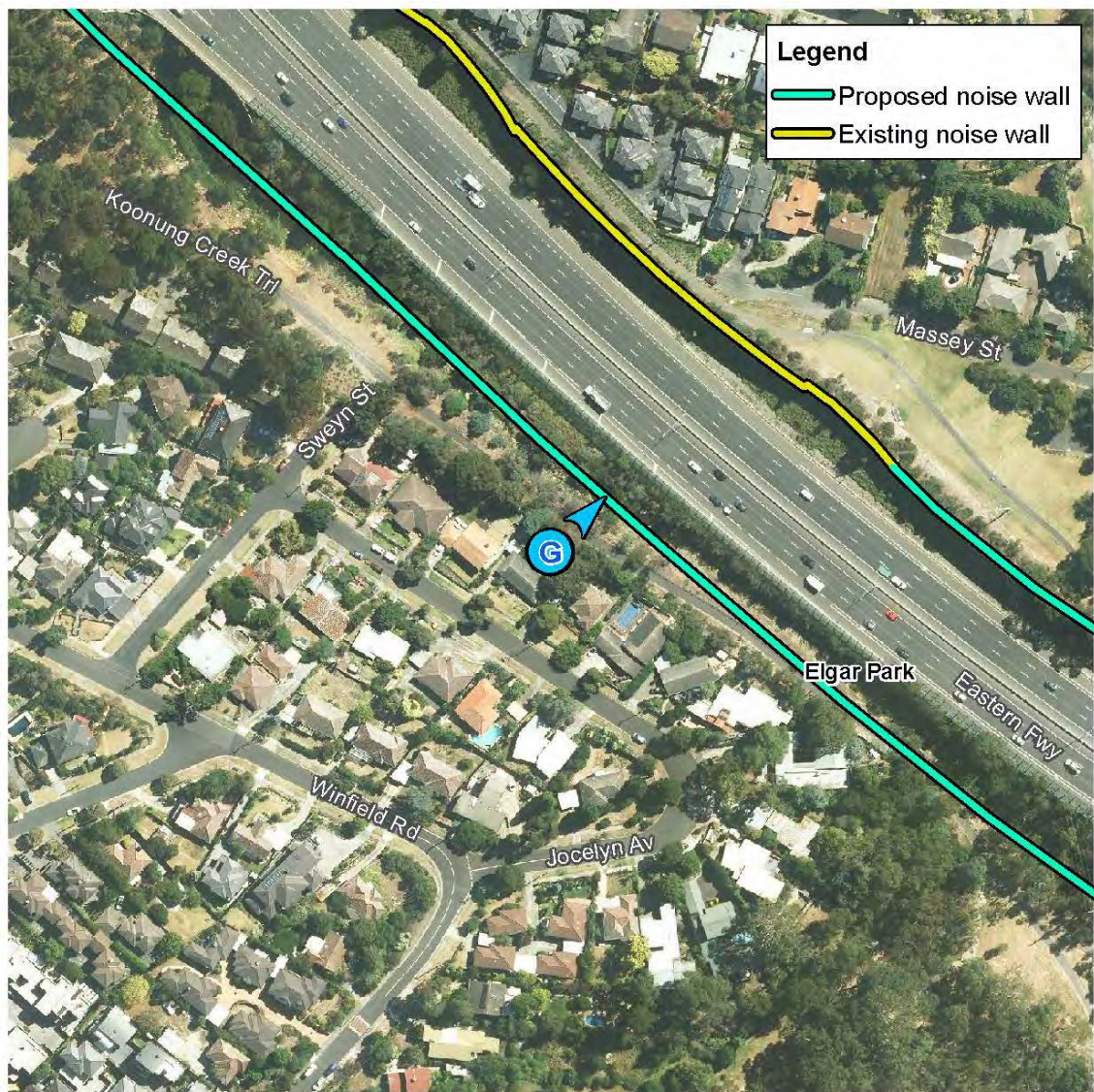


Figure 9-188 VPG – Location plan

The current view from this location is towards the existing acrylic noise wall and residential behind, with established vegetation and a timber fence in front as shown in Photo 9-75. The existing noise wall in this location is approximately 7.2 metres high.



Photo 9-75 VPG – Existing view north

This is a residential setting where the noise wall and vegetation are major elements.

Proposed change

The proposed noise wall in this location would be approximately 14 metres closer to the viewpoint. Some of the existing vegetation would be removed. The proposed noise wall in this location would be approximately 10 metres high.

Assessment

As a result of the project, the view would be towards the proposed 10 metre high noise wall.



Figure 9-189 VPG – Photomontage Year 0



Figure 9-190 VPG – Photomontage Year 3



Figure 9-191 VPG – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0, year 3 and year 10 – **High**, as the proposed 10 metre high noise wall would be visually dominant and the some of the existing vegetation removed, opening up views to the proposed noise wall. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.4.8 Viewpoint H – Stanton Street, Doncaster

Viewpoint H is located within the back yard of a property along Stanton Street in Doncaster. This viewpoint is located approximately seven metres from the existing noise wall as shown in Figure 9-192.



Figure 9-192 VPH – Location plan

The current view in this location is of a concrete noise wall with suspension bridge in the background and back garden with open grassed area and vegetation partially screening the noise wall as shown in Photo 9-76. The existing noise wall in this location is approximately seven metres high.



Photo 9-76 VPH – Existing view south

This is a residential setting where the noise wall is a major element.

Proposed change

The existing noise wall in this location would be retained. The existing suspension bridge behind would be removed and replaced, as shown in Figure 9-193.

Assessment

As a result of the project the view would be towards part of the proposed bridge visible above the top of the existing noise wall.



Figure 9-193 VPH – Photomontage Year 0



Figure 9-194 VPH – Photomontage Year 3



Figure 9-195 VPH – Photomontage Year 10

As this viewpoint, the visual impact is assessed as:

- Year 0, year 3 and year 10 – **Low**, as the existing noise wall would be retained, the suspension bridge in the background would be replaced with new bridge which would be partially visible above the top of the existing noise wall.

9.4.9 Viewpoint I – Presbyterian Theological College, Elgar Road, Box Hill North

Viewpoint I is located adjacent to the building and fence line of the Presbyterian Theological College in Box Hill North. This viewpoint is located approximately 63 metres from the existing noise wall as shown in Figure 9-196.



Figure 9-196 VPI – Location plan

The current view in this location is of dense vegetation and concrete noise wall in the background with a low timber fence, car park and established trees and shrubs in the foreground as shown in Photo 9-77. The existing noise wall in this location is approximately three to four metres high.



Photo 9-77 VPI – Existing view north

This is a residential setting where the vegetation is a major element in the landscape.

Proposed change

The proposed noise wall in this location would be approximately 11 metres closer to the viewpoint. Some of the existing vegetation behind the low timber fence would be removed. The proposed noise wall in this location would be approximately eight metres high.

Assessment

As a result of the project, the view would be towards the proposed eight metre high noise wall with landscaping establishing in front as shown in Figure 9-197.

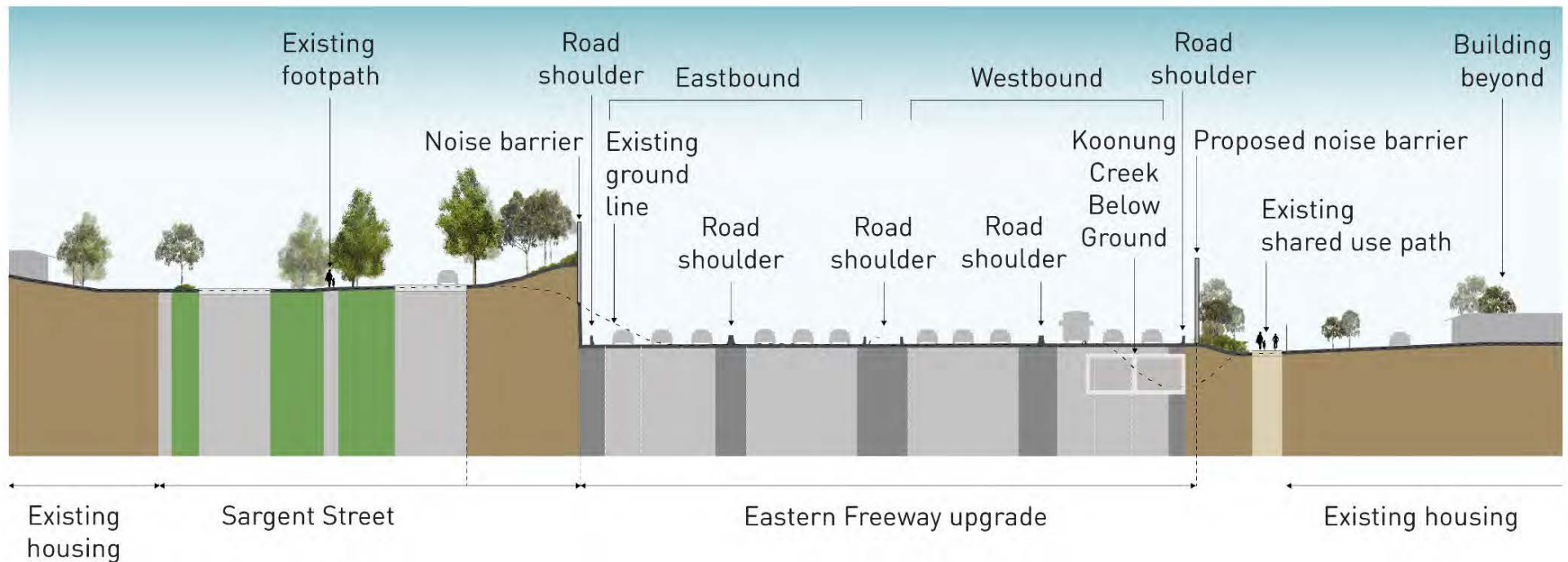


Figure 9-197 VPI - Landscape treatment section view east

As this viewpoint, the visual impact is assessed as:

- Year 0 – **High**, as the proposed eight metre high noise wall would be visually dominant and the existing vegetation removed
- Year 3 – **Medium**, as the landscaping would establish and partially screen the lower half of the proposed noise wall
- Year 10 – **Low to negligible**, as the landscaping would screen the noise wall and the landscape setting would be similar to the existing. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.4.10 Viewpoint J – Lyndhurst Crescent, Box Hill North

Viewpoint J is located on the back deck of a property along Lyndhurst Crescent adjacent to the Eastern Freeway. This viewpoint is located approximately 45 metres from the Eastern Freeway edge as shown in Figure 9-198.

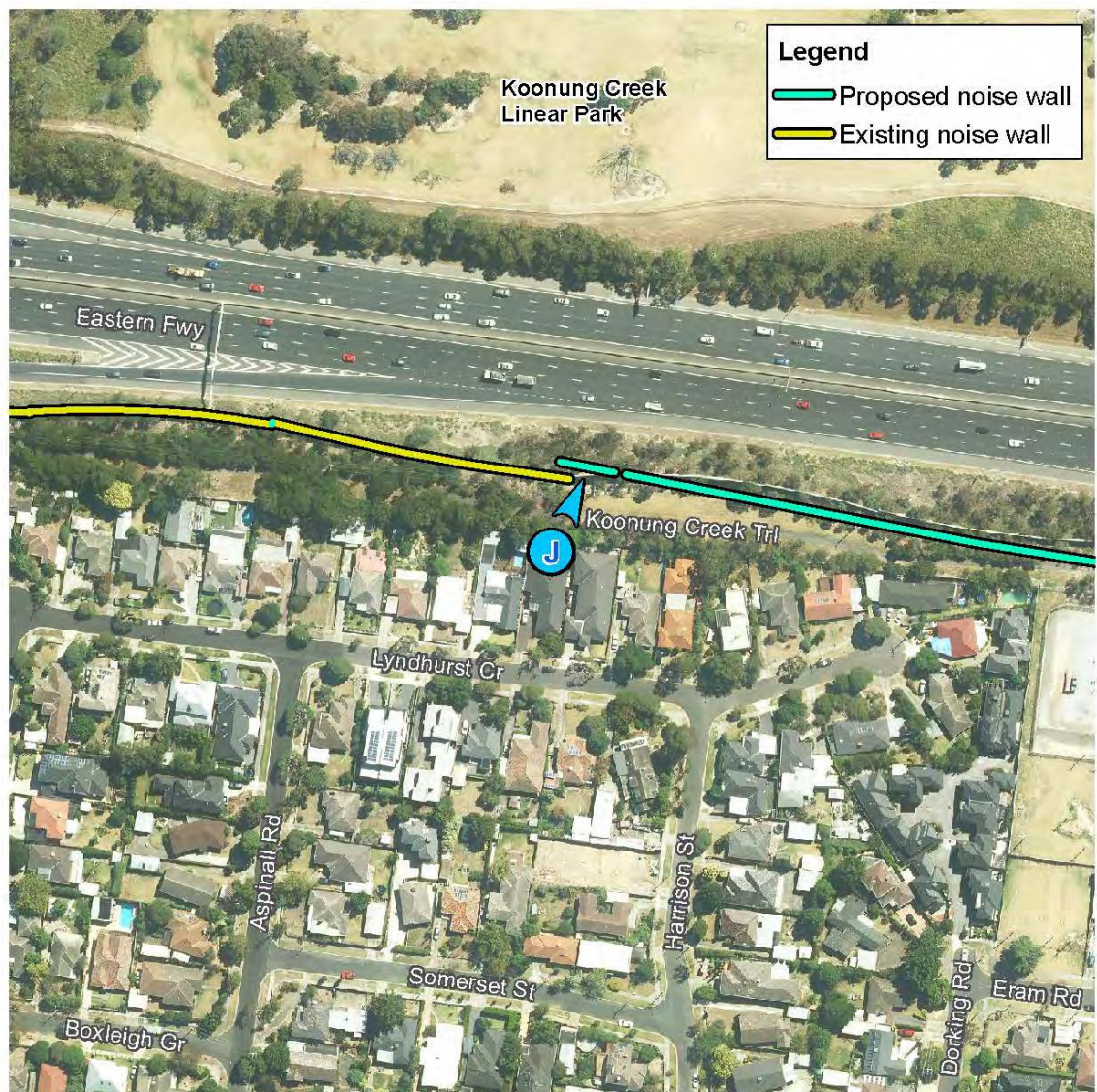


Figure 9-198 VPJ – Location plan

The current view from this location is of established vegetation in the background. There are glimpsed views through the vegetation of the existing concrete noise wall. The property has a fence with a gate leading to the existing shared use path as shown in Photo 9-45. The existing noise wall in this location is approximately five metres high.



Photo 9-78 VPJ – Existing view looking north

Proposed change

The existing noise wall would be retained to the west. The existing noise wall to the east would be replaced by a proposed noise wall in the same location. Some of the existing vegetation would be removed to enable the construction of the proposed shared use overpass.

The proposed shared use overpass would be located to the north-east of the rear of the property. The proposed noise wall in this location would be approximately eight metres high.

Assessment

As a result of the project, the view would be towards the proposed shared use overpass with landscaping establishing between the overpass and existing noise wall and the proposed eight-metre high noise wall behind, as shown in Figure 9-199. The existing retained vegetation adjacent to the property boundary would filter views to the proposed shared use overpass and noise walls.



Figure 9-199 VPJ – Photomontage Year 0



Figure 9-200 VPJ – Photomontage Year 3



Figure 9-201 VPJ – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **Medium to low**, as the removal of vegetation would open up views to the noise walls and shared use overpass although the existing vegetation retained adjacent to the property boundary would filter views to the noise walls and shared use overpass
- Year 3 and Year 10 – **Low to negligible**, as the landscaping would establish and screen the existing noise wall and shared use overpass. The landscape would be similar to the existing. In addition, the design of the noise wall would be in accordance with the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.4.11 Viewpoint K – Eram Road, Box Hill North

Viewpoint K is located in the back yard of a property along Eram Road adjacent to the Eastern Freeway. This viewpoint is located approximately 45 metres from the Eastern Freeway road edge as shown in Figure 9-202.



Figure 9-202 VPK – Location plan

The current view from this location is of established vegetation to the rear of the property adjacent to the shared use path. There are views through the vegetation to the existing concrete noise wall as shown in Photo 9-79. The existing noise wall in this location is approximately 3.5 metres high.



Photo 9-79 VPK – Existing view looking north

Proposed change

The proposed noise wall would be approximately two metres closer to the viewpoint. The existing vegetation would be removed. A noise wall would be proposed to run along the south side of the shared use path adjacent to the back fence of the residential properties. The proposed noise wall in this location would be approximately eight metres high.

Assessment

As a result of the project, the view would be towards the proposed eight metre high noise wall along the back fence of the property, as shown in Figure 9-203.

Due to noise walls moving closer to the property and increasing in height there would be increased shading in the area.



Figure 9-203 VPK – Photomontage Year 0



Figure 9-204 VPK – Photomontage Year 3



Figure 9-205 VPK – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0, year 3 and year 10 – **High**, as the proposed eight metre high noise wall would be visually dominant and there would be significant visual change. The design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.4.12 Viewpoint L – Douglas Street, Blackburn North

Viewpoint L is located within the back yard of a property along Douglas Street, Blackburn North. This viewpoint is located approximately 25 metres from the existing noise wall as shown in Figure 9-206.



Figure 9-206 VPL – Location plan

The current view in this location is towards the existing concrete noise wall with established vegetation behind, and a timber fence with creepers in front. A shared use path and established vegetation are located between the back fence and the noise wall. The vegetation in front of the noise wall partially screens views to the noise wall as shown in Photo 9-80. The existing noise wall in this location is approximately four metres high.



Photo 9-80 VPL – Existing view north

This is a residential setting where the vegetation is a major element.

Proposed change

The proposed noise wall in this location would be approximately three metres closer to the viewpoint. Some of the existing vegetation would be removed. The proposed noise wall in this location would be approximately eight metres high.

Landscaping would be proposed between this viewpoint and the noise wall as shown in Figure 9-209.

Assessment

As a result of the project, the view would be towards the proposed eight metre high noise wall with landscaping establishing in front.



Figure 9-207 VPL – Photomontage Year 0



Figure 9-208 VPL – Photomontage Year 3



Figure 9-209 VPL – Photomontage Year 10

At this viewpoint, the visual impact is assessed as:

- Year 0 – **High**, as the proposed eight metre high noise wall would be visually dominant and the some of the existing vegetation removed, opening up views to the proposed noise wall
- Year 3 – **Medium**, as the proposed landscaping would partially screen the proposed noise wall
- Year 10 – **Low to negligible**, as the landscaping would screen the noise wall and the landscape setting would be similar to the existing. In addition, the design of the noise wall would be guided by the project's Urban Design Strategy which requires materials and colour palettes to be coordinated, with consideration to form, texture and colour on both sides of the walls, and high quality finishes. This would assist with integrating the noise wall into the surrounding area.

9.4.13 Summary of impacts on private domain viewpoints

Private domain viewpoints were assessed at locations that were between three metres to 52 metres from the project.

A majority of the selected private domain viewpoints are in close proximity to the project and there would be a high level of visual impact, which would reduce to a medium level of visual impact where intervening landscaping is possible.

Where private domain viewpoints are located at a distance, which would only need to be one allotment from the project, the visual impact is low or negligible. This is due to the project's noise walls which are the main visible element, and in some locations are similar in height to a two story residence. In addition, in a residential neighbourhood, with existing vegetation, the project would be screened by both the existing built form and the existing vegetation.

Therefore the most significant landscape and visual impact on the private domain are at viewpoints immediately adjacent to the project and where there would be removal of existing vegetation that was part of the outlook from these residential properties.

9.5 Shading impacts

The scoping requirements required the landscape and visual impact assessment to *'Undertake a shading analysis and assess the extent and nature of residual shading ... on residential properties and public realm arising from the permanent project infrastructure with due regard to local planning provisions for shading ...'*

Shading impacts have been considered across a number of EES technical reports.

Technical report E – Land use and planning considers the shading impacts in relation to the local planning provisions and relevant strategic objectives regarding amenity. The following areas are identified in Technical report E – Land use and planning as having potentially adverse impacts from shading on private open space and amenity:

- *'Locations within the M80 Ring Road to Northern Portal precinct (generally on the southern side of the M80 and isolated locations south of the Greensborough Bypass)*
- *Eastern Freeway (generally on the southern side of the Eastern Freeway)'*

The implementation of EPR LP4 Minimise overshadowing from noise walls and elevated structures, would see shading impacts minimised.

The landscape and visual impact has considered the shading impacts of project infrastructure, existing vegetation and landscape plantings to the existing views. Looking solely at shading from a landscape and visual impact perspective, the difference may be either:

- Decreased shading, where existing vegetation is being removed and where this existing vegetation currently shades spaces in the public domain or residential areas
- Neutral, where vegetation may be removed and replaced with species with a similar shading potential
- Increased shading, where project infrastructure such as noise walls which may be higher than the existing noise walls and closer to residential/public open spaces and therefore may increase shading, or
- Increased shading, where proposed landscaping works to screen views to the noise walls means that vegetation may also increase shading to public domain/residential locations.

The assessment of the impact of increase/neutral/decrease in shading on the public domain also varies across the study area according to context. For example, public parkland areas may retain significant areas of unshaded space and the increased area of shading may well provide choices for where people sit or enjoy that open space. If the shading is a result of vegetation designed to screen views to the noise walls, the resultant increase in shading may on balance be a positive outcome.

The assessment of the impact of increase/neutral/decrease in shading on residential viewpoints would partly depend on the extent to which the private open spaces were overshadowed and if this was a result of constructed infrastructure such as the noise walls or as a result of vegetation. It is noted that many residential properties abutting the current freeway have extensive vegetative screening brought about by planting between the residence and the existing freeway. This vegetation can, and does, provide a pleasant aspect from residential courtyards and private open space. Vegetative shadowing may therefore on balance be perceived as a positive outcome. If however, the increased shading is a result of noise walls, this would exacerbate a negative visual outcome.

The shading impacts have been assessed where applicable on a viewpoint-by-viewpoint basis as identified in Section 9 of this report.

EES I – social Technical report considers shading impacts that relate to public open space. Technical report Q – Ecology considers shading impacts that relate to vegetation, habitat and waterways.

While it is noted that shading does have the potential to affect the light availability required for vegetation growth, species selection during the project's detailed design could mitigate the impact through the implementation of EPR LV1.

9.6 Light spill impacts

There is currently no lighting design for the project however, locations have been identified for future assessment where there would be increased infrastructure with increased street lighting or where the existing landscape would be highly modified, adjacent to residential properties or the public realm. Any future impacts would be reduced via implementation of EPRs LV3 minimise construction lighting impacts and LV4 minimise operation lighting impacts which requires the project's design to be in accordance with relevant standards including the AS 4282-1997 *Control of the obtrusive effects of outdoor lighting*.

Residential properties

The following sections of the project were identified with potential medium to high light spill impacts on residential properties:

- The M80 Ring Road interchange would have widened road corridors in all directions and the multiple viaducts would be added
- The Grimshaw Street interchange would have a widened road corridor and elevated roadway
- Watsonia railway station to Lower Plenty Road would have a significantly widened road corridor
- The Manningham Road interchange would see the removal of existing industrial buildings and the addition of new tunnel entry and exit roads
- The Eastern Freeway interchange would have a widened road corridor and multiple viaducts
- The Eastern Freeway at Bulleen Road to Doncaster Road would see the addition of the Doncaster Busway on the northern side of the freeway.

Public realm

The following sections of the project were identified with potential medium to high light spill impacts on public realm:

- The Manningham Road interchange would see the removal of existing industrial buildings and the addition of new tunnel on and off ramps
- The M80 Ring Road interchange would have widened road corridors in all directions and the multiple viaducts would be added
- The Grimshaw Road interchange would a widened road corridor and elevated road way
- The northern portal would have on and off ramps, a tunnel portal and ventilation structure
- The southern tunnel would have on and off ramps, a tunnel portal and ventilation structure.

10. Environmental Performance Requirements

Table 10-1 lists the recommended Environmental Performance Requirements (EPRs) relevant to the landscape and visual impact assessment.

Table 10-1 Environmental Performance Requirements for landscape and visual impact assessment

EPR ID	Environmental Performance Requirement
EPR LV1	<p>Design to be generally in accordance with the Urban Design Strategy</p> <p>Urban Design and Landscape Plans must be developed and implemented for permanent above-ground works in accordance with the North East Link Project – Incorporated Document. The design response must be generally in accordance with the North East Link Urban Design Strategy and, to the extent practicable:</p> <ul style="list-style-type: none"> • Avoid or minimise landscape and visual, overlooking, and shading (with reference to EPR LP4) impacts in extent, duration and intensity • Maximise opportunities for enhancement of public and private receptors including public amenity, open space and facilities, and heritage places resulting from the project.
EPR LV2	<p>Minimise landscape impacts during construction</p> <p>Temporary and construction works are to be designed and carried out generally in accordance with the Urban Design Strategy guidance on using design to help manage construction impacts. Areas disturbed by temporary and construction works are to be reinstated in consultation with the relevant land manager.</p> <p>Develop and implement measures to use temporary landscaping, features or structures (including viewing portals) during construction to minimise adverse visual impact of project works and provide visual appeal. Temporary landscape treatments, features or screening must be reused across the project, where appropriate.</p> <p>Implement landscaping enhancement (as part of permanent works) prior to construction works commencing, where practicable.</p>
EPR LV3	<p>Minimise construction lighting impacts</p> <p>Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks, community facilities and any known significant native fauna habitat to the extent practicable.</p>
EPR LV4	<p>Minimise operation lighting impacts</p> <p>Design and install lighting used during operation of permanent structures in accordance with relevant standards, including but not limited to AS 4282 -1997 Control of the obtrusive effects of outdoor lighting.</p> <p>Design lighting to minimise spill and disturbance to significant fauna sites (eg, Grey-headed Flying-fox colony at Yarra Bend, wetlands and waterways immediately adjacent to roadways).</p>

In addition to the above LVIA EPRs, the following additional EPRs as listed in apply to the assessment of landscape and visual impacts.

Table 10-2 Environmental Performance Requirements – other disciplines

EPR ID	Environmental Performance Requirement
AR1	Develop and implement a Tree Removal Plan
AR3	Implement a Tree Canopy Replacement Plan
LP4	Minimise overshadowing from noise walls and elevated structures

11. Conclusion

The purpose of this report is to provide a landscape and visual impact assessment to inform the preparation of the EES.

The report provides an assessment of landscape and visual considerations associated with the construction and operation of North East Link that would have the potential to impact existing landscape and visual environment.

The key landscape values and visual features identified within the study area affected by the project and the associated impacts are summarised below.

11.1 Existing conditions

The key landscape values and features identified in the study area include the Yarra River corridor and Koonung Creek corridor and their associated parks and reserves, Bolin Bolin Billabong, Simpson Barracks and the Heide Museum of Modern Art. These landscapes are valued for their dense vegetation, open spaces and cultural significance. The dense vegetation within these areas provides visual relief from the surrounding urban landscape. Views to and from these locations are valued for their continuous green canopy.

The existing major road corridors with the wide verges, embankments and established vegetation are distinctive throughout the study area. The M80 Ring Road, Greensborough Bypass and the Eastern Freeway all contribute to the overall leafy character of the surrounding suburban residential areas.

Within the study area, a majority of the landscape consists of suburban residential properties. These areas are valued for the extensive established vegetation within the lots and surrounding streets, and the prominent ridgelines. This is reflected in the local council legislation and policy (refer to Appendix B) with particular reference to views to and from the vegetated ridgeline.

11.2 Impact assessment

Impacts were assessed from 69 public and 12 private viewpoints.

The reference project has been designed to reduce impacts on the existing landscape where possible, with particular consideration to minimising the construction footprint, reducing surface impacts (ie construction of twin tunnels to avoid large areas of residential and ecological significant areas) and micro-siting and design of project infrastructure.

The medium and high impacts associated with suburban residential areas are specific to residential areas in proximity to the project where large amounts of new infrastructure are proposed. Along the M80 Ring Road, residential properties directly adjacent to the southern project boundary would be impacted due to their proximity to new noise walls and the reduced space for planted buffers. At the M80 Ring Road interchange, residential properties in the south-west and south-east would be impacted due to new or increased height noise walls, viaducts and reduced space for planted buffers. At Grimshaw Street, the AK Lines Reserve and adjacent residential properties would be impacted due to new noise walls and an elevated road corridor. Along Greensborough Road, residential properties to the east would be impacted due to new noise walls and elevated road corridor. At the northern portal, residential properties directly adjacent in the east and west would be impacted due to new noise walls and the approximately 40 metre high ventilation outlet.

At the Eastern Freeway interchange, residential properties to the south-west and south-east would be impacted due to the increased height of noise walls and addition of viaducts.

Along the Eastern Freeway, residential properties directly adjacent to the project boundary on the south would be impacted due to new and the increased height of noise walls. These high impacts would decrease as the distance from the project increased.

The medium impacts associated with the road corridors are particular to sections of the Eastern Freeway. The addition of a considerably widened road corridor and large interchanges with overhead viaducts would result in the loss of available space for vegetated embankments and shaped noise walls. This would see the existing landscape significantly altered.

Through the design process EPR LV1 influences the landscaping outcomes and noise wall design could reduce these impacts.

The highest impacts would be south of the M80 Ring Road corridor, south-west of the M80 Ring Road interchange and south of the Eastern Freeway from the east of the Bulleen interchange where noise walls would increase in height or move closer to viewpoints due to the increased width of the road corridor, and around the southern portal where open space and sports fields would be in close proximity to the proposed ventilation structure.

It is noted that many residential properties abutting the current Eastern Freeway have extensive vegetative screening from planting between the residence and the freeway. This vegetation can and does provide a pleasant aspect from residential courtyards and private open space.

Vegetative shadowing may on balance be perceived as a positive outcome. If however, the increased shading was a result of noise walls, this would exacerbate a negative visual outcome.

Potential light spill impacts were identified in locations with increased infrastructure or where the existing landscape would be highly modified. Key locations include the M80 Ring Road interchange, the Eastern Freeway and at the northern and southern tunnel portals. EPRs LV3 and LV4 require future lighting designs to adhere to relevant standards.

During the projects' construction, landscape and visual impacts would generally be similar to during its operation but temporary construction fencing would be located around the works and would be visually impermeable. Infrastructure associated with construction such as scaffolding, machinery and spoil stockpiles would be visible but these would be temporary.

During the project's construction multiple open space reserves would be occupied for construction compounds. These reserves and the surrounding residential properties would see the highest visual impact during construction as the reserves would be screened with temporary construction fencing and public access restricted. Affected reserves include AK Lines Reserve, Gabonia Avenue Reserve, Winsor Reserve, Borlase Reserve, Bullen Park, Musca Street Reserve, Koonung Creek Linear Reserve, Katrina Street Reserve and Elgar Park.

For these reasons, the project is well sited to minimise impacts to landscape and visual amenity during its construction and operation. Where there are high impacts, landscape treatments may visually screen proposed infrastructure or the infrastructure may be designed to visually integrate with the existing landscape. Landscape treatments and the design response would be required in compliance with the relevant EPRs and the project's Urban Design Strategy.

12. References

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