Title of Proposal - Lower Latrobe River Wetlands: Water Regulation Infrastructure Project, Victoria

Section 1 - Summary of your proposed action

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

1.1 Project Industry Type

Natural Resources Management

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

Background

The West Gippsland Catchment Management Authority (WGCMA) works includes the construction and replacement of existing water regulating structures to improve water management into the lower Latrobe wetland sites of Heart Morass and Dowd Morass, which forms part of the Gippsland Lakes wetland system in southern Victoria (Attachment 1).

The Gippsland Lakes has been included under the international convention for significant wetland sites, as it meets six of the nine Ramsar listing criteria, including:
• Criterion 1: The Gippsland Lakes is a particularly good representative example of a natural or near-natural wetland, characteristic of the biogeographical region. It forms one of the largest coastal lagoon systems in the Drainage Division and contains a distinctive landscape of wetlands and flat coastal plains. The site supports a broad range of wetland types in close proximity to each other, including periodically inundated palustrine marshes, permanently inundated palustrine marshes, shallow lacustrine (lake) features, deep lacustrine features, lagoons with narrow inlets and broad embayments.;
• Criterion 2: The site supports several nationally threatened wetland fauna species at various stages of their life-cycle including two nationally threatened frog species (Green and Golden Bell Frog Litoria aurea and Growling Grass Frog Litoria raniformis), the vulnerable Australian Painted-snipe Rostratula australis, a vulnerable fish species (the Australian Grayling Prototroctes maraena) and three nationally vulnerable and endangered wetland-associated flora species (Dwarf Kerrawang Rulingia prostrata, Swamp Everlasting Xerochrysum palustre and Metallic Sun-orchid Thelymitra epipactoides);
• Criterion 4: The site supports habitat and conditions that are important for critical life cycle stages of a variety of wetland-dependent fauna species. The permanence of the main lakes and the relatively regular flooding of the adjacent wetlands mean that this wetland is an important drought refuge for many water birds and other aquatic species, including as permanent refuge and breeding sites for two threatened frog species;
• Criterion 5: The Gippsland Lakes Ramsar site has been identified as being of outstanding importance for waterbirds, regularly supporting more than 20,000 waterfowl;
• Criterion 6: Waterbird species which are considered to have met the one per cent population threshold are: Red-necked Stint (Calidris ruficollis), Black Swan (Cygnus atratus), Sharp-tailed

Sandpiper (Calidris acuminate), Chestnut Teal (Anas castanea), Musk Duck (Biziura lobata), Fairy Tern (Sterna nereis) and Little Tern (Sterna albifrons); and
• Criterion 8: Gippsland Lakes provides important habitats, feeding areas, dispersal and migratory pathways, and spawning sites for numerous fish species of direct and indirect fisheries significance. These fish have important fisheries resource values both within and external to the site.

Proposed Action
The work includes the construction and replacement of existing water regulating structures to improve water management into the lower Latrobe wetland sites of Heart Morass and Dowd Morass, which forms part of the Gippsland Lakes wetland system. These wetland systems are also considered to be a ‘Wetland of International Importance’ and Dowd Morass is listed on the Register of the National Estate. Dowd Morass and Heart Morass provide important habitat for threatened flora and fauna, contain sites of Aboriginal cultural heritage, and offers valuable amenity and recreation opportunities for the local community. The Project will contribute to maintaining the natural and cultural values of the wetlands through maintaining and improving water flows.

Detailed plans for the construction design of each work site is provided in Attachments 2 and 3.

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
This area encompasses four smaller sites (refer to attachment below)	1	-38.145631820514	147.10565087636
This area encompasses four smaller sites (refer to attachment below)	2	-38.147859318652	147.11114404042
This area encompasses four smaller sites (refer to attachment below)	3	-38.142054181166	147.134404157
This area encompasses four smaller sites (refer to attachment below)	4	-38.142189189609	147.14444634755
This area encompasses four smaller sites (refer to	5	-38.13746374544	147.15543267567

Area	Point	Latitude	Longitude
attachment below)			
This area encompasses four smaller sites (refer to attachment below)	6	-38.141041609875	147.16392991383
This area encompasses four smaller sites (refer to attachment below)	7	-38.14286422808	147.16616151173
This area encompasses four smaller sites (refer to attachment below)	8	-38.14198667685	147.17852113087
This area encompasses four smaller sites (refer to attachment below)	9	-38.13746374544	147.18513009389
This area encompasses four smaller sites (refer to attachment below)	10	-38.137058693129	147.19414231618
This area encompasses four smaller sites (refer to attachment below)	11	-38.129902398255	147.19946381886
This area encompasses four smaller sites (refer to attachment below)	12	-38.129767367079	147.20392701466
This area encompasses four smaller sites (refer to attachment below)	13	-38.132737995252	147.20478532155
This area encompasses four smaller sites (refer to attachment below)	14	-38.134560820863	147.19886300404
This area encompasses four smaller sites (refer to attachment below)	15	-38.138611381445	147.19637391408
This area encompasses four smaller sites (refer to attachment below)	16	-38.139758999401	147.18658921559
This area	17	-38.143944276643	147.18040940602

Area	Point	Latitude	Longitude
encompasses four smaller sites (refer to attachment below)			
This area encompasses four smaller sites (refer to attachment below)	18	-38.146104325803	147.16547486623
This area encompasses four smaller sites (refer to attachment below)	19	-38.14428178854	147.1611833318
This area encompasses four smaller sites (refer to attachment below)	20	-38.141041609875	147.156720136
This area encompasses four smaller sites (refer to attachment below)	21	-38.140164036723	147.15328690846
This area encompasses four smaller sites (refer to attachment below)	22	-38.144011779148	147.14762208302
This area encompasses four smaller sites (refer to attachment below)	23	-38.14488930602	147.14075562794
This area encompasses four smaller sites (refer to attachment below)	24	-38.14488930602	147.13208672841
This area encompasses four smaller sites (refer to attachment below)	25	-38.149209284421	147.11861131032
This area encompasses four smaller sites (refer to attachment below)	26	-38.15184164581	147.11346146901
This area encompasses four smaller sites (refer to attachment below)	27	-38.152044131213	147.10882661183
This area encompasses four smaller sites (refer to attachment below)	28	-38.149884257936	147.10590836842
This area encompasses four smaller sites (refer to			

Area	Point	Latitude	Longitude
attachment below)			
This area encompasses four smaller sites (refer to attachment below)	29	-38.147319325349	147.10350510915
This area encompasses four smaller sites (refer to attachment below)	30	-38.145429317311	147.10573670705
This area encompasses four smaller sites (refer to attachment below)	31	-38.145564319509	147.10573670705
This area encompasses four smaller sites (refer to attachment below)	32	-38.145631820514	147.10565087636

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 study area is located at the lower Latrobe wetland sites of Heart Morass and Dowd Morass, which forms part of the Gippsland Lakes wetland system. The study area includes four sites approximately 5-10 kilometres south-west of Sale, Victoria. The four sites include the banks of the Latrobe River and adjoining Heart Morass and Dowd Morass wetlands (Attachment 1).

According to the Department of Environment, Land, Water and Planning (DELWP) Native Vegetation Information Management (NVIM) system, the study area occurs within the Gippsland Plain bioregion. It is located within the jurisdiction of the West Gippsland Catchment Management Authority (WGCMA) and the Shire of Wellington municipality (Attachment 1).

1.6 What is the size of the development footprint or work area?

1.154

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Public Land

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.

Wellington Shire Council

1.10.1.2 E-mail

1.10.1.3 Telephone Number

1300 366 244

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

Start date 10/2017

End date 12/2022

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

Please refer to the full Biodiversity Report for a detailed review of relevant planning framework and State and/or Local government requirements (Attachment 1).

Flora and Fauna Guarantee Act 1988

The Flora and Fauna Guarantee Act 1998 (FFG Act) is the primary legislation dealing with biodiversity conservation and sustainable use of native flora and fauna in Victoria. Proponents are required to apply for an FFG Act Permit to 'take' listed and/or protected flora species, listed vegetation communities and listed fish species in areas of public land (i.e. within road reserves, drainage lines and public reserves).

Two species protected under the FFG Act were recorded within the study area. A permit under the FFG Act will be required through DELWP for the removal of species protected under the FFG Act (Common Cotula Cotula australis and Rough Fireweed Senecio hispidulus) as the study area is located on public land (Attachment 1).

Planning and Environment Act 1987. In Victoria the control, use and development of land, including native vegetation removal, is managed under the Planning and Environment Act 1987 and municipal planning schemes. Under the Victorian system each planning scheme contains State and local policy provisions as well as provisions that control the use and development of land.

The study area is located within the Shire of Wellington municipality and is zoned Public Conservation and Resource Zone (PCRZ). The following overlays also apply:

Design and Development Overlay – Schedule 6 (DDO6) and Land Subject to Inundation Overlay (LSIO-FO).

While there are no specific environmental or biodiversity-related implications contained in the application requirements or decision guidelines of these zones and overlays, the Schedule to the LSIO-FO suggests that works that will affect the height, length or location of a levee, embankment or road may require a permit. Works on Waterway permit for works on a waterway or floodplain are administered by the local Catchment Management Authority. As the statutory authority, the West Gippsland Catchment Management Authority is exempt from requiring a Works on Waterways permit for its activities.

A Planning Permit from Wellington Shire Council will be required to remove, destroy or lop any native vegetation. In this instance, the application will be referred to DELWP as greater than 0.5 hectares of vegetation are proposed for removal under the 'Permitted clearing of native vegetation - Biodiversity assessment guidelines' (the Guidelines).

Biodiversity Assessment Guidelines

The State Planning Policy Framework and the decision guidelines at Clause 52.17 (Native Vegetation) and Clause 12.01 require Planning and Responsible Authorities to have regard to the Guidelines. The study area is within Location A, with a total of 1.053 hectares of native vegetation proposed to be removed across the four sites. As such, the permit application falls under the Moderate Risk-based pathway. No Specific offset obligations are generated by the proposal.

The offset requirement for permitted native vegetation removal is:

Heart Morass Inlet (HW1): 0.153 General Biodiversity Equivalence Units (BEU);

Dowd Morass Inlet (D1): 0.112 General BEU;

Dowd Morass Outlet and Big Drain (D2): 0.052 General BEU; and

Dowd Morass Outlet and Little Drain (D3): 0.001 General BEU

Catchment and Land Protection Act 1994

The Catchment and Land Protection Act 1994 (CaLP Act) contains provisions relating to catchment planning, land management, noxious weeds and pest animals. Landowners are responsible for the control of any infestation of noxious weeds and pest fauna species to minimise their spread and impact on ecological values.

Several weeds and pest animals listed as noxious under the CaLP Act were recorded during the assessment (Attachment 1). The noxious and highly invasive Parrots Feather Myriophyllum aquaticum has also been recorded during previous assessment within the region. Similarly, there is evidence that the study area is currently occupied by several pest fauna species listed under the CaLP Act. Landowners are responsible for the control of any infestation of noxious weeds and pest fauna species.

Wildlife Act 1975

The Wildlife Act 1975 (and associated Wildlife Regulations 2013) is the primary legislation in Victoria providing for protection and management of wildlife. Authorisation for habitat removal may be obtained under the Wildlife Act 1975 through a licence granted under the Forests Act 1958, or under any other Act such as the Planning and Environment Act 1987. Any persons engaged to remove, salvage, hold or relocate native or significant fauna (including Green and Golden Bell Frog and Growing Grass Frog) during construction must hold a current Management Authorisation under the Wildlife Act 1975, issued by DELWP.

Water Act 1989 (Victoria)

The purposes of the Water Act 1989 are manifold but (in part) relate to the orderly, equitable, efficient and sustainable use of water resources within Victoria. This includes the provision of a formal means of protecting and enhancing environmental qualities of waterways and their in-stream uses as well as catchment conditions that may affect water quality and the ecological environments within them.

Any proposed works carried out as part of this project will be conducted on behalf of a public land manager or Parks Victoria under the relevant provisions of the Water Act 1989, and are therefore exempt from the need for a 'works on waterways' permit.

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

Local land owners, land managers, and Gunaikurnai Land and Waters Aboriginal Corporation traditional owners have been involved and/or consulted in the development of the proposed works.

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.

The proposed development is not subject to a Commonwealth or State environmental impact assessments.

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?

Yes

1.16.1 Identify the nature/scope and location of the related action (Including under the relevant legislation).

The Victorian Environmental Water Holder (VEWH) holds an entitlement (Latrobe River Environmental Water Entitlement 2010) to divert water into Dowd Morass and Heart Morass for environmental purposes. The Seasonal Watering Plan issued by the VEWH each year provides

priority environmental watering actions to be undertake in that year. Priority watering actions are provided within this document for Dowd Morass and Heart Morass (Latrobe River Environmental Water Entitlement 2010). The proposed development will allow for significant improvements to the management of the environmental water entitlement by providing fit-for-purpose water regulating control structures.

The proposed development is a priority action under the West Gippsland Waterway Strategy 2014-2022 (see Section 11 of report), and supports the objectives of the West Gippsland Regional Catchment Strategy 2013-2019 (see Table 10 of report), pertaining to the management of environmental water and improvement of environmental condition of the Gippsland Lakes Ramsar site. This will be achieved by providing significant improvement to environmental water management and salt regimes through the construction of fit-for-purpose water regulating control structures.

The proposed development supports two Management Strategies under Gippsland Lakes Ramsar Site Management Plan: Summary Report (see Section 4.7, pg. 32);

"*4A. Undertake regular planning, delivery, monitoring and evaluation of the use of environmental water entitlements in the lower Latrobe wetlands (Sale Common, Heart Morass, Dowd Morass) and the Latrobe River estuary;*

4B. Investigate, and where feasible and cost effective, implement actions that enable and facilitate effective management of the water and salt regimes of priority fringing wetlands, including Sale Common, Heart Morass, Dowd Morass, Lake Reeve and Macleod Morass. For example: technical studies, management plans and/or agreements, water entitlements, on-ground works, operational management and monitoring."

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 impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to impact on the members of any listed threatened species (except a conservation dependent species) or any threatened ecological community, or their habitat?

No

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

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 likely to impact on any part of the environment in the Commonwealth land?

No

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

No

2.9 Will there be any 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 impact on any part of the environment in the Commonwealth marine area?

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.

Listed Threatened Species

National Significant Flora

The VBA contains records of five nationally significant flora species previously recorded within 10 kilometres of the project locality (Attachment 1). The Protected Matters Search Tool (PMST) nominated an additional two nationally significant species which have not been previously recorded but have the potential to occur in the locality (Attachment 1).

Previous records for nationally significant flora within 10 kilometres of the study area include River Swamp Wallaby-grass *Amphibromus fluitans*, Thick-lip Spider Orchid *Caladenia tessellata*, Trailing Hop-bush *Dodonaea procumbens*, Clover Glycine *Glycine latrobeana*, Metallic Sun-orchid *Thelymitra epipactoides* and Swamp Everlasting *Xerochrysum palustre* (Attachment 1).

No nationally significant flora species were recorded within the four proposed sites during the field assessment. Based on the site condition (level of disturbance and saline intrusion), historical mapping of significant species records and modelling of vegetation types within the study area, the landscape context of the site and the proximity of previous records to the study area, no nationally significant flora species (including Thick-lip Spider Orchid, Trailing Hop-bush, Clover Glycine, Metallic Sun-orchid and Swamp Everlasting) are considered likely to occur within the study area (Attachment 1).

One record for River Swamp Wallaby-grass is present approximately one kilometre from the study area (Figure 3), however, given the degraded nature of habitat within the proposed construction footprint, and small area of disturbance within potential habitat (riparian zone of the Latrobe River), there is considered to be a low likelihood of the species occurring within the study area (Attachment 1).

It should be noted that within the broader Lower Latrobe River wetland system, suitable habitat exists for several nationally significant flora, and while it is considered unlikely that these species occur within the study area, it is likely that they do occur within the broader locality.

State Significant Flora

The VBA contains records of 18 State significant flora species previously recorded within 10 kilometres of the study area (Attachment 1). No State significant flora species were recorded within the study area during the field assessment, although there is a moderate likelihood of the following species occurring: Eastern Water-ribbons *Cycnogeton microtuberosum*, Wavy Swamp Wallaby-grass *Amphibromus sinuatus*, Lacey River Buttercup *Ranunculus amplus*, Large River Buttercup *Ranunculus papulentus* and Veined Fringe Sedge *Carex crinita*. Suitable habitat is present for these species, and they have previously been recorded within one kilometre of the study area (Attachment 1). Based on historical mapping of State significant species records, vegetation condition, the landscape context of the site and proximity of previous records to the study area, all remaining state significant flora species are considered unlikely to occur within the study area (Attachment 1).

It should be noted that while targeted surveys for State significant flora would assist to determine their presence within the study area, based on existing legislative approvals and requirements under the *Planning and Environment Act 1987* and the Guidelines, further surveys for these species is not currently required (Attachment 1).

In addition, Common Cotula and Rough Fireweed listed as protected under the *Flora and Fauna Guarantee Act 1988* were recorded within the study area although these species are not listed as threatened under the act or the advisory list of rare or threatened plants in Victoria (DEPI 2014).

National Significant Fauna

The VBA contains records of 10 nationally significant fauna species previously recorded within 10 kilometres of the study area (Attachment 1). The PMST nominated an additional 29 nationally significant species which have not been previously recorded but have the potential to occur in the locality.

Species include: Grey-headed Flying-fox *Pteropus poliocephalus*, Fairy Tern *Sternula nereis nereis*, Regent Honeyeater *Anthochaera phrygia*, Australasian Bittern *Botaurus poiciloptilus*,

Australian Painted Snipe *Rostratula australis*, Green and Golden Bell Frog *Litoria aurea*, Growling Grass Frog *Litoria raniformis* and Dwarf Galaxias *Galaxias pusilla* (Attachment 1).

While the majority of these records are documented outside of the study area, records for several species such as Australasian Bittern, Fairy Tern and Green and Golden Bell Frog extend within the bounds of Dowd Morass and Heart Morass and these species have the potential to reside within the greater study area on a permanent or regular basis.

Green and Golden Bell Frog

Approximately six Green and Golden Bell Frog individuals were heard calling during previous assessments at the interface of Long Waterhole and the western boundary of Dowd Morass (Attachment 1). Targeted Growling Grass Frog and Green and Golden Bell Frog surveys were also undertaken throughout numerous locations within Dowd and Heart Morass by Wildlife Unlimited Pty Ltd [Bairnsdale] concurrent with the previous assessments (Attachment 1). Targeted survey results recorded Green and Golden Bell Frog throughout the western section of the Dowd Morass, in proximity to the Dowd Morass Inlet (D1) site and adjacent to the south-eastern section of the Heart Morass (Attachment 1). The records suggest that the species has successfully occupied this section of the wetland system for many years.

Although the local population appears to prefer the western section of Dowd Morass (where conditions are assumed to be less saline), it is possible that the species is located throughout other areas of the study area, as it is recognised that adult Green and Golden Bell Frogs and tadpoles can tolerate moderate salinities (Attachment 1). However, increased salinisation as a result of land clearing, local run-off and long-term salt accumulation within stand-alone waterbodies is also recognised as a limiting factor and therefore may impede the ability for the species to seek refuge and/or breed within more saline sections of the study area (Attachment 1). Green and Golden Bell Frog is therefore considered to have a moderate to high likelihood of occurrence within other sections of the study area; however, this would be limited by the level of salinity (i.e. >5.5% sea water). The species is also unlikely to reside within the Latrobe River on a permanent basis or for breeding purposes given a lack of preferred habitat characteristics.

Growling Grass Frog

Growling Grass Frog have not been detected since 2007 in proximity to the study area, with the last record being noted in the north-east section of Heart Morass (Attachment 1). A small number of scattered and isolated records are also present in the greater surrounds (e.g. west of Clydebank Morass and also the Thomson River), although most date to the 1970's and 80's. Given previous documented records within the study area and the biological similarities to Green and Golden Bell Frog, the species is considered to have a moderate likelihood of residing within suitable habitat within the study area.

Australasian Bittern

Sixteen Australasian Bittern records are scattered within and surrounding the study area although the majority of these records are relatively old with the most recent dated 1992 (Attachment 1). Given the cryptic and shy nature of this species, Australasian Bittern may still reside in large stands of Common Reed Phragmites australis throughout the Lower Latrobe River Wetlands, or potentially along the banks of the Latrobe River supporting similar sections of dense vegetation. While suitable habitat is present within the overall Lower Latrobe River Wetlands, Australasian Bittern is considered unlikely to reside within or near any of the proposed construction sites as no suitable habitat is present (Attachment 1).

Australian Pained Snipe

Australian Painted Snipe may occur within dense areas of vegetation adjacent to the Latrobe River, especially midway along the northern boundary of Dowd Morass. Additional scattered and isolated records of the species are present around Sale Common and several kilometres north of the Sale township. Australian Painted Snipe is therefore considered to have a low to moderate likelihood of occurrence within the study area Attachment 1).

Dwarf Galaxias

Five records (the most recent dated 2009) exist for Dwarf Galaxias within a 10 kilometre radius of the study area. However, none of the records occur within the study area and are instead restricted to freshwater conditions in Sale Common and drainage lines south of Dowd Morass associated with Boundary Creek. Dwarf Galaxias is therefore considered unlikely to occur within the study area (Attachment 1).

<u>Common Flora and Fauna Species</u>

Flora

An over-storey and mid-storey layer comprises Gippsland Red-gum *Eucalyptus tere*ticornis subsp. *mediana*, Silver Wattle *Acacia dealbata*, Tree Violet *Melicytus dentatus* and Swamp Paperbark *Melaleuca ericifolia*.

While the understorey layer comprises Salt Club-sedge *Bolboschoenus caldwellii*, Slender Knotweed *Persicaria decipiens*, Shiny Swamp-mat *Selliera radicans*, Beaded Glass-wort

Sarcocornia quinqueflora, Berry Saltbush *Atriplex semibaccata*, Scrub Nettle *Urtica incisa*, Bidgee-widgee *Acaena novae-zelandiae*, Streaked Arrowgrass *Triglochin striata*, Angled Lobelia *Lobelia anceps*, Hollow Rush *Juncus amabilis*, Australian Salt-grass *Distichlis distichophylla*, Tall Sedge *Carex appressa*, Common Cotula *Cotula australis*, Water Pepper *Persicaria hydropiper*, Nodding Saltbush *Einadia nutans* subsp. *nutans*, Yellow Rush *Juncus flavidus* and Common Reed *Phragmites australis*.

Weed cover varied from low to high across the sites comprising a mixture of Water Couch *Paspalum distichum*, Fat Hen *Chenopodium album*, Sowbane *Chenopodium murale*, Kikuyu *Cenchrus clandestinum*, Couch *Cynodon dactylon*, Toowoomba Canary-grass *Phalaris aquatica*, Cocksfoot *Dactylis glomerata*, Paspalum *Paspalum dilatatum*, the noxious Spear Thistle *Circium vulgare* and Weed of National Significance (WoNs) Blackberry *Rubus fruticosus* spp. agg. and African Boxthorn *Lycium ferocissimum*.

Mapped Wetlands

Any areas covered by a DELWP ‘mapped wetland’ are considered a patch of native vegetation in accordance with the Guidelines (DEPI 2013), regardless of the site conditions. This relates to sites HW1, D1 and D2 (Attachment 1).

Fauna

There is suitable habitat within the study area for two nationally significant fauna species (Green and Golden Bell Frog and Growling Grass Frog) as outlined in Attachment 1.

Three State-significant fauna species (White-bellied Sea-Eagle *Haliaeetus leucogaster*, Hardhead *Aythya australis* and Musk Duck *Biziura lobata*) were recorded during previous field assessments (Attachment 1). State listed species which have also been recorded or are likely to use habitat within the broader project area, and include; Blue-billed Duck *Oxyura australis*, Magpie Goose *Anseranas semipalmata*, Black Falcon *Falco subniger*, Baillon's Crake *Porzana pusilla palustris*, Eastern Curlew *Numenius madagascariensis*, Freckled Duck *Stictonetta naevosa*, Caspian Tern *Hydroprogne caspia*, Australasian Shoveler *Anas rhynchotis*, Eastern Great Egret *Ardea modesta*, Intermediate Egret *Ardea intermedia*, Little Egret *Egretta garzetta nigripes* and Common Greenshank *Tringa nebularia*.

Common passerine bird species are common at these sites and may use vegetation along the river bank for nesting purposes, species include: Red Wattlebird *Anthochaera carunculata*, New Holland Honeyeater *Phylidonyris novaehollandia*, White-plumed Honeyeater *Lichenostomus penicillatus*, Spotted Pardalote *Pardalotus punctatus*, Azure Kingfisher *Alcedo azurea*, Grey

Fantail *Rhipidura albiscarpa* and Willie Wagtail *Rhipidura leucophrys*. One marine species was noted at Dowd Morass Outlet and Big Drain (D2) (Sacred Kingfisher *Todiramphus sanctus*).

These sites are likely to support a multi-faceted variety of ground dwelling reptiles, frogs and fish species (including the introduced European Carp *Cyprinus carpio*). While surrounding larger trees may support hollow dependent birds or refuge for arboreal mammals such as possums.

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

Heart Morass and Dowd Morass adjoin the lower Latrobe River and Lake Wellington (part of the Gippsland Lakes system of lakes). The wetlands are hydrologically connected to the river by overland flooding flows and occasionally by spills from Lake Wellington. River regulation and water extraction from the Latrobe and contributing river systems has reduced the frequency of small-medium floods which naturally inundated the wetlands.

Construction of levees, drains and filling in of natural depressions have also substantially altered water movement into and out of the wetlands. Typically, the wetlands receive inflows from minor floods 1-2 times every 2 years, and significant inflows from larger floods every 2-5 years. For over 20 years, Dowd Morass' water flows have also been actively managed using water regulating structures which connect these wetlands to the Latrobe River. The Heart Morass, which is mostly privately owned, also has a series of physical structures connecting it to the Latrobe River. These were historically used to drain water from the wetland back into the river for agricultural purposes. These structures are now being used to inundate the wetland as part of a rehabilitation program. A formal environmental water entitlement (Latrobe River Environmental Entitlement 2010) provides secure water regime management by diverting 'end of system' flows into the wetlands.

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

The region has a diversity of soil types that reflect differences in parent material, topography, climate, organic activity and age (e.g. degree of weathering). For management purposes, some of these soils have some chemical and physical limitations (i.e. acidity) which require careful management. Geotechnical and soil analyse test pits undertaken at the proposed sites, identified a low risk for acid sulphate soils.

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 in the project area.

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

Remnant native vegetation in the study area is representative of two Ecological Vegetation Classes (EVCs): Aquatic Herbland (EVC 653) and Floodplain Riparian Woodland (EVC 56). The presence of these EVCs is generally consistent with the modelled pre-1750s native vegetation mapping. Please refer to Attachment 1 for a more detailed summary of the native vegetation and EVCs relevant to each site.

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

Not applicable.

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

The wetlands provide habitat for a diverse range of water-dependent species, especially plants, waterbirds and frogs, including threatened species and communities. The ecological condition of the wetlands is influenced by the quality and quantity of flow in the Latrobe River, and the water level and salinity of Lake Wellington. Management of Heart Morass converted from agricultural to wetland habitat 10 years ago and has undergone significant natural and managed rehabilitation. Dowd Morass has operated as a state game reserve for around 40 years. Both wetlands host recreational activities such as bird watching, paddling, and hunting. The local area has a long history of agricultural practices including clearing, burning and historical browsing by the local traditional Aboriginal owners (Gunaikurnai).

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

There a no Commonwealth Heritage Places relevant to the study area.

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

There are no Indigenous heritage values relevant to the study area.

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

Public

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

Refer to Section 3.7 above

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.

Potential impacts, along with their associated management actions and controls are described in the Environment Management Plan within Section 6 of Attachment 1. The management responses set out are based on standard best-practice environmental protection measures. Where appropriate, and where agreed with the relevant authorities, the proponent may use alternative measures to meet the objectives of the Environmental Management Plan (EMP) (Attachment 1).

Environmental Site Induction

- All contractors will attend an environmental site induction. The induction will inform contractors of the environmental values present on and adjacent to the site, and the importance of protecting these areas.

- The induction will outline the purpose and general requirements of the EMP, with contractors provided with a copy of the document along with the planning permit.

- Other employees of the contractor, as well as new staff, will be inducted by the site manager.

Amphibian Relocation Procedure

The following procedures will be implemented in the case a Green and Golden Bell Frog or Growling Grass Frog is unearthed / discovered during pre-clearance surveys or construction activities.

Environmental Site Induction

The Environmental Site Induction will include the following information:

- Provide information on the appearance, habitat preferences, historical records and likely habitats at each site and relocation procedures for Green and Golden Bell Frog and Growling Grass Frog.

- Provision of a 'Species Fact Sheet' outlining information on the species and habitat attributes will be kept on site at all times (i.e. in the site shed).

- Key factors for checking signs of injury or ill health (i.e. Chytrid fungus).

- Recommendations to where works should attempt to minimise direct impact to areas of retained vegetation (including exotic vegetation used by Growling Grass Frog or Golden Bell Frog for refuge).

Chytrid Fungus

Appropriate hygiene protocols will be undertaken in accordance with Murray et al. 2011 to minimise the risk of introduction and spread of Amphibian Chytrid Fungus on the construction site from people / machinery and activities associated with the relocation of significant amphibians.

Pre-construction Phase

- A nocturnal pre-clearance survey each site prior to disturbance or augmentation works during the species active season (September-April) will be undertaken. Active searching will be undertaken within the 30 metre buffer areas surrounding each site.

- During the non-active period (April-August), Growling Grass Frog that may be present will be aestivating or less active (i.e. not foraging or vocalising calls), therefore pre-clearance nocturnal surveys prior to construction activities will not be undertaken.

Construction Phase

- A suitably qualified Zoologist will be present on site for the first phase of construction (i.e. vegetation removal and the removal of any topsoil) that takes place during the removal of existing vegetation within or surrounding each site up to a 30 metre radius, as required.

Capture and Relocation Methods

- Appropriate handling hygiene protocols will be undertaken in accordance with Murray et al.

2011 for the relocation of Growling Grass Frog and Green and Golden Bell Frog.

- Single–use lightweight plastic bags will be provided by the Zoologist and must be kept on site at all times in case of an emergency in which injured or salvaged individuals are located during construction. This will allow a relevant site supervisor or designated staff member from the construction team to keep the animal safe until the relevant ecological consultant is contacted and/or arrives on site (if required);

- If an individual is discovered during pre-construction or construction activities, the animal must be carefully captured using latex gloves (one pair per individual frog captured) and placed into the plastic bag provided.

- Once contained the site supervisor must inform the project Zoologist or selected environmental staff from WGCMA in order to check for any signs of injury or ill health (i.e. Chytrid fungus). Any injured individuals will be taken to the nearest veterinary clinic (Sale) for appropriate treatment or euthanasia, if required.

- Any Growling Grass Frog or Golden Bell Frog collected during salvage operations which are not visibly injured will be relocated to suitable habitat within ?100 metres of the construction zone into suitable habitats in proximity to the detection site.

- Ideally frogs will be moved the shortest distance possible outside of the proposed works area (i.e. preferably ?30 metres).

- The necessary Management Authorisation handling permits under the Wildlife Act 1975 from DELWP will be obtained by the relevant ecological consultant prior to the commencement of construction works.

Water Quality Monitoring

- Changes to water turbidity and pH levels may be experienced downstream (i.e. within the Latrobe River, and the wetland) during works. Where practical, these water quality levels will be monitored during works. Monitoring activities will be undertaken in compliance with the Victorian State Environment Protection Policy (SEPP) guidelines.

- Water quality will be monitored during works to ensure turbidity and pH levels remain within the relevant SEPP specifications.

- During the works, any breech of the water quality parameters will be reported to the Environment Protection Authority (EPA), and an agreed management action undertaken.

Fencing and No-Go Zones

- All areas of native vegetation located within 30 metres of the construction footprint are to be protected during construction works within a 'No-Go Zone' using high-visibility para-webbing (or similar fencing designed to prevent access). Webbing is not to be moved during the entire construction period.

- Webbing will be erected and maintained along the boundary of the construction footprint and clearly marked with temporary signs identifying the area as "VEGETATION PROTECTION AREA - ACCESS PROHIBITED".

- No machinery or construction equipment, waste, storage materials or un-authorised personnel shall be permitted within any No-Go Zone.

Storage, stockpiling and access roads

- All areas required for vehicle re-fuelling and maintenance, storage of materials, equipment and soil (or other) stockpiling locations must be pre-designated. No refuelling of plant or vehicles is to occur within 50 metres of a waterway.

- Storage areas must not be located in any areas supporting native vegetation and must be outside the No-Go Zones.

- All drivers and machinery operators are to be inducted on these pre-designated areas before any construction or works commence.

- All vehicles and machinery must enter and exit work sites along clearly defined routes.

- All drivers and machinery operators are to be inducted on these access routes before any construction or works commence.

<u>Pest Plant Control</u>

To avoid the introduction of new weeds into the site:

- Appropriate hygiene protocols will be undertaken in accordance with Murray et al. 2011 to minimise the risk of introduction and spread of Amphibian Chytrid Fungus on the construction site from people / machinery and activities associated with the relocation of significant amphibians.

- Ensure all vehicles/ plant/ machinery report to the construction compound when arriving on site. All vehicles/ plant/ machinery will be inspected on arrival. Any vehicles/ plant/ machinery which are determined to contain soil, or which may contain seeds must be washed down.

- A vehicle wash down area will be established on site for periodic cleaning of excess soil and organic matter (as required).

To avoid the spread of weeds throughout the site:

- All plant/machinery must be washed down post any works within each of the four individual construction sites;

- Within the morass inlet sites, construction must work from the Latrobe River to the morass, to prevent the spread of aquatic weeds from the morass to the river (such as Parrots Feather). If this is not possible, plants/machinery must be washed down prior to any works within the Latrobe River post any works within the morass;

- Within the morass outlet sites, construction must work from the morass to the Latrobe River, to prevent the spread of aquatic weeds from the river to the morass. If this is not possible, plants/machinery must be washed down prior to any works within the morass post any works within the Latrobe River.

To avoid the spread of weeds off site:

- Ensure all vehicles/ plant/ machinery report to the construction compound when leaving the site. All vehicles/ plant/ machinery will be inspected on departure. Any vehicles/ plant/ machinery which are determined to contain soil, or which may contain seeds must be washed down.

Weed Control

To be undertaken by the proponent in any areas within native vegetation that has been subjected to soil disturbance;

- Weed management must be undertaken by experienced contractors, familiar with local flora and significant species that may be present.

<u>Soil Disturbance, Erosion and Sedimentation Controls</u>

The eastern end of the study area includes part of the Gippsland Lakes Ramsar site. Provided management practices and construction techniques are consistent with Construction Techniques for Sediment Pollution Control (EPA 1991) and Environmental Guidelines for Major Construction Sites (EPA 1996), the proposed action is unlikely to impact the ecological character of any Ramsar wetland.

- Soil stockpiles are to be protected from erosion by applying the following measures:

- Soil stockpile locations must be pre-designated and must not be located in any areas supporting native vegetation;

- Soil stockpiles must be covered with geotextile, stabilisation matting or other suitable material (where practicable);

- Minimise the number and size of stockpiles; and

- Maximum 2:1 height to width ratio for soil stockpiles.

Temporary Loss of Native Vegetation

Rehabilitation of vegetation should be undertaken as soon as possible after the construction phase is complete. Revegetation will be undertaken in any areas of native vegetation that have been subject to soil disturbance that does not require permanent infrastructure as follows:

- Topsoil excavated during construction should be stockpiled and replaced over the disturbed zone after construction.

- Any open areas will be topsoiled and grassed to minimise the risk of erosion during construction.

- If native vegetation recolonisation is not successful by returning the retained topsoil, revegetation will be undertaken using a suite of flora species appropriate to the cleared EVC. The advice of experienced botanists should be sought during this process to determine an appropriate planting schedule.

- Only locally indigenous trees, shrubs and understorey vegetation (associated with the known or likely EVC present in a particular area) will be used. Appropriate species are identified below (Section 6.1.2).

- Revegetation and weed management must be undertaken by experienced contractors, familiar with local flora and significant species that may be present.

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 proposed infrastructure is designed to maintain and improve the natural and cultural values of the Ramsar wetland by more efficiently targeting and regulating environmental water allocations throughout the Morasses, as many of the old structures are no longer ‘fit-for-purpose’. As such, the proposed works are unlikely to negatively impact the Ramsar site in the long term, and will instead, maintain and improve the wetlands in the long term through improved water management. Overall, it is considered that provided appropriate mitigation measures are implemented during construction works, the overall wetland system will function

more effectively for all matter of NES noted within this referral application.

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.

Environment Protection and Biodiversity Conservation Act 1999

While there may be temporary sedimentation pulses into the Latrobe River during construction activities, the overall environmental outcomes of the proposed works are considered to provide a greater net-benefit to the functioning of the Ramsar site.

The proposed infrastructure has been designed in detail to maintain and improve the natural and cultural values of the Ramsar wetland by more efficiently targeting and regulating environmental water allocations throughout the Morasses, as many of the old structures are no longer ‘fit-for-purpose’. As such, the proposed works are unlikely to negatively impact the Ramsar site in the long term, and will instead, maintain and improve the wetlands in the long term through improved water management.

To mitigate any potential impacts, best practice sedimentation controls and construction design will be implemented to minimise short-term sedimentation and any minor indirect impacts to the Ramsar site (albeit these are considered to be insignificant overall). That is, the current condition and water quality of the Latrobe River is not expected to deteriorate further, or have any greater impact to the Ramsar site, in response to works at the selected sites.

While the likelihood of detecting Green and Golden Bell Frog and Growling Grass Frog is considered to be low, appropriate mitigation measures will be undertaken as a precautionary approach to ensure no direct impact occurs to either species. This will be managed through on-site inductions, pre-clearance surveys, capture and relocation measures and the management of disease through the hygiene requirements outlined in Murray et al., 2011.

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 WGCMA is a Victorian State Government Authority, which routinely undertakes environmental works on waterways and wetlands within its authority under the Catchment and Land Protection Act 1994. It has a satisfactory record of responsible environment management within the region. All activities adhere to relevant state and federal guidelines and legislation.

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 Will the action be taken in accordance with the corporation's environmental policy and planning 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.

The corporation is the West Gippsland Catchment Management Authority (WGCMA).

Refer to Attachment 4 below.

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?

No

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
Ecology and Heritage Partners Pty Ltd 2017. Biodiversity Assessment and Environment Management Plan.	HIGH	None
Jacobs 2015. Detailed Design Report / Construction Plans	HIGH	None
Gippsland Lakes Ramsar Site Management Plan 2015	HIGH	None
Latrobe River Environmental Entitlement 2010	HIGH	None
WGCMA Corporate Environmental Policy 2017	HIGH	None
West Gippsland Waterway Strategy 2014-2022	HIGH	None
West Gippsland Regional Catchment Strategy 2013-2019	HIGH	None
Seasonal Watering Plan 2017/2018	HIGH	None
DEPI 2014. Advisory list of rare or threatened plants in Victoria	HIGH	None

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?

The proposed work site locations are considered the best option for the proposed hydrology improvements for the Gippsland Lakes wetland system. That is, alternative locations have not been investigated as part of the proposed works.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

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
West Gippsland Catchment Management Authority

9.2.1 Job Title
Chief Executive Officer

9.2.2 First Name
Martin

9.2.3 Last Name
Fuller

9.2.4 E-mail
westgippy@wgcma.vic.gov.au

9.2.5 Postal Address
PO Box 1374 TRARALGON Victoria 3844 Australia

9.2.6 ABN/ACN
88 062 514 481

9.2.7 Organisation Telephone
1300 094 262

9.2.8 Organisation E-mail
westgippy@wgcma.vic.gov.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:
Please confirm any exemption through the link below: http://www.environment.gov.au/epbc/cost-recovery

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

Not applicable

Declaration

I, Martin Fuller_____, 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: 03/08/2017

I,_____, the person proposing the action, consent to the designation of_____as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:…… Date: ……

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

As Above

Declaration

I, Martin Fuller_____, 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.

Signature:…… Date: 03/08/2017

9.6 Is the Referring Party an Organisation or Individual?
Organisation

9.8 Organisation
Ecology and Heritage Partners Pty Ltd

9.8.1 Job Title
Consultant Zoologist

9.8.2 First Name
Andrew

9.8.3 Last Name
Taylor

9.8.4 E-mail
ataylor@ehpartners.com.au

9.8.5 Postal Address
230 Latrobe Terrace, Geelong West, VIC 3218

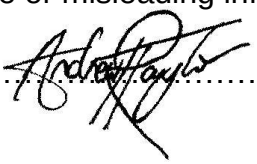
9.8.6 ABN/ACN
ABN 65 685 233 760 - The trustee for The EP Unit Trust

9.8.7 Organisation Telephone
(03) 9377 0100

9.8.8 Organisation E-mail
admin@ehpartners.com.au

9.8.9 Declaration

I, Andrew Taylor, 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: 03/08/2017

Appendix A - Attachments

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

1. 9026_fig01_studyareav2.pdf
2. attachment_1.pdf
3. attachment_2.pdf
4. attachment_3.pdf
5. attachment_4.pdf