NORTH EAST LINK PROJECT

Bulleen Park and Ride Urban Design and Landscape Plan

March 2021

PLANNING AND ENVIRONMENT ACT 1987

MANNINGHAM PLANNING SCHEME

NORTH EAST LINK PROJECT INCORPORATED DOCUMENT, DECEMBER 2021

ENDORSED PLAN

SHEET 1 OF 203

SIGNED ..... Richard Wynne

MINISTER FOR PLANNING

DATE 28/3/21

northeastlink.vic.gov.au
Authorised and published by the Victorian Government, 1 Treasury Place, Melbourne

VICTORIA'S BIG BUILD

VICTORIA State Government

Contents

Figures

Tables

Foreword

In accordance with the requirements set out in North East Link Project (NEL Project) Incorporated Document, dated December 2019, the Bulleen Park and Ride Urban Design and Landscape Plan (UDLP) was publicly exhibited from 2 November to 7 December 2020 with submissions invited via the Engage Victoria Website.

A total of 35 submissions were received in response to the exhibition of the UDLP. Of those 35 submissions, two were from community groups, six from local and State agencies and the balance (27) from individual members of the community comprising both people residing close to the site and those located nearby or in neighbouring suburbs.

In response to issues raised in the public submissions and incidental design refinements that have occurred since the UDLP was exhibited, updates have been made to this UDLP Report and the UDLP Drawings. Table F-1 below provides details of these updates and the location of each update in this report. These changes and design refinements were discussed with the Urban Design Advisory Panel (UDAP) on 25 January, 1 February and 8 February 2021 and their response to these is detailed in the UDAP memo which accompanies the UDLP.

Table F-1 List of changes to the UDLP Report and Drawings

Change	Reason for change	Details	Drawing numbers	Report sections
Buslink noise wall finish	Response to submissions	Resident concerns about light spill from bus headlights and the potential for overlooking related to the transparent Buslink noise wall have been considered by NEL and a new finish is now proposed for the noise wall to address this. The Buslink noise wall is now a precast concrete barrier and opaque light green acrylic screen for the first 3000mm above FSL (finished surface level) with a tinted, transparent light green acrylic screen for the remaining 1000mm.	15, 26, 30, 51, 52, 53, 54, 59, 60, 61, 62, 63, 69	Section 5.3.8 Section 5.3.10
Shared use path underpass – retaining wall to the south	Response to submissions	Changes have been made to the area to the south of the shared use pedestrian path to reduce the amount of retaining wall in this area and replace this with a planted batter. This will enhance the visual amenity of the area and also reduce the risk of graffiti on this section of exposed wall which were both issues raised in submissions.	9, 30, 32, 33, 51, 52, 53, 54, 61	-
Additional seating and bicycle repair facilities on green roof	Response to submissions	Four additional seats and a bicycle repair facility will be provided on the green roof to improve amenity and use of the green roof park area.	9, 32, 33	-

Change	Reason for change	Details	Drawing numbers	Report sections
Change to Kampman Street pedestrian crossing and speed controls	Response to submissions	Pedestrian crossing has been changed to a 'wombat' style crossing after further discussions with Manningham City Council. Removal of speed cushions on either side of the proposed pedestrian crossing to Kampman Street as these are no longer required with the raised crossing.	30, 61	-
New drawing added 'Sightlines from Noise Wall'	Response to submissions	In response to community comments. See UDLP Drawing 71.	71	Section 5.6.4
New drawing added 'Overshadowing from Noise Wall'	Response to submissions	In response to community comments. See UDLP Drawing 72.	72	Section 5.6.4
Graffiti mitigation	Response to submissions	Text added in response to submissions concerned about vandalism and graffiti.	-	Section 5.3.10
Pedestrian and shared user path connections	Response to submissions	Text added in response to submissions querying potential connectivity and wayfinding to and through the site.	-	Section 5.2.4
Third party planning applications	Response to submissions	Text added in response to submissions concerned about the impact of Bulleen Park and Ride works to third party developments near the site.	-	Section 4.3
Name of the facility	Response to submissions	Text added to discuss naming of the facility.	-	Section 5.5
Relocation of Accessible car parking spaces on basement level	Design refinement	Following consultation with DoT, accessible car parks have been moved to sit alongside the 'shared area' (hatched on plans) which provides appropriate space for accessible access to these car parks. This allows for two additional car parking spaces within the facility.	11, 12, 44	
Additional Kiss and Ride space (pick up/drop off)	Design refinement	Following consultation with DoT, by relocating one staff car park, an additional Kiss and Ride space can be accommodated on the intermediate level. This increases the number of Kiss and Ride spaces within the facility from five to six.	10, 12, 43	Section 5.3.5 Section 5.3.2

Change	Reason for change	Details	Drawing numbers	Report sections
Removal of Quadguard crash cushions	Design refinement	Following consultation with DoT, removal of Quadguard crash cushions next to western end of southern platform and replacement with bollards. Replacement of Quadguard crash cushions next to western end of southern platform with low level bollards to enhance visual amenity.	52, 53, 54, 55, 56, 62, 63, 67	-
Relocate Thompsons Road bus stop	Design refinement	Following consultation with DoT, Thompsons Road bus has been relocated approximately 18 metres to the south west. This allows for the bus stop to be designed to meet DDA standards in relation to gradient. A bus shelter will also be added to this stop.	7, 8, 9, 13, 32, 33, 40, 41, 42, 51, 53, 55, 56	-
Revision to geometry of Buslink	Design refinement	Following consultation with DoT, design refinements have been made to improve sightlines to the future uncontrolled intersection (in the ultimate design) and improve geometry of road. This results in minor changes to the Buslink and its associated noise wall's geometry and location.	7, 8, 9, 13, 32, 33, 40, 41, 42	-
Shared use path underpass dimensions	Design refinement	Following consultation with DoT, minor changes to the dimensions of the shared use path underpass below the Buslink connecting Kampman Street to the facility to accommodate revised road geometry of Buslink. Height reduced by 200mm and width reduced to 5.0 metres from 5.4 metres.	30, 61	Table 6.4
Southern Platform canopy	Design refinement	Following consultation with DoT, construction of elements of the southern platform, such as the canopy (structure and glazing) may be deferred until the platform begins regular operation.	-	Section 5.3.9
Southern platform retaining wall	Design refinement	Height of retaining wall behind southern platform to be increased and the amount of transparent glazing at the end of the Busway pedestrian underpass to be reduced as a result. This is a design refinement to ensure an appropriate drainage and maintenance outcome.	18, 20, 48, 52, 53,	-
Addition of maintenance	Design refinement	Design refinement to allow for maintenance vehicle to access green	7, 8, 9, 13, 32, 33, 40,	Section 5.4.1

Change	Reason for change	Details	Drawing numbers	Report sections
access to green roof		roof. Provides a loop road for access. Includes a new access off the Buslink onto the shared use path and a new section of granitic gravel pathway to create a 'loop' road around the green roof garden.	41, 42, 51, 52, 53, 54, 58, 68, 69	
Addition of concrete pad for generator	Design refinement	Addition of concrete pad next to the entry concourse to accommodate a generator should power supply fail.	25, 68, 70	-
Future proofing for myki infrastructure	Design refinement	Inclusion of conduits and future connections for myki readers (tap on/off) to future proof the facility.	63	-
Future Buslink intersection	Design refinement	Addition of an island to the Buslink at the intersection to the future Busway. Design refinement for safety at the future uncontrolled intersection.	7, 8, 9, 32, 33, 40, 41, 42	-

1 Introduction

1.1 Purpose of the Urban Design and Landscape Plan and this report

The Bulleen Park and Ride UDLP provides details of the proposed Bulleen Park and Ride facility (Bulleen Park and Ride or the facility) to be established on a portion of the Koonung Reserve Bulleen and delivered as part of the NEL Project. For the purposes of this report, the term 'UDLP' refers to both the UDLP Drawings and this UDLP Report.

Preparation of UDLPs is a requirement of the NEL Project Incorporated Document dated December 2019 which forms part of the Banyule, Boroondara, Manningham, Nillumbik, Whitehorse, Whittlesea, and Yarra Planning Schemes. The NEL Project Incorporated Document, approved by the Minister for Planning pursuant to Amendment GC98 in December 2019, provides the overarching mechanism for planning approval of permanent above ground buildings and structures forming part of North East Link.

The Incorporated Document requires that, prior to the commencement of development of permanent above-ground buildings or structures, a UDLP must be prepared to the satisfaction of the Minister for Planning.

The UDLP has been prepared in accordance with Clause 4.9.3 of the Incorporated Document. Its purpose is to detail the final built form design for the Bulleen Park and Ride project and demonstrate how the proposal is in accordance with the approved Urban Design Strategy (UDS) including any relevant elements of the Urban Design Framework Plan, and how the UDLP will comply with the approved Environmental Performance Requirements (EPRs) which apply to the NEL Project. The UDS was approved by the Minister for Planning on 23 March 2020 and the EPRs were approved as part of the Environmental Management Framework on 9 February 2020.

1.2 Project context

Bulleen Park and Ride will ultimately become fully integrated with the Doncaster Busway. The busway will be a key feature of North East Link and will include a new dedicated bus lane in each direction between Doncaster Road and Hoddle Street. The busway will largely be located north of the Eastern Freeway. At the Chandler Highway, the busway will split and be located on the outside edges of the Eastern Freeway to connect into the existing bus lanes on Hoddle Street.

The new dedicated lanes for the Doncaster Busway will increase service frequencies, provide faster travel times, and increase patronage across the busway routes benefitting bus users between the Melbourne CBD and eastern suburbs.

At the completion of the delivery of North East Link, two permanent park and ride facilities (each incorporating a bus interchange or station) will be delivered and integrated into the Doncaster Busway: an upgraded facility at the site of the existing Doncaster Park and Ride, and a second at the Eastern Freeway and Bulleen Road Interchange. The new Bulleen Park and Ride will increase community access to bus services between Bulleen, The Pines Shopping Centre and the Melbourne CBD.

Collectively, the Doncaster Busway and park and ride facilities would improve community accessibility and connectivity, including connections to other public transport and active transport options along the corridor.

The Reference Design used in the Environment Effects Statement for the North East Link included two permanent park and ride facilities - one at Bulleen and the other at Doncaster. In addition, the EES identified that a temporary park and ride facility would be constructed near the Eastern Freeway and Doncaster Road interchange, to replace the Doncaster Park and Ride during construction of the NEL Project.

The Minister for Planning, in his assessment of the NEL Project, noted that alternative designs had been presented for both the Bulleen and Doncaster park and ride facilities and that the transport conclave (as part of the EES hearing) had agreed that both facilities needed to be reviewed post EES to improve functionality and access[1].

As a consequence of the EES process, the locations and designs of the park and ride facilities were revisited including the need for, relative merits and cost of establishing a temporary park and ride facility at the Eastern Freeway and Doncaster Road interchange.

1.2.1 Bulleen Park and Ride as proposed in the Reference Project

In the Reference Design for the NEL Project, the Bulleen park and ride facility, proposed immediately to the east of the Eastern Freeway and Bulleen Road Interchange, was located on the site of the Boroondara Tennis Centre, below the North East Link entry and exit ramps connecting to the Eastern Freeway to the east (see Figure 1-1). It was described in the EES as being managed by Transport for Victoria to provide car parking for 300 to 400 commuter vehicles (Chapter 8 – Project Description).

As detailed in the EES, drivers accessing the park and ride facility were to have accessed the facility through an entrance to be shared with the Manningham Club and Hotel. This entrance was part of a complex intersection that would have encompassed the Manningham Club/Park and Ride entrance, Thompsons Road, the busway, and the Eastern Freeway outbound on-ramp.

[1] North East Link Minister's assessment of environmental effects November (2019:22)

Due to the complex nature of the intersection, drivers exiting the park and ride would be restricted to left turn only onto Thompsons Road. This turn restriction was raised as a concern by key stakeholders during the EES assessment process.

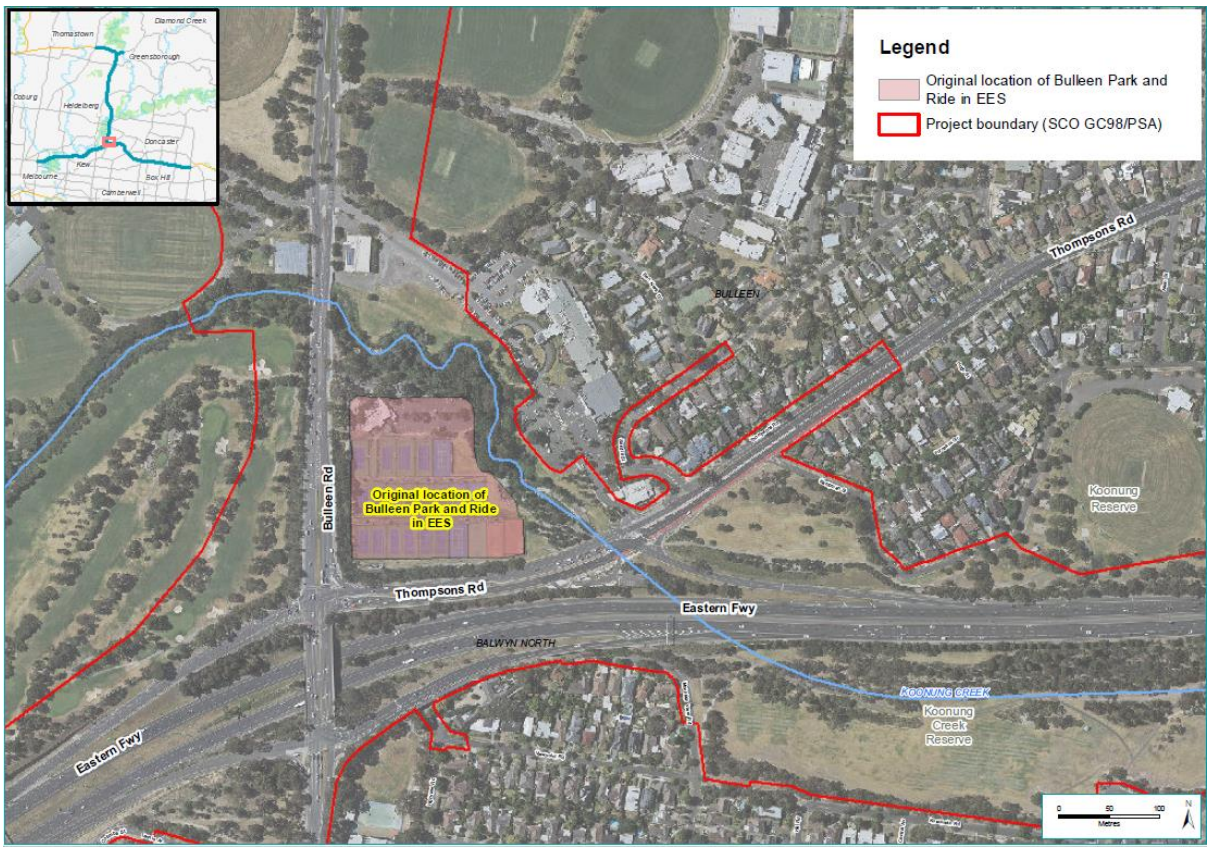

Figure 1-1 Location of the Bulleen Park and Ride in the Reference Project

1.2.2 Temporary Doncaster Park and Ride as proposed in the Reference Project

As part of the Reference Design for the Project, a temporary park and ride facility was proposed at the Doncaster Road interchange (to the west of the Eastern Freeway and the north of Doncaster Road). This was to ensure continuous operation of the Doncaster park and ride facility (east of the Eastern Freeway and south of Doncaster Road) while an upgraded multi-level facility was being built as part of the NEL Project. The temporary facility was to be in place until the existing Doncaster facility was upgraded to its ultimate design.

The temporary Doncaster park and ride facility proposed in the EES would have used a section of the Koonung Creek Reserve as shown below in Figure 1-2. This site was favoured due to its proximity to the existing Doncaster Park and Ride and its easy access to the Eastern Freeway.

The facility that was to be developed on this site was expected to contain the same number of commuter parking spaces as the existing Doncaster Park and Ride (430 spaces) as well as a bus turnaround. The use of the site for temporary commuter car parking would have removed its use as passive open space and displaced the shared use connections through the site. It would also have resulted in the loss of vegetation on the site.

While detailed plans were not presented as part of the EES, to quantify the potential loss of vegetation for the purposes of determining the native vegetation offsets, total vegetation loss was assumed in line with the practice across the whole Project.

Residences in Gardenia Road and Koonung Street back onto Koonung Creek Reserve and residences to the south of Doncaster Road overlook the site of the temporary facility. These residents would have been affected by the change in land use, loss of outlook, and loss of access to public open space. However, these effects would have been temporary as the facility was proposed to be in place for about three years.

Once the upgraded Doncaster Park and Ride at the existing site was opened for use, the temporary facility would have been demolished and the open space and shared use connections reinstated.

Figure 1-2 Location of the temporary Doncaster Park and Ride in the Reference Project

1.3 Overview of the alternate Bulleen Park and Ride proposed in this UDLP

Following the review of locations and designs of the park and ride facilities, an alternate site, located to the east of the intersection of Thompsons Road and the Eastern Freeway, has been identified as a preferable solution for the Bulleen Park and Ride. Figure 1-3 shows the originally proposed location and currently proposed location of the Bulleen Park and Ride in the context the broader NEL Project.

The current site for the Bulleen Park and Ride (shown as the 'Proposed Location' in Figure 1-3) was shown as a potential construction compound in the EES as Site 12, having an area of some 10,000m^2).

The EES stated this site would have been used as a construction compound for three years although the actual time of use would have been dependent on the final design and construction program.

It is now proposed to construct the new permanent Bulleen Park and Ride at the preferred location as part of the early delivery of the Doncaster Busway. Construction of the Bulleen Park and Ride at this location would take about 18 months. As such, construction related activities would be shorter in duration than originally proposed, but a new permanent land use would commence post construction.

The scale of impacts associated with the construction and operation of the Bulleen Park and Ride at the current location are generally consistent with the types of impacts described and assessed in the EES. The EPRs will apply to the construction and operation of the Bulleen Park and Ride as part of the NEL project, together with UDLP (if approved) and conditions and requirements of the Incorporated Document and EMF.

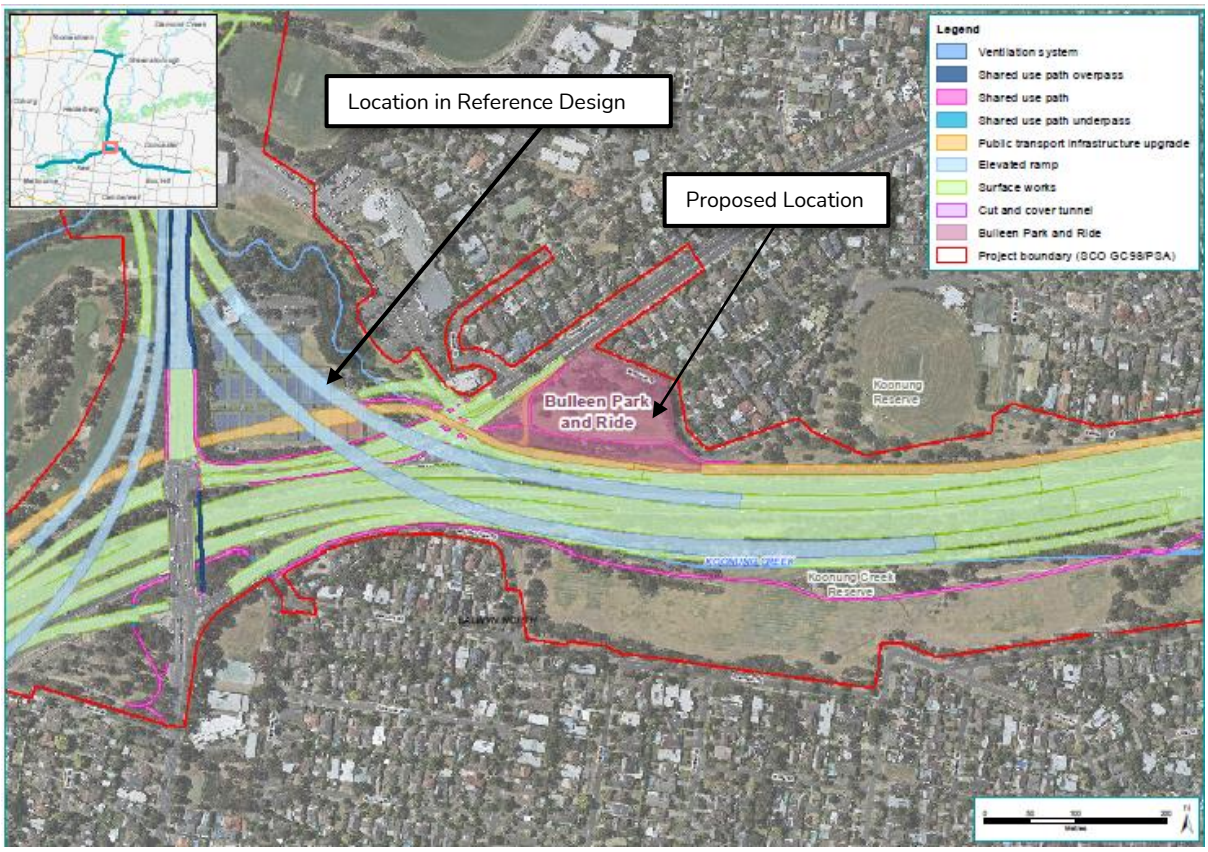

Figure 1-3 Reference design location and preferred current location of the Bulleen Park and Ride in the context of the NEL Project

The new Bulleen Park and Ride would be constructed before the completion of the busway. An 'interim design' would first be constructed until completion of the Doncaster Busway at which point the new busway would connect directly into the Bulleen Park and Ride.

This interim design would include a bus turnaround at the western end of the platform to allow buses to collect and or deliver passengers to the stop and return to Thompsons Road as shown in Figure 1-4. The 'ultimate design' would see platforms on both sides of the bus interchange fully integrated with the new busway connecting to Doncaster and the City as shown in Figure 1-5. Implementation of the ultimate design would take place three to five years after construction of the interim design.

This UDLP is for the interim design of the Bulleen Park and Ride. A subsequent UDLP process or amendment to this UDLP would be undertaken for the ultimate design.

Figure 1-4 Artist's impression of the interim design of the Bulleen Park and Ride (subject of the UDLP and this report)

Figure 1-5 Artist's impression of the ultimate design of the Bulleen Park and Ride

The Bulleen Park and Ride is proposed to be built in advance of the temporary closure of the Doncaster Park and Ride and would provide alternative commuter car parking while the existing Doncaster Park and Ride is upgraded. As a result, a temporary park and ride facility at the Doncaster interchange would not be required.

The Bulleen Park and Ride is proposed to be accessed by a signalised intersection off Thompsons Road. This design would allow motorists to enter and leave the facility in both directions along Thompsons Road, whereas the EES's Reference Design would have prohibited motorists directly exiting to the south along Thompsons Road.

Further detail on the design of the proposed alternate Bulleen Park and Ride is provided in Section 5 of this report.

1.4 Rationale for the alternate Bulleen Park and Ride proposed in this UDLP

Constructing a new park and ride facility at Bulleen in advance of the temporary closure of the existing Doncaster Park and Ride would enable continuous operation of a park and ride facility for commuters in the area. Further, the preferred Bulleen Park and Ride location may allow for the Doncaster Busway from Hoddle Street to Thompsons Road to be opened sooner than possible in other scenarios considered.

The proposed design of the preferred Bulleen Park and Ride would address many of the functionality and access concerns raised during the EES process. It would avoid the need for a shared entry with the Manningham Hotel and Club, reducing the complexity of this intersection. It would also allow motorists to enter and leave the facility to both the north and south along Thompsons Road. It may also provide opportunities to reinstate open space near Koonung Creek.

As discussed in Section 1.3 of this report, in the ultimate design, the proposed alternate Bulleen Park and Ride would be fully integrated with the new busway connecting to Doncaster and the City. It would allow for express buses travelling between Hoddle Street and the Doncaster Park and Ride to bypass the Bulleen Park and Ride stops. It would also allow for stopping buses to enter and exit the busway to Thompsons Road to both the north and south.

Constructing the permanent Bulleen Park and Ride, instead of the temporary facility at Koonung Creek Reserve near Doncaster Road, would avoid abortive works and temporary construction costs. The temporary park and ride facility and associated traffic mitigation works would meet a temporary need only and be demolished after that temporary need was met. The impacts of the temporary park and ride facility as described in Section 1.2.2 of this report would be avoided.

2 Requirements for the Urban Design and Landscape Plan

2.1 Requirements pursuant to Incorporated Document

Clause 4.9 of the Incorporated Document requires that, prior to the commencement of development of permanent above-ground buildings or structures (excluding preparatory buildings and works under Clause 4.13.1), a UDLP must be prepared to the satisfaction of the Minister for Planning.

The UDLP must show the final built form design for the project and include where relevant:

1. Site layout plan that shows the location of permanent above-ground buildings and structures (including but not limited to proposed bridges, elevated roads, tunnel portals, ventilation structures, flood walls, noise walls, public transport infrastructure, and walking and cycling facilities).
2. Architectural plans, including sections and elevations, with materials and finishes.
3. Landscape plans including sections and elevations with plant species.

The Bulleen Park and Ride UDLP Drawings provide this detail.

The UDLP must be accompanied by the following, where relevant:

a) *An explanation demonstrating how the UDLP is in accordance with the approved UDS including any relevant urban design framework plan.*

b) *An explanation demonstrating how the UDLP would comply with the EPRs included in the approved EMF.*

c) *A plan which shows the extent of the UDLP area in relation to any publicly available or approved UDLP/s.*

d) *A plan which shows the boundary of the Project Land and location of areas to be used for construction compounds consistent with the approved Construction Compound Plan under Clause 4.12.*

As there are no approved UDLP/s and no approved Construction Compound Plans, clauses (c) and (d) are not applicable.

Otherwise, the Bulleen Park and Ride UDLP Report provides this detail.

As previously stated, for the purposes of this report, the term 'UDLP' refers both the UDLP Drawings and UDLP Report.

The proposed Bulleen Park and Ride's compliance with the applicable provisions of the Urban Design Strategy and the applicable Environmental Performance Requirements (EPRs) is set out in Tables 6.1 to 7.1 of this report respectively.

The architectural plans and landscape plans which form the UDLP accompany this report. This report has been prepared to accompany the UDLP for the Bulleen Park and Ride.

2.2 Community and stakeholder engagement

The Incorporated Document requires consultation with the community and stakeholders to be undertaken prior to the submission of an UDLP to the Minister for Planning for approval. Clause 4.9.4 of the Incorporated Document directs an UDLP must be:

a) *Provided to the Urban Design Advisory Panel (UDAP) and relevant council/s for consultation.*

b) *Provided to the Department of Transport, Roads Corporation, Public Transport Development Authority, Melbourne Water, Heritage Victoria, the Department of Environment, Land, Water and Planning (DELWP), Parks Victoria and the Head, Transport for Victoria for consultation where relevant.*

c) *Made available for public inspection and comment on a clearly identifiable Project website. The website must set out details about the entity and contact details to which written comments can be directed during that time and specify the time and manner for the making of written comments.*

The Bulleen Park and Ride UDLP was provided electronically to UDAP members and Manningham, Whitehorse, Boroondara, Banyule and Yarra City Councils on 2 November 2020. The NEL Project notified representatives of departments listed under section 4.9.4 (b) electronically via email on 2 November 2020, informing of the UDLP exhibition period, an offer to meet with the NEL Project team and where to make a submission.

The NEL Project hosted a dedicated webpage https://northeastlink.vic.gov.au/design/bulleen-park-and-ride which provided an overview of the design and summary of the UDLP process. This website then directed people to the Engage Victoria webpage https://engage.vic.gov.au/north-east-link/bulleenparkandride, which was the portal for online engagement participation and to make a submission.

The minimum period for comment must be 21 days. Clause 4.9.4 directs that for the avoidance of doubt, consultation in accordance with (a) and (b) can occur prior to, during, and after the public inspection and comment period in accordance with 4.9.4(c).

The Bulleen Park and Ride UDLP was on public exhibition from 36 days from 2 November to 7 December, 15 days longer than was required to offset any potential impacts that the COVID-19 pandemic may have had on the ability for communities and stakeholders to engage.

Clause 4.9.5 directs that before, or on the same day as an UDLP is made available, in accordance with the project website a notice is to be:

a) *Published in a newspaper generally circulating in the area to which an UDLP applies informing the community of the matters set out in Clause 4.9.4(c).*

b) *Provided to owners and occupiers of land adjacent to the area/s to which an UDLP applies informing them of the matters set out in Clause 4.9.4(c).*

Notices were published in both the Herald Sun and The Age newspapers on 2 November 2020. Notice of the proposed Bulleen Park and Ride and public exhibition of the UDLP was provided to owners and occupiers of 26 properties adjacent to Koonung Reserve and was letterbox dropped to 52 properties nearby. 22 absentee owners were also notified about the project.

Clause 4.9.6 directs that an UDLP submitted to the Minister for Planning for approval under Clause 4.9.1 must be accompanied by a summary of the consultation carried out in accordance with the Incorporated Document including a summary of all written comments received and a response to issues raised in the submissions. This has been prepared for the Minister.

The UDLP Report and Drawings were exhibited and stakeholders were provided the opportunity to make submissions. This UDLP Report has been prepared to demonstrate how the UDLP complies with the EPRs and is in accordance with the UDS. This UDLP Report has been updated following the receipt of submissions and as outlined in the Foreword section of this report.

The UDLP has been informed by extensive consultation with the Department of Transport, Melbourne Water and the NEL Project's Urban Design Advisory Panel (UDAP).

3 Urban Design and Landscape Plan

The North East Link Incorporated Document requires the UDLP to show the final built form design for the project, and includes:

- Site layout plan
- Architectural plans, including sections and elevations with materials and finishes
- Landscape plans including sections and elevations with plant species.

Inclusions in UDLP are detailed in Table 3-1.

Table 3-1 Details of drawings included in the UDLP

Drawing number	Details
1	Cover Sheet
2	Site Aerial
3	Subject Site
4	Site Profile and Photos
5	Bus link Layout
6	Site Layout
7	Pedestrian and Cycle Circulation Interim
8	Noise Wall Alignment
9	Site Plan
10	Intermediate Level Plan
11	Lower Level Plan
12	Parking Study
13	Materials Schedule Road and Paving
14	Materials Schedule Architectural Elements
15	Materials Schedule Urban Elements
16	Material Schedule Underpass Walls
17	Building Façade Cladding
18	Car Park Section and Elevation
19	South West Elevation
20	South Platform South Elevation
21	Platform Plan Intermediate Level
22	South Elevation Car Park Building
23	Section of Bus Platform
24	Section of Bus Platform

Drawing number	Details
25	Arrival Concourse
26	Shared use path, Noise Wall and Bus Lane Interface
27	Shared use path Section A
28	Shared use path Section B
29	Shared use path Section C
30	Kampman Street Pedestrian Link
31	Tree Retention and Removal Plan
32	Landscape Plan Sheet 1
33	Landscape Plan Sheet 2
34	Landscape Elevation
35	Landscape Planting Schedule – Trees and Water Sensitive Urban Design
36	Landscape Planting Schedule - Shrubs and Groundcovers
37	View of Entry Concourse North Elevation
38	View of Entry Concourse
39	View of Northern Bus Platform
40	Site Context Plan
41	Roof Plan
42	Upper Level Plan
43	Intermediate Level Plan
44	Lower Level Plan
45	Car Park Building South Elevation
46	East Elevation
47	West Elevation
48	South Platform North Elevation
49	Longitudinal Section
50	North South Cross Section
51	Aerial View
52	Site View from South East Looking North West
53	Site View from South Looking North
54	Site View Looking South West
55	View from Thompsons Road Intersection
56	View Looking East from Thompsons Road
57	View Looking South East Across Thompsons Road

Drawing number	Details
58	View Looking South East from Thompsons Road
59	Proposed Noise Wall Viewed from Outside 26 Kampman Street Looking South
60	Proposed Noise Wall Viewed from Furneaux Grove Looking Southwest Across Kampman Street
61	View of Connection to Shared use path at Kampman Street East
62	View of Northern Platform Looking East
63	View of Southern Platform Looking East
64	View of Northern Platform Looking West
65	View of Northern Platform
66	View from Carpark View Toward Staircase and Northern Platform
67	Bus Platforms Viewed from South West
68	Concourse Viewed from Shared Use Path Bridge
69	View of Concourse Looking East
70	View of Concourse Looking West
71	Sightlines from Noise Wall
72	Overshadowing from Noise Wall

4 Site context

4.1 Location and existing conditions

The new Bulleen Park and Ride will form part of the new Doncaster Busway which will separate bus services from general traffic for its length, except where the Doncaster Busway crosses Thompsons Road. The Bulleen Park and Ride facility will be modelled on premium train stations which have a customer service centre and passenger facilities such as indoor waiting areas and toilets.

The busway will largely be located north of the Eastern Freeway. The location of the proposed Bulleen Park and Ride and the original location proposed for the park and ride are shown in Figure 4-1.

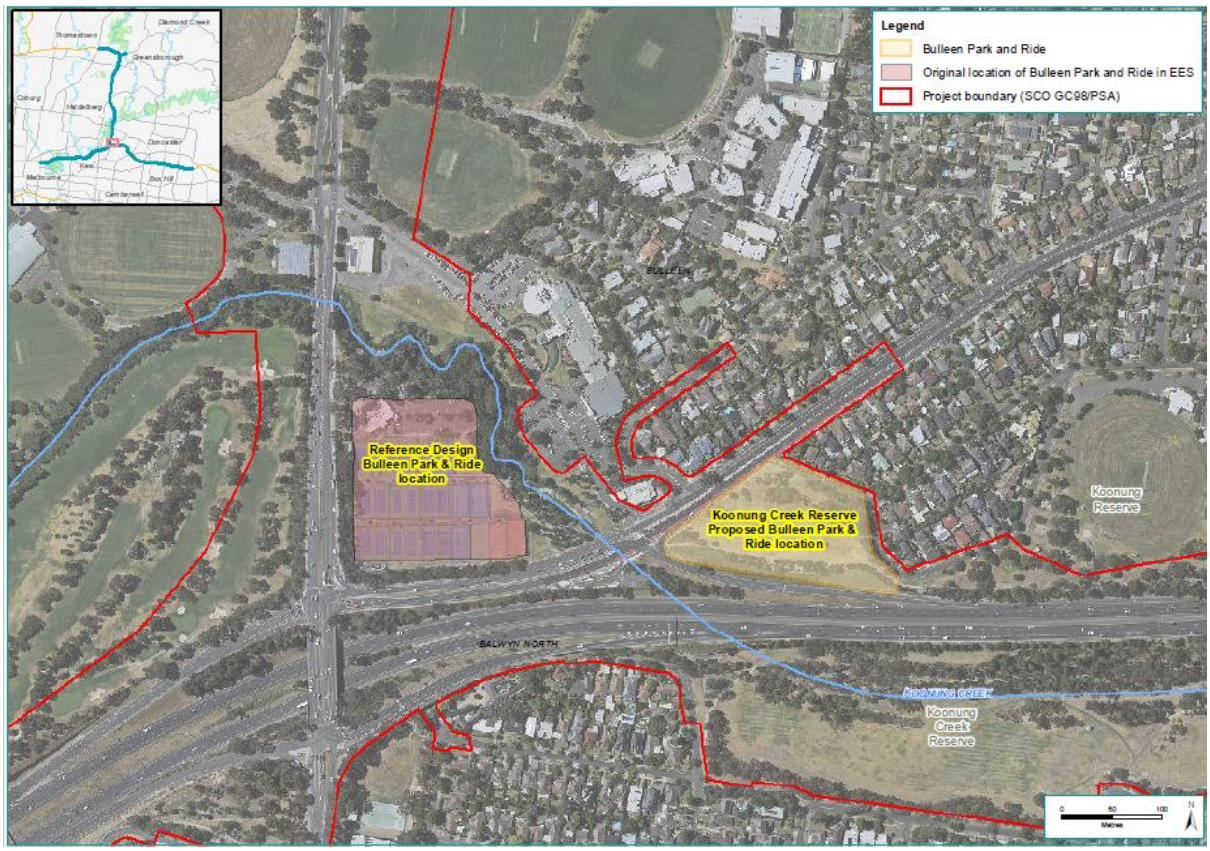

Figure 4-1 Location of Bulleen Park and Ride in Reference Project and proposed location at Koonung Reserve

The site is irregular in shape and bounded to the northwest by Thompsons Road, to the north and east by Kampman Street (which intersects with Thompsons Road to the north of Koonung Reserve), and to the south by the Eastern Freeway on-ramp. It has a frontage of 133.9 metres to Thompsons Road, 197.4 metres to Kampman Street, with an area of 13,488.8 square metres (1.34 ha).

The site currently serves as informal public open space and forms part of Koonung Reserve; a linear park to the north of the Eastern Freeway through which the Koonung Creek shared use path trail passes. The site falls sharply from the northern edge to Kampman Street to the south. The park features perimeter planting, comprising a mix of species, with mature planted native vegetation along the edge to Kampman Street filtering views across the park from Kampman Street. The lower level of the park is open and features scattered trees.

4.2 Tenure and title

The land is known as 2-30 Kampman Street and consists of multiple parcels of land. The land is described as part of Res1/PS803701, part of Res2/PS418197, a small section of Unreserved Crown land (being the former bed of Koonung Creek), and a section of the declared Eastern Freeway reserve (being land adjacent to the freeway on-ramp at the south of the site).

Res1/PS803701 and Res2/PS418197 are owned by the City of Manningham while the unreserved Crown land is administered by the Secretary to the Department of Environment, Land, Water and Planning. The declared Eastern Freeway reserve is managed by the Department of Transport - Roads.

Council owned land within the site will be divested and the unreserved Crown land will be reserved using provisions available for land within the North East Link project area designated under the *Major Transport Projects Facilitation Act 2009*. The result of these processes is that those parcels will become Crown land reserved for the purposes of and under the control of the NEL Project. The part of the site covering a small area of the declared Eastern Freeway to the south will be accessed for construction with the consent of the coordinating road authority in accordance with its powers under the *Road Management Act 2004*. After construction is complete, additional processes will be undertaken to vary the freeway declaration as required. See Figure 4-2 for an excerpt from site title.

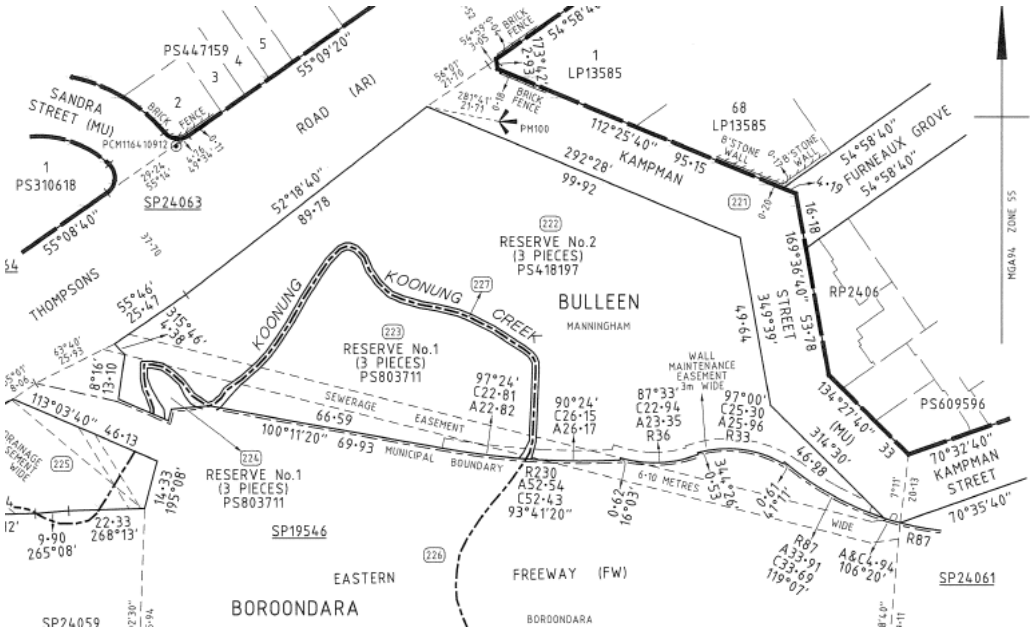

Figure 4-2 Excerpt from site survey plan (Source: Dwg No SP24062 Roads Corporation for NEL Project 20.12.19)

4.3 Planning controls

The site is zoned in part as Road Zone Category 1 and in part Public Park and Recreation Zone in the Manningham Planning Scheme. The site forms part of the Koonung Creek Reserve which flanks the Eastern Freeway located to the south. The whole of the site falls within the Specific Controls Overlay 12, as contained in the Manningham Planning Scheme, reflecting its location within the project area of North East Link to which the Incorporated Document applies.

Following the approval of Planning Scheme Amendment GC98 the Secretary to the Department of Transport became a 'Determining Referral Authority' for land affected by Design and Development Overlay (DDO) Schedule 14 and 15 (DDO14 and DDO15). The DDO mapping defines an area around the North East Link underground structures and trench sections where development on land above or adjacent has the potential to affect the structural integrity of project infrastructure. Aside from some exempt development types, a development proposed on land affected by the DDO will require Council to refer a permit application to the NEL Project.

In addition to formal referrals, Councils along the project alignment, including Manningham City Council, provide notice of planning proposals on land near the project boundary. The NEL Project and Manningham City Council are aware of a proposed development (subdivision of one lot into four and construction of four residential town houses) at 1 Furneaux Grove, in close proximity to the proposed Bulleen Park and Ride and have considered it as part of this UDLP process.

4.4 Easements

The site is burdened by a 6.1 metre wide sewer easement in favour of Melbourne Water that traverses across the southern part of the site from Kampman Street in the south-east, to Thompsons Road, to the south-west corner of the site. The alignment of the easement is shown on Figure 4-2.

Melbourne Water requires a further setback of development from the easement to ensure no structure is at risk in the event access to the easement is required. Melbourne Water requires a 5.4 metre setback from the centre line of the easement giving, in effect, a restriction of 10.8 metres for the length of the easement to new construction on the site.

The park and ride structure has been designed to avoid this restriction to the northern side of the easement with only the eastern end of the southern bus platform straddling part of the easement on the southern side of the easement.

Part of the site is also encumbered along part of the southern boundary by easements for maintenance of the existing freeway wall and wall footings. The beneficiary of these easements are the parcels of land abutting to the south, being land reserved and vested in Roads Corporation (Department of Transport – Roads) at the Eastern Freeway. The freeway walls will be reconfigured as part of the redevelopment of the site.

5 Project description

5.1 Design and functional parameters

The design of Bulleen Park and Ride has responded to a number of external drivers including:

- Meeting project and transport objectives
- Providing access to the busway off Thompsons Road in accordance with Department of Transport requirements
- Avoiding the sewer easement across the southern part of the site
- Fitting in with the future alignment of the Doncaster Busway and the NEL Project to the south of the site.

Access is required for four different modes of use:

- Buses stopping at the bus platforms
- Express buses passing through to connect to the busway
- Motorists seeking to park at the facility
- Motorists dropping off or collecting passengers using the bus services to the Kiss and Ride facility.

Each mode has different design parameters. Ideally each would have its own dedicated access and circulation separate to the other modes. However, access to the site is constrained by the location of the site relative to the intersection of Thompsons Road with the entrance to the Eastern Freeway and the functioning of that intersection in accordance with Department of Transport standards. That intersection accommodates left turns onto the freeway entrance from Thompsons Road for motorists travelling from the north east, and right turns for motorists travelling from the west to access the Eastern Freeway on ramp.

Additionally, the design of the park and ride needs to be in accordance with the Urban Design Strategy in terms of design principles and objectives, and relevant place specific requirements. The assessment of the proposal's compliance with the Urban Design Strategy is set out at Section 6 of this report.

In addition, the design must respond to its immediate context of being located at the intersection of Thompsons Road and the Eastern Freeway, being the site of part of a shared use path that traverses the site and forms part of a broader network for cyclists and pedestrians and being the site of a new park and ride facility to which local residents may choose to walk.

The other imperative is maximising the efficiency of the layout of the car park aisles whilst minimising the footprint of the building across the site.

5.2 Access arrangements

5.2.1 Overview

The arrangement and configuration of vehicular access to the site from Thompsons Road was the subject of considerable design work and testing.

After taking into consideration the design constraints and site conditions, a single signalised entrance was considered the safest and most efficient option for the operation of the facility and the surrounding road network. The key reasons are as follows:

- More than one additional signalised intersection (one for cars and one for buses) within a relatively short distance along Thompsons Road would not meet the Department of Transport's performance requirements (queues of vehicles would spill into the adjacent intersection).
- The location of a signalised intersection for the car park entrance would require additional turning restrictions to be placed on the intersection with Sandra Street. This would adversely impact local access for residents and other key stakeholders.
- The close spacing of the three resulting signalised intersections would result in safety issues where drivers may incorrectly interpret which set of traffic signals they should obey.
- Drivers heading to the freeway on-ramp may confuse the left-turn lane into the car park with the left-turn onto the on-ramp.
- If two additional signalised intersections were to be provided, it would be difficult to provide sufficient length for right-turn lanes in the median. This may result in rear-end collisions.
- Providing an un-signalised intersection for access into the car park would require it to be left-in, left-out only (for safety and operational reasons). Drivers would have to undertake U-turns on Thompsons Road either before they entered the facility, or on exit.

Access from Thompsons Road will be provided from a new signalised intersection to be constructed to the south of where Kampman Street meets Thompsons Road. Kampman Street will be closed at this point and instead be reconfigured as a cul-de-sac. The access, via a new bus link, will ultimately allow for buses to access the Doncaster Busway once completed.

The access arrangements to the site, and bus link layout, are illustrated Figure 5-1 (UDLP drawing number 5).

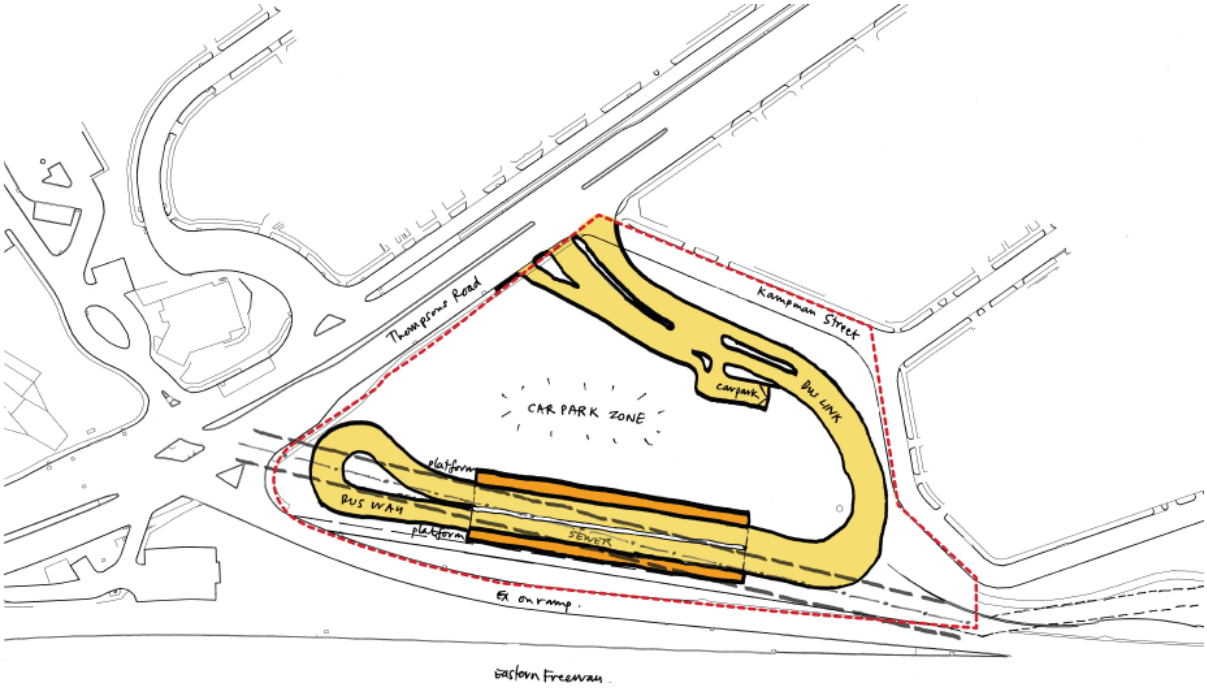

Figure 5-1 Bus link layout (UDLP drawing number 5)

5.2.2 Bus access

As the Bulleen Park and Ride would be constructed in advance of the completion of the busway, an 'interim design' would first be constructed until completion of the Doncaster Busway. This interim design would include most elements of the 'ultimate design', including car parking and bus station, but would include a bus turnaround at the western end of the platform to allow buses to collect and or deliver passengers to the stop and return to Thompsons Road. The ultimate layout would see platforms on both sides of the bus interchange fully integrated with the new busway connecting to Doncaster and the City.

The park and ride will allow for both stopping and express bus services. To enable bus services travelling to and from the north along Thompsons Road to access the facility and enter/exit the busway, a new bus link will be constructed along the north and east boundary of the site.

In the interim design, buses from Thompsons Road will enter the park and ride site via a new signalised intersection on Thompsons Road at the northern part of the site and travel via the bus link along the eastern boundary of the site to the bus platforms located along the southern boundary of the site. In the ultimate design, the bus platforms will eventually be integrated with the Doncaster Busway and will be served by buses travelling in both directions to and from the city and elsewhere.

Two bus platforms are to be located on either side of the in and out-bound lanes for buses in addition to express lanes, for those buses not stopping at the facility, in each direction in the centre of the bus interchange.

The bus stops for the Bulleen Park and Ride bus interchange will provide:

- For city-bound buses that will use the Doncaster Busway, a platform that will allow buses to pull up parallel to the platform that has sufficient length to:
  - allow two articulated buses and one rigid bus to share a stretch of the platform and that will allow for loading and unloading in each of the bays
  - allow one articulated bus operating independently from those buses.
- For out-bound buses that will use the Doncaster Busway, provide a platform that will allow buses to pull up parallel to the platform that has sufficient length to:
  - allow two articulated buses and one rigid bus to share a stretch of the platform and that will allow for loading and unloading in each of the bays
  - allow one articulated bus operating independently from those buses.

Buses from this bay need to be able to exit the Doncaster Busway to travel northeast along Thompsons Road.

Bus services that would use or pass through the bus station include:

- Express bus services that would not stop at the station while travelling along the busway between the City (Hoddle Street) and Doncaster Park and Ride
- Stopping bus services that would stop at Bulleen Park and Ride while travelling between the City (Hoddle Street) and Doncaster Park and Ride
- Bus services that would utilise the busway between the City (Hoddle Street) and Thompsons Road, stop at Bulleen Park and Ride and enter/exit the busway via the proposed bus link to the north east along Thompsons Road.

The creation of the new bus link between Thompsons Road and the busway will necessitate the closure of Kampman Street to the west of Furneaux Grove. A turning head will be provided to enable vehicles to turn. Further comment on the closure of Kampman Street is provided in Section 7 of this report.

5.2.3 Private vehicle access

In both the interim and ultimate designs, car parking will be accessed from the new signalised intersection on Thompsons Road. Vehicles will enter the car park building via the upper level and parking will be located across two levels – lower and intermediate – with the intermediate level connecting directly to the bus platforms.

5.2.4 Pedestrian and cyclist access and circulation

A shared use path will traverse the park and ride's green roof, connecting into the existing shared use path along Thompsons Road connecting to the Yarra Main Trail to the west, and the existing shared use path that forms part of the Koonung Creek Trail to the east.

The shared use path will be separated across the green roof to separate the pedestrian path from the bike path in the interests of pedestrian safety. Pedestrian access from the east (from Kampman Street) will be via a dedicated shared use underpass below the bus link that will connect with the northern platform.

A pedestrian connection to Kampman Street should be provided close to the underpass to provide convenient access to the facility for those residents living to the east of the site. A pedestrian crossing (subject to approval separate from Bulleen Park and Ride) could be added to provide a link to the east side of Kampman Street as there is no footpath on the west side of Kampman Street. The artist's impression presented in Figure 5-2 shows the proposed shared use underpass and pedestrian crossing (UDLP drawing 30).

While not part of the Bulleen Park and Ride Urban Design Landscape Plan, the final design of the North East Link Project will include improved shared user path connections across the entire Project corridor as detailed in the North East Link Project Urban Design Strategy (*March 2020*).

Specifically, this will include upgrades to shared use path connections along Bulleen Road running from north to south across the Eastern Freeway. This will enhance connectivity between North Balwyn, Bulleen and the greater shared use path network. These proposed upgrades will be subject to subsequent Urban Design Landscape Plan processes. The design of the crossing and associated traffic calming measures to ensure the safety of pedestrians will be the subject of detailed design in accordance with the relevant Department of Transport Guidelines and Standards. Approval for this crossing will be subject to separate process to that for the Bulleen Park and Ride.

The proposed pedestrian and cycling circulation arrangements are shown in Figure 5-3.

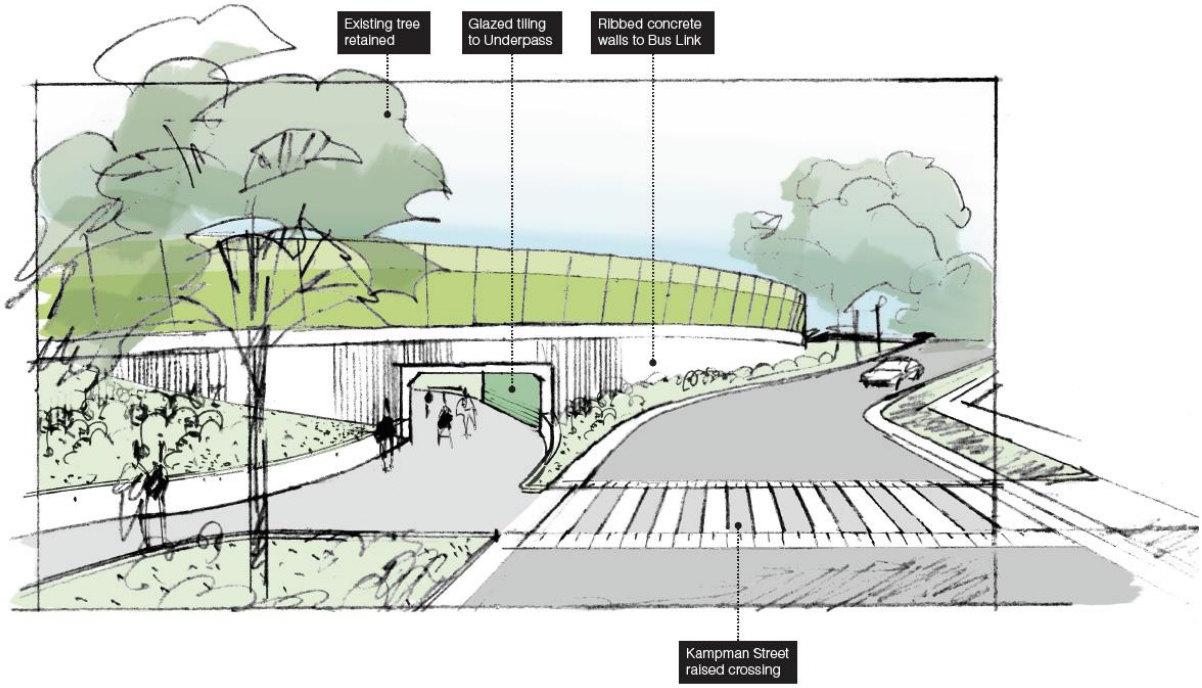

Figure 5-2 Proposed connection to shared use path at Kampman Street (UDLP drawing 30)
(Note: separate approval required for pedestrian crossing)

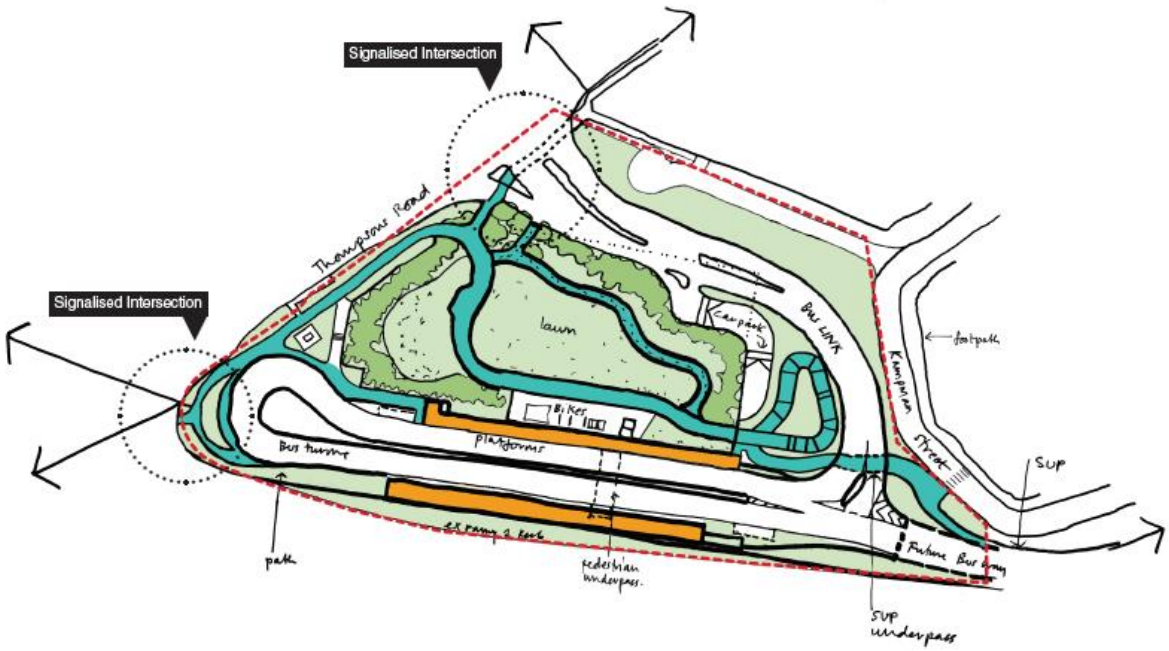

Figure 5-3 Pedestrian and Cycle Circulation (UDLP drawing 7)

Figure 5-4 shows a section through the shared use path, looking north, as it cuts through the underpass below the busway and connects with the switchback to lead to the rooftop passive open space (UDLP drawing 26).

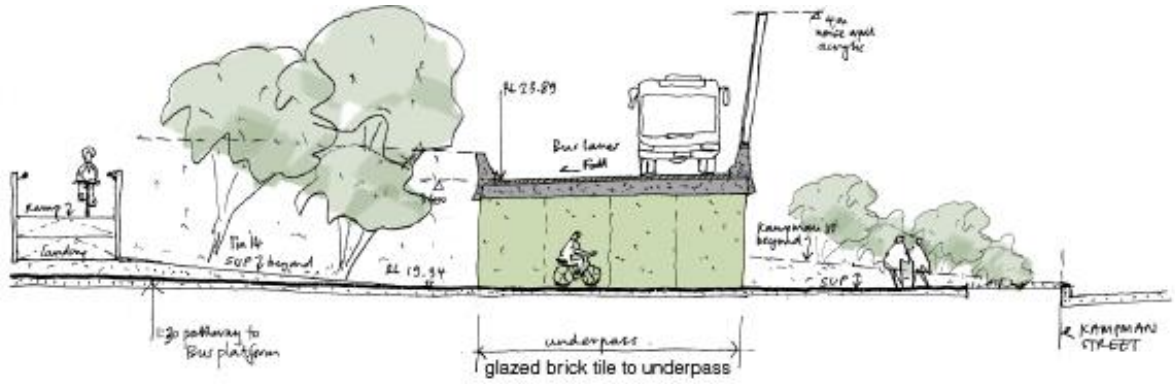

Figure 5-4 Section through the shared use path looking north (from UDLP drawing 26)

Figure 5-5 shows the detail of the Shared use path at the connection between the underpass and the building. The path will be four metres wide to allow for both cyclists and pedestrians to use and will be *Disability Discrimination Act 1992* (DDA) compliant. The centre of the switchback will accommodate the Water Sensitive Urban Design (WSUD) measures to filter stormwater runoff from the facility.

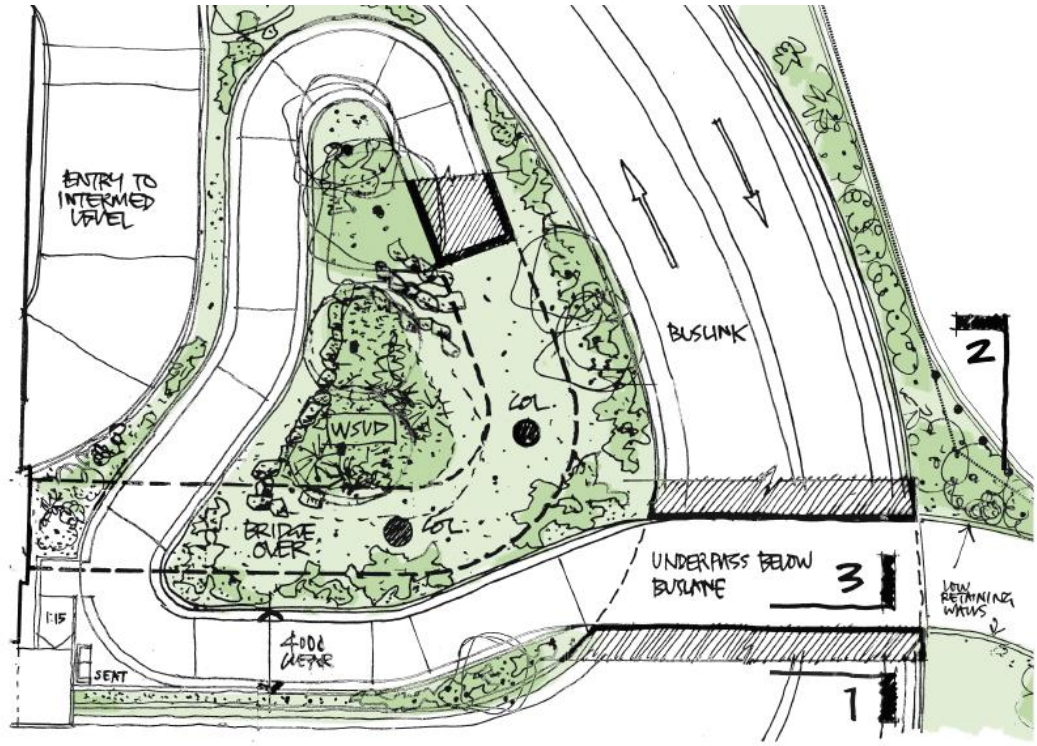

Figure 5-5 Shared use path detail at the east of the building (from UDLP drawing 26)

5.3 Park and Ride building

5.3.1 Overview

The site presents the opportunity to nest two levels of car parking within the fall of the site to keep the massing of the structure below the level of Kampman Street which sits elevated above the site to the north. This would serve to contain the visual impact of the proposal in accordance with the Urban Design Strategy and not interrupt views across the site from the north. It will allow for a landscaped green roof park to be added to the upper level of the structure to recompense for the loss of part of the open space.

The fall of the site similarly presents the opportunity to lower the busway (bus platforms) to contain offsite impacts of buses accessing the site from the Doncaster Busway.

The proposed development will integrate two levels of car parking with bus platforms to be established in parallel with a new section of the Doncaster busway.

The vehicle access and car park will be cut into the site to take advantage of the existing topography of site which falls away to the southwest. This will allow a landscaped green roof park to be constructed at the upper level, above the car park, level with Kampman Street. The green roof park will be landscaped and serve as passive open space.

Along the southern edge of the upper level, an arrival concourse has been created to provide weather protection to the pedestrian entrance, bicycle parking facilities and stairs that will serve the station platforms below.

A linear open sided 'concourse canopy' will not only provide weather protection but a point of identity for the Bulleen Park and Ride. The concourse canopy will be clearly visible across the park from the north, from Thompsons Road to the west, and from the busway to the south, and beyond. The concourse canopy will also provide shade and weather protection for park users.

The shared use path has been reconfigured as a separate pedestrian path and bike path across the green roof to link the existing pedestrian and cycling network to the arrival concourse. This will not only activate the upper-level green roof park but provide a high level of patron amenity separated from all vehicle traffic.

Pedestrian access from the green roof park level will lead to the bus stop concourse at the intermediate level below which may also be accessed by internal stairway from the lower level of parking. Ticketing, toilets and staff amenities, and facilities for the bus station will be located at this level.

The bus stop concourse will comprise two platforms to accommodate passengers for both in-bound and out-bound bus service. Each platform will be covered by a canopy to provide shelter and weather protection for waiting and alighting passengers. Passengers will also be able to wait in an enclosed waiting area on the north side of the bus station. Pedestrian access to the in-bound bus stop will be provided by an underpass below the busway which will connect to the stop platform via stairs and an accessible ramp.

A 1.4 metre high median barrier will divide the Busway to discourage at grade pedestrian access between the two platforms as shown in Figure 5-6 (UDLP drawing 62).

Figure 5-6 View of bus platforms from southern platform looking north east (UDLP drawing 62)

The building and broader site will be powered by a new 1000 KVA substation which will be constructed on a 6.4 metre by 6.4 metre pad located at the western end of the car park building adjacent to Thompsons Road. See UDLP Drawing 9 for the location of the substation.

5.3.2 Car, bicycle and motorbike parking

Provision will be made for:

- 356 standard car parking spaces and 11 accessible car parking spaces (four on the intermediate level and seven on the lower level) giving a total of 367 commuter car parking spaces.
- Six Kiss and Ride (drop off and pick up) spaces within the upper level of car parking (the intermediate level) one of which (westernmost) will be DDA compliant to allow for a passenger with mobility impairment to safely alight from a car.
- Two car parking spaces for staff.
- Two car parking spaces for bus drivers.
- Two spaces for a bus operator's response vehicle (outside of the building near the western end of the northern platform and to the eastern end of the southern platform).
- One Parkiteer cage for bicycle parking and 27 bicycle hoops under full weather protection. A Parkiteer cage can accommodate 26 bicycles, and each bicycle hoop can accommodate two bicycles, providing a total capacity for 80 bicycles to be secured.

- Ten spaces for motorcycles with full weather protection.

The layout of the car parking has been designed to maximise efficiency and yield of parking spaces whilst being easy to navigate for motorists as shown in

Figure 5-7 and Figure 5-8. Parking has been configured as three double sided aisles, parallel to the bus platforms, with connecting aisles at each end for circulation. Spaces are located around the perimeter to maximise the number of the spaces for the floor area. All parking spaces are 90-degree spaces with the exception of the Kiss and Ride spaces, which are parallel for ease of use. No blind (dead-end) aisles are incorporated into the design. Car park dimensions are Class 1 as per AS2890.1.

A one-way circulation system has been adopted to minimise congestion at the intersections between aisles, and between aisles and ramps, and for ease of use by motorists. The one-way system provides clockwise circulation with the southern aisle operating one-way westbound, and the middle and northern aisles operating one-way eastbound. This configuration will facilitate circulation for the Kiss and Ride spaces on the intermediate level and express exit for those leaving the lower level.

A secured 'Parkiteer' bicycle parking facility is proposed at the concourse level. These facilities are operated by Bicycle Network and access is via a security card provided to users. The proposed Parkiteer Cage façade is a custom design to complement the concourse level; however, the internal layout and hoop layout is per the standard Parkiteer cage system, i.e. 14 'Ned Kelly' wall mounts and six ground mount bicycle hoops either side of a single aisle arrangement.

In accordance with requirements for future proofing, provision has been made for the proposed bicycle parking areas to be doubled should future demand warrant this. Any expansion could be accommodated on the green roof in close proximity to the current proposed bicycle parking. This location allows for the extension of the concourse platform, services and roof to accommodate any expansion.

The car park has been designed to have clear and separate, safe, pedestrian connections to the bus concourse. The location of the Kiss and Ride spaces adjacent to the concourse area will ensure passengers can leave the car safely and directly access the pedestrian area removed from other vehicles circulating in the car park.

The regular layout will ensure clear view lines to add to the safety of the car parking area. The car park will be illuminated 24 hours per day and have extensive CCTV coverage to provide for safety of users. The facility will be a premium bus station and will be staffed by Protective Services Officers, as detailed in Section 5.3.6 of this report.

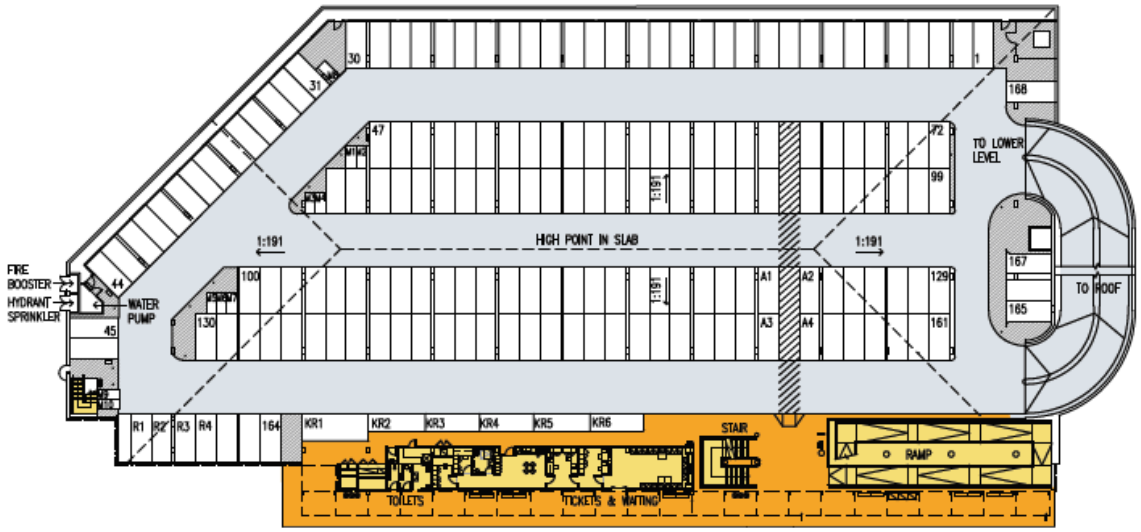

Figure 5-7 Layout of intermediate level car parking (from UDLP drawing 12)

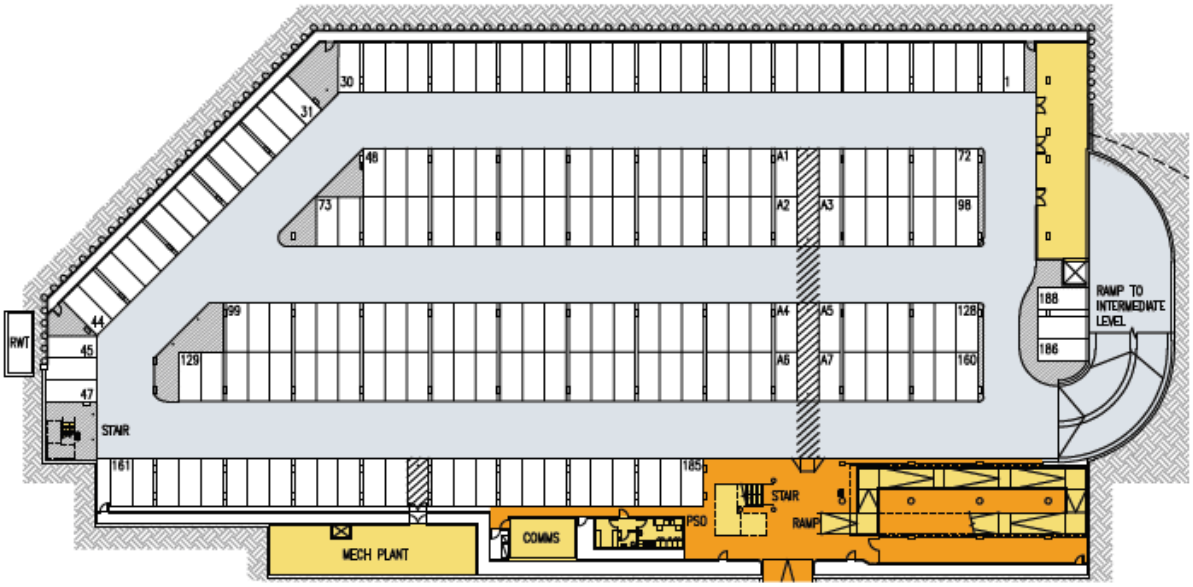

Figure 5-8 Layout of lower-level car parking (from UDLP drawing 12)

5.3.3 Occupancy detection system

A car park occupancy detection system will be provided for the facility to identify the number of car parking spaces available on each level of the facility. The total number of available spaces will be displayed to drivers approaching the facility from both directions along Thompsons Road to inform a decision to enter the facility. These signs will be located in advance of the turn lane commencement for lanes turning into the car park. Separate signs will be provided at the entrance to the car park to indicate the number of spaces available on each floor.

5.3.4 Accessibility

Eleven accessible car parking spaces will be provided within the car park. Four spaces will be located on the intermediate level, opposite the entrance to the ramp to the lower level, and seven spaces will be located on the lower level close to the concourse circulation area. Users of the accessible spaces on the lower level will be able to connect to the inbound platform via the pedestrian underpass below the busway and ramp up to the platform.

Users of the accessible spaces on the intermediate level will be able to connect directly to the outbound platform. However, to connect with the inbound bus platform they will be required to take the ramp to the lower level and travel through the underpass below the busway.

Access will be available from the upper level to the intermediate level platform via the shared use path to the east of the concourse. Access to the lower level would then be via the northern ramp connecting to the intermediate level.

One of the Kiss and Ride spaces will be an accessible space and will allow for a passenger to alight directly to the platform at intermediate level.

5.3.5 Kiss and Ride

Six Kiss and Ride spaces to provide for the drop off and collection of passengers will be located immediately adjacent to the ticket and waiting area of the bus stop platform on the intermediate level. Alighting passengers will enter a safe environment removed from circulating cars and will be able to directly access the bus stop platform. One of the spaces will be accessible.

5.3.6 Premium bus station facilities

The design of the bus station provides:

- Passenger seating/waiting areas (open at each platform and enclosed in a dedicated waiting room adjacent to the northern platform), ticketing facilities, and toilets located at both the north and south platforms
- Internal stairs between levels

- Two DDA compliant ramps between intermediate and lower level of the car park adjacent to the northern and southern platforms
- Staff amenities
- A Protective Services Officers' pod on the lower level adjacent to the pedestrian underpass.

Passenger seating and waiting areas will be located along the northern and southern platforms with public amenities located at the eastern end of the bus station building on the northern platform, and the eastern end of the southern platform. Those amenities will include an accessible toilet with a baby change facility, two ambulant toilets, and a cleaner store. The southern platform will also provide a kiosk (e.g. for a mobile coffee cart), a bus driver toilet, a water tank room and a dedicated bin storage area.

Each platform will feature a glazed canopy roof along the entire length of the platform. The southern platform will feature coloured acrylic back panels with fin like extensions to provide protection from prevailing winds. Rainwater from the canopies will be collected and used as grey water (for toilets) throughout the facilities.

Access between the in-bound and out-bound platforms will be controlled via a 1.4 metre high barrier to provide for the safety of passengers. An underpass (5.4 metres wide) below the busway will provide pedestrian access to the in-bound stop directly from the lower level car park. The 5.4 metre width is in order to be visually open and attractive to users to pass through as well as allowing for shared use by pedestrians and cyclists.

Access to the southern platform from the car park will be via an underpass from the lower level car park under the Busway and then by both a covered staircase orientated eastward and a 60 metre covered ramp orientated westwards to the southern platform. Provision has been made for two metre wide landings every 20 metres along the ramps length to allow for DDA turnaround and a bench seat will be located at lower end of the ramp facing the underpass to provide a resting place.

5.3.7 Environmentally sustainable design initiatives

Through the design process, energy efficiency has been optimised with the uptake of the following environmentally sustainable design initiatives:

- Selection of LED lighting coupled with the integration of motion and occupancy controls which will reduce energy consumption.
- Mechanical fans systems with carbon monoxide (CO) sensor and Variable Speed Drive (VSD) controls for effective operation.
- A high-level energy model for the operation stage has been completed to inform the estimated energy demand of the project and also support the Infrastructure Sustainability Energy (ENE-1).
- Location of solar photovoltaic on the roof of the entrance pavilion for onsite renewable energy generation to comprise 58 panels that are each rated at 400W which is estimated to generate an annual production of 20MWh. Based on the current estimated power demand, all energy generated will be utilised onsite.

- Installation of rainwater tanks to capture rainwater runoff from canopy/roof areas to be used for toilet flushing and irrigation of the landscaping. Three tanks totalling over 30,000 litres capacity will be installed on the lower level to capture rainwater runoff. A tank with 50,000 litres capacity will be installed to capture stormwater from the green roof for use in maintenance of landscaping.
- The use of products with recycled or reused content and with lower embodied carbon emissions (such as low carbon concrete), where practicable, to minimise the environmental impacts of construction materials. Some examples of products to be investigated by the contractor include >10 percent reclaimed asphalt pavements, reinforced steel with high recycled content.
- Provision of water sensitive urban design (WSUD) measures including rain gardens to filter storm water prior to discharge to the pit and pipe network. Water treatment to offset the water quality impact of the facility is achieved through a bio-retention basin located within the loop of the shared use path ramp immediately east of the park and ride building. A MUSIC model was prepared to assess the pollutant loads and concentrations that would be imposed on the surrounding drainage network as a result of the proposed development. The necessary offset is achieved by providing an inlet from the bus link and by diverting low flows from Kampman Street to bring additional roadway runoff into the site for treatment, and then have this treated runoff repatriated to the local stormwater drainage network.
- The WSUD retention basin will consist of native and indigenous plantings tolerant of extended periods in damp soil, periods of inundation as well as dry conditions during the summer months. Two smaller native canopy trees with similar properties will sit within the basin floor.
- In order to maintain the requisite extent and level of detention, localised rock boulder retaining walls will be placed between targeted interfaces of the WSUD and adjacent shared use path to negotiate changes in level and provide less engineered natural aesthetic.
- Inclusion of a green roof to which will lead to a reduction of urban heat island effects of the development, capture storm water, and improve the potential thermal performance of the building.
- Allowance for charging points for electric vehicles, including cars (24 spaces) and e-bikes, to be installed when demand warrants.

5.3.8 Noise wall

A noise wall in the order of four metres high will be installed to the immediate north and east of the bus link to provide acoustic screening to the nearby residences. The Buslink noise wall comprises a precast concrete barrier and opaque light green acrylic screen for the first 3000mm above FSL (finished surface level) with a tinted, transparent light green acrylic screen for the remaining 1000mm. The opaque sections will shield bus movements from local residents while the transparent section on top will help to reduce visual bulk and allow light transfer. The location and extent of the noise wall is shown in Figure 5-9 (UDLP drawing 8).

The northern interface of the site to Kampman Street will be landscaped to provide screening of the noise wall and to replace the existing trees which will be removed during the park and ride's construction.

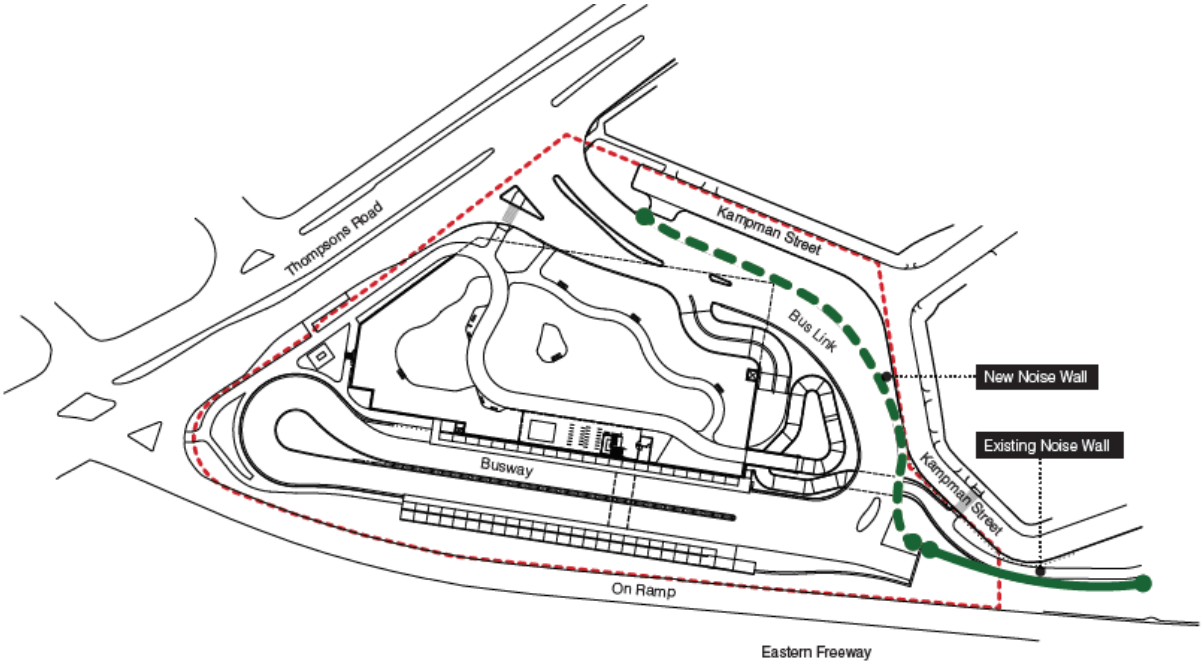

Figure 5-9 Location and extent of noise wall (UDLP drawing 8)

Figure 5-10 shows the materials proposed for the permanent noise wall to the bus link. It will feature light green opaque acrylic panels in the lower section to shield bus movements from local residents and light green transparent acrylic panels on the top to reduce visual bulk and allow light transfer.

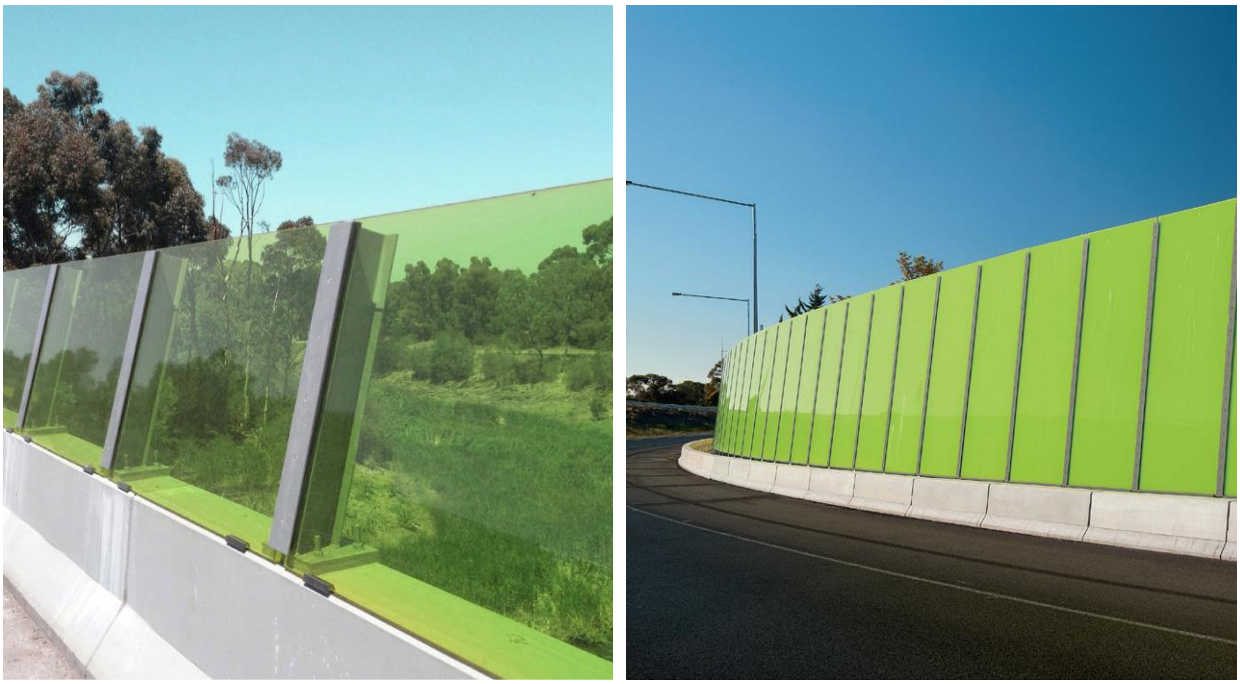

Figure 5-10 Example of materials proposed for the permanent noise wall

Figure 5-11 and Figure 5-12, show the view to the proposed noise wall from Kampman Street and Furneaux Grove.

Figure 5-11 Proposed noise wall viewed from outside 26 Kampman Street looking south (UDLP drawing 59)

Figure 5-12 Proposed noise wall viewed from Furneaux Grove looking south west across Kampman Street (UDLP drawing 60)

5.3.9 Materials and finishes

The selection of materials has been informed by the overarching imperative to ensure the finished result is enduring and robust and discourages graffiti. Similarly, the selection of materials has sought to maximise the sustainability credentials of the development and to ensure ease of maintenance across the site.

The car park building will have only a small area of exposed façade, given it is mostly embedded into the slope of the site.

The car park building's exterior will comprise concrete with galvanized steel framing clad with galvanized grate. Such an exterior will allow for natural ventilation and light penetration to the interior of the car park and will allow for climbing plants to create a green wall to the edge of the building. In time, this will assist in the visual effect of the building nestling into the fall of the site and presenting a green edge to the environs of the site.

A large yellow truss feature roof to the upper level concourse will help identify and accent the entry point to the bus station below from the green roof and surrounding area as shown in Figure 5-13 (UDLP drawing 70). This truss like form mirrors the architectural language of the truss to the bridge linking the loop shared use path to the green roof. A section of the south facing elevation of the concourse building will feature clear glazing panels in order to provide protection to the stair, connecting to the bus platform below, from wind driven rain from the south. The use of clear glazing will ensure the views across the bus station to the south will not be interrupted.

Figure 5-13 Entry pavilion viewed from shared use path looking south west (UDLP drawing 70)

The north and south platform canopies will comprise painted steel framing, a tinted glass roof, and an acrylic noise screen to the southern platform to shield waiting patrons. The bus station pavilion will feature aluminium framed windows, maximised to allow for passive surveillance, and a Colourback glass façade. Proposed exterior finishes for the car park, concourse canopy, bus station pavilion, stairs and ramps and shared use path ramp are shown in Figure 5-14 (UDLP drawing 14).

Retaining walls will be precast concrete panels. The shared use path ramp will be a painted steel structure with grey concrete flooring and galvanised steel, vertical rail balustrades. Examples of the proposed materials for these elements are shown in Figure 5-15 (UDLP drawing 15). Translucent and opaque acrylic with painted steel frames will be used for the Buslink noise wall as shown in Figure 5-16 (UDLP Drawing 26).

While the southern platform will be constructed along with the rest of the park and ride, it will not be regularly used during the interim operational phase, with pick-ups and drop offs occurring at the northern platform during this period. The southern platform will become the city bound platform in the ultimate design. As such, construction of elements of the southern platform, such as the canopy (structure and glazing) may be deferred until the platform begins regular operation. The NEL Project's delivery agreement with the Department of Transport requires that the canopy be constructed before the Department will accept final handover of the facility.

Figure 5-14 Exterior finishes to car park, concourse canopy, bus station pavilion, stairs and ramps and shared use path ramp (UDLP drawing 14)

Figure 5-15 Exterior finishes to Noise Wall for Buslink, Shared Use Path elevated ramp, Shared Use Path underpass and platform underpass, and retaining walls (UDLP drawing 15)

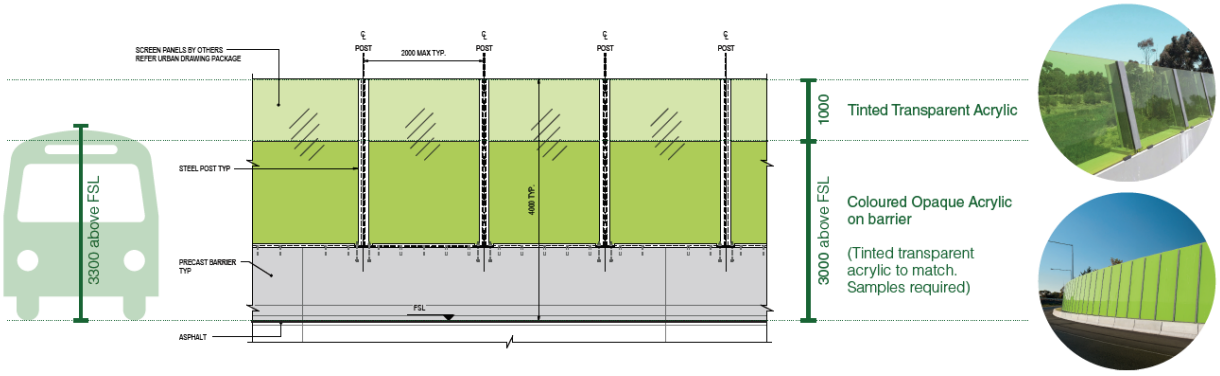

Figure 5-16 Elevation of Noise Wall to Buslink (UDLP Drawing 26)

The underpasses will feature colourful walls of glazed bricks in a stretcher bond pattern below the bus stop platform and the busway as shown in Figure 5-17. A high level of amenity is required to make this space attractive to pedestrians. The width of both underpasses will help create strong sight lines and a sense of openness aided by light-directed orientation - walking towards a light source on either end.

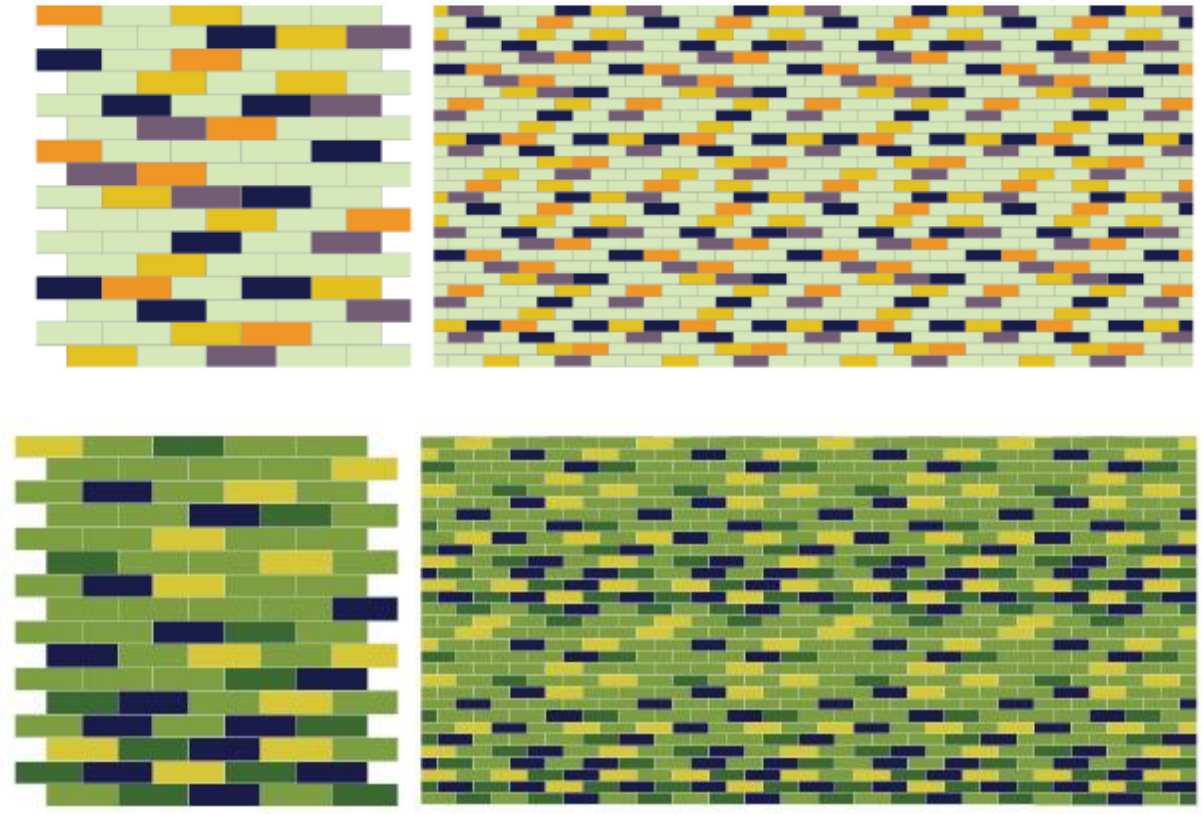

Figure 5-17 Proposed treatment of walls of underpasses to Platform and Kampman Street (UDLP drawing 16)

The materials to be used in the development are detailed on the following UDLP drawings:

- UDLP drawing 13 Materials Schedule Road and Paving
- UDLP drawing 14 Materials Schedule Architectural Elements
- UDLP drawing 15 Materials Schedule Urban Elements
- UDLP drawing 16 Material Schedule Underpass Walls
- UDLP drawing 17 Building Façade Cladding.

5.3.10 Graffiti mitigation

The graffiti mitigation strategy for Bulleen Park and Ride is based on experiences on recent public infrastructure projects. Graffiti in public spaces is difficult to fully prevent but can be mitigated through the careful choice of material surface finishes, good lighting, and active surveillance measures.

Car park building

The car park building will have only a small area of exposed façade, given it is mostly embedded into the land form. The façade cladding will be a galvanised steel webforge grated panel system fixed to a steel sub frame. It has been selected with the following design considerations:

- The grated panels have a 90 percent open area to allow natural ventilation and daylight into the car park
- The panels are made from flat steel blades which present a very limited surface area
- The panels allow for climbing plants to 'green' the façade and integrate it into the landscape
- Overall, the grated panel system presents a very low risk of being graffitied.

The interior of the car park will be concrete on all surfaces with CCTV coverage throughout, presenting a low risk. Some surfaces will be painted which can be patched or repainted in the event of being graffitied.

Station facility and platforms

The station facility building is aligned with the northern platform interface with the car park. This is to be a premium facility that is staffed and attended by Protective Service Officers. The station facility will have a full height glass façade system with a mix of clear glazing and opaque colour-back glazing. Glass presents a low risk given as it may be easily cleaned. A factor to consider is scratching which is evident on many bus and tram shelters.

Buslink noise wall

The materials specified for the permanent Buslink noise wall which will run between the Buslink and Kampman Street have been chosen to deter graffiti. The lower section of the noise wall will be constructed from concrete panels with an all over relief pattern. The upper sections feature a mix of coloured opaque acrylic finish and tinted transparent acrylic finish (at the top of the wall). The wall will be screened by vegetation whilst strategic use of lighting and lines of site will bolster the mitigation of vandalism and graffiti.

5.4 Landscape and open space and lighting

5.4.1 Landscape design

The following details the landscape concept in terms of the green roof for the concourse level, the interface to Kampman Street, and the deep soil gardens on existing subgrade for those areas not encumbered by the building and works. The concept for the green roof park was to create a simple central open lawn ringed by garden beds and trees to create a local sense of place. The design focus has been to create a high-quality landscape where the car park building is effectively concealed into the land form. Each element of the landscape design is addressed in the following sections.

Concourse level garden

- Open space to the roof of the proposed building comprising grassed lawn areas will accommodate passive open space activities such as informal gathering, dog walking, and passive surveillance. The proposed open space will be connected to the network of Shared use pathways as shown in Figure 5-18.
- Plant species of small native canopy tree planting with understorey groundcovers and tufted grasses will provide sight lines through to the surrounding park area and streetscape. The landscape planting design and hierarchy of soft landscape elements will consider *Crime Prevention Through Environmental Design* guidelines.
- The upper level concourse will be a defining landscape amenity for space activation and passive surveillance.
- Landscaped mounding similar to the existing creek and road arterial landscape will be reflected in the mounds and swathes of tufted grasses under canopy trees.
- The upper level garden area will be planted above a waterproofed membrane with a suitable gradient to capture excess storm water run-off. The structural engineering of the building will accommodate grass lawn areas and garden bed areas with a soil depth up to 200mm and up to one metre depth respectively to accommodate small tree planting.
- Maintenance track/walking loop provided via shared use path and granitic gravel pathway around the edge of the garden area.

Figure 5-18 View across concourse level garden looking west from the shared use path ramp (UDLP drawing 68)

Interface to Kampman Street

- Screen planting comprising indigenous or native species averaging two to three metres in height with some taller trees of five – ten metres planted in mounding to provide a more instantaneous effect to screen the noise wall to the bus link.
- Planting will be consistent with the overall plant palette for the project and include a garden bed featuring shrubs from 0.5 to one metre in height to sit closer to Kampman Street.
- The landscape treatment along the Kampman Street interface seeks to replicate the existing conditions with respect to native trees species, in addition to providing a more robust understorey of indigenous and native shrubs, grasses and groundcovers. Shade/semi-shade tolerant species of high screening shrubs will run longitudinally along the northern face of the noise wall softening the visual impact to adjacent residents.

Deep soil zones on existing subgrade

- Large tree canopy planting can be established in the area surrounding the building envelope. An offset distance of three metres from the building structure will be provided.

Water sensitive urban design (WSUD) retention basin

- The WSUD retention basin will consist of native and indigenous plantings tolerant of extended periods in damp soil, periods of inundation, as well as dry conditions during the summer months.
- Two smaller native canopy trees with similar properties to the above will sit within the basin floor.
- To maintain the requisite extent and level of detention, localised rock boulder retaining walls will be placed between targeted interfaces of the WSUD and adjacent shared use path to negotiate changes in level and provide a less engineered natural aesthetic.

Green cladding

- The cladding of the east and west elevations will provide for planting to grow up the façade. Native climbing species will provide textural interest to the façade of the building in these locations. The south elevation will be left open to allow for air flow to the car park levels.

Plant species and selection

- The landscape planting palette shows tree and plant species indigenous to the area from the Environmental Vegetation Classes (EVCs) identified in the ecological assessment of the area, ensuring a selection of species that complement the area along with enhancing the ecology and biodiversity of the area.
- Accompanying species to the proposed indigenous selection will be native to Australia, ensuring they are low maintenance and that the planting will qualify as a xeriscape palette (landscaping or gardening that reduces the need for supplemental water from irrigation) as per ESD requirements/guidelines.

The landscape proposal is detailed on the following drawings which form part of the Urban Design and Landscape Plans.

- UDLP drawing 32 Landscape Plan Sheet 1
- UDLP drawing 33 Landscape Plan Sheet 2
- UDLP drawing 34 Landscape Elevation
- UDLP drawing 35 Landscape Planting Schedule – Trees and WSUD
- UDLP drawing 36 Landscape Planting Schedule - Shrubs and Groundcovers

5.4.2 Lighting

Lighting is to be installed throughout the site with feature aluminium and stainless steel fixtures, of approximately 4.5 metres in height installed across the green roof and along the Shared use path, and between 10.5 metres and 15 metres in height at the busway. The lighting fixtures will feature dual luminaires and be powder coated finish in charcoal colour. The lighting layout is shown on UDLP Drawing 41. A number of lighting types are shown on this drawing, including:

- P1 – 4.5 metre LED pole top mounted pathway light
- P2 – 10.5 metre LED pole single arm mounted street light
- P3 – 10.5 metre LED pole double arm mounted street light
- P4 – 12 metre LED pole double arm mounted street light with pathway light mounted perpendicular to pathway at lower height
- P5 – 12 metre LED pole single arm mounted street light with pathway light mounted perpendicular to pathway at lower height
- P6 – 10.5 metre LED pole single arm mounted street light with pathway light mounted perpendicular to pathway at lower height
- P7 – 7.5 metre LED pole single arm mounted street light with pathway light mounted perpendicular to pathway at lower height
- P8 - 15 metre LED pole single arm mounted street light
- W4 – Wall mounted LED wall light with side throw optic.

An example of the P3 lighting fixture is shown in Figure 5-19. The lighting has been selected to provide the necessary illumination whilst limiting offsite light spill.

Figure 5-19 Example of P3 lighting fixture

5.5 Operation of facility

The operating hours of the Bulleen Park and Ride will be 5:00am to 12:00am in line with the current Route 905 timetable. Ultimately, Routes 906, 907 and 908 would travel through Bulleen Park and Ride and exit the busway at Doncaster Park and Ride. Route 905 would exit the busway at Bulleen Park and Ride to Thompsons Road via the proposed bus link. In the interim scenario Route 905 would utilise Bulleen Park and Ride at current or increased service frequencies.

In regard to private vehicle movements, it is likely in the interim scenario that the private vehicle arrival and departure patterns would be similar to the Doncaster Park and Ride. As a popular commuter car parking facility, the Doncaster Park and Ride generally reaches full occupancy before the morning peak period and then empties at a slower rate from mid-afternoon (on weekdays). There would likely be minimal private vehicle movements into and out of the carpark between these times.

During its planning and development, the facility has been known as the 'Bulleen Park and Ride'. The final name of the facility will be informed by Department of Transport's naming conventions. The conventions consider a facilities function, amenities, and capacity in determining an appropriate name. A final name for the facility will be determined prior to the commencement of operations.

5.6 Key impacts identified

5.6.1 Introduction

The establishment of a permanent bus and ride facility in advance of completion of the NEL Project, without the need for a temporary facility at Doncaster for Park and Ride patrons, will be a significant benefit to the community as a whole. However, the potential for some localised impacts has been identified.

The construction and subsequent operation of the facility will be subject to the NEL Project's Environmental Management Framework (EMF) approved for the project as a whole, and the Environmental Performance Requirements (EPRs) which were developed to address and manage potential impacts on the environment. In addition to the plans detailing the Bulleen Park and Ride proposal, which form the Urban Design and Landscape Plan to be considered by the Minister, Clause 4.9 of the Incorporated Document requires preparation of an explanation demonstrating how the Urban Design and Landscape Plan complies with the EPRs included in the approved Environmental Management Framework. That explanation is included in Section 7 of this report.

Impacts of the permanent use and development of the site as a premium bus interchange and park and ride facility for commuters have been identified in terms of construction of the facility, the operation of the facility, and the permanent change in land use. The design, construction of the facility and its ongoing operation will be subject to the overarching environmental management plans and specific environmental performance requirements which concern matters including noise, air quality, traffic, landscape and visual impact.

5.6.2 Land use

The establishment of Bulleen Park and Ride and premium bus interchange on site would be a significant change of land use for the site. However, the site flanks the Eastern Freeway and will be adjacent to the busway that will be established as part of the NEL Project. The busway would affect the amenity value of the site and its use as informal open space.

The amenity value provided by open space on the site will however be retained, and potentially enhanced, with the landscaped open space to be established on the green roof and the integration of the Koonung Creek Trail into the open space. The open space area will be smaller in size than the current area, but landscaping will be upgraded and passive and active surveillance of the open space will be improved with the bus interchange entry concourse integrated into the site.

The space will provide for informal activities to continue on site and provide seating in locations with outlook across the park and will benefit from additional active surveillance of the site and environs as a result of the level of pedestrian activity at the interchange. The landscape design will result in the space being in effect cocooned from the noise and activity of the nearby roads.

Access to the open space by nearby residents is currently via crossing Thompsons Road for residents to the west, and the crossing of Kampman Street for residents to the north and east. Access to the park will be provided via a signalised crossing at the Thompsons Street entrance to ensure safe crossing for pedestrians. Landscaping at the end of Kampman Street will be designed to direct pedestrians to the crossing for their safety. Access to the park by residents to the east will change as direct access will be prevented due to the bus link; however, access will be provided by the shared use path which will connect to the open space via an underpass under the bus link and ramp to the upper level of the park. Again, this will ensure safe passage of pedestrians and cyclists.

5.6.3 Construction impacts

The development of the site as the park and ride facility will entail an 18-month construction timeline on site; less than that proposed for its use as a construction compound. The construction activity would be more intense than originally proposed at this location due to buildings and structures being constructed on the site. Construction related impacts are likely to include (but not be limited to) noise, dust, visual and traffic impacts. Had the site been used as a construction compound as originally proposed, the impacts would have been similar in nature but may have varied in scale. NEL's EMF and EPRs, which include a number of construction related requirements, are an appropriate mechanism to manage construction related impacts.

All EPRs pertaining to construction will be satisfied as a contractual obligation by the contractor and to meet the requirements of the NEL Project approval as provided by the Incorporated Document at Clause 45.12 of the Manningham Planning Scheme.

For example, EPR *NV 3 Minimise construction noise impacts to sensitive receptors* requires that construction noise and vibration must be managed in accordance with the Construction Noise and Vibration Management Plan required by EPR *NV4 Implement a Construction Noise and Vibration Management Plan (CNVMP)* to manage noise and vibration impacts.

A site Construction Environmental Management Plan and Traffic Management Plan will be prepared to document traffic movement to and from the site, the breakdown of the type of vehicles accessing the site, the location of loading areas and access to the site, and the arrangements for workers to park their vehicles, amongst other aspects of the construction process. Protection of the amenity of the neighbouring residents will be a key driver for preparation of these plans. The hours of activities on site, limitations on the hours during which trucks can arrive at the site, and containment of mud and dust from vehicles, are typically addressed in the Traffic Management Plan.

EPRs *NV8 Minimise construction vibration impacts on amenity* and *NV9 Minimise construction vibration impacts on structures* would apply to the construction works on site to manage potential offsite impacts. EPR *LV3 Minimise construction lighting impacts* requires that the contractor will manage lighting to minimise light spillage and glare during construction including from construction vehicles and equipment to protect the amenity of the adjacent neighbourhood.

EPR *SC3 Implement a Communications and Community Engagement Plan* requires that prior to construction commencing a Communications and Community Engagement Plan, to engage the community and potentially affected stakeholders and communicate progress of construction activities and operation, must be prepared and implemented. Such a plan will be implemented with the local community in accordance with the overarching plan for the NEL Project.

The contractor will be obligated to ensure the surrounding community is kept informed of the progress of construction of the project. That plan will provide a mechanism for identifying community issues and the recording, management and resolution of complaints from affected stakeholders including residents, consistent with Australian Standard AS/NZS 10002:2014 Guidelines for Complaint Management in Organisations. The contractor will also be required to participate in the community liaison group for the NEP Project (EPR SC4).

EPR *AQ1 Implement a Dust and Air Quality Management and Monitoring Plan to minimise air quality impacts during construction* requires that the project contractor prepares and implements a Dust and Air Quality Management and Monitoring Plan to ensure the emission of dust and air borne pollutants is monitored and managed with particular regard for local sensitive land uses. The plan is to describe the monitoring of air quality, triggers for investigation, the mitigation measures, and the processes for implementing appropriate controls.

EPR *LV2 Minimise landscape and visual impacts during construction* requires that construction works must be located, designed and carried out, in accordance with a Construction Compound Plan to be approved under the Incorporated Document and the Urban Design Strategy guidance on using design to help manage construction impacts. Accordingly, temporary fencing will be considered during the construction phase to reduce the impact of the works during construction. The quality of enclosures, hoardings, screens and temporary features will be in accordance with the Urban Design Strategy, Section 7.2. A Construction Compound Plan will be prepared by the relevant project construction contractor. Implementing the Construction Compound Plan will be a requirement to satisfy the NEL Project's approval.

5.6.4 Operational impacts

Traffic and transport

A new connection to Thompsons Road to and from the park and ride will carry car and bus traffic and will result in additional vehicular movements into and out of Thompsons Road.

Kampman Street is a local street providing an access route to and from the residential properties along Kampman Street and Furneaux Grove. It will be necessary to close Kampman Street at Thompsons Road to facilitate the new signalised intersection at Thompsons Road that will provide access to the car park access and bus link road. Closure of Kampman Street at this point is essential as it is not possible to safely and efficiently connect Kampman Street to the new signalised intersection.

The existing intersection of Thompsons Road and Kampman Street is a left-in, left-out intersection. Drivers currently wishing to turn right out of Kampman Street to the north (towards Templestowe) or right from Thompsons Road into Kampman Street from the south (from Balwyn and the freeway) have to do so at the Hugo Street intersection via Furneaux Grove. The intersection of Thompsons Road and Hugo Street is approximately 200 metres northeast of the Kampman Street intersection.

This change will reduce the convenience of access to Thompsons Road currently afforded to the residents of Kampman Street and residents of Furneaux Grove but in practice add marginal extra travel time to their trip.

Closing Kampman Street at Thompsons Road would require those currently turning left in and left out of Kampman Street to use Hugo Street for all turning movements onto Thompsons Road. This would not result in any additional travel distance for those who would have turned left in to Kampman Street from the north. However, it would involve a maximum deviation of 400 metres for drivers who would have previously turned left out of Kampman Street. The changes in traffic volumes outside the dwellings in Hugo Street would be negligible.

Pedestrians and cyclists would not be impacted by the closure of Kampman Street as shared use path connectivity would be maintained. Impacted residents will be consulted. EPR *T1 Optimise design performance* would apply, as would EPR *T4 Road safety design*.

The closure of Kampman Street at Thompsons Road requires a turning head to be constructed at the western end of Kampman Street of sufficient size to enable municipal waste collection vehicles to turn. Only one residential property has access to this section of Kampman Street between Furneaux Grove and Thompsons Road. This property's access will be maintained as will on-street parking on the closed section. Figure 5-20 shows the proposed closure to Kampman Street at Thompsons Road.

Figure 5-20 Proposed closure of Kampman Street

Noise

Once operational, the park and ride will generate noise associated with bus operations, vehicle movements (cars, service vehicles etc.) and people using the bus interchange. A noise wall in the order of four metres high is proposed around the periphery of the site to protect the amenity of the surrounding residents and to satisfy the requirements of *N1 Achieve traffic noise objectives*; *NV2 Monitor Traffic Noise*; and *N13 Noise Mitigation – noise walls*.

Dust and Air Quality

Once operational, vehicles using the park and ride will contribute to the area's overall emissions. EPR *AQ4 Monitor ambient air quality* requires that an air quality monitoring program operate in consultation with the Environment Protection Authority (EPA) to measure the air quality impacts of the NEL Project during construction and operation. The proximity of the site to the Eastern Freeway and Thompsons Road would establish the baseline for consideration of the additional vehicle movements at the site.

Landscape and visual impacts

The project will result in a change to the landscape of the immediate environs. The EES assessment of impacts to trees assumed total loss of trees from the site to make way for its use as a construction compound. Based on data from the most recent arboricultural survey, up to 186 trees (a tree being classified as single trunk of greater than three metres in height) would be removed from the site. A Tree Canopy Replacement Plan will be developed by the project contractor for this site to satisfy EPR AR4, and to compensate for the loss of tree canopy and amenity plantings across the NEL Project. It will provide site-specific requirements for replacement plantings in the context of this plan contributing to an overall Tree Canopy Replacement Plan Strategy for the NEL Project (taking account of canopy loss and replacement across the NEL Project as a whole). Tree canopy replacement and the 2:1 replacement ratio for amenity trees will be achieved across the entire project area, with trees to be replaced as near to where they were removed wherever practicable.

The design of the project has been underpinned by a desire to fit it in with the fall of the site so as to contain potential visual impact of the bulk of the building from the surrounds of the site. As a result, the visual bulk of the building will be hidden from view of the residents to the north and east with the massing effectively contained in the form of the land. The use of 'green walls' to the east and west elevations, where cladding will appear to be made up of climbing plants, will further contain the potential visual impact.

The noise wall will feature light green opaque acrylic panels in the lower section to shield bus movements from local residents and light green transparent acrylic panels on the top to reduce visual bulk and allow for light transfer. Much of the building will be hidden from view from nearby housing to the north and the east by the noise wall.

The addition of screen planting to the south side of Kampman Street between the proposed noise wall and the roadway will serve to soften the visual impact of the noise wall and the access road into the park and ride.

Overshadowing and Overlooking

EPR *LP4 Minimise overshadowing from noise walls and elevated structures and overlooking from elevated structures* will apply to the project. Koonung Reserve slopes in a south-easterly direction, away from Kampman Street and Thompsons Road. As such, the surrounding residential properties are positioned on higher ground than the proposed facility. The roof of the building, to be landscaped and serve as passive open space, will be level with the northern part of Kampman Street. The proposed facility would not overshadow or overlook surrounding residential properties.

The EPR uses a distance of 15 metres as the standard against any overlooking from elevated structures to secluded open space and habitable room windows of residential properties must be minimised through detailed design as far as practicable. See Figure 5-21 for the location of this 15-metre set back along Kampman Street.

Overshadowing diagrams (see Figure 5-22) have been prepared to illustrate the shadow cast by the proposed noise wall at the worst case scenario of 4pm at the winter solstice, when the shadows cast are longest due to the sun being low in the sky on the shortest day of the year, as well as at 4pm on the summer solstice and the equinox. These drawings illustrate that the extent of shadow to be cast will not impact secluded private open space of the dwellings on the east side of Kampman Street but instead extend part way across the front yards of those dwellings at the worst-case scenario of 4pm on the winter solstice. Full size versions of these diagrams are provided in the UDLP Drawing set (Drawing 72).

Figure 5-23 and Figure 5-24 provide cross section sketches of the noise wall and view lines to Kampman Street. See Figure 5-21 for the location of each cross-sectional view. These diagrams are also provided in the UDLP Drawings set (Drawing 71).

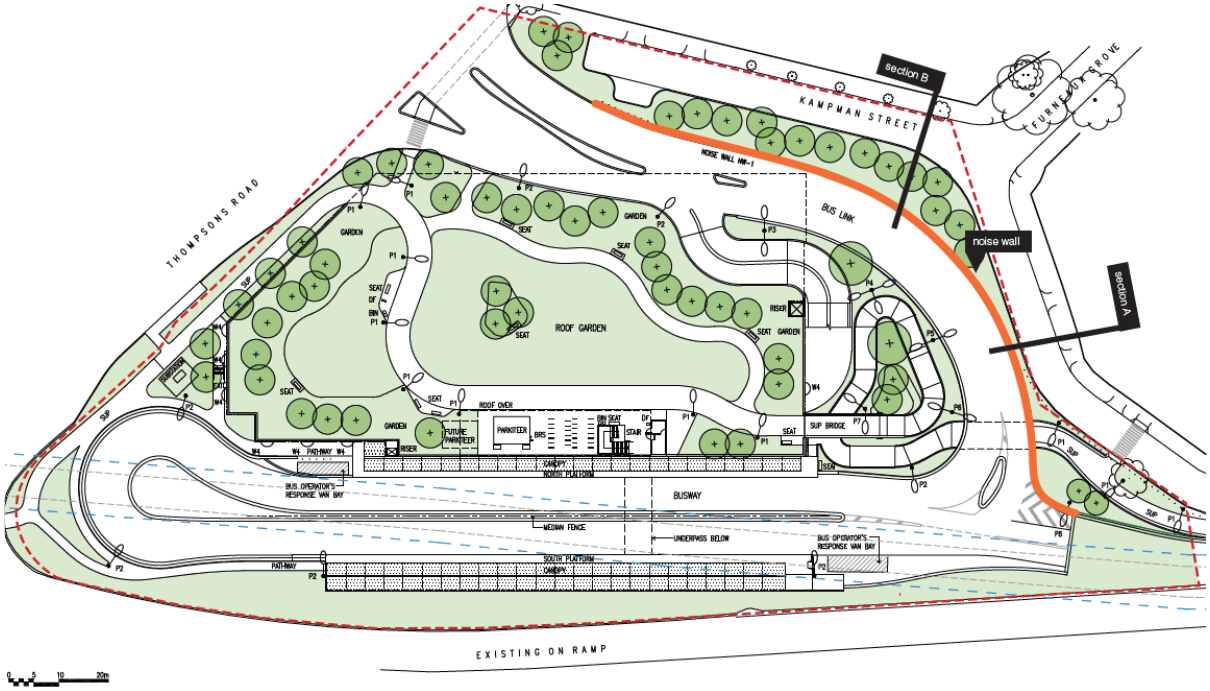

Figure 5-21 Set back line – 15 metres (orange line) and locations for cross section diagrams

Summer Solstice - 4pm, 22 Dec
Shadow does not extend beyond Kampman Street footpath.

Equinox - 4pm, 20 Mar
Shadow extending to the line of Kampman Street footpath.

Winter Solstice - 4pm, 22 Jun
The Angle of the shadow cast in winter is oriented more acutely to the north, hence the shadow cast is more glancing to properties east of Kampman Street.
The shadow diagram shows a maximum shadow extending 10m beyond the kerb, or approximately 7m beyond the property line.

Figure 5-22 Overshadowing study of Noise Wall

The area shaded grey is below the **sight line** of bus passengers / driver on the Buslink.

Residential properties cannot be **overlooked** from the Buslink as the noise wall is **opaque** to a height of **3m** above the road level.

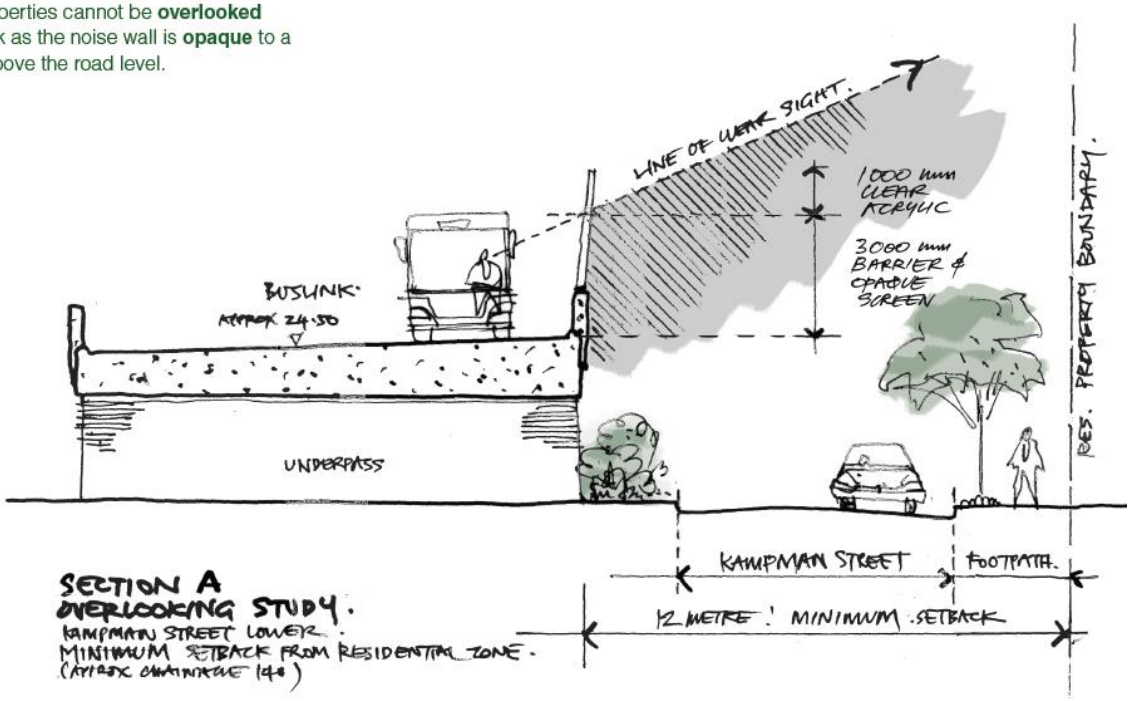

Figure 5-23 Overlooking Section Study Kampman Street Noise Wall – Section A (north south across street)

The area shaded grey is below the **sight line** of bus passengers / driver on the Buslink.

Residential properties cannot be **overlooked** from the Buslink as the noise wall is **opaque** to a height of **3m** above the road level.

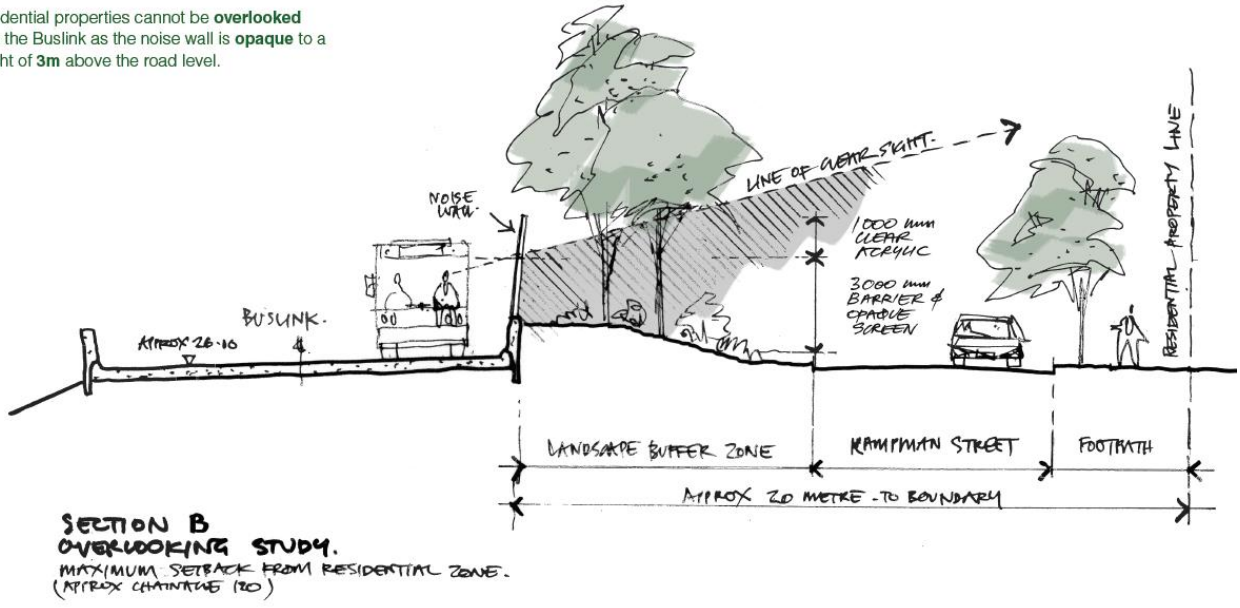

Figure 5-24 Overlooking Section Study Kampman Street Noise Wall – Section B (east west across street)

Light spill

Bulleen Park and Ride and its associated open space and share use paths will be lit at night to allow for its safe operation. EPR *LV4 Minimise operation lighting impacts and maximise operational lighting benefits for open space* requires that lighting be designed and installed in accordance relevant Australian Standards and guidelines. The design limits the extent of vehicle movement close to existing residential areas. New canopy trees to the northern interface of the site to Kampman Street will temper the impact of light glare from vehicle movement.

The lighting plan prepared for the rooftop open space has been designed to limit light spill off site whilst providing safety for users. The current lighting to the reserve is confined to the surrounding local road network. The design aim is to provide a lighting solution to enable the facility to be safe and satisfy environmental requirements and lighting standards. Light spill will be minimised to protect the local fauna habitats and avoid off-site amenity impacts.

An obtrusive lighting assessment was undertaken in accordance with Australian Standard/NZS 4282:2019 to assess the potential light spill and impacts of the lighting within the project to the residential properties on Kampman Street. Obtrusive light is light that can be considered an annoyance, uncomfortable or a distraction to neighbouring properties.

The levels of obtrusive lighting to result from the project will be compliant with the Australian standard. The calculated amount of obtrusive light is less than the recommended maximum for suburban areas during the lighting curfew hours of 11:00pm to 6:00am.

The assessment didn't consider the impacts of intrusive light from bus headlights and the Thompson Road intersection entity owned road lighting. The management of potential impact from bus headlights will take place during detailed design of the project to ensure no offsite amenity impacts in accordance with EPR *LV4 Minimise operational lighting impacts and maximize operational lighting benefits for open space*. This EPR requires the design and installation of *lighting used during operation of permanent structures and resulting from the orientation of all permanent structures (including from vehicle headlights) in accordance with relevant standards, including but not limited to relevant guidelines and Australian Standards pertaining to outdoor lighting and the protection of beneficial uses*.

6 Consistency with Urban Design Strategy

6.1 Overview

The Urban Design Strategy for the NEL Project was approved by the Minister for Planning on 23 March 2020. As noted in the introduction to the strategy, the purpose of the strategy is to establish the expectation of the Victorian Government for the design outcomes to be achieved by the project, specifically:

1 Establish and communicate the urban design requirements for the project.

2 Ensure proposals are developed with integrated urban design solutions.

3 Provide the framework for a performance-based assessment of Urban Design and Landscape Plans.

The Urban Design Strategy will drive:

- Urban design excellence to benefit the wider transport network, its users and the communities and places that North East Link passes through.
- Positive outcomes that minimise negative impacts of the project.
- Integration of high-quality urban design with effective technical solutions.
- Collaborative, multi-disciplinary, integrated design thinking for all elements of the project with an urban design-led process.

The Urban Design Strategy has a four-tier structure as follows:

- *Corridor-wide requirements* – set out a corridor-wide design approach across the project, and includes principles, objectives and key directions.
- *Place-specific requirements* – guide design development within three distinct character areas so that existing landscape and natural features influence design.
- *Detailed requirements and benchmarks* – relate to specific project elements and inform the minimum standard of the design quality expected for North East Link.
- *Urban Design Framework Plans* – set out design and development priorities relating to five key locations, to guide detailed design and ensure that landscape and visual impacts on these sensitive areas are minimised.

6.2 North East Link corridor wide urban design considerations

The Urban Design Strategy sets out corridor-wide requirements in the form of eight principles, objectives, and key design directions to inform the design process to ensure good design outcomes. Those principles are:

- *Principle 1 Identity:* A well-defined identity and sense of place add to people's experience and understanding of a place.
- *Principle 2 Connectivity and Wayfinding*: Well-connected and legible networks and places contribute to strong economies and healthy, inclusive communities.
- *Principle 3 Urban Integration*: Well integrated infrastructure provides a sound framework for successful cities and places.
- *Principle 4 Resilience and Sustainability*: Infrastructure must be sustainable, enduring and resilient to support current and future generations.
- *Principle 5 Amenity*: High quality urban amenity afforded by well-designed infrastructure contributes to successful, equitable and prosperous communities
- *Principle 6 Vibrancy*: Vibrant communities are places where people want to visit, experience or live.
- *Principle 7 Safety*: Safe environments are essential for strong, connected and liveable communities.
- *Principle 8 Accessibility*: Highly accessible and inclusive environments encourage positive activation and are vital to community wellbeing, inclusion and health.

These principles are complemented by objectives and key design directions Table 6-1 provides an assessment of the consistency of the Urban Design and Landscape Plan for the Bulleen Park and Ride with the principles and objectives of the Urban Design Strategy. Table 6-2 provides an assessment of the consistency of the Urban Design and Landscape Plan for the Bulleen Park and Ride with the key design directions.

6.2.1 Place-specific requirements

The Urban Design Strategy sets out place specific requirements to guide response to the local context of the project. The site of the proposed Park and Ride is located at the western end of the Koonung Creek Valley character area. It is shown in Map K1 Bulleen Road to Doncaster Road. Table 6-3 provides an assessment of the consistency of the Urban Design and Landscape Plan for the Bulleen Park and Ride with the place-specific requirements for the Koonung Creek Valley.

6.3 Specific design considerations

The element-based requirements address detailed elements of the project and encompass all aspects of the project including different types of bridges, ventilation structures, portals and tunnels, water and road signage. Those element-based requirements that would apply to the proposed Park and Ride are:

- Project buildings and ancillary infrastructure
- Public open space
- Walls, fencing, barriers and screens
- Bus park and ride, and bus lanes
- Lighting
- Walking and cycling infrastructure
- Walking and cycling underpasses
- Landscape
- Materials and finishes.

Table 6-4 provides an assessment of the consistency of the Urban Design and Landscape Plan for the Bulleen Park and Ride with the detailed requirements and benchmarks.

6.3.1 Urban Design Framework Plans

The site falls within the area of the Eastern Freeway Urban Design Framework Plan. Table 6-5 provides an assessment of the consistency of the Urban Design and Landscape Plan for the Bulleen Park and Ride with the Eastern Freeway Urban Design Framework Plan. Table 6-6 provides as assessment of consistency with Urban Design Framework Plan place-specific requirements.

6.4 Assessment of consistency with other design guidance documents

The Urban Design Strategy references a publication prepared by the Office of the Victorian Government Architect titled *Design Principles for Multi-Deck Commuter Car Parks*. It takes the form of a Guidance Note which *describes how multi-deck car parks can support and contribute to a well-connected, enjoyable, safe and vibrant public realm by adopting good design principles*.

The assessment of the proposed commuter car park against the parameters set out in the Guidance Note is provided at

Table 6-7.

Table 6-1 Consistency with Urban Design Strategy principles and objectives

Principle/objective		Urban design outcome	Response
Principle 1	**Identity**	**A well-defined identity and sense of place add to people's experience and understanding of a place**	
Objective 1.1	Sense of place	Protect, maintain and enhance the identity of local places, and respectfully consider Indigenous and non-indigenous cultural values. This includes appropriate consideration of local community facilities, the natural environment, European and Indigenous history, and cultural places such as the Bolin Bolin Billabong, Yarra Bend Park, and Heide Museum of Modern Art.	The design of the Bulleen Park and Ride facility will create a sense of identity and be a focal point for the local community. Its design is centred around a green roof and it has been designed sensitively to fit into the existing landscape and retain the public open space above.
Objective 1.2	Recognise the Yarra River	Provide a design that respects and promotes the Yarra River (Birrarung) and its environs which encompass its tributaries, wetlands, billabongs, native vegetation and parklands such as Banyule Flats, and seek opportunities to celebrate this iconic Melbourne asset and ceremonial meeting place for the benefit of Traditional Owners and the general public.	Not Applicable – the site is some distance from the Yarra River.
Objective 1.3	Landscape and Visual Amenity	Sensitively enhance landscape and visual outcomes and reduce physical and visual impacts associated with the project	The car park structure will be located in the lower level of the site, reducing the physical and visual impact of the structure to the adjacent residences in Kampman Street. The bus interchange platforms and canopies will be screened from the residences to the eastern interface by the car park structure.

Principle/objective		Urban design outcome	Response
Objective 1.4	Existing landscape character	Provide a high quality design outcome that responds sensitively to the distinctive character of this part of Melbourne, takes advantage of existing landmarks and vegetation, views and significant places, protects landscape and vegetation, and seeks to enhance the way in which people experience and interact with the landscape.	The existing character of the site is an open space for passive recreation with trees around the perimeter. A roof garden on top of the car park structure (green roof) will maintain the publicly accessible green open space in the area with an expansive grass area surrounded by small canopy trees. New planting to the northern interface to Kampman Street will maintain the landscape character of the area and filter views to the noise wall.
Objective 1.5	Architectural Contribution	Make a positive architectural contribution to infrastructure including bridges, noise walls and other structures.	Well-detailed, simple built form and materials, closely integrated with the landscape design, will provide a positive architectural contribution to the area.
Principle 2	**Connectivity and Wayfinding**	**Well connected and legible networks and places contribute to strong economies and healthy, inclusive communities.**	
Objective 2.1	Connectivity	Improve people's ability to move through the immediate and wider area with ample, efficient and quality links across and along the corridor for all transport modes, including pedestrians and cyclists.	The reconfigured shared use path will maintain safe, off-road cycling and pedestrian connectivity through the area, continuing the Koonung Creek Trail from Kampman Street through to Thompsons Road. The shared use path will be grade separated from the bus link by an underpass.
Objective 2.2	Transportation integration	Maximise the benefits of the project by facilitating seamless access to a variety of public transport, walking and cycling choices as part of a connected intermodal network.	The bus station will provide efficient modal interchange between pedestrians, cyclists, buses and cars, by minimising distances travelled between modes. The shared use path will provide access to the Parkiteer and bicycle hoops at the park / roof level of the bus interchange.
Objective 2.3	Legibility and wayfinding	Provide a coordinated design that promotes visual connections and wayfinding, reduces reliance on	The simplicity of the floor plan and the concentration of vertical circulation to the south side of the car parking structure will provide clear wayfinding throughout the building.

Principle/objective		Urban design outcome	Response
		signage and minimises visual clutter and obstructions to key views.	The open nature of the landscape will provide clear wayfinding throughout the site with considered planting and open and clear sightlines.
Principle 3	**Urban Integration**	**Well integrated infrastructure provides a sound framework for successful cities and places.**	
Objective 3.1	Integration with context	Avoid, minimise and mitigate any severance of communities. Provide a well-integrated corridor environment that enhances the street network and takes advantage of opportunities to connect and integrate with the broader commercial, residential and open space functions and environment.	The facility abuts a major road at the edge of a residential area so will not result in severance of the community. It will retain connection to the surrounding Koonung Creek Trail and provide easy connection to the nearby housing to access the new bus stops.
Objective 3.2	Integration of Design	Ensure an integrated engineering, urban design, architectural and landscape architectural approach that sensitively addresses social, cultural, functional and physical aspects of the project.	The development is both a public open space and an integrated transport hub. The design will provide opportunities for greater natural surveillance of the site while optimising the topography as a tool for segregating different uses.
Objective 3.3	Strategic Alignment	Provide an integrated transport infrastructure and land use solution that responds to strategic transport and land use planning for the broader precinct in consultation with local government and authorities.	The establishment of a park on the roof of the building will provide an integrated design response that maintains the functional amenity of public open space on the site, accessible by local residents and commuters, whilst accommodating an efficient park and ride facility.
Objective 3.4	Minimise Footprint	Minimise negative impacts on the community and the environment by minimising the project footprint and visual bulk, particularly where it intrudes on sensitive land uses including open space and existing vegetated areas.	The footprint of the car park structure has been minimised through efficient planning to maximise opportunities for deep soil landscape buffers around the perimeter of the site to accommodate new planting. This will lessen potential negative impacts on the community.

Principle/objective		Urban design outcome	Response
			The visual bulk of the project faces towards the Eastern Freeway to protect sightlines from Kampman Street and screen the bus interchange from the residential interface.
Principle 4	**Resilience and Sustainability**	**Infrastructure must be sustainable, enduring and resilient to support current and future generations.**	
Objective 4.1	Enduring and durable	Provide a design that is enduring and functional for generations to come, is readily maintainable and will age gracefully in concept and detail, ensuring a positive built form legacy.	The selection of robust, elegantly detailed, materials for the building facades will ensure that the building ages well. Climbing plants will be encouraged to grow up the galvanised steel grille facades over time, providing strong integration between the landscape and the building.
Objective 4.2	Resilience and Future proofing	Ensure the infrastructure is able to survive, adapt and perform when subjected to acute stresses and shocks such as changes in climate, technology, future fleets, road use and extreme events.	The design of the building will accommodate new technologies with provision of charging stations for electric vehicles using the facility. The future implications of climate change have been accommodated through the building's design to respond to the risk of flooding, as flagged by the site's inclusion in the Land Subject to Inundation Overlay under the Manningham Planning Scheme. Similarly, the entrance concourse, areas for bicycle and motorcycle parking, and waiting areas will all be sheltered by canopies to provide shade and weather protection. The design has been the subject of extensive flood modelling. In addition, there will be an enclosed waiting area on the northern platform to provide a comfortable waiting area for patrons. The potential for expansion of bicycle parking has been identified on the concourse level to double the capacity when demand warrants.
Objective 4.3	Environmental Sustainability	Optimise environmental performance and embed sustainability initiatives into the design response. This includes integrated water management, biodiversity and habitat enhancement and	Green infrastructure on site will include a green roof and a rain garden as part of the Water Sensitive Urban Design (WSUD) initiative. The landscaped roof will provide thermal insulation for the car parking structure. Stormwater will be harvested and re-used for toilets and to provide irrigation to the landscaping on

Principle/objective		Urban design outcome	Response
		connections, green infrastructure provision and sustainable use of energy and materials.	site. Solar panels will be installed on the roof of the entry pavilion comprising 50 panels that are each rated at 400W which is estimated to generate an annual production of 25MW of power to operate the facility thus avoiding reliance on the electricity grid.
Objective 4.4	Whole of life	Ensure the design is appropriate having regard to ongoing maintenance, operations and upkeep; and effective governance arrangements are established to ensure its functionality, design qualities and appearance is able to meet community expectations.	The simple, robust nature of the design, with use of galvanised steel facades with integrated landscape design, will minimise maintenance requirements whilst providing a high-quality appearance over the life of the building.
Principle 5	**Amenity**	**High-quality urban amenity afforded by well-designed infrastructure contributes to successful, equitable and prosperous communities**	
Objective 5.1	Improved Amenity	Enhance urban amenity through a highly considered and site-specific response to realise opportunities and address challenges to create better places for people.	The inclusion of a landscaped space on the roof of the building will provide a high-quality amenity for the area. Similarly, the reconfigured Shared use path will activate the space and make the landscaped area attractive to users. The shared use path will be split to separated pedestrian and bike paths across the green roof in the interests of pedestrian safety.
Objective 5.2	Landscape values	Create positive outcomes for the community with a coherent landscape response that embraces natural qualities and values.	The inclusion of a landscaped space on the roof of the building will provide a high-quality amenity for the area along with new plantings to the northern interface to Kampman Street and Thompsons Road.
Objective 5.3	High quality	Provide a high-quality design outcome that makes a positive contribution to the local built and natural environment and minimises physical and visual impact on the surrounding community.	The simple, well-detailed design of the building and an integrated landscape will provide a positive contribution to the local built and natural environment. The siting of the building into the fall of the site will minimise physical and visual impact on the surrounding community through the massing being contained within the landscape.

Principle/objective		Urban design outcome	Response
Objective 5.4	Experiential	Provide a great journey for motorists, public transport users, pedestrians and cyclists with consideration of the varying speeds and journey types.	The facility will be attractive for motorists and pedestrian visitors accessing the facility. Similarly, the open space and the through connection for cyclists and pedestrians will be an attractive addition to their journeys.
Principle 6	**Vibrancy**	**Vibrant communities are places where people want to visit, experience or live.**	
Objective 6.1	Putting people first	Provide places that are comfortable, inclusive and pleasant for the local community, support active and healthy lifestyles, and encourage diverse social interaction within public spaces.	The extension of the Koonung Creek Trail Shared use path through the site and accessible rooftop garden will promote active transport to the bus interchange complemented by the provision of secure parking for up to 80 bicycles under weather protection.
Objective 6.2	Places for people	Improve local neighbourhoods where there are opportunities to create inviting, people-friendly streets and public places.	The rooftop landscaped space, clear wayfinding, and Shared use path through the site will provide a positive asset for the local area.
Principle 7	**Safety**	**Safe environments are essential for strong, connected and liveable communities.**	
Objective 7.1	Safer places	Reduce the opportunity for crime, maximise passive surveillance and support safe, comfortable and enjoyable places that meet Crime Prevention through Environmental Design (CPTED) principles.	The rooftop landscaped space will provide a safe, open parkland setting for access to the bus interchange. The bus platform may be directly accessed from the surrounding pedestrian footpath network. Lighting will be appropriate for commuter and park visitor safety with the car park to be lit 24-hours a day. The design of the building will discourage graffiti by limiting the use of flat surfaces and the use of graffiti resistant finishes.
Objective 7.2	Road Safety	Prioritise safety for all users including motorists, cyclists, pedestrians and public transport users, and avoid unnecessary distractions.	Local traffic in Kampman Street will be separated from cars and buses accessing the bus interchange to minimise traffic congestion impacts on local

Principle/objective		Urban design outcome	Response
			residents. Cyclists and pedestrians will similarly be separated from other vehicles through an underpass below the bus link.
Principle 8	**Accessibility**	**Highly accessible and inclusive environments encourage positive activation and are vital to community wellbeing, inclusion and health.**	
Objective 8.1	Universally inclusive	Enhance universal access across the affected and surrounding area for all members of the community	Paths and ramps will provide appropriate universal access to the bus interchange. The facility will provide accessible car parking spaces including a Kiss and Ride space directly accessible to the bus platforms.
Objective 8.2	Twenty-minute neighbourhoods	Support and enhance 20-minute neighbourhoods for convenient and desirable access to everyday services and facilities (within a 20-minute walk from their home, or faster by bicycle or local public transport).	The project maintains access to the local area by maintaining continuity of the Koonung Creek Trail albeit in a reconfigured arrangement across the site connecting the trail to Thompsons Road.
Objective 8.3	Active Transport	Encourage walking and cycling for transport and recreation with an integrated active transport infrastructure that meets future growth in demand and connects seamlessly with surrounding networks and with proposed infrastructure being delivered by others.	The bus interchange retains the Shared use path through the site and end-of-trip facilities including a secure Parkiteer and bicycle hoops. Capacity will be provided for secure and weather protected parking of 80 bicycles.

Table 6-2 Consistency with Urban Design Strategy Key Design Directions

Key Design Direction			Response
1	**Develop an integrated design response**	The project must demonstrate the effective integration of engineering and urban design to deliver an innovative and balanced design solution. This key direction requires proponents to move beyond a business as usual and engineering-centred approach to design and address challenges using a multi-disciplinary, innovative framework of three-dimensional design thinking. The principles of sustainability must also be embedded into the design approach to maximise environmental, social and economic outcomes.	The proposal demonstrates an integrated design response by utilising the natural fall of the site disguise the bulk of the car park building, incorporating a green roof to compensate for the displacement of public open space, and connecting the roof and building to the existing shared use path network as an integral part of the site's design. Locating the car parking structure at the lower level of the site integrated with a rooftop landscaped space will provide a design solution that minimises visual impact and maintains public open space in the locality. The design incorporates sustainability as an integral driver of design through use of green infrastructure including the green roof and rain gardens to filter stormwater, inclusion of solar panels to reduce reliance on grid electricity, harvesting of storm water for toilets and irrigation of landscaping.
2	**Support a natural and connected corridor**	The project must demonstrate a design that responds to the natural, movement and open space systems and improve connectivity to 'stitch' communities across the project corridor. Given the site is within the Koonung Creek linear parklands, being part of the open space networks highly valued by the community, the project design should maintain, link and extend the important functions of the open spaces that exist along and adjacent to the project corridor. Reducing severance is a key priority for the project.	The project is located on a site traversed by the shared use path which connects the Koonung Creek linear parklands. The shared use path has been incorporated into the design to ensure the connection remains in place as an integral part of the design. As a result, the important function of the passive open space in this location will be maintained, and upgraded with new landscaping, along with the connections provided by the shared use path.
3	**Recognise past, contemporary and shared**	The project must demonstrate a design philosophy and approach that recognises, protects and promotes Indigenous cultural heritage values, and celebrates and interprets places and objects of historical heritage importance.	The relocation of the Bulleen Park and Ride to the subject site (from the previous site at the Boroondara Tennis Centre) provides the opportunity to revitalise the area of the Koonung Creek to the north of Thompsons Road.

Key Design Direction			Response
	Indigenous and historic cultural values	Enhance urban amenity, user experience and contribute to a sense of place and local identity. Ensure the built form for North East Link contributes to the identity of Melbourne.	By utilising the natural fall of the site, the facility minimises its visual impact on the natural environment. The design will ensure the bulk of the building visually disappears into the landscape and land form of the site. Through the UDLP process the design has been subject to direct engagement with the Traditional Owners (Wurundjeri Woi Wurrung).
		Embed Indigenous and local community knowledge and understandings of place into the project	While the site is highly transformed as a consequence of the development of the Eastern Freeway and the remaining landscape has limited archaeological cultural significance, Wurundjeri Woi wurrung (Traditional Owners) have been directly engaged through the UDLP consultation process.
		Enhance urban amenity, user experience and contribute to a sense of place and local identity.	The building has been designed to integrate into the landscape and present a low scale building compatible with the local area.
4	**Provide a great experience for road users**	The project must demonstrate a design that creates a great journey for road users, with a consistent experience that coherently links to adjacent freeways and provides a design hierarchy that allows for intuitive navigation.	The park and ride will represent a positive experience for bus users, pedestrians, cyclists in particular.
		The Eastern Freeway interchange is an important node for bus users and includes a busway and the Park and Ride facility in Bulleen. The project is not seeking additional large-scale, feature vertical elements at this location due to the sensitivity of the surrounding context. Nodes at this location should be created by well-designed elegant structures and the use of landform and landscaping rather than with additional superfluous built elements.	The building has been designed to integrate into the landscape and use the landform to present a low scale building compatible with the local area and sensitive to the surrounding context.
5	**Create a context**	The project must demonstrate a design that protects, maintains and enhances the local context through which the project passes: Koonung Creek Valley.	The building responds positively to the local context by employing a functional rooftop landscape. New planting along the northern edge of the site to

Key Design Direction			Response
	sensitive design		Kampman Street will recompense for the loss of the existing trees and reinstate the landscape character.

Table 6-3 Consistency with Urban Design Strategy place-specific requirements for Koonung Creek Valley Design Character Area (map K-1)

Key Design requirement		Response
Identity	1A – Ensure the Thompsons Road intersection supports a safer pedestrian environment and caters for public transport such as for the Bulleen Park and Ride facility	In the interim design of the park and ride, buses will access the site from the northern corner near Kampman Street. Once the busway is operational and the ultimate design of the park and ride is implemented, buses will also access Thompsons Road using a signalised intersection to the south west. The pedestrian environment of the Thompsons Road intersection will not be impacted by Bulleen Park and Ride as Shared use paths and connections will be retained across the site.
Connectivity, Wayfinding and Accessibility	2A – Reinstate or realign the Koonung Creek Trail where required to a suitably wide and functional standard.	The Koonung Creek Trail will be maintained through the site with a shared use path traversing the site through the rooftop park.
	2C – Where project works directly affect existing secondary paths in Koonung Creek Reserve, provide replacement walking paths in high use area where safe and practicable to reduce the potential for conflict between walkers and cyclists along the Koonung Creek Trail and provide additional amenity for the community.	The Koonung Creek Trail will be maintained through the site and integrated with the rooftop.
Resilience and sustainability	4A – Support the biodiversity corridor in Koonung Creek Reserve with indigenous revegetation.	Landscaping for the green roof and surrounds will use indigenous vegetation with plant selection informed by local Environmental Vegetation Classes (EVCs) to ensure the biodiversity values of the immediate environs are enhanced.

Key Design requirement		Response
Amenity, Vibrancy and Safety	5D – Provide canopy tree planting to improve shade provision along the Koonung Creek Trail and along connections to key destinations.	New trees will be planted around the outside of the car park structure to provide shade to the public open space and enhance the Koonung Creek Trail shared use path.
	5G – Where project works directly affect Koonung Creek Reserve provide appropriate seating and additional planting to enhance amenity for the community.	New planting along the northern boundary of the site to Kampman Street will filter views from adjacent residences to the noise wall and the Eastern Freeway and maintain the treed neighbourhood character. Lighting will be incorporated into the landscape design, to provide for the safety and amenity of pedestrians and cyclists moving through the site.
	5H – Consider planting of the open space at the corner of Kampman Street and Thompsons Road.	This open space is the site of the Bulleen Park and Ride and will be transformed by extensive landscaping of the site.

Table 6-4 Consistency with Urban Design Strategy detailed requirements and benchmarks

Element – based requirements and qualitative benchmarks			Response
6	**Project buildings and ancillary structures**		
6.1	Siting	New above-ground service and utility infrastructure are located to avoid or minimise impacts to existing to adjoining properties, and to reduce the need to remove vegetation. The number and size of utility buildings and structures within public open space are minimised. Above-ground utility buildings and structures are co-located with nearby existing structures and adjacent to	The car parking structure has been located on the lower level of the site to minimise visual impact of new built form to the adjacent residences. Any utility infrastructure is incorporated into the design.

Element – based requirements and qualitative benchmarks			Response
		vegetation to better integrate with the surrounding area. They are located to maintain the amenity and function of the places they occupy, and minimise visual impacts on significant buildings, monuments, trees, open spaces and landscape vistas.	
6.2	Integrated and coordinated	Project buildings, technical shelters, compounds and structures integrate sensitively with their surrounds, and complement and coordinate with existing nearby structures and fencing where appropriate. The obtrusive appearance of utility buildings and structures from the public realm (public realm refers to all public open space along with other publicly-owned land between buildings including streets) is minimised through the use of appropriate landscaping screening (e.g. planting and land form), architectural façades, and/or security fencing that also function as a visual screen.	The building has been integrated into the site's surrounds by its location with the fall of the site to hide the building bulk within the fall of the site with walls to be covered in climbing plants to further screen the built form. Utility elements are incorporated into the car parking building. The Protective Services Officers' pod will be integrated with the building design.
7	**Public open space**		
7.1	Integration with surroundings	The design maximises continuity of public realm, extends surrounding public open space (land primarily used for recreation, nature conservation and passive outdoor enjoyment) and movement patterns, and mitigates any severing of communities and places. Access to public open space within and at the interface of the project is enhanced.	The shared use path connects the rooftop landscape with open space to the east along the Koonung Creek Trail. The rooftop landscape will also be directly accessible from Thompsons Road and neighbouring Kampman Street by pedestrians and cyclists. The existing open space on the site will be considerably enhanced with the replacement new rooftop landscape.

Element – based requirements and qualitative benchmarks			Response
		Opportunities to create additional functional and high-quality open space within the project corridor are maximised. The open space function of the open spaces within and along the project corridor is maintained. Encroachment and impacts on adjacent open space by freeway infrastructure and roadside landscaping (planting within the road reserve) is minimised.	
7.2	Open space infrastructure	Opportunities to upgrade the existing open spaces along the project corridor are maximised to create consistent, high quality, multifunctional and efficient spaces. This includes public open space infrastructure to enhance the function and enjoyment of the open space, such as seating, natural shade, drinking fountains, dog drinking bowls, emergency markers, bicycle leaning rails/ hoops and rest areas. Public open spaces are consistent with local council or Parks Victoria furniture, material palettes and standards, and playground guidelines. Park and recreation facilities are clustered within open spaces to encourage people to gather together and to have positive social interactions.	The existing open space will be replaced with high quality landscaped space featuring seating, lighting, bicycle parking hoops, which could in time become a community focus area.
7.3	Positive use of space	The design promotes and enables the positive use of public open space through design, with the resulting spaces being useful, attractive, activated, safe and sustainable. This includes incidental spaces such as	The rooftop open space will be accessible and its design flexible to accommodate a range of activities with the provision of areas of lawn, and seating, activated by the location of the pedestrian entrance to the facility in the centre of the rooftop open space. The rooftop space will be further

Element – based requirements and qualitative benchmarks			Response
		those under ramps and viaducts, as well as pocket parks alongside the roadway. Places are well designed to cater for a diversity of uses that promote opportunities for positive social interactions and incidental physical activity.	activated with the integration of the pedestrian and bike connections to the Koonung Creek Trail.
7.4	Pedestrian realm	Public open spaces are inclusive, pleasant and welcoming. Seating, shade, shelter, 'pause points' and lighting are provided, as appropriate, and at regular intervals in open spaces at transport stops, on key pathways, and in community spaces associated with the project. Natural daylight is maximised into public spaces below and adjacent structures.	The rooftop landscaped space will provide open space infrastructure including seating, shade, lighting and rest areas. Bicycle parking hoops will be located within the entry pavilion.
7.5	Safety	New spaces created around the project feel safe, comfortable and welcoming to users during both day time and night time, maximising passive surveillance, clear sight lines and appropriate lighting.	The design of the rooftop landscape will provide public open space with clear sight lines, appropriate lighting and an open, welcoming appearance. Egress from the bus interchange to the rooftop landscape will improve passive surveillance and the space will be activated with commuters and uses of the shared use path, moving through the area.
9	**Walls, fencing, barriers and screens**		
9.1	Noise and visual mitigation	Noise attenuation elements are high quality and context sensitive. Innovative methods of noise mitigation are maximised to reflect/refract and/or absorb noise. Landscaping and landscaped embankments enhance and soften the appearance of walls and barriers, reduce height and bulk, and better integrate the structures into the surrounding area.	The new noise wall along the bus link will present a high-quality face to Kampman Street being sited behind new planting that will soften the view from the northern boundary of the site. The noise wall will feature light green opaque acrylic panels in the lower section to shield bus movements from local residents and light green transparent acrylic panels on the top to reduce visual bulk and allow for light transfer.

Element – based requirements and qualitative benchmarks			Response
			The walls to the building will be softened visually though the use of cladding to incorporate climbing plants to screen the structure to the east and west elevations and in part, the south elevation.
9.2	Integrated and coordinated	Noise walls, flood walls, fences, screens and traffic barriers are coordinated and integrated to minimise visual and physical clutter. These elements integrate with existing or proposed elements to reduce the need for additional structures and transition seamlessly into the existing elements. Opportunities to incorporate new built form as noise mitigation are maximised to replace the need for noise walls. Transitions in wall and fencing heights are well considered and seamless. Materials and colour palettes are coordinated, and finishes are high quality.	The new noise wall along the bus link will present a high-quality face to Kampman Street due to being sited behind new planting that will soften the view from the northern boundary of the site. The noise wall will sit apart from the building however due to the layout of the site and the vehicular access to the car park. The walls to the building will be softened visually though the use of cladding to incorporate climbing plants to screen the structure to the east and west elevations.
9.3	Local context and scale	Walls, fencing and screens are designed in response to the surrounding areas, with careful consideration to form, texture and colour on both sides of the walls. Use of colour is appropriate to location, and minimises the impact on residential and sensitive uses, including negative impacts from coloured light from transparent materials. Both faces are designed to the same standard of quality, with a front and a front, rather than a front and a back. Walls are appropriately designed to address the speed at which they are viewed. Design on public and	New landscaping to the northern side of the site will provide visual screening to exiting residences to the north and east of the site. The noise wall will feature light green opaque acrylic panels in the lower section to shield bus movements from local residents and light green transparent acrylic panels on the top to reduce visual bulk and allow for light transfer.

Element – based requirements and qualitative benchmarks			Response
		residential interfaces reflects a pedestrian scale, whereas the roadside interface reflects the scale of a high-speed vehicle environment. Walls and other structures are sensitively sited and proportionate to the surrounding structures, landscape and urban elements.	
9.4	Interfaces	The creation of unsafe narrow areas between noise walls and residential properties are avoided and minimised. Innovative solutions are included to ensure any narrow spaces are pleasant and safe. Walls respond to the adjacent land uses and boundaries and maximise opportunities for dual use.	No narrow areas will be created between noise walls and residential properties.
9.5	Transitions	Transitions in types and materials of walls, barriers and fencing appropriately address adjacent sensitive land use, property boundaries and vegetation. Changes in wall heights and materials types in walls, barriers and fencing are well considered.	The walls are in effect contained within the site and will in time be covered in foliage. The noise wall will feature light green opaque acrylic panels in the lower section to shield bus movements from local residents and light green transparent acrylic panels on the top to reduce visual bulk and allow for light transfer.
9.6	Visual connectivity and solar access	Transparent barriers are used to take advantage of scenic and adjacent views of surrounding landscape and reduce the bulky appearance of structures. Walls and barriers are designed (for example sited or angled) to avoid or minimise overshadowing of properties, waterways and open space. Transparent barriers are used to optimise solar access, and to maximise visual connectivity across corridor to connect communities.	The noise wall to the bus link will be designed to reduce visual bulk when viewed from adjoining residential areas. The noise wall will feature light green opaque acrylic panels in the lower section to shield bus movements from local residents and light green transparent acrylic panels on the top to reduce visual bulk and allow for light transfer. The noise wall will be located to the west and south of dwellings and will not result in overshadowing to secluded private open space.

Element – based requirements and qualitative benchmarks			Response
		Walls and barriers are responsive to the local environment and allow sunlight to waterways and ecological areas.	
9.9	Deterring graffiti	High quality materials and textured surfaces are used on walls, fencing and screening to deter graffiti, particularly at lower levels of the noise wall. Other opportunities for innovative solutions to deter graffiti are maximised.	The car park building will have only a small area of exposed façade, given it is mostly embedded into the landform. The façade cladding will be a galvanised steel webforge grated panel system fixed to a steel sub frame with a very limited surface area and the panels will allow for climbing plants to 'green' the façade and integrate it into the landscape. The lower level of the noise wall will not present a flat surface and so will be less attractive for graffiti.
9.10	Maintenance	Walls are designed to minimise maintenance burden through the selection of high-quality materials that are durable, not subject to environmental damage and can be accessed to maintain their high quality.	The noise wall will be designed to minimise maintenance whilst maintaining a high-quality appearance. The façade cladding will mostly a green wall on a galvanised steel webforge grated panel system requiring only maintenance of the planting.
10	**Bus park and ride, and bus lanes**		
10.1	Bus interchanges	Bus interchanges provide a high-quality experience for commuters that enhances their journey, provides intermodal connections and increases neighbourhood connectivity. Interchanges have demonstrated capacity to support or facilitate future service changes.	The bus interchange has been designed to provide a high-quality user experience through integration with a rooftop landscape and the provision of safe and separated access options for pedestrians and cyclists. The facility will provide for intermodal connection for bicycles and cars and connect to pedestrian walkways (a Shared use path). The layout and length of the platforms will provide flexibility for future service changes in arrangements of pickups and drop offs to serve in-bound and out-bound journeys.

Element – based requirements and qualitative benchmarks			Response
10.2	Bus station design	The design of the interchange optimises their dual role as service points for public transport infrastructure and as public landmarks. Architecture of the bus interchange is high quality and provides a positive built-form contribution to the local area. The public realm promotes pedestrian activity, creates vibrant spaces, uplifts connectivity, and integrates the interchange precinct into the surrounding area. Complementary land use and activation opportunities such as commercial, retail and public facilities are maximised. Car parking areas are safe and positive places. Weather protection must be provided such as shelters and passenger lounges. Break rooms and toilets for drivers are conveniently located to minimise disruption to services.	Well-detailed, simple built form and materials, closely integrated with the landscape design, will provide a positive architectural contribution to the area. The provision of a rooftop landscape will provide amenity for residents and commuters. Commuter facilities in the bus interchange will be clearly laid out in an efficient and accessible manner. The arrival concourse and passenger platforms will have weather protection and a waiting area or passenger lounge is incorporated into the design of the ticketing area and staff amenity areas. The Protective Services Officers' facilities will be incorporated into the design of these amenities. The car park has been designed to have clear and separate, safe, pedestrian connections to the bus concourse. The regular layout will ensure clear view lines to add to the safety of the car parking area. The car park will be illuminated 24-hours per day and have extensive CCTV coverage.
10.3	Innovation	Innovative design solutions that add value to project should be incorporated into the design. These are solutions that are not commonly used in Victoria and are beyond business-as-usual approaches. These solutions include locating of ticketing devices on platforms, creating more attractive 'airport' style waiting spaces, integrating retail and public amenities into station building, initiatives that support intermodal interchange such as shower and change room facilities, integrating future-thinking technologies, and built form	The rooftop landscape provides an innovative aspect to the bus interchange, especially given green roofs are yet to become standard green infrastructure in Victoria, maintaining publicly accessible passive open space in the local areas whilst accommodating the facility with minimum visual impact. The facilities on site will include a ticketing area and an 'airport style' passenger waiting area integrated with the staff facilities and amenities. The facility will include conduits to provide for charging of electric vehicles (bikes and cars) with secure storage in the Parkiteer for e-bikes.

Element – based requirements and qualitative benchmarks			Response
		sustainability initiatives that contribute to beyond business-as-usual sustainability outcomes	
10.4	Transport and active travel connections	Interchanges provide the ability for commuters to undertake effective, safe and comfortable intermodal connections to public transport, vehicles and active transport. Customers are provided with clear and open movement within the bus precinct/station. Walking and cycling along priority routes into the precinct, along desire lines and at entry points (both existing and future) within the precinct is improved. Walking and cycling connections link into the surrounding network, and are convenient, direct and attractive to use. End of trip and bicycle amenities including bicycle parking are provided. Clear sight lines and well-integrated connections are provided to feeder bus services and other modes of transport. The entry and exit to facilities and stops are identifiable and easy to access.	The bus station will provide efficient modal interchange between pedestrians, cyclists, buses and cars, by minimising distances travelled between modes. The configuration of the waiting room and facilities has been designed to ensure clear lines of sight and active surveillance of spaces within the facility The shared use path will provide access to the Parkiteer and bicycle hoops at the park / roof level of the bus interchange. The entry to the facility from the bicycle and pedestrian connections will be very clear as a design feature of the green roof; similarly, a clear connection will be provided to residents to the east of the facility through an underpass below the bus link.
11	**Car parking**		
11.1	Car park design	Car parks will maximise opportunities for vehicle efficiencies such as via other off-peak uses of car park area, and the integration of commuter car parking into any site development.	Car parking is to be exclusively available for commuters as it is removed from other land uses which may generate demand for car parking spaces. The design has avoided expanses of pavement as a multi-level parking facility with rooftop landscaping to be used as passive open space. Canopy tree planting will be used at the periphery of the site and planting will be

Element – based requirements and qualitative benchmarks			Response
		Landscaping is used in car parks to mitigate the visual impact of large expanses of pavement and to create attractive buffers to residential interfaces. Canopy tree planting is used in car parks to enhance amenity and to provide shade. Opportunities to incorporate Water Sensitive Urban Design (WSUD) infrastructure into the car park precinct is maximised to reduce surface water flow impacts and to provide passive irrigation to planted areas.	undertaken to the north of the site to create an attractive buffer to that residential interface. WSUD measures feature in the design and will add to the landscaped setting of the site.
11.2	Connectivity and safety	Car parking areas feel safe during the day and night time, passive surveillance is maximised with clear sight lines for pedestrians and cyclists. Car parking areas support the ease of movement for pedestrians and cyclists and avoid or minimise the potential for conflict with vehicles. Access points to walking and cycling paths are clearly defined and are separate from vehicle movements.	Cyclists and pedestrians will be clearly separated from the car parking areas and access to the car park with dedicated pathways. The landscaping will provide clear lines of sight into and out of pedestrian and cyclist areas. Active and passive surveillance will be integral to the design with the location and design of waiting areas, staff facilities and Protective Service Officers' facilities, and the generous connections between levels and spaces.
11.3	Signage and entries	Entries to car parks are legible and clear for all modes of transport. Entry points and signage are of high-quality design.	The vehicular entrance to the facility will be via a new signalised intersection and will be complemented by signage advising of parking availability on site.
12	**Lighting**		
12.1	General lighting	Functional lighting design and light elements for roads and paths integrate with infrastructure and surrounding areas and are appropriate to surrounding land uses and enhance personal safety.	Appropriate lighting will be provided in both the public realm, car parking structure (to be illuminated 24-hours per day) and bus interchange.

Element – based requirements and qualitative benchmarks			Response
		Lighting creates a cohesive identity for the project and is integrated with built elements and the general lighting approach.	The lighting plan prepared for the facility will ensure spaces are well lit and attractive to users and presents a consistent approach across the site. Offsite light spill has been avoided in the design.
12.3	Light pollution	Lighting employed in the project is designed sensitively for the surrounding environment and to avoid or minimise light pollution.	The light plan prepared for lighting to the rooftop open space has been will be designed to limit light spill off site whilst providing safety for users. Light spill will be minimised to protect the local fauna habitats and avoid disruption to off-site amenity. An obtrusive lighting assessment was undertaken in accordance with Australian Standard/NZS 4282:2019 to assess the potential light spill and impacts of the lighting within the project to the residential properties on Kampman Street. The levels of obtrusive lighting to result from the project will be compliant with the Australian standard.
12.4	Maintenance	General and feature lighting include designs and elements that maximise road safety, are environmentally friendly and can be safely maintained.	Light fixtures included in the lighting plan are environmentally friendly and can be safely maintained.
12.5	Energy efficiency	Energy efficient lighting is used to reduce ongoing energy consumption	Energy efficient lighting will be used.
13	**Walking and cycling infrastructure**		
13.1	Pedestrian and cycling network	The project maintains or enhances the existing pedestrian and cycling network. Walking and cycling connectivity through local neighbourhoods is improved	The walking and cyclist route along the Koonung Creek Trail will be maintained through the site from Kampman Street to Thompsons Road.

Element – based requirements and qualitative benchmarks			Response
		with integrated links and connections across the project. Clear visual and movement linkages between streets, footpaths, bicycle paths, and public open spaces connect public transport, neighbourhood activity centres, schools and other key community facilities and services.	
13.2	Encourage cross community connectivity	Opportunities to remove barriers that discourage walking and cycling, cross-project corridor connectivity, and the community's ability to reach everyday services and facilities within a 20-minute walk are maximised. These barriers include physical obstructions, and a lack of shade and rest stops. Pedestrian and cycle crossings of the project corridor are celebrated and emphasised to encourage greater sense of connectivity.	The Bulleen Park and Ride includes infrastructure which encourages walking and cycling to and from the facility. This includes: • Shared use path connections to and through the site, as part of the Koonung Creek Trail • Pedestrian and cyclist access from the east (from Kampman Street) via a dedicated shared use underpass • Bicycle parking for up to 80 bikes (with provision for future expansion if demand warrants this) • Shared use path will have separated pedestrian and cyclist sections on the green roof • Inclusion of seating in locations adjacent to the shared use path within the facility.
13.3	Pathways and connections	Connectivity and continuity of on-road and off-road walking and cycling routes along and around the corridor are maintained and enhanced. Any existing trails impacted by works are realigned to retain connectivity. Pathways are direct and convenient. Access is maintained or improved with direct, pleasant and safe pedestrian and cycling links.	The walking and cyclist route along the Koonung Creek Trail will be maintained through the site from Kampman Street to Thompsons Road. The shared use path will be grade separated from the bus link via an underpass at the eastern part of the site.

Element – based requirements and qualitative benchmarks			Response
		Opportunities for grade separation of walking and cycling paths from roads are maximised. Off-road walking and cycling paths are high quality, suitably wide, functional and aligned appropriately.	
13.4	Path separation	Separated walking and cycling paths are used in high-use areas where appropriate and avoid and minimise the potential for conflict between intersecting travel paths.	The Shared use path forming part of the Koonung Creek Trail will be reinstated across the site however separate paths for pedestrians and cyclists will be provided in the vicinity of the entry pavilion to ensure safety for users and minimise scope for conflict between modes of travel.
13.6	Perceived safety	Perceptions of safety along walking and cycling paths are improved for pedestrians and cyclists, through good design, to remove barriers to participation.	Clear sight lines and open landscape design will improve the perception of safety along walking and cycling paths. The shared use path underpass is generous in proportion and will have clear sightlines through it making it attractive to users.
13.7	Shade	Canopy trees are maximised along pedestrian and cycle routes, to provide amenity and shade.	Canopy trees planted to the periphery of the building will provide amenity and shade in the vicinity of the building and for users of the green roof.
13.8	Prioritise pedestrians	Pedestrian priority is maximised on key walking routes into and around key community facilities and destinations (including activity centres, Park and Rides and nearby schools and aged care facilities) by providing a high-quality walking environment. This includes shade, drinking fountains at appropriate intervals and rest stops with seating. Pedestrian-friendly walkways are free from obstructions and have a smooth surface. Outdoor furniture and fixtures such as bins, bicycle parking and drinking fountains are offset from pedestrian pathways	The design seeks to prioritise pedestrians within the site with separate pedestrian and cycle paths across the green roof from Thompsons Road to the bus interchange and the shared use path ramp beyond. The Shared use path will be designed to ensure safety for all users.

Element – based requirements and qualitative benchmarks			Response
13.9	Wayfinding	Wayfinding and signage are used to improve the ability for people to find their way to key destinations.	The open nature of the landscape will provide clear wayfinding throughout the site with considered planting plans and open and clear sightlines. The simplicity and logic of the floor plans and the concentration of vertical circulation to the south side of the car parking structure will provide clear wayfinding throughout the building. Signage will be in accordance with Department of Transport standards and will include electronic signage as to parking availability to motorists in Thompsons Road to inform prospective users of the facility as to parking availability.
13.10	Wayfinding signage design	Wayfinding signage provides clear and reliable information, as well as being appropriate and sensitive to the environment and users of varying abilities. A balance is struck between sufficient signage and visual clutter. Obstructions to key sightlines are avoided or minimised. Signage is consistent and well integrated with any existing local signage systems. Route hierarchy is coherent. Standard route naming is adopted along entire routes, negotiated with the relevant authority. Individual branding incorporating graphic devices is employed, such as the Koonung Creek Trail branding. A list of 'standard' destinations is developed for each route in consultation with the relevant authority.	Department of Transport's standard way finding signage will be applied within the facility and its surrounds. Signage for the Koonung Creek Trail will be incorporated into the site's signage plan. Way finding signage will also comply with DDA signage requirements.

Element – based requirements and qualitative benchmarks			Response
		Names and notation are consistent with those used on other wayfinding signs and maps. Signage is provided where users join the route, at the ends of the route and at any significant intersection with another, route, trail, path or road. Alternative routes are signed where appropriate, such as where the main route may flood. Signage is provided at any point where route continuity is unclear. Signage is high quality, graffiti proof, weatherproof and low maintenance.	
15	**Walking and cycling underpasses**		
15.1	Entries	Underpasses have a sense of openness at the approach, with a clearly identifiable entry and effective wayfinding.	The shared use path underpass below the bus link will have an open appearance and clearly identifiable entry. The generous proportions of the underpass will make it attractive to users. Similarly, the link between the lower car park level and the southern platform will be generously proportioned to be attractive to users.
15.2	Connections	Underpasses are strategically located to improve any gaps in the existing path network. Topography and entry points are integrated with the existing path network to provide a seamless and safe journey with clear sight lines. Paths are generously proportioned with room for pedestrians and cyclists traveling in both directions.	The shared use path underpass has been included in the design under the Buslink road to provide pedestrian and cyclist access to the site from the east via Kampman Street and to provide continuity for the existing path network. Paths are generously proportioned to allow room for movements in both directions and include marked pedestrian and cycling zones on the green roof section pathway to separate users.

Element – based requirements and qualitative benchmarks			Response
15.3	Safety	Underpasses have clear visual connections through to the streetscape and public spaces on either side. Underpasses are wide enough to provide a high level of passive surveillance and perception of safety. The length of underpasses is minimised.	The shared use path underpass below the bus link will be appropriately scaled at approximately 5 metres wide and 2.5 metres high. The length of the underpass will be minimised to ensure the dimensions of the space ensure it is attractive and visibility is maximised. Similarly, the underpass below the busway will have generous proportions to ensure it is attractive to users.
15.4	Deterring graffiti	Internal and external walls use high quality materials with graffiti-resistant surfaces.	Internal and external walls will incorporate measures to resist graffiti.
15.5	Natural lighting	Opportunities to incorporate openings for natural daylight are maximised to improve lighting and reduce operating costs.	Opportunities for light penetration to the underpasses and the intermediate level and parts of the lower have been maximised as has the design of the waiting room and staff facilities on the intermediate level.
15.6	Artificial lighting	High quality artificial lighting is used to enhance safety for pedestrians and cyclists. Lighting elements are included as design features integrated into the structure.	High quality and energy efficient lighting will be used to enhance safety for users of the facility and the green roof.
17	**Landscape**		
17.4	Minimising loss	The removal of mature trees, planted and remnant native trees and remnant vegetation, (particularly large amenity trees, heritage vegetation and vegetation within or connected to open space) is minimised. Opportunities to retain all valuable habitat linkages or corridors are maximised. An approach for the reuse of existing vegetation to be removed is developed.	Existing trees along the northern and eastern boundary of the site to Kampman Street will unavoidably be lost due to the requirements of the bus link connecting to Thompsons Road.

Element – based requirements and qualitative benchmarks			Response
17.6	Visual mitigation	Landscaping is used to filter or screen views of road infrastructure and head light glare. The punctuation of built form and structures above treed ridgelines is minimised. Support a canopy of mature trees as the dominant visual element throughout the project corridor. Roadside landscape is used to mitigate the visual impact of large expanses of asphalt and to enhance the driver experience.	New planting along the northern boundary of the site to Kampman Street will screen views from the adjacent residences to the bus interchange and bus link noise wall.
17.7	Be inspired by local assets	The landscape design takes cues and is inspired by nearby local environmental assets including the Yarra Valley Parklands, Koonung Creek, Plenty River Gorge, Gresswell Nature Forest, Banyule Creek and Simpson Barracks. Landscapes along river and creek corridors that are impacted by the project are rehabilitated and naturalised for ecological and experiential benefits.	The existing character of the site is an open space for passive recreation with trees around the perimeter and this will be continued in the design of the replacement roof top garden and surrounds. Plant selection has been based on EVCs for the local environs. New planting along the northern boundary to Kampman Street will maintain the landscape character of the area.
17.8	Urban forest	New tree planting and vegetation is prioritised within the project corridor, including adjoining streets, medians, buffers, and in carparks to support the urban forest. Opportunities for tree planting within the roadway landscape, local streetscapes, in buffer planting, and on highpoints and ridgelines is maximised. Innovative engineering solutions are used to maximise tree planting. Where there is a conflict between	The footprint of the car parking structure has been minimised through efficient planning, to maximise opportunities for deep soil planting of trees and landscaping to the surrounds of the roof garden.

Element – based requirements and qualitative benchmarks			Response
		planting canopy trees and maintaining views, canopy tree and buffer planting may take precedence. Services are located to optimise tree planting.	
17.9	Plant health	The design provides sufficient setbacks, soil, and conditions for new and existing trees and vegetation to maintain and support plant health and growth.	The landscape plan which forms part of the UDLP details the proposed species selection and planting specifications. The landscape plans have been further developed in construction drawings to detail the planting conditions for new landscaping.
17.10	Plant selection	Planting throughout the project is self-reliant, sustainable and requires minimal maintenance. Native species of local provenance are used in environmentally sensitive areas and/or identified biodiversity sites and corridors. The potential for impacts on identified biodiversity and habitat corridors and sites, and the Yarra River corridor by introduced species, is minimised. Trees and other vegetation are selected, to take into account predicted future changes in climate. Plant species selection is consistent with State and local government guidance. New tree planting, within or adjacent to the road reserve, is appropriate to the scale for the road environment and considers maintenance access.	Soil to a depth of 200mm will be provided on the rooftop of the car park structure to support the healthy growth of lawn. Areas of taller planting on the rooftop will rely on localised areas of deeper soil. Where feasible, the landscape planting palette shows tree and plant species indigenous to the area from the Environmental Vegetation Classes (EVCs) identified in the area, ensuring a selection of species that complements the area along with enhancing the ecology and biodiversity of the area. Accompanying species to the proposed indigenous selection will be native to Australia, ensuring they are low maintenance and that the planting will qualify as a xeriscape palette (landscaping or gardening that reduces the need for supplemental water from irrigation) as per ESD requirements/guidelines. Landscaping, including Water Sensitive Urban Design (WSUD) measures, has been selected to require low levels of maintenance. No roadside planting is proposed as part of this project.

Element – based requirements and qualitative benchmarks			Response
17.11	Buffer planting and land form	Landscape design elements including buffer planting (planted vegetation situated outside the road reserve) and land form are used to create a visual buffer between the roadway and surrounding areas. Existing buffer planting is retained at the edges of any widened road corridors. Land form is used to reduce the apparent height of walls, barriers and road infrastructure. A suitable width of low planting is used to separate pedestrian and roadside traffic.	Not applicable to the Bulleen Park and Ride site. This section relates to buffer planting adjacent to the freeway or arterial road reserve to create a visual buffer. For Bulleen Park and Ride the buffer planting is provided within the Kampman Street Riad reserve adjacent to the Buslink noise wall. While the facility has been designed to be embedded within the land form it has not been used as a visual buffer.
18	**Water**		
18.1	Water Sensitive Design	A 'water-sensitive design' approach is used to integrate water management objectives into the project's urban design and achieve a broad range of community and environmental benefits. This includes the use of passive irrigation techniques, and the incorporation of Water Sensitive Urban Design infrastructure such as swales, bio-filtration systems (rain gardens) and wetlands. A holistic approach to integrated water management across the entire project should be adopted.	Water treatment to offset the water quality impact of the facility will be achieved through a bio-retention basin located within the loop of the shared use path ramp immediately east of the park and ride building. A MUSIC model was prepared to assess the pollutant loads and concentrations that would be imposed on the surrounding drainage network as a result of the proposed development. The necessary offset is achieved by providing an inlet from the bus link, and by diverting low flows from Kampman Street to bring additional roadway runoff into the site, for treatment and then have this treated runoff repatriated to the local stormwater drainage network. The WSUD retention basin will consist of native and indigenous plantings tolerant of extended periods in damp soil, periods of inundation as well as dry conditions during the summer months. Two smaller native canopy trees with similar properties to the above will sit within the basin floor.

Element – based requirements and qualitative benchmarks			Response
			In order to maintain the requisite extent and level of detention, localised rock boulder retaining walls will be placed between targeted interfaces of the WSUD and adjacent shared use path to negotiate changes in level and provide less engineered natural aesthetic.
18.2	Healthy waterways	The project maintains or improves the river health of the waterways that it crosses. Drainage infrastructure maximises opportunities to replicate natural processes in the treatment of water, and enhances stormwater management outcomes, as well as broader urban design an ecological values.	Not applicable to the Bulleen Park and Ride site.
18.3	Daylighting waterways	Opportunities are maximised to preserve and restore natural and open waterways, and to 'daylight' (restore to a more natural state aboveground) sections of creeks and streams that have previously been diverted into a culvert, pipe or drainage system to improv aesthetics, amenity and ecological values. Roadway crossings of waterways and wetland are minimised.	Not applicable to the Bulleen Park and Ride site.
18.4	Minimise habitat impacts	Road infrastructure is designed, located and constructed to minimise short and long-term impacts on riparian, riverbed and aquatic habitat.	Not applicable to the Bulleen Park and Ride site.
18.5	Drainage infrastructure and retarding basin design	Drainage infrastructure and retarding basins are located and designed to not adversely impact on the function of public open space. Drainage infrastructure within public open space does not inhibit the ability of local residents to have access to open space near where they live. New infrastructure enhances	Not applicable to the Bulleen Park and Ride site.

Element – based requirements and qualitative benchmarks			Response
		recreational values and contributes positively to the quality and function of the open space. Low points in basins are strategically located to maximise useable open space, and to minimise disruption to the community's enjoyment of open space, particularly following wet periods. Drainage infrastructure is designed to visually blend into the surrounding landscape.	
18.6	Maximise community and environmental benefits	Opportunities for community education and to integrate community recreational infrastructure (e.g. seating, paths, boardwalks) are maximised. Water Sensitive Urban Design infrastructure is prioritised at locations where there are opportunities for water harvesting, treatment and reuse that support community facilities (such as providing a source of treated water for the irrigation of sporting fields). Water Sensitive Urban Design infrastructure does not limit opportunities to use landscape to mitigate visual impacts of the project (that is, by reducing available space for planting of trees and vegetation to filter views towards infrastructure). Water Sensitive Urban Design infrastructure is located and designed to support the proposed hierarchy of navigational nodes.	A loop track approximately 200 metres in length runs around the edge of the green roof park, comprising 100 metres of paved shared use path and 100 metres of granitic sand path. Seating and a bicycle repair facility will be provided on the green roof to improve amenity and use of the green roof park area. A rain garden / bio-retention basin is the key Water Sensitive Urban Design initiative for the site. The rain garden is located within the loop of the shared use path ramp immediately east of the park and ride building. Its location utilises space that would otherwise just have been planted as a garden area. This location does not limit opportunities to use landscape to mitigate visual impacts of the project. It also does not impact navigational nodes or wayfinding within the site as it is located out of the way in an area that will not be accessible to users.
18.7	Rain garden and wetland design	Water Sensitive Urban Design infrastructure is integrated with the surrounding context and is designed to enhance the aesthetic appeal and	A rain garden / bio-retention basin is the key Water Sensitive Urban Design initiative for the site. The rain garden will consist of native and indigenous

Element – based requirements and qualitative benchmarks			Response
		ecological values of the area. Water Sensitive Urban Design maintains existing and planned key walking and cycling movement connections. Wetlands and raingardens located within or near the Yarra River floodplain or along creek and waterway corridors are naturalistic in form and aesthetics. The location of these elements minimises impact on existing recreational values. New wetland shapes respond to the contours of the land. The design provides a balance between natural areas for animal and bird life, and areas for public amenity, including places for respite, recreation and seclusion.	plantings tolerant of extended periods in damp soil, periods of inundation as well as dry conditions during the summer months.
20	**Materials and finishes**		
20.1	High quality	Materials and finishes used in the project are high quality, durable, robust, easy to maintain, and will weather and age well over time.	The simple, robust nature of the design such as galvanised steel grate cladding to facades with integrated landscape design will minimise maintenance requirements whilst providing a high-quality appearance over the life of the building.
20.2	Colour palette	The colour palette for the materials and finishes is consistent along the project's design character areas sensitive to the local environment and reinforces the broader wayfinding approach for the corridor.	The colour palette for the materials and finishes is appropriate for the local area with natural and recessive materials blending into the landscape setting and featuring a pop of colour to signal the entry pavilion. The colours to the bus platforms will be part of the overall branding of the facility within the Busway.
20.3	Reflectivity	New materials and finishes minimise light pollution in the surrounding areas from reflectivity.	New materials and finishes such as galvanised metal, Colourback glass and concrete will minimise light pollution caused by reflectivity.

Element – based requirements and qualitative benchmarks			Response
20.4	Vandalism	Selection and application of materials and finishes discourages and minimises the potential for vandalism including graffiti.	The robust materials palette of galvanised metal, Colourback glass and concrete minimises the potential for vandalism including graffiti.
20.6	Use resources efficiently	Opportunities are maximised to use materials that are recycled, recovered, have lower embodied energy and are ethically sourced.	Products with recycled or reused content and with lower embodied carbon emissions (such as low carbon concrete) will be used where practicable to minimise the environmental impacts of construction materials. The design approach is to minimise or eliminate superfluous applied finishes, like paint. Materials have been selected for finishes of concrete, galvanised steel and glass.

Table 6-5 Consistency with Urban Design Framework Plan design and development priorities

Design and development priorities	Strategic context and opportunities	Response
PRINCIPLE 1 IDENTITY		
Objective 1.3 Landscape and visual amenity Sensitively enhance landscape and visual outcomes and reduce physical and visual impacts associated with the project.	The elevated structures, ventilation building, and associated elements could have a visual impact on the residential areas, along Bulleen Road. The design must address these impacts as a high priority, using innovative solutions, appropriate mitigation measures and sensitive siting to reduce any adverse effects.	The car parking structure will be located in the lower levels of the site, reducing the physical and visual impact of the structure from the adjacent residences in Kampman Street. The bus interchange platforms and canopies will be screened from the residences by the car park structure.
Objective 1.4 Existing landscape character Provide a high quality design outcome that responds sensitively to the distinctive character of this part of Melbourne, takes advantage of existing landmarks and vegetation, views and significant places, protects landscape and	The largely flat topography and residential interfaces around the Eastern Freeway interchange require a landscaped design approach that reinforces the status of the interchange as a primary node, sensitively integrates new elevated road structures and enhances	The existing character of the site is an open space for passive recreation with trees around the perimeter. The landscaped green roof to the car park will maintain and significantly upgrade the publicly accessible green open space in the area.

Design and development priorities	Strategic context and opportunities	Response
vegetation, and seeks to enhance the way in which people experience and interact with the landscape.	the significant parkland areas along the Yarra River and Koonung Creek.	
Objective 1.5 Architectural contribution Make a positive architectural contribution to infrastructure including bridges, noise walls and other structures.	The environment along Bulleen Road is flat and open with residences on the escarpment to the north. The introduction of a relatively tall element at Bulleen Park such as a ventilation structure could have a visual impact for residents, parkland users and school students and staff. To address this, the structure must be sensitively sited and well designed.	Well-detailed, simple built form and materials, closely integrated with the landscape design, will provide a positive architectural contribution to the area that is sensitive to the site and well designed.
PRINCIPLE 2 CONNECTING AND WAYFINDING		
Objective 2.1 Connectivity Improve people's ability to move through the immediate and wider area with ample, efficient and quality links across and along the corridor for all transport modes, including pedestrians and cyclists.	Walking and cycling paths along and across Bulleen Road poorly service the schools (Marcellin College, Trinity Grammar and Carey Grammar) and sporting clubs in the area. The path on the Bulleen Road bridge over the Eastern Freeway is narrow. The Koonung Creek Trail has an at-grade crossing at Bulleen Road. The project provides an opportunity to significantly enhance the pedestrian and cycling network and connectivity in the area, improving facilities for students, sportspeople, pedestrians and cyclists.	The reconfigured shared use path will maintain safe, off-road cycling and pedestrian connectivity through the area, continuing the Koonung Creek Trail from Kampman Street through to Thompsons Road. The shared use path will be grade separated from the bus link and be a key and integral feature of the landscaped space.
Objective 2.2 Transport integration Maximise the benefits of the project by facilitating seamless access to a variety of	A new bus interchange at Bulleen will enhance the public transport options for the area. This facility must be well connected to the pedestrian and cycling network, to maximise access. The Park and Ride should	The bus station will provide an efficient modal interchange between pedestrians, cyclists, buses and cars, by minimising distances travelled between modes.

Design and development priorities	Strategic context and opportunities	Response
public transport, walking and cycling choices as part of a connected intermodal network.	be designed to respond to its context including the Koonung Creek, open space, the adjacent road infrastructure and create a space for use by people (not only vehicles).	The shared use path will provide access to the Parkiteer and bicycle hoops at the park / roof level of the bus interchange. The design of the facility responds to its context by integrating the Koonung Creek trail within the design, by providing a green roof to compensate for displacement of open space and being connected to Thompsons Road.
PRINCIPLE 3 URBAN INTEGRATION		
Objective 3.2 Integration of design Ensure an integrated engineering, urban design, architectural and landscape architectural approach that sensitively addresses social, cultural, functional and physical aspects of the project.	The interchange at the intersection of the Eastern Freeway and Bulleen Road would be complex, accommodating numerous traffic movements, elevated rams and a dedicated busway. This increased complexity would require a multidisciplinary approach that results in well-proportioned elevated structures with clear wayfinding for drivers and a design that integrates well with the Eastern Freeway landscape and adjoining uses.	The development is both a public open space and an integrated transport hub. The design will provide opportunities for greater natural and active surveillance of the site, while optimising the topography as a tool for segregating different uses of the site.
Objective 3.4 Minimise footprint Minimise negative impacts on the community and the environment by minimising the design footprint and visual bulk.	The Eastern Freeway interchange presents a significant opportunity to minimise the footprint of the road infrastructure and protect schools (Marcellin College, Trinity Grammar, Carey Grammar and Belle Vue Primary), sporting clubs and facilities, and businesses (Manningham Hotel).	The footprint of the car parking structure has been minimised through efficient planning to maximise retention of soil and thus opportunities for landscape buffers and canopy planting around the perimeter of the site. The visual bulk of the project faces towards the Eastern Freeway, to protect sightlines from Kampman Street and contain views of the interchange from the residential and parkland interface.
PRINCIPLE 4 RESILIENCE AND SUSTAINABILITY		

Design and development priorities	Strategic context and opportunities	Response
Objective 4.3 Environmental sustainability Optimise environmental performance and embed sustainability initiatives into the design response. This includes integrated water management, biodiversity and habitat enhancement and connections, green infrastructure provision and sustainable use of energy and materials	Land adjacent and under the new road structures at the interchange presents the opportunity to improve amenity and environmental values through initiatives such as functional water bodies and indigenous planting. This includes connecting and enhancing the Yarra River parkland and Koonung Creek, naturalising waterways and strengthening riparian vegetation.	The green roof will provide thermal insulation for the car parking structure. Stormwater will be collected and re-used on site for irrigation of landscaping and toilets. Other sustainable initiatives such as solar energy and provision of electric car charging points have been incorporated into the building. Plants have been selected on the basis of local Environmental Vegetation Classes (EVCs) to maximise contribution of new planting to local biodiversity values.

Table 6-6 Consistency with Urban Design Framework Plan place-specific requirements

Requirement	Place Specific Context	Response
1A Design the Eastern Freeway interchange to be a navigational node by using distinctive elements to provide features and landmarks for navigation for all modes of transports. Landscaping is to take inspiration from surrounding natural assets such as the Yarra River and will maximise indigenous planting to support biodiversity and habitat.	The Eastern Freeway interchange will mark the transition between the Eastern Freeway and North East Link. It also marks a meeting point of waterways (Yarra River and Koonung Creek) and is a threshold between the City of Manningham and the City of Boroondara. With these attributes, the design must act as a navigational feature, using a well-considered multi-disciplinary response that sensitively integrates road infrastructure with the surrounding parkland and residential areas.	This place-specific requirement does not refer to the park and ride site.
2D Provide a walking and cycling crossing of the Eastern Freeway linking the new walking and cycling path to the Koonung Creek Trail.	The existing paths on the Bulleen Road bridge over the Eastern Freeway are narrow and are located on the road side of the vehicle containment barriers. This creates an uncomfortable and low-quality experience for pedestrians and cyclists moving between North Balwyn and Bulleen. The project provides an opportunity to significantly enhance the pedestrian and cycling network in	This place-specific requirement does not refer to the park and ride site.

Requirement	Place Specific Context	Response
	the area, by improving the link across the freeway between schools such as Marcellin College and Belle Vue Primary, sporting facilities and residential areas.	
2E Provide an alternative grade-separated crossing of Bulleen Road for pedestrians and cyclists traveling along the Koonung Creek Trail.	The existing at-grade crossing at Bulleen Road diminishes the safety, efficiency and enjoyment of the Koonung Creek Trail for pedestrians and cyclists. A grade-separated alternative would enhance the user experience of the trail for both commuter and recreational cyclists, as well as pedestrians. The design must sensitively integrate the path into the surrounding landscape and carefully consider useability and safety.	This place-specific requirement does not refer to the park and ride site.
4A Provide planting to enhance visual amenity, biodiversity and habitat link along the Koonung Creek corridor	The quality of the Koonung Creek environment is relatively poor, where it passes by the Boroondara Tennis Centre and Manningham Hotel. The creek is in a concrete channel, at the eastern end near Thompsons Road. The area is not very accessible to people other than car park users. There is an opportunity for the community to reengage with the Koonung Creek, by improving access and landscaping in the area, addressing hydrology and health of the waterway, maximising opportunities for daylighting and strengthening the habitat link along the creek corridor.	This place-specific requirement does not refer to the park and ride site.

Table 6-7 Consistency with design principles from Multi-Deck Commuter Car Parks Guidance Note

Design Principles		Response
1	**Inspiring** Good design embeds the essence of a project into an inspiring narrative and vision. Car park design must have a positive impact by improving its interfaces, not precluding high-quality adjacent developments and inspiring positive change which can be supported by the community.	The primary image of Bulleen Park and Ride will be the rooftop landscape. The building facades to Thompsons Road, Kampman Street and the busway will be clad in galvanised steel grilles that are robust, elegantly detailed, and will ensure that the building ages well. Climbing plants will be encouraged to grow up the galvanised steel grille facades, over time, providing strong integration between the landscape and the building.

Design Principles		Response
2	**Contextual** Good design is informed by its location and responds to its environmental, social and cultural contexts. A car park must not be a generic 'box'. Its design must respond to its unique context and enhance the character of place through its scale, massing and materials. Its relationship to public space and existing patterns of movement must inform the design.	The car parking building will be embedded into the site, covered by a rooftop landscape, and therefore will present a low profile to the neighbouring context.
3	**Functional** Good design develops synergies between the functional requirements and creating value beyond meeting primary technical needs. Architecture and engineering must be integrated, reducing the reliance on architecture to mitigate engineering impacts. Integrated design will deliver car parks as positive elements in the built environment.	The development will be both a public open space and an integrated transport hub. The design solution will effectively hide the building from the north, east and south to lessen impact to sensitive interfaces.
4	**Valuable** Good design enhances the quality of experience, creates stronger connections and supports a vibrant public realm which are all key to realising the full potential for value creation and capture. A mix of uses in car parks ensures a broader economic and social benefit and supports a more vibrant and attractive public realm, for more hours of the day.	The establishment of a park on the roof of the building will provide an integrated design response that maintains the functional amenity of green open space on the site, accessible by local residents and commuters, whilst accommodating an efficient park and ride facility.
5	**Sustainable** Good design respects our environment and resources by promoting efficiency, enhancing local ecology and creating a sustainable long-term legacy. Car park design must be adaptable or easily demountable in response to rapidly changing technology and shifts in private car use. Generation of solar	The landscaped roof will provide thermal insulation for the car parking structure. Stormwater will be collected and re-used on site. Other sustainable initiatives such as solar energy and provision of electric car charging points (for 24 bays) have been incorporated into the building.

Design Principles		Response
	power, harvesting of rainwater, green walls, green roofs and a high-quality landscape must all be integrated elements of the design.	The simple, robust nature of the design such as galvanised steel facades with integrated landscape design will minimise maintenance requirements whilst providing a high-quality appearance over the life of the building.
6	**Enjoyable** Good design delivers inclusive and equitable environments which contribute to broader positive social and economic outcomes. Stations are important public spaces and car parks must contribute active interfaces and passive surveillance for a safe and attractive public realm for all users at all times of the day.	The rooftop garden will provide a safe, open parkland setting for pedestrian and cyclist access to the bus interchange as well as a functional space for nearby residents It will enjoy active surveillance by users of the shared use path and commuters using the bus station.
7	**Enduring** Through the synthesis of vision and function, good design embeds lasting value into our built environment. Good design is essential in place-making which promotes community pride, providing a truly enduring legacy which will continue to serve, inspire and delight. Car parks designed today must not compromise the future potential of station precincts being valuable, sustainable and enjoyable public spaces in the future.	The inclusion of an accessible landscaped space on the roof of the building will provide a high-quality amenity for the area. The simple, well-detailed design of the building and an integrated landscape will provide a positive contribution to the local built and natural environment. The extension of the Koonung Creek Trail through the site and accessible rooftop garden promote active transport to the bus interchange.

7 Compliance with Environmental Performance Requirements

The Incorporated Document requires at Clause 4.9.3 that an UDLP submitted to the Minister is to be accompanied by:

> (b) An explanation demonstrating how the UDLP would comply with the EPRs included in the approved EMF.

The following table (Table 7-1) lists all the EPRs and assesses how the project may comply with the applicable EPRs.

It is acknowledged that those EPRs pertaining to construction and the like are not strictly applicable, or able to be assessed, at this stage of the Bulleen Park and Ride; however, due consideration of these EPRs has been undertaken to ensure that the design will not compromise the ability to achieve compliance during construction. This approach is consistent with the risk management strategy underpinning the NEL Project.

Table 7-1 Compliance with Environmental Performance Requirements

Discipline	EPR Ref	Environmental Performance Requirement	Response
ALL	EMF 1	**Deliver project in general accordance with an Environmental Management System** Develop, implement and maintain an Environmental Management System (EMS) that conforms to Australian Standard AS/NZS ISO 14001:2015 Environmental Management Systems – requirements with guidance for use through design, construction and operation of North East Link.	An EMS will be developed, implemented and maintained by the relevant project contractor, as a contractual condition to satisfy the statutory requirement under the Incorporated Document.
	EMF 2	**Deliver project in accordance with an Environmental Strategy and Management Plans** Prepare and implement an Environmental Strategy, Construction Environmental Management Plan (CEMP), Worksite Environmental Management Plans (WEMPs), Operation Environmental Management Plan (OEMP) (operator only) and other plans as required by the Environmental Performance Requirements (EPRs) and in accordance with the Environmental Management Framework (EMF). The Environmental Strategy, CEMP, WEMPs and OEMP must be developed in consultation with relevant stakeholders as listed in the EMF and as required by the NEL Project or under any statutory approvals. The CEMP must be prepared with reference to best practice and EPA Victoria Publication 480 Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites.	The relevant project contractor will prepare and implement an Environmental Strategy and all relevant Management Plans, as a contractual condition to satisfy the statutory requirement under the Incorporated Document.

Discipline	EPR Ref	Environmental Performance Requirement	Response
	EMF 3	**Audit and report on environmental compliance** Appoint an Independent Environmental Auditor (IEA) to: • Review the Environmental Strategy, CEMP, WEMPs, OEMP and other plans required by the EPRs for compliance with the EMF and the EPRs • Undertake environmental audits of compliance with and implementation of the EPRs and the Environmental Strategy, CEMP, WEMPs, OEMP and other plans required by the EPRs. The IEA must include persons with expertise, based on qualifications and experience, appropriate to allow the roles specified for the IEA in the EMF to be properly carried out; including a person(s) appointed by the EPA as an environmental auditor for contaminated soil and groundwater given the potential risk of acid sulfate soils, and to ensure that there is no risk of vapour or gas intrusion from former landfills. Audits must occur during construction and for five years after opening of North East Link, or as otherwise agreed with the Minister for Planning. A six-monthly summary report must be provided to the Minister for Planning that summarises the findings of audits carried out during the reporting period. A close-out report must be provided to the Minister for Planning at the conclusion of the auditing and reporting period. The summary reports must be made publicly available on a project website for the period of construction and a minimum of five years after opening of North East Link.	The relevant project contractor has engaged an IEA who will undertake the reviews and audits in accordance with the requirements of the EMF. The IEA incorporates expertise for this role in accordance with the EPR. As noted in relation to the contaminated soil and groundwater EPRs, this site has low risk of contaminated soil, groundwater interception, acid sulfate soils or vapour intrusion.
	EMF 4	**Complaints Management System** Prior to the commencement of works a process for recording, managing, and resolving complaints received from affected stakeholders must be	The NEL Project has established a complaints hotline and engagement database. The relevant project contractor, as a contractual condition to satisfy the statutory requirement under the Incorporated Document, will

Discipline	EPR Ref	Environmental Performance Requirement	Response
		developed and implemented. The complaints management arrangements must be consistent with Australian Standard AS/NZS 100002: 2014 Guidelines for Complaints Management in Organisations. The complaints management system must be consistent with the Communications and Community Engagement Plan required under EPR SC3.	prepare and implement a complaints management systems and Communications and Community Engagement Plan.
Aboriginal Heritage	AH 1	**Comply with the Cultural Heritage Management Plan** Implement and comply with the Cultural Heritage Management Plan (CHMP) approved under the *Aboriginal Heritage Act 2006*.	The site was investigated as part of the approved CHMP and there is a registered VAHR site as a result of the CHMP investigations. The relevant project contractor will comply with the specific requirements of the CHMP including the management condition for this location as part of construction works. Compliance with the CHMP by the contractor, including when giving effect to this UDLP, will be a statutory requirement under the *Aboriginal Heritage Act 2006*.
Air Quality	AQ 1	**Implement a Dust and Air Quality Management and Monitoring Plan to minimise air quality impacts during construction** Prepare and implement a Dust and Air Quality Management and Monitoring Plan(s), in consultation with EPA, which sets out best practice measures and controls to minimise and monitor impacts on air quality during construction. The plan(s) must: • Set out how the project will monitor and control the emission of smoke, dust, fumes, odour and other pollution into the atmosphere during construction using best practice measures with reference to EPA Victoria Publication 480 Best Practice Environmental Management: Environmental Guidelines for Major Construction Sites	The Dust and Air Quality Management and Monitoring Plan will be prepared by the relevant project construction contractor to include measures for dust and air quality management at this site. Implementing the approved Management Plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Identify the main sources of dust and airborne pollutants, and the location of sensitive land uses relevant to each construction area • Describe the monitoring requirements for each construction area including real-time particulate matter monitoring to manage dust control where deemed to be required, and with reference to sensitive receptors and utilising consistent and common monitoring equipment across the project • Describe the air quality triggers for investigation, the mitigation measures, and the processes for implementing appropriate controls	
	AQ 2	**Design tunnel ventilation system to meet EPA requirements for air quality** Design, construct and operate the permanent tunnel ventilation system to meet the requirements of the State Environment Protection Policy (Air Quality Management) and in accordance with the requirements of the EPA Victoria Works Approval and the EPA Victoria Licence. The design should include provision for retrofitting of tunnel ventilation particulates pollution control equipment if subsequently required.	Not applicable to this UDLP as the project does not entail construction of a tunnel.
	AQ 3	**In-tunnel air quality performance standards** Design, construct and operate a tunnel ventilation system to introduce and remove air from the tunnels to meet the in tunnel air quality requirements for carbon monoxide (CO) and for NO2 listed below and in accordance with the EPA Victoria Works Approval and EPA Victoria licence. In tunnel air quality must meet the following CO standards: • Maximum peak CO value of 150 ppm • 15-minute average CO value of 50 ppm	Not applicable to this UDLP as the project does not entail construction of a tunnel.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• 2-hour average CO value of 25 ppm. The tunnel ventilation system must also be designed and operated so that the tunnel average nitrogen dioxide (NO2) concentration is less than 0.5 ppm as a rolling 15-minute average. Develop and implement contingency measures to manage in-tunnel air quality in the event of incidents or emergencies. Apply best practice Australian management techniques to minimise impacts on health from in-tunnel exposure to PM2.5 and PM10.	
	AQ 4	**Monitor ambient air quality** Develop and undertake an ambient air quality monitoring program in consultation with EPA Victoria to measure the air quality impacts of North East Link during construction and operation. The ambient air quality monitoring program must be undertaken at a minimum of six locations (including a site where the highest increases of air pollution are predicted to occur), unless otherwise agreed by EPA Victoria; include at least one year of monitoring before operation; continue for 5 years after commencement of North East Link operation; and, for the ventilation structures, be in accordance with the EPA Victoria licence. Monitoring results must be compared against the Environmental Quality Objectives of the State Environment Protection Policy (Ambient Air Quality). Results (not validated) of the monitoring program are to be made publicly available on a website related to the project, or through EPA Victoria's Air Watch website, on a daily basis.	Relocation of Bulleen Park and Ride does not result in a need to relocate or modify any of the existing air quality monitoring stations.

Discipline	EPR Ref	Environmental Performance Requirement	Response
	AQ 5	**Monitor compliance of in-tunnel air quality and ventilation structure emissions** Monitor the in-tunnel air quality and ventilation structure emissions during operation of the ventilation system to demonstrate compliance with EPR AQ2, EPR AQ3 and the EPA Victoria licence to the satisfaction of EPA Victoria. Report the monitoring results publicly after validation and in accordance with the EPA Victoria licence. If standards outlined in EPR AQ2, EPR AQ3 and the EPA Victoria licence are not met, report to EPA Victoria, investigate the cause of the exceedance, and take remedial action as appropriate to the satisfaction of EPA Victoria.	Not applicable to this UDLP as the project does not entail construction of a tunnel.
	AQ 6	**Construction Haulage Vehicle Fleet** Incentives must be provided for contractors and subcontractors to preferentially select on-road heavy vehicles for haulage that comply at a minimum with the Euro V European emission standards. The incentives must seek to increase the proportion of on-road heavy vehicles that comply at a minimum with Euro V European emission standards within the project's construction haulage fleet over the construction life of the project.	The project contractor will be required to provide incentives for its contractors and subcontractors as a contractual condition to satisfy the statutory requirement under the Incorporated Document.
Aboriculture	AR 1	**Develop and implement a Tree Removal Plan** Develop and implement a Tree Removal Plan, as part of the CEMP, that identifies all trees within the project boundary and includes: • Trees to be removed or retained as part of the works • Confirmation of the condition and arboricultural value of the amenity trees to be removed	The Tree Removal Plan will be prepared by the relevant project construction contractor as part of their CEMP and will be reviewed and audited by the Independent Environmental Auditor. It will include measures for trees to be removed including undertaking relevant arboricultural assessments that will verify existing details and inform design, to maximise tree retention to the extent practicable.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• The canopy area of all trees to be removed • The procedure for tree removal that addresses the requirements of EPR FF1, EPR FF2 and EPR FF5. Tree retention must be maximised to the extent practicable through detailed design and selection of construction methods to minimise canopy loss, and in accordance with EPR FF1, including by retaining trees where practicable and minimising potential impacts to trees. This includes the River Red Gum (Caltex Tree) at 39 Bridge Street, Bulleen. Arboricultural assessments are to verify existing details and inform the detailed design, Tree Removal Plan and Tree Canopy Replacement Plan (required by EPR AR3) in order to maximise tree retention and long-term viability of amenity plantings in accordance with Australian Standard AS4970:2009 Protection of Trees on Development Sites. The Tree Removal Plan must be informed by a pre-construction site assessment to confirm the area and number of trees and other vegetation proposed to be impacted. Trees to be retained must be protected in accordance with EPR AR2. Vegetation removal is to occur in a staged manner with removal only occurring once necessary for the current stage of works. The area and number of trees and other vegetation actually removed is to be confirmed through a post-construction assessment.	Implementing the CEMP will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.
	AR 2	**Implement a Tree Protection Plan(s) to protect trees to be retained** The CEMP must include a Tree Protection Plan(s), which is to be developed and implemented in accordance with Australian Standard AS4970-2009 Protection of Trees on Development Sites.	The Tree Protection Plan will be prepared by the relevant project construction contractor as part of their CEMP and will be reviewed and audited by the Independent Environmental Auditor. It will identify protection measures for trees to be retained on the site. Implementing

Discipline	EPR Ref	Environmental Performance Requirement	Response
		The Tree Protection Plan(s) must provide details of any tree protection actions that will ensure that trees proposed to be retained are adequately protected from the impact of construction or related activities, prior to those works being undertaken. Tree Protection Plans must be prepared based on detailed construction drawings and surveyed tree locations. Trees subject to protection must be monitored for a three-year period following completion of construction works in that location to assess ongoing viability, with maintenance or replacement of stressed or damaged specimens to be undertaken.	the CEMP will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.
	AR 3	**Implement a Tree Canopy Replacement Plan** Develop and implement a Tree Canopy Replacement Plan to replace the canopy of native vegetation and amenity plantings removed as a result of the project and achieve a net gain in tree canopy cover by 2045. The plan must: • Show the location, size (including canopy spread) and species of replacement trees, in consultation with councils and other relevant land managers • Specify requirements to support the long-term viability of all replacement plantings including appropriate soil requirements, establishment works and ongoing maintenance. • Maintain at least a ratio of 2:1 for replacement of amenity plantings. • Replanting should generally follow the hierarchy of: 1 Within the North East Link Project boundary - as first priority, in locations in close proximity to where trees are removed	A Tree Canopy Replacement Plan will be developed by the relevant project contractor for this site. It will provide site-specific requirements for replacement plantings in the context of the project. This Plan will contribute to an overall Tree Canopy Replacement Plan Strategy for the Project (taking account of canopy loss and replacement across the Project as a whole) while providing site specific requirements for replacement plantings at the site. Implementing the Tree Canopy Replacement Plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. Notably, there are opportunities for the re-establishment of canopy trees in natural soil: • to the east and west of the car park • at the Kampman Street court head to the north of the site and along the south side of Kampman Street.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		2 Outside the Project boundary and within 400 metres walking catchment from where trees are removed 3 Within Victorian Government and local Council land within the municipalities of Manningham, Boroondara, Nillumbik, Yarra, Whitehorse and Banyule outside the Project boundary 4 Within the wider north east area of metropolitan Melbourne outside the Project boundary, if required. Note: all locations selected must provide for long-term tree growth • Within the project boundary, include understorey plantings in addition to the tree canopy replacement plantings where feasible in consultation with Councils and/or the land manager • Specify requirements for the ongoing responsibility for maintenance and monitoring of the Tree Canopy Replacement Plan. The replacement planting should commence as soon as possible and in stages, once tree removal extent is confirmed and suitable replacement sites have been determined in consultation with relevant councils and authorities. A post-construction assessment is to be undertaken to confirm extent of tree removal and that the Tree Canopy Replacement Plan will achieve the net gain target set out above.	There is also the potential for tree and shrub replanting in nominated garden areas on the car park roof structure, subject to provision of sufficient soil volumes and engineering considerations. This would need to be investigated as part of detailed design. The early design and development of this site provides an opportunity for early tree replacement planting. Tree replacement is a project-wide requirement and the overall net gain canopy objective, and 2:1 replanting ratio for amenity trees, may not be, nor are they expected to be, achieved within a discrete construction area such as the site subject to this UDLP.
Business	B 1	**Business disruption mitigation plan** Prepare and implement a Business Disruption Mitigation Plan in accordance with the Victorian Small Business Engagement Guidelines (Victorian Small Business Commission) to ensure that business disruption for small businesses, including all disrupted businesses in the Bulleen	A Business Disruption Mitigation Plan will be prepared by the relevant project contractor addressing works on this site. Implementing the plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. It is noted that the businesses at 1 Thompson Road may potentially be disrupted by the construction and this would be addressed in the Plan.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		Industrial Precinct, arising from the project is mitigated to the extent practicable.	
	B 2	**Business Relocation Strategy** MTIA must develop and implement a Business Relocation Strategy to assist businesses directly affected by acquisition. The strategy must be developed in consultation with affected businesses, relevant local Councils, relevant local trader associations, and other affected stakeholders affected, immediately on approval of the EMF. The strategy must include, but not be limited to: • The identification of affected businesses and other relevant stakeholders • Provide a program to support the relocation of businesses including identifying services and support programs. • The appointment of an independent specialised relocation adviser(s) to support affected businesses. • Procedures to disseminate information, including through the Business Liaison Group (EPR B8) regarding the business relocation strategy and services, key project milestones that may impact on business relocations, and other changes that may affect businesses during the closure of existing operations. • Assistance in the provision of targeted marketing and promotional initiatives to build community and customer awareness for relocated businesses. • Procedures to work with business and landowners to endeavour to reach agreement on the timeframe for possession of the land.	Not applicable as no business acquisition or relocation is proposed by the UDLP.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Procedures to engage with businesses and other stakeholders, and through which affected businesses and relevant local trader associations can provide comment or feedback in relation to the relocation strategy and its associated services. The NEL Project should also work with councils to identify and assess the feasibility of alternative location options for displaced businesses. In parallel with the Business Relocation Strategy, the independent specialised relocation adviser(s) must provide individual business planning and support to the businesses in the Bulleen Industrial Precinct, including to prepare and implement individual business plans prepared with each business in the Bulleen Industrial Precinct (except where a business has requested not to be part of such assistance) that: • Understands at a fine-grained level their current operation • Desire to relocate or cease operations • Business needs for new sites • Preliminary specific site identification • Practical and reasonable assistance to implement these plans. Note: the requirements of this EPR are in addition to any rights or entitlements available under compulsory acquisition legislation.	
	B 3	**Employee Assistance Strategy** MTIA must develop and implement an Employee Assistance Strategy to provide relevant workforce support measures for employees of businesses closing or relocating as a consequence of acquisition for the Project. The strategy must include, but not be limited to:	Not applicable as no acquisition of business land, business closure, or relocation is proposed by the UDLP. It is not expected that any nearby businesses would close or relocate as a result of the development.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• The identification of affected businesses and employees • Provide a co-ordinated link to support services for affected employees (for example, access to a range of services such as training advice, careers advice, resume workshopping, advice on government entitlements, referral to other job support services, and skills assessments). • The identification of relevant government agencies and support services • Procedures to disseminate information including through the Business Liaison Group (EPR B85), regarding the employee assistance strategy and services, key project milestones that may impact on business closures and relocations, and other changes that may affect businesses and their employees during the closure of existing operations. In parallel with the Employee Assistance Strategy, MTIA with appropriate expert advice, must prepare and implement a package of individual employee assistance plans prepared with and for each employee who requests it, in consultation with the employer, that: • Understands at a fine-grained level their future employment plans • Need for training and development • Factors that would influence their desire to remain employed with a Bulleen Industrial Precinct business • Practical and reasonable assistance to implement their assistance plan.	

Discipline	EPR Ref	Environmental Performance Requirement	Response
	B 4	**Minimise disruption to businesses from land acquisition and temporary occupation** Minimise disruption to businesses from permanent acquisition or temporary occupation of land to the extent practicable, and work with affected businesses and land owners to endeavour to reach agreement on the terms for possession of the land in accordance with relevant legislation. Efforts to provide for Bulleen Art and Garden's continued operation from its current site should be undertaken.	No permanent acquisition of business land is proposed by the UDLP. Temporary occupation of the site for construction would not occupy business land (there are no businesses occupying the subject land). It is noted that the site is further away from nearby businesses compared to the EES Reference Project. This should reduce impacts from temporary occupation of the site during construction.
	B 5	**Minimise and remedy damage or impacts on third party property and infrastructure** Through detailed design and construction, and in consultation with relevant land owners and parties as necessary, design and construct the works to minimise, to the extent practicable, impacts to, and interference with, third party property and infrastructure and to ensure that infrastructure and property is protected during construction and operation. Any damage caused to property or infrastructure as a result of North East Link must be appropriately remedied in consultation with the property or asset owner.	The design of the Bulleen Park and Ride takes into account the risk of damage to third party property and infrastructure. The design will accommodate the existing Melbourne Water sewer easement on the site by avoiding any requirement to intersect with the sewer. The building footprint completely avoids the 5.4 metre setback from the centre of the sewer, as required by Melbourne Water, and only encroaches onto a small portion of the southern side of the easement The sewer is estimated to be between eight and ten metres deep beneath the site and below the depth of planned excavations. Foundations for the proposed car park structures will be founded below the base of the sewer, so that no additional vertical stress is applied to the sewer from the development. As noted for EPR GM1, 2 and 3, no impacts are expected to the asset as a result of ground movement. The construction contractor will be required to protect the sewer to the reasonable satisfaction of Melbourne Water, as a contractual requirement and to satisfy the statutory requirement under the Incorporated Document. The design has been developed in consultation with Melbourne Water.

Discipline	EPR Ref	Environmental Performance Requirement	Response
			With respect to the existing Koonung Creek Culvert, which passes to the west of the site, the closest excavation associated with proposed car park is approximately 70 metres from the eastern wall of the culvert. This is outside the zone of influence for possible ground movement.
	B 6	**Minimise access and amenity impacts on businesses** Any reduction in the level of access, amenity or function of any business or commercial facility must be minimised to the extent and duration necessary to carry out the relevant construction related works. Affected business and commercial facilities must be provided with adequate notification of potential impacts and temporary access arrangements. Emergency access must be maintained at all times. Access must be maintained for customers, delivery and waste removal unless there has been a prior arrangement with affected businesses. As well as minimising impacts above, temporary occupation of sites for construction must: • Minimise impacts on the viability of nearby businesses • Minimise adverse amenity impacts on views and amenity experience from nearby businesses • Minimise significant increases in travel time from residential areas to businesses and shopping precincts including Watsonia Village • Not reduce car parking available to shoppers and traders in shopping areas including Watsonia Village. All permanent access to business and commercial facilities affected by North East Link works is to be reinstated, or relocated as agreed with the relevant property owner, including associated landscaping and	The new proposed site for the Bulleen Park and Ride as shown in the UDLP is further away from the businesses compared to the original site shown in the EES Reference Project. Potential access and amenity impacts to local businesses both during construction and operation will be minimised by the new location. There are no existing businesses or commercial facilities that are adjacent to the proposed location at Koonung Reserve. The design exhibited in the EES replaced the Manningham Club Hotel's dedicated access to Thompsons Road with one shared with the Bulleen Park and Ride. The new location relocates the park and ride away from the Manningham Club access, removing the need for a shared access for this purpose. The design therefore reduces the access impact on the Manningham Club Hotel. Construction activity also poses a risk of reduction in amenity for businesses (through increased noise and dust) in the locality. Moving the construction site further away from the businesses is a benefit during the construction period. The proposed design also provides the opportunity to reduce construction traffic on the road where the businesses are located – the section of Thompsons Road between Bulleen Road and Kampman Road. The relevant project contractor will prepare construction management plans which include measures for minimising access and amenity

Discipline	EPR Ref	Environmental Performance Requirement	Response
		reinstatement works, and temporary access arrangements put in place for construction must be removed when relevant construction activities have ceased.	impacts during construction, including Traffic Management Plans (TMP), Construction Environmental Management Plan (CEMP) (addressing construction impacts such as noise) and a Dust and Air Quality Management Plan. Implementing approved TMPs and the CEMP will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. It is noted that the hotel and club, and the liquor retail outlet rely on ease of access and car parking for patronage and staff. Any access impacts would be specifically addressed in the relevant construction management plans. There is a risk that car parking at these businesses would be used by construction staff or contractors - this risk would need to be managed. The TMP required by EPR T2 must include requirements to minimise impacts on local streets, community and commercial facilities by providing parking for construction workers at construction compounds where practicable so as to not impact the customer carparks of the businesses or obstruct Thompsons Road, as this could reduce access to the businesses for patrons and discourage customers if there is limited or no car parking available. Completion and implementation of a TMP will be a contractual obligation to satisfy the provisions of the Incorporated Document.
	B 7	**Protect utility assets** Protect or, where required, relocate utility assets to the reasonable satisfaction of the service provider and/or asset owners.	The design in the UDLP has taken into account the risk of damage to third party assets. The design will accommodate the existing Melbourne Water sewer easement on the site by avoiding any requirement to intersect with the sewer.

Discipline	EPR Ref	Environmental Performance Requirement	Response
			The building footprint completely avoids the 5.4 metre setback from the centre of the sewer, as required by Melbourne Water, to the northern side of the easement and only encroaches onto a small portion of the southern side of the easement. The construction contractor will be required to protect the sewer to the reasonable satisfaction of Melbourne Water, as a contractual requirement to satisfy the statutory requirement under the Incorporated Document. As noted for EPR GM1, 2 and 3, no impacts are expected to the asset as a result of ground movement.
	B 8	**Business liaison groups** Contractors must participate in the Business Liaison Groups established and managed by the North East Link Project to facilitate business and stakeholder involvement for the construction phase of the project. Participation must include: • Attendance at meetings • Regular and timely reporting of design and construction activities and key project milestones • Provision of advance notice about changes to traffic and parking conditions and the duration of impact • Timely provision of relevant information, including response to issues raised by the group • Regular reporting and monitoring of business community feedback, impacts and discussion of mitigation measures and their effectiveness	The relevant project contractor will participate in the Business Liaison Groups established by the NEL Project.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Recording, managing and resolving complaints from affected businesses in accordance with the complaints management process required under EPR EMF4.	
Contamination	CL 1	**Implement a Spoil Management Plan** Prepare and implement a Spoil Management Plan (SMP) in accordance with relevant regulations, standards and best practice guidelines and with reference to the Spoil Management Strategy contained within the EES (Technical Report O). The SMP must be developed in consultation with the EPA Victoria, any relevant public land managers and, in respect of transport of spoil, the relevant road authorities. The SMP must include processes and measures to manage spoil, define roles and responsibilities and include requirements and methods for: • Complying with applicable regulatory requirements • Completing a detailed site investigation (in accordance with Australian Standard AS 4482.1:2005 Guide to the investigation and sampling of sites with potentially contaminated soil and the EPA Victoria Industrial Waste Resource Guidelines) prior to any excavation of potentially contaminated areas to identify location, types and extent of impacts and to characterise spoil to inform spoil and waste management • Identifying the nature and extent of spoil (clean fill and contaminated spoil). • Identifying, in consultation with the waste industry, the capacity for contaminated spoil material to be treated and/or disposed • Storage, handling, transport and disposal of spoil in a manner that protects human health and the environment and is consistent with the	The proposed development will involve soil excavation. A construction Spoil Management Plan (SMP) will be prepared by the relevant project construction contractor addressing spoil management measures relevant to this site. Implementing the plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. The preparation of the UDLP was informed by investigations for soil hazard categorisation and groundwater contamination in the area including nine samples from nine soil borehole locations on the site and two groundwater monitoring wells on the site The results suggest the likelihood of encountering gross contamination is low and standard management measures in a SMP are expected to be appropriate. The SMP will assess potential management options based on the EPA Waste Hierarchy. Reuse onsite is an option for consideration by the project contractor. Given the shallow nature of excavation with the project it is considered unlikely that groundwater would be encountered.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		transport management plan(s) required by EPR T2. This includes requirements and methods for the appropriate treatment/remediation of any contaminated excavated spoil and contaminated residual material left on site. • Design and management of temporary stockpile areas • Minimising impacts and risks from disturbance of acid sulfate soils (as per EPR CL2), odour (as per EPR CL3) and vapour and ground gas intrusion (as per EPR CL4) • Transport of spoil along appropriate roads with reference to the transport management plan(s) required by EPR T2 • Management of hazardous substances, including health, safety and environment procedures that address risks associated with exposure to hazardous substances for visitors, the general public; and local fauna; contain measures to control exposure in accordance with relevant regulations, standards and best practice guidance and to the requirements of WorkSafe and EPA Victoria; and include method statements detailing monitoring and reporting requirements. • Identifying where any contaminated or hazardous material is exposed during construction (notably through former landfills, service stations and industrial land) and how it will be made safe for the public and the environment. Beneficial uses of land and National Environment Protection (Assessment of Site Contamination) Measures 2013 guidance on criteria protective of those beneficial uses must be considered for the land uses in these areas. This must include methods for:	

Discipline	EPR Ref	Environmental Performance Requirement	Response
		– Construction of appropriate cover (soil, concrete, geofabric etc) such that no contamination is left exposed at the surface or where it may be readily accessed by the public and local fauna such that it cannot generate runoff or leachate during rain events – Maintenance of the cover – Identification of the nature and depth of the contaminants – Mitigating impacts during sub-surface works in those areas, e.g. drilling and excavation • Monitoring and reporting Identifying locations and extent of any prescribed industrial waste (PIW), other waste, and the method for characterising PIW and other waste prior to excavation Application of the *Environment Protection Act 1970* waste management hierarchy, including: – Ongoing identification and, where practicable, adoption of options for the re-use of spoil – Identification of options for management of spoil – Identifying suitable sites for disposal of any waste. This includes identifying contingency arrangements for management of waste, where required, to address any identified capacity issues associated with the licensed landfill's ability to receive PIW and other waste In areas used for temporary construction works, and the construction of surface water management works, contamination attributable to the	

Discipline	EPR Ref	Environmental Performance Requirement	Response
		project must be appropriately remediated in consultation with the relevant land manager.	
	CL 2	**Minimise impacts from disturbance of acid sulfate soil** The SMP referenced in EPR CL1 must include requirements and methods to minimise impacts from disturbance of acid sulfate soil, including but not limited to: • Characterising acid sulfate soil and rock prior to excavation • Developing appropriate stockpile areas including lining, covering and runoff collection to prevent release of acid to the environment, including wetlands, and impact to human health • Identifying suitable sites for re-use management or disposal of acid sulfate soil and rock • Preventing oxidation that could lead to acid formation if possible through cover and/or scheduling practices, i.e. ensuring acid sulfate soil and rock is not left in stockpiles for any length of time and/or addition of neutralising compounds. Requirements and methods must be in accordance with the Industrial Waste Management Policy (Waste Acid Sulfate Soils), EPA Victoria Publication 655.1 Acid Sulfate Soil and Rock, and the Department of Sustainability and Environment's Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soil.	A construction Spoil Management Plan (SMP) will be prepared by the relevant project construction contractor addressing spoil management measures relevant to this site. Implementing the plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. Given the shallow nature of excavation for the development it is considered unlikely that acid sulfate soil or rock would be encountered.
	CL 3	**Minimise odour impacts during spoil management** The SMP referenced in EPR CL1 must include requirements and methods for odour management (in accordance with EPA Victoria requirements)	A construction Spoil Management Plan (SMP) will be prepared by the relevant project construction contractor addressing spoil management measures relevant to this site including odour management.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		during the excavation, stockpiling and transportation of contaminated material including: • Identifying the areas of contamination that may pose an odour risk • Monitoring of the excavated material for possible odour risk • Management measures to minimise odour.	Implementing the plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. Existing soil data did not indicate the presence of odorous soil or waste on the site. Therefore, the risk of encountering odorous material is considered low. Further monitoring would be undertaken by the construction contractor under EPR CL1 to confirm the low risk. Should odours be detected, the SMP would direct mitigation measures to be incorporated into the construction methodology by the contractor, commensurate with any risk identified.
	CL 4	**Minimise risks from vapour and ground gas intrusion** Relevant North East Link sections must be designed and constructed to prevent ingress of vapours and gases associated with any construction that interfaces with landfill sites or contaminated areas. The SMP referenced in EPR CL1 must include requirements for assessment, monitoring and management of intrusive vapour including potentially toxic, flammable or explosive conditions in enclosed spaces or other impacts on human health and the environment. The plan must address vapour risks associated with excavation of impacted soils, extraction of impacted groundwater, open excavations and stockpiles and gases associated with landfills. This must include, where relevant: • Securing of the excavation and stockpile area from the public and signage warning of open excavations • Monitoring of vapours and odours while excavations are open and stockpiles remain onsite	A construction Spoil Management Plan (SMP) will be prepared by the relevant project construction contractor addressing spoil management measures relevant to this site including vapour management. Implementing the plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. There is a low risk of vapours and gases at this site due to lack of former landfilling and no evidence of gross or odorous contamination in investigations to date.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Mitigation measures to prevent fugitive releases of vapours and gasses during construction	
	CL 5	**Manage chemicals, fuels and hazardous materials** The CEMP and OEMP must include requirements for management of chemicals, fuels and hazardous materials including: • Minimise chemical and fuel storage on site and store hazardous materials and dangerous goods in accordance with the relevant guidelines and requirements • Comply with the Victorian WorkCover Authority and Australian Standard AS1940 Storage Handling of Flammable and Combustible Liquids and EPA Victoria publications 480 Environmental Guidelines for Major Construction Sites and 1698 Liquid Storage and Handling Guidelines • Develop and implement management measures for hazardous materials and dangerous substances, including: – Creating and maintaining a dangerous goods register – Disposing of any hazardous materials, including asbestos, in accordance with Industrial Waste Management Policies, regulations and relevant guidelines – Implementing requirements for the installation of bunds and precautions to reduce the risk of spills • Contingency and emergency response procedures to handle fuel and chemical spills, including availability of on-site hydrocarbon spill kits.	A CEMP will be prepared by the relevant project construction contractor incorporating measures for management of chemicals and hazardous materials used during construction. Implementing the plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. An OEMP will be prepared for the operation phase and will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. If there is a requirement to store and use some chemicals and hazardous materials on site for operational purposes (for example cleaning materials), then any specific management measures for the facility will be incorporated into the OEMP.

Discipline	EPR Ref	Environmental Performance Requirement	Response
	CL 6	**Minimise contamination risks during operation** The OEMP must include requirements and methods for minimising contamination risks during operation and maintenance of North East Link including: • Maintaining relevant controls and preventing impacts during operation from contaminated material, odour, vapour and gas • Maintaining controls implemented as part of North East Link to make any known areas of contamination or hazardous material that were exposed during construction (notably through former landfills) safe for the public and the environment • Mitigating impacts during sub-surface works in any identified areas of contamination or hazardous materials, e.g. drilling and excavation • Implementing contingency measures, where required, to address any potential contamination, odour, vapour or gas impacts or incidents. • Monitoring any potential mobilisation of contaminants towards ecological and recreational assets including the Yarra River and wetlands and must include a groundwater monitoring program, intervention trigger levels and mitigation actions.	An OEMP will be prepared for the operation phase. Any specific management measures for the facility in order to minimise contamination risks will be incorporated into the OEMP. The results of previous investigations suggest a low risk of encountering gross contamination on this site. This will be confirmed by the relevant project contractor during construction and any related operation phase measures identified.
Ecology	FF 1	**Avoid and minimise impacts on fauna and flora** The CEMP must include requirements and methods for avoiding, or where avoidance is not feasible minimising to the greatest extent reasonably possible, for: • Managing fauna that may be displaced due to vegetation removal or encountered on site during construction works in compliance with the	A CEMP will be prepared by the relevant project construction contractor incorporating the requirements for managing and minimising construction ecological impacts at this site. An Avoid and Minimise Statement will also be prepared by the contractor to justify removal of native vegetation. Implementing the CEMP will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		Wildlife Act 1975 and in consultation with public land managers where relevant • Complying with the *Fisheries Act 1995* • Undertaking pre-clearing surveys and inspections to confirm the on-site location of fauna immediately prior to habitat removal or, where relevant, works on waterways, and to assist fauna to safety as necessary • Prepare a Kangaroo Management Plan for the project interface with Simpson Barracks and for the M80 interchange in consultation with DELWP • Contingency and reporting procedures for the event that a listed threatened species is identified in order to mitigate any potential for significant impacts on the listed threatened species. • Protection of all vegetation inside and adjacent to the Project area that is not required to be removed, provided that such measures should be limited to activities undertaken inside the project boundary Surveys, inspections and management actions must be undertaken by a qualified wildlife ecologist or aquatic ecologist with all necessary authorisations obtained prior to removal of fauna habitat. The CEMP must be prepared in consultation with relevant land managers. A copy of the flora and fauna sub plan(s) of the approved CEMP must be provided to relevant land managers and each relevant municipal Council.	Kangaroo Management Plan requirement are not relevant to this site.

Discipline	EPR Ref	Environmental Performance Requirement	Response
	FF2	**Minimise and offset native vegetation removal** Through detailed design, avoid, or where avoidance is not feasible, minimise to the greatest extent reasonably possible, the removal of native vegetation and fauna habitat and impacts on habitat connectivity, in particular in relation to *Environment Protection and Biodiversity Conservation Act 1999* (Cth) or Flora and *Fauna Guarantee Act 1988* listed threatened species. This must include minimising removal of Matted Flax Lily, the locally endemic Studley Park Gum and the loss of potential foraging habitat for the Powerful Owl, Swift Parrot and Grey-headed Flying Fox. Key areas for minimisation efforts must include Simpson Barracks, Yarra Bend, Trinity Grammar wetlands, Banksia Parkland, River Gum Walk Creek Bend Reserve and the Koonung Creek valley. Where the removal of native vegetation is unavoidable the project must meet the offset requirements of the Guidelines for the removal, destruction or lopping of native vegetation, DELWP December 2017 except as otherwise agreed to by the Secretary to DELWP.	No more than 0.223ha of native vegetation (as per the DELWP guidelines) is proposed to be impacted along with areas of planted amenity vegetation. The final extent of impact will be confirmed in the Tree Removal Plan which will be prepared by the contractor prior to the commencement of construction. The only large tree (as per DELWP guidelines) on site (on the edge of Kampman Street) is to be retained. This is consistent with the Reference Project. The tree replacement is proposed to be a mixture of indigenous and non-indigenous species and will be addressed through a Tree Replacement Plan under EPR AR3. The NEL Project holds sufficient native vegetation credits to fulfill the requirements of the DELWP Guidelines at this site. Native vegetation removal here will be included in the iterative project-wide Native Vegetation Removal Report to demonstrate sufficient offsets are held prior to works commencing.
	FF 3	**Avoid introduction or spread of weeds and pathogens** The CEMP must include measures to avoid the spread or introduction of weeds and pathogens during construction, including vehicle and equipment hygiene.	A CEMP will be prepared by the relevant project construction contractor incorporating the requirements for managing weeds at this site. Implementing the CEMP will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.
	FF 4	**Protect aquatic habitat** In consultation with public land managers and Melbourne Water where relevant, design, locate and construct structures to minimise short and long term adverse impacts on riparian, riverbed and aquatic habitat in waterways and wetlands, including billabongs. The CEMP must contain	A CEMP will be prepared by the relevant project construction contractor incorporating the requirements for managing construction impacts on Koonung Creek. Implementing the CEMP will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		and require implementation of measures to minimise adverse impacts from construction activities on riparian, riverbed and aquatic habitat and aquatic fauna connectivity.	Koonung Creek lies in modified drainage structures beneath the site, directly or nearby. Relevant mitigation will be a consideration for the CEMP. The design takes account of the Creek drainage structure beneath the site and this will be further considered in the detailed design.
	FF 5	**Obtain *Flora and Fauna Guarantee Act 1988* permits** Prior to commencement of relevant works, a permit(s) must be obtained to take and destroy flora species protected under the *Flora and Fauna Guarantee Act 1988*.	The relevant project contractor would obtain any necessary permits prior to construction.
	FF 6	**Implement a Groundwater Dependent Ecosystem Monitoring and Mitigation Plan** Prepare and implement a Groundwater Dependent Ecosystem Monitoring and Mitigation Plan with no objection from the relevant water authorities.* The Groundwater Dependent Ecosystem Monitoring and Mitigation Plan must be informed by the groundwater modelling and groundwater monitoring required by EPR GW1 and EPR GW2, and must include (but not be limited to): • Identification of Groundwater Dependent Ecosystems (GDEs) predicted to be impacted prior to relevant construction commencing, including Bolin Bolin Billabong if relevant. • Details of the monitoring procedures and program for each relevant GDEs including monitoring periods appropriate to each GDE • Specific procedures to monitor groundwater levels at GDE's predicted to be impacted including monitoring as close as possible to the GDE (considering ecological and access constraints) and for aquatic GDEs	A Groundwater Dependent Ecosystem Monitoring and Mitigation Plan will be prepared by the relevant project contractor. Implementing the Groundwater Dependent Ecosystem Monitoring and Mitigation Plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. Based on the groundwater monitoring wells on the site which measured groundwater between right to ten metres below top of casing, the Bulleen Park and Ride development is not expected to intercept groundwater.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		monitoring the surface water levels and quality as appropriate, including Bolin Bolin Billabong. These procedures should include: – Groundwater monitoring of the alluvium by specific monitoring bores as close as possible to billabongs must be undertaken before, during and after construction. – Monitoring of water levels and water quality in billabongs must be undertaken before, during and after construction. – Estimation of water balance input and output volumes to and from billabongs must be undertaken before, during and after construction, based on analysis of the monitoring of water levels in the billabong and surrounding groundwater monitoring bores. • Identification of relevant monitoring and management programs by Melbourne Water or other authorities and how these are referenced in the Groundwater Dependent Ecosystem Monitoring and Mitigation Plan • Measures to mitigate monitored changes in water levels and quality that could impact the billabongs or other GDEs, which take into account the natural variability • Where the survival of Groundwater Dependent Large Trees not requiring removal is predicted to be affected by groundwater drawdown during • construction or operation based on groundwater modelling outputs, include measures to maintain the health of large trees	

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• In relation to any trees unlikely to survive during operation as a consequence of groundwater drawdown, processes for offsets to be obtained in accordance with EPR FF2 • The process for review of the Plan, including how the groundwater modelling and monitoring under EPR GW1 and EPR GW2 will be considered and the GDE monitoring program and periods subsequently reviewed. * All reasonable endeavours must be made to reach a position of no-objection, provided the stakeholder responds within a reasonable timeframe.	
	FF 7	**Implement a salvage and translocation plan for Matted Flax-lily** Where direct impacts on Matted Flax-lily occur, a salvage and translocation plan must be developed and implemented to the satisfaction of the Department of Environment, Land, Water and Planning and the Commonwealth Department of Environment and Energy, prior to the commencement of relevant works.	Not applicable as there are no Matted Flax lily at this site.
	FF 8	**Minimise intense noise and vibration impacts on Australian Grayling** The CEMP must include and require implementation of reasonable measures to avoid and mitigate intense noise and vibration impacts in or near the Yarra River (e.g. from activities such as pile driving and similar activities). This must include, to the extent practicable: • Selection of work methods to minimise noise and vibration	Not applicable to this site as the site is removed from the Yarra River.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Avoiding activities that may generate intense noise and vibration and impact on the Australian Grayling during critical migration or breeding periods (March to June, September to November) as defined within the National Recovery Plan for the Australian Grayling *Prototroctes maraena* (Backhouse, G, Jackson, J and O'Connor, J 2008) • Management and monitoring of noise and vibration in accordance with the CNVMP (EPR NV4).	
	FF 9	**Protect fauna habitat values in existing waterbodies that are modified for drainage purposes** Where existing waterbodies within or near the project boundary are to be modified for drainage purposes (for example Simpson's Lake, billabongs, and the southernmost waterbody in the Freeway golf course), the CEMP must include and require implementation of measures to minimise impacts on waterbirds and other fauna that use the wetlands including: • Retain dead and alive standing trees and other vegetation in and surrounding the waterbody • As far as practicable, undertake activities outside the typical nesting period for waterbirds (typically Sept to Jan) • Minimise the construction period to the extent practicable and refill the wetlands post construction if they have been drained. • Use of gross pollutant traps and water quality treatment measures to the requirements of the relevant waterway manager.	Not applicable to this site as the site is removed from existing waterbodies.
	FF 10	**Studley Park Gum Mitigation** To mitigate impacts on the Studley Park Gum, a Studley Park Gum Management Framework must be developed and corresponding	Not applicable as there are no Studley Park Gums at this site.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		management plan must be developed and implemented in consultation with DELWP.	
Ground Movement	**GM 1**	**Design and construction to be informed by a geotechnical model and assessment** Develop and maintain geological and groundwater model(s) (as per EPR GW1) to inform tunnel and trench design and the construction techniques to be applied for the various geological and groundwater conditions. The model(s) are to: • Identify sensitive receptors that may be impacted by ground movement • Inform monitoring of ground movement and ground water levels prior to construction to identify pre-existing movement • Inform tunnel design and the construction techniques to be applied for the various geological and groundwater conditions • Assess potential drawdown and identify trigger levels for implementing additional mitigation measures to minimise potential primary consolidation settlement. Assess potential ground movement from excavation and identify trigger levels for implementing additional mitigation measures to minimise potential ground movement.	The Bulleen Park and Ride will not involve tunnelling or deep trenches and is considered low risk in respect to the EPRs to manage ground movement. The development includes some excavation to construct the semi-basement car park structure and to construct retaining walls along Kampman Street and Thompsons Road. Additional ground investigation has been completed to inform site-specific geotechnical characterisation that will be undertaken as part of the detailed design process. This provides information the following: • Design of the retaining wall structures • Assessment of potential ground movement associated with excavation • Assessment of potential for settlement of the structure on areas of fill. This work will be undertaken by the relevant project contractor as part of detailed design. Groundwater monitoring data from existing bores on the site indicates that groundwater is approximately 8.5 metres from the ground surface. The planned excavations are approximately three metres deep, so groundwater drawdown is not expected to be a factor at the site. The existing sewer that runs near the southern edge of the site, being right to ten metres below the site, is not expected to be impacted by proposed excavations. Heave resulting from the excavations is expected

Discipline	EPR Ref	Environmental Performance Requirement	Response
			to be low. Foundations for the proposed car park structures will be taken to found below the base of the sewer, so that no additional vertical stress is applied to the sewer from the development. The sewer is estimated to be between eight to ten metres beneath the site and below the depth of planned excavations. A proposal has been provided to Melbourne Water (the asset owner) detailing the proposed options for protecting the asset. The key points with respect to the building foundations are: • Foundations for the proposed car park structures in the vicinity of the sewer will be designed to socket into the rock below the base of the sewer and outside the sewer's 45 degree angle of repose specified in Melbourne Water's Build-Over Guide. • No additional vertical stress will be applied to the sewer from the structure foundations.
	GM 2	**Implement a Ground Movement Plan to manage ground movement impacts** Develop and implement a Ground Movement Plan(s). The Ground Movement Plan must be informed by EPR GM1 and EPR GW1 (predictive model) and: • Address the location of structures/assets which may be susceptible to damage by ground movement • Identify baseline ground movement monitoring prior to construction. A baseline monitoring report is to be compiled summarising the results of the baseline surveys undertaken and included in the plan • Identify appropriate ground movement impact acceptability criteria	The design of the planned excavations has considered the potential ground movement with investigations undertaken to inform the design. The scale of excavation for the development is significantly lower than the excavations required for the NEL tunnel and trenches on which the Ground Movement EPRs are based and it is expected that potential ground movements will be small and able to be contained within the site boundary without adversely impacting adjacent infrastructure. As such, a ground movement plan is not considered to be necessary for Bulleen Park and Ride.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Identify appropriate mitigation measures should the geotechnical model (EPR GM1), predictive groundwater model (EPR GW1), or subsequent monitoring program indicate acceptability criteria may not be met Establish ground movement monitoring requirements for the area surrounding proposed project works to measure ground movement consistency with the anticipated ground movement in the predictive model.	
	GM 3	**Carry out Condition surveys for potentially affected property and infrastructure** Conduct condition survey(s) of property and infrastructure predicted to be affected by ground movement based on the results of the geological and groundwater model (EPR GM1) or, where a property owner reasonably expects to be potentially affected and has requested a pre-construction condition survey. Develop and maintain a database of pre-construction and as-built condition information for each potentially affected structure identified as being in an area susceptible to damage (see EPR GM1) or where a property owner has requested a pre-construction condition survey, specifically including: • A list of identified structures/assets which may be susceptible to damage resulting from ground movement resulting from project works • Results of pre-construction condition surveys of structures, pavements, significant utilities and parklands to establish baseline conditions and potential vulnerabilities	The relevant project contractor would conduct any necessary condition surveys prior to construction. As noted for EPR GM2, it is expected that potential ground movements will be small and able to be constrained within the site boundary without adversely impacting adjacent infrastructure.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Records of consultation with land owners in relation to the condition surveys • Post-construction stage condition surveys conducted, where required, to ascertain if any damage has been caused as a result of project works. Pre- and post-condition assessments must be proactively shared with the property owner. All stakeholder engagement activities must be undertaken in accordance with the Communications and Community Engagement Plan (see EPR SC2).	
	GM 4	**Rectify damage to properties and assets impacted by ground movement or settlement** For properties and assets (including natural landscapes and parklands) damaged by ground movement caused by the project, undertake necessary repair works or other actions as agreed with the relevant property or asset owner (or land manager). For places listed on the Victorian Heritage Register, consultation with Heritage Victoria must be undertaken. Establish an independent mediation process for the assessment of claims for property and asset damage that cannot be agreed between the Project and the property or asset owner.	The relevant project contractor would rectify any damage caused by ground movement as a result of construction to on site assets or nearby properties and assets. As noted for EPR GM2, it is expected that potential ground movements will be small and be able to be constrained within the site boundary without adversely impacting adjacent infrastructure.
Groundwater	GW 1	**Design and construction to be informed by a groundwater model** Develop a predictive and numerical groundwater model in consultation with EPA Victoria, informed by field investigations, to predict changes in groundwater levels and flow and quality, as they are affected by	Based on the understanding of groundwater levels in this area, the proposed development is unlikely to intersect groundwater. Under these conditions, permanent change to the groundwater table is not likely.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		construction, and develop mitigation strategies, as per EPR GM1. The groundwater model must be of a standard that is at least comparable to the modelling documented within the Report on Additional Groundwater Modelling prepared by GHD and dated July 2019 and must be updated to take account of any changes to construction techniques or operational design features, and additional monitoring data from EPR GW2. The groundwater model must be developed with a process that involves independent review by the Independent Environmental Auditor consistent with the Australian Groundwater Modelling Guidelines (June 2012).	Therefore, Bulleen Park and Ride (and any associated shallow excavations) does not need to be included in the numerical groundwater model which will be developed by the relevant project contractor to inform groundwater management for the construction of the primary project excavations.
	GW 2	**Monitor groundwater** Develop and implement a pre-construction, and construction groundwater monitoring program to: • Establish baseline water level and quality conditions throughout the study area, including the delineation (to the extent practicable) of those portions of existing contaminant plume(s) that may be impacted by the project • Calibrate the predictive model prior to commencement of construction, manage construction activities, and verify the model predictions • Assess the adequacy of proposed design and construction methods, and where required, identify and implement any additional measures required to mitigate impacts from changes in groundwater levels, flow and quality. A post-construction groundwater monitoring program must be developed and implemented to:	The relevant project construction contractor will develop and implement a Groundwater Monitoring Program prior to construction as a contractual obligation and to satisfy the requirements of the Incorporated Document. There are two existing NEL groundwater monitoring bores at this location. Both bores are monitoring conditions within the bedrock aquifer system. It would be prudent for groundwater quality and groundwater level monitoring to be continued in this region (irrespective of any structure or facility being located in the park) to establish a baseline of conditions prior to construction of the development. Both bores have been subject to a single episode of groundwater sampling and no obvious evidence of contamination was identified. Whilst fill materials have been deposited in this location (above the groundwater table), concentrations of heavy metals are consistent with other parts of the project area. The absence of obvious evidence of

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Confirm the acceptability of resultant water quality and water level recovery (and potential mounding) as predicted by the numerical groundwater model. Acceptability is to be assessed with consideration to the Groundwater Dependent Ecosystem Monitoring and Mitigation Plan (as required by EPR FF6) and other identified beneficial uses of groundwater • Confirm the effectiveness of applied measures as identified in the Groundwater Management Plan (refer EPR GW4) and if required, identify and implement contingency measures to restore groundwater to an acceptable level. The duration of post-construction monitoring must be a minimum of two years or until acceptable restoration of groundwater and a relatively stable hydrogeological regime, taking into account prevailing climatic conditions and natural variability, has been confirmed by the Independent Environmental Auditor, in consultation with EPA Victoria and Melbourne Water. The pre-construction, construction and post-construction monitoring program(s) must be developed in consultation with EPA Victoria and Melbourne Water, and be consistent with EPA Victoria Publication 668 Hydrogeological assessment groundwater quality guidelines, EPA Victoria Publication 669 Groundwater Sampling Guidelines, and the State Environment Protection Policy (Waters).	contamination, based on the existing data, would suggest that further works to delineate a contaminated groundwater plume is not relevant. It is highly likely that the two bores would be demolished as part of the construction works as they fall within the excavation footprint. It is not unexpected that geotechnical investigation monitoring bores could be damaged, destroyed or lost, as they were originally installed to support planning and Reference Project development. As part of EPR GW4, the development and implementation of a Groundwater Management Plan will be undertaken by the relevant construction contractor. This plan will review the groundwater monitoring network in this region of the project to determine if replacement bores drilled outside of the construction area are required. The topography rises steeply on the northern margins of the site towards Kampman Street. Cut and fill will be required in this area where ramps will be created to service parking and commuter loading area. It is estimated that this may involve one to two metres of cut. The likelihood of exposing perched water in the northern areas where this relatively abrupt change in topography is not known. In the detailed design phase, the relevant project contractor will consider if further geotechnical investigations are required to support the engineering design in this location, and this may result in additional groundwater monitoring bores being installed on the site.
	GW 3	Minimise changes to groundwater levels through tunnel and trench drainage design and construction methods	Not applicable to this UDLP as the project does not entail construction of any tunnelling or trench drainage.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		Design long term tunnel and trench drainage and adopt construction methods which minimise changes to groundwater levels during construction and operation to manage, mitigate and/or minimise to the extent practicable: • Requirements for groundwater management and disposal • Mobilisation of contaminated groundwater • Dewatering and potential impacts of acid sulfate soils, including both unconsolidated sediments and lithified sedimentary rock • Potential impacts on waterways and potential groundwater dependent ecosystems, including terrestrial ecosystems • Any other adverse impacts of groundwater level changes such as subsidence. Design and implement engineering control measures and/or ground treatment to limit to the extent practicable groundwater inflow and groundwater drawdown during excavation, construction and operation of tunnels and trenches, cross passages and subsurface excavations. The Groundwater Management Plan (as required by EPR GW4) must contain measures and/or controls to minimise groundwater inflow during construction to excavations and groundwater drawdown, including contingency measures should monitoring indicate adverse impacts are occurring. These must include measures to: • Minimise to the extent practicable reduction or loss of groundwater discharge to waterways or loss of water availability for terrestrial ecosystems	

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Manage, mitigate and minimise the oxidation of acid sulfate soil materials and acidification of groundwater • Manage, mitigate and minimise any movement of contamination that is identified • Manage, mitigate and minimise impacts on beneficial uses and risk of vapour intrusion • Ensure that groundwater seepage is collected, treated and disposed during construction in accordance with the *Environment Protection Act 1970* waste management hierarchy and EPA Victoria requirements. Obtain a trade waste agreement from the relevant water authority where disposal to sewer is required or approval from EPA and the relevant water authority (as required) if discharge to waterways is determined to be appropriate.	
	GW 4	**Implement a Groundwater Management Plan to Protect groundwater quality and manage groundwater interception** A Groundwater Management Plan must be developed in consultation with EPA Victoria and Melbourne Water and implemented to protect groundwater quality and manage interception of groundwater including documenting the measures required to achieve EPR GW2 and EPR GW3. The Groundwater Management Plan must be informed by the groundwater modelling required by EPR GW1 and updated where required in response to modelling results, new information resulting from the monitoring programs required by GW2 and assessment of the adequacy or effectiveness of controls.	A Groundwater Management Plan will be prepared by the relevant project construction contractor. Implementing the Groundwater Management Plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. Based on the current understanding of groundwater levels at the site, the proposed design is not expected to intersect groundwater. Measures to manage groundwater interception are therefore not material for this UDLP.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		The Groundwater Management Plan must include requirements and construction methods to protect groundwater quality including where appropriate, but not limited to: • Selection and use of sealing products, caulking products, lubricating products and chemical grouts during construction that will not diminish the groundwater quality • Selection and use of fluids for artificial recharge activities that will not diminish the groundwater quality • Requirements to ensure compatibility of construction material with groundwater quality to provide long term durability for infrastructure design life • Design and development of drainage infrastructure that minimises clogging and maintenance risks from dissolved constituents in groundwater precipitating out of solution • Measures to assess, remove and dispose of contaminated groundwater and impacted soils associated with excavation and construction • Reinjection borefields for hydraulic control of drawdowns (or contaminated groundwater plumes) • Remedial grouting. The Groundwater Management Plan must include requirements and methods for management of groundwater interception during construction including where appropriate, but not limited to:	

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Identification, treatment, disposal and handling of contaminated seepage water and/or slurries including vapours in accordance with relevant legislation and guidelines • Assessment of barrier/damming effects • Subsidence management • Dewatering and potential impacts on acid sulfate soils, including both unconsolidated sediments and lithified sedimentary rock • Protection of waterways and potential groundwater dependent ecosystems • Management of unexpected contaminated groundwater e.g. using treatments, hydraulic controls, grouting and exclusion methods • Management of possible impact to groundwater monitoring and management by third parties of existing contamination plumes • Contingency actions when interventions are required. The Groundwater Management Plan must also include a review to confirm the status of potential use of extraction bores within the estimated construction drawdown area. Where required, measures must be developed and implemented, to the satisfaction of Southern Rural Water, to maintain water supply to identified, impacted groundwater users.	
	GW 5	**Manage groundwater during operation** Prepare as part of the OEMP and implement measures for management, monitoring, reuse where possible and disposal of groundwater inflows during operation that comply with relevant legislation and guidelines (and include provisions of EPR FF6 where relevant), including but not limited to:	An OEMP will be prepared (for the operation phase) and any specific management measures for the facility in order to manage groundwater will be incorporated into the OEMP. There are unlikely to be any relevant measures related to this site. This will be confirmed by the relevant project contractor during construction monitoring and, if any related operation phase measures are identified,

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• *State Environment Protection Policy (Waters)* • *State Environment Protection Policy (Prevention and Management of Contaminated Land)* • *Water Act 1989 and Water Industry Regulations 2006* • *Occupational Health and Safety Act 2004 and Occupational Health and Safety Regulations 2017.* The OEMP must include contingency measures and emergency response plans if unexpected groundwater contamination is encountered and requires disposal. A trade waste agreement from the relevant water authority must be obtained in accordance with regulatory requirements, where disposal to sewer is proposed. Approval from EPA and the relevant water authority (as required) must be obtained in accordance with regulatory requires, where discharge to waterways is proposed.	they will be implemented as part of the OEMP which will be a contractual requirement to satisfy the Incorporated Document.
Heritage	HH 1	**Design and construct to minimise impacts on heritage** Undertake detailed design of the permanent and temporary works to minimise impacts to the greatest extent practicable on the cultural heritage values of heritage places in consultation with Heritage Victoria and/or local councils (as applicable). Prior to commencement of works with capacity to affect heritage places, structures or features, directly or indirectly, develop and implement in consultation with the relevant heritage authority: • Physical protection measures for potentially affected heritage places, structures or features as appropriate	Not applicable to this UDLP as there are no heritage places on the site or affected by the works.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Where required, a methodology for any required dismantling, storage or reinstatement of heritage fabric (with reference to the ICOMOS Burra Charter 2013) and works to ensure an appropriate setting if relocation is required.	
	HH 2	Implement an Archaeological Management Plan to avoid and minimise impacts on historic archaeological sites and values Develop and implement an Archaeological Management Plan in consultation with Heritage Victoria detailing measures to avoid, minimise, mitigate and manage disturbance of archaeological sites and values affected by the project. Undertake investigations in accordance with the Guidelines for Investigating Historical Archaeological Artefacts and Sites, Heritage Victoria 2015 and to the satisfaction of the Executive Director, Heritage Victoria. The Archaeological Management Plan must include: • Requirements for background historical research, excavation methodology, research design, reporting and artefact management, artefact conservation, and analysis • Protocols for managing previously unidentified historical archaeological sites discovered during the works.	An Archaeological Management Plan will be prepared by the relevant project construction contractor. Implementing the Archaeological Management Plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.
	HH 3	**Monitor condition of heritage sites** Undertake pre-construction and post construction condition survey(s) in accordance with EPR GM3 for heritage places at risk of impact from settlement and structural integrity disturbance as a result of the project. Measures to manage and monitor potential vibration impacts on heritage places during construction must be implemented in accordance with the	Not applicable to this as there are no heritage places on the site or affected by the works.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		Construction Noise and Vibration Management Plan required by EPR NV4 and Groundwater Management Plan required by EPR GW4. Report the results of monitoring for heritage places to the Executive Director, Heritage Victoria and take remedial action, if required, to the satisfaction of the Executive Director, Heritage Victoria.	
	HH 4	**Undertake archival photographic recording** Prior to commencement of relevant works, undertake archival photographic recording of all heritage places (including trees) and their settings, demolished or modified by the works in accordance with Heritage Victoria's specification for the archival photographic recording of heritage places or alternative applicable Heritage Victoria guidelines as updated, to the satisfaction of the Executive Director, Heritage Victoria.	Not applicable to this UDLP as there are no heritage places on the site or affected by the works.
	HH 5	**Minimise impacts on heritage trees** Comply with any requirements of Heritage Victoria if the trees that are to be impacted by the project are listed on the Victorian Heritage Register (VHR).	Not applicable to this UDLP as there are no VHR heritage places (trees) on the site or affected by the works.
Land Use	LP 1	**Minimise Land Use Impacts** The project must be designed and constructed to: • Minimise the construction and design footprint and avoid, or, where avoidance is not feasible, minimise to the greatest extent reasonably possible, any temporary and permanent impacts on the following land uses: – Parks and reserves including passive and active open pace and pathways	The footprint of the Park and Ride facility has been minimised by adopting an efficient car parking layout design Specifically, the facility has been designed to be two levels that make use of existing road connections and direct access to the Eastern Freeway and future busway. The proposed design provides for a landscaped green roof to provide passive open space and augment some of the existing open space reserve to be occupied by the facility.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		– Significant landscapes including those around the Yarra River – Other sensitive land uses such as educational facilities – Sport, recreational and community facilities – Residential properties – Commercial and industrial sites – Sites of identified cultural or social value including Heide Museum of Modern Art and Bulleen Art and Garden • Consolidate or minimise the fragmentation of, and provide access to, residual land parcels to support future viable land use to the extent practicable.	New vegetation to the northern boundary of the site will provide screening of the facility from the residential properties in Kampman Street. The location and design will not impact any significant landscapes, other sensitive uses, sport, recreational or community facilities, commercial or industrial sites, sites of cultural or social value. The site will be acquired in full.
	LP 2	**Minimise land use impacts** New above ground services and utility infrastructure are to be located in a way that minimises impacts to existing residential areas, public open space and recreational facilities. This must include considering options to co-locate infrastructure where practicable.	Any utility infrastructure is incorporated into the design of the facility.
	LP 3	**Minimise inconsistency with strategic land use plans** Design and development of the project must have regard to relevant approved urban design and land use strategies, plans and frameworks including the Yarra Strategic Plan and Draft Yarra River Bulleen Precinct Land Use Framework Plan when approved or any approved superseding document. Consultation must occur with land managers and authorities responsible for the implementation of the relevant strategic land use plans and policies in preparing Urban Design Framework Plans required by the Incorporated Document.	The *Draft Yarra Strategic Plan* is a 10-year overarching policy and planning framework for the Yarra River corridor. The site of the facility is well removed from the Yarra Strategic Plan area which is defined as any land within one kilometre of the banks of the Yarra River. The site of the facility is also outside of the area that is the subject of the *Draft Yarra River Bulleen Precinct Land Use Framework Plan*. *The Manningham Open Space Strategy* (2014) includes the site within the Bolin Bolin precinct and notes the Koonung Creek Linear Park as being a major feature of the precinct providing a mixture of natural

Discipline	EPR Ref	Environmental Performance Requirement	Response
		An integrated approach must be adopted to the Manningham Interchange in consultation with Manningham City Council which supports viable future land uses (such as commercial and industrial) and includes maximising the developable area at surface level to the extent practicable in addition to requirements for the Urban Design Framework Plan for this interchange to be approved under the Incorporated Document as part of the Urban Design Strategy. The project must avoid, or where avoidance is not feasible, minimise to the greatest extent reasonably possible, impacts on residential, commercial, industrial, open space, culturally valued and community facility land uses from project development and operations which would be inconsistent with approved strategic land use policies.	settings, indigenous bushland and open parkland with sporting grounds, play spaces and areas used for informal recreation (Part 2, page 47). The *Manningham Open Space Strategy* also notes that there is potential to extend the pedestrian link from the Linear Park to Bulleen Park via Bulleen Road. The *Koonung Creek Linear Park Management Plan* (2011) proposes installation of light poles to illuminate the Shared use path across the site and additional planting to the hillside and extension of the tree area. The Park and Ride facility is considered generally consistent with both the Manningham Open Space Strategy as well as the Koonung Creek Linear Park Management Plan. While access to the open space area would be lost during construction of the park and ride facility, this would be for a period of approximately one year, and once complete the landscaped green roof will provide for informal outdoor recreation reinstating this section of the Koonung Creek Linear Park. It is noted that in the NEL Project's EES, the site was designated for temporary occupation to facilitate construction activities and temporary loss of this open space was anticipated for three years. As such, the temporary impact would be less than that anticipated for the construction compound assessed in the NEL EES. A Shared use path would be provided to connect Thompson Road, through the Park and Ride facility and then back into the Koonung Creek Trail via an underpass. This would be a slight re-alignment of the existing trail which generally travels alongside the Eastern Freeway at this location to maintain shared use path connections to and through the Park and Ride facility.

Discipline	EPR Ref	Environmental Performance Requirement	Response
			Lighting would be provided as part of the Park and Ride facility and in the Shared use path underpass. Plans for the Bulleen Park and Ride are consistent with strategic land use policies.
	LP 4	**Minimise overshadowing from noise walls and elevated structures and overlooking from elevated structures** Overshadowing from elevated structures and noise walls to residential properties (including existing solar panels), community facilities, open spaces, waterways and valuable natural habitats must be minimised through detailed design. Consultation must occur with directly affected property owners and occupiers to inform formulation of parameters for these structures including location, design and materials. Unless with the consent of an affected landowner or in exceptional circumstances, the extent of additional overshadowing of residential properties from non-transparent structures: • Should be no greater than the existing shadowing of secluded private open spaces associated with residential properties cast by existing structures including existing noise walls and other structures (e.g. elevated walkways) between the hours of 9:00 am to 3:00 pm as measured on September 22. • If additional overshadowing occurs it must not be greater than 50 percent of the secluded private open space or 40 sqm, whichever is the greater, between the hours of 9:00 am to 3:00 pm as measured on September 22. Overlooking from elevated structures, especially within a distance of 15 metres to secluded open space and habitable room windows of residential	Koonung Reserve slopes in a south-easterly direction, away from Kampman Street and Thompsons Road. As such, the surrounding residential properties are positioned on higher ground than the proposed facility. The roof of the proposed facility, to be vegetated and serve as passive open space, will be level with the northern section of Kampman Street. The proposed facility will not overshadow or overlook surrounding residential properties. The noise wall to sit at the edge of the bus access to the site will be four metres in height and will be well removed from residential properties. Secluded private open space will not be overshadowed by the noise wall.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		properties, must be minimised through detailed design as far practicable. Consultation must occur with directly affected property owners and occupiers to inform formulation of parameters, designs and materials for these structures.	
	LP 5	**Prepare and implement a Public Open Space Relocation and Replacement Plan** Prior to operation of the Project, the Proponent in conjunction with the State and in consultation with relevant stakeholders including DELWP, Parks Victoria, Melbourne Water and Birrarung Council, must develop and implement a Public Open Space Relocation and Replacement Plan to provide for replacement of public open space permanently required for the project, where not already being replaced in accordance with EPR SC5. The plan should reflect an underlying philosophy of replacement on a like-for-like basis. The Public Open Space Relocation and Replacement Plan must set out the process for selecting and acquiring replacement public open space, including but not limited to: • Identifying public open space to be permanently required for the project, including public land used for parkland, reserves, passive open space and active open space including recreation facilities (where not addressed by EPR SC5) • A process for the acquisition of replacement land, including within the Public Acquisition Overlay or land in key strategic locations • Assessment of the suitability of potential replacement land by reference to:	Development and implementation of the Public Open Space Relocation and Replacement Plan would be undertaken by the State in advance of the operation of the NEL Project. Whilst the design will provide replacement passive open space at the site, likely to be more usable with landscaping and active surveillance, there will be an unavoidable net loss in area of passive open space as a result of the building and bus link. The Public Open Space Relocation and Replacement Plan will be for the NEL Project as a whole and is to be implemented prior to operation of the NEL Project commencing.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		– the location and characteristics of the land – relevant approved strategic land use plans and policies, including those within planning schemes – existing and proposed public purpose reservations – the Yarra Strategic Plan (when released), reference to the Yarra River Bulleen Land Use Framework Plan (when released) • An approach for the preparation of functional concept plans for the future use of each replacement site, where the plans will be prepared with input from relevant councils, land managers, public asset owners and stakeholders (in the case of formal sporting uses being replaced) • A program identifying the timing and scope of works to be undertaken to implement the functional concept plans and provide appropriate or upgraded facilities at the replacement sites. In addition, where public open space is to be temporarily lost during construction, residual public open space should be enhanced where practical to minimise and mitigate land use impacts. Note: * Land in a Road Zone is excluded from the replacement calculation and land on a land bridge that is part of the access network will not count as replacement public open space.	
Landscape and Visual	**LV 1**	**Design to be in accordance with the Urban Design Strategy** Urban Design and Landscape Plans must be developed and implemented for permanent above-ground buildings or structures (excluding preparatory buildings and works) in accordance with the North East Link Project – Incorporated Document. The design response must be in	A separate assessment against the UDS has been completed as set out in Section 6 of this report. Key points regarding this EPR are as follows: • In response to the topography of the site, the design's incorporation of a landscaped green roof aims to minimise the landscape and visual impact. The facility has been sited and integrated into the existing topography.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		accordance with the North East Link Urban Design Strategy and, to the extent practicable: • 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 by the project including by facilitating value add/capture opportunities. • Respond to opportunities and constraints identified in an Urban Design Framework Plan forming part of the approved Urban Design Strategy for key interchanges, activity centres and interfaces identified in the Incorporated Document (where applicable). • Identify residential areas with the potential for high visual impact and develop targeted design options to avoid or minimise amenity impacts on these areas, including as a result of the proposed noise walls. • Detailed design to ensure landmark elements balance visual impact with minimal overshadowing.	• The Urban Design Strategy requires innovative design solutions that add value to the project; this has been achieved through the use of a green roof. • By incorporating a landscaped green roof with a large expanse of lawn area and perimeter small canopy trees with low understorey planting the space promotes passive surveillance with protection from overlooking. • Small canopy tree planting will promote intermittent views onto the open space from Kampman Street and the surrounding area to the north. • The provision of open space to the roof of the car park and bus interchange will capture and extend the visual and environmental canopy links from the surrounding park. • Connectivity, wayfinding and accessibility are well represented in this urban and landscape concept design connection to network of Shared use pathways and streetscape. • The provision of new trees surrounding the building and the placement of planting to the rooftop garden will minimise the visual impact of proposed built form and noise walls. • The proposed built form will be clad with a galvanised grate to accommodate climbing plants. The integration of the urban design, architectural design, and landscape design will provide a green building that will be connected to the existing landscape character of the Koonung Creek Valley area. • The design integrates the built form with sustainable measures, through water harvesting with water tank storage.

Discipline	EPR Ref	Environmental Performance Requirement	Response
			• Solar panels will be located to the entry pavilion roof to support sustainable benchmarks.
	LV 2	**Minimise landscape and visual impacts during construction** Temporary and construction works must be located, designed and carried out in accordance with a Construction Compound Plan to be approved under the Incorporated Document and the Urban Design Strategy guidance on using design to help manage construction impacts. Areas disturbed by temporary and construction works must be reinstated with no objection from the relevant land manager, waterway manager and any relevant public asset owners.* Design of acoustic sheds used during construction, to contribute to the image and identity of the area. 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. Implement landscaping enhancement including early tree planting (with reference to EPR AR3 as part of permanent works) prior to construction works commencing, where practicable. * All reasonable endeavours must be made to reach a position of no-objection, provided the relevant stakeholder responds within a reasonable timeframe.	A Construction Compound Plan will be prepared by the relevant project construction contractor. Implementing the Construction Compound Plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. While Manningham City Council is the current land manager for most of the site, the site will be fully acquired for the purpose of the project. The project will encompass part of the declared Eastern Freeway. Melbourne Water will continue to maintain a sewer asset on the site. The construction contractor will work with relevant land/asset owners during construction and reinstatement. It is noted that: • Temporary fencing will be considered during the construction phase to reduce the impact of the works during construction. The quality of enclosures, hoardings, screens and temporary features will be in accordance with the Urban Design Strategy (Section 7.2). • The early works scope includes early tree planting within the NEL Project area; however, the park and ride's site is constrained and early tree planting would not be practicable given it will be occupied in its entirety for construction.

Discipline	EPR Ref	Environmental Performance Requirement	Response
	LV 3	**Minimise construction lighting impacts** Develop and implement effective measures to minimise light spillage and glare during construction including from construction vehicles and equipment to protect the amenity of adjacent neighbourhoods, parks, community facilities and any known significant native fauna habitat to the extent practicable. Such measures must have regard to the content of guidelines or Australian Standards pertaining to outdoor lighting and best available technology and best practice.	These matters will be considered by the construction contractor as part of their construction methodology and will be the subject of the Construction Environmental Management Plan for the construction of the project. The CEMP will be a contractual obligation and required to satisfy the requirements of the Incorporated Document.
	LV 4	**Minimise operation lighting impacts and maximise operational lighting benefits for open space** Design and install lighting used during operation of permanent structures and resulting from the orientation of all permanent structures (including from vehicle headlights) in accordance with relevant standards, including but not limited to relevant guidelines and Australian Standards pertaining to outdoor lighting and the protection of beneficial uses. Design and install lighting to minimise light spill and disturbance to significant fauna sites including the Grey-headed Flying-fox colony at Yarra Bend, wetlands and waterways immediately adjacent to roadways. Subject to consultation with and the views of future asset owners, provide sensitively designed lighting to Shared use paths and open spaces to provide improved safety for users without causing unreasonable effects on residential amenity or environmental and landscape values.	Lighting to the rooftop open space will be designed to limit light spill of site whilst providing safety for users. The current lighting to the reserve is concentrated to the surrounding local road network. The lighting plan will provide lighting to enable the facility to be safe and satisfy environmental requirements and lighting standards. Light spill will be minimised to protect the local fauna habitats and disruption to off-site amenity. The proposed landscape design will consist of small native canopy tree planting to the roof with an understorey of low groundcover planting. This will provide views through and under the canopy considering the principles of Crime Prevention Through Environmental Design.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		Designs must consider Crime Prevention Through Environmental Design, including effects on safe movements of pedestrians and cyclists; including within under crofts, bicycle and pedestrian tunnels and open spaces areas.	
Noise	NV 1	**Achieve traffic noise objectives** Design, construct and maintain the works to meet the following traffic noise objectives. (a) Traffic noise from North East Link Project Roads* must be no greater than: 63 dBA (L10,18hr) measured between 6 am and midnight at Category A buildings** 63 dBA (L10, 12hr) measured between 6 am and 6 pm at Category B buildings**. (b) For Category A and Category B buildings on non-Project Roads which: - Abut the North East link Project roads, or directly intersect with North East Link Project roads, and - where total traffic noise for the design year and with Project exceeds the thresholds listed in paragraph (a). The combined noise from North East Link Project Roads and non-Project Roads must not be more than 2 dBA higher than the predicted traffic noise level under the design year 'do nothing' scenario. Intersecting non-Project Roads must be modelled for a distance of 100 m from the intersection with North East Link Project Roads or to the first traffic intersection (whichever is the lesser). (c) Night-time traffic noise for category A buildings must meet the WHO 2009 interim target of LAeq night 55dB when adjusted to Australian	The responsibility for compliance with NV1 lies with the Contractor designing and constructing the North East Link Project. This EPR applies at the Project's year of opening and for 20 years thereafter. The proposed Bulleen Park and Ride would be located closer to sensitive receptors (residences) compared to the location proposed in the EES Reference Project (approximately 40 metres from the site boundary to the closest house, compared to around 150 metres for the Reference Project); hence the potential for noise impacts would be increased. Noise mitigation, primarily in the form of noise walls and low nose asphalt on the Eastern Freeway will be required to achieve compliance with EPR NV1. At-property treatments may be required where there are residual impacts. Though not required as part of the interim use and operation of the park and ride facility, high-level noise modelling of the final design was undertaken to check compliance with EPR NV1 on the basis of: • A four-metre wall on the eastern side of the bus ramp from Thompson Road to the bus drop off points. The wall is on the higher of the ramp or adjoining retaining wall (if the ramp is in a section of cutting). • The wall to the north of the Eastern Freeway's eastbound on-ramp from Thompson Road is assumed to be the same top of the existing barrier/mound height. This wall is nominally six metres compared to

Discipline	EPR Ref	Environmental Performance Requirement	Response
		conditions as per the EES Technical Appendix C i.e. be no greater than 58dB LAeq 8hr (including façade correction). The 8-hour time period is to be between 2200-0600hrs as consistent with the Better Apartment Design Standards. (d) The noise criteria in paragraphs (a), (b), and (c) above and (e) are to apply to the lowest habitable level of Category A buildings and Category B buildings at both the year of opening and 20 years thereafter. Traffic noise mitigation measures must be maintained throughout this period. For the purposes of this EPR, Category A buildings and Category B buildings to be considered are those that are either existing or known to have planning approval prior to exhibition of the North East Link Environment Effects Statement. (e) Where external traffic noise cannot be mitigated through project design solutions to meet the criteria outlined in paragraphs (a), (b) and (c), at-property treatments will be required to be designed and constructed so that internal noise levels achieve the following: – 35dBA for bedrooms assessed as an LAeq, 8 h from 10pm -6am – 40dBA for living areas assessed as LAeq, 16h from 6am-10pm At-property treatments would be undertaken in accordance with section 7.3 of the NSW Road and Maritime Services document 'Noise Mitigation Guidelines 2015 – Roads and Maritime Services', and in consultation with the owner of the relevant building. In circumstances where at-property treatments are proposed, the Independent Environmental Auditor must review the project design solutions to confirm that the criteria outlined in paragraphs (a), (b) and (c), could not be achieved by the adoption of reasonable and feasible detailed design measures.	the level of the off-ramp, but its height and length will ultimately be optimised and determined by the Contractor as part of their detailed design. • All NEL traffic volumes and alignments used in the EES for 2036 for the 'with project' scenario and additionally includes all buses within the proposed Bulleen Park and Ride facility. • The Park and Ride building structure. The height of the final permanent noise wall (along the east bound on ramp) would be determined during detailed design of the Bulleen Park and Ride but is expected to be in the order of four metres high. The noise wall (and other mitigation, as deemed necessary) will need to comply with NV1 and all relevant EPRs.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		Project Roads are defined to be the M80 Ring Road (east of Plenty Road), the Greensborough Bypass (west of the Plenty River bridge and up to the M80 interchange with North East Link), the upgrade of the Eastern Freeway (between Hoddle Street and Springvale Road) and the new North East Link freeway (connecting the M80 Ring Road to the Eastern Freeway), including all access ramps. ** Category A Buildings and Category B Buildings means: – Category A Buildings – Residential dwellings, aged persons homes, hospitals, motels, caravan parks and other buildings of a residential nature – Category B Buildings – Schools (including buildings within the Carey Sports Complex), kindergartens, libraries and other noise-sensitive community buildings. Note: If a resident of a dwelling advises the NEL Project that they consider their residence to be noise affected, external noise levels must be investigated against the above criteria. If the external noise levels do not comply and mitigation is not feasible (as confirmed by the IEA) then at property treatment to achieve the required internal noise levels must be undertaken in accordance with (e) above.	
	NV 2	**Monitor traffic noise** Traffic noise monitoring must be carried out for at least the following time periods: • Baseline traffic noise must be re-measured after project award and prior to construction works	The relevant project contractor will be responsible for the traffic noise monitoring, as a contractual condition to satisfy the statutory requirement under the Incorporated Document. Locations in the vicinity of Bulleen Park and Ride would be considered as part of the overall traffic noise monitoring strategy including baseline monitoring prior to construction.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Traffic noise must be re-measured within six months of project opening during normal traffic flows (outside school or public holidays). For the purpose of determining compliance, the measurements conducted after project opening must be adjusted to the 10-year traffic flows. • Traffic noise must be re-measured 10 years and 20 years after project opening. All traffic noise monitoring must be undertaken in accordance with the VicRoads Traffic Noise Measurement Requirements for Acoustic Consultants – September 2011, to verify conformance with the external traffic noise objectives set out in EPR NV1. The adequacy of the monitoring program is to be verified by the Independent Environmental Auditor. Remedial action must be taken in the event that the measured traffic noise levels demonstrate that the external traffic noise objectives set out in EPR NV1 are not met. The timeframe and the criterion for remedial action must be determined by the IEA and reporting of compliance must be provided to the Minister for Roads or his/her successor.	
	NV 3	**Minimise construction noise impacts to sensitive receptors** Construction noise and vibration must be managed in accordance with the Construction Noise and Vibration Management Plan (CNVMP) required by EPR NV4.	A CNVMP will be prepared by the relevant project construction contractor. Implementing the approved CNVMP will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.
		<u>Non-residential sensitive receptors</u> For sensitive land uses (based on AS/NZS 2107:2016) implement management actions as per EPR NV4 if construction noise is predicted to or does exceed the internal or external noise management levels set out in	

<table>
<tr><th>Discipline</th><th>EPR Ref</th><th>Environmental Performance Requirement</th><th>Response</th></tr>
<tr><td></td><td></td><td>
the table below, and a noise sensitive receptor is, or is predicted to be, adversely impacted. If construction exceeds the noise management levels below, in determining whether a noise sensitive receptor is, or is predicted to be, adversely impacted:

Consider the duration of construction noise
Consider the existing ambient noise levels
Consult with the owner or operator of the noise sensitive receptor

Consider any specific acoustic requirements of land uses listed below to determine whether a noise sensitive receptor is adversely impacted.
<table>
<tr><th>Land Use</th><th>Construction Noise management level LAeq(15 min) applies when properties are in use</th></tr>
<tr><td>Classrooms in schools and other educational institutions</td><td>Internal noise level 45 dB(A)</td></tr>
<tr><td>Healthcare facilities with inpatient care including hospital wards and operating theatres, and rehabilitation centres</td><td>Internal noise level 45 dB(A)</td></tr>
<tr><td>Places of worship</td><td>Internal noise level 45 dB(A)</td></tr>
<tr><td>Active recreation areas characterised by sporting activities and activities which generate their own noise, making</td><td>External noise level 65 dB(A)</td></tr>
</table>
</td><td></td></tr>
</table>

Discipline	EPR Ref	Environmental Performance Requirement		Response
		them less sensitive to external noise intrusion		
		Passive recreation areas characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example reading, meditation **School grounds used for teaching purposes are to be considered as passive recreation areas, where feasible and reasonable *****	External noise level 65 dB(A)	
		Community centres	Depends on the intended use of the centre. Refer to the recommended upper internal levels in AS/NZS 2107:2016 for specific uses	
		Industrial premises	External noise level 75 dB(A	
		Offices, retail outlets	External noise level 70 dB(A)	
		Other noise sensitive land uses as identified in AS/NZS 2107:2016	Refer to the noise levels in AS/NZS 2107:2016	

<table>
<tr><th>Discipline</th><th>EPR Ref</th><th>Environmental Performance Requirement</th><th>Response</th></tr>
<tr><td></td><td></td><td>
<u>Residential receptors</u>
For residential dwellings, management actions must be implemented as per EPR NV4 if noise from construction works during normal working hours is predicted to or does exceed the noise management levels for normal working hours below.
Noise from construction works during weekend/evening work hours and the night period must meet the weekend/evening and night period noise guideline targets in the table below unless they are Unavoidable Works verified by the Independent Environmental Auditor as per EPR NV4. All reasonable strategies to mitigate the impacts of such Unavoidable Works must be applied.

<table>
<tr><th>Time of day</th><th>Construction Noise guideline targets</th></tr>
<tr><td>Normal working hours:
7am – 6pm Monday to Friday
7am – 1pm Saturday</td><td>Noise affected: Background LA90+10 dB
Highly noise affected: 75 dB(A)
Source: NSW Interim Construction Noise Guideline (ICNG) Chapter 4.1.1 Table 2
The noise affected level represents the point above which</td></tr>
</table>
</td><td></td></tr>
</table>

Discipline	EPR Ref	Environmental Performance Requirement		Response
			there may be some community reaction to noise The highly noise affected level represents the point above which there may be strong community reaction to noise.	
		Weekend/evening work hours: **6 pm – 10 pm Monday to Friday** **1 pm – 10 pm Saturday** **7 am – 10 pm Sunday and public holidays**	Noise level at any residential premises not to exceed background noise (LA90) by: • 10 dB(A) or more for up to 18 months • 5 dB(A) or more after 18 months Source: EPA Publication 1254 Section 2	
		Night period: **10 pm – 7 am Monday to Sunday**	Noise inaudible within a habitable room of any residential premises Source: EPA Publication 1254 Section 2 and EPA Publication 480 Section 5	
		Note:* Where any reference is made to the rating background level (RBL) or background LA90; the 'average background': – it applies to each discrete time period to ensure that averaging does not necessarily occur over day, evening or night-time hours.		

Discipline	EPR Ref	Environmental Performance Requirement	Response
		For example, background noise between 0100 and 0400 may be substantially different to that between 2200 and 0100 and hence should not be averaged over the entire night time period; and – over the assessment period as per Victorian noise policy practices is to be used. This applies to all receptors and all time periods. ** In relation to sensitive receptors, the construction noise guideline targets apply to construction works and construction compounds. *** Consultation with affected schools should be undertaken to designate the most sensitive areas where teaching occurs within school grounds. <u>Unavoidable Works</u> Unavoidable Works must be verified by the Independent Environmental Auditor for each instance they are undertaken, as per EPR NV4 and include the following: • The delivery of oversized plant or structures that police or other authorities determine require special arrangements to transport along public roads • Emergency work to avoid the loss of life or damage to property, or to prevent environmental harm • Maintenance and repair of public infrastructure where disruption to essential services and/or considerations of worker safety do not allow work within standard hours • Tunnelling works including mined excavation elements and the activities that are required to support tunnelling works (i.e. spoil treatment facilities)	

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Road and rail occupations or works that would cause a major traffic hazard Other works where a contractor demonstrates and justifies a need to operate outside normal working hours and exceed the noise guideline targets such as work that once started cannot practically be stopped.	
	NV 4	**Implement a Construction Noise and Vibration Management Plan (CNVMP) to manage noise and vibration impacts** Prepare, implement and maintain a Construction Noise and Vibration Management Plan (CNVMP) in consultation with EPA Victoria, relevant councils and relevant stakeholders. The CNVMP must comply with and address the Noise and Vibration EPRs, be informed by the noise modelling and monitoring results and must include (but not be limited to): • Identification and assessment of noise and vibration sensitive receptors along the project alignment, including but not limited to: – habitat for listed threatened fauna likely to be impacted by the project (refer to EPR FF8) – buildings used for shop, gallery, commercial, office or industrial purposes including Bulleen Art and Garden and the Heide Museum of Modern Art – school buildings and school grounds – Residential buildings • Construction noise and vibration targets as per EPRs NV3, NV5, NV8, NV9, NV10, NV11 and NV12, including any details of conversions between alternative metrics	A CNVMP will be prepared by the relevant project construction contractor. Implementing the approved CNVMP will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document. This EPR is expected to address the requirements for ecological impacts at this site. No habitat for listed threatened fauna is located at or in the vicinity of this site.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Details of construction activities and an indicative schedule for construction works, including the identification of key noise and/or vibration generating construction activities that have the potential to generate airborne noise and/or surface vibration impacts on surrounding sensitive receivers • How construction noise (including truck haulage) and vibration would be minimised (see EPR T2) • A requirement for preliminary tests using the actual equipment to validate modelling for vibration and regenerated noise and review, with predictions to be remodelled as necessary and confirm prevention/mitigation/remediation measures confirmed • Management actions and notification and mitigation measures to be implemented with reference to the Appendix B and Appendix C of the New South Wales Roads and Maritime Services Construction Noise and Vibration Guideline 2016 (CNVG) • Any processes and measures to be implemented as part of the Communications and Community Engagement Plan including managing matters of interest raised by key stakeholders through CCEP processes, and measures concerning complaints management (see EPR SC2) • Requirements to assess and manage vibration impacts to scientific or medical establishments to the higher of ambient levels or ASHRAE VC Standards (as defined in the 2015 handbook), or manufacturers equipment levels (unless by agreement with occupant)	

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Measures to ensure effective monitoring of noise and vibration associated with construction with consideration to the construction noise and vibration targets • Measures to minimise noise and vibration impacts from temporary traffic diversions and altered access to parking facilities • The Unavoidable Works (refer to EPR NV3) that would be undertaken, including their location, timing and duration. The CNVMP must either include a clear rationale for defining works or a list of the type of planned works that constitute Unavoidable Works and response strategies to mitigate the impacts of these Unavoidable Works, consistent with EPA Victoria Publication 1254 Noise Control Guidelines and with reference to Appendix B and Appendix C of the CNVG. The Independent Environmental Auditor must verify that the proposed Unavoidable Works meet the definition of Unavoidable Works (refer to EPR NV3) for each instance they are undertaken. • Details of Unavoidable Works must be made publicly available. For emergency Unavoidable Work, a rationale must be provided to the satisfaction of the Independent Environmental Auditor as soon as practicable. • Noise from construction works during weekend/evening work hours and the night period must meet the weekend/evening work hours and night period noise guideline targets unless they are unavoidable works verified by the Independent Environmental Auditor. All reasonable measures must be implemented to mitigate the impacts of such unavoidable works. A clear framework for managing Unavoidable Work must be developed and include noise level	

Discipline	EPR Ref	Environmental Performance Requirement	Response
		thresholds and details of mitigation measures. The framework must be approved by the Independent Environmental Auditor. The CNVMP must be reviewed (including consultation with external stakeholder as required) and updated as appropriate on a six monthly basis and verified by the Independent Environmental Auditor. Note: * The CNVMP applies to construction works and construction compounds.	
	NV 5	**Establish vibration guidelines to protect utility assets** Prior to commencement of relevant works, undertake condition assessments of above and below ground utility assets (EPR GM3) and consult with asset owners to establish and agree construction vibration guidelines to maintain asset integrity. In all cases the asset owner's criteria takes precedence. Where construction vibration guidelines are not proposed by the asset owner, reference should be made to the relevant sections of German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) for guideline assessment procedures for buried pipework or underground infrastructure. The integrity of the asset should be reviewed and assessed (by the contractor, in conjunction with the asset owner) to confirm these values are appropriate. If necessary, based on this assessment, limits must be reduced to the level necessary to maintain asset integrity. Monitor vibration levels during construction to demonstrate compliance with agreed vibration guidelines. Identify contingency measures to be implemented if guidelines are not met. Where necessary rectify any defects that are attributable to the project.	The relevant project construction contractor will undertake any required condition assessments prior to construction as a contractual condition to satisfy the statutory requirement under the Incorporated Document. The contractor's CNVMP will need to detail the procedure for assessment, mitigation and monitoring of vibration sensitive assets. As noted above for EPR GM1, 2 and 3, the existing sewer that runs near the southern edge of the site is not expected to be impacted by the development including the excavations, foundations or related impacts.

<table>
<tr><th>Discipline</th><th>EPR Ref</th><th>Environmental Performance Requirement</th><th>Response</th></tr>
<tr><td></td><td></td><td>An overview of the key vibration guidelines values is presented below. In all cases, the supporting documentation within the Standard which describes, clarifies and sometimes modifies the tables below must be considered. Table 2 Guideline values for vi, max, for evaluating the effects of short-term vibration on the lining of underground cavities.</td><td></td></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Line</th><th>Lining material</th><th>Guideline values for vi, max in mm/s perpendicular to lining surface</th></tr>
<tr><td>1</td><td>Reinforced or sprayed concrete, tubbing segments</td><td>80</td></tr>
<tr><td>2</td><td>Concrete, stone</td><td>60</td></tr>
<tr><td>3</td><td>Masonry</td><td>40</td></tr>
</table>
Note: The guideline values were measured during nearby mine blasting operations and apply only to the lining of underground structures, but not to any associated installations.
<table>
<tr><th>Line</th><th>Lining material</th><th>Guideline values for vi, max in mm/s perpendicular to lining surface</th></tr>
<tr><td>1</td><td>Steel, welded</td><td>100</td></tr>
<tr><td>2</td><td>Vitrified clay, concrete, reinforced concrete, prestressed concrete, metal (with or without flange)</td><td>60</td></tr>
</table>
</td><td></td></tr>
</table>

Discipline	EPR Ref	Environmental Performance Requirement	Response
		3 Masonry, plastics 40	
	NV 6	**Design a permanent tunnel ventilation system and relevant fixed infrastructure to meet EPA requirements for noise** Design and construct the permanent tunnel ventilation system and relevant fixed infrastructure that is subject to State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N-1) to achieve compliance with SEPP N-1 and in accordance with the Works Approval. Where SEPP N-1 does not apply, design and implement the permanent tunnel ventilation system to comply with the internal lower Recommended Design Sound Levels as defined in AS/NZS 2107 for the types of occupancies, relevant to spaces within the affected Category A and Category B buildings, as defined in EPR NV1. If the existing internal background noise level within any identified relevant Category A or Category B buildings already exceeds the upper Recommended Design Sound Level in AS/NZS 2107 for the types of occupancies relevant to spaces within these buildings, then noise from the fixed plant associated with the Project must not exceed the existing background levels within these buildings.	Not applicable to the Park and Ride facility as the EPR relates to the tunnel ventilation system. It is noted however that the design of the mechanical ventilation system for the Park and Ride facility will meet the requirements of SEPP N1 and silencers will be provided on air intake and discharge fans to achieve compliance. These details will be determined during detailed design.
	NV 7	**Monitor noise from tunnel ventilation system and relevant fixed infrastructure** Measure noise from the permanent tunnel ventilation system and relevant fixed infrastructure that is subject to State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 (SEPP N-	Not applicable to the Park and Ride facility as the EPR relates to the tunnel ventilation system.

<table>
<tr><th>Discipline</th><th>EPR Ref</th><th>Environmental Performance Requirement</th><th>Response</th></tr>
<tr><td rowspan="2"></td><td></td><td>1) on commencing road operation and monitor noise from the tunnel ventilation system post opening of the North East Link, as agreed with EPA Victoria, to verify compliance with SEPP N-1 and the EPA Victoria Licence. Identify and implement contingency measures to be implemented if noise level limits are not met.</td><td></td></tr>
<tr><td>NV 8</td><td>Minimise construction vibration impacts on amenity
Implement management actions if the following guideline target levels for vibration from construction activity to protect human comfort of occupied buildings (including heritage buildings) are not achieved (levels are calculated from the British Standard BS6472-1:2008 Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting).

<table>
<tr><th></th><th colspan="4">Vibration Dose Values (m/s 1.75)</th></tr>
<tr><th></th><th colspan="2">Day (7am to 10 pm)</th><th colspan="2">Night (10pm to 7am)</th></tr>
<tr><th>Type of space occupancy</th><th>Preferred Value</th><th>Maximum Value</th><th>Preferred Value</th><th>Maximum Value</th></tr>
<tr><td>Residential</td><td>0.2</td><td>0.4</td><td>0.1</td><td>0.2</td></tr>
<tr><td>Offices, school, educational institutions, places of worship</td><td>0.4</td><td>0.8</td><td>0.4</td><td>0.8</td></tr>
</table>
</td><td>Construction vibration management to meet this requirement will be the responsibility of the relevant project construction contractor, as a contractual condition to satisfy the statutory requirement under the Incorporated Document.</td></tr>
</table>

Discipline	EPR Ref	Environmental Performance Requirement	Response
		Workshops | 0.8 | 1.6 | 0.8 | 1.6 Note: The Guideline Targets are non-mandatory; they are goals that should be sought to be achieved through the application of practicable mitigation measures. If exceeded, then management actions would be required. The Vibration Dose Values may be converted to Peak Particle Velocities within a noise and vibration construction management plan. For the purpose of this EPR, the guideline target levels for 'offices, schools, educational institutions, places of worship' also apply to the Heide Museum of Modern Art and the outdoor sculpture exhibition area at Heide Museum of Modern Art.	
	NV 9	**Minimise construction vibration impacts on structures** Construction vibration targets for structures based on German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) must be adopted. All sections of the German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) standard apply, noting the guideline levels detailed in Section 5 and Section 6 (and any references sections). An overview of the key vibration guidelines values is presented below. In all cases, the supporting documentation within the Standard which describes, clarifies and sometimes modifies the tables below must be considered.	Construction vibration management to meet this requirement will be the responsibility of the relevant project construction contractor, as a contractual condition to satisfy the statutory requirement under the Incorporated Document.

<table>
<tr><th>Discipline</th><th>EPR Ref</th><th>Environmental Performance Requirement</th><th>Response</th></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>Table 1 — Guideline values for vibration velocity, vi, max, for evaluating the effects of short-term vibration on structures
<table>
<tr><th></th><th>Type of structure</th><th colspan="4">Guideline values for vi, max in mm/s</th></tr>
<tr><th></th><th></th><th colspan="3">Foundation, all directions, i = x, y, z, at a frequency of</th><th>Topmost floor, horizontal direction, i = x, y</th><th>Floor slabs, vertical direction, i = z</th></tr>
<tr><th></th><th></th><th>1 Hz to 10 Hz</th><th>10 Hz to 50 Hz</th><th>50 Hz to 100 Hz (a)</th><th>All frequencies</th><th>All frequencies</th></tr>
<tr><td>Column Line</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr>
<tr><td>1</td><td>Buildings used for commercial purposes, industrial buildings, and buildings of similar design</td><td>20</td><td>20 to 40</td><td>40 to 50</td><td>40</td><td>20</td></tr>
<tr><td>2</td><td>Residential buildings and buildings of similar design and/or occupancy</td><td>5</td><td>5 to 15</td><td>15 to 20</td><td>15</td><td>20</td></tr>
<tr><td>3</td><td>Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (e.g. listed buildings)</td><td>3</td><td>3 to 8</td><td>8 to 10</td><td>8</td><td>20 (b)</td></tr>
</table></td><td></td></tr>
</table>

Discipline	EPR Ref	Environmental Performance Requirement	Response

Note: Even if guideline values as in line 1, columns 2 to 5, are complied with, minor damage cannot be excluded.

(a) At frequencies above 100 Hz, the guideline values for 100 Hz can be applied as minimum values.

(b) Paragraph 2 of 5.1.2 must be observed.

Table 4 — Guideline values for vi, max, for evaluating the effects of long-term vibration on buildings

	Type of building	**Guideline values for vi, max, in mm/s**	
		Topmost floor, horizontal direction, all frequencies	**Floor slab, vertical direction, all frequencies**
Column Line	1	2	3
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	10	10
2	Residential buildings and buildings of similar design and/or occupancy	5	10
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (e.g. listed buildings)	2.5	10 (a)

Note: Even if guideline values as in line 1, column 2, are complied with, minor damage cannot be ruled out.

Section 6.1.2 must be observed.

Vibration levels above apply to all works, including unavoidable works as defined in NV3.

<table>
<tr><th>Discipline</th><th>EPR Ref</th><th>Environmental Performance Requirement</th><th>Response</th></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>NV 10</td><td>Minimise impacts from ground-borne (internal) noise
Implement management actions in consultation with potentially affected land owners to protect amenity at residences where the following ground borne noise guideline targets based on Section 4.2 of the New South Wales Interim Construction Noise Guidelines are exceeded during construction.

<table><tr><th>Time of Day</th><th>Internal noise level measured at the centre of the most affected habitable room</th></tr><tr><td>Evening (6 pm to 10 pm)</td><td>LAeq(15 minute) = 40 dBA</td></tr><tr><td>Night (10 pm to 6 am)</td><td>LAeq(15 minute) = 35 dBA</td></tr></table>Note:
1 Levels are only applicable when ground borne noise levels are higher than airborne noise levels.
2 Management actions include community consultation to determine acceptable level of disruption and provision of respite accommodation in some circumstances.
3 Noise levels above apply to all works, including unavoidable works as defined in NV3</td><td>Construction ground borne noise management to meet this requirement will be the responsibility of the relevant project construction contractor as a contractual condition to satisfy the statutory requirement under the Incorporated Document.</td></tr>
</table>

<table>
<tr><th>Discipline</th><th>EPR Ref</th><th>Environmental Performance Requirement</th><th>Response</th></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>NV 11</td><td>Minimise amenity impacts from blast vibration
Implement management actions if the following vibration values are not achieved. Blasting activities must comply with Australian Standard AS2187.2-2006, Explosives – Storage and use Part 2 – Use of explosives for all blasting.</td><td>Not applicable to the park and ride facility as there will not be any blasting required for construction of the project.</td></tr>
<tr><td></td><td></td><td colspan="2">
<table>
<tr><th>Category
(as defined in AS 2187.2-2006)</th><th>Type of blasting operations</th><th>Peak component particle velocity
(mm/s)</th></tr>
<tr><td>Sensitive site</td><td>More than 20 blasts</td><td>5 mm/s for 95% blasts per year
10 mm/s maximum (unless by agreement with occupier)</td></tr>
<tr><td>Sensitive site</td><td>Less than 20 blasts</td><td>10 mm/s maximum (unless by agreement with occupier)</td></tr>
<tr><td>Non-sensitive site (with occupants)</td><td>All blasting</td><td>25 mm/s maximum value (unless by agreement with occupier).</td></tr>
<tr><td>Scientific equipment</td><td>All blasting</td><td>Existing ambient levels or ASHRAE VC Standards (as defined in the 2015 handbook) (whichever is the higher) or manufacturers equipment levels (unless by agreement with occupier)</td></tr>
</table>
</td></tr>
<tr><td></td><td>NV 12</td><td>Minimise amenity impacts from blast overpressure
Implement management actions if the following overpressure values are not achieved. Blasting activities must comply with Australian Standard AS2187.2-2006, Explosives – Storage and use Part 2 – Use of explosives for all blasting.</td><td>Not applicable to the park and ride facility as no blasting would be involved in the proposed development.</td></tr>
</table>

<table>
<tr><th>Discipline</th><th>EPR Ref</th><th>Environmental Performance Requirement</th><th>Response</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Category (as defined in AS 2187.2-2006)</th><th>Type of blasting operations</th><th>Peak Overpressure Value (dBL)</th></tr>
<tr><td rowspan="2">Sensitive Site</td><td>More than 20 blasts</td><td>115 dBL for 95% blasts
120 dBL maximum (unless by agreement with occupier)</td></tr>
<tr><td>Less than 20 blasts</td><td>120 dBL for 95% blasts
125 dBL maximum (unless by agreement with occupier)</td></tr>
<tr><td>Occupied non-sensitive sites such as factories and commercial premises</td><td>All blasting</td><td>125 dBL maximum (unless by agreement with occupier)
For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturers specification or levels that can be shown to adversely affect the equipment operation</td></tr>
</table>
</td><td></td></tr>
<tr><td></td><td>NV 13</td><td>Noise mitigation – noise walls
Construction of permanent noise attenuation must, where feasible, be installed in advance of adjacent works.
Where the ultimate wall cannot be constructed prior to demolition of the existing wall and noise sensitive premises will be exposed to significantly increased traffic noise for an extended period, install temporary noise walls where practicable.</td><td>The contractor will be responsible for addressing NV13 to meet the requirements of the Incorporated Document. This may require consideration of a new temporary noise wall in Kampman Street (approximately four metres in height) to reduce noise from the Eastern Freeway and the Park and Ride facility to adjacent residents during construction. The relevant construction contractor will consider the sequencing of construction including timing for installing the temporary and/or permanent noise walls.</td></tr>
</table>

Discipline	EPR Ref	Environmental Performance Requirement	Response
	NV 14	**Reduce impacts from engine brake noise** Measures to encourage heavy vehicle drivers to reduce use of engine brakes must be considered and implemented, where practicable.	The contractor will be responsible for encouraging heavy haulage associated with construction to reduce use of engine brakes to meet the requirements of the Incorporated Document. Not applicable to the operations of the Bulleen Park and Ride Facility, as buses are not normally fitted with engine brakes.
	NV 15	**Noise at public open space and school recreation grounds** Predicted noise levels at existing public open space and school grounds detailed in updated noise modelling for the final design and as-built construction of the Project must not exceed the predicted design year noise levels detailed in the EES -Technical Appendix C. Noise monitoring at appropriate locations must be performed post construction to verify that predicted levels have been achieved. Monitoring must be performed 10 years and 20 years after Project opening.	Not applicable to the Park and Ride facility as the site is removed from existing public open space and school grounds.
	NV 16	**Monitoring of Ongoing performance of operational traffic noise mitigation measures** Permanent noise monitoring stations must be established in representative locations based on a programme developed in consultation with the IEA and the EPA, to enable the ongoing real time monitoring of operational traffic noise. Where open graded asphalt is used and is relied on to achieve compliance with noise limits the acoustic performance of the OGA must be assessed at least once in each 12 months to ensure that it continues to reduce operational traffic noise to the project traffic noise objectives in EPR NV1. NEL Project interactive noise tool	The Contractor/State will be responsible for addressing NV13 to satisfy the statutory requirement under the Incorporated Document This may for example, require consideration of a new temporary noise wall in Kampman Street (approximately four metres in height) to reduce noise from the Eastern Freeway to nearby residents during construction. The relevant construction contractor will consider the sequencing of construction including timing for installing the temporary and/or permanent noise walls.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		The following information is to be made freely available on a publicly accessible website as interactive layers: • Existing (pre-Project) noise levels • Final operational road traffic noise contours for the Project • Operational noise criteria for the Project • Operational noise monitoring data for the Project. The maps are to be interactive so as to enable the public to locate their position on a map, identify the operational noise criteria and data relevant to their location and submit a query or complaint to the NEL Project online.	
Social and Community	**SC 1**	**Reduce community disruption and adverse amenity impacts** Design and construct the project to reduce disruption to residences, community infrastructure facilities and open spaces from direct acquisition or temporary occupation, to the maximum extent reasonably possible to preservice acceptable levels of amenity.	The design has minimised the building footprint by adopting an efficient car parking layout and a multi-level structure. The bus access and car park will be cut into the site and take advantage of the existing topography of site which falls away to the south. This will allow a landscaped informal (passive) open space to be constructed above level with Kampman Street. The disruption to the community would be reduced due to the shorter duration of construction of the park and ride facility as compared to the previous proposed use of the site as a construction compound. The design retains access to a reinstated passive open space and the reinstated Koonung Creek Trail located on the reserve. In order to address the EPR the use of, and access to, the portion of the Koonung Creek Trail located on the reserve is to be retained for as long as possible during the initial construction stages. When access is no longer possible, the Traffic Management Plan for the Bulleen Park and Ride will divert pedestrian access to the footpath of Kampman Street

Discipline	EPR Ref	Environmental Performance Requirement	Response
			and cyclists to Kampman Street to connect to Thompsons Road to the west and the Koonung Creek Trail to the east.
	SC 2	**Minimise and manage impacts of land acquisition and occupation** Where private land is to be permanently acquired or temporarily occupied, the project must: • Minimise the extent of the acquisition or the extent or duration of the occupation • Use a case-management approach for project interactions with affected land owners and occupants including appointing a social worker, buyers' advocate or equivalent to assist households with special needs to manage the transition, except where a land owner or occupier has requested not to be part of such assistance • Endeavour to reach agreement on the terms for possession of the land including purchasing properties early when identified for permanent acquisition and agreed by the landowner • Consider the relative vulnerability and special needs of land owners and occupants • Communicate likely timing and steps to be taken including updates as relevant • Return private land not required for permanent project infrastructure to its pre-existing use post-construction as soon as practicable, unless otherwise agreed with the land owner. Where public land is to be permanently acquired or temporarily occupied, the project will:	The design has minimised the footprint by adopting an efficient car parking layout, and a multi-level structure to maximise the amount of natural space to allow of green cover with trees able to utilise natural conditions and soil depth. The design provides for replacement passive open space at the site to be enhanced with landscaping and upgraded Shared use paths (also refer to EPR LP5). Acquisition of the land will take place in accordance with divestment processes available under the *Major Transport Projects Facilitation Act 2009*, and the State is working with Manningham Council as the land manager to agree on the terms of possession.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Minimise the extent of the acquisition or the extent or duration of the occupation • Stage works to the greatest extent reasonably possible to maintain functionality of the land for all users either within the site or on proximate land, subject to the Public Open Space Relocation and Replacement Plan required by EPR LP5 • Endeavour to reach agreement with the land manager on the terms for possession of the land • Return public land not required for permanent project infrastructure to its pre-existing use post-construction as soon as practicable, including with all relevant reinstatement works, unless otherwise agreed with the land manager • In the case of public land used for formal active recreate on, ensure that impacts are minimised in accordance with SC5.	
	SC 3	**Implement a Communications and Community Engagement Plan** Prior to construction, prepare and implement a Communications and Community Engagement Plan to engage the community and potentially affected stakeholders and communicate progress of construction activities and operation. The plan must include: • A process for identifying community issues and the recording, management and resolution of complaints from affected stakeholders including business owners, community service providers, education providers, public and active transport key user groups and residents,	A Communications and Engagement Plan will be implemented with the local community in accordance with the overarching plan for the North East Link Project and to meet the requirement of the Incorporated Document. The community will have the opportunity to comment on the project during the exhibition period. Similarly, the plan will inform decision makers of local issues of interest for consideration in design refinement and conditions for construction activities on site.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		consistent with Australian Standard AS/NZS 10002:2014 Guidelines for Complaint Management in Organisations • Approach to stakeholder identification • Enquiry management and record keeping approach and procedures including making available an attended 24-hour telephone number, postal address, and an email address and publishing these on the project website • Approach to communicating and engaging with the community and potentially affected stakeholders in relation to: – Construction activities including temporary facilities and impacts that may affect the community, businesses or individual stakeholders (e.g. dust, noise, vibration and light) and relevant mitigation (e.g. relocations policy) – Changes to transport conditions and relevant mitigation (e.g. road closures, detours) • Timelines and an outline of works that will affect particular local areas, to be updated to reflect current and anticipated conditions • Identifying how stakeholders can access information on environmental performance that is to be made publicly available • Incident and emergency communications, including notification methods and timeframes in the event of a major incident or overrun • Approach and processes to ensure that the workforce has appropriate community awareness and sensitivity including to prevent the workforce from parking in local roads and in public parking in the	The contractor will be contractually obligated to ensure the surrounding community is kept informed of the progress of construction of the project to meet the requirement of the Incorporated Document.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		vicinity of local shopping areas except when frequenting those areas for private purposes. • Innovative communications tools and methods to enhance the project's ability to effectively communicate and engage with the community and stakeholders including best available technology in addition to conventional means • Approach to engaging with local schools to ascertain safety requirements (including evacuation procedures) and to provide education opportunities on project activities. • Approach to making relevant project information available to the community, including updates on project works, with specific consideration to vulnerable groups (including culturally and linguistically diverse groups) and a responsive process for resolving complaints by vulnerable groups or individuals • How it will evaluate the effectiveness of the communication and engagement under the Communications and Community Engagement Plan. The Communications and Community Engagement Plan must consider and where appropriate address matters of interest or concern to the following stakeholders, and provide for the appointment of a dedicated liaison officer (as appropriate): – Municipal councils – Recreation, sporting clubs and community groups – Schools and other educational institutions – Potentially affected residents and property owners – Potentially affected business	

Discipline	EPR Ref	Environmental Performance Requirement	Response
		– Other public facilities in proximity – Religious and worship groups – Vulnerable groups – Traditional owners – Public transport users	
	SC 4	**Participate in the Community Liaison Group** Contractors must participate in the Community Liaison Group (CLG) that has been established and managed by North East Link Project, to facilitate community and stakeholder involvement for the design and construction phases of the project. Participation must include: • Attendance at meetings • Regular reporting of design and construction activities • Timely provision of relevant information, including response to issues raised by the group • Regular reporting and monitoring of community feedback, impacts and discussion of mitigation measures and their effectiveness.	The relevant project contractor will be required to participate in the Community Liaison Groups established by the NEL Project.
	SC 5	**Minimise impacts of displacement of formal active recreation facilities** The project must be designed and delivered to minimise displacement of formal active recreation facilities including facilities on private land such as schools. Where formal active recreation facilities are displaced by the construction or operation of the project, the project must facilitate the reasonable relocation of all such facilities to enable their continued functionality at a reasonable level of service for those activities (except where otherwise	Not applicable as there are no formal active recreational facilities are located at the far western portion of Koonung Reserve.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		agreed with the relevant facility owner or where other compensation is provided by agreement or under relevant legislation). The Proponent must work in collaboration with facility operators, local Councils, public land managers and relevant State authorities, to prepare and implement a Formal Active Recreation Facilities Relocation Plan. The Plan must: • seek to relocate all formal active recreation facilities to reasonable relocation sites to the extent possible before existing facilities are discontinued • document measures to be provided by the Proponent to provide reasonable replacement facilities at all relocation sites • where facilities are not permanently displaced, document measures to be provided by the Proponent to restore facilities that have been vacated to at least the same standard than when the use was discontinued, accounting for identified growth of clubs (where applicable) and for any decline in condition of the facility during the time of disuse • consider and provide a suite of reasonable measures to enable the ongoing viability of relevant sporting and recreation clubs affected by displacement and to reduce material disadvantage.	
	SC 6	**Minimise impacts on formal active recreation and other facilities** Where construction or operation activities directly impact formal active recreation facilities or community infrastructure facilities not on public land such as schools, child care centres, and aged care centres, consultation must occur with facility operators, owners and user groups of the facilities to understand and, implement any practical measures that can be taken to	Not applicable as there are no formal active recreational facilities (or other community infrastructure facilities as listed in the EPR) located at far western end of Koonung Reserve.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		avoid or minimise impacts. Such measures must provide for the continued operation of each facility (except where the facility is permanently displaced), with suitable access, provision of generally proximate parking comparable to pre-development conditions (where possible), reasonable protection of amenity, and maintenance of the current level and nature of activity, except where otherwise agreed with relevant facility owners.	
	SC 7	**Implement a Community Involvement and Participation Plan (CIPP)** Develop and implement a CIPP in consultation with local councils for communities within those council areas affected by the impacts of the Project, in order to improve community connectedness and cohesiveness, enhance the local area and create a positive project legacy. The plan must include: • Identification of affected communities relevant to the CIPP • Approach and processes for funding allocation with funding to be proportionate to the level of impact on each community • Identification of types of initiatives that the CIPP may facilitate including community led, community partnership programs; community support grants; community events; sponsorships of local sporting clubs; small capital works projects targeting community, sporting and recreation facilities.	The State will develop and implement a CIPP. Manningham City Council will be consulted in preparation of the plan.
	SC8	**Implement a voluntary purchase scheme for residential properties** Develop and implement a voluntary purchase scheme for residential properties that satisfy defined criteria relating to significant amenity impacts.	A voluntary purchase scheme for residential properties has been developed by the NEL Project and will be applicable where defined criteria are met.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		The voluntary purchase scheme must include principles and criteria for eligibility of residential properties for inclusion in the voluntary purchase scheme. The principles and criteria must be developed having regard to: • Construction impacts including proximity of the residential property to major works and likely extent and duration of proximate works; and • Built form impacts on the residential property including visual intrusion and overshadowing. In applying the principles and criteria of the voluntary purchase scheme, consideration must also be given to the presence of vulnerable occupants of residential properties.	
Surface Water	SW 1	**Discharges and runoff to meet State Environment Protection Policy (Waters)** Meet the State Environment Protection Policy (Waters) requirements for discharge and run-off from the project, including by complying with the Victorian Stormwater Committee's Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and others).	The current design minimises the increase in impervious area by adopting a green roof for much of the car park area. There is expected to be an increase in impervious area and subsequently runoff volumes from the site. At least some of this increased runoff volume is expected to be stored in rainwater tanks. Further modelling will be undertaken in detailed design to demonstrate suitable performance of the treatment system in terms of volume and quality of discharge from the site. Although compliance with BPEMG is proposed to be assessed at a project level, it is noted that the design for these works aims to treat or potentially even over treat on site so that satisfactory performance is delivered as part of these works and not reliant on the performance of future works.

Discipline	EPR Ref	Environmental Performance Requirement	Response
	SW 2	**Design and implement spill containment** Design and construct the spill containment capacity of the stormwater drainage system for all freeway pavements (including ramps) to manage the risk of hazardous spills from traffic accidents at or prior to every stormwater outlet, to meet AustRoads requirements (Part 5 Drainage – General and Hydrology Considerations). The design and location of spill containment must consider the risk and potential impact of a spill, as well as the effectiveness in reducing the risks associated with a spill on the environment. Develop procedures for freeway roads and ramps to be implemented in response to a hazardous spill. The OEMP must include requirements to maintain spill containment infrastructure and implement associated procedures.	While EPR SW2 does not strictly apply to a car park, the design incorporates stormwater treatment systems as part of this development which will have some capacity to capture litter (from people) and spills from vehicles. Operational requirements of relevant design features will be included in the OEMP to be prepared by the relevant project contractor as a contractual obligation.
	SW 3	**Waste water discharges to be minimised and approved** The Surface Water Management Plan (refer EPR SW5) and OEMP must include requirements and methods for minimising, handling, classifying, treating, disposing and otherwise managing waste water. Any proposed discharge of waste water from the site must be approved by the relevant authority prior to discharges occurring and meet the State Environment Protection Policy (Waters) requirements.	While EPR SW3 is focused more on waste water from construction and operation of tunnels it is a useful guideline for Bulleen Park and Ride in terms of managing water streams appropriately to minimise cross contamination and the need for additional treatment. For instance, runoff from the green roof and the canopy could be expected to be of a higher quality than from the car park itself which may require additional treatment and or spill containment. It is expected that Bulleen Park and Ride will discharge treated stormwater to Koonung Creek. The approval requirement of SW3 for the discharge of waste water are not applicable for Bulleen Park and Ride facility because it will be discharging stormwater not waste water.

Discipline	EPR Ref	Environmental Performance Requirement	Response
	SW 4	**Monitor water quality** Develop and implement a surface water monitoring program prior to commencement of, and during construction, to assess surface water quality in multiple locations at suitable distances upstream and downstream of works to establish baseline conditions and enable assessment of construction impacts on receiving waters. The surface water quality monitoring program must be implemented for a period up to three years after commencement of North East Link operation, or a lesser period agreed with the EPA, to assess the discharges and runoff from the project against SEPP requirements and confirm the effectiveness of environmental controls. The monitoring program must be developed in consultation with EPA Victoria and the asset owner/manager and as appropriate with reference to applicable policies and guidelines, including SEPP (Waters), Victorian Stormwater Committee's Victoria Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and others), EPA Victoria Publication 596 Point source discharges to streams: protocol for in-stream monitoring and assessment and Industrial Waste Resource Guideline 701 Sampling and analysis of waters, wastewaters, soils and wastes. The surface water monitoring program is to be used to inform the development and refinement of the Surface Water Management Plan (EPR SW5).	The relevant construction contractor will develop a surface water monitoring program. The program will be implemented as a contractual condition to satisfy the statutory requirement under the Incorporated Document. It is noted that due to the small upstream catchment and proximity to Koonung Creek there is limited potential for upstream or downstream monitoring at the site. While some monitoring may be useful during the construction period to demonstrate compliance, it seems unlikely that this is an ideal site to be the specific focus of future long-term monitoring.
	SW 5	**Implement a Surface Water Management Plan during construction** Develop and implement a Surface Water Management Plan, in consultation with EPA Victoria, for construction that sets out requirements and methods for:	A Surface Water Management Plan will be prepared by the relevant project construction contractor. Implementing the approved Management Plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Best practice sediment and erosion control and monitoring, in general accordance with EPA Victoria publications 275 Construction techniques for sediment pollution control, 480 Best Practice Environmental Management Environmental Guidelines for Major Construction Sites, 960 Temporary Environmental Protection Measures for Subdivision Construction Sites, and Industrial Waste Resource Guideline 701 Sampling and analysis of waters, wastewaters, soils and wastes • Maintaining the key hydrologic and hydraulic functionality and reliability of existing flow paths, drainage lines and floodplain storage • Retain existing flow characteristics to maintain waterway stability downstream of construction • Location and bunding of any contaminated material (including tunnel spoil and stockpiled soil) to the one percent AEP flood level and to the requirements of EPA Victoria and the relevant drainage authority • Works scheduling to reduce flood related risks • Bunding of significant excavations including tunnel portals and interchanges to an appropriate level during the construction phase • Protecting against the risk of contaminated discharge to waterways when working in close proximity to potential pollutant sources (e.g. landfill or sewer infrastructure) • Documenting the existing condition of all drainage assets potentially affected by the works (including their immediate surrounds) to enable baseline conditions to be established and potential construction impacts on these assets to be assessed and managed.	It should be noted that Koonung Creek lies in modified drainage structures to the south of the subject site and Eastern Freeway. Impacts on that waterway will be a consideration in development of the Surface Water Management Plan.

Discipline	EPR Ref	Environmental Performance Requirement	Response
	SW 6	**Minimise risk from changes to flood levels, flows and velocities** Permanent works and associated temporary construction works must not increase overall flood risk at relevant locations or modify the flow regime of waterways without the acceptance of the relevant flood plain manager, drainage authority or asset owner (typically Melbourne Water) and in consultation with other relevant authorities (e.g. Council, Department of Transport, Parks Victoria, SES, emergency services). Prior to commencement of relevant works, flood risk should be appropriately assessed using modelling of the design of permanent and temporary works to demonstrate the resultant flood levels and risk profile in accordance with Melbourne Water Standards for Infrastructure Projects in Flood-Prone Areas (2019). This modelling analysis is to include sufficient events (at least up to and including the one percent AEP event) and scenarios (e.g. with and without blockage) to support the estimation of tangible (e.g. average annual damages) and intangible flood damages. If significant increases in flood risk are predicted for any events analysed, an assessment of overall flood risk considering tangible and intangible flood damages must be prepared and presented with appropriate mitigation measures for the acceptance of the relevant drainage authority or asset owner prior to commencement of construction for the relevant section of the works. If there are significant design changes during construction, the model must continue to be updated, as appropriate to represent those changes.	The nature of the proposed works limits the potential for the works to result in adverse offsite changes to flood levels, flows and velocities. No significant impacts are anticipated. Modelling will be undertaken to confirm whether there are any adverse offsite impacts which require mitigation. It is intended that this modelling will also support the development of the design to minimise flooding risks to park and ride users and assets. A substantial portion of the site is covered by multiple land subject to inundation overlays (LSIO). These typically indicate that an area is subject to flooding. Of the two overlapping LSIOs on this site the more extensive and older overlay predates the construction of the Eastern Freeway. The smaller and newer extent is a more recent assessment of current conditions; however, was modelled with an uncalibrated rain on grid model with incomplete pipe data and hence the extent defined by the new LSIO is larger than actual flooding of this area. The flooding assessment has responded to the flood related planning overlays; specifically, two overlapping land subject to inundation overlays (LSIO) which in combination cover a significant portion of the site. While these overlays are not considered to be a reliable indication of the nature of flooding on the site, they are expected to trigger a higher level of analysis in accordance with Melbourne Water Standards for Infrastructure Projects in Flood-Prone Areas (2019). Pursuant to Clause 4.9.4 of the Incorporated Document the UDLP will be provided to

Discipline	EPR Ref	Environmental Performance Requirement	Response
			Melbourne Water for consultation in advance of its submission to the Minister for Planning.
	SW 7	**Develop flood emergency management plans** Develop and implement flood emergency management plans for each of construction and operation. Flood emergency management plans are to include but not be limited to measures to manage flood risk to construction sites (including consideration of scheduling works), the tunnels and tunnel portals including interchanges and substations, and operation, maintenance and emergency management procedures for flood protection works.	A Flood Emergency Management Plan will be prepared by the relevant project contractor for each of the construction and operation phases. Implementing the approved Management Plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.
	SW 8	**Minimise impacts from waterway modifications** Where waterway or flow regime modification is necessary, modifications will be designed and undertaken in a way that mitigates to the extent practicable the effects of changes to flow and minimises, to the extent practicable, the potential for erosion, sediment plumes, impacts on bed or bank stability and exposure or mobilisation of contaminated material during construction and operation to the requirements of Melbourne Water or the relevant drainage authority. Waterway modifications are to be designed and undertaken in a way that supports the visual and aesthetic amenity and environmental conditions (including habitat, connectivity, refuge and hydraulic conditions) to support aquatic ecosystems of the waterways having regard to relevant strategies, policies and plans for that waterway and in consultation with Melbourne Water or the relevant drainage authority.	Not applicable as no waterway modifications are required for the development of Bulleen Park and Ride.

Discipline	EPR Ref	Environmental Performance Requirement	Response
	SW 9	**Maintain bank stability** Develop and implement appropriate measures to minimise erosion and protect bank stability of waterways affected by construction or operation activities both directly or indirectly (for example as a result of site access), to the requirements of Melbourne Water or the relevant drainage authority.	Not applicable as no waterway modifications are required for the development of Bulleen Park and Ride.
	SW 10	**Provide for access to Melbourne Water and other drainage assets** Provide adequate clearances and access for ongoing maintenance of Melbourne Water and other drainage authority assets to the requirements of the relevant drainage authority.	There is a Melbourne Water sewer asset at the site whose easement has informed the design with no impact to the clearances and access to that asset. This surface water EPR is specific to Melbourne Water and other drainage authority drainage assets. It does not relate to other Melbourne Water or other authority non drainage assets, including the Melbourne Water sewer, which are the subject of other EPRs such as EPR B7.
	SW 11	**Adopt Water Sensitive Urban and Road Design** Adopt and implement water sensitive urban design (WSUD) and integrated water management principles in the stormwater treatment design in consultation with the relevant flood plain manager, drainage authority, asset owner or land manager and in general accordance with the Urban Design Strategy, the specifications of the relevant local council as applicable, and VicRoads Integrated Water Management Guidelines (June 2013), the Victorian Stormwater Committee's Victoria Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and	The design incorporates installation of three tanks totalling over 30,000 litres capacity on the lower level to capture rainwater from roof areas. The captured water will be reused on site for toilet flushing and irrigation of landscaping. Another tank with 50,000 litres capacity will be installed to capture stormwater from the green roof for use in maintenance of landscaping. The detailed design of the stormwater treatment will also take account of WSUD principles. A rain garden will be established on site to filter stormwater prior to discharge to pit and pipe networks and incorporated into the landscape design across the site.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		others) and the DELWP Integrated Water Management Framework for Victoria (September 2017).	
	SW 12	**Minimise impacts on irrigation of sporting fields** Maintain existing storage and available water supply of a quality that is suitable for the irrigation of sporting fields impacted by the project as necessary in consultation with the impacted stakeholders.	Not applicable as there is no known usage of water from this site for irrigation of sporting fields.
	SW 13	**Consider climate change effects** The flood risk assessment (as required by EPR SW6) must consider current climate conditions as well as the potential effects of climate change on pre and post work scenarios for future climate conditions (i.e. increased rainfall intensity and sea-level rise) as predicted at the end of the asset's design life using RCP8.5 projections from CSIRO to the requirements of Melbourne Water or the relevant drainage authority.	The flood modelling (to inform a risk assessment) undertaken for EPR SW6 in accordance with Melbourne Water Standards for Infrastructure Projects in Flood-Prone Areas (2019) has considered climate change.
	SW 14	**Meet existing water quality treatment performance** Retain or replace existing water quality treatment assets to meet or exceed water quality treatment performance as originally designed for that asset. In consultation with relevant asset owner or land manager, consider climate change effects and the potential for improved treatment outcomes where practicable.	Not applicable as currently there are no water quality treatment assets at this site.
	SW 15	**Water Sensitive Urban Design asset transfer strategy** Prepare a strategy identifying Water Sensitive Urban Design (WSUD) assets constructed as part of the Project to be transferred to public authorities. The strategy must include a process to consult with relevant	It is expected that the Department of Transport (DoT) will be the public authority that will operate and maintain the Bulleen Park and Ride and its associated busway. DoT has been engaged during the design of the Bulleen Park and Ride as formal reviewers of the design. DoT has reviewed the proposed

Discipline	EPR Ref	Environmental Performance Requirement	Response
		asset managers to confirm the relevant delivery and maintenance standards to be met.	WSUD design and is engaging with the NEL Project about their operational and maintenance requirements. Delivery, operational and maintenance plans for WSUD infrastructure will be documented Bulleen Park and Ride and associated busway operational and maintenance strategies, drawings and manuals. These will be developed by the Contractor in consultation with the relevant public authorities prior to the completion of Bulleen Park and Ride.
Sustainability	SCC 1	**Implement a Sustainability Management Plan (SMP)** North East Link Project must set sustainability targets and specify ratings to be achieved under the Infrastructure Sustainability Council of Australia's infrastructure Sustainability Rating Tool. Contractors must develop and implement a Sustainability Management Plan that contains measures to meet, as a minimum, the sustainability targets and specified ratings.	The NEL Project has established sustainability targets that apply across the project and these are publicly available on the NEL Project website. Achieving the targets will be a contractual condition to satisfy the statutory requirement under the Incorporated Document. The NEL Project's sustainability targets relevant to the Bulleen Park and Ride have been identified for the design, construction, and operation phases. The targets relevant to the design phase have been embedded within the UDLP, and all targets relevant for design and construction will become contractual requirements to satisfy the statutory requirement under the Incorporated Document. Contractors engaged to construct the project will also be encouraged to seek opportunities to improve on these targets. The design will incorporate sustainability elements to make a positive contribution in meeting sustainability targets and Infrastructure Sustainability rating. This is a rating using the Infrastructure Sustainability Council of Australia (ISCA) rating scheme which measures the sustainability performance of infrastructure development. The project will include the following environmentally sustainable design initiatives:

Discipline	EPR Ref	Environmental Performance Requirement	Response
			• Location of solar photovoltaic on the roof of the entrance pavilion for onsite renewable energy generation to comprise 50 panels that are each rated at 400W which is estimated to generate an annual production of 25MWh. Based on the current estimated power demand, all energy generated will be utilised onsite. • Use of energy efficient LED lighting. • The design incorporates installation of three tanks totalling over 30,000 litres capacity on the lower level to capture rainwater from /roof areas. The captured water will be reused on site for toilet flushing and irrigation of landscaping. • An additional tank with 50,000 litres capacity will be installed to capture stormwater from the green roof for use in maintenance of landscaping. • The use of products with a favourable life cycle assessment (e.g. recycled or reused content) where practicable to minimise the environmental impacts of construction materials including the reduction by 30 percent of the amount of Portland Cement. • Allowance for charging points for electric vehicles to charge to be installed when demand warrants. • Incorporation of green infrastructure a including rain garden and a green roof. • The green roof, to be landscaped to serve as passive open space, will lessen urban heat island effects, capture storm water, and improve the thermal performance of the building.

Discipline	EPR Ref	Environmental Performance Requirement	Response
			The relevant contractor will seek an Infrastructure Sustainability rating for Design and as built. Design elements of the UDLP will contribute towards the rating. Relevant design aspects include harvesting stormwater and incorporating two rainwater tanks to reduce potable water demand and provide water source for toilet flushing and landscaping irrigation. This design initiative aligns with ISCA rating Credit 'Wat- 2 Replace Potable Water'. The relevant construction contractor will have an SMP to address the targets and ratings for their scope of work. The SMP will identify sustainability performance measures, defined roles and responsibilities to ensure that they measure, monitor and review sustainability performance in line with sustainability targets and IS requirements. Preparation of the SMP will be a contractual obligation and to satisfy the requirements of the Incorporated Document.
	SCC 2	**Minimise greenhouse gas emissions** Integrate sustainable design practices which are best practice for major road and tunnel infrastructure projects into the design process and implement these to minimise, to the extent practicable, greenhouse gas emissions arising from construction, operation and maintenance of North East Link. In detailed design, select materials and consider energy and carbon during construction, to target: • At least a 30 percent reduction in carbon emissions from the construction of North East Link against an Infrastructure Sustainability Council of Australia (ISCA) verified base case calculated in accordance	**1. Energy Efficiency embedded in design** This EPR relates to best practice sustainable design for major road and tunnel infrastructure projects and is relevant to the overall project design. The UDLP incorporates best practice sustainability initiatives and through the design process, energy efficiency has been optimised with the uptake of the following: • Selection of LED lightings coupled with the integration of motion and occupancy controls which reduces energy consumption. • Mechanical fans systems with carbon monoxide (CO) sensor and Variable Speed Drive (VSD) controls for effective operation.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		with their independent standards (IS v1.2 Ene-1 Level 3 or v2.0 equivalent) • Use of a minimum of 50 percent of renewable energy for electricity used to construct North East Link (IS v1.2 Ene-2 Level 1.5 or v2.0 equivalent) • Net zero emissions in the operation and maintenance of North East Link (excluding emissions from traffic) with reference to the IS v2.0 energy and carbon guideline. Reduction of the amount of Portland Cement content in concrete across the project by a minimum of 30 percent against Green Building Council of Australia reference mix design levels subject to durability and strength requirements.	• 20kW solar PV angled to north facing to maximise energy generation and efficiency. • A high-level energy model for the operation stage has been completed to inform the estimated energy demand of the project and also support the Infrastructure Sustainability Energy (ENE-1). **2. Reduction in carbon emissions** The design provides for reduction in ongoing operational energy consumption leading to GHG emission reduction through: • Utilising light-emitting diodes (LED) lighting. • Installing motion control and sensors. **3. Life cycle impacts** The relevant construction contractor will be responsible to meet the reduction of the amount of Portland Cement content in concrete by 30 percent across their scope of works, as a contractual condition to satisfy the statutory requirement under the Incorporated Document. The construction contractor will confirm a verified base case as part of their ISCA requirements. Reduction in carbon emissions during construction and achieving net zero emissions in the operation and maintenance will be targeted by the construction contractors for these works and the overall NEL Project.
	SCC 3	**Apply best practice measures for energy usage for tunnel ventilation and lighting systems** Best practice measures for energy usage are to be applied for the tunnel ventilation and lighting systems in accordance with the Protocol for Environmental Management (Greenhouse Gas Emissions and Energy	Not applicable to the Bulleen Park and Ride facility as the EPR relates to the tunnel systems.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		Efficiency in Industry), the EPA Victoria Works Approval and the EPA Victoria Licence.	
	SCC 4	**Minimise and appropriately manage waste** Develop and implement management measures for waste (excluding soils) minimisation during construction and operation in accordance with the *Environment Protection Act 1970* waste management hierarchy and management options, to address: • Litter management • Construction and demolition wastes including, but not limited to, washing residues, slurries and contaminated water • Organic wastes • Inert solid wastes.	The relevant construction contractor will develop and implement waste management measures to address waste diversion from landfill and achieve landfill diversion rates in accordance with the NEL Project's sustainability objectives and targets to satisfy the requirements of the Incorporated Document. Waste generation during the operation phase is anticipated to be minimal but relevant measures will be incorporated into the OEMP comprising rubbish/recycling bins located on the platforms, in staff facilities and on the green roof.
	SCC 5	**Minimise potable water consumption** Stormwater, recycled water and groundwater inflow to tunnels or other water sources must be used in preference to potable water for construction activities, including concrete mixing and dust control, where this is available, practicable, of suitable quality, and meets health and safety requirements.	The relevant construction contractor will determine their construction methodology including minimising potable water consumption to satisfy the requirements of the incorporated Document.
Traffic and Transport	T 1	**Optimise design performance** Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: • Minimise adverse impact on travel times for all transport modes, including walking and cycling	The strategic, functional and operational requirements for the facility were developed by Department of Transport (DoT) in consultation with the NEL Project. DoT as the Responsible Road Authority for Thompsons Road has also been consulted during the design process and has provided input into the design.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Maintain, and where practicable, enhance the traffic movements at interchanges and adjacent intersections within the project boundary • Design the road, walking and cycling and public transport elements to meet relevant road and transport authority requirements • Design any truncation of local access roads in consultation with directly affected residents Maintain, and where practicable, enhance pedestrian movements, bicycle connectivity, and shared use path, including access (both vehicular and pedestrian) to public open space and reserves • Work with relevant public transport authorities and road authorities to minimise impacts on buses, trams and rail and, where practicable, enhance public transport facilities and services that cross or run parallel to the alignment of North East Link. • Replace and enhance commuter car parking, where affected by the Project, in consultation with the Department of Transport • Minimise loss of other car parking in consultation with relevant local councils and other directly affected stakeholders.	Transport modelling of the proposed intersection arrangements with Thompsons Road has been undertaken. The modelling indicates that the proposed intersection of Thompsons Road and the bus link will meet the DoT design target of level of service (LOS) D. This target is the final category by which stable flow is maintained and is therefore the optimum balance between traffic performance and investment. This Thompsons Road traffic performance is equivalent to that for the design exhibited as part of the NEL EES. For pedestrians and cyclists, the proposed Bulleen Park and Ride will upgrade the existing shared use path through the Koonung Reserve and include a connection to new bicycle parking located on the proposed green roof. As per the design exhibited in the EES, the path will connect to new paths west of Thompsons Road that are planned as part of the wider North East Link Project. The proposed Bulleen Park and Ride will provide continuous park and ride operation during the reconstruction of the existing Doncaster Park and Ride. This will avoid the need for a temporary facility at Koonung Creek Reserve. Following the completion of the Doncaster facility, the operation of both the Doncaster and the Bulleen Park and Ride will provide additional park and ride capacity in the area. The operational and design requirements for the park and ride have been developed in conjunction with DoT to deliver a premium passenger experience. Kampman Street is a local street providing an access route to and from the residential properties along Kampman Street and Furneaux Grove.

Discipline	EPR Ref	Environmental Performance Requirement	Response
			To facilitate the new signalised intersection between Thompsons Road and the car park access and busway link road, it will be necessary to close Kampman Street at Thompsons Road. This is essential as it is not possible to safely and efficiently connect Kampman Street to the new signalised intersection. The existing intersection of Thompsons Road and Kampman Street is a left-in, left-out intersection. Drivers currently wishing to turn right out of Kampman Street to the north (towards Templestowe) or right in to Kampman Street from the south (from Balwyn and the freeway) have to do so at the Hugo Street intersection via Furneaux Grove. The intersection of Thompsons Road and Hugo Street is approximately 200 metres northeast of the Kampman Street intersection. Closing Kampman Street at Thompsons Road would require those currently turning left in and left out of Kampman Street to use Hugo Street for all turning movements. This would not result in any additional travel distance for those who would have turned left in to Kampman Street from the north. However, it would involve a maximum deviation of 400 metres for drivers who would have previously turned left out of Kampman Street. Many drivers would experience less of deviation, depending on their origin in the local area. Pedestrians and cyclists would not be impacted by this closure and path connectivity would be maintained. Impacted residents will be consulted. The closure of Kampman Street at Thompsons Road requires a turning head to be constructed at the western end of Kampman Street to enable municipal waste collection vehicles to turn. Only one residential property has access to this section of Kampman Street between

Discipline	EPR Ref	Environmental Performance Requirement	Response
			Furneaux Grove and Thompsons Road. This resident's access will be maintained as will on-street parking on the closed section. The proposed intersection of Thompsons Road with the bus link also provides public vehicle access to the car park. This intersection allows drivers entering and exiting the park and ride to travel in both directions along Thompsons Road. This is an improved level of access to the park and ride compared to the exhibited EES design. This is achieved by a design that allows exiting vehicles to travel to the south. This change addresses the discussion on this issue as raised in the Minister's EES Assessment.
	T 2	**Transport Management Plans** Prior to commencement of relevant works, develop and implement Transport management Plan(s) (TMP) to minimise disruption to affected local land uses, traffic, car parking, public transport (rail, tram and bus), pedestrian and bicycle movements and existing public facilities during all stages of construction. The TMP must be informed and supported by an appropriate level of transport modelling and must include: • Requirements for maintaining transport capacity for all travel modes in the peak demand periods • Requirements for limiting the amount of construction haulage during the peak demand periods • A monitoring program to assess the effectiveness of the TMPs on all modes of transport	A Transport Management Plan for these works will be prepared by the relevant construction contractor. Implementing the approved Management Plan will be a contractual requirement to satisfy the statutory requirement under the Incorporated Document.

Discipline	EPR Ref	Environmental Performance Requirement	Response
		• Where monitoring identifies adverse impacts, implement practicable and appropriate mitigation measures • Consideration of construction activities for other relevant major projects occurring concurrently with construction activities for North East Link and potentially impacting modes of transport in the same area • Potential routes for construction haulage and construction vehicles travelling to and from the project construction site, recognising sensitive receptors and avoiding the use of local streets where practicable • Suitable measures, developed in consultation with emergency services, to ensure emergency service access is not inhibited as a result of project construction activities • Provision of alternative parking where practicable to replace public, private and commuter parking lost as a result of project construction activities • Requirements to minimise impacts on local streets, community and commercial facilities by providing parking for construction workers at construction compounds where practicable • Measures to ensure connectivity and safety for all transport network users during construction • Measures to limit the extent of road closures • Consultation with the Department of Transport, relevant transportation authorities and relevant local Councils	

Discipline	EPR Ref	Environmental Performance Requirement	Response
		A TMP may be split into precincts where appropriate but must consider other precinct TMPs through the Transport Management Liaison Group.	
	T 3	**Transport Management Liaison Group** A Transport Management Liaison Group (TMLG) must be established and convene prior to the commencement of any works that may impact on existing roads, paths or public transport infrastructure. The TMLG must include representatives from the State, the Department of Transport, emergency services, the project, relevant transportation authorities and relevant local councils. The TMLG will be a forum for exchange of information and discussion of issues associated with Transport Management Plans. This must include review of proposed haulage routes for construction sites to minimise reliance on a single haulage route between Bell Street and the M80 Ring Road and facilitate different sites using different haulage routes. The TMLG must be provided with the Transport Management Plans, details as to timing of implementation, information about construction traffic monitoring conducted by the project, relevant sections of road safety audit reports and other reports, as relevant. Where construction activities have the potential to significantly impact on specific stakeholder or community group facilities, the TMLG should be satisfied that there has been adequate consultation to inform the Transport Management Plans and should consider inviting stakeholder representatives to relevant TMLG meetings. The TMLG must meet at least monthly until the completion of construction.	The TMLG has been initiated as part of the Early Works Program. The group will be advised of the program for the Bulleen Park and Ride works. The construction contractor will prepare and implement a Transport Management Plan for the works.

Discipline	EPR Ref	Environmental Performance Requirement	Response
	T 4	**Road safety design** Undertake independent road safety audits after each stage of detailed design and during and after construction. The project design and operational activities must meet all relevant road and transport authority requirements with respect to transport network user safety.	In the subsequent design stages, road safety audits will be undertaken on the functional and detailed road designs of the interim layout. The design will be prepared in accordance with project specific design requirements, and relevant design standards and guidelines. Where required, Department of Transport (DoT) approval will be sought in relation to road safety matters where it is the Responsible Road Authority (Thompsons Road).
	T 5	**Traffic Monitoring** Undertake traffic monitoring on selected roads (arterial and non-arterial) identified in consultation with the relevant transportation authorities and local council pre-construction, at six monthly intervals during construction, and up to two years after construction is complete. As part of the selection process, consideration must be given to roads that carry public transport services. Ensure any material adverse traffic impacts of the Project, are mitigated by implementing local area traffic management strategies, including other works as required in consultation with the relevant road management authorities. Develop and implement traffic performance management to monitor conditions during construction. Real time traffic information must be provided to drivers.	The relevant construction contractor will develop and implement a traffic monitoring program as a contractual obligation and to meet the requirements of the Incorporated Document