Australian Government
Department of the Environment

Referral of proposed action

What is a referral?

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) provides for the protection of the environment, especially matters of national environmental significance (NES). Under the EPBC Act, a person must not take an action that has, will have, or is likely to have a significant impact on any of the matters of NES without approval from the Australian Government Environment Minister or the Minister's delegate. (Further references to 'the Minister' in this form include references to the Minister's delegate.) To obtain approval from the Environment Minister, a proposed action should be referred. The purpose of a referral is to obtain a decision on whether your proposed action will need formal assessment and approval under the EPBC Act.

Your referral will be the principal basis for the Minister's decision as to whether approval is necessary and, if so, the type of assessment that will be undertaken. These decisions are made within 20 business days, provided sufficient information is provided in the referral.

Who can make a referral?

Referrals may be made by or on behalf of a person proposing to take an action, the Commonwealth or a Commonwealth agency, a state or territory government, or agency, provided that the relevant government or agency has administrative responsibilities relating to the action.

When do I need to make a referral?

A referral must be made for actions that are likely to have a significant impact on the following matters protected by Part 3 of the EPBC Act:

- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Wetlands of international importance (sections 16 and 17B)
- Listed threatened species and communities (sections 18 and 18A)
- Listed migratory species (sections 20 and 20A)
- Protection of the environment from nuclear actions (sections 21 and 22A)
- Commonwealth marine environment (sections 23 and 24A)
- Great Barrier Reef Marine Park (sections 24B and 24C)
- A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
- The environment, if the action involves Commonwealth land (sections 26 and 27A), including:
    - actions that are likely to have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land);
    - actions taken on Commonwealth land that may have a significant impact on the environment generally;
- The environment, if the action is taken by the Commonwealth (section 28)
- Commonwealth Heritage places outside the Australian jurisdiction (sections 27B and 27C)

You may still make a referral if you believe your action is not going to have a significant impact, or if you are unsure. This will provide a greater level of certainty that Commonwealth assessment requirements have been met.

To help you decide whether or not your proposed action requires approval (and therefore, if you should make a referral), the following guidance is available from the Department's website:

- the Policy Statement titled Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Additional sectoral guidelines are also available.

- the Policy Statement titled Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies.
- the Policy Statement titled Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources.
- the interactive map tool (enter a location to obtain a report on what matters of NES may occur in that location).

Can I refer part of a larger action?

In certain circumstances, **the Minister may not accept a referral for an action that is a component of a larger action and may request the person proposing to take the action to refer the larger action for consideration under the EPBC Act (Section 74A, EPBC Act).** If you wish to make a referral for a staged or component referral, read 'Fact Sheet 6 Staged Developments/Split Referrals' and contact the Referrals Gateway (1800 803 772).

Do I need a permit?

Some activities may also require a permit under other sections of the EPBC Act or another law of the Commonwealth. Information is available on the Department's web site.

Is your action in the Great Barrier Reef Marine Park?

If your action is in the Great Barrier Reef Marine Park it may require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If a permission is required, referral of the action under the EPBC Act is deemed to be an application under the GBRMP Act (see section 37AB, GBRMP Act). This referral will be forwarded to the Great Barrier Reef Marine Park Authority (the Authority) for the Authority to commence its permit processes as required under the Great Barrier Reef Marine Park Regulations 1983. If a permission is not required under the GBRMP Act, no approval under the EPBC Act is required (see section 43, EPBC Act). The Authority can provide advice on relevant permission requirements applying to activities in the Marine Park.

The Authority is responsible for assessing applications for permissions under the GBRMP Act, GBRMP Regulations and Zoning Plan. Where assessment and approval is also required under the EPBC Act, a single integrated assessment for the purposes of both Acts will apply in most cases. Further information on environmental approval requirements applying to actions in the Great Barrier Reef Marine Park is available from http://www.gbrmpa.gov.au/ or by contacting GBRMPA's Environmental Assessment and Management Section on (07) 4750 0700.

The Authority may require a permit application assessment fee to be paid in relation to the assessment of applications for permissions required under the GBRMP Act, even if the permission is made as a referral under the EPBC Act. Further information on this is available from the Authority:

Great Barrier Reef Marine Park Authority

2-68 Flinders Street PO Box 1379
Townsville QLD 4810
AUSTRALIA

Phone: + 61 7 4750 0700
Fax: + 61 7 4772 6093

www.gbrmpa.gov.au

What information do I need to provide?

Completing all parts of this form will ensure that you submit the required information and will also assist the Department to process your referral efficiently. If a section of the referral document is not applicable to your proposal enter N/A.

You can complete your referral by entering your information into this Word file.

Instructions

Instructions are provided in blue text throughout the form.

Attachments/supporting information

The referral form should contain sufficient information to provide an adequate basis for a decision on the likely impacts of the proposed action. You should also provide supporting documentation, such as environmental reports or surveys, as attachments.

Coloured maps, figures or photographs to help explain the project and its location should also be submitted with your referral. Aerial photographs, in particular, can provide a useful perspective and context. Figures

should be good quality as they may be scanned and viewed electronically as black and white documents. Maps should be of a scale that clearly shows the location of the proposed action and any environmental aspects of interest.

Please ensure any attachments are below three megabytes (3mb) as they will be published on the Department's website for public comment. To minimise file size, enclose maps and figures as separate files if necessary. If unsure, contact the Referrals Gateway (email address below) for advice. Attachments larger than three megabytes (3mb) may delay processing of your referral.

Note: the Minister may decide not to publish information that the Minister is satisfied is commercial-in-confidence.

How do I pay for my referral?

From 1 October 2014 the Australian Government commenced cost recovery arrangements for environmental assessments and some strategic assessments under the EPBC Act. If an action is referred on or after 1 October 2014, then cost recovery will apply to both the referral and any assessment activities undertaken. Further information regarding cost recovery can be found on the Department's website.

Payment of the referral fee can be made using one of the following methods:

- **EFT Payments can be made to:**

  BSB: 092-009
  Bank Account No. 115859
  Amount: $7352
  Account Name: Department of the Environment.
  Bank: Reserve Bank of Australia
  Bank Address: 20-22 London Circuit Canberra ACT 2601
  Description: The reference number provided (see note below)

- **Cheque** - Payable to "Department of the Environment". Include the reference number provided (see note below), and if posted, address:

  The Referrals Gateway
  Environment Assessment Branch
  Department of the Environment
  GPO Box 787
  Canberra ACT 2601

- **Credit Card**

  Please contact the Collector of Public Money (CPM) directly (call (02) 6274 2930 or 6274 20260 and provide the reference number (see note below).

Note: in order to receive a reference number, submit your referral and the Referrals Gateway will email you the reference number.

How do I submit a referral?

Referrals may be submitted by mail or email.

Mail to:

Referrals Gateway
Environment Assessment Branch
Department of Environment
GPO Box 787
CANBERRA ACT 2601

- If submitting via mail, electronic copies of documentation (on CD/DVD or by email) are required.

Email to: epbc.referrals@environment.gov.au

- Clearly mark the email as a 'Referral under the EPBC Act'.
- Attach the referral as a Microsoft Word file and, if possible, a PDF file.
- **Follow up with a mailed hardcopy including copies of any attachments or supporting reports.**

What happens next?

Following receipt of a valid referral (containing all required information) you will be advised of the next steps in the process, and the referral and attachments will be published on the Department's web site for public comment.

The Department will write to you within 20 business days to advise you of the outcome of your referral and whether or not formal assessment and approval under the EPBC Act is required. There are a number of possible decisions regarding your referral:

The proposed action is NOT LIKELY to have a significant impact and does NOT NEED approval

No further consideration is required under the environmental assessment provisions of the EPBC Act and the action can proceed (subject to any other Commonwealth, state or local government requirements).

The proposed action is NOT LIKELY to have a significant impact IF undertaken in a particular manner

The action can proceed if undertaken in a particular manner (subject to any other Commonwealth, state or local government requirements). The particular manner in which you must carry out the action will be identified as part of the final decision. You must report your compliance with the particular manner to the Department.

The proposed action is LIKELY to have a significant impact and does NEED approval

If the action is likely to have a significant impact a decision will be made that it is a *controlled action*. The particular matters upon which the action may have a significant impact (such as World Heritage values or threatened species) are known as the *controlling provisions*.

The controlled action is subject to a public assessment process before a final decision can be made about whether to approve it. The assessment approach will usually be decided at the same time as the controlled action decision. (Further information about the levels of assessment and basis for deciding the approach are available on the Department's web site.)

The proposed action would have UNACCEPTABLE impacts and CANNOT proceed

The Minister may decide, on the basis of the information in the referral, that a referred action would have clearly unacceptable impacts on a protected matter and cannot proceed.

Compliance audits

If a decision is made to approve a project, the Department may audit it at any time to ensure that it is completed in accordance with the approval decision or the information provided in the referral. If the project changes, such that the likelihood of significant impacts could vary, you should write to the Department to advise of the changes. If your project is in the Great Barrier Reef Marine Park and a decision is made to approve it, the Authority may also audit it. (See "*Is your action in the Great Barrier Reef Marine Park,"* p.2, for more details).

For more information

- call the Department of the Environment Community Information Unit on 1800 803 772 or
- visit the web site http://www.environment.gov.au/topics/about-us/legislation/environment-protection-and-biodiversity-conservation-act-1999

All the information you need to make a referral, including documents referenced in this form, can be accessed from the above web site.

Referral of proposed action

Project title: Western Distributor Project

1 Summary of proposed action

NOTE: You must also attach a map/plan(s) and associated geographic information system (GIS) vector (shape file) dataset showing the location and approximate boundaries of the area in which the project is to occur. Maps in A4 size are preferred. You must also attach a map(s)/plan(s) showing the location and boundaries of the project area in respect to any features identified in 3.1 & 3.2, as well as the extent of any freehold, leasehold or other tenure identified in 3.3(i).

1.1 **Short description**

Use 2 or 3 sentences to uniquely identify the proposed action and its location.

The Western Distributor Project ('the Project') is a proposed new tunnel and elevated motorway connecting the West Gate Freeway with the Port of Melbourne, CityLink and the western edge of the CBD to provide an alternative river crossing to the existing West Gate Bridge. The Project also involves the widening of the existing West Gate Freeway from the M80 Western Ring Road to the West Gate Bridge to boost capacity, and associated road linkages to the M80 Western Ring Road and Princes Freeway.

A Project area was identified to encompass the area within which works could be required during construction. The Project area begins at the interchange of the Princes Freeway and the M80 Western Ring Road (to the west) and ends at the western edge of the CBD (to the east).

In order to clearly identify and discuss the potential presence of and impacts upon MNES in this Referral, the Project area was divided into seven precincts. These precincts are based on the location of the Project's main components. These Project components and the seven precincts comprising the Project area are shown on Figure 1 and Attachment 1 and listed in the table below.

Project Precincts	Project components
Precinct 1 – M80 Interchange to Millers Road	West Gate Freeway – Widening and road connections
Precinct 2 – Millers Road to Williamstown Road	
Precinct 3 – Williamstown Road to the Southern Tunnel Portals	Western Distributor – Yarraville alignment (including tunnel)
Precinct 4 – Yarraville Tunnel	
Precinct 5 – Northern Tunnel Portals to the Maribyrnong River	Western Distributor – Elevated road and port access
Precinct 6 – Maribyrnong River Crossing, Footscray Road Viaduct and Port Access	
Precinct 7 – Eastern Interchange and CBD Bypass	Western Distributor – Eastern interchange and CBD bypass

The Victorian Department of Economic Development, Jobs, Transport and Resources (DEDJTR) is responsible for this Referral, and is the proponent for the Project on behalf of the Victorian State Government.

This Referral is based on the State's Concept Design, developed for the purpose of preparation of the Business Case for the Project.

This concept design will be subject to more detailed development during the Victorian environmental impact assessment and statutory approvals process, which will include extensive opportunity for stakeholder and community consultation and input. This process will involve consideration and assessment of variations or alternatives to certain elements of the concept design such as the length of the tunnel, the location of ventilation structures or the location of elevated and surface road connections.

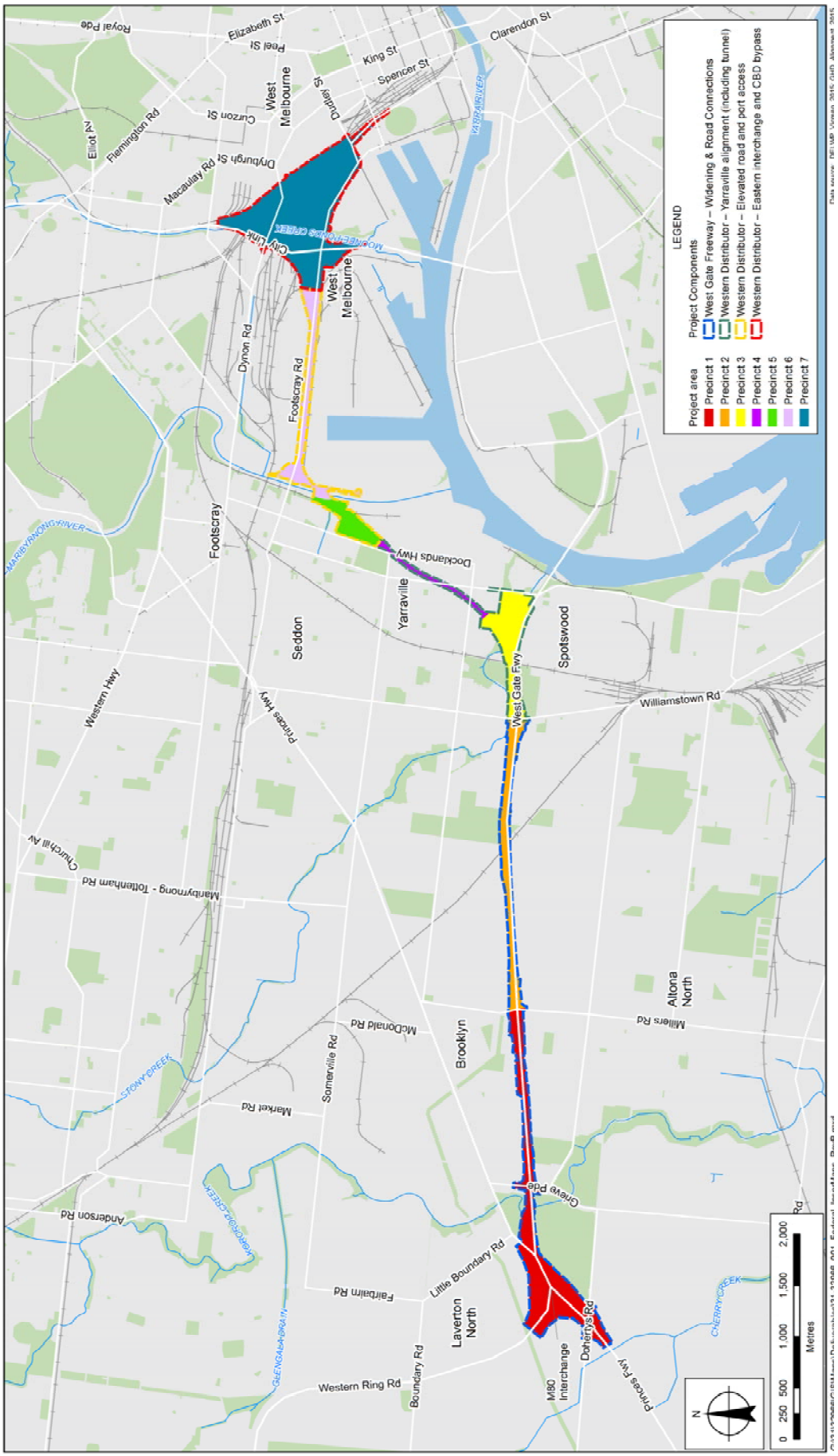

Figure 1 Western Distributor Project schematic

1.2 **Latitude and longitude**

Latitude and longitude details are used to accurately map the boundary of the proposed action. If these coordinates are inaccurate or insufficient it may delay the processing of your referral.

The Project is linear, with a significant part of the works proposed involving augmentation of existing operating arterial roads.

The coordinates given below represent the Project area, which is comprised of the seven precincts shown in Figure 1. The GIS files for the Project area are provided as Attachment 2.

Location point	Latitude			Longitude		
	deg	min	sec	deg	min	sec
1	37	49	30.22874S	144	49	07.50328E
2	37	49	26.90415S	144	49	24.12589E
3	37	49	24.76112S	144	52	06.05181E
4	37	49	27.92412S	144	52	53.84268E
5	37	49	27.70284S	144	53	15.92439E
6	37	49	20.29505S	144	53	27.88718E
7	37	49	20.15154S	144	53	34.25399E
8	37	48	51.82013S	144	53	57.96741E
9	37	48	35.11648S	144	54	07.60250E
10	37	48	36.49814S	144	54	12.88645E
11	37	48	27.87653S	144	54	20.40058E
12	37	48	28.61725S	144	54	24.40428E
13	37	48	13.21182S	144	54	31.77597E
14	37	48	22.86958S	144	54	37.15952E
15	37	48	28.62399S	144	55	31.71940E
16	37	48	21.64724S	144	55	56.71102E
17	37	48	14.21285S	144	55	59.59267E
18	37	48	00.19736S	144	56	09.96604E
19	37	48	00.18760S	144	56	15.28867E
20	37	48	14.23302S	144	56	24.25799E
21	37	48	41.90019S	144	56	47.46508E
22	37	48	59.54492S	144	56	59.09479E
23	37	48	45.56574S	144	56	42.07054E
24	37	48	47.66143S	144	56	35.26091E
25	37	48	36.77960S	144	56	04.98760E
26	37	48	47.37702S	144	56	04.30277E
27	37	48	47.77428S	144	56	00.52643E
28	37	48	34.72616S	144	55	50.69857E
29	37	48	27.15097S	144	54	34.63704E
30	37	48	31.61135S	144	54	27.69526E
31	37	48	45.00854S	144	54	25.17476E
32	37	48	43.14596S	144	54	16.00916E
33	37	48	56.65015S	144	53	59.26739E
34	37	49	22.34098S	144	53	38.60671E
35	37	49	22.93073S	144	53	45.66694E
36	37	49	40.90772S	144	53	42.94865E
37	37	49	35.96860S	144	53	23.09066E
38	37	49	34.39041S	144	53	09.76020E
39	37	49	36.53806S	144	52	51.71337E
40	37	49	30.90499S	144	52	24.92928E
41	37	49	29.61001S	144	51	53.21672E
42	37	49	33.68180S	144	50	56.80612E
43	37	49	36.70324S	144	49	20.62308E
44	37	49	53.11206S	144	48	58.22785E
45	37	49	58.86768S	144	48	42.76390E
46	37	49	54.47159S	144	48	38.99780E
47	37	49	35.30406S	144	48	44.04442E
48	37	49	28.76737S	144	48	50.26798E

The Interactive Mapping Tool may provide assistance in determining the coordinates for your project area.

If the area is less than 5 hectares, provide the location as a single pair of latitude and longitude references. If the area is greater than 5 hectares, provide bounding location points.

There should be no more than 50 sets of bounding location coordinate points per proposal area.

Bounding location coordinate points should be provided sequentially in either a clockwise or anticlockwise direction.

If the proposed action is linear (eg. a road or pipeline), provide coordinates for each turning point.

Also attach the associated GIS-compliant file that delineates the proposed referral area. If the area is less than 5 hectares, please provide the location as a point layer. If greater than 5 hectares, please provide a polygon layer. If the proposed action is linear (eg. a road or pipeline) please provide a polyline layer (refer to GIS data supply guidelines at Attachment A).

Do not use AMG coordinates.

1.3 **Locality and property description**

Provide a brief physical description of the property on which the proposed action will take place and the project location (eg. proximity to major towns, or for off-shore projects, shortest distance to mainland).

The Project would extend over a distance of about 12 kilometres and traverse the suburbs of Melbourne's inner west, through Laverton North, Altona North, Brooklyn, Spotswood, Yarraville, Footscray and West Melbourne. The inner west is heavily urbanised and incorporates a mix of industrial, residential, retail, commercial and port and transport-related infrastructure land uses, with some areas of open space and recreation. The Project area is mainly within or abutting highly disturbed major transport corridors.

The existing West Gate Freeway occupies over half of the total length of the Project area. The West Gate Freeway begins at its interchange with the Princes Freeway and the M80 Western Ring Road, and ends at Southbank. The freeway includes the West Gate Bridge over the Yarra River, which is the major link between the west and south-east of Melbourne. The freeway is a key road connection within the M1 corridor, which stretches from Geelong through to the Latrobe Valley connecting the west and south-east of Melbourne and Melbourne's CBD and inner urban areas. The M1 corridor also includes the Princes Freeway, CityLink and the Monash Freeway.

There is limited remnant vegetation within the Project area, predominantly confined to fragmented patches along the margins of Kororoit Creek, Stony Creek, the Maribyrnong River and Moonee Ponds Creek. These waterways and their lower catchments in and downstream of the Project area have been highly modified by urban development for over 100 years. Public spaces within the Project area are predominantly planted with exotic grass, shrub and tree species.

Precinct 1 – M80 Interchange to Millers Road (P1)

Precinct 1 extends from the beginning of the West Gate Freeway from the M80 Western Ring Road interchange with the Princes Freeway and West Gate Freeway to the intersection of Millers Road and the West Gate Freeway.

This precinct is largely contained within the road reserve of the existing multi-lane West Gate Freeway structure and connecting ramps from both the M80 Western Ring Road and Princes Freeway. It mainly consists of paved road areas with amenity plantings in the road verges. Within this Precinct there are high voltage transmission lines and towers running parallel to the West Gate Freeway's northern boundary.

A constructed wetland occurs within the interchange of the freeways that is disconnected from the surrounding natural drainage network and receives stormwater run-off from the M80. The wetland is completely isolated from other waterways and aquatic habitat by the heavily modified road corridor.

Near its western extent, the West Gate Freeway bridges Kororoit Creek. At this location Kororoit Creek is a freshwater system, above tidal influence. Vegetation resembling immature Riparian Woodland is present along Kororoit Creek; however the majority of the vegetation has the appearance of being planted. The immediately surrounding land, as well as the creek catchment upstream and downstream, is completely urbanised. There has been significant commercial and industrial development of the catchment, including historic quarrying and landfill activities.

Precinct 2 – Millers Road to Williamstown Road (P2)

Precinct 2 extends along the West Gate Freeway from Millers Road to Williamstown Road. This precinct is largely contained within the road reserve of the existing multi-lane West Gate Freeway structure. It mainly consists of paved road areas with amenity plantings in the road verges. Within this precinct there are high voltage transmission lines and towers running parallel to the West Gate Freeway's northern and southern boundaries. The Bacchus Marsh Junction-Newport freight railway line runs underneath the West Gate Freeway, diagonally bisecting this precinct.

Precinct 3 – Williamstown Road to the Southern Tunnel Portals (P3)

Precinct 3 extends from Williamstown Road along the West Gate Freeway to the location of the concept design's proposed southern tunnel portals, north of the West Gate Freeway and west of Hyde Street.

Much of this precinct is contained within the road reserve of the existing multi-lane West Gate Freeway structure, which consists of paved road areas with amenity plantings in the road verges. There are high voltage transmission lines and towers running parallel to the West Gate Freeway's northern boundary. The Yarraville (Jemena) Terminal Station is immediately adjacent to the eastern edge of Precinct 3.

Precinct 3 intersects with areas of public open space, including the West Gate Golf Course (north of the West Gate Freeway) and Donald McLean Park (south of the West Gate Freeway), which contains planted vegetation and lawns. Immediately to the east of these areas of public open space, the Werribee railway line runs north-south through the middle of this precinct.

There are additional areas of modified public open space to the east of the railway line and north of the West Gate Freeway. At this location, Stony Creek runs parallel to the north of the West Gate Freeway. Stony Creek is a highly modified urban stream. This reach of the creek is estuarine, and is tidally affected, with the Stony Creek Backwash located at the mouth of the estuary, downstream of the Project area. In the Project area, Stony Creek contains Coastal Saltmarsh and Brackish Wetland, and immediately adjacent to the Project area on the eastern side of Hyde Street is Mangrove Shrubland. Upstream of the estuarine reach, the creek is predominantly a concrete channel, managed entirely for stormwater drainage. The catchment of Stony Creek contains significant urban and industrial development.

There is a narrow band of public open space on the southern side of the creek adjoining the West Gate Freeway. The open space on the northern bank of the creek between Hyde Street and the Werribee railway line is known as Hyde Street Reserve. It mainly contains planted vegetation and lawns, with some native vegetation fringing the creek, as described above.

Precinct 4 – Yarraville Tunnel (P4)

Precinct 4 extends from the concept design's southern tunnel portals to the northern tunnel portals to the west of the Maribyrnong River.

Precinct 4 is a section through the suburb of Yarraville, which was established as a suburb of Melbourne close to 150 years ago. Land uses within this precinct are a mix of residential, commercial and industries properties and community facilities such as the Yarraville Community Centre. This precinct passes close to the east of a public park (Yarraville Gardens) but does not contain any public open space.

Precinct 5 – Northern Tunnel Portals to the Maribyrnong River (P5)

Precinct 5 extends from the northern tunnel portals to the Maribyrnong River. The land use within this precinct is commercial and industrial, with significant areas devoted to container storage for the Port of Melbourne. The land on the banks of the Maribyrnong River is entirely modified and developed.

Precinct 6 – Maribyrnong River Crossing, Footscray Road Viaduct and Port Access (P6)

Precinct 6 extends from the western bank of the Maribyrnong River to the intersection of Footscray Road and Appleton Dock Road. Apart from where it crosses the Maribyrnong River, this precinct is largely contained within the road reserve of the existing Footscray Road, which is a major arterial and consists of paved road areas with amenity plantings in the road verges.

The Maribyrnong River separates Yarraville and Seddon from West Melbourne and the Port of Melbourne, and joins the Yarra River estuary at Yarraville. Within the Project area, the river is estuarine. At this location and in its upstream freshwater reaches, both banks are highly modified with surrounding industrial and commercial land uses and infrastructure. The catchment has been extensively modified through urban, industrial and agricultural development.

Footscray Road crosses the Maribyrnong River immediately upstream of the Project area and at this point is known as Shepherd Bridge. On the northern side of Footscray Road, the predominant land uses are associated with transport logistics. This northern side is also the site of the former Melbourne Wholesale Fruit and Vegetable Market site, which is a significant land asset. South of Footscray Road, all of the land is utilised by the Port of Melbourne, including significant areas devoted to container storage.

Precinct 7 – Eastern Interchange and CBD Bypass (P7)

Precinct 7 extends from the intersection of Appleton Dock Road and Footscray Road through to the western edge of the Melbourne CBD. This precinct is dominated by commercial and industrial land uses associated with transport logistics and the Port of Melbourne. It is completely modified and developed and contains limited amenity planting.

The Western Link component of the CityLink toll road runs north-south within Precinct 7, connecting to the West Gate Freeway to the south. Footscray Road also connects into CityLink, to the east of Appleton Dock Road. Moonee Ponds Creek is an urban stream that flows underneath CityLink before joining the Yarra River at Docklands. Where it intersects Precinct 7, the creek is degraded and in poor condition, with both banks heavily modified. It is crossed by numerous rail and road bridges. Upstream of the Project area, Moonee Ponds Creek is a concrete channel, with little ecological habitat value.

Between CityLink and Moonee Ponds Creek, Precinct 7 is heavily industrialised. The land east of Moonee Ponds Creek and to the north of Footscray Road is primarily used for rail infrastructure.

1.4	**Size of the development footprint or work area (hectares)**	The Project area is approximately 250 ha from the interchange of the Princes Freeway and the M80 Western Ring Road (to the west) to the western edge of the CBD (to the east). The permanent footprint of the surface works would be approximately 68 hectares, and the permanent sub-surface footprint would be approximately 4 hectares. The total footprint of temporary ancillary worksites required for construction is dependent on the construction methodology adopted.
1.5	**Street address of the site**	Not applicable

1.6 **Lot description**

Describe the lot numbers and title description, if known.

Not known at this stage - to be determined based on the final detailed design.

1.7 **Local Government Area and Council contact (if known)**

If the project is subject to local government planning approval, provide the name of the relevant council contact officer.

The Project would traverse four municipalities in metropolitan Melbourne, being the City of Wyndham, City of Hobsons Bay, City of Maribyrnong and City of Melbourne.

It would be proposed that the Planning Schemes for each of these municipalities be amended under the *Planning and Environment Act 1987* to introduce planning controls to regulate the construction of the Project, following the conclusion of the State environmental assessment process (refer to section 2.5).

1.8 **Time frame**

Specify the time frame in which the action will be taken including the estimated start date of construction/operation.

Indicative timings for the delivery of the Project are:
2015-2016

- Business case preparation
- Project design
- Community and stakeholder consultation
- Project Outline and submission to the Minister of Planning
- Scoping Requirements issued by the Minister for Planning
- Preparation and exhibition of environmental impact assessment and planning documentation
- Start of procurement process.

2017-2018

- Completion of planning and environmental assessment
- Decision on environmental assessment and obtaining approvals
- Completion of procurement process for project delivery
- Contract award and commencement of construction.

The timing of construction would be a matter for determination by the Victorian Government. It is expected that construction of the Project would take around four years.

	Alternatives to proposed action Were any feasible alternatives to taking the proposed action (including not taking the action) considered but are not proposed?		No
		x	Yes, you must also complete section 2.2
1.10	**Alternative time frames etc** Does the proposed action include alternative time frames, locations or activities?	x	No
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	**State assessment** Is the action subject to a state or territory environmental impact assessment?		No
		x	Yes, you must also complete Section 2.5

1.12	**Component of larger action** Is the proposed action a component of a larger action?	X	No Yes, you must also complete Section 2.7
1.13	**Related actions/proposals** Is the proposed action related to other actions or proposals in the region (if known)?	X	No Yes, provide details:
1.14	**Australian Government funding** Has the person proposing to take the action received any Australian Government grant funding to undertake this project? The Victorian Government is seeking funding contribution from the Australian Government.	X	No Yes, provide details:
1.15	**Great Barrier Reef Marine Park** Is the proposed action inside the Great Barrier Reef Marine Park?	X	No Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

NOTE: It is important that the description is complete and includes all components and activities associated with the action. If certain related components are not intended to be included within the scope of the referral, this should be clearly explained in section 2.7.

2.1 Description of proposed action

This should be a detailed description outlining all activities and aspects of the proposed action and should reference figures and/or attachments, as appropriate.

The Project involves the augmentation of existing operating freeways and arterial roads, as well as construction of new surface road connections, elevated structures and tunnelling. The surface road connections, elevated structures and underground tunnels would be located within highly urbanised areas of inner Melbourne, largely within (or directly adjacent to) existing road reserves (as described in section 1.3). All works would be undertaken within the context of the Victorian regulatory regime, which mandates the development and implementation of an Environmental Management Framework (EMF), with strong governance. The EMF for this Project would include environmental management measures such as:

- Minimising the Project footprint to avoid and minimise adverse impacts on biodiversity such as minimising the removal of native vegetation and offsetting any adverse impact on native vegetation that does occur, in accordance with the 'no net loss' objective of Victoria's *Permitted clearing of native vegetation Biodiversity assessment guidelines* (DEPI 2013)
- Implementation of appropriate sediment and erosion control measures in accordance with State Environment Protection Policy (Waters of Victoria) (SEPP WoV) (Vic. Gov. 2004) and EPA Victoria's *Best Practice Environmental Management Guidelines for Major Construction Sites* (1996) (EPA Victoria Publication 480)
- Implementation of standard construction techniques to prevent the spread of weeds or introduction of new weeds in compliance with the Victorian *Catchment and Land Protection Act 1994* and best practice guidelines such as EPA Victoria's *Best Practice Environmental Management Guidelines for Major Construction Sites* (1996) (EPA Victoria Publication 480) and *A Guide For Machinery Hygiene For Civil Construction* (Civil Contractors Federation 2011)
- Prevention of pollution of air, water and soil under the requirements set by the Victorian *Environment Protection Act 1970*, including State Environment Protection Policy (Air Quality Management) (Vic. Gov. 2001a), State Environment Protection Policy (Prevention and Management of Contamination of Land) (Vic. Gov. 2013), State Environment Protection Policy (Waters of Victoria) (SEPP WoV) (Vic. Gov. 2004) and State Environment Protection Policy (Groundwaters of Victoria) (Vic. Gov. 2002)
- Management of acid sulfate soils in accordance with the *Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils* (DSE 2010) and EPA Victoria's *Industrial Waste Resource Guidelines* (2009)
- Maintenance of waterway flow regimes and existing levels of flood protection in accordance with requirements under the *Water Act 1989*
- Control of construction noise levels in compliance with EPA Victoria's *Best Practice Environmental Management Guidelines for Major Construction Sites* (1996) (EPA Victoria Publication 480) and the information contained in State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N–1 (Vic. Gov. 2001b)
- Management of Aboriginal cultural heritage and historic heritage assets as required by the *Aboriginal Heritage Act 2006* and *Heritage Act 1995*.

A detailed assessment of the location and alignment of the Project and its key components will be undertaken as part of the State environmental impact assessment and statutory approvals process. Where appropriate this will also include assessment of the preferred construction methodology and approach to undertaking the activities as well as suitable management and mitigation measures. It may also include consideration and assessment of alternatives to certain elements of the Project such as a longer tunnel, the location of ventilation structures or the location of elevated or surface road connections. Investigative and enabling works discussed in section 2.7 do not form part of the referred Project.

Project components

The Project can be separated into four main components, which are described below:

- West Gate Freeway – Widening and road connections
- Western Distributor – Yarraville alignment (including tunnel)
- Western Distributor – Elevated road and port access
- Western Distributor – Eastern interchange and CBD bypass.

West Gate Freeway – Widening and road connections

The key elements of this Project component within Precincts 1 and 2 are:

- Widening and associated pavement rehabilitation of the West Gate Freeway in both directions to provide overall capacity of 6 lanes each direction (additional 2 lanes each way) between Williamstown Road and the M80 Western Ring Road
- Separated carriageways eastbound directing traffic to the Western Distributor (outer carriageway) or West Gate Bridge (inner carriageway)

- Separated carriageways westbound directing traffic to the M80 Western Ring Road (outer carriageway) or Princes Freeway (inner carriageway)
- Arterial road connections and ramps that would be provided from the outer carriageways and via 'braided' connections between the inner and outer carriageways
- Strengthening of bridges along the West Gate Freeway to accommodate High Productivity Freight Vehicles (HPFV) at higher mass limits, including strengthening and widening of the existing bridge over Kororoit Creek
- Replacement of two existing pedestrian bridges spanning over the West Gate Freeway in the vicinity of Wembley Avenue and Rosala Avenue
- Upgrading noise attenuation along the West Gate Freeway
- Subject to detailed design, relocation or replacement of several high voltage transmission towers alongside the West Gate Freeway.

Precinct 1 – M80 Interchange to Millers Road (P1)

Key elements within Precinct 1 include lane widening and pavement rehabilitation, separated carriageways, connections to Grieve Parade and Millers Road, on and off-ramps, strengthening and widening of the existing bridge over Kororoit Creek, upgrading noise attenuation along that part of the West Gate Freeway, and relocation or replacement of high voltage transmission towers alongside the West Gate Freeway (subject to detailed design).

The strengthening and widening of the bridge over Kororoit Creek would fully span the waterway and fringing native vegetation. Bridge piers would be constructed outside of the waterway to limit impacts on waterway function. The bridge superstructure is anticipated to be comprised of precast concrete elements thus avoiding the need for concreting works to be undertaken in and around the creek. The casting of concrete for the platform and associated asphalt surfacing would be fully contained above the waterway to avoid interaction with the creek and its immediate environment.

In addition to the bridge construction over Kororoit Creek as described above, construction activities within Precinct 1 would likely include:

- Road widening and realignment
- Road surfacing and pavement rehabilitation
- Construction of ramps, batter slopes, pier and bridge foundations, the installation of drainage and associated earthworks
- Strengthening and construction of elevated structures
- Construction of retaining walls and noise walls
- Relocation or replacement of several high voltage transmission towers alongside the West Gate Freeway (subject to detailed design).

Precinct 2 – Millers Road to Williamstown Road (P2)

Key elements within Precinct 2 include lane widening and pavement rehabilitation, separated carriageways, connections to Millers Road and Williamstown Road and on and off-ramps, strengthening and widening of the bridge over the Bacchus Marsh Junction-Newport freight railway line, replacement of existing pedestrian bridges, upgrading noise attenuation along that part of the West Gate Freeway, and relocation or replacement of high voltage transmission towers alongside the West Gate Freeway (subject to detailed design).

Construction activities would generally be as described for Precinct 1, noting that there are no waterway crossings within Precinct 2.

Western Distributor – Yarraville alignment (including tunnel)

The key elements of this Project component within Precincts 3 and 4 are:

- Road connections between the West Gate Freeway and the southern tunnel portals, including bridging over Stony Creek
- New ramps for vehicles to access Hyde Street to and from the elevated connection
- Southern tunnel portals adjacent to the northern side of the West Gate Freeway, west of Hyde Street
- Two underground tunnels ultimately catering for three traffic lanes each.

Precinct 3 – Williamstown Road to the Southern Tunnel Portals (P3)

Key elements within Precinct 3 include road connections between the West Gate Freeway and the southern tunnel portals (including bridging over Stony Creek), the new ramps for vehicles to access Hyde Street to and from the elevated connections and the southern tunnel portals.

As for Kororoit Creek, the bridges over Stony Creek would fully span the waterway and fringing native vegetation. Bridge piers would be constructed outside of the waterway to limit impacts on the waterway. The bridge superstructures are anticipated to be comprised of precast concrete elements thus avoiding the need for concreting works to be undertaken in and around the creek. The casting of concrete for the platforms and associated asphalt surfacing would be fully contained above the waterway to avoid interaction with the creek and its immediate environment.

Aside from the bridge construction as described above, construction and operational activities in Precinct 3 would generally be as described for Precinct 1. In addition, earthworks would likely be required for the excavation of approaches to the tunnels.

Precinct 4 – Yarraville Tunnel (P4)

The key element of Precinct 4 is the two underground tunnels.

The tunnels would likely be constructed starting from the north, most likely using a Tunnel Boring Machine or similar technology, as suitable for the expected ground conditions. Some elements such as cross tunnel passages may require the use of road header equipment. It is expected that the tunnels would be lined with precast concrete segments.

The construction of tunnels would also involve the extraction, treatment and disposal of groundwater and the management of excavated material. It is anticipated that trucks carting excavated material would directly access the arterial road and freeway network from work sites. Excess material would need to be carted to off-site locations. Options for reuse and disposal would be investigated. The appointed contractor would enter into a commercial arrangement for the delivery and disposal of excavated material at the time of construction, for example refilling of former and current quarries. Excavated material would be submitted to regular contaminant testing to ensure suitability for disposal. All material, including any contaminated soils generated by the works, would be managed in accordance with the *Environment Protection Act 1970*.

Western Distributor – Elevated road and port access

The key elements of this Project component within Precincts 5 and 6 are:

- Northern tunnel portals east of Yarraville Gardens and west of the Maribyrnong River
- Road connections between the northern tunnel portals and the bridging of the Maribyrnong River
- Bridging across the Maribyrnong River, including:
    - A central carriageway connecting the tunnel and elevated viaducts above Footscray Road
    - On- and off-ramps from the tunnel to Mackenzie Road to provide access to the Port of Melbourne
- Viaducts in both directions above Footscray Road
- Connections between the viaducts and Appleton Dock Road
- Grade separated shared user facilities at Appleton Dock Road, Footscray Road and Mackenzie Road intersections.

Precinct 5 – Northern Tunnel Portals to the Maribyrnong River (P5)

Precinct 5 extends from the location of the northern tunnel portals to the Maribyrnong River. Key elements within Precinct 5 include the northern tunnel portals, and the road connections between these portals and the Maribyrnong River bridges.

An area (possibly 100m x 200m) would likely be required at the northern tunnel portals from which to launch the tunnelling equipment. In addition, earthworks would likely be required for the excavation of approaches to the tunnels.

Precinct 6 – Maribyrnong River Crossing, Footscray Road Viaduct and Port Access (P6)

Key elements within Precinct 6 are the bridges across the Maribyrnong River to the viaduct above Footscray Road and to Mackenzie Road, the elevated viaduct above Footscray Road and connections to Appleton Dock Road, and associated shared user facilities.

The form of the bridges over the Maribyrnong River would be resolved as part of the detailed design and procurement process for the Project. The bridges may either span the river or could be multi-span, requiring the construction of bridge supports within the waterway.

Should multi-span bridges be required, these would be constructed to minimise impacts on the waterway. Any bridge piers required to be located within the waterway would need to be supported on piles. The construction methodology for the piles would involve a cofferdam likely comprised of a steel sleeve driven into the river bed from a barge or temporary platform.

Limiting construction to the dry area within the steel sleeve would control the potential for impacts on the waterway. River bed material would be removed from within the sleeve to allow construction of reinforced concrete piles in dry conditions. Excavated material would be placed onto barges on the river and managed in accordance with EPA Victoria requirements.

The bridge piers would either be precast concrete, or cast in-situ with close control on formwork placement and sealing to ensure that concrete would be contained. At the completion of construction, the temporary barge or platform would be withdrawn from the river.

Aside from the bridge construction as described above, construction activities in Precinct 6 would generally be as described for Precinct 1.

Western Distributor – Eastern interchange and CBD bypass

The key elements of this Project component within Precinct 7 are:

- Inbound and outbound connections to the CityLink toll road
- Connections to the areas east of CityLink, including bridging over Moonee Ponds Creek. The design for these connections will require consultation with key stakeholders including the City of Melbourne as part of the formal planning process.

Precinct 7 – Eastern Interchange and CBD Bypass (P7)

Key elements within Precinct 7 are surface and elevated road connections and bridges over Moonee Ponds Creek. The form of the bridges over Moonee Ponds Creek would be resolved as part of the detailed design and procurement process for the Project. It is expected that these bridges would span the creek. Should multi-span bridges be required, these would be constructed to minimise impacts on the waterway, using similar techniques as described for the construction of bridging over the Maribyrnong River in Precinct 6.

Aside from the bridge construction as described above, construction activities in Precinct 7 would generally be as described for Precinct 1.

2.2 Alternatives to taking the proposed action

This should be a detailed description outlining any feasible alternatives to taking the proposed action (including not taking the action) that were considered but are not proposed (note, this is distinct from any proposed alternatives relating to location, time frames, or activities – see section 2.3).

A persuasive case for investment in major rail and road capacity linking Melbourne's east and west was put forward by Sir Rod Eddington in his 2008 *Investing in Transport: East West Link Needs Assessment Study* (Eddington 2008).

Melbourne faces rapid population growth, changing economic geography and an expanding freight task. Transport connectivity is increasingly critical to underpin the Victorian Government's vision for Melbourne as a 'global city of opportunity and choice'. The Government is investing in Melbourne's transport network and further investment priorities have been identified to address increasing road demand on the M1 Corridor and the West Gate Bridge.

Key problems

Four key problems have been identified in relation to transport connectivity on the M1 Corridor. These problems and their impacts are summarised below.

Problems	Impacts
Transport capacity on the M1 Corridor is inadequate relative to growing demand	• Increasing congestion, reduced reliability and higher travel costs for road users • Safety implications for users through increased rate of accidents and incidents
Melbourne is over-reliant on the West Gate Bridge currently operating at capacity	• High network vulnerability to constraints and disruptions on the West Gate Bridge • Lack of network redundancy to cater for future demand growth without undesirable loss of performance
Port and freight connections are inadequate to sustainably cater for growth and cause reduced amenity in the west	• Diminishing freight competitiveness of Melbourne • Negative impacts on amenity for local communities in the inner west
There is a mismatch between transport and land use	• Constrained jobs accessibility for the west's growing population • Challenges attracting workers to Melbourne may occur in the future

The do nothing option

Further deferring investment in the road network in Melbourne's western suburbs is not considered to be an option.

By not undertaking the Project, congestion will worsen, average travel speeds will decrease, delays will be more common and travel time reliability will deteriorate. Increased congestion and travel times would put at risk the amount of freight that can be moved in and out of the Port of Melbourne, undermining the efficiency of port operations and future expansion plans as well as Victoria's productivity.

Unless access to the Port of Melbourne is improved, the numbers of trucks on local inner west roads is likely to increase, reducing the liveability of the inner-west and increasing pressure on port activities, which could affect its ability to grow.

If nothing is done, the transport network in the west of Melbourne will not keep pace with changes in economic and urban structure, further entrenching the historic east-west divide instead of seeking to narrow the resulting socio-economic gap.

Consideration of strategic alternatives

A number of strategic interventions have been identified and considered as alternatives to the Project, including:

- Reform and demand management
    - Network pricing and transport funding reform
    - Heavy vehicle charges and investment reform
    - Arterial road management
    - Investment and land use change
- Improve productivity
    - Improve network utilisation
    - High productivity freight vehicle network
    - Enhance efficiency of bus services
    - Port-rail shuttles
- Increase supply
    - New rail link connecting west and east Melbourne
    - New western road connection
    - Increase existing freeway capacity.

Reflecting on the scale and timing of benefits as well as deliverability, a new western road connection and west to east rail link were identified as the highest value projects with the highest achievement of benefits in the western M1 Corridor. As the rail link initially identified in Eddington (2008) is now a Government commitment (Melbourne Metro), the road connection has been identified as the next preferred strategic priority.

Assessment of corridor options

There is more than one possible option for a new western freeway river crossing from Melbourne's west. Eddington identified two corridors for the river crossing from Melbourne's west: a northern corridor connecting CityLink and the M80 under Footscray, and a southern corridor connecting CityLink and the West Gate Freeway in the vicinity of Williamstown Road (Figure 2).

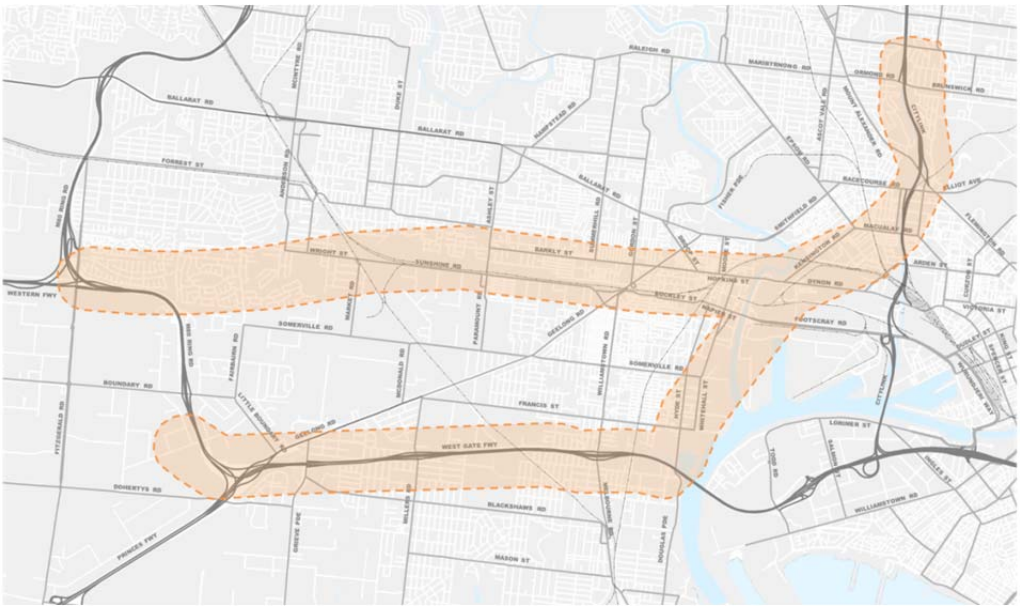

Figure 2 Western Road corridor options

Source: Eddington (2008)

Subsequent Victorian Government work has investigated the following routes as part of a broader integrated transport solution:

- Old Geelong Road
- Variations of the northern corridor
- The West Gate Distributor (part of Eddington's Truck Action Plan)
- Combinations of the above.

These investigations have shown that the northern and southern corridors were preferred long-term corridors, and Old Geelong Road and West Gate Distributor could be part of a staged or complementary upgrade of the northern and/or southern corridor. Faster than expected population growth suggests the need for both corridors in the long-term. Using an investment pathways approach, it has been possible to determine which corridor option should be the short term priority. The investment pathways method recognises both the urgency of dealing with long standing issues and the need to maintain a flexible approach to investment given the inherent uncertainty in forecasting long term population and employment projections, advances in technology and societal trends.

The southern corridor has been identified as the most likely short to medium term solution. It accommodates the future construction of the northern corridor and provides the opportunity to defer significant investment in the northern corridor for 10 to 15 years. This allows time to resolve some of the uncertainty around future growth and to optimise land use planning in the west of Melbourne.

2.3 Alternative locations, time frames or activities that form part of the referred action

If you have identified that the proposed action includes alternative time frames, locations or activities (in section 1.10) you must complete this section. Describe any alternatives related to the physical location of the action, time frames within which the action is to be taken and alternative methods or activities for undertaking the action. For each alternative location, time frame or activity identified, you must also complete (where relevant) the details in sections 1.2-1.9, 2.4-2.7, 3.3 and 4. Please note, if the action that you propose to take is determined to be a controlled action, any alternative locations, time frames or activities that are identified here may be subject to environmental assessment and a decision on whether to approve the alternative.

No alternative timeframes, locations or activities for the Project are proposed outside of the Project area as described in section 1.1 and shown on Figure 1. A detailed assessment of the location and alignment of the Project and its key components within the Project area will be undertaken as part of the Victorian environmental impact assessment and statutory approvals process. This may include consideration of alternatives to certain elements of the Project in response to community and stakeholder engagement. Where appropriate it may also include assessment of the preferred construction methodology and approach to undertaking the activities as well as suitable management and mitigation measures.

Investigative and enabling works discussed in section 2.7 however, do not form part of the referred Project.

2.4 Context, planning framework and state/local government requirements

Explain the context in which the action is proposed, including any relevant planning framework at the state and/or local government level (e.g. within scope of a management plan, planning initiative or policy framework). Describe any Commonwealth or state legislation or policies under which approvals are required or will be considered against.

The western suburbs' proximity to inner Melbourne should be a major advantage, but poor links and congestion mean local residents have greater travel times to work and fewer employment opportunities within reasonable travel times from their homes than those living elsewhere in Melbourne. Existing and forecast employment growth in inner Melbourne and south-eastern suburbs is expected to widen this gap between where the jobs are, and where people live, driving up demand for CBD and cross-city trips (*Plan Melbourne*, DTPLI 2014). Therefore greater investment in the road network is required, to put people and businesses in closer reach of jobs and economic opportunities.

In addition, the heavy reliance on the M1 Corridor as the primary road connection from the west into Melbourne makes the state economy highly vulnerable to incidents and disruptions on the West Gate Bridge, as described in section 2.2. It also reduces the overall redundancy on the transport network to cater for future demand growth. The redistribution of traffic by creating a second river crossing as proposed by the Project would be an effective way to accommodate the projected population growth and anticipated increases in commercial activity along the M1 corridor.

Commonwealth Policy Context

Australian Infrastructure Audit

Infrastructure Australia in its 2015 Australian Infrastructure Audit (Infrastructure Australia 2015) found that without investment in transport infrastructure, Australia's productivity and quality of life is likely to erode, with the cost of congestion in Melbourne- Geelong set to grow from $2.8 billion in 2011 to over $9 billion in 2031. The Audit specifically identified the M1 corridor as part of a heavily congested corridor likely to face capacity constraints in the absence of investment.

National Infrastructure Plan

A national infrastructure priority list was last recommended to the Infrastructure Australia Council by the National Infrastructure Coordinator in 2013.

Action 6 of the National Infrastructure Plan (Infrastructure Australia 2013) is to 'create a complete national freight network'. The National Infrastructure Plan recommends a number of long-term directions for incorporation into the national freight network, including progress towards connecting the designated National Land Transport Network by road to all nationally significant container and bulk freight ports, including preferred truck routes to the Port of Melbourne. The Project would contribute to achieving this action by improving freight access to the Port of Melbourne.

National Land Freight Strategy

The National Land Freight Strategy Discussion Paper (Infrastructure Australia 2011) identified an 'improvement in the efficiency of freight movements across infrastructure networks' as a key objective, with priority actions to effect this objective including 'freight infrastructure improvement and access'. For roads, this includes improvements to relevant highway level of service standards, access for high productivity weight-dimension vehicle configurations, and compatibility of freight transfer with rail freight and international shipping. Identified goals include the completion of urban motorway networks. The Project is therefore consistent with this strategy.

State Policy Context

Investing in Transport: East West Link Needs Assessment Study - 2008

The transport related problems in the west are long-standing and well documented. The *Investing in Transport: East West Link Needs Assessment Study 2008* (Eddington, 2008) proposed an integrated strategic response incorporating supply, productivity and reform/demand management interventions to meet the transport and liveability challenges in the west.

The case for an integrated strategic response is even stronger now with population, freight, CBD employment and travel demand all exceeding Eddington's 2008 projections. This was highlighted in the Victorian Government's Project 10,000, the Government's policy for transport augmentation, which identified the need to:

- Reduce congestion costs
- Serve the traffic demands of a growing population
- Improve efficiency of freight movement
- Reduce the duration of peak hour and improve travel time reliability
- Reduce trucks crossing the West Gate Bridge.

In 2008, Melbourne's population was forecast to reach 4.5 million by 2031 – but this is now reality. The updated forecast for 2031 is a city of 5.8 million people. Despite rail absorbing the majority of the commuter demand growth from the west to inner Melbourne, there remains substantial growth in demand for road trips across the Maribyrnong River, with a sizeable portion freight-related. A new freeway crossing of the Maribyrnong River is becoming increasingly critical, and the Project addresses this need.

Plan Melbourne – the Victorian Government's metropolitan planning strategy

Plan Melbourne (DTPLI 2014) forecasts a 2031 population of between 5.85 and 6.15 million people (an annual growth rate of between 1.7% and 2%). The Project would provide roads that would ease congestion which is projected to rise due to population increase, allowing local residents in western Melbourne to reach employment opportunities in shorter travel times. This is increasingly important due to existing and forecast employment growth in inner Melbourne and south-eastern suburbs expected to widen the gap between where the jobs are, and where people live, driving up demand for CBD and cross-city trips.

The Project would enable the western suburbs and regional cities of Geelong, Ballarat, Bendigo and Bacchus Marsh to become less isolated from employment opportunities.

The Project would enhance the performance of the transport network and growing congestion with population and freight growth, and help overcome this significant productivity challenge.

A Plan Melbourne Refresh Discussion Paper was released in October 2015 (DELWP 2015a). The discussion paper aims to refresh Plan Melbourne 2014 by promoting discussion of options with stakeholders, experts and the community, building on the extensive work and consultation underpinning Plan Melbourne 2014. The discussion paper indicates that a refreshed Plan Melbourne will be published in the first half of 2016, which could include the Western Distributor Project as a road-based initiative (DELWP 2015a, p. 41).

State Planning Policy Framework – Victorian Planning Provisions

Across the state of Victoria, the objective for management of the road system is to manage the road system to achieve integration, choice and balance by developing an efficient and safe network and making the most of existing infrastructure.

Strategies to achieve this include:

- Selectively expand and upgrade the road network to provide for:
    - High-quality connections between Metropolitan Melbourne and regional cities, and between regional cities
    - Upgrading of key freight routes
    - Ongoing development in outer suburban areas
    - Higher standards of on-road public transport
    - Improved key cross-town arterial links in the outer suburbs including circumferential and radial movement
- Improve road networks where public transport is not viable, and where the road development is compatible with the Neighbourhood Principles and urban design objectives
- Improve roads in developing outer-suburban areas to cater for car, bicycle, public transport, and freight, commercial and service users
- Improve the management of key freight routes to make freight operations more efficient while reducing their external impacts
- Ensure that road space complements land use and is managed to meet community and business needs.

The Project would address this objective and accompanying strategies.

Local Policy Context

City of Melbourne Transport Strategy 2012

The City of Melbourne Transport Strategy 2012 (City of Melbourne, 2012) sets out the City of Melbourne's key transport directions and policy targets up to 2030. It notes that the lack of good east west connections is most acute in the inner north where key road corridors (including Footscray Road and its links to Dudley Street and Victoria Street) are often congested and where the Port of Melbourne road freight is forced to use the local road network.

Local Government Planning Schemes

Each of the four municipalities traversed by the Project has a Planning Scheme. In addition, the Port of Melbourne is subject to a separate Planning Scheme. These are discussed below.

Wyndham Planning Scheme

An objective of the Wyndham Planning Scheme is to *'improve and upgrade transport infrastructure to meet existing and future population'*. This is due to increased demand for transport, driven by rapid population growth, being met by primarily by private car use. Strategies to achieve this objective include:

- Provide for an integrated, safe and efficient transport network
- Ensure new development is provided with safe and efficient vehicular access
- Identify options for future railway lines and stations, freight centres, freeways, interchanges and arterial roads.

The Project aligns with these strategies by increasing capacity for private car use to move from west to east across Melbourne.

Hobsons Bay Planning Scheme

An objective of the Hobsons Bay Planning Scheme is to provide access to, through and within the municipality by all modes of transport, including walking, cycling, public transport and private and commercial vehicles. Strategies to achieve this objective include:

- Have regard to the State transport strategies and opportunities for transport improvements in the assessment of broader regional patterns of land use and transport movements
- Ensure that the cost of new road and transport infrastructure required to serve specific development is met by the developer
- Ensure that developers provide a continuous network of bicycle paths and pedestrian facilities in new residential subdivisions that contributes to community health and wellbeing by encouraging walking and cycling
- Ensure bicycle paths and pedestrian facilities interconnect with the existing transport network and form a safe, efficient and convenient network that promotes walkability
- Liaise with surrounding municipalities and VicRoads to improve the connectivity of the bicycle network
- Encourage the improvement of the arterial road system to service the industrial areas
- Support more direct connections to the M80 Western Ring Road (from Grieve Parade industrial areas) and the upgrade of the arterial link road network
- Encourage the development of new industrial access roads to service industrial areas.

The Project aligns with these strategies to ease congestion, and facilitate economic growth within Victoria by enabling the physical movement of people towards employment hubs.

Maribyrnong Planning Scheme

An objective of the Maribyrnong Planning Scheme is to '*develop a safe, efficient and accessible transport network*'. Strategies to achieve this include the protection of the operational requirements of the state and national passenger and freight road and rail routes, and encouraging development that facilitates heavy vehicle traffic onto arterial roads and designated truck routes.

'The forecast increase in the Port's container trade, coupled with the future residential and industrial growth within the western region, will increase the amount of road and rail passenger and freight travelling through the city. Major redevelopment of strategic sites including the Maribyrnong Defence Site (MDS), Highpoint Principal Activity Centre (PAC) and the Footscray CAD, will place further pressure on the local transport network. Significant improvements are needed to the transport network to ensure the region's growth is sustainable. In an effort to address some of these issues, State Government Department's such as VicRoads and the Department of Transport have identified the need for significant new transport infrastructure to improve east-west connections and reduce the impact of freight traffic on the municipality'.

The Project aligns with this strategy by helping to address the need for significant improvements of the transport network within the City of Maribyrnong, and the need for protection of state and national freight transport routes to the Port of Melbourne and their operational requirements.

Melbourne Planning Scheme
Objectives of the Melbourne Planning scheme are '*to encourage more efficient use of private motor vehicles*', and '*to enhance Melbourne's role as Australia's freight hub and gateway*'. Strategies to achieve these objectives include:

- Support the provision of an efficient and integrated freight transport system that reduces negative environmental impacts in residential and public areas. Support integrated planning of the Port, its environs and the road, rail and sea links to the Port.

The Project aligns with this strategy as it would be a significant investment in linking freight transport routes in Melbourne's west with other arterial links to the east.

Port of Melbourne Planning Scheme
Objectives of the Port of Melbourne Planning Scheme are '*to ensure adequate road, rail and maritime infrastructure is provided to support growth in trade and changes in technology*' and '*to encourage where practical transport linkages to strategic inland cargo handling facilities*'. Strategies to achieve the objectives include:

- Facilitate the construction of an improved road connection between the Webb Dock area and the West Gate Freeway interchange.

  'The Port of Melbourne is dependent on the effective and efficient performance of a variety of State and privately owned infrastructure. The service performance of the Port is closely linked to the performance and capacity of other elements of the transport system. State and national transport policies significantly influence the Port's future growth'.

The Project aligns with this strategy by providing additional road infrastructure which would improve port access.

Relevant Legislation

Commonwealth Legislation

- *Environment Protection and Biodiversity Conservation Act 1999*

State Legislation

- *Planning and Environment Act 1987*
- *Aboriginal Heritage Act 2006*
- *Crown Land (Reserves) Act 1978*
- *Environment Protection Act 1970*
- *Flora and Fauna Guarantee Act 1988*
- *Heritage Act 1995*
- *Road Management Act 2004*
- *Water Act 1989*.

The requirements of the State legislation and its relevance to the Project are outlined in Attachment 3.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

If you have identified that the proposed action will be or has been subject to a state or territory environmental impact statement (in section 1.11) you must complete this section. Describe any environmental assessment of the relevant impacts of the project that has been, is being, or will be carried out under state or territory legislation. Specify the type and nature of the assessment, the relevant legislation and the current status of any assessments or approvals. Where possible, provide contact details for the state/territory assessment contact officer.

Describe or summarise any public consultation undertaken, or to be undertaken, during the assessment. Attach copies of relevant assessment documentation and outcomes of public consultations (if available).

A Project Outline has been submitted to the Victorian Minister for Planning, to invite him to declare the Project as 'public works' under section 3 of the *Environment Effects Act 1978* (EE Act). If the Minister makes such a declaration, the Project would be assessed by an Environment Effects Statement under the EE Act. This is an accredited assessment process under the bilateral agreement between the Victorian and Commonwealth governments.

It is proposed that each relevant Planning Scheme would be amended under the *Planning and Environment Act 1987* to introduce planning controls to regulate the construction of the Project, following the conclusion of the State environmental assessment process (refer to section 1.7).

2.6 Public consultation (including with Indigenous stakeholders)

Your referral must include a description of any public consultation that has been, or is being, undertaken. Where Indigenous stakeholders are likely to be affected by your proposed action, your referral should describe any consultations undertaken with Indigenous stakeholders. Identify the relevant stakeholders and the status of consultations at the time of the referral. Where appropriate include copies of documents recording the outcomes of any consultations.

DEDJTR is committed to engagement and consultation with stakeholders and the community and this would be a key component of the formal planning process for the Project. This would build upon public consultation already undertaken by Transurban, which has submitted a market-led proposal for the Project to the Victorian Department of Treasury and Finance (DTF).

A Communications and Engagement Strategy has been developed and will be implemented to raise awareness of the Project and guide engagement with stakeholders in order to build trust, gather information about community values and encourage public participation in the Project development. The strategy is based on the following principles:

- Open communication – actively seeking diverse opinions and perspectives to broaden understanding of views and assist in 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.

Key stakeholders

The Project will attract interest from a broad cross section of the Victorian community, particularly people who live, work, own land and travel through the Project area. Stakeholders with an interest in transport and freight movement, as well as those which play an advocacy role for the development of Melbourne will also have an interest. This strategy is designed to target these and broader categories of stakeholders as outlined below.

- Commonwealth Government
- Victorian Government, including the Department of Treasury and Finance (DTF) and Public Transport Victoria (PTV)
- Regulatory agencies including the Department of Environment, Land, Water and Planning (DELWP), EPA Victoria, Melbourne Water, Heritage Victoria and the Office of Aboriginal Affairs Victoria (OAAV). Consultation with OAAV and Indigenous stakeholders would be undertaken during the development of a Cultural Heritage Management Plan as required under the Victorian *Aboriginal Heritage Act 2006* (discussed further in section 3.3 (i))
- Local Government, including the City of Wyndham, City of Hobsons Bay, City of Maribyrnong and City of Melbourne
- Parks Victoria, Yarra Trams, Metro, Port of Melbourne Corporation, emergency services organisations, utilities
- Private road operators
- Directly/potentially impacted landowners and business owners
- Road users
- Community facilities
- Media
- Transport advocacy stakeholders
- Interest groups
- Social service providers
- Culturally and linguistically diverse communities and other potentially disadvantaged groups.

The Communications and Engagement Strategy would be timed to coincide with the planning and delivery program for the Project and in consideration of feedback from stakeholders. It is proposed to be undertaken in three phases, commencing in 2015-16, as described below:

Early engagement:

- Explain the problem
- Explain the Project planning and development process.

Purpose

Hold high level discussion with stakeholders and the community about the transport problems facing Melbourne and how the Project would help address these, including its opportunities and challenges.

Once the State environmental impact assessment and statutory approvals process commences, the focus will be on establishing relationships with community and stakeholders to explain the Project planning, development and procurement processes.

Key engagement tools

- Online engagement forums
- Distribute Project newsletters and information materials
- Engage with landowners to confirm the high level feedback already documented by Transurban as part of the Victorian Government market-led proposal process and capture any additional issues for consideration.

Concept project:

- Seek stakeholder views on the Project concept including opportunities for refinement and ensuring impacted stakeholders are informed and consulted.

Purpose

Seek feedback on any issues or concerns that need to be considered by the Project team for the Project design. This will be a more detailed design than the high level proposals the community has viewed to date.

Key engagement tools

- Establish Community Reference Group/s
- Hold community workshops and information sessions
- Online and social media engagement
- Distribute Project newsletter
- Formal feedback period to receive written submissions
- One-on-one engagement and support with landowners.

Submission:

- Support the engagement process as part of the State environmental impact assessment and statutory approvals process
- Generate public awareness about Project benefits and outcomes
- Ensure that stakeholders are kept informed about Project development in a timely manner.

Purpose

Present the findings of the planning studies to the community and encourage participation in the State environmental impact assessment and statutory approvals process e.g. making a submission.

Key Engagement Tools

- Public displays
- Project newsletter
- Online engagement
- Establishment of independent planning panel to review submissions and to host a public hearing for submitters to present their views.

2.7 A staged development or component of a larger project

If you have identified that the proposed action is a component of a larger action (in section 1.12) you must complete this section. Provide information about the larger action and details of any interdependency between the stages/components and the larger action. You may also provide justification as to why you believe it is reasonable for the referred action to be considered separately from the larger proposal (eg. the referred action is 'stand-alone' and viable in its own right, there are separate responsibilities for component actions or approvals have been split in a similar way at the state or local government levels).

The Project is being delivered in the context of current ongoing investment in wider upgrades to the road network. During the assessment and delivery period for the Project, it is anticipated there would be multiple changes to the road network through separate projects and through renewal and maintenance works. As a consequence, a number of works and activities on the road network may precede or follow the development of the Project. These provide relevant context for a consideration of the Project, but do not form part of the Project itself, which is a separate and stand-alone activity in its own right.

Other future road upgrade projects which complement the Project include upgrade works to the Monash Freeway and improved access to Webb Dock within the Port of Melbourne. These works are physically and functionally separate from the Project, and would be constructed regardless of whether the Project proceeds. These works do not form part of the proposed action that is the subject of this referral, and would be subject to separate future assessment and approval, as required.

Investigative works

The following works are proposed to be undertaken before completion of the State environmental impact assessment and statutory approvals process for the Project. These works are necessary to enable detailed assessment of the Project to be undertaken under the State environmental impact assessment and statutory approvals process. They do not form part of the Project and are not part of the action which is being referred.

- Geotechnical investigations to determine site conditions, including drilling and sampling, installation of monitoring wells and stand pipes to monitor ground water level and quality
- Site surveys and environmental site assessment works, including flora and fauna surveys, air quality and noise monitoring, and heritage investigations.

The works would be carried out in accordance with any State regulatory or planning approvals required for the works.

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest.

Your assessment of likely impacts should refer to the following resources (available from the Department's web site):

- specific values of individual World Heritage properties and National Heritage places and the ecological character of Ramsar wetlands;
- profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;
- *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*; and
- associated sectoral and species policy statements available on the web site, as relevant.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The Minister has prepared four marine bioregional plans (MBP) in accordance with section 176. It is likely that the MBP's will be more commonly relevant where listed threatened species, listed migratory species or a Commonwealth marine area is considered.

Note that even if your proposal will not be taken in a World Heritage area, Ramsar wetland, Commonwealth marine area, the Great Barrier Reef Marine Park or on Commonwealth land, it could still impact upon these areas (for example, through downstream impacts). Consideration of likely impacts should include both direct and indirect impacts.

3.1 (a) World Heritage Properties

Description

The Royal Exhibition Building and its surrounding Carlton Gardens is the only world heritage property identified by the Protected Matters Search Tool (PMST) (DotE, 2015a) within a 5km buffer distance from the Project area. The location of this property is depicted in Figure 2.

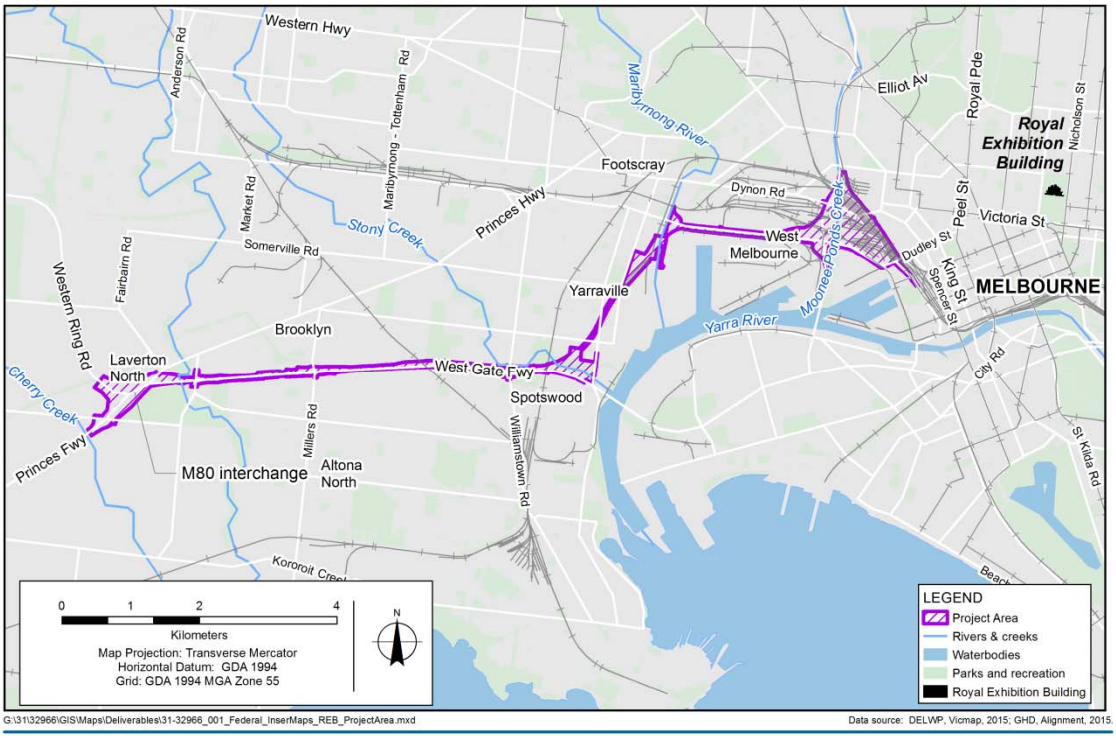

Figure 2 Royal Exhibition Building location

The Royal Exhibition Building and its surrounding Carlton Gardens is situated in the suburb of Carlton. The Royal Exhibition Building and Carlton Gardens are over 6km from the proposed tunnel alignment at its nearest point.

The property listing on the Australian Heritage Database (DotE 2015b) states that it is "an outstanding surviving manifestation of the international exhibition movement of the nineteenth century and early twentieth century." Furthermore, "most of this building survives in its original form, in its original, purpose-designed parkland setting of the Carlton Gardens, and therefore retains a high level of authenticity. In terms of continuity of function, the Royal Exhibition Building has been used as a general exhibition hall since its construction, through to the present day".

Nature and extent of likely impact

Address any impacts on the World Heritage values of any World Heritage property.

As no works are proposed in respect of the world heritage place, the Project would have no direct impact on the Royal Exhibition Building and its surrounding Carlton Gardens and the heritage values of this property. Additionally, the Project would have no indirect impacts to the world heritage values of this property associated with ground vibration from tunnelling works.

The internationally accepted German Standard DIN 4150-Part 3 *Structural Vibration Part 3 Effects of Vibration in Structures* (1999) describes vibration levels below which no impact has been observed on different types of structures, and indicates that a vibration level of 2.5mm/s (long term peak particle velocity – 'PPV') should not result in any impacts for structures that have a particular sensitivity to vibration.

A published upper bound for construction vibration data (Crabb and Hiller, 2000) shows that PPV levels from a tunnel boring machine (TBM) would not exceed 2.5mm/s at a distance of 25m from the TBM. At a distance of over 6km, the PPV value is expected to be well below the DIN vibration levels.

It can be concluded that ground vibration from tunnelling activities associated with the Project would have no impact on the Royal Exhibition Building or Carlton Gardens, as these are located over 6km from the tunnel alignment – well beyond the 25m distance at which the recommended DIN levels are predicted to be achieved.

3.1 (b) National Heritage Places

Description

The Protected Matters Search Tool (PMST) (DotE, 2015a) identifies seven listed National Heritage Places within the 5km buffer distance from the Project area, as shown in the table below.

Status	Place	Location relative to the Project area (km)	Location relative to proposed tunnel (km)
Listed Places	Flemington Racecourse	~1.3	~2.3
	High Court of Australia (former)	~0.9	~5.1
	ICI Building (former)	~2.3	~6.4
	Melbourne Cricket Ground	~2.9	~7.1
	Newman College	~2.3	~5.8
	Royal Exhibition Building National Historic Place	~2	~6.0
	Sidney Myer Music Bowl	~2.3	~6.4

Nature and extent of likely impact

Address any impacts on the National Heritage values of any National Heritage place.

As no works are proposed in respect to any of these National Heritage places, the Project would have no direct impact on the heritage values of these places. Additionally, the Project would have no indirect impacts to the national heritage values of these places associated with ground vibration from tunnelling works.

The internationally accepted German Standard DIN 4150-Part 3 *Structural Vibration Part 3 Effects of Vibration in Structures* (1999) describes vibration levels below which no impact has been observed on different types of structures, and indicates that a vibration level of 2.5mm/s (long term peak particle velocity – 'PPV') should not result in any impacts for structures that have a particular sensitivity to vibration.

A published upper bound for construction vibration data (Crabb and Hiller, 2000) shows that PPV levels from a tunnel boring machine (TBM) would not exceed 2.5mm/s at a distance of 25m from the TBM. At a distance of approximately 2.3km (i.e. the distance between the proposed tunnel and the Flemington Racecourse, which is the closest National Heritage Place to the tunnel), the PPV value is expected to be well below the DIN vibration levels.

It can be concluded that ground vibration from tunnelling activities associated with the Project would have no impact on the seven National Heritage Places listed above, as these are located between 2.3-7.1km (approximately) from the tunnel alignment – well beyond the 25m distance at which the recommended DIN levels are predicted to be achieved.

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

There are no Ramsar wetlands located within or near the Project area. Kororoit Creek flows into Port Phillip Bay, north-east of the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site. Stony Creek, Maribyrnong River and Moonee Ponds Creek flow into the Yarra River, which enters Port Phillip Bay further to the northeast. None of these four waterways flow directly into the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site.

Nature and extent of likely impact

Address any impacts on the ecological character of any Ramsar wetlands.

The Project would have no direct or indirect impact upon the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site. Kororoit Creek is approximately 9km north-east of the edge of the Ramsar wetland. Stony Creek, the Maribyrnong River and Moonee Ponds Creek are tributaries of the Yarra River and the river mouth is approximately 10km north-east of the edge of the Ramsar wetland. Furthermore, wind driven circulation is the dominant cause of water movement within Port Phillip Bay (CSIRO 1996) and numerical modelling studies of Port Phillip Bay demonstrate the tendency of the Yarra River plume to flow down the north-east coast of the bay, away from these Ramsar wetlands, due to the currents (EPA 2011).

The likelihood of the Project having a significant impact on the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site or any other Ramsar site as a result of the Project is negligible.

3.1 (d) Listed threatened species and ecological communities

The Project area has been investigated to assess the potential for listed threatened species and ecological communities to occur. These investigations comprised desktop studies followed by fieldwork to confirm the findings of the desktop assessment. The fieldwork focussed on areas where Matters of National Environmental Significance (MNES) are known to occur or have potential to occur. The outcome of these investigations is documented in the *Western Distributor Project: EPBC Act Referral – Ecological Report on Matters of National Environmental Significance* (GHD, 2015), provided in Attachment 4 of this referral and summarised below.

Description

Threatened Listed Ecological Communities

One EPBC Act-listed ecological community is confirmed as present within the Project area: *Subtropical and Temperate Coastal Saltmarsh* (Coastal Saltmarsh), listed as Vulnerable. This community occurs within Precinct 3 as distinct bands of vegetation along both banks of Stony Creek, typically ranging in width from 1-5m wide (greater in some areas) and meeting condition thresholds to be considered the listed community (i.e. patch size is greater than 0.4 hectares). The dominant species are: *Sclerostegia arbuscula* (Shrubby Glasswort), *Suaeda australis* (Austral Seablite), *Frankenia pauciflora* var. *gunnii* (Southern Sea-heath), S*arcocornia quinqueflora* subsp. *quinqueflora* (Beaded Glasswort) and *Disphyma crassifolium* subsp. *clavellatum* (Rounded Noon-flower). The condition of this patch of Coastal Saltmarsh at the time of assessment was moderate based on presence of a diverse array of native species considered characteristic of this community and low cover abundance of weeds (weeds comprised less than 25% of the total vegetation cover).

Threatened Listed Flora Species

Suitable habitat is potentially present for one EPBC Act-listed flora species within the Project area: River Swamp Wallaby-Grass (*Amphibromus fluitans*) (listed as Vulnerable). It is possible that this species occurs along some of the creeks within the Project area, e.g. Kororoit Creek (P1), Stony Creek (P3) and Moonee Ponds Creek (P7). However, given the low quality of the habitat (e.g. cover abundance of weeds and dominance of Common Reed), the likelihood of this species occurring within the Project area is low.

Threatened Listed Terrestrial Fauna Species

Suitable habitat is present for three EPBC Act-listed fauna species and it considered possible that they could visit or fly over the Project area occasionally: Grey-headed Flying-fox (*Pteropus poliocephalus*), Swift Parrot (*Lathamus discolor*), and Growling Grass Frog (*Litoria raniformis*). While habitats within the Project area may provide dispersal opportunities for these fauna species to access other patches of higher quality habitat, they are not considered to be of high value to these species. These species are described below.

Grey-headed Flying-fox (*Pteropus poliocephalus*) (Vulnerable)

Grey-headed Flying-fox uses a wide range of habitats in Victoria, mainly east of Melbourne. It uses densely vegetated flowering and fruiting trees, including those in agricultural land and suburban gardens. Established colonies are known to occur in Melbourne and Geelong. The main Melbourne colony is located at Yarra Bend Park, 7km east of the eastern end of the Project area. The Project area (P1, P2, P3, P5, P6, P7) supports flowering trees, which provide low quality and non-critical foraging habitat that may be used occasionally by the Grey-headed Flying Fox.

Swift Parrot (*Lathamus discolour*) (Endangered)

Swift Parrot is a winter migrant to Victoria (and other parts of south-eastern Australia) from breeding areas in Tasmania. In Victoria, Swift Parrot prefers dry, open eucalypt forests and woodlands, especially Box Ironbark Forest in north-central Victoria. It is occasionally recorded in urban parks, gardens, street trees and golf courses with flowering ornamental trees and shrubs. The Project area (P1, P2, P3, P5, P6, P7) supports flowering trees, which provide low quality and non-critical foraging habitat that may be used occasionally by the Swift Parrot.

Growling Grass Frog (*Litoria raniformis*) (Vulnerable)

Growling Grass Frog occurs in permanent and semi-permanent open vegetated wetlands, flooded paddocks, drains, farm dams, and river pools. It occurs generally in habitats containing abundant submerged and emergent vegetation. There is one record of the frog (from 1990) within the Project area, at the far western end. It is from a wetland that no longer exists near the (M1/M80 intersection). A newly created wetland nearby (within the M1/M80 intersection) appears to provide suitable habitat although it is potentially inaccessible to frogs. There are numerous records for Growling Grass Frog along Kororoit Creek, well upstream and well downstream of the Project area. A 2015 targeted survey within the Project area for Growling Grass Frog failed to detect the species.

Threatened Listed Aquatic Fauna Species

One EPBC-Act listed aquatic fauna species possibly occurs within the Project area: Australian Grayling (*Prototroctes mareana*). Of the four waterways assessed, Australian Grayling is recorded from the Maribyrnong River only.

Australian Grayling (*Prototroctes maraena*) (Vulnerable)

If present, Australian Grayling larvae would drift downstream to Port Philip Bay along Maribyrnong River through the Project area (Precinct 5) and juveniles would return to freshwater river habitat by swimming upstream.

There have been six records of the Australian Grayling from within the Maribyrnong River, despite 266 individual fish surveys undertaken throughout the river catchment in the past 30 years. These six records are from the freshwater reaches of the Maribyrnong River upstream of the Project area. Prior to 2015, the most recent record is from 1982. Targeted surveys for Australian Grayling within the Maribyrnong and Yarra Rivers in 2008 failed to record the Australian Grayling, despite the sampling of 113 sites.

The Maribyrnong River does not support an important population of Australian Grayling in the context of the Australian Grayling Recovery Plan (Backhouse et al. 2008).

Nature and extent of likely impact

Address any impacts on the members of any listened threatened species (except a conservation dependent species) or any Threatened ecological community, or their habitat.

Threatened Listed Ecological Communities

The potential impacts of the Project on the vulnerable *Subtropical and Temperate Coastal Saltmarsh* (Coastal Saltmarsh) community would be limited to a small-scale loss of vegetation that would not significantly alter its overall functionality. Ecological communities in the vulnerable category of ecological communities listed under the EPBC Act are not MNES for the purposes of Part 3 of the EPBC Act (requirements for environmental approvals; DotE 2013). For this reason *Subtropical and Temperate Coastal Saltmarsh* has not been considered further in this referral.

Threatened Listed Flora Species

The likelihood of River Swamp Wallaby-Grass occurring within the Project area is low because of the low quality of the habitat present (e.g. cover abundance of weeds and dominance of Common Reed). The likelihood of the Project impacting upon River Swamp Wallaby-Grass is therefore negligible.

Threatened Listed Terrestrial Fauna Species

Grey-headed Flying-fox (*Pteropus poliocephalus*) (Vulnerable)
The only potential impact on the Grey-headed Flying-fox would be through the loss of some flowering trees (mostly non-remnant) that provide low quality and non-critical foraging habitat. Given the ubiquity of similar low quality foraging habitat in the surrounding area, and the apparently small numbers of individuals that forage in this part of Melbourne, the likelihood of this limited and localised loss of low quality foraging habitat resulting in a significant impact to the Grey-headed Flying-fox is negligible.

Swift Parrot (*Lathamus discolour*) (Endangered)
The only potential impact on the Swift Parrot would be through the loss of some flowering trees (mostly non-remnant) that provide low quality and non-critical foraging habitat. Given the ubiquity of similar low quality foraging habitat in the surrounding area, and the apparently small numbers of individuals that forage in this part of Melbourne, the likelihood of this limited and localised loss of low quality foraging habitat resulting in a significant impact to the Swift Parrot is negligible.

Growling Grass Frog (*Litoria raniformis*) (Vulnerable)
The only potential impact on the Growling Grass Frog would be through the disturbance to low quality dispersal habitat along Kororoit Creek and/or the disturbance to suitable habitat at the wetland within the M80 interchange intersection. Given the limited and localised disturbance to these areas as a result of the Project, the potential dispersal opportunities for the species would remain unchanged and the likelihood of a significant impact to the Growling Grass Frog is negligible.

Threatened Listed Aquatic Fauna Species

The only potential impacts on Australian Grayling in the Maribyrnong River would be from the construction of bridge piles and piers within the river (if this is required).

Given the repeated low recorded abundance of Australian Grayling in the Maribyrnong River it is not an important population, and the river does not contain critical habitat for this species. The likelihood of the Project having a significant impact on the Australian Grayling is negligible.

3.1 (e) Listed migratory species

Description

The PMST (DotE, 2015a) and VBA database (DELWP, 2015b) identify 76 EPBC Act-listed Migratory Species (66 birds, five marine mammals, three turtles and two sharks) within the 5km buffer distance from the Project area. However, the migratory marine mammals, turtles and sharks are highly unlikely to occur within the Project area, and the migratory bird species are unlikely to specifically target habitats within the Project area (refer to Attachment 4).

Nature and extent of likely impact

Address any impacts on the members of any listed migratory species, or their habitat.

The likelihood of the Project having a significant impact on migratory species, or their habitat, is negligible.

3.1 (f) Commonwealth marine area

(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

Description

The Project is over 50 kilometres from the nearest Commonwealth marine area.

Nature and extent of likely impact

Address any impacts on any part of the environment in the Commonwealth marine area.

The Project would have no impacts on the environment in the Commonwealth marine area, as it is a considerable distance from the Commonwealth marine area and does not involve any discharges into the Commonwealth marine area.

3.1 (g) Commonwealth land

(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

Description

If the action will affect Commonwealth land also describe the more general environment. The Policy Statement titled *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* provides further details on the type of information needed. If applicable, identify any potential impacts from actions taken outside the Australian jurisdiction on the environment in a Commonwealth Heritage Place overseas.

The Project would not be developed on Commonwealth land. The closest Commonwealth land is over 550m south of the Project area in Spotswood. It is currently occupied by a Commonwealth Department of Agriculture and Water Resources Post Entry Quarantine Facility for plants and animals (Department of Agriculture and Water Resources, 2015).

Nature and extent of likely impact

Address any impacts on any part of the environment in the Commonwealth land. Your assessment of impacts should refer to the *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* and specifically address impacts on:

- ecosystems and their constituent parts, including people and communities;
- natural and physical resources;
- the qualities and characteristics of locations, places and areas;
- the heritage values of places; and
- the social, economic and cultural aspects of the above things.

As no works are proposed in respect of the Commonwealth property identified above, the Project would have no direct impact on this Commonwealth property.

The only potential for indirect impacts on this property are associated with ground vibration from tunnelling works. The tunnel alignment would be located approximately 1km from this Commonwealth property.

As stated in Part 3.1, the internationally accepted German Standard DIN 4150-Part 3 Structural Vibration Part 3 Effects of Vibration in Structures (1999) describes vibration levels below which no impact has been observed on different types of structures, and indicates that a vibration level of 2.5mm/s (long term peak particle velocity - PPV) should not result in any impacts for structures that have a particular sensitivity to vibration.

A published upper bound for construction vibration data (Crabb and Hiller, 2000) shows that PPV levels from a tunnel boring machine (TBM) would not exceed 2.5mm/s at a distance of 25m from the TBM. This means that ground vibration levels from the TBM would be below the DIN levels. It can be concluded from this analysis that ground vibration from tunnelling activities would have no significant impact on the Commonwealth land or the buildings thereon.

3.1 (h) The Great Barrier Reef Marine Park

Description

The Project area is not within or near the Great Barrier Reef Marine Park.

Nature and extent of likely impact

Address any impacts on any part of the environment of the Great Barrier Reef Marine Park.

Not applicable.

Note: If your action occurs in the Great Barrier Reef Marine Park you may also require permission under the *Great Barrier Reef Marine Park Act 1975* (GBRMP Act). If so, section 37AB of the GBRMP Act provides that your referral under the EPBC Act is deemed to be an application under the GBRMP Act and Regulations for necessary permissions and a single integrated process will generally apply. Further information is available at www.gbrmpa.gov.au

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3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

If the action is a coal seam gas development or large coal mining development that has, or is likely to have, a significant impact on water resources, the draft *Policy Statement Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources* provides further details on the type of information needed.

The Project does not involve coal seam gas development or large coal mining development.

Nature and extent of likely impact

Address any impacts on water resources. Your assessment of impacts should refer to the draft *Significant Impact Guidelines: Coal seam gas and large coal mining developments—Impacts on water resources*.

Not applicable.

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

You must describe the nature and extent of likely impacts (both direct & indirect) on the whole environment if your project:

- is a nuclear action;
- will be taken by the Commonwealth or a Commonwealth agency;
- will be taken in a Commonwealth marine area;
- will be taken on Commonwealth land; or
- will be taken in the Great Barrier Reef marine Park.

Your assessment of impacts should refer to the *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* and specifically address impacts on:

- ecosystems and their constituent parts, including people and communities;
- natural and physical resources;
- the qualities and characteristics of locations, places and areas;
- the heritage values of places; and
- the social, economic and cultural aspects of the above things.

3.2 (a)	**Is the proposed action a nuclear action?**	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (b)	**Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?**	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (c)	**Is the proposed action to be taken in a Commonwealth marine area?**	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))

3.2 (d)	**Is the proposed action to be taken on Commonwealth land?**	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))		

3.2 (e)	**Is the proposed action to be taken in the Great Barrier Reef Marine Park?**	X	No
			Yes (provide details below)
	If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))		

3.3 Other important features of the environment

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed above). If at Section 2.3 you identified any alternative locations, time frames or activities for your proposed action, you must complete each of the details below (where relevant) for each alternative identified.

3.3 (a) Flora and fauna

Flora

The Project area is highly urbanised and few patches of remnant native vegetation remain. Remnant native vegetation occurs in fragmented patches, mostly along waterways, and is generally in poor to moderate condition, owing to extent of past disturbance and abundance of introduced flora species.

The field assessment (GHD 2015) confirmed the presence of the following EVCs within the Project area: Coastal Saltmarsh (EVC 9) and Brackish Wetland (EVC 656). An area of Mangrove Shrubland (EVC 140) occurs immediately adjacent to the Project area (adjacent to P3) but is not currently intercepted by the Project area. Coastal Saltmarsh (EVC 9) corresponds to the EPBC Act-listed *Subtropical and Temperate Coastal Saltmarsh ecological community* (i.e. patch size within the Project area is >0.4 ha, which meets condition thresholds to be considered the community). No groundwater-dependent ecosystems are present in the Project area.

Terrestrial Fauna

Habitats for native terrestrial fauna can be grouped into the following categories: grassy areas (mainly non-native), woodland (mainly with planted trees), scattered trees, waterbodies and waterways, small estuaries with fringing vegetation. Grassy areas are common in all Project area precincts, occurring in parks and reserves, nature strips, road reserves and roadside margins. Grassland in the area is generally of low quality for fauna and species most likely to use grasslands in the Project area include common native and non-native species. Generally, trees in the Project area occur in low to medium density, and are in moderate to good condition. Larger trees in denser patches offer moderate quality habitat to fauna, but are most likely to be used by species that are common in urbanised environments. Larger trees may be visited occasionally by threatened species [e.g. EPBC-listed Grey-headed Flying-fox (*Pteropus poliocephalus*) and Swift Parrot (*Lathamus discolor*)], but those species are unlikely to depend upon these trees.

The Project area contains one artificial wetland (within the M80 intersection) and crosses four watercourses (Kororoit Creek, Stony Creek, Maribyrnong River and Moonee Ponds Creek). Upstream and downstream of the Project area, there are historical records of the Growling Grass Frog in wetlands associated with Kororoit Creek. While the creek within the Project area does not provide suitable calling, breeding or foraging habitat for the Growling Grass Frog, it provides a dispersal opportunity for individuals seeking to move upstream or downstream.

At the far western end of Stony Creek Reserve there are limited patches of dense aquatic and semi-aquatic vegetation (e.g. *Phragmites*) and may be suitable for small mammals (e.g. Water Rat, *Hydromys chrysogaster*), some birds (e.g. crakes and rails), and perhaps reptiles (e.g. Common Blue-tongued Lizard, *Tiliqua scincoides*). The estuarine reach of Stony Creek is suitable for a range of waterfowl (ducks, swans, cormorants) and is lined with low rocky banks that support a narrow and degraded fringe of saltmarsh vegetation. These banks may attract small numbers of threatened and non-threatened shorebirds (e.g., sandpipers) and waterbirds (e.g. egrets, herons) occasionally.

Where it intersects the Project area, the Maribyrnong River is large and tidal and within an industrial setting. The river itself is likely to be visited regularly by waterbirds (gulls, terns, cormorants, ducks) for foraging. Threatened species of waterbirds (e.g. egrets, shorebirds, terns) may visit or fly along the river at the Project area.

The Maribyrnong River is likely to be used by some birds as a movement corridor upstream and downstream.

Where it intersects the Project area, Moonee Ponds Creek is a small tidal inlet from the Yarra River, and is within an industrial area. It is generally degraded and in poor condition. The estuary itself is highly disturbed and degraded, but may occasionally attract a range of waterbirds (ducks, swans, cormorants, gulls, terns). At low tide, exposed mud banks may occasionally attract small numbers of threatened and non-threatened shorebirds (e.g. sandpipers) and waterbirds (e.g. egrets, herons).

Aquatic Fauna

Suitable aquatic habitat for fish is likely to be found within waterway or wetland habitats in Kororoit Creek and Maribyrnong River upstream of the Project area. It is unlikely that Stony Creek or Moonee Ponds Creek support suitable fish habitat due to the extended concrete channel in these waterways which is likely to inhibit upstream passage of juvenile fish.

3.3 (b) Hydrology, including water flows

Four perennial waterways flow through the Project area: Kororoit Creek, Stony Creek, Maribyrnong River and Moonee Ponds Creek. These waterways, their locations and condition are described in section 2.1 and shown in Figure 1 and Attachment 1.

The DELWP Water Measurement Information System (DELWP 2015c) indicates that groundwater levels range between 0.3m to 1.8m above sea level. Groundwater levels are likely to be influenced by tidal fluctuations owing to the proximity of the coast. The lack of groundwater use in the region suggests that abstractive influences on water levels are likely to be minimal. One dewatering bore was identified in the Project area. Water levels within the shallow fill may be perched above the regional water table. A deep sewer may be locally influencing (depressing) water levels in in the Whitehall Street area. The sewer runs along Whitehall Street and through the centre of the Mobil Terminal on Francis Street.

3.3 (c) Soil and Vegetation characteristics

Based on published geological information, the Project area is predicted to contain the following geological units:

- Fill Material - Variable composition and thickness. Gravels, sandy gravels and clays
- Newer Volcanics - Weathered to fresh basalts and basaltic clays. Forms the near surface geology of a large area of western Melbourne and beyond. May not be present near the Maribyrnong River. Potentially up to 20m thick locally
- Coode Island Silt - Dark grey to brown silt and clay with lenses of shelly beds and sand. May only be a thin veneer (0.5 to 1m) in the Project area
- Fishermans Bend Silt - Yellow, brown to grey mottled stiff clays and silty clays with minor sandy clays. May be present beneath Coode Island Silt but not likely to extend westwards significantly
- Brighton Group - Variable from clays to quartz sands and gravels. Graded bedding common
- Older Volcanics - Deeply weathered basalts and basaltic clays
- Werribee Foundation - Sand, silt and silty clay
- Melbourne Formation - Mudstone, siltstone, lesser interbedded sandstone.

The Australian Soil Resource Information System acid sulfate soils maps (CSIRO 2013) show that acid sulfate soils are likely to occur along and adjacent to Stony Creek associated with Coode Island Silt and alluvial sediment, and areas east of the Maribyrnong River associated with Coode Island Silt.

3.3 (d) Outstanding natural features

There are no outstanding natural features within the Project area.

3.3 (e) Remnant native vegetation

Patches of remnant native vegetation present within the Project area comprise of the following Ecological Vegetation Classes:

- Brackish Wetland (EVC 656)
- Coastal Saltmarsh (EVC 9)
- Mangrove Shrubland (EVC 140).

Within the Project area, Coastal Saltmarsh occurs along both banks of Stony Creek (P3). The vegetation forms a distinct band, typically ranging in width from 1-5m wide but wider in some areas. The dominant species are: *Sclerostegia arbuscula* (Shrubby Glasswort), *Suaeda australis* (Austral Seablite), *Frankenia pauciflora* var. *gunnii* (Southern Sea-heath), S*arcocornia quinqueflora* subsp. *quinqueflora* (Beaded Glasswort) and *Disphyma crassifolium* subsp. *clavellatum* (Rounded Noon-flower).

Within the Project area, Brackish Wetland fringes both banks of Moonee Ponds Creek (P7). The vegetation is dominated by *Phragmites australis* (Common Reed), which almost forms a monotypic stand. There are occasional occurrences of low succulent shrubs, such as *Sarcocornia quinqueflora* (Beaded Glasswort) and occasional native herbs such as *Persicaria decipiens* (Slender Knotweed). The width of the Brackish Wetland vegetation typically ranges from 1-5m wide.

There is Mangrove Shrubland immediately adjacent to the Project area (east of Hyde Street, Yarraville, near P3). The vegetation was planted in the 1980s after an oil spill damaged an area of remnant Mangrove Shrubland at this location. The vegetation is intermixed with small patches of Coastal Saltmarsh, similar to that described above, however the Coastal Saltmarsh areas would comprise < 50% of the vegetation cover at this location. The Mangroves form a dense shrubland to 2m tall, and comprise an almost monotypic stand of *Avicennia marina* subsp. *australasica* (Grey Mangrove; listed as rare in Victoria; DEPI 2014).

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

The Project area is relatively flat, especially within residential and industrial areas. There are slight undulations present, mainly in the form of small valleys or low points. From the western end, noticeable drops in gradient occur along Kororoit Creek at Brooklyn, the intersection of the West Gate Freeway at Millers Road, and along Stony Creek. The highest point in the Project area is 29.7m AHD.

3.3 (g) Current state of the environment

Include information about the extent of erosion, whether the area is infested with weeds or feral animals and whether the area is covered by native vegetation or crops.

As described in section 1.3, the Project area is heavily urbanised and incorporates a mix of industrial, residential, retail, commercial and port and transport-related infrastructure land uses, with some areas of open space and recreation. The Project area has been extensively cleared of virtually all remnant vegetation. Remnant native vegetation occurs within the Project area in fragmented patches, mostly along waterways, comprising Coastal Saltmarsh, Mangrove Shrubland and Brackish Wetland EVCs. There are numerous amenity plantings present, mostly within parklands, and these include indigenous and native plant species. Introduced weed species are present within all vegetated areas. Generally parklands and road reserves throughout the Project area provide some limited foraging and roosting habitat for fauna species. However, 150 years of industrialisation and urbanisation has resulted in an area that now supports very little natural habitat for fauna, and much of that is degraded. Feral animal species such as Common Starling, Feral Pigeon and European Rabbit would frequently use degraded habitat within the Project area.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

The PMST identifies 13 Commonwealth Heritage Places within a 5km buffer distance of the Project area, as shown in the table below.

Status	Place	Location relative to the Project area (km)	Location relative to proposed tunnel (km)
Listed Places	City Streets Delivery Centre	~0.5	~4.7
	Commonwealth Offices Building	~2.5	~6.7
	Defence Explosive Factory Maribyrnong	~4.4	~5.1
	Flemington Post Office	~1.5	~4.0
	Melbourne General Post Office	~1.3	~5.5
	Victoria Barracks A Block	~2.3	~6.2
	Victoria Barracks C Block	~2.3	~6.2
	Victoria Barracks F Block	~2.3	~6.2
	Victoria Barracks G Block	~2.3	~6.2
	Victoria Barracks Guardhouse (former)	~2.3	~6.2
	Victoria Barracks J	~2.3	~6.2
	Victoria Barracks Precinct	~2.3	~6.2
	Victoria Barracks, The Keep	~2.3	~6.2

As no works are proposed in respect to any of these Commonwealth Heritage places, the Project would have no direct impact on the heritage values of these places. Additionally, the Project would have no indirect impacts to the national heritage values of these places associated with ground vibration from tunnelling works.

The internationally accepted German Standard DIN 4150-Part 3 *Structural Vibration Part 3 Effects of Vibration in Structures* (1999) describes vibration levels below which no impact has been observed on different types of structures, and indicates that a vibration level of 2.5mm/s (long term peak particle velocity – 'PPV') should not result in any impacts for structures that have a particular sensitivity to vibration.

A published upper bound for construction vibration data (Crabb and Hiller, 2000) shows that PPV levels from a tunnel boring machine (TBM) would not exceed 2.5mm/s at a distance of 25m from the TBM. At a distance of approximately 4km (i.e. the distance between the proposed tunnel and the Flemington Post Office, which is the closest Commonwealth Heritage Place to the tunnel), the PPV value is expected to be well below the DIN vibration levels.

It can be concluded that ground vibration from tunnelling activities associated with the Project would have no impact on the 13 Commonwealth Heritage Places listed above, as these are located between 4-6.7km (approximately) from the tunnel alignment – well beyond the 25m distance at which the recommended DIN levels are predicted to be achieved.

The Project area intersects or is close to a series of heritage places, predominantly associated with Melbourne's industrial and maritime history. These include archaeological sites listed in the Victorian Heritage Inventory (VHI), as well as sites included in the Schedule to the Heritage Overlay (HO) under the Wyndham, Hobsons Bay and Maribyrnong Planning Schemes and a small number of Victorian Heritage Register (VHR) sites.

Of these, the following sites are within the Project area:

- Stony Creek Ballast Quarries (VHI H7822-0426) and Stony Creek drawbridge (VHI H7822-0424)
- Lyons Street Explosive Store, Tramway and Dock (VHI H7822-0451)
- Cuming Smith site (HO179, demolished)
- Powder Magazine (HO177)
- Hilaria Bathing Ship Site and Mowlings Soap and Candle (HO178)
- Barnett Glass & Rubber (HO78)
- Saltwater River Crossing and Footscray Wharves (VHR H1397 and HO50)
- Shepherd Swingbridge abutment foundations (VHI H7822-0434)
- Sims Street unidentified timber slipways and boatyard (VHI H7822-0487)
- Botterill and Fraser slipways, concrete landing and boatyard (VHI H7822-0442)
- West Melbourne Rubbish Tips (VHI H7822-0312)
- Dudley Flats rubbish dump and ash tipping site (H7822-0167).

There may also be archaeological sites in the Maribyrnong River, such as the shipwrecks Ecina Bow (S199) and an unidentified Maribyrnong River mud hopper barge wreck (S781) and there may be others not previously identified.
A new Heritage Overlay is proposed at the eastern end of the Project area. Amendment C207 to the Melbourne Planning Scheme proposes to apply the Heritage Overlay to the Moonee Ponds Creek and Infrastructure Precinct (proposed HO1092); this amendment has been considered by an independent Panel (reported in January 2014) however the amendment has not yet been gazetted.

Impacts on heritage sites would be minimised by avoiding physical or visual impacts on sites where possible and through a range of other measures.

3.3 (i) Indigenous heritage values

The Project is being constructed through a highly modified urban environment, nevertheless there is potential for Aboriginal places (archaeological sites) to occur within the Project area. If present, Aboriginal places will most likely occur close to waterways, but may also occur in pockets of relatively undisturbed land away from water. Due to the modified nature of the Project area the potential for undisturbed Aboriginal places to occur is low.

An examination of the Aboriginal Cultural Heritage Register and Information System (ACHRIS), maintained by the Office of Aboriginal Affairs Victoria, was undertaken on 28 September 2015. This found that no registered Aboriginal places occur in the Project area. The examination found that six areas of cultural heritage sensitivity (as defined by the *Aboriginal Heritage Act 2006*) occur in the Project area. These areas of cultural heritage sensitivity are associated with:

- A 50m radius of VAHR 7822-0437;
- 200m either side of Kororoit Creek, Stony Creek, Yarra River, Maribyrnong River, Moonee Ponds Creek.

Under the *Aboriginal Heritage Act 2006*, a CHMP is required if all or part of a proposed activity is in an area of cultural heritage sensitivity, and all, or part of the activity is a high impact activity. A CHMP is also required where an Environment Effects Statement is required to be prepared for a project under the *Environment Effects Act 1978*. As the Project would be considered a high impact activity and traverses areas of cultural heritage sensitivity, as listed above, preparation and approval of a CHMP is required. Further it is anticipated that an Environment Effects Statement would be required for the project, further triggering the need for an approved CHMP.

3.3 (j) Other important or unique values of the environment

Describe any other key features of the environment affected by, or in proximity to the proposed action (for example, any national parks, conservation reserves, wetlands of national significance etc).

Not applicable.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

The Project area is predominantly within public land (i.e. road and rail reserves and parks). Some permanent works, construction activity and lay down sites could occupy freehold land.

3.3 (l) Existing land / marine uses of area

Refer to section 1.3.

3.3 (m) Any proposed land / marine uses of area

The proposed use of the land would be new sections of elevated and at-grade road, tunnels (underground) and bridging (refer to section 2.1).

4 Environmental outcomes

Provide descriptions of the proposed environmental outcomes that will be achieved for matters of national environmental significance as a result of the proposed action. Include details of the baseline data upon which the outcomes are based, and the confidence about the likely achievement of the proposed outcomes. Where outcomes cannot be identified or committed to, provide explanatory details including any commitments to identify outcomes through an assessment process.

If a proposed action is determined to be a controlled action, the Department may request further details to enable application of the draft *Outcomes-based Conditions Policy 2015* and *Outcomes-based Conditions Guidance 2015* (http://www.environment.gov.au/epbc/consultation/policy-guidance-outcomes-based-conditions), including about environmental outcomes to be achieved, details of baseline data, milestones, performance criteria, and monitoring and adaptive management to ensure the achievement of outcomes. If this information is available at the time of referral it should be included.

General commitments to achieving environmental outcomes, particularly relating to beneficial impacts of the proposed action, CANNOT be taken into account in making the initial decision about whether the proposal is likely to have a significant impact on a matter protected under the EPBC Act. (But those commitments may be relevant at the later assessment and approval stages, including the appropriate level of assessment, and conditions of approval, if your proposal proceeds to these stages).

As outlined in Section 6.2, given the highly urbanised nature of the Project area, the Project would have no significant impacts on any MNES. This conclusion is based on the following:

- There is high quality baseline data about the protected matters and their habitat
- All environmental risks are well understood and can be adequately managed
- Sections 2.1 and 3.1 clearly describe the likely impacts of the Project on the protected matters
- DEDJTR has demonstrated capability and willingness to achieve sound environmental outcomes through previous projects.

All works would be undertaken within the context of the Victorian regulatory regime (as described in Section 2.5), which mandates the development and implementation of an Environmental Management Framework (EMF), with strong governance. Environmental management measures that would be incorporated into the EMF are described in Section 2.1.

Consequently, no additional specific environmental outcomes are proposed.

5 Measures to avoid or reduce impacts

Note: If you have identified alternatives in relation to location, time frames or activities for the proposed action at Section 2.3 you will need to complete this section in relation to each of the alternatives identified.

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

For any measures intended to avoid or mitigate significant impacts on matters protected under the EPBC Act, specify:
- what the measure is,
- how the measure is expected to be effective, and
- the time frame or workplan for the measure.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

Provide information about the level of commitment by the person proposing to take the action to achieve the proposed environmental outcomes and implement the proposed mitigation measures. For example, if the measures are preliminary suggestions only that have not been fully researched, or are dependent on a third party's agreement (e.g. council or landowner), you should state that, that is the case.

Note, the Australian Government Environment Minister may decide that a proposed action is not likely to have significant impacts on a protected matter, as long as the action is taken in a particular manner (section 77A of the EPBC Act). The particular manner of taking the action may avoid or reduce certain impacts, in such a way that those impacts will not be 'significant'. More detail is provided on the Department's web site.

For the Minister to make such a decision (under section 77A), the proposed measures to avoid or reduce impacts must:
- clearly form part of the referred action (eg be identified in the referral and fall within the responsibility of the person proposing to take the action),
- be must be clear, unambiguous, and provide certainty in relation to reducing or avoiding impacts on the matters protected, and
- must be realistic and practical in terms of reporting, auditing and enforcement.

More general commitments (eg preparation of management plans or monitoring) and measures aimed at providing environmental offsets, compensation or off-site benefits CANNOT be taken into account in making the initial decision about whether the proposal is likely to have a significant impact on a matter protected under the EPBC Act. (But those commitments may be relevant at the later assessment and approval stages, including the appropriate level of assessment, if your proposal proceeds to these stages).

Given the highly urbanised nature of the Project area, the Project is unlikely to have a significant impact on any MNES. Accordingly, no specific management measures are required to avoid or mitigate significant impacts on any MNES.

Standard construction management measures would be implemented as part of the Project as outlined in section 2.1 and would ensure that overall impacts of the Project are minimised.

6 Conclusion on the likelihood of significant impacts

Identify whether or not you believe the action is a controlled action (ie. whether you think that significant impacts on the matters protected under Part 3 of the EPBC Act are likely) and the reasons why.

6.1 Do you THINK your proposed action is a controlled action?

✓	No, complete section 6.2
	Yes, complete section 6.3

6.2 Proposed action IS NOT a controlled action.

Specify the key reasons why you think the proposed action is NOT LIKELY to have significant impacts on a matter protected under the EPBC Act.

The Project works would be undertaken in inner Melbourne in an area that has been subject to urban and industrial development for over one hundred years. The analysis presented in this referral indicates that the potential impacts of the Project on MNES would not be significant, because:

- No World Heritage properties or National Heritage Places would be directly affected by the Project or indirectly affected by ground vibration. Tunnelling works associated with the Project would be over six kilometres to the west of the Royal Exhibition Buildings and surrounding Carlton Gardens, and approximately 2.3 kilometres to the south of Flemington Racecourse
- The Project would have no direct or indirect impact upon the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site
- The likelihood of the Project having a significant impact on the Swift Parrot or Grey-headed Flying-fox is negligible, as the limited and localised loss of some flowering trees (mostly non-remnant) that provide low quality and non-critical foraging habitat is not considered ecologically significant
- The likelihood of the Project having a significant impact on the Growling Grass Frog is negligible, as the Project area does not contain an important population or critical habitat. Potential limited and localised disturbance to low quality dispersal habitat would not change the species' potential dispersal opportunities
- The likelihood of the Project having a significant impact on the Australian Grayling is negligible, as the Project area does not contain an important population or critical habitat
- The Project area does not contain important habitat or support significant populations of Migratory species
- No other EPBC-listed species or ecological communities would be affected
- No other MNES would be affected.

6.3 Proposed action IS a controlled action

Type 'x' in the box for the matter(s) protected under the EPBC Act that you think are likely to be significantly impacted. (The 'sections' identified below are the relevant sections of the EPBC Act.)

	Matters likely to be impacted
	World Heritage values (sections 12 and 15A)
	National Heritage places (sections 15B and 15C)
	Wetlands of international importance (sections 16 and 17B)
	Listed threatened species and communities (sections 18 and 18A)
	Listed migratory species (sections 20 and 20A)
	Protection of the environment from nuclear actions (sections 21 and 22A)
	Commonwealth marine environment (sections 23 and 24A)
	Great Barrier Reef Marine Park (sections 24B and 24C)
	A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
	Protection of the environment from Commonwealth actions (section 28)
	Commonwealth Heritage places overseas (sections 27B and 27C)

Specify the key reasons why you think the proposed action is likely to have a significant adverse impact on the matters identified above.

7 Environmental record of the responsible party

NOTE: If a decision is made that a proposal needs approval under the EPBC Act, the Environment Minister will also decide the assessment approach. The EPBC Regulations provide for the environmental history of the party proposing to take the action to be taken into account when deciding the assessment approach.

		Yes	No
7.1	**Does the party taking the action have a satisfactory record of responsible environmental management?** **Provide details** The Department of Economic Development, Jobs, Transport and Resources (DEDJTR) and its predecessor organisations, the Department of Transport, Planning and Local Infrastructure (DTPLI) and the Department of Transport (DoT), have a sound environmental management record, and DEDJTR promotes sustainable development within its projects.	✓	
7.2	**Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?** **If yes, provide details**		✓
7.3	**If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?** **If yes, provide details of environmental policy and planning framework** The DEDJTR environment policy applies to all departmental activities. The environment policy is available online at: http://www.dtpli.vic.gov.au/about-the-department/structure-and-governance/corporate-governance/environment-policy	✓	

7.4	**Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?** **Provide name of proposal and EPBC reference number (if known)** The eight most recent referrals submitted by DEDJTR predecessor organisations DTPLI and DOT (and the Melbourne Metro Authority as an Administrative Office in relation to DEDJTR) listed on the EPBC website are: • Melbourne Metro Rail Project 2015/7549 • Pakenham East Stabling & Maintenance Depot 2014/7263 • Regional Rail Link Section 1 2011/6015 • Williams Landing Railway Station Development 2010/5464 • Caroline Springs Railway Station Development 2010/5463 • Cardinia Road Railway Station Development 2010/5462 • South Morang Rail Extension Project 2010/5313 • Electrification of Railway between Watergardens and Sunbury 2009/5182	✓	

8 Information sources and attachments

(For the information provided above)

8.1 References

- List the references used in preparing the referral.
- Highlight documents that are available to the public, including web references if relevant.

References

Backhouse, G, Jackson, J and O'Connor, J 2008. *National Recovery Plan for Australian Grayling (Prototractes maraena)* Victorian Government Department of Sustainability and Environment, Melbourne. This document is publicly available.

City of Melbourne, 2012. *Transport Strategy 2012: Planning for Future Growth.* Accessed via https://www.melbourne.vic.gov.au/AboutCouncil/PlansandPublications/strategies/Pages/transportstrategy.aspx. This document is publicly available.

Civil Contractors Federation, 2011. *A Guide for Machinery Hygiene for Civil Construction*. Prepared by the Civil Contractors Federation, State of Victoria, former Department of Primary Industries, Department of Sustainability and Environment, VicRoads and the Association of Land Development Engineers, 2011. This document is publicly available.

Crabb, GI and Hiller, DM 2000. *Groundbourne Vibration Caused by Mechanical Construction Works*. Transport Research Laboratory, Great Britain. This document is publicly available.

CSIRO 2013. *Australian Soil Resource Information System*. Accessed via http://www.asris.csiro.au/mapping/viewer.htm. This website is publicly available.

CSIRO 1996. *Port Phillip Bay Environmental Study: The Findings*. Publication Number ISSN 1324-7905. This document is publicly available.

DELWP 2015a. *Plan Melbourne Refresh Discussion Paper*. Department of Environment, Land, Water and Planning, October 2015. Authorised and published by the Victorian Government. Accessed via http://refresh.planmelbourne.vic.gov.au/plan-melbourne-refresh-discussion-paper. This document is publicly available.

DELWP 2015b. *Victorian Biodiversity Atlas*. Department of Environment, Land, Water and Planning. Accessed in September 2015 via https://vba.dse.vic.gov.au/vba/. This data is available to the public by request to the Department.

DELWP 2015c. *Water Measurement Information System*. Accessed in August 2015 via http://data.water.vic.gov.au/monitoring.htm. This website is publicly available.

Department of Agriculture and Water Resources 2015. *The new Post Entry Quarantine Facility*. Accessed in October 2015 via http://postentryquarantine.govspace.gov.au/. This website is publicly available.

DEPI 2014. *Advisory List of Rare or Threatened Plants in Victoria - 2014*. Victorian Department of Environment and Primary Industries, East Melbourne, Victoria. This document is publicly available.

DEPI 2013. *Permitted clearing of native vegetation - biodiversity assessment guidelines*. Former Victorian Department of Environment and Primary Industries. Downloaded from http://www.depi.vic.gov.au/environment-and-wildlife/biodiversity/native-vegetation/native-vegetation-permitted-clearing-regulations. This document is publicly available.

DotE 2015a. *EPBC Act Protected Matters Search Tool Report*. Created 17 September 2015. http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf. Electronic report generated by the Australian Government Department of the Environment, Canberra, Australia.

DotE 2015b. *Royal Exhibition Building and Carlton Gardens, Victoria St, Carlton, VIC , Australia – Place Details*. Accessed in October 2015 via http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;place_id=105143. This website is publicly available.

DotE 2013. *Matters of National Environmental Significance Significant Impact Guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999*. Commonwealth Department of the Environment, Canberra. Accessed via http://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf. This document is publicly available.

DSE, 2010. *Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils.* DSE, Victoria. This document is publicly available.

DTPLI 2014. *Plan Melbourne Metropolitan Planning Strategy*. Department of Transport, Planning and Local Infrastructure, May 2014. Authorised and published by the Victorian Government. Accessed via http://www.planmelbourne.vic.gov.au. This document is publicly available.
Eddington, R 2008. *Investing in Transport – East West Link Needs Assessment,* State Government of Victoria, Melbourne, Victoria. This document is publicly available.

EPA Victoria 2011. *Port Phillip and Western Port Receiving Water Quality Modelling: Hydrodynamics*. Publication 1377. This document is publicly available.

EPA Victoria 2009. *Industrial Waste Resource Guidelines*. Available from: http://www.epa.vic.gov.au/business-and-industry/guidelines/waste-guidance/industrial-waste-resource-guidelines. These guidelines are available to the public.

EPA Victoria 1996. *Best Practice Environmental Management - Environmental Guidelines for Major Construction Sites*. EPA Publication 480, published by the Environment Protection Authority in February 1996, downloaded from http://www.epa.vic.gov.au in October 2015. This document is publicly available.

German Standard 1999. *DIN4150-3: Structural vibration – Effects of vibration on structures*. This document is publicly available.

GHD 2015. *Western Distributor Project: EPBC Act Referral – Ecological Report on Matters of National Environmental Significance*. Prepared for DEDJTR, November 2015. This document is Attachment 4 to this Referral.

Infrastructure Australia 2015. *Australian Infrastructure Audit, Our Infrastructure Challenges*. Published by Infrastructure Australia, Sydney NSW, April 2015. Accessed via http://infrastructureaustralia.gov.au/policy-publications/publications/Australian-Infrastructure-Audit.aspx. This document is publicly available.

Infrastructure Australia 2013. *Report to COAG: National Infrastructure Plan*. Published by Infrastructure Australian in June 2013. Accessed via http://infrastructureaustralia.gov.au/. This document is publicly available.

Infrastructure Australia 2011. *National Land Freight Strategy Discussion Paper*, February 2011. Accessed via http://infrastructureaustralia.gov.au/. This document is publicly available.

Victorian Government 2001a. *State Environment Protection Policy (Air Quality Management)*, Victorian Government Gazette No. S240, 21 December 2001. This document is publicly available.

Victorian Government 2001b. *State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1*. Victorian Government Gazette No. S31, 15 June 1989 as varied by Victorian Government Gazette No.s G37 (15 September 1992) and S183 (31 October 2001). This document is publicly available.

Victorian Government 2002. *State Environment Protection Policy (Groundwaters of Victoria)*, Victorian Government Gazette No. S160, 17 December 1997 as varied by Victorian Government Gazette No. G12, 21 March 2002. This document is publicly available.

Victorian Government 2004. *State Environment Protection Policy (Waters of Victoria)*. Victorian Government Gazette No. S13, 26 February 1988 as varied by Victorian Government Gazette No.s G12 (6 February 1990), S122 (22 October 1996), S101 (27 August 1997), S89 (22 June 1999), S192 (2 November 2001), S107 (4 June 2003) and S210 (5 October 2004). This document is publicly available.

Victorian Government 2013. *State Environment Protection Policy (Prevention and management of contamination of land)*. Victorian Government Gazette No. S95, 4 June 2002 as varied by Victorian Government Gazette No. G39, 26 September 2013. This document is publicly available.

8.2 Reliability and date of information

For information in section 3 specify:

- source of the information;
- how recent the information is;
- how the reliability of the information was tested; and
- any uncertainties in the information.

All information in section 3 is derived from the references provided in section 8.1.

8.3 Attachments

Indicate the documents you have attached. All attachments must be less than three megabytes (3mb) so they can be published on the Department's website. Attachments larger than three megabytes (3mb) may delay the processing of your referral.

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	Attachment 1
	GIS file delineating the boundary of the referral area (section 1)	✓	Attachment 2
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	Within Attachment 4
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)	N/a	Not applicable The requirements of the State legislation and its relevance to the Project are outlined in Attachment 3 •
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)	N/a	Not applicable
	copies of any flora and fauna investigations and surveys (section 3)	✓	Attachment 4
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	Attachment 4
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)	N/a	Not applicable

9 Contacts, signatures and declarations

NOTE: Providing false or misleading information is an offence punishable on conviction by imprisonment and fine (s 489, EPBC Act).

Under the EPBC Act a referral can only be made by:

- the person proposing to take the action (which can include a person acting on their behalf); or
- a Commonwealth, state or territory government, or agency that is aware of a proposal by a person to take an action, and that has administrative responsibilities relating to the action[1].

Project title: Western Distributor Project

9.1 Project Proponent: Victorian Department of Economic Development, Jobs, Transport and Resources

Person proposing to take action

This is the individual, government agency or company that will be principally responsible for, or who will carry out, the proposed action.

If the proposed action will be taken under a contract or other arrangement, this is:

- the person for whose benefit the action will be taken; or
- the person who procured the contract or other arrangement and who will have principal control and responsibility for the taking of the proposed action.

If the proposed action requires a permit under the Great Barrier Reef Marine Park Act[2], this is the person requiring the grant of a GBRMP permission.

The Minister may also request relevant additional information from this person.

If further assessment and approval for the action is required, any approval which may be granted will be issued to the person proposing to take the action. This person will be responsible for complying with any conditions attached to the approval.

If the Minister decides that further assessment and approval is required, the Minister must designate a person as a proponent of the action. The proponent is responsible for meeting the requirements of the EPBC Act during the assessment process. The proponent will generally be the person proposing to take the action[3].

1. Name and Title:	Andrew Williams Executive Project Director – Western Distributor
2. Organisation (if applicable):	Victorian Department of Economic Development, Jobs, Transport and Resources
3. EPBC Referral Number (if known):	
4: ACN / ABN (if applicable):	69 981 208 782
5. Postal address	Level 22, 1 Spring Street, Melbourne VIC 3000

[1] *If the proposed action is to be taken by a Commonwealth, state or territory government or agency, section 8.1 of this form should be completed. However, if the government or agency is aware of, and has administrative responsibilities relating to, a proposed action that is to be taken by another person which has not otherwise been referred, please contact the Referrals Gateway (1800 803 772) to obtain an alternative contacts, signatures and declarations page.*

[2] *If your referred action, or a component of it, is to be taken in the Great Barrier Reef Marine Park the Minister is required to provide a copy of your referral to the Great Barrier Reef Marine Park Authority (GBRMPA) (see section 73A,* EPBC Act*). For information about how the GBRMPA may use your information, see http://www.gbrmpa.gov.au/privacy/privacy_notice_for_permits.*

[3] *If a person other than the person proposing to take action is to be nominated as the proponent, please contact the Referrals Gateway(1800 803 772) to obtain an alternative contacts, signatures and declarations page.*

6. Telephone:	(03) 8392 5926
7. Email:	Andrew.Williams@ecodev.vic.gov.au
8. Name of designated proponent (if not the same person at item 1 above and if applicable):	
9. ACN/ABN of designated proponent (if not the same person named at item 1 above):	

COMPLETE THIS SECTION ONLY IF YOU QUALIFY FOR EXEMPTION FROM THE FEE(S) THAT WOULD OTHERWISE BE PAYABLE

I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

□ an individual; OR

□ a small business entity (within the meaning given by section 328-110 (other than subsection 328-119(4)) of the *Income Tax Assessment Act 1997*); OR

✓ not applicable.

If you are small business entity you must provide the Date/Income Year that you became a small business entity:

Note: You must advise the Department within 10 business days if you cease to be a small business entity. Failure to notify the Secretary of this is an offence punishable on conviction by a fine (regulation 5.23B(3) *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth)).

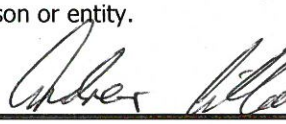
COMPLETE THIS SECTION ONLY IF YOU WOULD LIKE TO APPLY FOR A WAIVER

I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations. Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made:

✓ not applicable.

Declaration

I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.
I agree to be the proponent for this action.
I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature  Date 10/12/2015

9.2 Person preparing the referral information (if different from 8.1)

Individual or organisation who has prepared the information contained in this referral form.

Name	Murray Cullinan
Title	Executive Director
Organisation	Victorian Department of Economic Development, Jobs, Transport and Resources
ACN / ABN (if applicable)	69 981 208 782
Postal address	Level 22, 1 Spring Street, Melbourne VIC 3000
Telephone	(03) 8392 5926
Email	Murray.Cullinan@ecodev.vic.gov.au
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence.
Signature	 Date 10/12/15

Geographic Information System (GIS) data supply guidelines

If the area is less than 5 hectares, provide the location as a point layer. If the area greater than 5 hectares, please provide as a polygon layer. If the proposed action is linear (eg. a road or pipeline) please provide a polyline layer.

GIS data needs to be provided to the Department in the following manner:

- Point, Line or Polygon data types: ESRI file geodatabase feature class (preferred) or as an ESRI shape file (.shp) zipped and attached with appropriate title
- Raster data types: Raw satellite imagery should be supplied in the vendor specific format.
- Projection as GDA94 coordinate system.

Processed products should be provided as follows:

- For data, uncompressed or lossless compressed formats is required - GeoTIFF or Imagine IMG is the first preference, then JPEG2000 lossless and other simple binary+header formats (ERS, ENVI or BIL).
- For natural/false/pseudo colour RGB imagery:
    - If the imagery is already mosaiced and is ready for display then lossy compression is suitable (JPEG2000 lossy/ECW/MrSID). Prefer 10% compression, up to 20% is acceptable.
    - If the imagery requires any sort of processing prior to display (i.e. mosaicing/colour balancing/etc) then an uncompressed or lossless compressed format is required.

Metadata or 'information about data' will be produced for all spatial data and will be compliant with ANZLIC Metadata Profile. (http://www.anzlic.org.au/policies_guidelines#guidelines).

The Department's preferred method is using ANZMet Lite, however the Department's Service Provider may use any compliant system to generate metadata.

All data will be provide under a Creative Commons license (http://creativecommons.org/licenses/by/3.0/au/)