Australian Government
Department of the Environment and Energy

**Title of Proposal** - Mordialloc Bypass

# Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

### 1.1 Project Industry Type

Transport - Land

### 1.2 Provide a detailed description of the proposed action, including all proposed activities.

The Mordialloc Bypass (the Project) is the proposed construction and operation of a new arterial road within Melbourne's south eastern suburbs, located predominately within an existing road reservation. The reservation was conceived in the 1950s and formalised in the 1970s to accommodate a six lane road to cater for future urban growth.

The project corridor is approximately 8.7 km in length, comprising 7.5 km of greenfield dedicated road corridor and 1.2 km of road upgrade to the Mornington Peninsula Freeway. A four lane arterial road, with divided median and a path for walking and cycling, is currently proposed to be constructed however, provision has been made for the future upgrade of the Bypass to a six lane arterial road or freeway, within the construction footprint.

The Mordialloc Bypass will also provide connections to four arterial roads, being Governor Road, Lower Dandenong Road, Centre Dandenong Road and Dingley Bypass, via signalised intersections or elevated bridge strucutres. Mordialloc Creek and the associated Waterways Wetlands will be spanned by twin 400m long bridges.

Each carriageway of the proposed Mordialloc Bypass will include two 3.5m wide lanes, typically widening to four 3.5m lanes at the signalised intersections. The road design is still at concept stage and will be further refined as part of the Environment Effects Statement process, particularly where passing through environmentally sensitive areas, to minimise the impact footprint.

Proposed construction activities are expected to be consistent with a road construction project within a greenfield corridor, including:

• Detailed investigations and baseline environmental monitoring, remediation of contaminated land and removal of hazardous material
• Vegetation lopping and removal
• Clearing and grubbing, temporary sediment and erosion control works
• Bulk earthworks and haulage
• Structures and drainage works
• Pavement works
• Shared user path

• Bikeway and walkway construction and connections

The following investigative and enabling works do not form part of the action that is being referred, where they have been assessed and determined not to have an impact upon MNES:

• Activities associated with design and assessment of the potential impacts of the project such as geotechnical and environmental investigations, site surveys and establishing the location of existing utilities and services
• The relocation of utilities and services, where such activities are comparable in scope and scale to renewal and maintenance, and are undertaken in accordance with applicable Victorian planning and environmental approval processes
• Site establishment, including (but not necessarily limited to) site offices and installation of site fencing
• Road maintenance and improvement works where such works are undertaken in accordance with applicable Victorian planning and environmental approval processes

**1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.**

| Area | Point | Latitude | Longitude |
|---|---|---|---|
| Mordialloc Bypass | 1 | -37.958993420057 | 145.11328153381 |
| Mordialloc Bypass | 2 | -37.960194611445 | 145.12332372436 |
| Mordialloc Bypass | 3 | -37.961497289757 | 145.12308768997 |
| Mordialloc Bypass | 4 | -37.961057426937 | 145.11931113968 |
| Mordialloc Bypass | 5 | -37.964034908428 | 145.11845283279 |
| Mordialloc Bypass | 6 | -37.965625104767 | 145.11817388305 |
| Mordialloc Bypass | 7 | -37.965523603902 | 145.11755161056 |
| Mordialloc Bypass | 8 | -37.970107919685 | 145.11673621902 |
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| Mordialloc Bypass | 14 | -37.973135779406 | 145.11965446243 |
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| Mordialloc Bypass | 16 | -37.973237269748 | 145.11737994919 |
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| Area | Point | Latitude | Longitude |
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| Area | Point | Latitude | Longitude |
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| Mordialloc Bypass | 133 | -37.958993420057 | 145.11328153381 |

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

The project area for Mordialloc Bypass traverses the suburbs of Clayton South, Dingley Village, Braeside, Waterways, Aspley Gardens, Chelsea Heights and Bangholme in the City of Kingston.

The project area is situated approximately 25 km south-east of the Melbourne CBD and 5 km east of Mordialloc. The proposed road is to extend north-west from the Mornington Peninsula Freeway's existing terminus at Springvale Road, in Aspendale Gardens, and link to the Dingley Bypass as well as providing connections to Governor Road, Lower Dandenong Road and Centre Dandenong Road.

The land use within the project area is predominantly road reservation however, also includes a number of properties belonging to VicRoads and several privately owned properties. There are four commercial enterprises within the project area, two commercial nurseries, a materials recycling/composting facility and a brick recycling business. A Parks Victoria ranger's office on VicRoads owned land is situated within the project area, abutting Braeside Park. The project area also includes a 1.2 km section of the existing Mornington Peninsula Freeway.

Land uses in the vicinity of the project area are predominantly composed of residential,

industrial, recreation and non-urban land.

There are numerous shopping centres, recreational reserves and golf courses within 2 km of the project area.

**1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?**

The project area is 137 hectares. The construction footprint for the project is 108 hectares.

**1.7 Is the proposed action a street address or lot?**

Lot

**1.7.2 Describe the lot number and title.**Refer to Attachment 3 - Mordialloc Bypass Lot Numbers and Titles

**1.8 Primary Jurisdiction.**

Victoria

**1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?**

No

**1.10 Is the proposed action subject to local government planning approval?**

Yes

**1.10.1 Is there a local government area and council contact for the proposal?**

Yes

**1.10.1.0 Council contact officer details**

**1.10.1.1 Name of relevant council contact officer.**

City of Kingston – Daniel Freer, City of Greater Dandenong – Julie Reid

**1.10.1.2 E-mail**

daniel.freer@kingston.vic.gov.au

**1.10.1.3 Telephone Number**

Daniel Freer: m 0437 360 730

**1.11 Provide an estimated start and estimated end date for the proposed action.**

Start date 07/2019

End date 12/2021

**1.12 Provide details of the context, planning framework and State and/or Local government requirements.**

The Project is being assessed under the Victorian *Environment Effects Act 1978* following the Minister for Planning's determination on 13 September 2017 that an EES will be required. Refer to the Victorian Department of Environment, Land, Water and Planning (DELWP) website on decisions on referrals here https://www.planning.vic.gov.au/environment-assessment/decisions-on-ees-referrals

**Environment Protection Act 1970 (EP Act)**

The EP Act is the key legislation in Victoria providing protection to the environment. The EP Act requires that a works approval application must be submitted to the Victorian Environment Protection Authority (EPA) before any activity that has the potential to have a significant impact on the environment can be undertaken.

The Environment Protection (Scheduled Premises) Regulations 2017 specifies the activities that require works approval and licensing in Victoria.

An initial review of Schedule 1 of the Regulations 2017 suggests that approval of the works under the EP Act will not be required for the Project.

**Flora and Fauna Guarantee Act 1988 (FFG Act) and Wildlife Act 1975 (Wildlife Act)**

It is likely that a permit to impact species or communities listed under the FFG Act will be required for the Project.

There are a number of large trees within the project area, some of which may have hollows. If any of these trees are proposed for removal, it is likely that a licence to take or destroy wildlife under the Wildlife Act will also be required.

It is noted that DELWP may require a salvage and relocation management plan if threatened flora and fauna are likely to be impacted.

**Planning and Environment Act 1987 (P&E Act)**

The Project will require approval under the Kingston Planning Scheme for use and/or development works within the Public Use Zone, Land Subject to Inundation Overlay and the Special Building Overlay of the Kingston Planning Scheme. Approvals for vegetation removal

(works) will be required under both the Kingston and Greater Dandenong Planning Schemes.

It is proposed to prepare and exhibit a planning scheme amendment authorising use and development of the Project concurrently with the EES, and it is anticipated that a joint Inquiry and Advisory Committee will be appointed to consider public submissions on the proposed amendment to the Greater Dandenong and Kingston Planning Schemes.

The Project is located primarily within the City of Kingston, with a small area of proposed works within Greater Dandenong. The State Planning Policy Framework is included in both the Kingston and Greater Dandenong Planning Scheme. A key strategy in Clause 11.06 of the Policy Framework is to ‘enable improved arterial road connections across Melbourne’ and to ‘improve the road network in growth areas and outer suburbs to ensure access to jobs and services’. The proposed Mordialloc Bypass will add to the arterial road network and improve the transport connections in the south-east growth area of Melbourne.

Kingston’s Municipal Strategic Statement identifies capacity deficiencies in the north-south arterial routes as a key land use challenge. The proposed Mordialloc Bypass will alleviate the pressure on existing roadways and improve the transport network for the municipality. Further, the Dingley Bypass and extension of the Mornington Peninsula Freeway are identified as a key priority area for Kingston in Clause 21.12-3 of the Local Planning Scheme.

Greater Dandenong’s Municipal Strategic Statement sets out key strategic directions to achieve Greater Dandenong’s vision, which includes Economic Well-being - Strategies that facilitate employment and investment in the key economic areas of the municipality and stimulate its economic growth and well-being. The proposed Mordialloc Bypass will contribute to this vision by providing for improved efficiency in the movement of traffic to support the operation of nearby employment activity.

The land use surrounding the project area is a mixture of low rise residential and industrial, with some parkland, wetland, and agricultural areas. The primary land use classifications within the project area are Industrial 1 Zone, Road Zone, and Green Wedge Zone.

The majority of the project area is covered by a Public Acquisition Overlay (PAO) for acquisition for the purpose of a road. A PAO may be required over portions of three privately-owned industrial properties, in Braeside. A PAO does not exist over a number of other properties within the project area however, is not required as these properties are either freehold land owned by VicRoads or road reserve.

In addition, several areas that are prone to flooding are identified with a Land Subject to Inundation Overlay (LSIO) and a Special Building Overlay (SBO).

**Heritage Act 1995 (Heritage Act)**

The purpose of the Heritage Act is to protect and conserve places and objects of heritage significance. Under Sections 64 and 127 of the Heritage Act, it is an offence to excavate, disturb or damage any heritage relics or sites. Prior to impacting any historic archaeological site, Consent to Destroy must be obtained from Heritage Victoria.

No Victorian Heritage Inventory or Victorian Heritage Register places are located within the project area.

**Aboriginal Heritage Act 2006 (Aboriginal Heritage Act) and Aboriginal Heritage Regulations 2007 (Aboriginal Heritage Regulations)**

Part 4, Division 2 of the Aboriginal Heritage Act states that certain activities will require a Cultural Heritage Management Plan (CHMP) to be prepared if high-impact activities are proposed within areas of cultural heritage sensitivity.

A mandatory Cultural Heritage Management Plan (CHMP) is required for the Mordialloc Bypass as the Project requires the preparation of an EES. A Cultural Heritage Management Plan (CHMP) is currently being prepared, as required by the Aboriginal Heritage Act and Regulations. Early-stage investigations have shown that part of the Project is covered by an area of legislated cultural heritage sensitivity.

There have been three cultural heritage surveys and five CHMPs, completed for other projects, which have crossed the project area. No Aboriginal cultural heritage was identified within the project area during these previous investigations.

Two surface stone artefacts, a quartzite proximal flake and a quartz proximal blade, were found during the cultural heritage standard assessment undertaken in July 2017 for the Mordialloc Bypass project. A complex assessment is currently underway and results are pending.

**Permitted clearing of native vegetation: Biodiversity Assessment Guidelines**

An application to remove native vegetation can be assessed under one of three risk-based pathways of the guidelines – Low, Moderate or High risk. Most of the alignment is mapped as Location A risk category, except for the Waterways wetlands, which is mapped as mix of Location B and Location C. Preliminary assessments have identified that the Project will trigger a High Risk Referral pathway.

An application under a High Risk Referral pathway must be accompanied by a habitat hectare assessment, a statement outlining what steps have been taken to avoid and minimise impacts on native vegetation, an assessment of whether the proposal will have a significant impact on Victoria's biodiversity (with specific regard to the proportional impact on habitat for any rare or threatened species), and an Offset Management Strategy that details how a compliant Offset will be secured to meet the 'no nett loss' tenet of the Biodiversity Assessment Guidelines policy 2013.

Preliminary calculations for DELWP's Biodiversity Impacts and Offset Requirements (BIOR) report have been completed based on the concept road design. These calculations have resulted in a mix of General Offset (0.076 general units) and Specific Offset requirements. Specific Offset requirements (between 0.06 and 2.794 specific units for each species) have been identified for Orange-bellied Parrot, Marsh Saltbush, Creeping Rush, Salt Lawrencia, Purple Blown-grass and Lacey River Buttercup.

When the design is ready, GIS shapefiles will be sent to DELWP to identify the formal offset requirements. Potential Offset Sites with Credits listed on the Native Vegetation Credit Register for these offset targets have been identified. One species, Lacey River Buttercup, has no Offset credits on the Register; and alternative Offset arrangement may have to be developed and endorsed by DELWP for this species.

The current Biodiversity Assessment Guidelines policy is under review. As the Offset process is now dependant on EES timelines, it may therefore be necessary to collect any additional data required, and to re-assess the Native Vegetation Offset targets in compliance with a revised policy. The trigger for implementation of the revised policy will be dependent on its date of gazettal, and conditions as determined under a Planning Scheme Amendment and associated Incorporated Document. An agreement with DELWP regarding offset requirements during the transitional period will be sought.

**Catchment and Land Protection Act 1994 (CaLP Act)**

The project area supports a number of weeds that are declared noxious under the CaLP Act.

Measures to manage noxious weeds within the project area and to avoid and minimise weed dispersal from the works site will be addressed during the construction of the project, through appropriate management measures.

**Water Act 1989**

A Melbourne Water Permit to Work under the *Water Act 1989* is likely to be required for works within flood overlay areas and works on or in the vicinity of Melbourne Water assets.

**1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.**

Previously, VicRoads carried out consultation with the local community in 2012, as part of a project feasibility study. VicRoads asked for information about people’s experiences of issues around network, congestion spots as well as their environmental and amenity interests. Over 500 responses were received from individuals and stakeholder groups via an online survey, emails and letters. In addition to this approximately 150 people attended community information sessions.

Following the construction funding announcement in May 2017, VicRoads implemented a stakeholder engagement plan to engage with local councils, government departments, special interest and community groups, and the broader community. This engagement has involved using a mix of face-to-face communications, printed collateral, external media and digital media to provide project information, consult on the designs and impacts mitigation, and adhere to the required engagement processes for planning and approvals, such as the Environment Effects Statement (EES).

**ENGAGEMENT ACTIVITIES**

The engagement activities to date, as well as future activities, are outlined below:

**May 2017**

Commenced regular briefings with officers and councillors from Kingston City Council, the Greater Dandenong City Council, and local members of Parliament. Regular meetings are scheduled with the councils to discuss ongoing engagement, design and approvals associated with the Project.

First round of briefings with community and special interest groups to provide information and gather feedback about the proposed bypass.

Commenced meetings with potentially impacted land owners, occupiers and businesses regarding potential access changes and land acquisition.

**June 2017**

A project area walk-through was undertaken in June 2017 with the Bunurong, Boon Wurrung and Wurundjeri Tradition Owner Groups to assess cultural heritage. A mandatory Cultural Heritage Management Plan (CHMP) is currently in preparation. To date, a standard assessment has been undertaken and a methodology for a complex assessment agreed with Aboriginal Victoria and Traditional Owner Groups. The complex assessment is near completion (as at October 2017).

**August 2017**

VicRoads met with Parks Victoria to discuss the Braeside Park office, and potential impacts or changes to its location. Discussions are ongoing with Parks Victoria.

VicRoads conducted community consultation on the concept design consultation including:

Online consultation via an interactive map on the 'EngageVicRoads' website (www.engage.vicroads.vic.gov.au) for six weeks to gather feedback on the project design and key concerns.

Enabled community and stakeholders to view the designs, drag and drop comments and engage in discussion with other community members

Six drop-in/pop-up information sessions (17 August to 11 September 2017) shopping centres along the project area. These sessions were held to provide local residents, businesses and the general public with information on the project, and to gather feedback on the concept design and key project features.

The consultation was promoted via:

Mailing out postcards to 70,000 properties in the area inviting the community to participate in online engagement opportunities.

As a result, 2,295 visitors entered the online engagement address provided on the postcard.

Five weeks of advertising via geographically targeted Facebook posts, and online and print advertising to promote the project and consultation. The advertising via Facebook resulted in 3,423 visitors clicking through to interactive map on the VicRoads website.

Updating the VicRoads website with engagement and pop-up consultation details, which resulted in 969 visitors clicking through from the website to the interactive map.

**November 2017**

Provide information to community and stakeholders about the EES process and timing and how they can get involved

Publish the feedback report on Engage VicRoads website, summarising what we heard from the concept design consultation.

**December 2017**

It is anticipated that the draft scoping requirements for the EES will be released by DEWLP in December 2017. Once these scoping requirements have been published, online submissions of feedback will be invited by DELWP for a period of 15 days.

The EES consultation plan will be shared publicly on the DELWP website.

**Ongoing to August 2018**

There will be ongoing project updates, including updates on the EES process and timing, and the final EES scoping requirements. Event data will be provided on community information sessions and to share the key findings of the specialist studies.

**2019**

Prior to the start of construction, door knocks and briefings with impacted businesses will be undertaken.

**STAKEHOLDERS**

An overview of the stakeholders, and status of consultations, is provided below:

<u>General public:</u>

Road users, local residents, business owners, schools and community groups within the scope of upgrades; Landowners/occupiers and businesses directly impacted by the project (land acquisition/access changes etc.) *(Ongoing consultations – Contact (via phone and email) with approximately 30 individuals regarding project updates)*

Advocacy groups:

Build the Mordialloc Bypass Group *(Ongoing consultations)*

Frankston Business Network *(Ongoing consultations)*

Resident associations groups:

Aspendale Gardens Residents Association *(Ongoing consultations)*

Carrum and Patterson Lakes Forum *(Ongoing consultations)*

Seaford Community Committee *(Ongoing consultations)*

The Waterways Residents Association Owners Corporation *(VicRoads met with members on 21/06/2017)*

Residents Against Mordialloc Bypass *(Ongoing consultations)*

Kingston Residents Association *(Ongoing consultations)*

Dingley Village Community Association *(Ongoing consultations)*

Environmental groups:

Mordialloc Beaumaris Conservation League *(Ongoing consultations)*

Friends of the Mordialloc Catchment (Help council rangers care for and maintain the vegetation along the creek) *(Ongoing consultations)*

Mordialloc College and Yarrabah schools (Undertake revegetation and litter removal works in conjunction with the council on a regular basis) *(Finalised – response received has indicated that the school is not interested in consultation)*

Friends of Braeside Park *(Ongoing consultations – future meeting scheduled)*

Defenders of the South East Green Wedge *(Ongoing consultations)*

Industry groups:

Aboriginal Victoria *(Will be contacted as per Cultural Heritage Management requirements)*

Heritage Victoria *(Will be contacted as per Cultural Heritage Management requirements)*

Environmental Protection Authority *(Will be contacted as required)*

PTV/Metro/bus operators *(Will be contacted as required)*

Municipal Association Victoria *(Will be contacted as required)*

Victorian Transport Association *(Will be contacted as required)*

Freight industry *(Will be contacted as required)*

Utility providers (gas, electricity, water, etc.) *(Will be contacted as required)*

Government / Statutory Authorities:

Department of Economic Development, Jobs, Transport and Resources (DEDJTR) *(Regular catch ups as required)*

Department of Environment, Land, Water and Planning (DELWP) *(Regular catch ups as required)*

Public Transport Victoria *(Regular catch ups as required)*

Level Crossing Removal Authority *(Regular catch ups as required)*

Transport for Victoria *(Regular catch ups as required)*

Victorian Planning Authority (VPA) *(Regular catch ups as required)*

Interface council group *(Regular catch ups as required)*

Kingston Council *(Ongoing consultations – future meeting scheduled)*

City of Greater Dandenong *(Ongoing consultations – two meetings held to date)*
Melbourne Water

Political:

Minister for Roads and Road Safety – Luke Donnellan (Also Member for Narre Warren North) *(VicRoads provides regular briefings)*

Treasurer – Tim Pallas *(VicRoads provides regular briefings)*

Premier – Daniel Andrews *(VicRoads provides regular briefings)*

Local members (Govt): *(Updated via the Ministers Office)*

Member for Mordialloc, Tim Richardson - Member for Dandenong, Gabrielle Williams

Member for Keysborough, Martin Pakula - Member for Frankston, Paul Edbrooke

Member for South Eastern Metropolitan, Adem Somyurek

Member for South Eastern Metropolitan, Gavin Jennings

Local members (Opposition): *(Informed at the same time as community)*

Member for South Eastern Metropolitan, Inga Peulich

Member for Gembrook, Brad Battin

Member for Hastings, Neale Burgess

Member for Mornington, David Morris

Member for South Eastern Metropolitan, Nina Springle

**1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.**

In Victoria, environment assessment of potential environmental impacts or effects of a proposed development may be required under the EE Act. The process under this EE Act is not an approval process itself, rather it enables statutory decision-makers to make decisions about whether a project with potentially significant environmental effects should proceed. Under the EE Act, an environment effects statement (EES) may need to be prepared for a particular activity when there is:

· A likelihood of regionally or state significant adverse effects on the environment;

· A need for integrated assessment of potential environmental effects of a project; or

· Relevant alternatives and normal statutory processes would not provide sufficiently comprehensive, integrated and transparent assessment.

The Mordialloc Bypass project is being assessed under the EE Act with the Minister for Planning determining, on 13 September 2017, that an EES is required.

**1.15 Is this action part of a staged development (or a component of a larger project)?**

No

**1.16 Is the proposed action related to other actions or proposals in the region?**

No

# Section 2 - 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. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• 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;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

**2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?**

No

**2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?**

No

**2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?**

Yes

**2.3.1 Impact table**

| Wetlands | Impact |
|---|---|
| Edithvale-Seaford Wetlands | The below provides a summary of the significant impact criteria assessment (Attachment 6) completed as part of the Preliminary flora and fauna assessment (Attachment 5) for the Project. The works for the proposed road will occur over 700 m from |

| Wetlands | Impact |
| --- | --- |
| | the Edithvale component of the wetlands and approximately 4 km from the Seaford component, such that no direct impacts upon the wetlands are expected to occur. However, the potential for indirect impacts upon the Edithvale Wetlands were identified (refer Attachment 5), as: Impacts upon the hydrological regime of the wetland, and Impacts upon waterbird use of the wetland from noise and increased traffic upon Edithvale Road. The project is not expected to significantly impact the Ramsar wetland for the following reasons: While preliminary surface water investigations (by WSP) indicate that three drains contribute runoff into the southern section of Edithvale wetlands, only a portion of the catchment area, feeding into one of these drains, is located within the project area. This catchment area extends from Springvale Road to approximately 800 m south of Springvale Road and discharges to the Melbourne Water Carrum Lowlands North Drainage Scheme drainage system just south of Edithvale Road. Specific mitigation measures will be required to ensure that impacts to Edithvale-Seaford Wetlands hydrological regimes are negligible, as discussed in Section 4. With regard to groundwater, whilst the deeper ponds at Edithvale are connected to groundwater, (particularly in the northern part), the important bird habitat values are predominantly the surface water-fed shallow wetlands and marsh areas that draw down in summer (DSE 2012). The Waterways Wetland and Springvale Road overpasses are not anticipated to have a meaningful impact on the drawdown of the local and regional groundwater tables in the Quaternary Alluvium and Brighton aquifers because they are within the range of typical natural seasonal and drought condition fluctuations (Attachment 7). As such, the embankment structures will have a negligible impact on the ecological systems prevailing in the Bowen Parkway and Waterways Wetlands and Edithvale Wetlands (Attachment 7). Edithvale Road will not be used as a haulage |

| Wetlands | Impact |
| --- | --- |
| | route during construction and as such, impacts upon wetland birds at the Ramsar site are considered unlikely. |

### 2.3.2 Do you consider this impact to be significant?

No

### 2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

### 2.4.1 Impact table

| Species | Impact |
| --- | --- |
| River Swamp Wallaby-grass (Amphibromus fluitans) | The below provides a summary of the significant impact criteria assessments (Attachment 6) completed as part of the Preliminary flora and fauna assessment (Attachment 5) for the Project. The species has been planted within the Waterways Wetlands but was not detected in the project area during field surveys in 2015 (Biosis) or more recently by WSP (Attachment 5). It was assessed in Attachment 5 as having a moderate likelihood of occurrence - it is possible that this plant occurs in the project area at the Waterways Wetlands in low numbers. It is unlikely to occur elsewhere in the Project area. The Project will modify or remove potential habitat for the species at the Waterways through shading and vegetation loss. The Project is unlikely to significantly impact this species for the following reasons: The potential habitat at the project area is suboptimal revegetated/planted habitat and not considered critical to the species' survival. A population at the project area would not be considered an 'important population'. Removal of a small amount of potential habitat is unlikely to significantly impact this species. The potential for minor changes in overland water flow and drainage was addressed in |

| Species | Impact |
| --- | --- |
| | Attachment 5. This may decrease the quality of the habitat and cause the species to decline in this location. Mitigation will aim to maintain existing flows such that this impact is negligible (Refer Section 4). Sediment-laded run-off from the road may lead to a decrease in the quality of habitat for the species. Erosion and sediment control measures (refer Section 4) will effectively mitigate this risk The works may lead to additional invasive species becoming established in the species' habitat, however, this is unlikely. The potential habitat occurs in an already disturbed landscape. Comprehensive weed and disease hygiene measures within the Construction Environmental Management Plan will minimise the likelihood of harmful invasive species becoming established in the species' habitat. |
| Matted Flax-lily (Dianella amoena) | The below provides a summary of the significant impact criteria assessments (Attachment 6) completed as part of the Preliminary flora and fauna assessment (Attachment 5) for the Project. The species has been planted within the Waterways Wetlands but was not detected in the project area during field surveys in 2015 (Biosis) or more recently by WSP (2017). It is possible that this plant occurs in the project area at the Waterways Wetlands in low numbers. It is unlikely to occur elsewhere in the Project area. The project is unlikely to significantly impact this species for the following reasons: The Project may remove some potential habitat for the species, although if the species occurs in the project area, it is most likely to occur outside of the construction footprint. This is unlikely to cause the species to decline at the Waterways. The works may lead to additional invasive species becoming established in the species' habitat, however this is unlikely. The potential habitat occurs in an already disturbed landscape. Comprehensive weed and disease hygiene measures within the Construction Environmental Management Plan will minimise the likelihood of harmful invasive species becoming established in the species' habitat. |

| Species | Impact |
|---|---|
| Swamp Fireweed (Senecio psilocarpus) | The below provides a summary of the significant impact criteria assessments (Attachment 6) completed as part of the Preliminary flora and fauna assessment (Attachment 5) for the Project. The species has been planted within the Waterways Wetlands but was not detected in the project area during field surveys by 2015 (Biosis) or more recently by WSP (Attachment 5). It is possible that this plant occurs in the project area at the Waterways Wetlands in low numbers. It is unlikely to occur elsewhere in the Project area. The Project will modify or remove some potential habitat for the species at the Waterways through shading and vegetation loss. The project is unlikely to significantly impact this species for the following reasons: The potential habitat at the project area is suboptimal revegetated/planted habitat and not considered critical to the species' survival. A population at the project area would not be considered an 'important population'. Removal of a small amount of potential habitat is unlikely to significantly impact this species. There is the potential for minor changes in overland water flow and drainage which may decrease the quality of the habitat and cause the species to decline in this location. Mitigation will maintain existing flows such that this impact is negligible (refer Section 4). Sediment-laded run-off from the road may lead to a decrease in the quality of habitat for the species. Erosion and sediment control measures (refer Section 4) are expected to effectively mitigate this risk. The works may lead to additional invasive species becoming established in the species' habitat, however, this is unlikely. The potential habitat occurs in an already disturbed landscape. Comprehensive weed and disease hygiene measures within the Construction Environmental Management Plan will minimise the likelihood of harmful invasive species becoming established in the species' habitat. |
| Swamp Everlasting (Xerochrysum palustre) | The below provides a summary of the significant impact criteria assessments (Attachment 6) completed as part of the |

| Species | Impact |
|---|---|
| | Preliminary flora and fauna assessment (Attachment 5) for the Project. This species has been planted within the project area in the Waterways. It was recorded in one location in the project area at the Waterways (outside of the construction footprint) in Plains Grassy Wetland/Plains Sedgy Wetland. The project is unlikely to significantly impact this species for the following reasons: Whilst recorded close to the impact area, with the incorporation of no go zones (refer Section 4), direct impacts upon the species are unlikely. The population at the project area is not considered an 'important population'. The Project will remove some potential habitat for this species although the recorded plants occur outside of the construction footprint. Additional plants not recorded during targeted survey may be impacted however a pre-clearing survey at the Waterways will be undertaken to ensure individual plants are included within no go zones or relocated elsewhere at the Waterways (refer Attachment 4). Without specific mitigation, there is the potential for habitat modification due to changes in overland water flow and drainage which may decrease the quality of the habitat and cause the species to decline in this location. Mitigation will maintain existing flows such that this impact is negligible (refer Section 4 and Attachment 5). Although the habitat occurs in an already disturbed landscape, weed invasion is a major threat to the remaining populations of this species across its range (Carter 2011). Comprehensive weed and disease hygiene measures within the Construction Environmental Management Plan will minimise the likelihood of harmful invasive species becoming established in the species' habitat. |
| Australasian Bittern (Botaurus poiciloptilus) | The below provides a summary of the significant impact criteria assessments (Attachment 6) completed as part of the Preliminary flora and fauna assessment (Attachment 5) for the Project. The Australasian Bittern is commonly recorded within the Edithvale-Seaford Wetlands, Woodlands |

| Species | Impact |
| --- | --- |
| | Industrial Estate Wetlands, Braeside Park, and the Waterways. It is a non-breeding visitor to these areas, however the habitat in the area appears to be valuable foraging habitat for the species when it is present. It was assessed as having a high likelihood of occurrence within the study area. The Project would remove up to 5.23 ha of foraging habitat for the species (some of which is low quality or only likely to be habitat in times of flooding), reduce connectivity of patches of potential foraging habitat, and has the potential to reduce usage or quality of habitat through increased noise, light and disturbance. From the assessment using the significant impact guidelines (refer Appendix F of Attachment 5, and Attachment 4), the Project is unlikely to have a significant impact upon the species with appropriate mitigation. The Project is unlikely to significantly impact this species for the following reasons: The Project is unlikely to lead to a long term decrease in the size of a population, a reduction in area of occupancy, modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, or interfere with the recovery of the species. This will be ensured through measures including no go zones, lighting solutions, sound attenuation (if required), barriers to restrict access to habitat and minimise mortality, buffer zones, and landscaping to maintain connectivity. The Project is unlikely to adversely affect habitat critical to the survival of the species as the measures listed above will ensure that the Important Bird Areas near the project area are not impacted by the Project. The Project is unlikely to lead to fragmentation of a population as the species is mobile, the bridge will allow movement across the Waterways Wetlands, and landscaping will be utilised to facilitate movement. The species is not known to breed at the project area or nearby so the project is unlikely to disrupt the breeding cycle of a species The works are unlikely to lead to the introduction or spread of an invasive species which is harmful to this species. The project |

| Species | Impact |
| --- | --- |
| | area is located in a landscape which is moderately to highly modified already. The proposed works are unlikely to lead to an increase in pest fauna. The Project is unlikely to introduce a disease to this species. |
| Curlew Sandpiper (Calidris ferruginea) (also listed as migratory) | The below provides a summary of the significant impact criteria assessments (Attachment 6) completed as part of the Preliminary flora and fauna assessment (Attachment 5) for the Project. The Curlew Sandpiper is recorded regularly at Braeside, Woodlands, and Edithvale although only in low numbers. No primary habitat for this species has been recorded in the construction footprint therefore there is only a moderate likelihood of occurrence of this species within the project area. However, the potential for indirect impacts upon nearby foraging and roosting habitat has been considered. Indirect impacts such as lighting, noise, and other habitat disturbance may reduce the quality of nearby habitat for this species. From the assessment using the significant impact guidelines (refer Appendix F of Attachment 5), the Project is unlikely to have a significant impact upon the species with appropriate mitigation. The Project is unlikely to significantly impact this species for the following reasons: No primary habitat for the species is proposed to be removed so the Project is unlikely to lead to a long-term decrease in the size of a population, or reduce the area of occupancy of the species. The species is highly mobile and the habitat in the area is already fragmented so the Project is unlikely to fragment a population The habitat at the project area and immediate vicinity supports low numbers of the species only so the Project is highly unlikely to adversely affect any habitat critical to the species' survival. The species does not breed within or nearby to the project area (non-breeding migrant) so the project is unlikely to disrupt the breeding cycle of the species. The Project is unlikely to modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, or interfere with |

| Species | Impact |
| --- | --- |
| | the recovery of the species, with the incorporation of the proposed mitigation measures, specifically lighting solutions, barriers and buffer zones. The works are unlikely to lead to the introduction or spread of an invasive species within the wetland which is harmful to this species. The project area, located in a landscape which is moderately to highly modified already, is a sufficient distance from primary habitat such that impacts from weeds are unlikely to be an issue. The proposed works are unlikely to lead to an increase in pest fauna. The Project is unlikely to introduce a disease to this species. |
| Eastern Curlew (Numenius madagascariensis) (also listed as migratory) | The below provides a summary of the significant impact criteria assessments (Attachment 6) completed as part of the Preliminary flora and fauna assessment (Attachment 5) for the Project. The Eastern Curlew has been recorded occasionally in the area (at Edithvale and Braeside Park) in low numbers. It is generally found in intertidal mudflats and sandflats and is less likely to visit the freshwater habitats in the area to forage. No primary habitat for this species has been recorded in the construction footprint therefore there is only a low to moderate likelihood of its occurrence at the project area, however the potential for indirect impacts upon nearby foraging or roosting habitat has been considered. Indirect impacts such as lighting, noise, and other habitat disturbance may reduce the quality of nearby habitat for this species. From the assessment using the significant impact guidelines (refer Appendix F of Attachment 5), the Project is unlikely to have a significant impact upon the species with appropriate mitigation. The Project is unlikely to significantly impact this species for the following reasons: No primary habitat for the species is proposed to be removed so the Project is unlikely to lead to a long-term decrease in the size of a population, or reduce the area of occupancy of the species. The species is highly mobile and the habitat in the area is already fragmented so the Project is unlikely to |

| Species | Impact |
| --- | --- |
| | fragment a population The habitat at the project area and immediate vicinity supports low numbers of the species only so the Project is highly unlikely to adversely affect any habitat critical to the species' survival. The species does not breed within or nearby to the project area (non-breeding migrant) so the project is unlikely to disrupt the breeding cycle of a species. The Project is unlikely to modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, or interfere with the recovery of the species, with the incorporation of the proposed mitigation measures, specifically lighting solutions and sound attenuation measures (if required), barriers, and buffer zones. The works are unlikely to lead to the introduction or spread of an invasive species within the wetland which is harmful to this species. The project area, located in a landscape which is moderately to highly modified already, is a sufficient distance from primary habitat such that impacts from weeds are unlikely to be an issue. The proposed works are unlikely to lead to an increase in pest fauna. The Project is unlikely to introduce a disease to this species. |
| Seasonal Herbaceous Wetlands of the Temperate Lowland Plains | The below provides a summary of the significant impact criteria assessments (Attachment 6) completed as part of the Preliminary flora and fauna assessment (Attachment 5) for the Project. The Project would require the clearance of up to 2.40 ha of the community. Approximately 30% of the Seasonal Herbaceous Wetlands in the construction footprint is high quality revegetated wetland at The Waterways, whereas the remainder are low quality remnants which may not constitute the community, but have been assessed in a dry phase. The Project is unlikely to significantly impact this community for the following reasons: In Victoria, it is estimated that there are 18,224 ha of EVCs most similar to Seasonal Herbaceous Wetlands, with 490 ha remaining in the South East Coastal Plain IBRA bioregion according to (TSSC 2012). The |

| Species | Impact |
| --- | --- |
| | removal of the maximum area of impact (2.40 ha) for the Project would constitute 0.01% of the total area remaining, or 0.49% of the total area in the South East Coastal Plain Bioregion. Within the project area this community is a mix of high quality revegetated Seasonal Herbaceous Wetlands and highly modified and species-poor remnants in paddocks. Although the Project will slightly reduce the extent of the community, the relatively small area of revegetated or modified vegetation is unlikely to be critical to the survival of the community. No go zones will ensure that no more than 2.40 ha of this community is lost. The Project will fragment patches of Seasonal Herbaceous Wetlands, most notably at the Waterways. However, a bridge is proposed to pass over the majority of Seasonal Herbaceous Wetlands through the Waterways. Mitigation will include minimisation of impacts at the Waterways and revegetation/assisted regeneration under the bridge to maintain the connectivity of this community. The Project has the potential to modify abiotic factors which could impact areas of the community. Mitigation will be undertaken as required to ensure that existing water flows and quality are maintained (refer Section 4). From preliminary investigation into shading from the bridge, negligible impacts are expected outside of the construction footprint. Light penetration under the bridge is expected to allow some reestablishment of this community towards the edges of the bridge and between the carriageways. Comprehensive weed and disease hygiene measures in the Construction Environmental Management Plan will minimise the likelihood of impacts from new or increased weeds in the community. |
| Natural Damp Grasslands of the Victorian Coastal Plains | The below provides a summary of the significant impact criteria assessments (Attachment 6) completed as part of the Preliminary flora and fauna assessment (Attachment 5) for the Project. The Project would clear up to 0.03 ha of the community at the Waterways. In Victoria, it is estimated that there is approximately 10 ha of Natural Damp |

| Species | Impact |
| --- | --- |
| | Grassland remaining, according to TSSC (2015). The removal in this project would constitute 0.3% of total area of known community. However, all of this community at the project area is revegetated (i.e. non natural). The Project is unlikely to significantly impact this community for the following reasons: The small area of the community proposed to be removed is unlikely to be critical to the survival of the community. Standard no go zones are likely to be sufficient to prevent direct impacts outside of the construction footprint. There is the potential for additional loss of this community without specific mitigation measures. The Project may increase fragmentation of this community at the Waterways, however as this is a revegetated community, and the project will not be directly splitting a patch, the impact is likely to be negligible. The Mordialloc Bypass has the potential to modify abiotic factors which could impact the remaining areas of the community. This includes potential changes to surface water drainage, groundwater systems and increased pollution. Mitigation will be undertaken as required to ensure that existing flows and quality are maintained (refer Section 4 and Attachment 4). Species composition beyond the construction footprint may be substantially altered if there are significant changes in vegetation management (leading to an increase in weed cover, etc.). Comprehensive weed and disease hygiene measures in the CEMP will minimise the likelihood of impacts from new or increased weeds in the community. |

**2.4.2 Do you consider this impact to be significant?**

No

**2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?**

Yes

### 2.5.1 Impact table

| Species | Impact |
|---|---|
| Criterion Types | Criterion 1. substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species Criterion 2. result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or Criterion 3. seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species. |
| Sharp-tailed Sandpiper (Calidris acuminate) | Criterion 1: Important habitat is present at Edithvale, however the habitat is unlikely to be substantially modified given the distance between Edithvale wetlands and the Project. Criterion 2: Unlikely due to the distance between the Project and the Edithvale-Seaford wetlands. Criterion 3: The potential for impacts on feeding and resting behavior from temporary and operational lighting and noise was identified in the Preliminary flora and fauna assessment report (Attachment 5). Mitigation, including lighting solutions and sound attenuation measures will sufficiently reduce impacts near the Project area, and avoidance of Edithvale Road as a haulage route will sufficiently minimise impacts at Edithvale Wetlands. |
| Curlew Sandpiper (Calidris ferruginea) | Criterion 1: Important habitat unlikely to be present. Species utilises study area and locality only occasionally and in low numbers with respect to the species' estimated population size. Criterion 2: Important habitat unlikely to be present Criterion 3: Unlikely. Species utilises study area and locality only occasionally and in low numbers and the lifecycle is unlikely to be disrupted. |
| Pectoral Sandpiper (Calidris melanotos) | Criterion 1: No important habitat present. Species utilises study area and locality in low numbers only with respect to the estimated |

| Species | Impact |
|---|---|
| | population size of the species. Criterion 2: No important habitat present Criterion 3: Unlikely. There is the potential for impacts on feeding and resting behaviour however, the project is unlikely to impact an ecologically significant proportion of the species, as the species only ever utilises nearby habitat in low numbers. |
| Red-necked Stint (Calidris ruficollis) | Criterion 1: No important habitat present. Species utilises study area and locality in low numbers only with respect to the estimated population size of the species. Criterion 2: No important habitat present Criterion 3: Unlikely. There is the potential for impacts on feeding and resting behaviour, however the project is unlikely to impact an ecologically significant proportion of the species, as the species only ever utilises nearby habitat in low numbers. |
| Latham's Snipe (Gallinago hardwickii) | Criterion 1: The Waterways and nearby habitat should be assumed to be important habitat given the regular records in the area. Some mapped habitat (up to 5.23 ha) is proposed to be cleared for the Project. Some of this habitat currently consists of degraded, exotic grass-dominated vegetation, when not inundated, and it is unclear to what extent that this vegetation would support the species (and other waterbirds) in times outside of flooding. Nevertheless, it should be considered important for its potential value and current connectivity with other areas of known habitat. Mitigation measures including no go zones (Attachment 4), lighting solutions, sound attenuation measures (if required), buffer areas, barriers and landscaping, and maintenance of existing hydrological regimes (refer Section 4) will mitigate any potential impacts. Criterion 2: Unlikely – no harmful invasive species likely to become established Criterion 3: Unlikely. There is the potential for impacts on feeding and resting behaviour however the species utilises the habitat in low numbers only, and the Project is unlikely to impact an ecologically significant proportion of the species. |
| Eastern Curlew (Numenius madagascariensis) | Criterion 1: No important habitat present. Species utilises study area and locality in low numbers only with respect to the estimated |

| Species | Impact |
|---|---|
| | population size of the species. Criterion 2: No important habitat present Criterion 3: Unlikely. Species utilises study area and locality only occasionally and in low numbers and the lifecycle is unlikely to be disrupted. |
| Glossy Ibis (Plegadis falcinellus) | Criterion 1: No important habitat present. Species utilises study area and locality in low numbers only with respect to the estimated population size of the species. Criterion 2: No important habitat present Criterion 3: Unlikely. Potential impacts on feeding and resting behaviour however unlikely to impact an ecologically significant proportion of the species. |
| Wood Sandpiper (Tringa glareola) | Criterion 1: No important habitat present. Species utilises study area and locality in low numbers only with respect to the estimated population size of the species. Criterion 2: No important habitat present Criterion 3: Unlikely. Potential impacts on feeding and resting behaviour however unlikely to impact an ecologically significant proportion of the species. |

**2.5.2 Do you consider this impact to be significant?**

No

**2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?**

No

**2.7 Is the proposed action to be taken on or near Commonwealth land?**

No

**2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?**

No

**2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?**

No

**2.10 Is the proposed action a nuclear action?**

No

**2.11 Is the proposed action to be taken by the Commonwealth agency?**

No

**2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?**

No

**2.13 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?**

No

# Section 3 - Description of the project area

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 in Section 2).

**3.1 Describe the flora and fauna relevant to the project area.**

**VEGETATION**

Based on the latest vegetation assessments undertaken by WSP Parsons Brinckerhoff (WSP) from Janurary to May 2017, the project area supports 11.99 ha of native vegetation, including 43 scattered trees, comprising 12 Ecological Vegetation Classes (EVCs). The remainder of the project area (approximately 125 ha) consists of exotic vegetation and constructed features such as roads.

Two EPBC Act listed threatened ecological communities were recorded, both listed as critically endangered:

Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains

Natural Damp Grassland of the Victorian Coastal Plains

**FLORA**

A total of 240 vascular plant species were recorded in surveys completed for the Preliminary flora and fauna assessment (Attachment 5) and surveys by (Biosis 2015), of which 102 (43%) were native, 7 (3%) were planted street trees/shrubs and 131 (54%) were introduced species. A number of species have been planted throughout The Waterways, which significantly contributes to the diversity of native plant species recorded in the project area.

As identified in the desktop component of Attachment 5, 39 flora species of state and/or national significance have been recorded within 5 km of the project area according to DELWP's Victorian Biodiversity Atlas (VBA), or are predicted to occur by the Department of the Environment and Energy (DoEE) Protected Matters Search Tool. Several additional significant species not known to occur in the area have been planted within the Waterways wetlands.

The likelihood of these species to occur within the project area and to be impacted by the Project was assessed in a Likelihood of Occurrence and Impact Assessment in the Preliminary flora and fauna assessment (Appendix D1 of Attachment 5). Although only one EPBC Act listed flora species, Swamp Everlasting, was recorded within the project area during field survey, an additional three EPBC Act listed flora species, River Swamp Wallaby-grass, Matted Flax-lily, and Swamp Fireweed, were considered to have the potential to occur at the Waterways and to be impacted by the Project. These four species were assessed further in accordance with the

significant impact guidelines.

**FAUNA**

A total of 106 fauna species were recorded within the study area during surveys for the Preliminary flora and fauna assessment (Attachment 5) and by Biosis (2015). These include 74 native birds, nine introduced birds, seven frogs, six mammals (three introduced), and ten fish (including four introduced). A number of significant (listed) bird species were recorded, including one EPBC Act listed migratory species, Latham's Snipe.

In addition to WSP (2016 and 2017) and Biosis (2015) data, survey data from other sources were examined/collated to inform a likelihood of occurrence and impact assessment. These sources include:

Targeted survey for wetland and migratory shorebirds at the site by Biosis (2013).

Surveys at the Waterways Wetlands (Cook, date unknown).

Bird records available from regular Birdlife Australia surveys

DELWP's VBA

Citizen science data from birdwatchers visiting the wetlands near the project area, examined via online databases including ebird (ebird 2017).

One hundred and one (101) fauna species of state and/or national significance were assessed in the desktop component of Attachment 5 for their potential to occur within 5 km of the project area. These species have been recorded within 5 km according to the VBA, or are predicted to occur by the DoEE Protected Matters Search Tool. The full list of fauna species considered is provided in Appendix D.2 of Attachment 5. It includes 81 birds, 4 fish, 8 mammals, 2 frogs, 2 insects, and four reptiles. Forty-one (41) are EPBC Act listed threatened and/or migratory species. This assessment excluded pelagic/oceanic fauna, for which there is no habitat at the Project area.

Of these species, from analysis of records and habitat, 44 of the 101 fauna species assessed (including 19 EPBC Act listed threatened and/or migratory fauna) are considered moderately or highly likely to occur within or nearby the Project area on a permanent or intermittent basis. Based on past records, habitat quality, and species ecology, many of these species were preliminarily assessed in the Likelihood of occurrence and impact assessment as having a low likelihood of impact (prior to mitigation) and therefore have not been considered further. Rationale for the likelihood of occurrence and impact (prior to mitigation) for each species is provided in Appendix D.2 of Attachment 5.

The EPBC Act listed species with the potential to be impacted (without mitigation) were assessed in accordance with the significant impact guidelines and are addressed in Section 2

of this referral. These species are all birds, and include one endangered species, six migratory species, and two species which are both critically endangered and migratory.

Several species which have previously been recorded at or nearby the Project area are now no longer likely to occur. These include:

Eastern Dwarf Galaxias – Targeted surveys undertaken by (Biosis 2015) failed to detect this species. In addition to this study, Streamline Research has undertaken extensive sampling for Melbourne Water throughout the length of the Mordialloc Bypass over the past decade without detecting the species. A study undertaken during the current assessment (McGuckin 2017, results incorporated into Attachment 5) determined that the species is unlikely to occur.

Growling Grass Frog –A translocated population of the species was introduced to the Waterways Estate in January 2002, and have since been regularly monitored, however there have been no records of the species in that location or elsewhere in the locality since 2006. Surveys were completed in 2012-2013 (Biosis 2013), and 2014-2015 (Biosis 2015). Areas surveyed included Waterways Estate, Melbourne Water wetlands to the north of Waterways, and wetlands within Braeside Park. The species is considered unlikely to currently occur within the project area or vicinity.

Southern Brown Bandicoot – There are no recent records of the species in the locality. The species was known to occur in the Braeside area but is now considered locally extinct. The closest known extant population is in Cranbourne.
The primary types of fauna habitat within the project area are:

The constructed wetlands at the Waterways, immediately south of Governor Road, which includes some permanent aquatic habitat at Mordialloc Creek and fringing swamp vegetation. The wetlands provide habitat for a diverse range of aquatic and terrestrial species, and support areas with dense understorey cover and some canopy trees. There is potential roosting and foraging sites for wetland and migratory birds, as well as potential habitat for bats, frogs, small mammals, and turtles and other reptiles. The majority of the Waterways wetlands is located outside of the project area and will not be directly impacted.

Agricultural grassland (predominantly highly modified with some small patches of remnant vegetation) occurring adjacent to Braeside Park and Woodlands Industrial Estate.

Roadside weedy grassland and small roadside drains, some of which provide some foraging habitat for wetland birds.

Some remnant and planted trees (providing low quality foraging habitat for woodland birds and minimal nesting habitat).

Higher quality fauna habitat for threatened and migratory fauna occurs in the broader locality of the project area. Most migratory, or nomadic waterbird species, are likely to move freely

between all wetlands in the area depending on the local conditions. These areas of habitat include:

The broader Waterways area (the majority of which is outside of the project area). The Project bisects the 48 ha area of constructed and rehabilitated wetlands and fringing grassland immediately south of Governor Road. Although threatened and listed migratory species have been recorded at Waterways, the wetland is not managed purely for conservation. It is also relatively newly established, having been rehabilitated in 2000. It is regularly visited by nearby residents and their dogs, and is likely to also support roaming cats from local residences (although cats are not permitted). Given the above, and from examination of species record data, it appears to be of less value to the threatened and migratory birds of the area than the other wetlands discussed below.

Woodlands Industrial Estate wetlands, located immediately west of the project area, north of Govenor Road, a partially constructed area of permanent wetlands which occasionally supports large numbers of migratory and other wetland birds.

Braeside Park, a large parkland area comprised of predominately constructed and/or rehabilitated wetlands and rehabilitated woodland. Braeside Park is located immediately east of the project area north of Govenor Road and provides habitat for numerous common and threatened species and is a popular birding hotspot.

The Edithvale component of the Edithvale-Seaford Wetlands Ramsar site, which provides high value habitat for wetland birds, including listed threatened and/or migratory species. It regularly supports over 1% of the population of the migratory shorebird Sharp-tailed Sandpiper, and is a birding hotspot. Although all wetlands in the area are likely to occasionally or regularly support the migratory and threatened bird species recorded at this site, this wetland provides high-value seasonal mudflat foraging habitat for migratory waders which is not provided by the permanent wetlands immediately adjacent to the project area.

The Carrum Swamp ‘Important Bird Area (IBA)’ (BirdLife International 2017) is comprised of a number of wetlands, including areas adjacent to the project area: Woodlands Wetlands, Braeside Park and Edithvale-Seaford Wetlands. It is known to be important as a coastal refuge for waterbirds during drought periods (Clarke et al. 2015).

Other waterbird habitat present in the wider locality, although more distant and unlikely to be affected by the proposed project. For example, the Eastern Treatment Plant is a high value bird area located south of the project area.

**3.2 Describe the hydrology relevant to the project area (including water flows).**

The Project will occur partly within the designated Braeside West and Mordialloc Creek Wetlands (also referred to as ‘The Waterways’) catchment areas. Both these catchments contribute tributary runoff flow to the larger Mordialloc Creek drainage system.

The Braeside West catchment is consistently flat and covers an area of approximately 21 km2

within the municipalities of Kingston and Greater Dandenong. The main drainage asset for this catchment is the Braeside West Drain which discharges into the Mordialloc Main Drain approximately 1 km east of the Wells Road Bridge, ultimately connecting to Port Phillip Bay. The project area crosses the Braeside West drain as well as several tributary drains.

The Mordialloc Creek Wetlands catchment is very flat and covers an area under 2 km2 within the municipality of Kingston. It consists of medium to high density development surrounding a constructed wetland and lake system. Drainage is through the network of wetlands and eventual discharge into the Mordialloc Creek Main drain less than approximately 2 km east of the Wells Road Bridge.

**3.3 Describe the soil and vegetation characteristics relevant to the project area.**

The project area lies within geological deposits of:

- Quaternary inland dune deposits (Qd1), comprising sand, silt and clay: friable to consolidated; well sorted; includes both lunette deposits and deposits of longitudinal dunes.

- Pleistocene to Holocene swamp lake deposits (Qm1) comprising grey to black carbonaceous mud, silt, clay, minor peat: generally unconsolidated; rare dolomite.

- Holocene coastal lagoon deposits (Qg) comprising silt, clay: dark grey to black; variably consolidated

- Holocene coastal dune deposits (Qdl1) comprising sand, silt and clay: well sorted, poorly consolidated; coastal dune and beach deposits; some swamp deposits.

These recent Quaternary deposits overlie Tertiary sands, of the Brighton Group, and potentially Tertiary silts and clays, of the Newport Formation. These overlie Silurian bedded sandstones and siltstones of the Dargile Formation at depth. A variable thickness of anthropogenic fill material is expected to be found overlying the natural geological materials in numerous locations along the alignment due to historic sand quarrying, landfill creation, industrial and residential development and other activities in the area.

The Acid Sulfate Soils Distribution Map has indicated the project site is within the Coastal Acid Sulfate Soils Area.

**3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.**

There are no outstanding natural features within the project area.

**3.5 Describe the status of native vegetation relevant to the project area.**

The project area has been highly modified due to past disturbances including the draining of Carrum Carrum Swamp, clearing of vegetation, modification of the landscape for urban development, agriculture and roads, alterations to local hydrology through the extensive modification of waterways, and the introduction of exotic flora and fauna species. Most of the project area has been significantly degraded and supports predominantly introduced vegetation that is of limited value to the region's native fauna.

Despite this, patches of remnant vegetation persist and the constructed wetlands at the Waterways/ Mordialloc creek offer habitat values for a range of threatened species. Furthermore, there are ecological values (native vegetation and habitat) within nearby areas, such as the nearby Edithvale – Seaford Wetlands (Edithvale component located 700m to the south-west of the project area and Seaford component located 4 km to the south), and Braeside Park and the wetlands at Woodlands Industrial Estate, which abut the project area.

Based on the latest vegetation assessments from January to May 2017, the project area supports 11.99 ha of native vegetation, including 43 scattered trees, comprising 12 EVCs. Most of these EVCs are considered 'endangered' within the Gippsland Plain Bioregion. The remainder of the project area (approximately 125 ha) consists of exotic vegetation and constructed features such as roads.

A total of 6.17 ha of native vegetation occurs within the construction footprint and is proposed to be lost. A small amount of additional native vegetation (<0.5 ha) may be lost through minor associated works, such as the shared user path, once the location has been determined.

**3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.**

The topography of the project area is relatively flat, with gentle rises in the landscape. The lowest lying section of project area is in the south around the Waterways Wetlands, at around 4 m above sea level. The topography increases gradually heading north, to around 30 m above sea level at the northern end of the project boundary.

**3.7 Describe the current condition of the environment relevant to the project area.**

The majority of the project area supports exotic vegetation (including exotic roadside vegetation and modified agricultural land) and constructed features such as roads, however patches of remnant vegetation, planted/revegetated wetland vegetation, and some scattered trees occur. The patches of remnant vegetation are generally moderately-highly modified, however the planted/revegetated wetland vegetation at the Waterways is in good condition. No significant erosion occurs within the project area. Feral animals, including cats, foxes, and rabbits, are known to occur in the area.

The study area supports a number of weeds that are declared noxious under the *Catchment*

*and Land Protection Act 1994* (CaLP Act). Plants occurring on this list are known to, or have the potential to, result in detrimental environmental and/or economic impact.

The field survey identified that the project area supports eleven regionally controlled (C), four restricted (R) and one regionally prohibited (P) CaLP Act weeds. Six of these weed species are also listed as 'Weeds of National Significance' by the Australian Government.

Most of the significant weeds were recorded along the roadsides and within private land in the north of the project area. Very few noxious weeds were recorded within the Waterways.

**3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.**

No Commonwealth Heritage Places or places recognised as having heritage values exist within the project area.

**3.9 Describe any Indigenous heritage values relevant to the project area.**

The project is located on land formerly occupied by the Carrum Carrum Swamp, an area of high cultural significance to Traditional Owner Groups of the region. Although the project area has been highly disturbed since European settlement, the construction phase of the project still has the potential to uncover and damage cultural artefacts.

A compulsory Cultural Heritage Management Plan (CHMP) is currently being prepared, as required by the Aboriginal Heritage Act and Regulations. Early stage investigations have shown that part of the project is covered by an area of legislated cultural heritage sensitivity (Regulation 31: Koo Wee Rup Plain; see Attachment 5), and there have been three cultural heritage surveys and five CHMPs completed which have included at least part of the project area.

Two surface stone artefacts, a quartzite proximal flake and a quartz proximal blade, were found during the cultural heritage standard assessment undertaken in July 2017 for the Mordialloc Bypass project.

**3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.**

The project area consists of predominantly road reserve controlled by VicRoads and the City of Kingston. The project area also includes freehold land, much of which is owned by VicRoads.

**3.11 Describe any existing or any proposed uses relevant to the project area.**

The current land use within the project area is road reservation which is predominantly vacant land. Wetlands occur in the Waterways area and several modified waterways and drains intersect with the project area. A commercial nursery and materials recycling facility is located within the road reservation on land leased from VicRoads. The Parks Victoria office for Braeside Park also occupies land within the proposed alignment. Privately owned lots south of Mordialloc Creek include paddocks used for cattle grazing.

The property within the project area is proposed to be utilised as a road corridor (Mordialloc Bypass) and is subject to a Public Acquisition Overlay.

# Section 4 - Measures to avoid or reduce impacts

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.

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.

**4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.**

The sections below outline the Project's approach to avoiding and reducing the impact to matters of national environmental significance. For further information regarding mitigation for the Project, refer to Section 5 of the Preliminary flora and fauna assessment (Attachment 5). Additional mitigation opportunities will be identified during the design stage of the Project.

Standard Mitigation Measures

VicRoads has an environmental specification *(Section 177 - Environmental Management (Major)* which forms the standard project contractual requirements for the avoidance and minimisation of impacts for each aspect of the environment.

The contract specification will be adapted to address all site specific identified risks and proposed mitigation measures including any additional requirements detailed in the table below. Refer to Attachment 8 for VicRoads Environmental Specification *Section 177 – Environmental Management (Major)*.

Key Avoidance Measures

The principal of avoidance > minimisation > mitigation > offset has been considered early in the design of the project. The following measures have been considered/incorporated early in the Project to avoid/reduce some of the potential direct impacts.

- Elevation of the road over Mordialloc Creek and the southern part of the Waterways Wetlands. The bridge is proposed to be 4-5 metres above the water. This will minimize vegetation loss under the bridge, including the threatened community Seasonal Herbaceous Wetlands of the Temperate Lowland Plains (although loss of all of this community under the bridge has been assumed as a worse case scenario for assessing the potential for significant impacts). The bridge structure is at sufficient height and is proposed as a twin structure to minimise sun light shadowing impacts to flora, and maximise terrestrial and aquatic connectivity for flora and fauna, including Australasian Bittern. Bored piling is proposed to minimise vibration impacts to aquatic life.

- The installation of kerb and channel in place of swales in sections of project that are adjacent to native vegetation to reduce the construction footprint.

- Micro-alignment of the road and the shared user path to avoid impacts on existing native vegetation at various sections of the Project.

Key Specific Mitigation Measures

**No Go Zones**

Install temporary fencing around vegetation that is to be retained (no-go zones). No go zones will be fenced conservatively where possible (i.e. with a vegetative buffer of at least one metre). No-go areas will be well defined visually in the field and identified to all works crew as part of an induction undertaken on site. The indicative no-go zones are provided as Attachment 4. Note that these are preliminary and will require revision to incorporate the Shared User Path and any barriers/fencing that are required, once locations have been determined.

Relevant MNES:

Threatened ecological communities Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains and Natural Damp Grasslands of the Victorian Coastal Plains. Threatened planted flora at the Waterways Wetlands. All EPBC Act migratory and threatened birds that are likely to occur.

**Physical barriers**

The incorporation of physical barriers into the road design are being considered to prevent EPBC Act listed fauna colliding with vehicles, both in flight and on the ground.

A range of different physical barrier designs are being considered, including:

- Solid fencing to form a barrier to force birds to fly over the road that would also provide light mitigation and partial noise mitigation.

- Chain mesh fencing to form a barrier to force birds to fly over the road and would not provide noise or light mitigation. Chain mesh would need to incorporate a solid material or fine rabbit-proof mesh at the base, to prevent small fauna moving through it. The top wire should be marked to prevent bird collisions.

- Noise attenuating barriers.

- A combination of noise barriers and fencing, consisting of noise walls at the base and fencing erected using lighter (less dense) materials above the noise wall (at various dimensions and proportions).

Relevant MNES:

All EPBC Act migratory and threatened birds that are likely to occur, particularly low-flying species such as Australasian Bittern.

**Landscaping and revegetation**

Revegetation, including plantings that facilitate habitat connectivity will be considered to mitigate impacts on MNES, specifically Australasian Bittern. It is important however that landscaping and revegetation does not lead to an increase in mortality, or otherwise draw fauna into suboptimal habitat (i.e. create an 'ecological trap').

The MNES mitigation objectives of landscaping and revegetation for the Project are:

To provide additional habitat for a range of fauna, including threatened wetland bird species to maintain habitat connectivity between Important Bird Areasto compliment physical barriers at the roadside to prevent wetland bird vehicle collisions to assist in the function of Water Sensitive Road Design (WSRD) to improve water quality to stabilise banks to help attenuate light in particular locations

Relevant MNES:

All EPBC Act migratory and threatened birds that are likely to occur.

Waterways bridge design, shading and revegetation

The entire construction footprint of the proposed bridge over the Waterways, aside from pylon locations, has the potential to be revegetated, which will be dependent on the amount of light (both direct and indirect sunlight), whereby vegetation within areas receiving minimal shading are expected to be reinstated to approximate pre-construction cover and composition, which will be achieved by planting wetland species, and by natural re-colonisation. Areas receiving extended shading as a result of the bridge will be planted with wetland species that are more tolerant of shade, with the aim of maintaining maximum vegetative continuity beneath the bridge. It is anticipated that the majority of the area directly beneath each ~16 metre wide carriageway can be re-instated with vegetation of varying density, within terrestrial or semi-aquatic environments.

Relevant MNES:

Threatened ecological Communities Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains and Natural Damp Grasslands of the Victorian Coastal Plains.

All EPBC Act migratory and threatened birds that are likely to occur, particularly Australasian Bittern and Latham's Snipe.

**Buffer zones and habitat protection**

Incorporation of ‘buffer zones’ to protect important habitat from ongoing disturbance has been identified as a mitigation measure for EPBC Act listed migratory and threatened birds. The potential for an area to be set aside as a buffer zone per se is limited due to the proximity of the proposed road to important habitat areas, however buffering of wetland bird habitat, particularly the IBAs (Woodlands and Braeside Park wetlands) to minimize impact is proposed to be achieved through the following:
Landscaping to shield habitat at Braeside Wetlands from light and human disturbance from the shared user path and the road.

Landscaping to shield habitat at the Waterways (north of the proposed bridge) from car headlights and shared user path impacts (light, disturbance).

Additional vegetation planting adjacent to Woodlands Wetlands to increase the vegetative buffer between the proposed road and the wetlands. This vegetation would also shield habitat from headlights.

Maintenance of habitat within the project area to buffer higher quality habitat in the adjacent IBAs. For example, Latham’s Snipe and Australasian Bittern habitat within the Project area (both remnant and planted) should not be mown unless required to sustain the health of the habitat (in which case it will be occasional and patchy).

Relevant MNES:

All EPBC Act migratory and threatened birds that are likely to occur.

**Light mitigation**

Road lighting will be achieved using directional lighting that minimises light spill onto surrounding areas. At this stage, it is expected that the Project will include street lighting within 200 metres of the approach and departure of intersections with Governor Road, Lower Dandenong Road, Centre Dandenong Road and the Dingley Bypass. There will be no lighting on the Bypass between these intersections. Light frequency will be investigated with the aim to minimise impact on native fauna. Road lighting spill will be further mitigated by screen planting immediately adjacent to the road.

Lighting of the Shared User Path is not currently proposed.

Relevant MNES

All EPBC Act migratory and threatened birds that are likely to occur.

**Noise attenuation**

The use of noise-reducing structures, surfaces and other measures, such as planted mounds/embankments will be considered.

Operational noise from the Project is unlikely to affect habitat at Edithvale. Furthermore,

Edithvale Road (through the Edithvale wetland) will not be used for hauling equipment and materials during the construction phase.

Measures for mitigation of construction noise are provided in Section 5 of Attachment 5.

Relevant MNES:

All EPBC Act migratory and threatened birds that are likely to occur.

**Weed management**

The standard weed and pathogen management measures stipulated in VicRoads' Section 177 document is likely to effectively mitigate most of the risks associated with weeds and pathogens. Additional requirements include:

Prior to commencement of works, a detailed weed assessment will be completed in the project area in areas of ecological sensitivity, and preliminary weed control will be undertaken.

Immediately following works, a program of weed monitoring and control will be commenced, targeting high-risk species and areas of ecological sensitivity in the project area.

High risk species will be regularly controlled along road edges for the life of the road.

Mowing regime and timing of road edges will be determined with consideration of ecological impacts and timing of seed set.

Slashers will be cleaned prior to mowing near areas of ecological sensitivity to avoid spreading weeds.

Relevant MNES:

EPBC Act listed flora, EPBC Act listed threatened ecological communities

**Erosion and sedimentation**

While vegetation provides the most effective form of erosion control, interim measures involving a variety of soil erosion techniques and materials may be required on an as needs basis to ensure that there are no impacts upon EPBC Act values outside of the impact area.

During construction, measures will be implemented in line with the Victoria EPA Principals of Best Practice Guidelines, including Environmental Guidelines for Major Construction Sites (Environmental Protection Agency 1996), Construction Techniques for Sediment Pollution Control (Environmental Protection Agency 1991), and EPA Publication 960 'Doing it right on subdivisions' (Environmental Protection Agency 2004).

With regard to the design and ongoing use of the road, Clause 46 of the SEPP (Waters of Victoria) requires urban stormwater, which includes road runoff, provides for the protection of

beneficial users and the demonstration of best practice. The best practice approach requires proposed road projects meet the best practice performance objectives and process outlined in Urban Stormwater: Best Practice Environmental Management Guidelines (Victorian Stormwater Committee 1999). To achieve this, increases to pollutant loads will be assessed and mitigated using Water Sensitive Road Design (WSRD) elements as part of the design phase. Specific mitigation, corrective action and contingency measures to protect waterway habitat from pollutants will be determined.

Relevant MNES:

EPBC Act listed flora, EPBC Act listed threatened ecological communities

**Specific groundwater mitigation (if required)**

The following measures have been identified in the groundwater assessment as potential options for precautionary mitigation for reduction in potential subsurface hydraulic conductivity in the shallow alluvium and consequential disruption of groundwater flow, should they be required:

Trenched high permeability groundwater conduits installed transverse to the alignment, to provide a groundwater bypass through the zone of compaction impacts.

Inclusion of Controlled Modulus Columns (CMC) road design elements (‘grout piles’) which present another option to provide support to the pavement, limiting the compaction effects of embankment loading and minimise groundwater flow disruption.

Lengthened elevated bridge sections, as typical pile support spacing may also impose minimal impacts to ground conditions and groundwater flow in the key aquifer layers.

Numerical modelling will be completed as part of the EES process to provide predictions of the magnitude of impact and input into the precautionary mitigation measures design specifications.

Relevant MNES:

All EPBC Act migratory and threatened birds that are likely to occur, EPBC Act threatened communities, EPBC Act threatened flora.

**Surface Water**

With regard to surface water quality and flow mitigation, the Project is required to meet the requirements of the State Environment Protection Policy (SEPP) (Waters of Victoria) for urban stormwater runoff, which requires the protection of beneficial uses and the demonstration of the application of best practice. Melbourne Water’s Mordialloc Bypass Stormwater Quality Performance Criteria provides a hierarchy of how stormwater quality treatment measures should be implemented by the Project. At source treatment is the most preferred measure, then Water Sensitive Urban Design (WSUD) outside the Project corridor, with offset options being least preferred. The intention is to provide WSUD within the Project Area boundary to meet best practice WSUD requirements for the overall project and for drainage outfalls upstream of

sensitive receptors, such as the Edithvale wetlands. The implementation of this, with the aim of achieving best practice, will be determined by surface water studies, completed as part of the design stage.

Relevant MNES:

All EPBC Act migratory and threatened birds that are likely to occur, EPBC Act threatened communities, EPBC Act threatened flora.

**4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.**

The impact of the Project on Matters of National Environmental Significance (MNES) is not expected to be significant. Potential impacts to MNES have been identified during the project design phase with steps taken to avoid these impacts wherever possible. In instances where it is not possible to avoid impacts to MNES emphasis will be on minimising both the direct and indirect impacts from construction and operation of the road. There are opportunities for a range of innovative solutions (grounded in sound research and informed by expert opinion), to mitigate the indirect impacts of the Project (light, noise, etc.).

The overall aim of the Project with regard to EPBC Act values is to ensure that impacts upon listed matters are negligible to low, and are not ‘significant’.

# Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

### 5.1.1 World Heritage Properties

No

### 5.1.2 National Heritage Places

No

### 5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

### 5.1.4 Listed threatened species or any threatened ecological community

No

### 5.1.5 Listed migratory species

No

### 5.1.6 Commonwealth marine environment

No

### 5.1.7 Protection of the environment from actions involving Commonwealth land

No

### 5.1.8 Great Barrier Reef Marine Park

No

### 5.1.9 A water resource, in relation to coal/gas/mining

No

### 5.1.10 Protection of the environment from nuclear actions

No

### 5.1.11 Protection of the environment from Commonwealth actions

No

### 5.1.12 Commonwealth Heritage places overseas

No

### 5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

The results of the Preliminary Flora and Fauna Impact Assessment for Mordialloc Bypass (Attachment 5) indicate that the Project overall has a moderate potential for significant impacts upon MNES without appropriate mitigation beyond standard measures. The MNES assessed for their potential to be significantly impacted include the Ramsar site Edithvale-Seaford Wetlands, the threatened water birds Australasian Bittern, Curlew Sandpiper, and Eastern Curlew, the threatened flora River Swamp Wallaby-grass, Matted Flax-lily, Swamp Senecio and Swamp Everlasting, the threatened ecological communities Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains and Natural Damp Grasslands of the Victorian Coastal Plains, and eight bird species listed as migratory. Although additional species are likely to periodically occur, they were assessed in the Preliminary Flora and Fauna Impact Assessment for the Mordialloc Bypass (Attachment 5) as being unlikely to be impacted by the Project.

A range of specific mitigation measures will be provided both during and after construction to reduce impacts to the identified MNES. Proposed mitigation measures include the maintenance of wetland connectivity in the Waterways through the creation of a bridge over the wetlands (instead of an at-grade solution), rehabilitation and revegetation of habitat beneath the bridge, revegetation (terrestrial and aquatic) throughout much of the Project, installation of physical barriers to prevent vehicle-wildlife collisions, carefully designed and minimal use of road lighting, designated haulage routes that minimise noise and vibration impacts during construction, weed and disease management, erosion, sediment and water pollutant mitigation, landscaping to minimise light impacts and assist in maintaining connectivity, and no go zones (including temporary fencing of these zones) during construction. For further information regarding mitigation for the Project, refer to Section 5 of Attachment 5.

Providing that the specific measures to avoid, minimise and mitigate impacts can be designed and implemented, no significant impacts on listed MNES are anticipated.

# Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

**6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.**

The Victorian Roads Corporation (VicRoads) has initiated and completed a significant number of both major and minor road projects across the State, all of which have the potential for environmental impact. In any one year, it is estimated that approximately 200 projects are completed, of which, on average, five projects per year are referred for approval under the EPBC Act.

Although not established under the Corporation Act 2000, VicRoads publicly reports its environmental performance in the Annual Report. In recent years, the environmental incident reporting system was upgraded to automatically track and escalate issues as appropriate. Since January 2010, there have only been 3 significant environmental incidents reported (significant is defined as Level 4 and Level 5 incidents) of which only one related to EPBC issues and resulted from contractor non-compliance with VicRoads specifications and requirements. Details are as follows:

The incident occurred on 6.12.2010. VicRoads notified the Department of the Environment on 8.12.2010..The incident was investigated by VicRoads and corrective action taken.

In addition, to the best of our knowledge, neither VicRoads or its directors have been refused a licence, permit or authority under any environment protection legislation or had any such licence, permit or authority suspended, revoked or withdrawn in Australia or elsewhere been prosecuted for an offence under any environment protection legislation either in Australia or elsewhere been found guilty of an indictable environmental office either in Australia or elsewhere.

A search of EPA Victoria's prosecutions database as at 26 June 2017, [http://www.epa.vic.gov.au/our-work/compliance-and-enforcement/epa-sanctions/prosecutions] in relation to enforcement of the *Environment Protection Act 1970* and the *Pollution of Waters by Oil and Noxious Substances Act 1986*, has indicated no prosecutions involving VicRoads.

VicRoads has been involved in EPBC compliance audits as noted below.

**EPBC 2005/1990 – Construction of Bayles Bridge**

Approval conditions attached to a project by VicRoads to replace the Bayles Bridge in Victoria

were audited on 25 to 26 October 2006. The conditions related to the protection of Growling Grass Frog (*Litoria raniformis*), Southern Brown Bandicoot (*Isoodon obesulus*) and Dwarf Galaxias (*Galaxiella pusilla*).

The audit identified compliance with eight of the 12 conditions of approval. Two instances of noncompliance were related to the implementation of an offset strategy and bridge construction material. Five elements of the conditions were found to be partially compliant. These related to construction methods and materials, water quality testing, and reporting to the Department. A formal warning was issued to VicRoads and recommendations for rectification of the compliance issues made. The non-compliances have been addressed to the satisfaction of the Department in accordance with the Department's Compliance and Enforcement Policy.

**EPBC 2008/4486 – Geelong Ring Road – Section 4A, Victoria**

A compliance audit of the Geelong Ring Road – Section 4A, Victoria, was conducted by the Department on 21 August 2012.

There are seven particular manner requirements set out in the decision notification. VicRoads demonstrated compliance with requirements 2, 5, 6 and 7 relating to best practice erosion, siltation and sediment controls being implemented; controls to manage a one in two Year Average Recurrence Interval event being implemented and maintained; construction activities that could potentially impact on the breeding of the Yarra Pygmy Perch and the Growling Grass Frog not being undertaken during September and October in associated habitat; and the construction area being fenced off to ensure that areas outside of the construction area are not impacted.

Non-compliance was found with elements of requirements 1, 3 and 4 relating to the implementation of the Project Environment Protection Strategy and water quality monitoring requirements for the project. The non-compliances have been addressed to the satisfaction of the Department in accordance with the Department's Compliance and Enforcement Policy.

**EPBC 2010/5741 – Western Highway Project Section 2: Beaufort to Ararat, Victoria**

VicRoads self reported an alleged breach of conditions attached to EPBC 2010/5741 to the Department the day following the potential impact to an area less than 0.1 hectare of Grassy Eucalypt Woodland of the Victorian Volcanic Plain (GEWVVP).

Condition 5 of the approval required VicRoads to implement the Threatened Species Management Plan approved by the Department. The Plan required no-go zones to be installed at the section of the site where unapproved works were undertaken. Vegetation, located outside the no-go zone, that had been marked and agreed to be cleared by VicRoads and its Contractor was fallen and stored in the no-go zone by a subcontractor.

An audit by the Department determined that although condition 5 of EPBC 2010/5741 had been contravened, no matters of national environmental significance were impacted in this instance.

No further action was taken by the Department at that time.

**6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.**

Not applicable

**6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?**

Yes

**6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.**

VicRoads has a comprehensive environmental management system designed to identify and minimise environmental impact from its construction and maintenance activities. VicRoads approach to environmental management is modelled on ISO 14001- *Environmental Management Systems.*

The main elements of VicRoads environmental management system are:

VicRoads Sustainability and Climate Change Policy (2014)VicRoads Sustainability and Climate Change Strategy (2015-2020)

VicRoads Environmental Risk Management Guidelines (2012)

Environmental procedures for management of projects

Project Environment Protection Strategies

Where appropriate, specific guidance documents e.g. integrated water management, fauna sensitive design, etc.

Contract specifications with specific environmental clauses

Surveillance audits of contractor activities based on a risk based approach

Independent environmental audits of contractor environmental management systems prior to commencement of major works

Independent environmental audits throughout the life of major construction projects

Training modules including e-learning modules for environmental aspects of project construction

When managing projects, VicRoads exercises high standards of environmental diligence both in the contract preparation and administration.

The VicRoads Environmental Risk Management Guidelines provide more detail about VicRoads systems which are utilised to manage risk and protect the environment and how these systems and tools are implemented throughout the life cycle of a project (refer Attachment 9).

**6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?**

Yes

**6.4.1 EPBC Act No and/or Name of Proposal.**

See Attachment 10

# Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

**7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).**

| Reference Source | Reliability | Uncertainties |
|---|---|---|
| Australian Standard for Protection of trees on development sites (AS4970-2009) (Standards Australia 2009) | Reliable source | No uncertainties |
| Australian Standard for Pruning of amenity trees (AS4373-2007) (Standards Australia 2007) | Reliable source | No uncertainties |
| Biosis (2013), Flora and Fauna investigation: Northern extension of the Mornington Peninsula Freeway | Reliable source | No uncertainties |
| Biosis (2015), Mordialloc Bypass: Flora and Fauna investigation including habitat hectare assessment (draft report), Prepared by Biosis for VicRoads | Reliable source | No uncertainties |
| Carter, O, Walsh, N. (2011), National Recovery Plan for the Swamp Everlasting Xerochrysum palustre, <http://www.environment.gov.au/system/files/resources/8717304e-3eb2-4e1a-ba23-22a18d4a3b0b/files/xerochrysum-palustre.pdf> | Reliable source | No uncertainties |
| Cook, D (undated), Flora and fauna lists of “The Waterways”, Unpublished report by Damien Cook | Reliable source | No uncertainties |
| DELWP (2015), Permitted clearing of native vegetation - Biodiversity assessment handbook | Reliable source | No uncertainties |
| DEPI (2013), Permitted | Reliable source | No uncertainties |

| Reference Source | Reliability | Uncertainties |
|---|---|---|
| Clearing of Native Vegetation – Biodiversity Assessment Guidelines | | |
| DoEE (2017), Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species, Commonwealth of Australia, Department of Environment and Energy | Reliable source | No uncertainties |
| eBird. 2017. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: http://www.ebird.org. (Accessed: March-August 2017) | Usually a reliable source, however based on citizen science data | Data entered by citizen scientists, considered in context with other data |
| Ecology Australia (2016), Edithvale-Seaford Wetlands Ramsar Site Management Plan, Prepared by Ecology Australia for Melbourne Water | Reliable source | No uncertainties |
| EPA (1996), Environmental Guidelines for Major Construction Sites | Reliable source | No uncertainties |
| EPA (1991), Construction Techniques for Sediment Pollution Control | Reliable source | No uncertainties |
| EPA (1996), Environmental Guidelines for Major Construction Sites | Reliable source | No uncertainties |
| Gleeson, J & Gleeson, D (2012), Reducing the Impacts of Development on Wildlife, CSIRO Publishing, Collingwood | Reliable source | No uncertainties |
| TSSC (2012), Commonwealth Listing Advice on Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains, <http://www.environment.gov.au/biodiversity/threatened/communities/pubs/97-listing-advice.pdf> | Reliable source | No uncertainties |

| Reference Source | Reliability | Uncertainties |
|---|---|---|
| Victorian Stormwater Committee (1999), Urban Stormwater: Best Practice Environmental Management Guidelines | Reliable source | No uncertainties |
| VicRoads (2012), VicRoads Fauna Sensitive Road Design Guidelines, VicRoads | Reliable source | No uncertainties |
| Assessments that have been undertaken in relation to the Mordialloc Bypass include: Biosis Research (2008), Preliminary Assessment of a 12 km proposed road alignment for SEITA, Prepared for VicRoads by Biosis Research Pty Ltd, Port Melbourne. Brett Lane & Associates (2016), Outer Suburban Arterial Road Program - Preliminary Biodiversity Assessment, Prepared for VicRoads by Brett Lane & Associates Pty Ltd, Hawthorn. WSP (2017a) Preliminary flora and fauna impact assessment for Mordialloc Bypass. Prepared by WSP Australia Pty Ltd for VicRoads. WSP (2017b) Outer Suburbs Arterial Roads Project (OSAR) – Qualitative Environmen Effects Statement (EES) Self-Assessment – Project Site 26 – Mordialloc Bypass. WSP (2017b) Addendum to Preliminary flora and fauna impact assessment for Mordialloc Bypass: - Impact and Mitigation Update: Matters of Environmental Significance for the Mordialloc Bypass (Addendum 1) | Reliable source | No uncertainties |
| Other relevant studies that have been undertaken include: Australian Ecosystems (2017) Establishment of Indigenous | Reliable source | No uncertainties |

| Reference Source | Reliability | Uncertainties |
|---|---|---|
| Flora and Fauna in Revegetated Areas at 'The Waterways'. Birdlife Australia (2016a) Melbourne Water – Regional Bird Monitoring Project AECOM-GHD JV (2016) Edithvale & Bonbeach Groundwater Preliminary Impacts - Ecological Assessment. Report prepared by AECOM-GHD Joint Venture for the Level Crossing Removal Authority, Melbourne. AECOM-GHD JV (2017) Flora and Fauna Assessment – Rail Under Road. Edithvale & Bonbeach. Report prepared by AECOM-GHD Joint Venture for the Level Crossing Removal Authority, Melbourne. Ecology Australia (2016) Edithvale-Seaford Wetlands Ramsar Site Management Plan. Birdlife Australia (2016b) Edithvale and Seaford Wetlands Bird Survey Project 2014-15. Birdlife Australia (2016b) Edithvale and Seaford Wetlands Bird Survey Project 2014-15. VicRoads Geotechnical Services (VRGS) Potential Acid Sulfate Soil (PASS) assessment WSP (2017c) Preliminary surface water impact assessment Associates Pty Ltd, Hawthorn. WSP (2017a) Preliminary flora and fauna impact assessment for Mordialloc Bypass. Prepared by WSP Australia Pty Ltd for VicRoads. WSP (2017b) Outer Suburbs Arterial Roads Project (OSAR) – Qualitative Environmen Effects Statement (EES) Self-Assessment – Project Site 26 – Mordialloc Bypass. WSP (2017b) | | |

| Reference Source | Reliability | Uncertainties |
| --- | --- | --- |
| Addendum to Preliminary flora and fauna impact assessment for Mordialloc Bypass: - Impact and Mitigation Update: Matters of Environmental Significance for the Mordialloc Bypass (Addendum 1) | | |

# Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

**8.0 Provide a description of the feasible alternative?**

No feasible alternatives.

**8.1 Select the relevant alternatives related to your proposed action.**

**8.27 Do you have another alternative?**

No

Australian Government
Department of the Environment and Energy

# Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

**9.0 Is the person proposing to take the action an Organisation or an Individual?**

Organisation

**9.2 Organisation**

**9.2.1 Job Title**

Projects Director Metropolitan

**9.2.2 First Name**

Brendan

**9.2.3 Last Name**

Pauwels

**9.2.4 E-mail**

Brendan.Pauwels@roads.vic.gov.au

**9.2.5 Postal Address**

40 Belgrave-Hallam Road
Hallam VIC 3803
Australia

**9.2.6 ABN/ACN**

ABN

61760960480 - ROADS CORPORATION

**9.2.7 Organisation Telephone**

131170

**9.2.8 Organisation E-mail**

vicroads@vicroads.gov.au

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

Not applicable

**Small Business Declaration**

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date: .....

**9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations**

No

**9.2.9.3 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**

**Person proposing the action - Declaration**

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

Signature:..... Date: 30/10/17.....

I, BRENDAN PAMMELS, the person proposing the action, consent to the designation of VICROADS as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: 30/10/17.....

**9.3 Is the Proposed Designated Proponent an Organisation or Individual?**

Organisation

**9.5 Organisation**

**9.5.1 Job Title**

Projects Director Metropolitan

**9.5.2 First Name**

Brendan

**9.5.3 Last Name**

Pauwels

**9.5.4 E-mail**

Brendan.Pauwels@roads.vic.gov.au

**9.5.5 Postal Address**

40 Belgrave-Hallam Road
Hallam VIC 3803
Australia

**9.5.6 ABN/ACN**

ABN

61760960480 - ROADS CORPORATION

**9.5.7 Organisation Telephone**

131170

**9.5.8 Organisation E-mail**

vicroads@vicroads.gov.au

**Proposed designated proponent - Declaration**

I, BRENDAN PAUWELS, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Australian Government
Department of the Environment and Energy

Signature:..... Date: 30/10/17.....

**9.6 Is the Referring Party an Organisation or Individual?**

Organisation

**9.8 Organisation**

**9.8.1 Job Title**

Principal Environmental Scientist

**9.8.2 First Name**

Philippa

**9.8.3 Last Name**

Forge

**9.8.4 E-mail**

philippa.forge@wsp.com

**9.8.5 Postal Address**

28 Freshwater Place
Southbank VIC 3006
Australia

**9.8.6 ABN/ACN**

ABN

80078004798 - WSP AUSTRALIA PTY LIMITED

**9.8.7 Organisation Telephone**

(03) 9861 1243

**9.8.8 Organisation E-mail**

admin@wsp.com

**Referring Party - Declaration**

Australian Government
Department of the Environment and Energy

I, Philippa Forge, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature:..... Date: 27 October 2017.....

## Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. attachment_1_project_area_shapefiles.zip
2. attachment_2_-_map_of_project_area_.pdf
3. attachment_3_-_mordialloc_bypass_lot_numbers_and_titles.pdf
4. attachment_4_-_indicative_no_go_zone_map_series.pdf
5. attachment_5_prelim_f_and_f_ia_part_1_of_3.pdf
6. attachment_5_prelim_f_and_f_ia_part_2_of_3.pdf
7. attachment_5_prelim_f_and_f_ia_part_3_of_3.pdf
8. attachment_6_significant_impact_tables.pdf
9. attachment_7_groundwater_impacts_-_part_1_of_5.pdf
10. attachment_7_groundwater_impacts_-_part_2_of_5.pdf
11. attachment_7_groundwater_impacts_-_part_3_of_5.pdf
12. attachment_7_groundwater_impacts_-_part_4_of_5.pdf
13. attachment_7_groundwater_impacts_-_part_5_of_5.pdf
14. attachment_8_vicroads_section_177.pdf
15. attachment_10_-_roads_corporation_previously_referred_actions.pdf
16. mordialloc_bypass_referral_document_pdf_version.pdf