



**Department of
Sustainability and Environment**

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Frankston Bypass EES Submission
Planning Panels Victoria
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Dear Sir/Madam

FRANKSTON BYPASS ENVIRONMENT EFFECTS STATEMENT – DSE SUBMISSION

Please find enclosed the Department of Sustainability and Environment's (DSE) submission on the above EES. DSE welcomes the opportunity to assist the Panel, and is happy to expand on any of the issues raised in the enclosed submission.

Please contact Mr Mark Winfield, Biodiversity Manager, on 0419 751 006 if you have any further inquiries.

Yours sincerely

Kimberley Dripps
Executive Director
Biodiversity and Ecosystem Services

19/12/2008

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Department of Sustainability and Environment

Department of Sustainability and Environment submission to the Frankston Bypass Environment Effects Statement

Introduction

The following represents the joint submission by Department of Sustainability and Environment (DSE) and Parks Victoria to the “Frankston Bypass Project Environmental Effects Statement (EES)” proposed by Southern and Eastern Integrated Transport Authority (SEITA).

The project aims to create a road network, known as the Frankston Bypass, to meet the future travel demands in the Frankston – Mornington Peninsula corridor along a road corridor extending from the Mornington Peninsula Freeway and EastLink interchange at Carrum Downs to the Mornington Peninsula Freeway at Mount Martha, a distance of approximately 25km.

DSE has considered the extent to which the project is capable of having a significant effect on the environment in terms of:

- The potential for significant adverse effects on individual environmental assets, taking into account the magnitude, geographic extent and duration of change in the values of each asset;
- The range and complexity of potential adverse effects;
- The likelihood of adverse effects and associated uncertainty of available predictions;
- The likelihood of effective avoidance and mitigation measures;
- Other available assessment processes that may be suitable to address potential environmental effects;
- The likelihood that available environmental standards provide a sufficient basis for managing key issues;
- Consistency with applicable policy; and
- The availability of project alternatives that may warrant investigation to assess opportunities to avoid or minimise adverse environmental effects.

DSE’s interest is in biodiversity assets impacted upon by the proposed project. In particular, the removal of native vegetation (in the context of Victoria’s Native Vegetation Management - A Framework for Action); impacts on threatened species, including both national (*Environment Protection and Biodiversity Conservation Act 1999*) and state (*Flora and Fauna Guarantee Act 1988*) listed plants, animals and vegetation communities; and, impacts on public land. Parks Victoria’s primary interest is the extent of impacts on the 220 ha Pines Flora and Fauna Reserve and the nature and effectiveness of mitigation measures to minimise any adverse impacts.

Summary of DSE’s submission in response to Option 1

DSE has previously provided comments to SEITA in relation to the preliminary and detailed reports provided by SEITA, particularly the *Flora and Fauna Assessment of the Proposed Frankston Bypass, Carrum to Mount Martha, Victoria: Existing Conditions and Impact Assessment Report*, September 2008, Biosis Research Pty Ltd.

DSE understands that the alignment within the road corridor has limited capacity for variation, given surrounding land use and the limited ability for the described impacts on biodiversity to be avoided should any road option be approved. The EES proposes three land options, with one option (Option 1) being the preferred option of SEITA.

Option 1 deviates from the reserved road corridor through the Pines Flora and Fauna Reserve to go further east in an attempt to minimise impacts of the natural gradation of Ecological Vegetation Classes (EVC), from the elevated sand dunes to low lying areas, retention of a greater core area of remnant vegetation and to minimise fragmentation of key fauna habitat areas, especially habitat for the Southern Brown Bandicoot. Option 1 avoids impacts on the rare Sand Heath EVC, which is part of the only example of heathland on an extensive dunefield remaining within the Melbourne area (as identified in the 1993 Draft Management Plan for the Pines Flora and Fauna Reserve). Options 2 and 3 use the reserved road corridor and would have greater impacts on biodiversity and cultural heritage values than Option 1.

Only Option 1 (not Options 2 and 3 based on existing road reservation through the Pines Flora and Fauna Reserve) has been analysed for the overall net gain impacts and offsets and impacts to threatened species.

In DSE and Parks Victoria's view, the EES identifies and quantifies the level of environmental impacts of the proposed Option 1 accurately. The EES identifies potential impacts on ecological systems that vary from a local and regional level to a state level impact in certain circumstances. In particular, the loss of vegetation at the Pines Flora and Fauna Reserve and loss of Plains Grassy Wetland vegetation at the interchange with EastLink.

Biodiversity impacts for Option 1 are summarised below:

- *Native vegetation:* The Frankston Bypass project proposes clearance of 53.2 hectares of 12 Ecological Vegetation Classes (EVC) and 87 Very Large and Large Old Trees and 72 Scattered Trees. Almost all the loss of native vegetation is of Very High Conservation Significance (78%), the majority of which is located within the Pines Flora and Fauna Reserve.
- *Threatened species:* Known populations of three nationally-listed and two state-listed species and one state-listed vegetation community are within the proposed Frankston Bypass Corridor.
- *Iconic species and wildlife management issues:* Koalas and Kangaroos. Both Koalas and the Eastern Grey Kangaroo occur along the proposed alignment.
- *Changes to hydrological regimes:* the Frankston Bypass project proposes the realignment of a number of man-made and natural creek systems, alteration of surface water flows and potential impacts on water quality. DSE has an interest where the hydrological impacts affect both nationally-listed and state-listed aquatic flora / fauna species. Surface flows and water quality impacts are discussed in the Melbourne Water submission.
- *Impact on public land:* the proposed road corridor transects a number of areas of public land, the most significant of which is the Pines Flora and Fauna Reserve in Seaford, near the northern end of the corridor.

Should the Frankston Bypass be approved, specific issues will need to be addressed within the Environmental Management Plan (EMP). The EMP will need to provide a detailed assessment that clearly demonstrates how impacts will be avoided and minimised and how any residual impacts will be offset. The EMP will should be completed to the satisfaction of the Secretary, DSE.

The EMP should outline detailed information on the monitoring requirements of the project.

The project will require a number of environmental approvals/authorisations, including:

- *Planning and Environment Act 1987*, for clearing of native vegetation under Victoria's Native Vegetation Management – A Framework for Action;
- *Flora Fauna Guarantee Act 1988*, for the taking of protected flora on public land;
- *Wildlife Act 1975*, for research and the capture and relocation of fauna species during vegetation removal and/or other works; and
- *Crown Land (Reserves) Act 1978*, for vegetation clearing and other works in the Pines Flora and Fauna Reserve (Pines FFR).

DSE's response to the EES Impact Assessment

Ecological consultant's report – Biosis Research Pty Ltd.

Field work has been carried out using appropriate standard methods and techniques. The surveys have been undertaken at the appropriate times of the year. The more intensive surveys within the Pines FFR have been sufficient. All relevant data sources and reports have been accessed to extract data. The consultants have interpreted the data in an appropriate manner and have recognised habitat that either contains or potentially supports significant species. The analysis of the loss of native vegetation under Victoria's Native Vegetation Management – A Framework for Action (Native Vegetation Framework) is supported. The criteria used for determining significant sites were appropriate.

Impacts on native vegetation

There are 75.76 hectares mapped within the proposed Option 1 Frankston Bypass alignment. The entire alignment corridor falls within the Gippsland Bioregion and is located north of Golf Links Road, within the Pines Flora and Fauna Reserve. Other smaller areas are Willow Road Reserve and an area of vegetation known as Patch 46a.

Twelve Ecological Vegetation Classes (EVC) are recorded within the alignment, including one that is a state-listed threatened floristic community (Herb-rich Plains Grassy Wetland) at the interchange of the Mornington Peninsula Freeway and EastLink.

Within the Gippsland Bioregion, seven of the EVCs are Endangered (Swampy Woodland, Plains Grassy Wetland - includes the Herb-rich Plains Grassy Wetland, Grassy Woodland, Swamp Scrub, Aquatic Hermland, Swampy Riparian Woodland and Plains Grassy Woodland), two are Rare (Sand Heathland and Damp Heathland) and two are Vulnerable (Damp Sands Herb-rich Woodland and Damp Heathy Woodland). One EVC is of Least Concern (Heathy Woodland).

Option 1 would result in the loss of an estimated 30 ha of Endangered, three hectares of Rare and 14.5 ha of Vulnerable EVCs within the Gippsland Bioregion.

Option 1 would directly remove 53.2 hectares (25.62 habitat hectares) of native vegetation. See Table 1 for a detailed description of EVCs and magnitude of losses.

Seventy-eight per cent of the vegetation directly removed under Option 1 (18.7 habitat hectares) is of Very High Conservation Significance (see Table 2).

There are a number of further vegetation losses in relation to the residual impacts on remaining vegetation patches that are less than 10 metres wide. This amounts to an additional 1.4 habitat hectares requiring an offset of 2.35 habitat hectares (see Table 2). The total offset requirement is 49.39 habitat hectares (see Table 2). It should be noted that some patches of

A corridor of diverse bushland and wetlands linking seaford to the Morning Peninsula. A series of irreplaceable ecosystems supporting, sugar gliders, bandicoots, kangaroos, koalas, antechinus echidnas, rare orchids, powerful & boobook ows, parrots, blue-tongue lizards.

native vegetation were not assessed. Minor amendments to the total offset requirement may be necessary depending on whether the bypass is approved and under which alignment option.

Table 1: Vegetation losses within the Gippsland Bioregion

Ecological Vegetation Class	Conservation Status in Gippsland Bioregion	Number of Patches	Area within alignment (hectares)	Direct clearance (hectares)	Loss (habitat hectares)
Swampy Woodland	Endangered	36	16.55	12.76	5.54
Plains Grassy Wetland	Endangered	36	12.09	7.37	3.43
Grassy Woodland	Endangered	10	5.31	3.61	1.99
Swamp Scrub	Endangered	12	2.82	2.41	1.15
Aquatic Herbland	Endangered	3	1.45	1.39	0.98
Swampy Riparian Woodland	Endangered	2	1.73	1.72	0.78
Plains Grassy Woodland	Endangered	2	0.08	0.07	0.01
Damp Heathland	Rare	3	1.90	1.90	1.48
Sand Heathland	Rare	3	1.24	1.19	0.79
Damp Sands Herb-rich Woodland	Vulnerable	37	22.78	14.35	6.48
Damp Heathy Woodland	Vulnerable	1	0.21	0.21	0.14
Heathy Woodland	Least Concern	7	9.58	6.22	2.84
TOTAL			75.76	53.20	25.62

Table 2: Summary of direct and indirect habitat hectares losses and offset requirements

Conservation Significance	Direct Hha Loss	Indirect Hha Loss	Total Hha Loss	Offset Hha
Very High	18.70	0.57	19.29	38.54
High	5.43	0.74	6.17	9.26
Medium	0.89	-	0.89	0.89
Low	0.60	0.10	0.70	0.70
TOTAL	25.62	1.40	27.02	49.39

Eighty-seven Very Large Old Trees (VLOT) and Large Old Trees (LOT) and 72 scattered trees will also be lost with the proposed Option 1 Frankston Bypass. This is potentially significant for some hollow-dependent faunal species. The offset required would be: to protect 27 VLOTs; 432 LOTs and 36 Medium Large Old Trees and recruit 3,283 new plants.

Any clearing of native vegetation will require an Offset Management Plan, and the establishment of offsets to the satisfaction of the Secretary, DSE. Clearing Very High Conservation Significance vegetation requires the approval of the Minister for Environment and Climate Change. The Native Vegetation Management Framework requires offsets for the clearing of Very High Conservation Significance native vegetation to be established before the clearing is undertaken. All other vegetation offsets must be initiated as soon as possible, but no later than after 12 months of clearing.

DSE considers that additional effort could be made to further avoid and minimise vegetation loss. This could include route selection to areas with lower value vegetation and the use of equipment and construction techniques that reduce the width of the construction corridor as far as possible (for example, reducing the five metre buffer to the edge of batter line). Further consideration should be given to clearing vegetation in a staged manner to facilitate

construction, rather than the clearance of the entire site prior to the commencement of construction.

Impacts on Threatened Species

There are potential significant impacts on a number of threatened flora and fauna species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) and *Flora and Fauna Guarantee Act 1988* (FFG) if measures are not implemented to avoid, minimise or offset these impacts.

Environment Protection and Biodiversity Conservation Act 1999 (EPBC ACT) listed species

The Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA) is responsible for administering the EPBC Act and will, therefore, have specific views and requirements on the appropriateness of the project and possible management of matters of National Environmental Significance. Its advice should be sought on EPBC-listed species. However, DSE provides advice and guidance here on these significant species.

- **Southern Brown Bandicoot (*Isoodon obesulus obesulus*)**
This species occurs in the Pines Flora and Fauna Reserve in low numbers. It is associated with heathland, swamp scrub and woodland vegetation. Surveys did not record the species within the DARA Block. The potential impact of the proposed Frankston Bypass is that it may cause the local extinction of this species at this location given its low numbers, the loss of native vegetation, habitat fragmentation and increased mortality through increased predation, unless measures are implemented to minimise or mitigate impacts.

The creation of habitat links underneath the Option 1 bypass has been proposed as a mitigation measure to ensure that the species can continue to move between areas of remnant habitat. Previous studies have found that bandicoots will use underpasses, and the design, number and location of the underpasses within the Pines Flora and Fauna Reserve would need to be addressed at the EMP stage.

There are people management issues associated with the underpasses that need to be resolved, including risk management of access by the general public. It is also an area where targeted fox control should be directed.

The potential impacts would need to be mitigated against with significant investment in the transfer of Crown land directly north of the Pines Flora and Fauna Reserve (currently occupied by the Department of Primary Industries) and together with the former DARA Block be revegetated to an EVC standard. A long-term monitoring plan should be initiated for this species, including investigating the supplementing of the population to increase its resilience to the impacts of the proposed Frankston Bypass. Predator control would also assist in minimising impacts on the population.

Parks Victoria supports these mitigation options and views the Draft Master Plan as an opportunity to discuss the future vision for the Pines Flora and Fauna Reserve.

The EES includes a proposal to construct a predator-proof fence around the Pines Flora and Fauna Reserve. Neither DSE nor Parks Victoria are supportive of any proposed predator-proof fence around the Pines Flora and Fauna Reserve on the basis that it is not considered feasible or viable and that more cost-effective approaches to predator control should be pursued. The major issue with any boundary fence is the high-risk of on-going breaches, primarily due to vandalism. DSE and Parks Victoria's preference is to continue fox control and give more emphasis to habitat re-instatement/restoration – the latter being an area where the impacts of the bypass may be mitigated in the medium-term by a substantial revegetation program.

- **River Swamp Wallaby-grass (*Amphibromus fluitans*)**
There is a well-established population of River Swamp Wallaby-grass within the Pines Flora and Fauna Reserve amounting to approximately 0.76 hectares around the Tamarisk/wetland complex. The proposed Option 1 would result in the direct loss of 0.03 hectares. There is also the potential for the species to exist within the Plains Grassy Wetland and Aquatic Herbland complexes around the Mornington Peninsula/EastLink interchange. Design options that avoid impacts on this species should be explored. Mitigation measures, including sensitive hydrological engineering and translocation, should be considered.
- **Dwarf Galaxias (*Galaxiella pusilla*)**
Two distinct populations of the Dwarf Galaxias have been recorded along the proposed bypass alignment. One is a very small and previously unknown population at Boggy Creek/Tamarisk Creek within the Pines Flora and Fauna Reserve. The other is a very significant and large population at Tuerong Creek, in the vicinity of Tuerong Road and Old Mooroduc Road. The population at Tuerong Creek is possibly the most significant on the Mornington Peninsula. The proposed Option 1 alignment has already been redesigned (at a concept level) at Tuerong Creek to avoid any impact on the Dwarf Galaxias population. However, it is still important to undertake monitoring both during and post construction to ensure there are no adverse effects. The specific redesign will require considerable input from suitably qualified aquatic ecologists.

Given that Boggy/Tamarisk Creek would need to be modified/re-created with any proposed option that requires works in the Pines Flora and Fauna Reserve, the impact on the Dwarf Galaxias at this location must be considered and addressed. The modification of the creek system should aim to recreate a more natural drainage regime and enhance the habitat for this species.

Flora and Fauna Guarantee Act 1988 (FFG Act) listed species

- **Swamp Skink (*Egernia coventryi*)**
A small population of the Swamp Skink occurs around the Tamarisk Creek complex in the Pines Flora and Fauna Reserve. This species prefers Swamp Scrub vegetation. Any modification to the creek system and habitat fragmentation, as proposed by Option 1, must address potential impacts on this species. The redesign of the creek system should avoid Swamp Scrub where possible and aim to recreate any habitat lost.

As with the Dwarf Galaxias, any re-creation/restoration of Boggy/Tamarisk Creek must enhance habitat for this species.

- **Hooded Robin (*Melanodryas cucullata*)**
The Hooded Robin has been recorded in the Pines Flora and Fauna Reserve. The loss of native vegetation may fragment this population. Mitigation options that reduce the impact on native vegetation and restore vital habitat within the Pines Flora and Fauna Reserve must be explored.

FFG-listed floristic community

- **Herb-rich Plains Grassy Wetland**
This floristic community occurs at the interchange of the Mornington Peninsula Freeway and EastLink at Carrum Downs. The proposed Option 1 would result in the direct loss of just over 60% of this community. Indirect losses to patches adjacent to the proposed bypass could also occur due to changes in hydrology. This location is the second largest known site for Herb-rich Plains Grassy Wetland (Cranbourne Swamp is the largest). The proposed Frankston Bypass has the potential to significantly impact on the community if

measures are not implemented to avoid, minimise or mitigate the impacts. It is highly unlikely that an offset for this site given its scarcity, its Very High Conservation Significance and the Like-for-Like rules required under the Native Vegetation Framework. Options to avoid impacts on this species should be explored as a first priority, e.g. the construction of a bridge over the most significant areas. Mitigation measures, such as redesigning the batters, should be pursued as a second option.

Threatened species with the potential to occur within the proposed alignment

Although none were detected in survey work to date, there are a number of species both National and State listed that have the potential to occur within the proposed Bypass alignment. Potential impacts to these species are detailed in Table 3 below.

Table 3: Potential impacts and mitigation measure for species that may occur within the proposed Bypass alignment.

Species	Listing status	Potential impacts	Suggested mitigation measures
Growling Grass Frog (<i>Litoria raniformis</i>)	EPBC/FFG	Loss of habitat	Avoid impacts to wetlands. Ensure habitat connectivity.
Swift Parrot (<i>Lathamus discolor</i>)	EPBC/FFG	Loss of old trees	Avoid large to very large old trees.
Maroon Leek Orchid (<i>Prasophyllum frenchii</i>)	EPBC/FFG	Loss of habitat	Investigate options to avoid impact on areas of suitable habitat. Consider translocation and maintenance options.
Clover Glycine (<i>Glycine latrobeana</i>)	EPBC / FFG	Loss of habitat	Investigate options to avoid impact on areas of suitable habitat. Consider translocation and maintenance options.
Swamp Fireweed (<i>Senecio psilocarpus</i>)	EPBC	Loss of habitat	Investigate options to avoid impact on areas of suitable habitat. Consider translocation and maintenance options.
Purple Blown-grass (<i>Lachnagrostis punicea</i> subsp. <i>filifolia</i>)	FFG	Loss of habitat	Investigate options to avoid impact on areas of suitable habitat. Consider translocation and maintenance options.
Purple Diuris (<i>Diuris punctata</i> var. <i>punctata</i>)	FFG	Loss of habitat	Investigate options to avoid impact on areas of suitable habitat. Consider translocation and maintenance options.
Southern Toadlet (<i>Pseudophyrne semimarmorata</i>)	Victorian Rare or Threatened (VROT)	Previously recorded in the Pines Flora and Fauna Reserve. Loss of suitable woodland and heathland vegetation.	Review options to avoid. Maintain habitat connectivity at Devilbend / Tuerong Creek.

Wetland and migratory bird species

There is the potential to impact on a number of both **national and state-listed migratory waterbirds** and the potential impact on the Edithvale – Seaford and Westernport Ramsar Wetlands. The bypass must avoid disturbance to waterways and wetlands that support or feed into these Ramsar Wetlands. Stormwater runoff management and construction design should ensure that there are no impacts on the Ramsar Wetlands or associated migratory species.

Iconic species

Although not a listed species, the Koala is known to occur within the local area of the proposed Option 1. Ensuring that habitat that supports Koala populations is protected and creating improved wildlife habitat corridors is important.

Wildlife population management issues

The Eastern Grey Kangaroo is known to occur within native vegetation throughout the Mornington Peninsula and along the proposed alignment of the Frankston Bypass. The bypass may increase road kill and further contribute to habitat/population fragmentation effects. The Eastern Grey Kangaroo is a high profile public species and any impacts are likely to generate animal welfare concerns and have the potential to pose risks to human safety through vehicle collisions. The provision of habitat connectivity structures for large macropods should be incorporated into the design where appropriate. Kangaroo-proof fencing should be constructed in areas of known populations.

Habitat fragmentation

The proposed Option 1 Frankston Bypass will lead to habitat fragmentation within the Pines Flora and Fauna Reserve and at other localities along the alignment. Habitat fragmentation results in the reduced area of suitable habitat for faunal species that generally leads to a decline in population numbers. The bypass itself would create a barrier to less-mobile fauna species. Fauna crossings or underpasses have been proposed as a way of ameliorating the effect of the road as a barrier to movement. Underpasses should maximise the potential for all species to utilise them and enhance the underpasses proposed for hydrology connectivity, to provide for fauna and improved habitat outcomes.

The proposed bypass could also lead to an increased risk of mortality for certain species from habitat clearance during construction and by direct roadkills during its operation. Measures to minimise these impacts should be included in the EMP.

Changes to hydrological regimes

There is the potential for the proposed Option 1 Frankston Bypass to change hydrological regimes or alter water quality in a number of localities that may then impact on biodiversity values. Particular locations of concern are the: Mornington Peninsula Freeway/EastLink interchange (Herb-rich Plains Grassy Wetland); Tamarisk/Boggy Creek within the Pines Flora and Fauna Reserve (Dwarf Galaxias, Swamp Skink and River Swamp Wallaby-grass and potentially Growling Grass Frogs); Willow Road Reserve (small natural wetland); Tuerong Creek (Dwarf Galaxias); and, the Devilbend Reservoir/Creek.

The reconstruction requirements of Tamarisk Creek/Boggy Creek are the most significant hydrological impacts of the proposed Option 1. There are overland flow, water quality and floodplain connectivity impacts that in turn affect the habitat quality and connectivity for nationally and state-listed species utilising this wetland complex. The EES does not detail how the construction will address these issues. These will need to be clearly addressed in the separate EMP / restoration plan for Tamarisk Creek.

There are also important wetlands at Willow Road Reserve. The proposed Frankston Bypass should ensure that there are no ecological impacts on these wetlands through sensitive hydrological engineering. DSE understands that SEITA is considering bridging versus a cut approach with the objective of maintaining wetland ecology. DSE will provide advice on future design options when available.

Associated Impacts during construction and/or operation

Spread of weed and disease

Failure to ensure compliance with weed, disease and pathogen hygiene protocols could lead to a significant increase in these highly undesirable organisms in systems which are already under considerable stress. A weed management strategy must be developed as part of the EMP to reduce the spread or introduction of weed species. The spread of diseases and pathogens, in particular Cinnamon Fungus and Amphibian Chytrid Fungus, could be catastrophic to the remaining biodiversity values along the proposed Bypass alignment. Cinnamon Fungus is known to be present within the Pines Flora and Fauna Reserve and the EMP should address the specific measures required to manage and prevent further spread, including soil testing, protocols for spoil stockpiling, personnel disinfectant, vehicle and machinery washdown procedures.

The National Threat Abatement Plan for Amphibian Chytrid Fungus should be complied with during construction activities and any wildlife salvage operations.

Noise, light emissions, sedimentation / pollutants and dust

These are all issues that could potentially impact on fauna and their associated habitat, native vegetation and waterway quality. All matters would need to be adequately addressed within the EMP.

Public land

Impacts on public land - Existing 220 ha Pines Flora and Fauna Reserve

The primary management objective for the Pines Flora and Fauna Reserve is to conserve and protect species, communities and habitats of indigenous plants, animals and other organisms (Conservation Reserves Management Strategy, Parks Victoria 2003).

In addition, Parks Victoria has an interest in the provision of opportunities for appropriate enjoyment and recreation and education by the public where this does not conflict with the primary management objective. Parks Victoria also has an interest in the protection of Aboriginal sites and places in the Pines Flora and Fauna Reserve.

Measures to replace or restore vegetation within the Pines Flora and Fauna Reserve, and hence reduce fragmentation and enhance habitat for fauna, are strongly supported. The restoration of habitat for the Southern Brown Bandicoot, including the revegetation of the former orchard area, is considered to be particularly important for this species and provide benefits for other fauna in the reserve.

Open space considerations

The proposed development of a major shared pathway along the alignment of the proposed bypass provides an opportunity to deliver a longer-term action within *Linking People and Spaces – a strategy for Melbourne’s open space network* (Parks Victoria 2002). This would provide for the creation of a continuous open space link by developing a trail to connect parks and reserves in the locality, including the Pines Flora and Fauna Reserve, Langwarrin Flora and Fauna Reserve and the Edithvale-Seaford Wetlands. In addition, provision of a connecting loop trail from the proposed major shared trail into the Pines Flora and Fauna Reserve via the existing City of Frankston shared path network provides opportunities for enhancement of visitor experiences and appreciation of the important values of the Pines Flora and Fauna Reserve, with minimal impact on values.

Moving the proposed bypass alignment from the road reserve will maintain the current level of accessibility into the Pines Flora and Fauna Reserve for residents in the area to the west of the reserve.

The provision of noise walls along the alignment through the Pines Flora and Fauna Reserve is expected to minimise impacts of high-volume traffic noise on visitor enjoyment and appreciation of the reserve's values and is supported. However, it is important to note that the sounds walls may result in higher impacts on landscape values (see below).

The EES identifies that SEITA will investigate opportunities to increase the size of the existing Pines Flora and Fauna Reserve as a measure to mitigate impacts on the Southern Brown Bandicoot, as previously discussed. The addition of parts of the DPI land to the north provides for enhanced open space trail connectivity through use of existing management tracks and links the Pines Flora and Fauna Reserve with the major shared path network.

Landscape considerations/impact assessment

The EES identifies landscape impacts, including the loss of visual amenity for users of the Pines Flora and Fauna Reserve and reduction in the landscape values of the Pines Flora and Fauna Reserve.

It is important to note that mitigation measures to provide for habitat and open space connectivity (i.e. raising the roadway to a height of some 12 metres including sound walls and providing for underpasses) is likely to increase the visual impact of the bypass.

Consideration should be given to the preparation of a detailed revegetation or landscape plan for adjacent areas (including the DARA land) that meets the objective of establishing effective screening while providing for vegetation restoration objectives recommended by SEITA's consultant, Biosis Research. The proposed linear band of planting may need to be substantially broadened to provide effective screening of the bypass due to the relatively flat topography and limited height of locally indigenous plants. Selected mounding in disturbed areas may be required to achieve screening objectives and may contribute to fauna habitat and feeding areas.

Indigenous cultural heritage

The proposed Option 1 alignment will have some impact on Aboriginal cultural heritage within the existing Pines Flora and Fauna Reserve with direct impact on a site with one recorded artefact and partial loss of a site with two artefacts. The alignment, however, largely avoids an area of Aboriginal Archaeological Sensitivity. Moving the alignment from the reserved road corridor provides for the protection of recorded Aboriginal sites and avoidance of extensive areas of Aboriginal Archaeological Sensitivity located within the reserved road corridor. The potential addition of the section of the reserved road corridor that is not proposed to be used for the bypass to the Pines Flora and Fauna Reserve provides opportunities for enhanced protection of Aboriginal cultural heritage values.

Fire and emergency access issues

Parks Victoria supports the provision of access for management and emergency (fire access) under the proposed Frankston Bypass in context with fire management/suppression. Smoke over the bypass connected with prescribed burning or wildfire is an issue regardless of the alignment through the Pines Flora and Fauna Reserve. Consideration will need to be given to limiting this impact by undertaking prescribed burns in suitable weather conditions.

Environmental management and mitigation

Environmental Management Plan (EMP)

The detailed EMP would be finalised when the road building contractor is appointed and will be required as part of the planning process for construction. This EMP should require:

- the proponent to prepare an EMP to the satisfaction of the Secretary, DSE;
- the EMP to incorporate measures to address the various potential environmental effects of the project, including those subject to separate statutory approval; and
- independent monitoring and auditing of the environmental effects of the proposed bypass construction and rehabilitation, which will include regular reports to DSE.

Combined, these processes, plus appropriate conditional approvals, are considered an appropriate assessment and management pathway.

Consideration of other design and alignment options

Design option

The significant biodiversity issues with Option 1 primarily relate to the Pines Flora and Fauna Reserve. One way of eliminating the majority of these impacts would be to construct a tunnel under the Pines Flora and Fauna Reserve.

Alignment option

In their report to the EES, SEITA's ecological consultant, Biosis Research, has undertaken a preliminary assessment that refined the proposed Frankston Bypass alignment within the Pines Flora and Fauna Reserve and directed it through the top section of the Centenary Park Public Golf Course (see report *Centenary Park Public Golf Course Feasibility Study: in relation to proposed Frankston Bypass*, October 2008, Thomson Perrett; Option C). This approach would considerably reduce the impact on Very High Conservation Significance native vegetation within the Pines Flora and Fauna Reserve in an area known as 'the triangle' and would reduce fragmentation and connectivity impacts.

Alignment through the Centenary Golf Course would be a superior proposal for the Southern Brown Bandicoot, given that it does not impact on the high quality vegetation in the Pines Flora and Fauna Reserve.

This option would require a complete re-design of the Golf Course and some native vegetation on the former Department of Agriculture and Rural Affairs (DARA) Block of the Pines Flora and Fauna Reserve would be impacted. However, this vegetation is of lesser quality than that to be impacted by proposed Option 1. There is potential to further reduce the impact of the new golf fairway construction through innovative design and, although some public inconvenience would be experienced for a time, it would then provide a superior public golf course.

Conclusions and recommendations with respect to Option 1 and alternative alignment option

The proposed Option 1 Frankston Bypass will have less of an impact on biodiversity values than Options 2 or 3, as exhibited.

Should the Panel recommend that the project proceed as the proposed Option 1 Frankston Bypass, the Department makes the following recommendations:

- An EMP should be prepared to the satisfaction of DSE, incorporating all recommendations made within the *Flora and Fauna Assessment of the proposed Frankston Bypass, Carrum to Mount Martha, Victoria: Existing Conditions and Impact Assessment Report*, September 2008, Biosis Research Pty Ltd and those referred to in this submission. This would include a separate EMP to address the hydrological impacts of the proposed project and should be prepared to the satisfaction of DSE and Melbourne Water;
- Any Site Environmental Management Plan / Workplans / Concept Plans or their equivalents should be prepared to the satisfaction of DSE;
- A Native Vegetation Offset Plan consistent with the Native Vegetation Management Framework must be prepared to the satisfaction of DSE;
- A Weed and Biosecurity Management Strategy, including disease and pathogen hygiene protocols, should be prepared to the satisfaction of DSE in consultation with the Department of Primary Industries.

Consents/approvals required

In regard to other approval processes in addition to the EES, the proponent will also be required to obtain authorisations under the *Flora and Fauna Guarantee Act 1988* (to take protected flora from public land), *Wildlife Act 1975* (research, capture and relocation of fauna found along the corridor during and after construction), *Crown Land (Reserves) Act 1978* (works in the Pines Flora and Fauna Reserve) and referrals pertaining to the Commonwealth *Native Title Act 1993*.

Clearing areas of Very High Conservation Significance (VHCS) vegetation may not occur without the prior approval from the Minister for Environment and Climate Change. Offsets for the loss of VHCS vegetation must be secured and initiated prior to any clearing occurring.