Linking Melbourne Authority

East West Link, Eastern section

Project Proposal

May 2013

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PREFACE

The Eastern section of East West Link (the project) would involve construction and operation of a new freeway standard road link from the end of the Eastern Freeway to CityLink generally along Alexandra Parade corridor, with a further southerly connection to the Port of Melbourne area.

The timing, delivery and funding for the project are subject to future decisions by the Victorian Government. Linking Melbourne Authority is the project Proponent for planning and construction of East West Link, Eastern section.

East West Link, Eastern section was declared as a major transport project under the *Major Transport Projects Facilitation Act 2009* (MTPF Act) on 19 December 2012. This Project Proposal has been prepared in accordance with the MTPF Act to inform the Minister for Planning’s decisions on the required assessment process (either Comprehensive Impact Statement or Impact Management Plan) and the nature and extent of investigations to be undertaken for the project.

A list of key project terminology is located on the next page of this submission.

Terminology

|  |  |
| --- | --- |
| East West Link (EWL) | The entire East West Link extending from the Eastern Freeway at Hoddle Street to the Western Ring Road at Sunshine West. |
| The Eastern section of the East West Link (the project) | The Eastern section of the EWL, being the proposed freeway standard link between the Eastern Freeway and the CityLink, generally along Alexandra Parade corridor, with a further southerly connection to the Port of Melbourne area. |
| Part A | Eastern Freeway to CityLink |
| Part B | CityLink to the Port of Melbourne area, where it would interface with the Western Section. |
| Western section  (not part of this assessment) | The Western section of the EWL (previously known, and declared under the MTPF Act, as WestLink), extending from the Port of Melbourne area to the Western Ring Road |

# Description of the Declared Project

## Particulars of the Proponent

Table 1 The Proponent

|  |  |
| --- | --- |
| Name of proponent: | Linking Melbourne Authority (LMA) |
| Authorised person for proponent: | Ken Mathers |
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## Title, purpose and project objectives

The East West Link, Eastern section (the project) would provide a new freeway standard link between the Eastern Freeway and the CityLink, generally along Alexandra Parade corridor, with a further southerly connection to the Port of Melbourne area to meet current and future demands for east west movements across Melbourne.

The project aims to improve the overall productivity and prosperity of Victoria.

In response to applicable legislation and government policy, a number of social, environmental and economic objectives have been developed for the project. These are:

1. Improve productivity and enhance Victoria’s economy.
2. Improve efficiency of the road network.
3. Facilitate efficient freight movements.
4. Enhance public transport, cycling and pedestrian movements.
5. Make a positive contribution to the built form (urban character/aesthetics of the area).
6. Protect the functioning of natural ecosystems and maintain biological diversity.
7. Protect indigenous and post-settlement cultural heritage values and places.
8. Protect surface and groundwater resources and water quality.
9. Contribute to the reduction of greenhouse gas emissions and build resilience to climate change.
10. Minimise displacement impacts, and where possible enhance existing land uses.
11. Maintain and enhance community cohesiveness.
12. Maintain community safety and amenity.

The above social, environmental and economic objectives have been established to guide the development of the project and would be used in conjunction with the assessment requirements specified by the Minister for Planning to evaluate the potential effects of the project.

## Strategic context and project need

The East West Link is a proposed cross city road connection linking the Eastern Freeway at Hoddle Street to the Western Ring Road in Sunshine West, a total length of approximately 18 kilometres.

The East West Link project was identified in Sir Rod Eddington’s *East West Link Needs Assessment Report* (EWLNA) in 2008 and is being proposed for a variety of reasons, particularly to:

* overcome poor east-west road connections.
* ease congestion on existing cross city routes.
* reduce Melbourne’s over-reliance on the Monash:CityLink:West Gate (M1).
* service the growing volumes of freight moving through the Port of Melbourne.

There is a strong and growing demand for east-west trips north of the central business district, with around 210,000 vehicles trips per day currently taken along existing routes.

The EWLNA highlighted that current east-west routes in this area are disconnected and often include inappropriate suburban streets. It found that around 40 per cent of daily in-bound traffic on the Eastern Freeway is destined to areas beyond the central city area, including to other arterial road connections in the south and west of metropolitan Melbourne.

The EWLNA discussed options for upgrading Melbourne’s future road network, in order to ease traffic congestion and facilitate freight mobility. It concluded that without taking action to improve cross city connections, there would be much higher levels of congestion on the city’s major east-west arterial routes, generating additional costs for businesses and causing unreliable and slow travel times.

The project would complete a missing link in the metropolitan freeway network between the Eastern Freeway and CityLink, with a connection to the Port of Melbourne precinct. It would contribute to improved east-west cross city traffic flow by meeting the demand for cross city travel, which is forecast to increase significantly over the next 25 years, and alleviating the congestion bottleneck where the Eastern Freeway terminates abruptly and joins with Alexandra Parade. It would cater for forecast future freight growth and provide a much needed alternative to the M1, Melbourne’s only high-capacity, east-west road connection.

The project is proposed to be constructed using a variety of methods to reduce community impacts, including some tunnel sections. The project offers the opportunity for significant amenity benefits to local communities by contributing to a reduction in traffic from the local street network and potentially freeing up road space for walking, cycling and public transport activity. It would contribute to urban renewal opportunities in a location well serviced by social and community infrastructure. The project underpins key drivers of the Victorian Government’s *Metropolitan Planning Strategy* (currently under preparation), which seeks to manage Melbourne’s growth as it moves beyond a city of four million people through to an integrated sustainable urban development and transport vision.

In the Discussion Paper , *Melbourne, lets talks about the future,* prepared by the Ministerial Advisory Committee for the Metropolitan Planning Strategy for Melbourne (October 2012), reinforces the key city shaping role East West Link would play in catering for population and economic growth, improving road capacity, freight efficiency and liveability and enhancing Victoria’s global competitiveness.

The project also seeks to respond to the Department of Transport’s (DOT) *Transport Solutions* strategy (under preparation), which seeks to act as a framework to promote efficient industry supply chains to boost the productivity of Victorian industry and enhance regional growth by removing congestion in the road, rail and port networks. *Transport Solutions* also seeks to strengthen partnerships between government and industry, encourage growth in exports, support industry, economic and population growth in regional Victoria, and facilitate both government and private sector investment.

Improvements to city, ports and airports access would enable the central city to intensify and expand to the north, west and south. Improvements to public transport and local amenity in the corridor would provide opportunities to leverage targeted urban renewal and provide greater housing choice and affordability.

## Project components

This Project Proposal is for the Eastern section of East West Link. The Eastern section comprises the following two parts:

* Part A: Eastern Freeway to CityLink
* Part B: CityLink to the Port area where it would interface with WestLink[[1]](#footnote-1).

Both Part A and Part B could comprise a combination of: tunnels, bridges, elevated roads and surface road connections. Part A and Part B may be delivered in separate stages with Part A capable of being developed independently of Part B.

Parts A and B of the project along with the Western section of East West Link (known as WestLink) are presented in Figure 1 - Regional Context Plan.

## Ancillary or subsidiary activities

There would be a range of ancillary activities that would form part of the core project. These would include road network changes and access restoration.

While there may be opportunity for such facilities once the project has been more clearly defined, these do not form part of the declared project under the MTPF Act.

## Proposed project program

Indicative timings for the planning and environmental assessment and approvals are detailed in Table 2. These are indicative only and the timing of any project planning, development and procurement is subject to future decision by the Victorian Government.

Table 2 Indicative Planning and Environmental Approvals Schedule

| Tasks | Indicative project timings |
| --- | --- |
| Preliminary investigations conducted for the study area and assessment of potential corridor options preceding the statutory approvals process. | Early 2012 – Early 2013 |
| A comprehensive impact assessment of a “project with variations”. | Early 2013 - Late 2013 |
| Public exhibition of planning and environmental assessment documentation, consideration by the Assessment Committee established by the Minister for Planning for a decision and ultimate approval. | Late 2013 – Mid 2014 |

## Project delivery approach

Linking Melbourne Authority (LMA) supported the Department of Transport (DOT) in the preparation of the business case to inform funding, delivery and timing decisions about the East West Link by the Victorian Government.

LMA will be responsible for the ongoing project as directed by the Victorian Government.

**Performance Requirements**

The project (based on a concept design) would be delivered in line with environmental performance requirements developed and exhibited as part of the statutory assessment process. The performance requirements would clearly define the performance that the project must achieve during detailed design, construction and operational phases. This performance based approach aims to achieve acceptable outcomes for the community and environment, whilst providing a delivery mode with sufficient flexibility to foster innovation by the private sector and to otherwise address specific challenges.

Performance requirements would be established through the specialist studies presented in Section 8 of this Project Proposal and be guided by relevant legislation and policy. These studies would be designed to address the key issues described through the Preliminary Issues Screen presented in Section 7 and the legislative requirements presented in Section 2.3.

Compliance with performance requirements would be a requirement under the commercial delivery mechanisms and through an Environmental Management Framework to be developed for the project as described in section 8.11.

# Project design

## Outline description of works

The key components of the project are proposed to be a freeway standard road comprising tunnels, elevated structures and surface roads. The main construction activities would be civil and structural works normally expected with major freeway projects including:

* General earthworks
* Relocation of utility services
* Tunnel construction which may involve blasting, tunnel boring and cut and cover
* Storage and removal of spoil
* Bridgeworks and other structural works
* Construction of ventilation structures
* Installation of drainage and water quality treatments
* Pavement construction
* Landscaping
* Installation of noise and screening barriers
* Installation of lighting, signage and management systems.

Based on preliminary investigations, it is likely that the project would entail the upgrade of the existing Eastern Freeway bridge crossing over the Merri Creek within the existing road reserve and construction within Moonee Ponds Creek environs. A large proportion of the road alignment within Part A is likely to be in tunnel and Part B elevated structure.

Please refer to Section 3 for further details on the project alternatives considered.

## Design parameters

The freeway spatial envelope would be designed to have a cross section of up to six lanes (Part A: 6 lanes; Part B 4 lanes). All connecting service roads would be designed to match the current road widths and be capable of incorporating any proposed upgrades; provision for public walking, cycling and landscaping would also be considered.

Design parameters dictate the necessary road design requirements which in turn determine the spatial envelope within which the project components would be developed. The following broad design parameters have been developed in accordance with the *VicRoads Road Design Guidelines*.

* Design vehicle:
* B-Double truck for interchange and motorway elements
* Where dual right turn lanes are required:
* Port Access - Two B-Doubles turning concurrently
* All other intersections - B-Double and car turning concurrently
* Assumes tunnel would not be a nominated over-sized route or suitable for placarded loads. These vehicles would continue to use the existing routes designated for such vehicles (as is the case with the CityLink and EastLink tunnels).
* Design speeds: Design speed limits commensurate with the standard of such a road facility in an inner urban environment are shown in Table 3

Table 3 Road Type, Design Speed and Posted Speed Limit

|  |  |  |
| --- | --- | --- |
| Road type | Design Speed (km/h) | Speed Limit (km/h) |
| Freeway (other than tunnel l) | 110 | 100 |
| Tunnel | 80 | 80 |
| Freeway to freeway ramps | 90 | 80 |
| Freeway to freeway ramps at CityLink[[2]](#footnote-2) | 60 - 80 | 60 |
| Freeway to freeway ramps at the Port | 80 | 80 |

The design of ramp lengths would ensure that a suitable distance is provided between entry and exit points to the surface road network to allow for appropriate acceleration and deceleration. Modifications to intersecting roads would be designed for the current posted speed for the intersection plus 10 km/h to the extent possible without requiring further private property acquisition.

## Environmental performance parameters

The design, construction and operation of the project would be subject to relevant Commonwealth and State legislation, policies and guidelines setting acceptable performance standards and environmental requirements:

* Policies under the *Environment Protection Act* 1970 such as:
* State Environment Protection Policy (SEPP) (Air Quality Management)
* SEPP (Ambient Air Quality)
* SEPP (Control of Noise from Commerce, Industry and Trade)
* SEPP (Groundwaters of Victoria)
* SEPP (Prevention and Management of Contaminated Land)
* SEPP (Waters of Victoria)
* Industrial Waste Management Policy (Waste Acid Sulphate Soils)
* Protocol for Environmental Management (Greenhouse Gas Emissions and Energy Efficiency in Industry).
* EPA Technical Guidelines TG302/92 for Construction and Demolition Works.
* EPA Publication 480 Environmental Guidelines for Construction Works 1996.
* EPA in-tunnel air quality requirements.
* VicRoads Traffic Noise Reduction Policy.
* Victoria’s Native Vegetation Management - A Framework for Action 2002.
* Urban Stormwater Best Practice Management Guidelines 1999.
* AS 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites.

The final environmental performance requirements would be determined through the statutory approvals process taking into account legislation and applicable policy directions, environmental risk and the outcomes of environmental investigations.

# Project alternatives

## Alternatives considered to date

The EWLNAconsidered strategic alternatives for the East West Link corridor. Potential corridor options were assessed against social, environmental and economic. As part of development of the business case for the East West Link, to determine the design for the Eastern section, potential corridor options were identified and considered. These potential corridor options were then evaluated against the project objectives for the EWL.

Following the evaluation of these corridors, a project with scope variations was developed. These variations may include alternative portal locations, ventilation structure locations, interchange locations, vertical and horizontal alignment modifications and construction techniques.

The project corridor is presented within Figure 2.

## Alternatives to be taken through the statutory assessment process

A detailed assessment of the project will be undertaken, together with the possible scope variations. During the assessment process, feedback on the project and its variations would be sought from the community and stakeholders.

The impact assessment documentation and concept design for the project and its variations would be publically exhibited prior to any approval decision.

# Description of Indicative Corridor

The project is located within the inner northern suburbs of Melbourne, generally between the Eastern Freeway from around Yarra Bend Road and CityLink as far as Moreland Road in the north and the Port of Melbourne in the south-west.

An indicative corridor for the Part A and Part B road alignment (project) has been identified (refer Figure 2). The corridor represents a likely connection between the Eastern Freeway and CityLink (Part A) and CityLink and the Port of Melbourne (Part B).

The corridor, being located within some of Melbourne’s earliest established suburbs, is highly urbanised and incorporates a wide range of residential, commercial, industrial, institutional and recreational / open space land uses (see Figure 3 – Land uses of interest). The Melbourne Central Business District (CBD) is immediately to the south. The corridor is located within a region that has been subject to early development and has contributed to shaping Melbourne, resulting in its current day and highly urbanised setting.

The area is predominately residential in the established suburbs of Clifton Hill, Collingwood, Abbotsford, Fitzroy, North Fitzroy, Carlton, North Carlton, Parkville, North Melbourne, Kensington, Flemington and West Melbourne. These areas are interspersed with elements of mixed use activity that contribute to a sense of vibrancy. Significant areas of heritage built form contribute to the character of the area. The corridor and bordering area comprises significant open space / recreational land use such as Moonee Ponds racecourse, major hospitals, educational institutions (University of Melbourne and associated colleges, Secondary and Primary schools), Melbourne General Cemetery and industrial / employment activity (largely to the south-west within North and West Melbourne).

Three passenger railway lines cross the corridor. The Hurstbridge and South Morang (Epping) lines run in a north-south direction towards the eastern end of the corridor, the Upfield line runs through Royal Park and the Craigieburn line intersects the south west end of the corridor. Tram routes run north-south along Royal Parade (19), Lygon Street (1, 8), Nicholson Street (96), Brunswick Street (11, 112), Smith Street (86), Flemington Road (59), Abbotsford Street (57) and Melville Road (55). The corridor is also well serviced by bus routes.

Whilst much of the corridor is highly urbanised, significant parklands were set aside early in Melbourne’s town planning history which today contribute to the unique character of inner Melbourne and provide important open space and recreational facilities for residents. Within these parklands, namely Royal Park and Yarra Bend Park, small remnant patches of native vegetation remain along with significant areas of planted native vegetation.

Royal Park has a rich military history. During the First World War, Royal Park was occupied by Australian Imperials Forces for military camps and training. The Australian and American Military used Royal Park as a base during the Second World War. After the Second World War ended the disused military camp provided emergency settlement, housing for approximately 3000 people. In preparation for the Melbourne 1956 Olympic Games, the camp was decommissioned and Royal Park returned to parkland. Today, Anzac Hall and two sentry gate posts near the Urban Camp are all that remain.

The region has a gently undulating terrain containing three perennial waterways, the Yarra River and the Merri and Moonee Ponds Creeks.

Further details, including a description of the existing environment, can be found at Section 5.

# Description of the Existing Environment

This section draws on the following sources of information in order to describe the existing environment in the indicative corridor for the project:

* Preliminary studies undertaken as part of EWLNA (2008).
* Preliminary Flora and Fauna Assessment (PB, 2013) (refer Appendix A).
* Preliminary Land Use Assessment (GHD, 2013) (refer Appendix B).
* Desktop European Cultural Heritage Desktop Assessment (PB, 2013b) (refer Appendix C).
* Relevant planning schemes, publically available spatial datasets, databases and literature.

## Gradient

The indicative corridor is generally flat, with a gentle regional slope towards the south and west. The highest altitude is within Melbourne General Cemetery at 49 metre above sea level, the lowest near the Port of Melbourne, adjacent to Moonee Ponds Creek at 1 metre above sea level.

## Soils and Geology

Geology and soils within the indicative corridor comprise the following:

* Coode Island silts occur in the immediate vicinity of Moonee Ponds creek to the south of Brunswick Road.
* Tertiary-aged silts and sands of the Green Gully Member and Red Bluff Sand extend to the east of Moonee Ponds creek, along with Quaternary riverine silts, sands and gravel and Silurian turbidite deposits comprising of interbedded shales, silts and sands.
* Tertiary and Quaternary basalts and associated clayey soils occur to the east of Melbourne General Cemetery in Parkville through to the Eastern Freeway.

Sites of geomorphologic importance which occur within the corridor are described in Table 4.

Table 4 Sites of geomorphologic importance within the indicative corridor

| Location | Description | Importance |
| --- | --- | --- |
| Royal Park – Upfield railway line | Steeply dipping sandstone and mudstone of the Silurian Dargile Formation are overlain with angular unconformity by coarse grained sandstone of the Tertiary Brighton Group. An iron stained soil with buckshot gravel has developed on the latter unit. | One of the traditional teaching sites for geology in Melbourne. The nature and relationship of Palaeozoic and Tertiary sediments in Victoria are clearly displayed. |
| Royal Park – southern railway cutting | Tertiary sands unconformably overlie very weathered Miocene basalt of the Older Volcanics. The clayey sands immediately above the basalt contain Middle Miocene bivalves and gastropods. These Middle Miocene sediments are overlain disconformably by cross-bedded coarse sandstone containing occasional Late Miocene - Early Pliocene bivalves and gastropods, as well as leaves and fruit. | Also one of the traditional teaching sites for geology in Melbourne. The site displays palaeo-landsurfaces, weathering, fossils, an unconformity and a disconformity. |
| Clifton Hill – Merri Creek/Yarra River confluence and digitate delta | At the confluence of the Merri Creek and Yarra River, a deltaic deposit of clay, silt, sand and gravel has extended the course of the Merri Creek into the channel of the Yarra River just upstream of Dights Falls. | This is a very disturbed site. Although a small deltaic form can still be discerned, the context of the site has been lost as a result of the Eastern Freeway construction in late 1970’s. |

(source: Sites of Geological and Geomorphological Significance on Public Land, Wakelin Assoc. & VEAC Final Report May 2009)

## Waterways

Hydrology in the area is dominated by urban and industrial activities. Much of the area is on hard surfaces with connections to the stormwater drainage system.

The urban waterways within the indicative corridor are the Moonee Ponds Creek and the Merri Creek (both tributaries of the Yarra River), and the Yarra River which discharges to Port Phillip Bay.

The overall condition of these waterways is rated from very poor to moderate according to the River Health Index, developed by Melbourne Water to provide an overall integrated measure of the environmental condition of rivers.

Also located within the indicative corridor is the Trin Warren Tam-Boore Wetland system in Royal Park, which is a series of two linked constructed wetlands used for water treatment and water bird habitat.

The project would likely require the upgrade of the existing Eastern Freeway bridge over the Merri Creek and the development of a crossing over the Moonee Ponds Creek. No works would be undertaken within the waterways. The Yarra River would not be directly affected by the project.

Figure 4 illustrates these waterways and other water-related opportunities and constraints.

Moonee Ponds Creek

Moonee Ponds Creek drains an area of approximately 145 km2, flowing from Greenvale down through Tullamarine and joining the Yarra River near the coast in West Melbourne. Works undertaken in the 1950s to increase flood protection resulted in the removal of bank vegetation and debris in the stream in conjunction with concrete lining of much of the lower reaches of the creek. The overall condition of Moonee Ponds Creek in the vicinity of the project is rated “poor” Index of River Condition (IRC), although the creek has a high social value and is popular for passive recreation.

Within the vicinity of the corridor, the channel is concrete lined north of Mount Alexander Road, Flemington. South of Mount Alexander Road, the creek has been artificially widened to form a railway canal, which is crossed by several road bridges before entering the Yarra River, including Macaulay Road, Arden Street, CityLink, Dynon Road and Footscray Road/ Docklands Highway.

Merri Creek

Merri Creek begins in Heathcote Junction and flows in a southerly direction for 70 km, before joining the Yarra River at Dight’s Falls, approximately 90m from the likely area of development. Tributaries include Edgars and Central Creeks. The Merri Creek catchment area is approximately 396 km2.

Few environmental values remain in the urban reaches of Merri Creek. The middle and lower reaches of Merri Creek have a “very poor” IRC rating due to the substantial degradation of riparian vegetation and an altered flow regime from catchment urbanisation. Nevertheless, the creek has very high social value because of passive recreation and European and Aboriginal heritage. The confluence of the Merri Creek and the Yarra River has high Aboriginal heritage values and was once an important meeting place.

Yarra River

The Yarra River begins on the southern slopes of the Great Dividing Range, in the forested catchments of the Yarra Ranges National Park and eventually discharges into Port Phillip Bay. The river's catchment area covers 4078 km2.

Development of urban areas in the lower catchment has contributed to degraded river health, although over the past few decades there has been a general improvement which is attributed to improvements in sewerage infrastructure, regulation against industrial discharges to waterways and works to prevent erosion. Overall, the river health over the middle and lower Yarra near the project area has a “moderate” IRC rating.

## Flora and fauna

A Preliminary Flora and Fauna Assessment was completed for the indicative corridor and is presented within Appendix A - *Preliminary Flora and Fauna Assessment, East West Link Project, Eastern section* (Parsons Brinckerhoff, 2013a).

Field investigations, conducted in autumn between 23 and 24 May 2012 and spring between 29 and 30 October 2012 and autumn March 2013 focused on identifying ecological values within areas of potential environmental sensitivity (refer Figure 5). These areas were defined based on locations of potential surface works, the potential presence of native vegetation, potential habitat and concentrations of historic threat-listed species records.

The following section presents a summary of the findings of the desktop assessment and field investigations.

Vegetation communities and habitats

The indicative corridor is largely cleared of native vegetation. However, it contains open spaces that have been revegetated with native and exotic plant species. Some remnant scattered trees, mostly *Eucalyptus camaldulensis* are also present in these areas. Large areas of exotic grassland are common throughout the indicative corridor, such as sporting fields. Native grasses occur in very small patches scattered throughout these larger areas of exotic grassland. The condition of vegetation and fauna habitats within the indicative corridor ranged from poor to moderate based on Victoria’s Native Vegetation Framework.

Three Ecological Vegetation Classes (EVCs) are present within the indicative corridor:

* Grassy Woodland (EVC 175) - Royal Park
* Floodplain Riparian Woodland (EVC 56) - Yarra Bend Park
* Escarpment Shrubland (EVC 895) - Yarra Bend Park.

The EVCs occupy an area of approximately 4 ha, which accounts for approximately 1per cent of the indicative corridor area.

Aquatic habitats are present including the Trin Warren Tam-Boore Wetlands in Royal Park, Moonee Ponds Creek (Railway Canal), the Yarra River and Merri Creek. Generally, the aquatic vegetation present along the water courses is considerably modified and is generally in poor condition (with the exception of the Floodplain Riparian Woodland EVC).

Threatened species and communities

Site inspections, along with a desktop assessment, undertaken for the project, determined that no *Environment Protection and Biodiversity Conservation Act* (EPBC Act) or *Flora and Fauna Guarantee Act* (FFG Act) listed ecological communities are present within the corridor.

No EPBC Act or FFG Act listed flora or fauna species were recorded during the site inspections. However, the literature and database review and the likelihood of occurrence assessment, indicated four EPBC Acts listing fauna species are likely to occur within the corridor with a moderate or greater likelihood. These are:

* Swift Parrot.
* Grey-headed Flying Fox.
* Macquarie Perch.
* Australian Grayling.

Significance assessment undertaken for each of these species determined that the project would be unlikely to significantly impact upon these species or interfere with their recovery.

Further, the likelihood of occurrence assessment indicated that one FFG Act listed flora species and thirteen FFG Act listed fauna species are likely to occur in the indicative corridor. These are:

* *Cullen parvum*
* Grey Goshawk, Intermediate Egret, Eastern Great Egret, Little Egret, Baillon’s Crake, Swift Parrot, Powerful Owl, Grey-headed Flying-fox, Australian Mudfish, Macquarie Perch, Freshwater Catfish, Australian Grayling, Water beetle species.

The known distribution and habitat preferences of these species are presented within Appendix A.

It was concluded that the project is unlikely to significantly impact upon any FFG Act listed species as:

* no significant breeding habitat would be affected by the project.
* whilst areas of foraging habitat (e.g. winter-flowering eucalypts) would be removed or modified, these areas do not constitute critical habitat and significant resources would be retained in the adjoining land and locality
* construction activities within the vicinity of waterways would not affect fish passage or reduce the quality of potential habitat for aquatic species.

The desk-based assessment identified 56 plants and 22 animals (17 birds, two mammals, one reptile, one frog and one fish) which are listed on the Department of Sustainability and Environment (DSE) Advisory lists, which potentially occur within the project locality. Of these species, two species of plant (Tragus australianus and Acacia cupularis) and three species of animal (Australasian Shoveler, Hardhead and Nankeen Night Heron) have been previously recorded within the indicative corridor. During site inspections completed in spring 2012, a Hardhead was recorded within the Trin Warren Tam-Boore Wetland – east pond. This species is listed as Vulnerable on the DSE Advisory List and is known to inhabit freshwater swamps and wetlands throughout Victoria.

A habitat area for White’s Skink (*Egernia whitii*) has been established by Melbourne City Council within a patch of Grassy Woodland (EVC 175) located along a railway cutting within Royal Park. Whilst not threat-listed under Commonwealth or State legislation or listed on DSE’s Advisory Lists, previous studies have identified that a regionally significant population of the species occurs within the parkland.

The assessment concluded that the project is unlikely to result in a significant impact to threat-listed biodiversity. Nonetheless, the impacts of the project would be managed to ensure that biodiversity impacts are avoided, reduced or mitigated.

## Land Contamination

Given the historical and current industrial land uses present within / proximate to the indicative corridor, there is likelihood of existing land contamination. Sites of known or potential land contamination are presented at Figure 6 which has been informed by:

* Environmental Audit Overlay (EAO) (these sites have potential to cause soil and groundwater contamination both on site and in surrounding areas due to past land uses). Areas covered by the EAO which are located within the indicative corridor include areas east of Nicholson Street in Fitzroy and Collingwood, and around CityLink in Kensington and North Melbourne.
* Industrial Zone areas. The industrial zoned land around CityLink in Kensington and North Melbourne and Dynon Road in West Melbourne are within the vicinity of the indicative corridor.

A review of the EPA Priority Sites Register was undertaken in November 2012. These are sites where pollution of land and/or groundwater presents an unacceptable risk to human health or to the environment and require some form of clean up or ongoing management. At the time of the search there were no Priority Sites within the indicative corridor.

Notwithstanding this, in the vicinity of the indicative corridor, the former gasworks site located between Alexandra Parade, Queens Parade and Smith Street, in North Fitzroy is known to be contaminated (North Fitzroy Gas Works Precinct, Urban Design Framework, City of Yarra, 2008).

Soils that contain significant amounts of iron sulphides are referred to as acid sulphate soils because they can become highly acidic when exposed to oxygen by excavation. A review of the areas with the potential to contain acid sulphate soils was undertaken based on the Department of Primary Industries, on-line acid sulphate soils map. Acid sulphate soils are most probable around Moonee Ponds Creek.

## Social and community

The indicative corridor is encompassed within the municipalities of Melbourne, Moonee Valley and Yarra and is bordered by the municipality of Moreland to the north. Outlined below is a description of the social and community profile for the City of Melbourne, City of Moonee Valley and the City of Yarra which identifies facilities which may potentially experience indirect effects as a result of the project. The Land Use Report (Refer Appendix B) identifies open space, parkland, community facilities and other social infrastructure within or near the indicative corridor.

City of Melbourne

The project is located within the northern-most section of the municipality, traversing the suburbs of Carlton and Carlton North, North Melbourne, Parkville and West Melbourne. These suburbs include residential / mixed use, institutional and industrial land use.

The municipality enjoys a culturally diverse population, with immigration over the years originating from throughout Europe, Asia, Africa and the Pacific.

**City of Moreland**

Moreland is situated to the north-west extremity of the indicative corridor, passing through Brunswick West which sits at the south-west corner of the municipality. Very similar to Melbourne, Moonee Ponds and Yarra, Moreland supports a culturally diverse population with land use proximate to the indicative corridor generally residential in nature (ie. along the City Link / Tullamarine Freeway corridor).

Whilst Moreland supports a range of social infrastructure, including numerous shopping strips and centres, opens space / playing fields and golf courses, there is no significant social infrastructure located within or proximate to the indicative corridor in this location, with the exception of some lineal reserves along the east side of Moonee Ponds Creek.

City of Moonee Valley

Moonee Valley is situated to the north-west of Melbourne’s CBD, with the indicative corridor taking in the suburbs of Flemington and Kensington. The wider municipality, like the City of Melbourne and City of Yarra, enjoys a culturally diverse population with significant historical immigration from Europe. Flemington and Kensington are predominately residential where potentially affected by the indicative corridor, with a business/shopping strip lining Mount Alexander Road.

City of Yarra

The City of Yarra is located directly to the north-east of Melbourne’s CBD. Similar to the City of Melbourne, it is a culturally diverse municipality and has a working class heritage. Immigration origin is also similar to that experienced in the City of Melbourne.

The part of the municipality within the indicative corridor has undergone and continues to undergo significant urban renewal, largely owing to its proximity to the Melbourne CBD and its village like atmosphere across Carlton, Clifton Hill and Fitzroy/Fitzroy North in particular. Urban renewal across former industrial sites has resulted in an increasing residential population.

* 1. Land use planning

The zoning and overlays (Refer Table 5) relevant to the indicative corridor are discussed in detail within Appendix B Preliminary Land Use Report (GHD, 2013) and can be seen in Figure 7 - Planning Zones and Figure 8 - Planning Overlays respectively.

Table 5 Zone and Overlay Controls within the indicative corridor

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | City of Melbourne | City of Moonee Valley | City of Yarra | City of Moreland |
| Z**one** | | | |
| Residential 1 Zone | ■ | ■ | ■ | ■ |
| Residential 2 Zone | ■ |  |  |  |
| Mixed Use Zone | ■ |  | ■ |  |
| Business 1 Zone |  |  | ■ |  |
| Business 2 Zone | ■ | ■ | ■ |  |
| Business 3 Zone |  |  | ■ |  |
| Business 4 Zone |  |  | ■ |  |
| Industrial 1 Zone | ■ |  |  |  |
| Industrial 3 Zone | ■ |  |  |  |
| Public Park and Recreation Zone | ■ | ■ | ■ | ■ |
| Public Use Zone | ■ | ■ | ■ |  |
| Road Zone - Category 1 | ■ | ■ | ■ | ■ |
| **Overlay** | | | |  | |
| City Link Project Overlay | ■ | ■ | ■ | ■ |
| Design and Development Overlay | ■ |  | ■ |  |
| Development Plan Overlay | ■ | ■ | ■ |  |
| Environmental Audit Overlay | ■ |  | ■ |  |
| Environmental Significance Overlay |  | ■ | ■ |  |
| Heritage Overlay | ■ | ■ |  |  |
| Incorporated Plan Overlay | ■ | ■ | ■ |  |
| Land Subject to Inundation Overlay | ■ |  |  | ■ |
| Public Acquisition Overlay | ■ |  |  |  |
| Road Closure Overlay | ■ |  | ■ |  |
| Special Building Overlay | ■ |  | ■ |  |

## Aboriginal cultural heritage

Due to the urbanisation of the indicative corridor there is generally a low potential for Aboriginal archaeological sites or sub-surface deposits. Areas where there is potential for sites to occur include the vicinity of waterways, remnant vegetation and high ground that overlook these areas as such, the Merri Creek and Royal Park provide the greatest potential for sites to occur within the indicative corridor.

For the purpose of the *Aboriginal Heritage Act* 2006, the project would be considered a high impact project requiring the preparation and approval of a Cultural Heritage Management Plan (CHMP).

## European cultural heritage

A desktop European cultural heritage database assessment has been undertaken for the indicative corridor (refer Appendix C - *European Cultural Heritage Database Assessment Report* (Parsons Brinckerhoff, 2013b)). The following section presents a summary of the findings of the assessment.

World Heritage and National Heritage

A review of the EPBC Protected Matters Search Tool has identified no World Heritage or National Heritage Places within the indicative corridor. The following sites are located within the vicinity of the indicative corridor:

* Royal Exhibition Building and Carlton Gardens, Carlton (World Heritage Property and National Heritage Property). This site is a significant distance south of the indicative corridor (at least one kilometre) and would not be affected by the project.
* Newman College, Parkville (National Heritage Property). Whilst within the vicinity of the indicative corridor (100 metres south), this site would not be directly affected by the project as the road would be in a tunnel at this location.

Potential ground level vibration associated with tunnel construction is expected to be negligible at these locations. A review of the National Trust of Australia database indicated that there are two sites within the indicative corridor:

* Melbourne General Cemetery
* Royal Parade

The road would be in tunnel within the vicinity of these locations.

Victorian Heritage Register and Inventory

A search of the Victorian Heritage Database undertaken in March 2013 found numerous listed European cultural heritage sites within the indicative corridor. These are tabulated within Appendix C of the European Heritage Database Assessment Report and presented in Figure 9. There are several sites listed on the Victorian Heritage Register and Inventory located within the indicative corridor. These include the following:

* Melbourne General Cemetery
* ANZAC Hall
* Royal Parade
* Royal Park
* Ormond College.

Local Heritage

Heritage Overlays are located extensively across the indicative corridor within the City of Melbourne, City of Yarra and City of Moonee Valley Planning Schemes. These are presented within Figure 8-2: Land Use Overlays - Heritage.

## Commercial and Business

Commercial and business precincts are interspersed across the corridor. Numerous employment types exist, from consumer services though to industrial employers. Industrial activity is principally located towards the south-west, within North and West Melbourne.

Some industrial areas, particularly in North Melbourne, are experiencing redevelopment / urban renewal pressures for new residential / mixed use development to take advantage of all forms of public transport modes, good social infrastructure and the proximity of the Melbourne CBD.

The Port of Melbourne, at the western end of the corridor, is Australia’s busiest container and general cargo port and handles over $75 billion of trade annually. The port receives approximately 3,500 commercial ship movements per year and provides linkages for exporters to over 300 markets throughout the world. Surrounding land is largely used by businesses supporting the port including container yards, storage and transport companies. This includes the Yarraville Port Industrial Precinct which sits adjacent to the Maribyrnong River, south of Footscray Road and to the east of Whitehall Street.

# Potential impacts on the existing environment

## Preliminary environmental issues screening

A preliminary evaluation of potential environmental impacts (which includes social impacts) associated with the project has been undertaken using an issues screening approach.

The preliminary environmental issues screening aimed to:

* Highlight those issues that would require particular focus for investigation during the assessment and approvals process.
* Assist in determining the level and scope of investigations that would be undertaken.
* Highlight those issues that can be adequately investigated and managed post the primary approvals phase via an Environmental Management Plan.

It is envisaged that this preliminary issues screen would assist the Minister for Planning to decide on the required assessment process and the nature and extent of investigations to be undertaken as part of the assessment and approvals process.

This screening exercise would form the basis for further and ongoing comprehensive risk assessment and management throughout project development and delivery, consistent with the International Standard ISO 31000, Risk Management.

## Methodology

Issues identification

Issues have been identified using available information on existing conditions in the indicative corridor and experience on similar projects. Input from relevant agencies including Department of Planning and Community Development, DSE, Melbourne Water, Heritage Victoria, Environment Protection Authority, Aboriginal Affairs Victoria has been sought in identifying and evaluating the issues.

As referenced at Section 5 above, the following sources of information have assisted in informing potential issues requiring further investigation:

* Preliminary studies undertaken as part of EWLNA (2008)
* Preliminary Flora and Fauna Assessment (PB, 2013a)
* Preliminary Land Use Assessment (GHD, 2013)
* Desktop European Cultural Heritage Desktop Assessment (PB, 2013b)
* Relevant planning schemes, publically available spatial datasets, databases and literature.

Issues have been identified for both project construction and operational phases. As the road would be considered a long life asset (100 plus years), decommissioning stage issues have not been considered.

**Issues screening**

The preliminary screening has assigned one of the following three investigation categories to each issue:

* Category A: Detailed and targeted investigation required as part of the assessment and approvals process.
* Category B: Moderate level of investigation required as part of the assessment and approvals process.
* Category C: Minimal level of investigation is required as part of the assessment and approvals process.

For some Category C issues, which are construction based, it was considered acceptable for investigation and management planning to be primarily undertaken after the assessment and approvals phase, prior to construction, when greater detail regarding construction activities would be available. In these instances, commitments for the management of the issue during construction would be made during the assessment and approvals process (refer to discussion in Section 8.4).

The category assigned to each issue was based on both the:

* Scale and severity of the potential impact (Consequence).
* Complexity of the mitigation measures required to manage the potential impact.

The description of each category is presented in Table 6 below.

Table 6 Investigation Categories

| Investigation category | Potential consequence | Complexity of mitigation |
| --- | --- | --- |
| A | High - Potential for extensive, long term impacts, significant assets or values affected with enduring changes (including potential for benefits). Widespread community interest. | Complex and detailed management measures required |
| B | Medium - Potential for moderate impacts, significant assets or values may be affected over an extended time frame with some resultant changes (including benefits). Regional community interest. | Standard management measures are available that can be adopted with some tailoring |
| C | Low - Potential for short term and localised impact. Asset or values may be temporarily affected but recovery expected. Local community interest. | Standard management measures are available. Routinely managed on equivalent projects |

In selecting a consequence category, an impact was considered to have “potential” if it has a real or not remote chance of occurring (with the application of mitigation measures). It was assumed that where applicable standard mitigation measures applied on similar past projects would be used.

## Results

Table 7and Table 8 present the findings of the issues screening exercise for Part A of the project (Eastern Freeway to CityLink) and Part B of the project (CityLink to the Port of Melbourne). Parts A and B of the project were split up for this exercise in order to reflect potential staging.

Table 7 Issues Screening - Part A: Eastern Freeway to CityLink

|  | Issue | Assets, values and uses to be protected | Can potential impacts be minimised during design? | Project Phase | Investigation Category | Comment |
| --- | --- | --- | --- | --- | --- | --- |
| **1. Air quality** | | | | | | |
| 1.1 | Air emissions from tunnel ventilation structures | Public health | Yes | Operation | A | Tunnel ventilation structures would be designed to ensure that air emissions meet agreed/required air quality standards. Nonetheless, assessment would be undertaken to predict compliance with air quality standards. |
| 1.2 | Air emissions from vehicles using surface and elevated roadways | Public health |  | Operation | A | The predicted change in air quality would be investigated. Local air quality is expected to improve in some areas due to reallocation of some traffic from surface roads into tunnels. |
| 1.3 | Dust from construction activities | Public health / residential amenity |  | Construction | C | Dust generation would be dependent on the construction methods selected (i.e. the length of cut and cover compared to underground tunnelling). Construction dust would be controlled via an Environmental Management Plan (EMP). |
| **2. Noise and vibration** | | | | | | |
| 2.1 | Noise from tunnel ventilation structures | Residential amenity | Yes | Operation | A | Ventilation systems are a potential noise source to local communities. As such, noise attenuation would need to be incorporated into the ventilation infrastructure. An assessment would be undertaken to ensure compliance with SEPP N-1. |
| 2.2 | Noise from vehicles using surface roads and elevated roadways | Residential amenity | Yes | Operation | B | There is potential for increased noise in some locations (portals and surface roads), whilst vehicle noise is expected to reduce in some areas owing to diversion of traffic into tunnel. Noise attenuation measures would be incorporated into design where required. |
| 2.3 | Vibration from vehicles using the tunnel | Residential amenity/ property assets | Yes | Operation | C | Through adopting appropriate engineering standards, vibration from heavy vehicles using the tunnel should not cause disturbance to residents or property damage. Experience from other tunnels in Melbourne and elsewhere would be used to inform the tunnel design. |
| 2.4 | Noise from construction activities could potentially cause short term disturbance | Residential amenity |  | Construction | B | Noise from construction would be temporary and would depend on particular construction activities. Construction noise would be managed via an EMP with particular care taken when works are in proximity to sensitive receptors, consistent with EPA Publication 480: Environmental Guidelines for Major Construction Sites. |
| 2.5 | Vibration during tunnel construction | Property and utility assets/ residential | Yes | Construction | B | The potential for vibration would be dependent on construction technique. Construction vibration will be managed in accordance with relevant standards as to ensure the structural integrity of buildings and other structures. |
| **3 Post settlement heritage** | | | | | | |
| 3.1 | Potential impact to registered heritage places in the vicinity of tunnelling works through ground vibration and/or settlement | Heritage places and values | Yes | Construction & Operation | B | There is one National heritage place within close vicinity of the indicative corridor - Newman College. Given the anticipated distance of the tunnel to the National Heritage Place and the depth of the tunnel, direct ground level vibration impacts at Newman College would be negligible.  Victorian Heritage Register and Inventory sites located within the vicinity of the indicative corridor include: Melbourne Cemetery, ANZAC Hall and Urban Camp, Newman College, Royal Parade, Royal Park, Ormond College and Janet Clarke Hall. Potential ground vibration associated with tunnel construction and ground settlement during and post construction would be managed to applicable standards so as to ensure building fabric integrity. |
| 3.2 | Potential impact to registered heritage places through surface construction activities | Heritage places and values | Yes | Construction & Operation | B | Preservation of significant heritage features as much as possible would be incorporated into the design phase as appropriate. If impacts to heritage places are expected, investigations into potential effects and mitigation opportunities would be undertaken.  Comprehensive post settlement heritage investigations would need to be undertaken during the planning process. |
| 3.3 | Potential to effect local heritage character and setting | Heritage places and values | Yes | Construction & Operation | B | Although much of the indicative corridor is affected by a heritage overlay, most of Part A is in tunnel. Urban design guidelines and construction techniques would be sympathetic to heritage values and local character. |
| 3.4 | Potential for impacts on undocumented sites of European heritage significance | Heritage places and values | Yes | Construction & Operation | C | Heritage within the indicative corridor has been well documented.  Comprehensive post settlement heritage investigations would need to be undertaken during the planning process |
| **4 Aboriginal cultural heritage** | | | | | | |
| 4.1 | Potential impacts to areas of cultural heritage sensitivity at the Merri Creek and Royal Park environs. | Cultural heritage | Yes | Construction & Operation | B | The majority of the indicative corridor is highly disturbed. Further cultural heritage investigations would be undertaken in areas of sensitivity in order to prepare a Cultural Heritage Management Plan (CHMP). |
| **5 Urban form, visual and landscape** | | | | | | |
| 5.1 | Integration of project structures with surrounding urban form, local character and streetscape | Urban form / places | Yes | Operation | A | Project structures (ventilation structures, portals, bridges or elevated roadways) would need to be sensitively designed using good urban design principles in order to maintain, as much as practicable, existing urban form. |
| 5.2 | Potential visual impacts of project structures (e.g. tunnel portals and elevated roadways) | Visual amenity | Yes | Operation | A | Tunnel portals and elevated roadways could potentially have a significant visual impact but would be sensitively designed by adopting good design urban principles to minimise to the greatest extent possible such visual impact. |
| 5.3 | Compatibility with existing and future land use activities including urban renewal opportunities | Existing and future land uses | Yes | Operation | A | Project structures would need to be designed to ensure that future land uses are not unreasonably compromised. |
| **6 Surface water** | | | | | | |
| 6.1 | Potential to affect flood plain function and flood levels | Property and assets | Yes | Design | B | Moonee Ponds Creek is significant in relation to flood impacts. Flood potential would be investigated and accommodated through the design process. |
| 6.2 | Management of polluted stormwater from road surface | Water quality | Yes | Operation | C | This would be routinely incorporated into the project design. |
| 6.3 | Bridge widening works over the Merri Creek could potentially impact waterways | Water quality | Yes | Construction | C | No works would be undertaken within the Merri Creek waterway so there are no offsite impacts to water quality |
| 6.4 | Interaction with sewage and drainage assets | Property and assets | Yes | Construction | B | A number of significant sewage and water assets are located in the indicative corridor. Project design would be undertaken in consultation with asset owners and services would be avoided or otherwise relocated. |
| 6.5 | Management of polluted stormwater during construction | Water quality | Yes | Construction | C | This would be controlled via work method statements in an EMP |
| **7 Groundwater** | | | | | | |
| 7.1 | Potential changes to groundwater movement patterns from tunnel | Property & assets Waterways/ commercial groundwater users | Yes | Construction & Operation | B | Hydrogeological investigation in the vicinity of the proposed tunnel would be undertaken to anticipate any impacts and appropriate design construction methodologies would then be adopted accordingly. |
| 7.2 | Potential for tunnel to contribute to migration of existing polluted groundwater | Water quality | Yes | Construction & Operation | B | Hydrogeological investigations would be undertaken to enable evaluation and management of any issues associated with groundwater migration. |
| 7.3 | Management of extracted groundwater | Water quality |  | Construction & Operation | B | Treatment systems can be designed to ensure pollution does not occur as a result of disposal of extracted groundwater. High salinity however can be difficult to manage.  During construction, extracted groundwater would be controlled via an EMP. |
| **8 Ecology** | | | | | | |
| 8.1 | Potential impacts on threat listed biodiversity | Listed species | Yes | Construction | C | Four EPBC Act listed fauna species are likely to occur within the indicative corridor with a moderate or greater likelihood: Swift Parrot, Grey-headed Flying Fox, Macquarie Perch & Australian Grayling. No EPBC Act listed flora species were considered likely to occur. Significance assessment determined that the project is unlikely to significantly impact these species or interfere with their recovery.  One FFG listed flora species and thirteen FFG listed fauna species are likely to occur in the indicative corridor (seven bird species, one mammal, four fish species and one invertebrate). The Preliminary flora and fauna assessment concluded that the project is unlikely to result in a significant impact to threat-listed biodiversity. |
| 8.2 | Potential loss of native vegetation and habitats | Native vegetation | Yes | Construction | C | The majority of the indicative corridor is highly developed, however habitat resources are available in the form of remnant and exotic vegetation and aquatic habitats.  The overall clearing construction footprint would be minimised and significant areas of native vegetation and fauna habitats would be avoided where possible. |
| 8.3 | Potential for habitat fragmentation and edge effects | Habitats | Yes | Construction | C | Whist the indicative corridor lies within a highly urbanised setting and is not considered to significantly contribute to local connectivity, the project has the potential to fragment small areas of remnant vegetation. Potential habitat fragmentation is unlikely to affect highly mobile bird and other flying species.  The Yarra River and Merri Creek corridors provide continuous habitat linkages through Melbourne. The potential upgrade to the Merri Creek bridge crossing however is unlikely to significantly affect the viability of the residual environmental corridors.  Vegetation and habitat is already fragmented by existing development and land use, and as a result is already subject to significant edge effects. |
| 8.4 | Noise and light pollution impacting fauna species | Native fauna | Yes | Operation and construction | C | Animals inhabiting and utilising habitat resources within the indicative corridor are likely to have habituated to urban noise and light pollution. Hence, increased noise and light pollution from the project is unlikely to cause significant impact. |
| 8.5 | Potential increase in fauna mortality | Native fauna |  | Operation and construction | C | Owing to the small extent of vegetation proposed to be removed and the lack of habitat available, it is considered that vehicle strike during construction works would not be significant. The project would not significantly increase the risk of wildlife colliding with vehicles, particularly given the proposed extent of tunnelling. |
| 8.6 | Potential aquatic disturbance | Native vegetation and waterways | Yes | Construction | C | Riparian zones would be protected where possible, where works are in the vicinity of waterways via standard measures in the EMP. Any waterway reinstatement would consider long term ecological outcomes. |
| 8.7 | Potential introduction/spread of weeds, pests or disease organisms during construction | Native vegetation |  | Construction | C | This would be controlled via standard measures in an EMP. |
| **9 Social and Community** | | | | | | |
| 9.1 | Regional community benefits of the project through improved access and mobility and reduced travel times | Community, access and mobility | Yes | Operation | A | A key driver for the project is the community benefits from improved access, mobility and reduced travel times, particularly for residents in Melbourne’s eastern and western suburbs and Regional Victoria. |
| 9.2 | Local community benefits through reduced traffic impacts on local roads | Community well being | Yes | Operation | A | Reallocating through traffic from local roads onto the East West Link would have considerable amenity benefits for local residents. |
| 9.3 | Potential impact on the connectivity of local communities | Community well being | Yes | Operation | A | The potential impact on local access and mobility would be investigated through a Social Impact Assessment. |
| 9.4 | Potential displacement of residents | Community well being | Yes | Operation | A | Land acquisition for Part A would be investigated and considered as part of the design process. |
| 9.5 | Potential disruption of local movement patterns | Community access and mobility | Yes | Construction & Operation | A | There would potentially be a need to modify existing road networks to accommodate the project during construction and operation. |
| 9.6 | Potential loss in quality and function of open space/parkland | Public open space | Yes | Operation | A | Main areas of public open space are Royal Park, Merri Creek and Moonee Ponds Creek. Permanent loss of public open space would be avoided where possible. Opportunities to replace open space would be investigated. |
| 9.7 | Potential temporary loss of access to public open space/parkland during construction (Royal Park, Merri Creek) | Public open space | Yes | Construction | A | There is likely to be community concern about the temporary loss of access to public open space during the construction period. |
| 9.8 | Potential loss of community facilities | Community facilities | Yes | Construction | A | It is expected that as part of the design development process, loss of significant community facilities would be avoided. If loss of community facilities does occur, opportunities for replacement and/or improvement to community facilities would be investigated. |
| 9.9 | Potential impact on pedestrian or bike paths during construction | Community access and mobility | Yes | Construction | B | A number of pedestrian and bike paths exist in the vicinity of the project. Any existing pedestrian or bike paths that are severed would be reinstated in a suitable location and alternative arrangements would be determined during construction. |
| 9.10 | Potential impact on public transport services during construction | Community access and mobility |  | Construction | B | Construction works may temporarily disrupt public transport services (e.g. Upfield railway line within Royal Park and north-south tram crossings along Alexandra Parade). Any impacts would be temporary in nature and would be managed through a Traffic Management Plan and via coordination with DOT, PTV, Metro Trains and Yarra Trams. |
| **10 Economics and business** | | | | | | |
| 10.1 | Economic benefits from the project through improved access and mobility and reduced travel times | Business viability and employment |  | Operation | A | Economic benefits associated with changed connectivity at the regional level would be described. |
| 10.2 | Potential displacement of businesses due to acquisition of commercial properties | Business viability and employment | Yes | Construction | A | Land acquisition will be determined during detailed design. |
| 10.3 | Changed traffic flows potentially affect business visibility/patronage | Business viability and employment | Yes | Operation | B | The project could possibly impact on passing trade. This aspect would require investigation. |
| 10.4 | Temporary disruption to business during construction period | Business viability and employment |  | Construction | B | Limited effects on retail/business precincts are expected. Where impacts are unavoidable, construction would be staged to minimise impacts. |
| **11 Transport and traffic** | | | | | | |
| 11.1 | Potential to cause unintended consequences on the road system | Community access and mobility | Yes | Construction & Operation | B | Transport modelling would be undertaken to predict any potential changes in traffic flows. These potential changes would be managed via Traffic Management Plan/s. |
| 11.2 | Potential conflicts with other transport projects | Community access and mobility | Yes | Operation | C | The project would be planned in consultation with other government agencies and councils to ensure compatibility with other transport projects. |
| 11.3 | Potential impacts to public transport facilities or service | Community access and mobility | Yes | Operation | C | The project would be planned in consultation with other government agencies and Councils to ensure compatibility with other transport projects to the extent possible. Opportunities for improvement to public transport services would be investigated |
| 11.4 | Changes in road safety as a result of the project | Road safety | Yes | Operation | C | Road safety assessments are a standard part of the design process. |
| 11.5 | Potential for traffic disruption due to the need to transport spoil | Community Access and Mobility |  | Construction | B | This is a common scenario for the construction of major transport projects. There is potential for large volumes of spoil to need to be removed. Opportunities for the beneficial re-use of spoil will be explored. |
| 11.6 | Potential impact on road network function as a result of construction activities | Community Access and Mobility |  | Construction | A | The potential for temporary disruption to the transport network is a common scenario during construction of major transport projects. Impacts are to be minimised through measures adopted as part of traffic management plans. |
| **12 Greenhouse Gas Emissions** | | | | | | |
| 12.1 | Contribution to Victoria’s transport related greenhouse gas emissions | Climate |  | Operation | B | The change in greenhouse gas emissions across the Melbourne metropolitan transport network as a result of East West Link would be estimated. By making transport movements more efficient, the project may contribute to reducing emissions from vehicles. |
| 12.2 | Greenhouse gas emissions from tunnel operations | Climate | Yes | Operation | C | Energy requirements to operate the tunnel would contribute to greenhouse gas emissions. Emission reduction opportunities would be explored during the design process. Best practice would to be applied to the management of energy use, energy related greenhouse gas emissions and any non-energy related greenhouse gas emissions. Major focus would be on lighting and ventilation systems. |
| 12.3 | Greenhouse gas emissions from construction activities | Climate |  | Construction | C | Construction phase emissions are considered less significant than operation phase emissions. Efficient construction methods are routinely specified as standard management measures through an EMP. |
| **13 Contaminated Land and Acid Sulphate Soils** | | | | | | |
| 13.1 | Management of contaminated land during construction | Public health, land/waterways/ ecosystems |  | Construction | C | Management of contaminated soil during construction is to be controlled via comprehensive measures in an EMP. Any potential impacts to public health would be closely managed and monitored. |
| 13.2 | Odour from excavation of contaminated materials | Residential amenity |  | Construction | C | Management of contaminated soil during construction is to be controlled through comprehensive management measures in an EMP. |
| 13.3 | Potential pollution from disturbance to acid sulphate soils (ASS) | Waterways/land /ecosystems |  | Construction | C | Management of ASS would be controlled via comprehensive management measures within an EMP. |
| 13.4 | Potential changes in groundwater movement due to tunnel construction and operation could result in changes in moisture content of ASS resulting in pollution | Waterways/land/ ecosystems |  | Construction and Operation | C | Groundwater investigations and interactions with ASS would be considered as part of the EMP. Comprehensive management measures would be in place to prevent pollution. |

Table 8 Issues Screening - Part B: CityLink to the Port of Melbourne

|  | Issue | Assets, values and uses to be protected | Can potential impacts be minimised during design? | Project Phase | Investigation Category | Comment |
| --- | --- | --- | --- | --- | --- | --- |
| **1 Air quality** | | | | | | |
| 1.1 | Air emissions from vehicles using surface and elevated roadways | Public health |  | Operation | A | The local air quality impact would be investigated. |
| 1.2 | Dust from construction activities | Public health/ residential amenity |  | Construction | C | Construction dust would be adequately managed through an Environmental Management Plan (EMP). |
| **2 Noise and vibration** | | | | | | |
| 2.1 | Noise from vehicles using surface roads and elevated roadways | Residential amenity | Yes | Operation | B | Any changes in noise levels near residential areas would be investigated and noise attenuation measures incorporated into design. |
| 2.2 | Noise and vibration from construction activities could potentially cause short term disturbance. | Residential amenity |  | Construction | C | Noise and vibration from construction would be temporary and would depend on particular construction activities. Construction noise would be managed via an EMP with particular care taken when works are in proximity to sensitive receptors, consistent with EPA guidelines. |
| **3 Post settlement heritage** | | | | | | |
| 3.1 | Potential impact to registered heritage places through surface construction activities | Heritage places and values | Yes | Construction & Operation | C | Preservation of significant heritage features as much as possible would be incorporated into the design phase as appropriate. If impacts to heritage places are expected, investigations into potential effects and mitigation opportunities would be undertaken.  Victorian Heritage Register and Inventory sites located within the vicinity of the indicative corridor include: Debneys Park East (VHI), Former Burge Brothers Factory (VHR) and West Melbourne rubbish Tips (VHI) |
| 3.2 | Potential to affect local heritage character and settings | Heritage places and values | Yes | Construction & Operation | C | Some of the indicative corridor is affected by a heritage overlay. Design parameters and construction techniques would need to be sympathetic to heritage values. |
| 3.3 | Potential for impacts on undocumented sites of European heritage significance | Heritage places and values | Yes | Construction & Operation | C | Heritage within the indicative corridor has been well documented.  Comprehensive post settlement heritage investigations would need to be undertaken during the planning process. |
| **4 Aboriginal cultural heritage** | | | | | | |
| 4.1 | Potential impacts to areas of cultural heritage sensitivity around the Moonee Ponds Creek environs | Cultural heritage | Yes | Construction & Operation | C | The majority of the indicative corridor is highly disturbed. Cultural heritage investigations would be undertaken in areas of sensitivity in order to prepare a Cultural Heritage Management Plan. |
| **5 Urban form, visual and landscape** | | | | | | |
| 5.1 | Integration of project structures with surrounding urban for, local character and streetscape | Urban form / places | Yes | Operation | A | Project structures (e.g. elevated roadways) would need to be sensitively designed using good urban design principles in order to maintain, as much as practicable, existing urban form and potential urban renewal opportunities. |
| 5.2 | Potential visual impacts of project structures (e.g. bridges, elevated roadways) | Visual amenity | Yes | Operation | A | Elevated roadways could potentially have a significant visual impact however adoption of good urban design principles would minimise that impact. |
| 5.3 | Compatibility with existing and future land use activities including urban renewal opportunities | Existing and future land uses | Yes | Operation | A | Project structures would need to be designed to ensure that future land uses are not unreasonably compromised. |
| **6 Surface water** | | | | | | |
| 6.1 | Potential to affect flood plain function and flood levels | Property and assets | Yes | Operation | A | Moonee Ponds Creek is significant in relation to flood impacts. This would be investigated and accommodated through the design process. |
| 6.2 | Management of polluted stormwater from road surface | Water quality | Yes | Operation | C | This would be routinely incorporated into the project design. |
| 6.3 | Interaction with sewage and drainage assets | Property and assets | Yes | Construction | B | A number of significant sewage and water assets are located in the project area. Project design would be undertaken in consultation with asset owners and services would be avoided where possible or otherwise relocated. |
| 6.4 | Management of polluted stormwater during construction | Water quality | Yes | Construction | C | This would be controlled via work method statements in an EMP |
| **7 Ecology** | | | | | | |
| 7.1 | Potential removal of native vegetation | Native vegetation | Yes | Construction | C | The majority of the corridor is highly disturbed and developed. |
| 7.2 | Potential loss of riparian vegetation (Moonee Ponds Creek) and reduction in ecological values of waterways | Native vegetation and waterways | Yes | Construction | C | Riparian zones would be protected where possible for works in the vicinity of Moonee Ponds Creek via standard measures in the EMP. |
| 7.3 | Potential introduction/spread of weeds, pests or disease organisms during construction | Native vegetation |  | Construction | C | This would be controlled via standard measures in an EMP |
| **8 Social and community** | | | | | | |
| 8.1 | Regional community benefits of the project through improved access and mobility and reduced travel times | Community, access and mobility | Yes | Operation | A | A key driver for the project is the community benefits from improved access, mobility and reduced travel times, particularly for residents in Melbourne’s eastern and western suburbs and Regional Victoria |
| 8.2 | Local community benefits through reduced traffic impacts on local roads | Community well being | Yes | Operation | A | Reallocation of through traffic from local roads onto East West Link would have considerable amenity benefits for local residents |
| 8.3 | Potential impact on the connectivity of local communities | Community well being | Yes | Operation | B | The potential impact of the project on local access and mobility would be investigated through a Social Impact Assessment. |
| 8.4 | Potential displacement of residents | Community well being | Yes | Operation | A | Property acquisition for Part B is unknown at this stage. This would be investigated and considered as part of the design process. |
| 8.5 | Potential disruption of local movement patterns | Community access and mobility | Yes | Construction & Operation | B | There may be a need to potentially modify existing road networks to accommodate the project via a Traffic Management Plan/s. |
| 8.6 | Loss in quality and function of open space/parkland | Public open space | Yes | Operation | B | There are some areas of public open space along Moonee Ponds Creek and Debneys Park. Loss of open space would be avoided where possible. |
| 8.7 | Potential temporary loss of access to public open space/parkland during construction period | Public open space |  | Construction | B | There are some areas of public open space within the corridor including Debneys Park and Moonee Ponds Creek. Temporary loss of access to open space would be avoided where possible |
| 8.8 | Potential loss of community facilities | Community facilities |  | Construction & Operation | B | It is expected that as part of the design development process, loss of community facilities would be avoided. If loss of community facilities does occur, opportunities for replacement of facilities would be investigated. |
| 8.9 | Potential impact on pedestrian or bike paths during construction | Community access and mobility |  | Construction | B | Any existing pedestrian or bike paths that are severed would be reinstated in a suitable location. |
| 8.10 | Potential impact on public transport services during construction | Community access and mobility |  | Construction | C | Construction works are not expected to cause significant impacts on public transport services. Any impacts would be temporary in nature and would be managed through a Traffic Management Plan. |
| **9 Economics and business** | | | | | | |
| 9.1 | Economic benefits from the project through improved access and mobility and reduced travel times | Business viability and employment |  | Operation | A | Economic benefits associated with changed connectivity at the regional level would be described. |
| 9.2 | Potential displacement of businesses due to acquisition of commercial properties | Business viability and employment | Yes | Construction & Operation | A | Potential acquisition of commercial/industrial land would be investigated and considered as part of the design process. |
| 9.3 | Changed traffic flows potentially affect business visibility/patronage | Business viability and employment | Yes | Operation | C | Not as relevant for Part B as it is likely that there would be less displacement of passing trade. |
| 9.4 | Temporary disruption to business during construction period | Business viability and employment |  | Construction | C | Limited effects on retail/business precincts are expected. Where these impacts are unavoidable, construction would be staged to minimise impacts. |
| **10 Transport and traffic** | | | | | | |
| 10.1 | Potential to cause unintended consequences on the road system | Community access and mobility | Yes | Construction & Operation | B | Transport modelling would be undertaken to predict any potential changes in traffic flows. These potential changes would be managed via Traffic Management Plan/s. |
| 10.2 | Potential conflicts with other transport projects | Community access and mobility | Yes | Operation | C | The project would be planned in consultation with other government agencies and councils to ensure compatibility with other transport projects to the extent possible. |
| 10.3 | Potential impacts to public transport facilities or service | Community access and mobility | Yes | Operation | C | The project would be planned in consultation with other government agencies and councils to enhance compatibility with other transport projects. Opportunities for improvement to public transport services would be investigated. |
| 10.4 | Changes in road safety as a result of the project | Road safety | Yes | Operation | C | Road safety assessments are a standard part of the design process. |
| 10.5 | Potential impact on road network function as a result of construction activities | Community access and mobility |  | Construction | C | The potential for temporary disruption to the transport network is a common scenario during construction of major transport projects. This issue is considered potentially more significant for Part A given the complexity of the local road network in that area. Impacts are to be minimised through measures adopted as part of traffic management plans. |
| **11 Greenhouse gas emissions** | | | | | | |
| 11.1 | Contribution to Victoria’s transport related greenhouse gas emissions | Climate |  | Operation | B | The change in greenhouse gas emissions across the Melbourne metropolitan transport network as a result of the project would be estimated. By making transport movements more efficient, the project may contribute to reducing emissions from vehicles. |
| 11.2 | Greenhouse gas emissions from construction activities | Climate |  | Construction | C | Efficient construction methods are routinely specified as standard management measures through an EMP. |
| **12 Contaminated land and acid sulphate soils** | | | | | | |
| 12.1 | Management of contaminated land during construction | Public health / land / waterways / ecosystem |  | Construction | C | Management of contaminated soil during construction is to be controlled via comprehensive measures in an EMP. Any potential impacts to public health would be closely managed and monitored. |
| 12.2 | Odour from excavation of contaminated materials | Residential amenity |  | Construction | C | Management of contaminated soil during construction would be controlled through comprehensive management measures in an EMP. |
| 12.3 | Potential pollution from disturbance to acid sulphate soils (ASS) | Waterways / land / ecosystems |  | Construction | C | Management of ASS would be controlled via comprehensive management measures within an EMP. |

# Applicable Statutory Approvals

## State Approvals

The primary State approvals required for the project capable of being granted under the MTPF Act are called applicable approvals, and the relevant legislation applicable law.

The applicable approvals likely to be required under the MTPF Act and their corresponding applicable laws are presented in Table 9 below, for Parts A and B

Table 9 Applicable approvals under the MTPF Act

| Approval / Consent | Part A | Part B |
| --- | --- | --- |
| Works approval under section 19B of the *Environment Protection Act 1970*. | Required for a road tunnel ventilation system as specified in the *Environment Protection (Scheduled Premises and Exemptions) Regulations 2007*. | Assumed not required, as this section would be elevated. |
| Planning scheme amendment under the *Planning and Environment Act 1987*. | Required. Incorporated document covering both Parts A and B. However the incorporated document may specify different controls applicable to each Part. | Required. Incorporated document covering both Parts A and B. However the incorporated document may specify different controls applicable to each Part. |
| Permit under Section 74 of the *Heritage Act 1995* to carry out works or activities in relation to a registered place or registered object. | Permit required in respect of the Melbourne General Cemetery (although the project is anticipated to be in tunnel in this section).  Permits may also be required for other sites listed on the Victorian Heritage Register/and or Inventory to the extent that there is potential for disturbance. | Permit may be required in relation to sites listed on the Victorian Heritage Register and/or Inventory to the extent that there is potential for disturbance. |
| Consent under Section 129 of the *Heritage Act 1995* for impact on archaeological relics. | Possibly required in respect of Royal Park listed on the Heritage Inventory and may be required to the extent that there is potential for impact on archaeological relics in other areas. | Unlikely that any consent will be required. |
| Consent under Clause 1 of Schedule 2 of the *Road Management Act 2004* allowing connection to a Freeway. | Required for connection to CityLink.  Required for connection to Eastern Freeway. | Likely to be required for connection to CityLink. |
| Consent under Clause 16 of Schedule 7 of the *Road Management Act 2004* for works on a road. | Consents required for works on roads. | Consents required for works on roads. |
| Licence under section 67 of the *Water Act 1989* required to construct, alter, operate or decommission works on a waterway, including works to deviate a waterway. | Licence under section 67 of the *Water Act 1989* to construct, alter, operate or decommission works on a waterway. | Licence under section 67 of the *Water Act 1989* to construct, alter, operate or decommission works on a waterway. |
| Comment from the Secretary pursuant to section 66 of the *Conservation, Forests and Lands Act 1987* on plan of works across waterways. | May be required for works across Merri Creek or Moonee Ponds Creek. | May be required for works across Moonee Ponds Creek. |

Each applicable law specified in the Table 9 has a range of relevant policies, objectives and criteria that would be considered in the assessment of potential impacts of the project or its component parts. Some of these policies are referred to in Section 2.3. Other policies, objectives and criteria can be found in the applicable laws. Where relevant, each of these would be considered not only in the assessment of the project but also in the development of the further studies discussed in Section 8.

For the purpose of the *Aboriginal Heritage Act* 2006, the project would be considered a high impact project requiring the preparation and approval of a Cultural Heritage Management Plan (CHMP).

In addition, other consents may be required for use of or access to crown land reservations, in accordance with the *Crown Land (Reserves) Act, 1978.* This would be investigated as part of the planning process.

## Commonwealth approvals

The project has been referred under the Commonwealth EPBC Act to the Minister for Sustainability, Environment, Water, Population and Communities for a decision on whether the project would constitute a controlled action.

# Outline of further studies

Specialist studies would be undertaken to assess the effects of the project, in accordance with the Scoping Directions.

The proposed studies outlined in this section have been designed to:

* assess the project against the evaluation objectives presented in Section 1.
* address applicable legislative requirements and support the applicable project approvals presented in Section 7.
* investigate the issues identified through the issues screen presented in Section 6. The level of investigation should be commensurate with the assigned investigation category presented in Tables 6 and 7.

Construction and operation of the project would be expected to have benefits and adverse effects at three scales – (a) the state/metropolitan level, (b) the regional level (across a number of local government areas) and (c) at a local precinct level. Accordingly, assessment of the benefits and adverse effects of the project would be undertaken at each of these scales.

Each study would entail the collection and collation of the base line data required to underpin impact assessments which would delineate between **permanent and temporary impacts** arising from construction, predict and evaluate impacts and their reliability, develop design and mitigation options and propose an approach to assessment and management of residual risk and uncertainty.

The output of each study would include clear performance requirements for the project (as discussed in Section 1.7). The management and mitigation measures developed by each of the specialist studies would provide guidance as to how the project and its variations could achieve the performance requirements.

The proposed tasks for each study, along with the issues the studies are to address, are indicated below.

## State/Metropolitan benefits

As an important metropolitan shaping project, the economic and other benefits which would arise from the project and its significance for Victoria would be clearly articulated.

In particular, the project’s contribution to the goals of the Victorian Government’s *Metropolitan Planning Strategy, Transport Solutions* strategy (both currently under preparation) and other key State Government strategies would be presented.

This discussion would draw on the work already completed for the East West Link Business Case and provide context for the subsequent regional and precinct level studies discussed below.

## Regional level impacts

It is expected that at a regional level, the integrated transport, land use, social, economic and environmental sustainability implications for the region in the Melbourne context would be investigated. The proposed scope of work for each study is presented below.

### Transport

This study would be undertaken to support the following applicable approvals:

* Planning Scheme Amendment under the *Planning and Environment Act 1987*.

Key issues to be investigated in this study would include:

* Changes in traffic volumes (including commercial vehicle volumes) and transport patronage within the region as a result of including the project into the transport network.
* Changes in traffic volumes (including commercial vehicle volumes) along roads within the region as a result of the construction activities associated with the project.

Key activities proposed to investigate, predict and mitigate the issues listed above include:

* Produce a fit-for-purpose transport model (including validation and calibration of the model).
* Model future years with and without the project to determine the transport changes.
* Test the sensitivities of these changes by varying some of the assumptions relating to future years (including demographics, transport infrastructure and costs relating to travel).
* Consider the regional impacts of construction activities on the road network and public transport services.
* Identify potential works to upgrade and / or mitigate roads and public transport services affected.
* Assess the potential benefits and disbenefits of the project due to changed local traffic volumes, safety conditions, travel time savings and vehicle emissions.

### Land use planning

This study would be undertaken to support the following applicable approvals:

* Planning Scheme Amendment under the *Planning and Environment Act 1987*.

Key issues to be investigated in this study would include:

* Potential for the project to have impacts upon existing / proposed land use activities (including public land).
* Potential influences of the project on urban renewal opportunities identified by State and Local Government.

Activities proposed to investigate, predict and mitigate the issues listed above include:

* Review existing land uses across the region.
* Evaluate the project in relation to relevant planning scheme provisions, policies and strategies (both State and Local), particularly in relation to strategic policy directions.
* Identify opportunities where the project can contribute to urban renewal opportunities.
* Identify opportunities to minimise impacts of the project on the use and development of surrounding land in a regional context.
* Identify the land requirements for the project and general ownership patterns within the region.

### Social and economic

This study would be undertaken to support the following applicable approvals:

* Planning Scheme Amendment under the *Planning and Environment Act 1987*.

Key issues to be investigated in this study would include:

* Social benefits (and any disbenefits) associated with changed connectivity at the regional level (i.e. the extended range of employment, recreational and business opportunities as well as social infrastructure and services which are practical to access).
* Economic benefits (and any disbenefits) associated with changed access and mobility at the regional level.
* Project links to the social and economic development goals and strategic planning objectives of the State Government.
* Temporary construction impacts on connectivity and access.
* Opportunities for improving the final use of public space and flow on potential legacy projects (e.g. final use redevelopment of parks, pedestrian paths, etc.).

Activities proposed to investigate, assess and mitigate the issues listed above include:

* Undertake a review of relevant policy to inform the social impact assessment including a review of DPCD planning documents, the *Transport Integration Act 2010* and other key documents to understand the regional planning context.
* Profile the existing social and economic conditions and characteristics of the region using a combination of quantitative and qualitative information, with emphasis on those attributes most susceptible to project impacts.
* Identify direct and indirect socio-economic impacts which are both perceived and likely to affect the social and economic conditions of the region, with a focus on those of materiality.
* Incorporate equity considerations into the assessment, addressing the project’s likely influence on vulnerable groups.
* Adopt an approach to the extent feasible which avoids the double counting of impacts and succinctly assesses the significance of each impact of the project in terms of its net or overall benefit or dis-benefit to the region.
* Propose management and mitigation measures where needed to address any regionally significant social and economic impacts.

### Environmental sustainability

This study would be undertaken to support the following applicable approvals:

* Works Approval under the *Environment Protection Act 1970* for a road tunnel ventilation system.
* Planning Scheme Amendment under the *Planning and Environment Act 1987*.

The environmental changes that could result from the project during construction and operation at a regional level would be summarised and assessed against the core principles of sustainable development. The following would be investigated:

* Regional air quality – investigate the total calculated air emissions from the regional road network, with and without the project.
* Greenhouse gas assessment **–** undertake a greenhouse gas assessment in accordance with relevant standards: including identification of key emission sources; based on transport modelling (including induced demand) calculate changes to greenhouse gas emissions levels compared to a “no project” scenario; and develop an approach to best practice energy and greenhouse gas management.
* Surface Water **–**- characterise floodplain function across the region and identify areas subject to inundation, identify water related constraints and risks; develop a project level strategy for managing surface water risks during design for operation and construction.
* Ground water – characterise groundwater flow systems and develop a strategy for managing groundwater related issues during design for operation and construction.
* Geology and contamination –- characterise regional geology; identify contamination risks and hotspots; develop a project level strategy for managing contamination issues and spoil disposal.
* Biodiversity –- characterise the regional biodiversity; identify biodiversity values and potential risks and develop a strategy for managing issues during design for operation and construction.
* Noise and Vibration – identify high amenity areas and locations (i.e. residential and potentially business/commercial areas) sensitive to noise and vibration which may be affected by increased noise from the project. Propose a strategy for managing and minimising noise during design for operation and construction

## Precinct Level Impacts

More detailed assessments would be undertaken at a local precinct level. Precincts would be defined around the locations of surface works and sensitive land uses (such as residential areas, waterways, parklands etc). The scopes of work for the proposed precinct level studies are presented below.

### Traffic

This study would be undertaken to support the following applicable approvals:

* Planning Scheme Amendment under the *Planning and Environment Act 1987*.
* Consent under the *Road Management Act*

Key issues to be investigated in this study would include:

* Changes in traffic volumes (including commercial vehicle volumes), transport patronage and localised congestion within the precinct as a result of including the project into the transport network.
* Changes in traffic volumes (including commercial vehicle volumes) and localised congestion within the precinct as a result of the construction activities associated with the project.

Key activities proposed to investigate, predict and mitigate the issues listed above include:

* Undertake traffic analysis to identify potential works to upgrade and/or mitigate roads, intersections and public transport services impacted upon during operation and construction.
* Assess the potential benefits and disbenefits of the project due to changed local traffic volumes, safety conditions, travel time savings and vehicle emissions.
* Propose performance requirements for minimising potential traffic impacts upon local road networks and public transport services.

### Urban form and landscape

This study would be undertaken to support the following applicable approvals:

* Planning Scheme Amendment under the *Planning and Environment Act 1987*.

Key issues to be investigated in this study would include:

* Potential for project structures to integrate sensitively with surrounding urban form, including impacts on local character and streetscape.
* Potential visual impact of project structures (e.g. tunnel portals and elevated roadways).
* Compatibility with existing and future land use activities including urban renewal

Activities proposed to investigate, predict and mitigate the issues listed above include:

* Identify and review precinct and structure plans, urban design plans and strategies relevant to the precinct in order to establish the existing structure and character of the urban form and landscape.
* Evaluate the potential impacts of proposed structures on surrounding urban fabric and landscape taking into account structure, character, scale and use.
* Propose performance requirements, urban design guidelines and indicative landscape and urban design treatments to minimise adverse impacts on urban form and landscape.

### Social amenity and business

This study would be undertaken to support the following applicable approvals:

* Planning Scheme Amendment under the *Planning and Environment Act 1987*.

Key issues to be investigated in this study would include:

* Community benefits (and any disbenefits) associated with changed connectivity at the precinct level (i.e. the extended the range of employment, recreational and business opportunities as well as social infrastructure and services which are practical to access).
* Business benefits (and any disbenefits) associated with changed connectivity at the precinct level.
* Local community benefits through changed traffic impacts on local roads (options for alternative use of time, improved amenity of local areas, etc).
* Potential displacement of residents due to acquisition of residential properties.
* Potential displacement of businesses due to acquisition of commercial properties.
* Potential post-construction opportunities proposing to improve, the quality and function of open space/parkland, in particular Royal Park, Yarra Bend Park, the Merri Creek environs and the Moonee Ponds Creek.
* Potential impacts of the project, including project-related changes to existing traffic movement patterns and access to residential properties, community facilities, open space/parkland and business during construction.
* Changed traffic flows potentially affecting business visibility/patronage particularly along Alexandra Parade during construction (particularly for Part A).
* Potential impacts on pedestrian or bike paths during construction and opportunities for improvements post-construction (particularly for Part A).
* Potential impacts on public transport services during construction and opportunities for improvements post-construction (particularly for Part A).
* Potential temporary loss of access to public open space/parkland during the construction period, in particular Royal Park, Yarra Bend Park, the Merri Creek environs and the Moonee Ponds Creek (Part A).

Activities proposed to investigate, assess and mitigate the issues listed above include:

* Undertake a review of relevant policy to inform the social impact assessment. Review Council Plans and other key documents to understand the local precinct planning context.
* Profile the existing socio-economic conditions and characteristics of study communities using a combination of quantitative and qualitative information, with emphasis on those attributes most susceptible to project impacts.
* Identify key community services, assets and facilities in the local precincts which may be influenced by, or have an influence on, the project.
* Characterise businesses in the local precincts, in consideration of supply chain logistics, target markets and relative contributions to the regional and state economies where appropriate.
* Identify and describe businesses potentially affected by the project including any which might be permanently displaced and those which might be temporarily disrupted by construction activities.
* Undertake primary social research including surveys, interviews and focus groups with project stakeholders to understand existing conditions and perceived impacts.
* Identify direct and indirect social economic impacts on communities and businesses which are both perceived and likely, with a focus on those of materiality.
* Assess the potential socio-economic impacts associated with the project, including but not limited to potential severance of communities, displacement of residents, changes in mobility and access to community facilities.
* Assess the effects of potential impacts on businesses within local precincts.
* Incorporate equity considerations into the assessment, addressing the project’s likely influence on vulnerable groups.
* Adopt an approach to the extent feasible which avoids the double counting of impacts and succinctly assesses the significance of each impact of the project in terms of its net or overall benefit or dis-benefit at the precinct level.
* Propose performance requirements, management and mitigation measures where needed to address any significant social and economic impacts on communities and businesses at the precinct level.

### Cultural heritage

This study would be undertaken to support the following applicable approvals:

* Permit under Section 74 of the *Heritage Act 1995* to carry out works or activities in relation to a registered place or registered object.
* Consent under Section 129 of the *Heritage Act 1995* for impact on archaeological relics.
* Planning Scheme Amendment under the *Planning and Environment Act 1987*.

Note: A Cultural Heritage Management Plan (CHMP) would be required for the project however this is not an applicable approval to be determined by the Minister for Planning.

Key issues to be investigated in this study (particularly for Part A) would include:

* Potential to impact Victorian Heritage Register and Inventory Places in the vicinity of the works (through ground vibration, settlement and /or surface construction activities).
* Potential to affect local heritage character and setting.
* Potential for impacts on undocumented sites of European significance.
* Potential impacts to areas of Aboriginal cultural heritage sensitivity, in particular Merri Creek, Yarra River and the Royal Park environs.

Activities proposed to investigate, predict and mitigate the issues listed above include:

* Review available information including previous reports and government databases to identify known Aboriginal and/or European cultural heritage sites and values.
* Undertake targeted investigations into key heritage sites potentially affected.
* Undertake targeted field investigations to characterise Aboriginal cultural heritage sites and values which may be potentially affected by the project.
* Consult with relevant Aboriginal groups such as the Wurundjeri Registered Aboriginal Party and other community based heritage groups.
* Assess the potential impacts on Aboriginal and European cultural heritage sites and values in the project area, including the opportunity to avoid sites where possible.
* Propose performance requirements for the management of cultural heritage issues.

### Air quality

This study would be undertaken to support the following applicable approvals:

* Works Approval under the *Environment Protection Act 1970* for a road tunnel ventilation system.

Key issues to be investigated in this study would include:

* Air emissions from tunnel ventilation structures.
* Air emissions from vehicles using surface and elevated roadways.
* Dust from construction activities with potential to cause nuisance.

Activities proposed to investigate, predict and mitigate the issues listed above include:

* Obtain and review existing air quality and meteorological data.
* Determine performance requirements for tunnel ventilation structures linked to relevant legislation and policy.
* Undertake air modelling using AUSPLUME or other suitable model to predict pollutant concentrations related to emissions from the tunnel ventilation structures.
* Assess potential air quality impacts associated with tunnel ventilation structures in relation to design criteria of SEPP AQM.
* Based on output from the strategic transport modelling, evaluate potential air quality impacts from vehicles as a consequence of the project.
* Assess potential air quality impacts from vehicles using the Part A Eastern section of East West Link and identified hotspots (e.g. key intersections) in relation to intervention levels of SEPP AQM.
* Investigate mitigation measures and propose performance requirements to address significant air quality issues identified through the assessments undertaken.

### Noise and vibration

This study would be undertaken to support the following applicable approvals:

* Works Approval under the *Environment Protection Act 1970* for a road tunnel ventilation system.
* Planning Scheme Amendment under the *Planning and Environment Act 1987*.

Key issues to be investigated in this study would include:

* Noise from operating ventilation structures.
* Noise from vehicles using surface roads and elevated roadways.
* Vibration from vehicles using the tunnel.
* Noise and vibration during construction.

Activities proposed to investigate, predict and mitigate the issues listed above include:

* Identify high amenity areas and locations (i.e. residential and potentially business/commercial areas) sensitive to noise and vibration which may be affected by above ground works and determine background noise and vibration levels.
* Use traffic modelling outputs to predict noise levels in noise sensitive areas with and without the project.
* Evaluate the potential impacts of noise from operating ventilation structures in relation to the requirements of SEPP N-1.
* Assess the potential for vibration impacts on private and public property assets.
* Propose performance requirements and a strategy to mitigate noise and vibration impacts during construction and operation.

### Surface water

This study would be undertaken to support the following applicable approvals:

* Licence under the *Water Act 1989* required to construct, alter, operate or decommission works on a waterway.
* Planning Scheme Amendment under the *Planning and Environment Act 1987*.

Key issues to be investigated in this study would include:

* Potential to affect flood plain function and flood levels, particularly within the Moonee Ponds Creek corridor, resulting in increased flood risk of property.
* Bridge widening works over the Merri Creek and bridge construction works over the Moonee Ponds Creek.
* Construction activities potentially damage sewage and drainage assets, particularly in the vicinity of Alexandra Parade.

Activities proposed to investigate, predict and mitigate the issues listed above include:

* Characterise floodplain function and identify areas subject to inundation.
* Assess the potential impacts of the project on floodplain function and beneficial uses of waterways including any potential consequential effects on property assets.
* Propose performance requirements and mitigation measures required in the design and operation of the project to minimise risks to floodplain function and waterways.

### Groundwater

This study would be undertaken to support the following applicable approvals:

* Licence under the *Water Act 1989* required to construct, alter, operate or decommission works on a waterway.

Key issues to be investigated in this study would include:

* Potential changes to groundwater movement patterns from tunnel which could result in property settlement/damage.
* Management of extracted groundwater so as not to cause pollution of aquifers and waterways.
* Potential for tunnel to contribute to migration of existing polluted groundwater.

Activities proposed to investigate, predict and mitigate the issues listed above include:

* Review available geological and hydrogeological data, reports and maps. Describe the groundwater flow systems, interactions between aquifers, characterise groundwater chemistry and identify receptors and users of the groundwater.
* Assess the potential for impacts on beneficial uses of groundwater.
* Assess the potential for property settlement due to changes in the groundwater system.
* Investigate methods to manage any groundwater extracted during the operation of the road tunnel.
* Propose performance requirements for groundwater management.

### Ecology

This study would be undertaken to support the following applicable approvals:

* Planning Scheme Amendment under the *Planning and Environment Act 1987*.

Key issues to be investigated in this study would include:

* Potential impacts on State and Regionally significant flora and fauna species and/or ecological communities in Royal Park.
* Potential removal of native vegetation and habitats in Royal Park.

Activities proposed to investigate, predict and mitigate the issues listed above include:

* Assess impacts the project may have on ecological communities or species listed under State legislation.
* Undertake a net gain assessment and identify any offset requirements in accordance with *Victoria’s Native Vegetation Management - A Framework for Action*.
* Propose performance requirements and measures to minimise and mitigate the issues listed above including disturbance to habitats and species/communities.

## Environmental management during construction & operation

The environmental assessment documentation would consider the potential impacts associated with both the construction and operation phases of the project, and present a management framework for construction works and operational activities to ensure that impacts are mitigated, monitored and managed throughout project delivery so as to meet performance requirements.

A Construction Environmental Management Framework (EMF) and an Operations EMF would be developed for the project. The content of the Operations and framework for Construction EMF would be determined following the results of the technical studies.

The following specific issues, reflecting the performance requirements, would be addressed through the EMF developed for construction of the project:

* Dust, noise and vibration generated from construction activities could potentially cause short term disturbance to community.
* Management, handling and transport of extracted groundwater and spoil.
* The potential for acid sulphate soils and contaminated land to be encountered and disturbed during project construction.
* Discharge of polluted stormwater.
* Erosion, soil stability and sedimentation hazards associated with construction of the project.
* Temporary disruption to businesses during the construction period.
* Potential impact on road network function as a result of construction activities including workforce access and parking.
* Greenhouse gas emissions from construction activities.

These issues were generally considered to be Category C issues, as per the Issues Screen (refer Section 6), as standard measures are available to manage these issues. Clear commitments on how environment issues would be managed during construction would be described within the EMF. The outputs of the technical studies undertaken for Category A and B issues would also be incorporated into the EMF where appropriate for construction.

The EMF would provide a structure for:

* Establishing, communicating and implementing Performance Requirements.
* Key risk management and control strategies.
* Governance approaches and arrangements including responsibilities, reporting, review and auditing.

The EMF (Construction and Operation) would become the basis for the development of future detailed Environmental Management Plans for construction and operational activities.

# Communications and stakeholder engagement

## Consultation completed to date

*East West Link Needs Assessment*

The EWLNA was conducted by Sir Rod Eddington in 2007. An overview document (*Investing in Transport* (2008) for the study canvassed key issues to be addressed and interested persons or groups were invited to make submissions, with 130 submissions from individuals, local councils and business and community organisations received. In addition, the team met with around 70 stakeholders.

The Investing in Transport Report (2008) Appendix B provides a summary of the issues raised by submissions and consultations. A number of submissions strongly supported the construction of a major new east-west road link, seeing such a link as filling a critical gap in Melbourne’s road network. These submissions argued that a new east-west link is essential to managing and supporting Melbourne’s population and industry growth over the next 30 years.

There were also several submitters that expressed strong opposition to any new road based east-west link and, in general, these submissions argued that any major road link would lead to increased road travel (than would otherwise occur); have adverse effects on the health and amenity of residents in Melbourne’s inner north; encourage urban sprawl; and increase Melbourne’s heavy dependence on cars at the expense of other, more sustainable transport modes.

*East West Link (western section) engagement*

A planning and consultation program was implemented during 2010 for the western section of the East West Link, previously known as WestLink. The planning study enabled the community to have input into the development of this section and to be kept accurately informed about the project. Engagement and information activities undertaken included a Community Reference Group, Social Impact Assessment, community values workshops, surveys and research, public information displays, formal feedback periods and regular project publications. The Communications and Consultation Strategy and copies of consultation reports and documents can be viewed online at [www.linkingmelbourne.vic.gov.au](http://www.linkingmelbourne.vic.gov.au).

## Project Community Engagement Strategy

A Communications and Engagement Strategy has been developed to support East West Link (Eastern section) planning. The program has been designed to inform stakeholders and the community about the progress and findings of the planning study, to obtain high quality feedback and involve stakeholders by ensuring their feedback is considered during the project development.

The engagement approach would be timed to coincide with the planning and delivery program for the project currently under development, and in consideration of feedback from stakeholders.

**Engagement principles**

Engagement for the project would be based on the following principles:

* *Open communication:* actively seeking diverse opinions and perspectives to broaden understanding of views and improve decision making.
* *Transparency:* sharing information broadly and establishing and maintaining agreed channels for communication and feedback.
* *Collaboration:* working to seek mutually beneficial outcomes, where feasible.
* *Inclusion:* seeking to identify and involve stakeholders in planning and decisions.
* *Integrity:* undertaking open and honest engagement in a way that promotes understanding and trust.

**Target stakeholders**

The project would attract interest from a broad cross section of the Victorian community, particularly within the project area but also across wider Melbourne and Victoria. Engagement is designed to reach a range of stakeholders from the following broad categories:

* Federal Government
* Victorian Government agencies
* Local Government
* Private road operators
* Directly and potentially affected landowners
* Residents/tenants located within the study area and within the north of Melbourne
* Business owners and industry peak bodies
* Commuters
* Community facilities and service operators
* Transport advocacy stakeholders
* Interest groups, including resident, environment and public transport
* Minority and vulnerable groups i.e. including people from culturally and linguistically diverse communities
* Heritage stakeholders
* Community, environmental and recreational interest groups
* Social service providers.

**Engagement phases**

A three phase communications and engagement approach is proposed:

*Phase 1: input*

During this phase a high level, discussion would be held with community and stakeholders about the transport problems facing Melbourne and the consideration being given to an East West Link, including its challenges and opportunities. Once formal planning commences a series of online engagement forums, information sessions, surveys and community information would be used to identify high level feedback and capture any issues for consideration.

*Phase 2: feedback*

This phase involves the release of the project, and any variations, for community and stakeholder information and feedback. Feedback would be sought on any issues or concerns that need to be considered by the project team. A project newsletter, community workshops, public displays and online engagement would be undertaken together with a formal feedback period enabling stakeholders to make written submissions.

*Phase 3: submission*

At this stage, the outcome of the planning studies would be presented to the community and they would be encouraged to participate in the formal statutory planning approval process, including the development of submissions.

Figures 1 - 9

Appendix A

Preliminary Flora and Fauna Assessment Report (PB, 2013)

Appendix B

Preliminary Land Use Report (GHD, 2013)

Appendix C

Desktop European Cultural Heritage Database Assessment Report (PB, 2013)

1. Port of Melbourne to the Western Ring Road and assessed under a separate process [↑](#footnote-ref-1)
2. Southerly ramps to CityLink would adopt a slower design speed in order to minimise private property impacts. [↑](#footnote-ref-2)