

Marinus Link EPBC Act referral
Preliminary MNES impact assessment table

Threatened species or ecological community	EPBC Act listing	Description ^a	Likelihood of occurrence ^a	Avoidance measures	Potential impacts ^a	Mitigation to be applied	Further assessment to be completed ^a
Threatened ecological communities							
Gippsland Red Gum (<i>Eucalyptus tereticornis</i> subsp. <i>mediana</i>) Grassy Woodland and Associated Native Grassland	Critically endangered	The grassy woodland has a tree canopy that has a projective foliage cover of more than 5% and is dominated by Gippsland red gum. The ground layer is covered by native perennial tussock grasses and grass-like plants with a variety of wildflowers. Natural temperate grasslands formerly occurred on the Gippsland plains. It is likely that a tree canopy was formerly present, but it has been largely cleared.	PMST: Community known to occur within PMST search area. Ecological assessment: May occur in isolated roadides or remnant patches throughout the Latrobe Valley in the north of the route. Remnants of this community are highly fragmented across much of its range, particularly in the Gippsland Plain bioregion where much of the original lowland vegetation has been removed for agricultural purposes.	The route has been selected to avoid impacts to native vegetation as much as possible. HDD or other trenchless construction methods is proposed at targeted crossing sites such as waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Remnant patches of this community within the Victorian survey area are likely to be narrow and linear in nature (associated with roadsides, waterways or unused road reserves) and cross the alignment at roughly right angles (perpendicular). As a result, the overlap between the area of disturbance and remnants of this community is likely to be small and avoidance and minimising of impacts considered feasible, with a low likelihood of residual impacts.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. Horizontal Directional Drilling (HDD) or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation type and condition will be completed within the survey area to confirm this ecological community is/is not present.
Natural Damp Grassland of the Victorian Coastal Plains	Critically endangered	This ecological community is grassland ranging to open grassy woodland with scattered trees and shrubs. It is generally found on heavy grey silty-loamy soils and tends to occur on floodplains that receive higher rainfall and have poor drainage, becoming seasonally waterlogged. It is generally dominated by tussock grasses. Where trees are present, they are typically a sparse cover of eucalypt species.	PMST: Community may occur within PMST search area. Ecological assessment: The community is unlikely to occur within the survey area as a result of past vegetation clearance and changed land use in coastal areas which may have once supported these communities.	The route has been selected to avoid impacts to native vegetation as much as possible.	Significant impact to the community as a result of the project is not expected as the community is not likely to occur within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation type and condition will be completed within the survey area to confirm this ecological community is/is not present.
Giant Kelp Marine Forests of South East Australia	Endangered	Also known as string kelp, giant kelp is a large brown algae that grows on rocky reefs from the sea floor 8 m below sea level and deeper. Its fronds grow vertically toward the water surface, in cold temperate waters off south east Australia. Giant kelp are the largest and fastest growing marine plants.	PMST: Community may occur within PMST search area. Marine ecological assessment: Anticipated to be mostly absent from the area of interest across Bass Strait, where the seabed is comprised of unconsolidated or loose soft sediments. Soft sediments lack the hard substrate required for kelp holdfasts.	The route has been selected to avoid impacts to marine communities as much as possible.	Significant impact to the community as a result of the project is not expected as the project is not likely to intersect the community.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts.	Marine ecological surveys for vegetation type and condition will be completed within the survey area to confirm this ecological community is/is not present.
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	The ecological community consists of the assemblage of plants, animals and micro-organisms associated with saltmarsh in coastal regions of sub-tropical and temperate Australia.	PMST: Community likely to occur within PMST search area Ecological assessment: The community is unlikely to occur within the survey area as a result of past vegetation clearance and changed land use in coastal areas which may have once supported these communities.	The route has been selected to avoid impacts to native vegetation as much as possible. HDD or other trenchless construction methods is proposed at targeted crossing sites such as waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Significant impact to the community as a result of the project is not expected as the community is not likely to occur within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation type and condition will be completed within the survey area to confirm this ecological community is/is not present.
Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (<i>Eucalyptus ovata</i> / <i>E. brookeriana</i>)	Critically endangered	The ecological community is typically associated with sites that are poorly draining and wet, such as lowland flats, lower slopes, gullies or seepage slopes. The structure of the vegetation varies from open woodland to sclerophyll forest. A tree canopy is present in which the minimum solid crown cover is 5% or more and the dominant trees have a minimum height of 5 metres or more. The tree canopy is dominated to dominated by <i>Eucalyptus ovata</i> (black gum) and/or <i>E. brookeriana</i> (Brookers gum).	PMST: Community may occur within PMST search area Ecological assessment: No records from within 5 km and no suitable habitat within survey area.	The route has been selected to avoid impacts to native vegetation as much as possible.	Significant impact to the community as a result of the project is not expected as the community is not likely to occur within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation type and condition will be completed within the survey area to confirm this ecological community is/is not present.
Threatened fauna - birds							
Tasmanian wedge-tailed eagle (<i>Aquila audax fleayi</i>)	Endangered	Large brown-black eagle with feathered legs. Occurs across Tasmania in forested habitats and nests in large tracts of more than 10 ha of eucalypt or mixed forests.	PMST: No suitable habitat within survey area. Ecological assessment: There are two records of eagle nests within 2km of the converter station site.	Route and converter site selection was informed by two eagle nest surveys with avoidance of nests prioritised in selection of the proposed route. Further avoidance of impacts through timing of construction and maintenance work will be included in a management protocol to be prepared for the species.	There is potential to impact the species through disturbance of nest sites and breeding activity from construction and maintenance activities during the breeding season from July to January.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as activities restricted during eagle breeding season. A management protocol will be prepared in consultation with PCAB, based on the requirements of <i>Fauna Technical Note No 1: Eagle nest searching, activity checking and nest management</i> (Forest Practices Authority, 2014).	Nest surveys have been completed to locate nests within 2 km of the proposed route and converter station. Further surveys will be completed prior to construction to confirm the presence and uses of nests within 1 km and 500 m of the proposed route and converter station so the appropriate mitigation measures can be implemented.
Curlew sandpiper (<i>Calidris ferruginea</i>)	Critically endangered Migratory Marine	Small, slim sandpiper that mainly occurs on intertidal mudflats in sheltered coastal areas and around non-tidal swamps, lakes and lagoons near the coast. They are also recorded inland around ephemeral and permanent waterbodies. Mostly occur in eastern Tasmania as well as several sites in Northwest Tasmania.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: In Victoria, the species is widespread and common in coastal bays and inlets and in near-coastal wetlands, and inland in suitable habitats such as the Kerang area, Mildura, and western districts. They inhabit Littoral and estuarine habitats, including intertidal mudflats, non-tidal swamps, lakes and lagoons on the coast and sometimes inland. The high-energy beach at Waratah Beach is not optimal habitat and there are few recent records in the landscape. Consequentially, there is a low likelihood of this species occurring.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Impacts unlikely due to lack of suitable habitat.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Tasmanian azure kingfisher (<i>Ceyx azureus diemenensis</i>)	Endangered	A small brightly coloured kingfisher with a long slender black bill and red legs. The head, neck, and back are deep blue, and the breast is orange-red. Species inhabits the forested margins of waterways.	PMST: Species or species habitat may occur within PMST search area. Ecological assessment: Species records in Tasmania are on the west and northwest coast in the forested margin of rivers, with suitable habitat unlikely in the survey area. No recorded sightings on waterways within 5 km of the proposed route..	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Impacts unlikely due to lack of suitable habitat.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
White-throated Needletail (<i>hirundapus caudocatus</i>)	Vulnerable Migratory Marine	Large swift with a thickset, cigar-shaped body, stubby tail and long pointed wings. Migratory species that is almost exclusively aerial within Australia. Occurs over most types of habitat, but recorded most often above wooded areas including open forest and rainforest. Mainly occurs within Australia during non-breeding season from September to November.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: The white-throated needletail is an aerial species which could occur over most habitats and has a moderate likelihood of occurrence within the Tasmanian survey area. Aerial species which could occur. No records within 5 km of project.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Impacts unlikely due to species almost exclusively being aerial within Australia and their high mobility.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Eastern Curlew (<i>Numenius madagascariensis</i>)	Critically endangered Migratory Marine	Largest migratory shorebird in the world. Rarely recorded inland. During non-breeding season in Australia the species is most commonly found in sheltered coasts, estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: A summer migrant to Australia, the eastern curlew inhabits estuaries, bays, harbours, inlets and coastal lagoons, intertidal mudflats or sandflats, ocean beaches, coral reefs, rock platforms, saltmarsh, mangroves, freshwater/brackish lakes, saltworks and sewage farms. Marginal habitat has been identified at Waratah Beach within the Victorian survey area, however it is not likely this species makes frequent use of this area. Suitable habitat unlikely within survey area as species primarily found near the coast. No records of the species within 5 km of the proposed route.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Impacts unlikely due to lack of suitable habitat.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.

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Hooded Plover (eastern) (<i>Thinorhis cucullatus cucullatus</i>)	Vulnerable Marine	A stocky, medium-sized wading bird about 20 cm long. Both males and females are similar and have a black 'hood' and a white 'collar' across the back of the neck. Occurs around the coast of Tasmania on ocean beaches where they may be observed singly, in pairs, family groups or flocks	PMST: There are no records within 5km and limited suitable habitat within the survey area. Ecological assessment: The beaches along the north coast between Deloraine and Burnie are subject to high levels of human disturbance.	Alternative construction methods e.g. HDD rather than trenching through sensitive coastal habitat areas	Main threats to the species include habitat loss from clearing for the project. Although no direct impacts on nesting (breeding) are likely to occur within the survey area there may be impacts on movements and dispersal along Sandy Point beach and between important areas of habitat and among populations at Waratah Bay.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Masked Owl (<i>Tyto novoehollandiae</i>)	Vulnerable	Large owl with white disc face that occurs in lowland areas generally below 660 m where it inhabits native forests and woodlands as well as agricultural areas with a mosaic of native vegetation and pastures. Nests in hollows in large old trees.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: The species nests in hollows in large old trees however no nest trees are known within the survey area. However, there may suitable large old trees present that provide suitable habitat. Records of species within 5 km of proposed route, however some records have poor accuracy.	The proposed route has been selected to avoid impacts to large old trees as much as practicable.	Clearing of vegetation for tracks, easements and transmission lines has the potential to impact on habitat. However, no known nest trees are recorded within the survey area, with the closest known nest over 24 km to the north east of the proposed route. There are limited areas of the preferred habitat of the species; lowland dry open forests and woodlands (including where there is a mosaic of agricultural land and forests). Because of this the species is unlikely to be impacted.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of large old trees will also be completed to confirm if there are nesting trees within the survey area.
Regent Honeyeater (<i>Anthochaera phrygia</i>)	Critically endangered	The honeyeater has a black head, neck and upper breast, a lemon yellow back and breast scaled back, with the underparts grading into a white rump, black wings with conspicuous yellow patches, and a black tail edged yellow. In males, the dark eye is surrounded by yellowish warty bare skin. Females are smaller, with a bare yellowish patch under the eye only, and have less black on the throat. Young birds resemble females, but are browner and have a paler bill.	PMST: Species or species habitat likely to occur within PMST search area; foraging, feeding or related behaviour likely to occur within area. Ecological assessment: Species occurs in box-ironbark forests and woodlands in northern Victoria. The project is outside species primary range and is not likely to have a significant impact on this species.	The proposed route has been selected to avoid impacts to large old trees as much as practicable.	Impacts unlikely due to lack of suitable habitat.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD will be undertaken at shore crossings, areas of significant vegetation and waterways where sensitive habitats may be impacted (where geotechnical conditions permit).	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Australasian Bittern (<i>Botaurus poiciloptilus</i>)	Endangered	The Australasian Bittern is a heavy-set, partially nocturnal heron with upperparts that are patterned dark brown, buff and black, and underparts that are streaked brown and buff. The eyebrow and throat are pale, and the side of the neck is dark brown. The bill is brown and the legs are greenish. The Australasian Bittern is also called the Australian Bittern or the Brown Bittern.	PMST: Species or species habitat likely to occur within area. Ecological assessment: The species is found in coastal and sub-coastal areas in extreme south-western mainland Australia, south-eastern mainland Australia and Tasmania and inhabits wetlands and swamps with tall aquatic vegetation. Occasionally occurring in rice fields and saltmarshes.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Impacts unlikely due to lack of suitable habitat.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Red knot (<i>Calidris canutus</i>)	Endangered Migratory	The Red Knot is a medium-sized, dumpy grey wader with a short neck and long body. The bill is short and straight and there is a faint pale brow line. The green-grey legs are short. The upper body is brownish grey with the dark streaks on the head and neck. The underbody is white with some light streaking. In breeding plumage, the upper body is boldly marked, contrasting with the chestnut-red body.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: Suitable habitat for the red knot occurs around the coast of Australia, and includes intertidal mudflats, sandflats sheltered sandy beaches, estuaries, bays, inlets, lagoons, harbours, sandy ocean beaches, rock platforms, coral reefs, terrestrial saline wetlands near the coast, sewage ponds and saltworks. Potential habitat has been identified at Waratah Bay within the Victorian survey area, but the species is unlikely to make significant use of this due to high levels of human activity (disturbance) along much of the bay and the (non-optimal) exposed/high-energy (wave) nature of the beach habitat present. Consequently, there is a low likelihood of significant impact to this species.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Impacts unlikely due to lack of suitable habitat.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Antipodean Albatross (<i>Diomedea antipodensis</i>)	Vulnerable Migratory Marine	A large bird with brown and white breeding plumage. Its juveniles are similar in appearance to the wandering albatross. Breeding females have brown upper parts, and have white vermiculations on their back. Its face, throat, lower breast, and belly are white, and its underfeathers are brown. Its underwings are also white, but with a dark tip. Breeding males are whiter than females, but not as white as the wandering albatross, and both sexes have a pink bill.	PMST: Foraging, feeding or related behaviour likely to occur within area. Ecological assessment: The Antipodean Albatross is endemic to New Zealand, but forages widely in open water in the south-west Pacific Ocean, Southern Ocean and the Tasman Sea. It is marine, pelagic and aerial.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Southern Royal Albatross (<i>Diomedea epomophora</i>)	Vulnerable Migratory Marine	The southern royal albatross is the largest of the albatrosses. It has a white body and black wings and white tail. The robust bill is light pink with a creamy tip and with a black cutting edge to the upper mandible.	PMST: Foraging, feeding or related behaviour likely to occur within area. Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Wandering albatross (<i>Diomedea exulans</i>)	Vulnerable Migratory Marine	The wandering albatross has the longest wingspan of any living bird. The plumage varies with age, with the juveniles starting chocolate brown. As they age they become whiter. The adults have white bodies with black and white wings. Males have whiter wings than females with just the tips and trailing edges of the wings black. The large bill is pink, as are the feet.	PMST: Foraging, feeding or related behaviour likely to occur within area. Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Northern Royal Albatross (<i>Diomedea exulans</i>)	Endangered Migratory Marine	Northern Royal Albatross have combination of blackish upperwing, pure white body and black cutting edge to the upper bill. Adults can be distinguished from the Southern Royal Albatross by the solid black upperwing. Young birds can be separated from the Southern Royal Albatross by lacking a white leading edge to the upperwing, and having black on the leading edge of the underwing.	PMST: Foraging, feeding or related behaviour likely to occur within area. Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Grey falcon (<i>Falco hypoleucos</i>)	Vulnerable	The Grey Falcon is a medium-sized, compact, pale falcon with a heavy, thick-set, deep-chested appearance. Upperparts are uniform light grey, shading to blackish on the primaries, forming conspicuous dark wing tips. The tail has narrow blackish bars. The chin, throat and cheeks are white, and the rest of the underbody is pale grey. The eye-ring, cere and base of the bill are bright orange-yellow, and the tip of the bill black.	PMST: Species or species habitat may occur within area.	The proposed route has been selected to species habitat as much as practicable.	Significant impacts unlikely due to lack of suitable habitat.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
White-bellied storm petrel (<i>Fregatta grallaria</i>)	Vulnerable	A small, compact storm-petrel with a square cut tail, white forehead, face and underparts and a broad dark mark through the eye. Upperparts are dark grey. Various colour phases have been observed, including a dark phase, having sooty plumage, with only the rump and belly showing white.	PMST: Species or species habitat likely to occur within area. Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to species habitat as much as practicable.	Significant impacts unlikely due to lack of suitable habitat.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.

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Painted honeyeater (<i>Grantiella picta</i>)	Vulnerable	The Painted Honeyeater is a medium-sized honeyeater with a relatively short beak and tail, and is particularly found in association with mistletoe. Males are black above with bright yellow wing panels and upper tail, and have white underparts with some black streaks on the flanks. The bill is pink. Females and young birds are duller and lack streaks.	PMST: Species or species habitat likely to occur within area.	The proposed route has been selected to species habitat as much as practicable.	Significant impacts unlikely due to lack of suitable habitat.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Blue Petrel (<i>Halobaena caerulea</i>)	Vulnerable	A small prion-like patterned petrel. It is readily identified by the white-tipped tail which is unique among petrels and prions. Other distinctive characteristics include the pale bluish-grey underparts with a narrow open 'M' marking across the upperwings, the black bill and the prominent blackish cap offset by a large white forehead patch.	PMST: Species or species habitat may occur within area. Marine ecological assessment: Species or species habitat may occur in area	The proposed route has been selected to species habitat as much as practicable.	Significant impacts unlikely due to lack of suitable habitat.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Swift Parrot (<i>Lathamus discolor</i>)	Endangered	The Swift Parrot is a slim, medium-sized parrot with a streamlined shape in flight, angular pointed wings and a long pointed purple-red tail. The body is mostly bright green, with a dark blue patch on the crown. The forehead to throat is crimson and there is a crimson patch at the bend of the wing. The female is slightly duller, with a creamy underwing bar.	PMST: Breeding likely to occur within PMST search area. Ecological assessment: A non-breeding winter migrant to the mainland from Tasmania. In Victoria, the over-wintering habitat of the Swift Parrot is eucalypt forests and woodlands. While the species may infrequently use the study area for foraging there are no recent records.	The proposed route has been selected to species habitat as much as practicable.	Given no recent records, there is a low likelihood of significant impact to this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Bar-tailed Godwit (<i>Limosa lapponica</i>)	Vulnerable Migratory	Bar-tailed Godwits are quite large waders, with females being bigger than males. The Bar-tailed Godwit is mainly mottled brown above and lighter and more uniform buff below. It has dull white underwings, and a long, slightly upturned bill. The white tail is barred with brown.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: Relatively common winter visitor to Tasmania where it intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons, bays, seagrass beds, saltmarsh, sewage farms and and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. Rarely inland wetlands, paddocks and airstrips.	The proposed route has been selected to species habitat as much as practicable.	Considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Southern Giant-Petrel (<i>macronectes giganteus</i>)	Endangered	Southern giant petrels have two distinct colour phases, white and dark. Dark phase adults have a grey-brown body with white head, neck and brown speckled breast. Juveniles of dark phase birds have a dark brown body with a dark brown iris, which closely resemble northern giant petrel juveniles. White phase birds are completely white except for a few scattered dark feathers. White phase birds generally constitute a maximum of 5% of a population.	PMST: Foraging, feeding or related behaviour likely to occur within PMST search area; species or species habitat may occur within area. Ecological assessment: The Southern Giant-Petrel is a marine species. Over summer, the species nests in small colonies amongst open vegetation on Antarctic and subantarctic islands. It can be seen off the coast of Victoria during the non-breeding season.	The proposed route has been selected to species habitat as much as practicable.	With the implementation of appropriate avoidance and mitigation measures, impacts are expected to be low.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Orange-bellied Parrot (<i>Nekopema chrysogastr</i>)	Critically endangered	The Orange-bellied Parrot is just bigger than a Budgerigar, with males and females varying slightly in appearance. The male is a bright grass-green on the head, back and most of the wings, fading to a yellowish-green on throat and breast, to bright yellow to the vent and under the tail. The belly has a bright orange patch, and there is a deep blue band between the eyes, bordered above by a faint blue line. The male also has bright blue on the bend of the wings. The female is duller, with less blue and has a smaller orange belly patch. Both male and females have a greyish-black bill, a dark-brown eye and greyish-brown legs.	PMST: Migration route likely to occur within PMST search area. Ecological assessment: The species breeds in Tasmania and migrates in autumn to spend the winter on the mainland coast of south-eastern South Australia and southern Victoria. Winter habitat is mostly within 3 km of the coast in sheltered bays, lagoons, estuaries, coastal dunes and saltmarshes. The species also occurs on small islands and peninsulas, saltworks, golf courses, low samphire heathland and taller coastal shrubland. There is a narrow band of suboptimal habitat present at Waratah Bay.	The proposed route has been selected to species habitat as much as practicable.	The species has a low likelihood of occurrence within the project area, and the project is not likely to have a significant impact to this species	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Fairy prion (<i>Pachyptila tartur</i>)	Vulnerable Marine	The fairy prion has dark "M" stretching across the back from wingtip to wingtip and a black tip to the upper tail. Fairy prions can be carefully distinguished by their smaller size, poorly defined facial markings, and broad, dark tip to the upper tail.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: A marine species often beachcast on the south-eastern coast of Australia and are commonly seen offshore over the continental shelf and over pelagic waters. Found in temperate and subantarctic seas. It sometimes forages over continental shelves and the continental slope but can come close inshore in rough weather.	The proposed route has been selected to species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Sooty albatross (<i>Phoebebia fusca</i>)	Vulnerable Migratory Marine	The sooty albatross is a slender all-dark chocolate brown albatross with a long pointed tail, slender head, long narrow wings usually flexed at the carpal joint, and a typically effortless flight, smoother and overall higher above the water than in other albatrosses. Adults in fresh plumage are entirely dark brown except for the whitish shafts of primaries and main tail feathers, a white crescent above and behind the eye, and a cream to yellow-orange stripe on the side of the slender glossy black bill.	PMST: Species or species habitat likely to occur within area. Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Gould's Petrel, Australian Gould's Petrel (<i>Pterodroma leucoptera leucoptera</i>)	Endangered	The upper surface of their long narrow wings has a distinctive 'M' pattern. This together with a darker head, distinguishes them from other petrels of similar size. The underside of the wings and body are white with a dark edge to the wing that terminates in a diagonal bar. Both sexes are identical and immature birds fledge in adult plumage.	PMST: Species or species habitat may occur within area. Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Soft-plumaged Petrel (<i>Pterodroma mollis</i>)	Vulnerable	The soft-plumaged petrel is a medium-sized dark-grey-and-white gadfly petrel with narrow wings and a pointed tail in flight. It has a dark grey head with prominent white feathers on the cheeks and throat, and white speckling on the forehead. There is a prominent dark eye patch. The upper surface is even dark-grey with darker brown-black feathers running across the upper wings and rump in an M-shape. The underside is mostly white on the body but with dark grey underwings. The dark neck collar can create a hooded appearance from a distance. In the hand, the black bill has a sharp hook to seize prey. The legs are pink with black on the outer webs and toes.	PMST: Species or species habitat may occur within area. Marine ecological assessment: Species or species habitat may occur in area	The proposed route has been selected to species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Australian Painted Snipe (<i>Rostratula australis</i>)	Endangered	The Australian Painted Snipe is a snipe-like shorebird with a bulbous-tipped bill, broad, rounded wings and longish legs that protrude beyond the tip of the tail when in flight. The sexes differ. Males have a dark-brown crown with a buff median stripe; the rest of the head and neck are dark ashy-grey, with a cream-coloured, comma-shaped mark around the eye. The upperparts are ashy-grey with blackish barring and blotches, and a narrow, golden-buff line separating the mantle and scapulars. The upper breast is dark ashy-grey with pale streaks; a broad white stripe extends from the sides of the breast onto the shoulders. The rest of the underparts are white. The upperwing is glossy olive-green with golden-buff spots and a dark bar; the underwing is light grey with fine barring and a white band through the centre. The female differs by having a uniform dark-brown head and upper breast, a rufous hindneck, and darker upperparts with fine barring.	PMST: Species or species habitat likely to occur within area.	The proposed route has been selected to species habitat as much as practicable.	The species has a low likelihood of occurrence within the project area, and the project is not likely to have a significant impact to this species	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Fairy Tern (<i>Sterna nereis nereis</i>)	Endangered	The Fairy Tern is small grey and white tern, 22 to 27 cm in length with long, narrow wings and a bright orange bill. In non-breeding plumage the crown is largely white, mottled black and the bill is blackish at the base and tip. Immature Fairy Terns are similar to non-breeding adults. Young birds are similar to immatures, but upwearing coverts and mantle are mottled grey and brown. Also known as Nereis Tern, White-faced Tern, Little Sea-swallow, Sea-swallow or Ternlet.	PMST: No suitable habitat within survey area. Ecological assessment: Occurs along the coast of Victoria. Inhabits a variety of habitats including offshore, estuarine or lake islands, wetlands and mainland coastline. It nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation. There is suitable habitat for the species at Waratah Bay beach and recent records.	The proposed route has been selected to species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Buller's Albatross, Pacific Albatross (<i>Thalassarche bulleri</i>)	Vulnerable Migratory Marine	One of the smallest albatross. The Buller's Albatross is similar to other grey-headed albatross, but has a striking black and yellow bill, a white forecap, black patch before the eye, a thin white crescent to the rear of and below the eye, and a mostly white underwing with a moderately broad sharply defined leading edge.	PMST: Species or species habitat may occur within area. Marine ecological assessment: Species or species habitat may occur in area	The proposed route has been selected to species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.

Marinus Link EPBC Act referral
Preliminary MNES impact assessment table

Threatened species or ecological community	EPBC Act listing	Description ^a	Likelihood of occurrence ^a	Avoidance measures	Potential impacts ^a	Mitigation to be applied	Further assessment to be completed ^a
Shy Albatross (<i>Thalassarche cauta</i>)	Endangered Migratory Marine	A medium-sized dark-backed albatross with pale underwings outlined by a narrow dark border and a dark notch in the armpit. The adult has a whitish head with greyish cheeks that give it a "white-capped" appearance. The grey-green bill has a yellowish tip to both mandibles. Juveniles are greyer on the head with grey bills. The species breeds on islands off Tasmania and New Zealand but disperses widely across the Southern Oceans between 15 and 60°S, where it is a frequently encountered pelagic seabird.	PMST: Foraging, feeding or related behaviour likely to occur within area. Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Grey-headed Albatross (<i>Thalassarche chrysostoma</i>)	Endangered Migratory Marine	Rarely found north of cold subantarctic waters; ranges south to pack-ice in summer. Adult has a grey head, thick black underwing margins like much commoner Black-browed Albatross. Immatures look similar to Black-browed overall, but told by black bill that soon develops yellow along top, and often with variable grey hood. Yellow bill edges narrower than the more lightly built Buller's Albatross, which occurs to the north but is often mistaken for Gray-headed.	PMST: Species or species habitat may occur within area. Marine ecological assessment: Species or species habitat may occur in area	The proposed route has been selected to species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Campbell Albatross, Campbell Black-brown Albatross (<i>Thalassarche impavidae</i>)	Vulnerable	It is similar to the more regularly encountered Black-browed Albatross but adults can be separated by the pale yellow (not dark brown) eyes, the heavier black brow (more extensive in front of the eye), the underwing having broad black margin, and the bill being a bright orange-yellow that may be reddish on the sides.	PMST: Foraging, feeding or related behaviour is likely to occur within the PMST search area. Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Black-browed Albatross (<i>Thalassarche melanophris</i>)	Vulnerable Migratory Marine	The Black-browed Albatross is the most common albatross seen in southern Australian waters for most of the year, and is the only one of the mollymawks (another name for the smaller black-and-white albatrosses) with a yellow bill. The bill has a pink tip. The back, upper wings and tail are a slaty black. The underwing is white with broad black margins, especially the leading edge. The face is white, with a small black brow over a dark eye. The legs and feet are blue-grey to flesh-pink. This species is also called the Black-browed Mollymawk.	PMST: Foraging, feeding or related behaviour likely to occur within PMST search area; species or species habitat may occur within area. Ecological assessment: The species is common in the non-breeding period at the continental shelf and shelf break of Victoria. It can tolerate a broad range of sea-surface temperatures, from 0–24° C. It forages around the breaks of continental and island shelves and across nearby underwater banks.	The proposed route has been selected to species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Gibson's Albatross (<i>Diomedea antipodensis gibsoni</i>)	Vulnerable	A large Albatross species, with breeding confined to New Zealand. Plumage varies widely, with the amount of white dependent upon the sex, age and population characteristics at its breeding site island. Males are white above and below, including crown. They have white upperparts; breast has varying densities of fine black wavy lines. Tail white, sometimes tipped black. Outer wing and trailing edge black. Underwing white, extreme tips always black. Legs and webbed feet are a pale flesh colour, while the bill is pink, tipped yellow. Females are similar to males however have brown speckles or striations on the crown.	PMST: Foraging, feeding or related behaviour likely to occur within PMST search area. Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Northern Giant Petrel (<i>Diomedea sanfordi</i>)	Vulnerable Migratory Marine	Very large with massive pale bill that always has a pinkish tip (often darker than rest of bill). Plumage varies; most birds dark overall or with whitish face, but some have very whitish head and underparts; does not have a white morph, unlike Southern Giant. Juveniles are sooty brown which fades to grey brown as they age.	PMST: Species or species habitat may occur within area. Marine ecological assessment: Species or species habitat may occur in area	The proposed route has been selected to avoid species habitat as much as practicable.	Clearing of vegetation is unlikely to impact the species due to the lack of habitat used by the species and lack of records within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Great Knot (<i>Calidris tenuirostris</i>)	Critically Endangered Migratory Marine	Largest of the calidrid shorebirds. It is a medium-sized shorebird and grows to a length of 26–28 cm with a wingspan of approximately 58 cm. Females are slightly larger than males. It has a straight, slender bill that is black with a green tinge at the tip. The eye is brown and legs and feet are dark greenish-grey. The bird has noticeable breeding, non-breeding and juvenile plumages. The great knot has been recorded around the entirety of the Australian coast, with a few scattered records inland.	PMST: Species or species habitat may occur within area. Ecological assessment: No historical records within 50 km of the study area.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Greater Sand Plover, Large Sand Plover (<i>Charadrius leschenaulti</i>)	Vulnerable Migratory Marine	The Greater Sand Plover is a small-to-medium sized shorebird with a straight longish bill that bulges towards the end but has a pointed tip. The legs are long and olive-grey. Sexes are non-distinguishable from each other when in non-breeding plumage. However, sexes differ when in breeding plumage with males having a chestnut breast band and rufous tinging to the head and nape and with black on the face. Victoria - mostly recorded from Corner Inlet, Western Port and Port Phillip Bay.	PMST: Species or species habitat may occur within area. Ecological assessment: Potential habitat at Waratah Beach. High-energy beach at Waratah beach not optimal habitat, but may be used occasionally.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Lesser Sand Plover, Mongolian Plover (<i>Charadrius mongolus</i>)	Endangered Migratory Marine	The Lesser Sand Plover is a small to medium-sized grey-brown and white shorebird. It has a dark eye-stripe, short stout black bill and short grey legs. Sexes differ when in breeding plumage, but are inseparable when in non-breeding plumage. The lesser sand plover is widespread in coastal regions and has been recorded in all states. The breeding grounds are at high elevations (up to 5,500 m), above the tree-line, in tundra on steppes and in flat, barren valleys and basins, usually in boggy areas.	PMST: Species or species habitat may occur within area. Ecological assessment: Potential habitat at Waratah Beach. High-energy beach at Waratah beach not optimal habitat, but may be used occasionally.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.

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Caspian Tern (<i>Hydroprogne caspia</i>)	Marine Migratory	The largest tern in Australia, the Caspian Tern has long, slender backswept wings and a slightly forked tail. The heavy bill is red with a dusky tip. The Caspian Tern has a white body, with a black and white streaked crown from bill to nape and a short shaggy crest. The mantle and upperwings are grey and the flight feathers are darker. The eye is dark brown and legs are black. The speices occurs in coastal regions.	PMST: Species or species habitat may occur within area. Ecological assessment: Suitable habitat at Waratach Bay beach and recent records.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Ruddy Turnstone (<i>Arenaria interpres</i>)	Marine Migratory	The Ruddy Turnstone forages in close flocks of 10-100 or more individuals, especially in tidal areas. Species is mainly coastal, frequenting productive rocky and shingle shores, breakwaters, sandy beaches with storm-wrecked seaweed, saltmarshes, sheltered inlets, estuaries, mangrove swamps, exposed reefs and mudflats with beds of molluscs.	PMST: Species or species habitat may occur within area. Ecological assessment: Moderate levels of seaweed and no rocky platforms within study area.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Sanderling (<i>Calidris alba</i>)	Marine Migratory	The Sanderling is a tiny, pale grey wader, seen darting along shorelines. The upper body is grey, with white below. The bill is dark, thick at the base and slightly drooped at the tip. The legs are short and black and lacking a hind toe. Sanderlings often occur on exposed sandy beaches along Australia's coastlines that are subject to the ocean's swell.	PMST: Species or species habitat may occur within area. Ecological assessment: Observed at Waratah Bay within study area	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Red-necked Stint (<i>Calidris ruficollis</i>)	Marine Migratory	The Red-necked Stint is a small Calidridine approximately 13-16 cm in length and is the smallest shorebird in Australia. It weighs 25 g and has a wingspan between 29 and 33 cm. It is distributed along most of the Australian coastline with large densities on the Victorian and Tasmanian coasts. The Red-necked Stint has been recorded in all coastal regions, and found inland in all states when conditions are suitable. The Red-necked Stint probably travels in flocks and has been observed to feed in dense flocks.	PMST: Species or species habitat may occur within area.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Double-banded Plover (<i>Charadrius bicinctus</i>)	Marine Migratory	The double-banded Plover's Upper body is brown; underparts are white, with a cream stripe through eye. Species is found in eastern Australia and Tasmania along beaches, grassed edges of open wetlands and intertidal mudflats.	PMST: Species or species habitat may occur within area. Ecological assessment: Suitable habitat within study area.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Swinhoe's Snipe (<i>Gallinago megala</i>)	Marine Migratory	Swinhoe's Snipe has black, brown, buff and white plumage. They are large, marsh-dwelling shorebird of wetlands, wet meadows, and both flooded and dry agricultural fields.	PMST: Species or species habitat may occur within area. Ecological assessment: No recent records and suboptimal habitat present in study area.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Red-capped Plover (<i>Charadrius ruficapillus</i>)	Marine	Red-capped Plovers are grey-brown above with white underneath and on the forehead. Their bill and legs are black. Adult males have a bright reddish-chestnut nape (back of neck) and crown, with a black stripe running from the bill to the eye and one running from the nape to the breast. Adult females have a grey-brown crown, a pale red-brown nape and less distinct black markings. Located along sandy beaches, saltmarshes, and saline wetlands and lakes in Victoria and Tasmania.	PMST: Species or species habitat may occur within area. Ecological assessment: Suitable habitat present at Waratah Beach.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Pacific Golden Plover (<i>Pluvialis fulva</i>)	Marine	The Pacific Golden Plover is a slender upright shorebird (wader), with a rounded head, slim neck, short fine bill and long legs. It has large eyes. In breeding plumage, the underparts from the tail to the chin including the eye are black with white flecking on the tail. The Pacific Golden Plover occurs mostly on the coast of Victoria and Tasmania.	PMST: Species or species habitat may occur within area. Ecological assessment: Suitable habitat present at Waratah Beach and recent records	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.

Marinus Link EPBC Act referral
Preliminary MNES impact assessment table

Threatened species or ecological community	EPBC Act listing	Description ^a	Likelihood of occurrence ^a	Avoidance measures	Potential impacts ^a	Mitigation to be applied	Further assessment to be completed ^a
Little Curlew, Little Whimbrel (<i>Numenius minutus</i>)	Marine Migratory	The Little Curlew is the smallest curlew with an average length of 28-31 cm. dult birds have strongly patterned heads, with a blackish crown, a narrow buff coloured median crown stripe, and a broad pale supercilium (eyebrow). A short blackish-brown eyestripe which is broader at the front but does not reach the bill also distinguishes the species. Lores are buff and ear coverts pale buff with fine brown streaking. The neck and breast is off white and streaked with dark brown, while the remaining underparts are white with dark brown bars noticeable on the flanks. The Little Curlew rarely occurs in Victoria, but has been recorded east of Wilson's Promontory and at Lake Tyers, Lake Wellington and Shallow Inlet, around Port Phillip Bay, and also from lakes in the western Victoria and in the region of Mystic Park. There have been a few scattered records in Tasmania, such as the Derwent River estuary, Pittwater and Cape Portland.	PMST: Species or species habitat may occur within area. Ecological assessment: Uncommon in Victoria. No historical records near the study area.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Whimbrel (<i>Numenius phaeopus</i>)	Marine Migratory	The Whimbrel is a medium-sized curlew, which is mainly streaked brown, with twin dark streaks along the crown and bill. The bill is long and slightly de-curved (curved downwards), with a pink lower base. The legs and neck are long. The body is white below, with with coarsely streaked brown upperparts. In flight, the light-coloured rump and streaked tail is obvious. Whimbrels feed in small groups and roost in large flocks, often with other waders. Whimbrels are found mainly on the coast, on tidal and estuarine mudflats, especially near mangroves. They are sometimes found on beaches and rocky shores.	PMST: Species or species habitat may occur within area. Ecology assessment: Marginal habitat at Waratah Bay beach. May make infrequent use.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Greater Crested Tern (<i>Thalasseus bergii</i>)	Marine Migratory	Greater Crested Terns are medium sized, slender terns that are widely distributed. They are commonly found in near-coastal environments and estuaries, but also inhabit lakes and rivers inland.	PMST: Species or species habitat may occur within area. Ecology assessment: Recorded during the shorebird field assessment along Sandy Point beach	The proposed route has been selected to avoid species habitat as much as practicable.	Potential for construction activities to impact on the species. It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Grey-tailed Tattler (<i>Heteroscelus brevipes</i>)	Marine	The grey-tailed tattler is a small, foraging shorebird. The bill is rather long and straight. In non-breeding plumage it is grey above and almost white below.	PMST: Species or species habitat may occur within area. Ecology assessment: No recent records in the study area. Suboptimal habitat.	The proposed route has been selected to avoid species habitat as much as practicable.	Clearing of vegetation is unlikely to impact the species due to the lack of habitat used by the species and lack of records within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Threatened fauna - crustaceans							
Giant freshwater crayfish (<i>Astacopsis gouldi</i>)	Vulnerable	A large slow-growing and long-lived freshwater crayfish that can weigh up to 3 kg. Species is endemic to rivers, lakes and streams of northern Tasmania.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: The species is endemic to rivers, lakes and streams of northern Tasmania. Potential suitable riverine habitat within the survey area with records in small streams within 5 km of the proposed route.	Direct impacts to riparian areas will be avoided where possible through overflying waterways and careful placement of towers. New access tracks will be designed to avoid waterway crossings where possible or will minimise and mitigate impacts through design and placement if needed.	Impacts are unlikely due to avoidance of impacts to waterways and the species having a low likelihood of occurrence within the project area. If access tracks are required they will be designed and constructed to avoid sediment laden runoff entering waterways and minimise clearing of riparian vegetation.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of existing aquatic ecology values and potential impacts to be completed.
Burnie Burrowing Crayfish (<i>Engaeus yabbinnunna</i>)	Vulnerable	Burnie Burrowing Crayfish are small freshwater crayfish, with a general body length of under ten centimetres. They vary in colour from orange to reddish brown, grey blue and purple. All burrowing crayfish species favour wet, muddy areas and seepages, where their burrows exhibit characteristic chimneys of pelleted soil. Particular species vary in the level of water availability and other environmental conditions that they tolerate and/or prefer	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: No suitable habitat within the survey area.	Direct impacts to riparian areas will be avoided where possible through overflying waterways and careful placement of towers. New access tracks will be designed to avoid waterway crossings where possible or will minimise and mitigate impacts through design and placement if needed.	Impacts are unlikely due to avoidance of impacts to waterways and the species having a low likelihood of occurrence within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of existing aquatic ecology values and potential impacts to be completed.
Threatened Fauna - fish							
Eastern Dwarf Galaxias (<i>Goniistius pusilla</i>)	Vulnerable	Found in lowland areas in the far north-west and north-east of Tasmania. Population distribution is patchy due to habitat being lowland, shallow and swampy.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: There is potential for dwarf galaxias populations to be present in several waterways south of Buffalo to Morwell, including Morwell River, Eel Hole Creek, Stony Creek, Little Morwell River, Berrys Creek, Tanwin River East Branch, and Fish Creek.	Direct impacts to riparian areas will be avoided where possible through overflying waterways and careful placement of towers. New access tracks will be designed to avoid waterway crossings where possible or will minimise and mitigate impacts through design and placement if needed.	There is potential for impacts to the species through loss or modification of instream aquatic or riparian habitations or through introduction of disease and pollutants during construction. Further information is required to determine whether there is suitable habitat for the species and if populations are present in proximity to the project. There is potential to avoid (through HDD) and mitigate impacts to this species (if present) to avoid a significant impact.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of existing aquatic ecology values and potential impacts to be completed.
Australian grayling (<i>Prototroctes moroneo</i>)	Vulnerable	Dark green to dark grey fish with silvery sides and a dark mid-lateral stripe. Fish are born in freshwater then migrate to the ocean as juveniles where they grow to adults before migrating back into freshwater to spawn.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: Suitable habitat within waterways intersected by the proposed route. Recorded in Cam River, Blythe River, Leven River, Forth River and Mersey River, however no records are within 5 km of the proposed route. In Victoria, There is potential for Australian grayling populations to be present in a number of waterways south of Buffalo to Morwell, and therefore potentially impacted by the project. These include Morwell River, Eel Hole Creek, Stony Creek, Little Morwell River, Berrys Creek, Tanwin River East Branch, and Fish Creek. This species has been recorded at several locations along the Tanwin River East Branch.	Direct impacts to riparian areas will be avoided where possible through overflying waterways and careful placement of towers. New access tracks will be designed to avoid waterway crossings where possible or will minimise and mitigate impacts through design and placement if needed.	There is potential for impacts to the species through loss or modification of instream aquatic or riparian habitations or through introduction of disease and pollutants during construction. Further information is required to determine whether there is suitable habitat for the species and if populations are present in proximity to the project. There is potential to avoid (through HDD) and mitigate impacts to this species (if present) to avoid a significant impact.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of existing aquatic ecology values and potential impacts to be completed.
Threatened fauna - frogs							
Growing Grass Frog, Green and golden frog (<i>Litoria raniformis</i>)	Vulnerable	Large green tree frog up to 80 cm long that breeds in permanent freshwater lagoons with a dense cover of aquatic vegetation.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: Suitable habitat unlikely within survey area. No records of the species within 5 km of the proposed route in Tasmania. There are numerous records of the growing grass frog within the Victorian survey area, with potential habitat in the form of permanent and ephemeral waterbodies such as fern dams, rivers, creeks, and lakes between Waratah Bay and Hazelwood. Specific locations include Fish Creek, Stony Creek, Tanwin River East Branch, Berrys Creek, Little Morwell River, Morwell River and Eel Hole Creek, and dams near Buffalo, Dumbalk-Stony Creek Road, South Gippsland Highway and Waratah Road.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	In Victoria, there is potential for impacts on growing grass frog to occur through the clearing or degradation of aquatic and terrestrial habitat for trenches, tracks, and/or easements, spread of disease (Chytrid fungus) and pests during construction, pollution, and (temporary) disruption of dispersal. However, with management measures implemented to avoid and minimise impacts on important populations (where present), it is considered unlikely the project will exceed significant impact thresholds for this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed in accordance with the impact guidelines for this species: 'Significant impact guidelines for the vulnerable growing grass frog (<i>Litoria raniformis</i>) Nationally threatened species and ecological communities - EPBC Act policy statement 3.14'.
Threatened fauna - mammals							
Spotted-tail quoll (<i>Dasyurus maculatus maculatus</i> (Tasmanian population))	Endangered	A medium carnivorous marsupial found in wet forest and coastal habitats across Tasmania.	PMST: Species or species habitat may occur within PMST search area. Ecological assessment: Potential for suitable habitat within the survey area. Species recorded near the proposed route. Suitable habitat for spotted-tailed quolls in wet forest and coastal habitats across Tasmania, including wet and dry forests which have rotting logs or rock outcrops to provide den sites and are found in the survey area for the Heybridge to Blythe River mouth survey area.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Clearing of vegetation has the potential to impact on habitat and maternal den sites. Post-mitigation, impacts are expected to be low	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of habitat and den sites in areas of suitable habitat (forest with abundant rotting logs or rock outcrops).

Marinus Link EPBC Act referral
Preliminary MNES impact assessment table

Threatened species or ecological community	EPBC Act listing	Description ^a	PMST: Species or species habitat may occur within area	Avoidance measures	Potential impacts ^a	Mitigation to be applied	Further assessment to be completed ^a
Spotted-tail quoll (<i>Dasyurus maculatus maculatus</i> (SE mainland population))	Endangered	A medium carnivorous marsupial found in wet forest and coastal habitats across several discrete areas of Victoria.	PMST: Species or species habitat may occur within area. Ecological assessment: Potential for suitable habitat within the survey area. Species recorded near the proposed route. In Victoria, locations include East Gippsland, the Strzelecki Range, and Wilson's Promontory National Park. The species inhabits rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Clearing of vegetation has the potential to impact on habitat and maternal den sites. Post-mitigation, impacts are expected to be low	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of habitat and den sites in areas of suitable habitat (forest with abundant rotting logs or rock outcrops).
Eastern quoll (<i>Dasyurus viverrinus</i>)	Endangered	A small carnivorous marsupial found in dry grassland and forest mosaics bounded by agricultural land.	PMST: Species or species are regionally extinct in the survey area. Ecological assessment: The species now survives in several discrete areas of Victoria, including eastern Victoria (north-eastern Victoria and lowland East Gippsland) and South Gippsland, in the Strzelecki Ranges. It inhabits Dry sclerophyll forest, scrub, heathland and cultivated land. There are records within 5km and potential for suitable habitat to occur in the survey area.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Clearing of vegetation has the potential to impact on habitat and maternal den sites. Post-mitigation, impacts are expected to be low	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of habitat and den sites in areas of suitable habitat (dry forest habitat, grasslands and heathlands).
Southern Brown Bandicoot (<i>Isodon obesulus obesulus</i>)	Endangered	Adult Southern Brown Bandicoots have a body length of about 300 mm, a short (120 mm), thin tail with a pointed end, and weigh between 400-1600 grams. The species has a relatively short nose and ears, dark grey or yellowish brown fur on its upper body, tail and feet and a creamy white belly.	PMST: Species or species habitat likely to occur within area Ecological assessment: Primarily distributed in coastal regions in Victoria. Distribution of this subspecies includes the East Gippsland Lowlands, Gippsland Plain (Western section) and Wilson's Promontory. The species inhabits heath or open forest with a healthy understorey on sandy or friable soils with dense ground cover and adjacent open areas for foraging. There are no recent records nearby and there is unlikely to be suitable habitat present.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of habitat and den sites in areas of suitable habitat (dry forest habitat, grasslands and heathlands).
Eastern barred bandicoot (Tasmania) (<i>Perameles gunnii gunnii</i>)	Vulnerable	A small marsupial with long pink nose and large ears and characteristic pale bars across its hindquarters. Occurs in a range of agricultural habitats across Tasmania where improved pasture is interspersed with patches of native bush.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: Suitable habitat likely within survey area. No records within 5 km of proposed route.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Clearing of vegetation has the potential to impact on habitat. However, as the species prefers mosaic native vegetation and pasture habitat, the impact is unlikely to be significant.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of habitat within survey area.
Broad-toothed rat (<i>Mastacomys fuscus mordicus</i>)	Vulnerable	A compact rodent, chubby-cheeked, with a short, wide face and ears, and long, dense fine fur. It is brown above, with attractive, rufous highlights. The tail is shorter than the head and body length. The tail is ringed, with very little fur.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: Found in the alpine and subalpine heathlands of Victoria and southern NSW. In southern Victoria, the species occupies dense undergrowth in wet sedgelands. There are no suitable vegetation types in the survey area.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	The project is not likely to have a significant impact on this species as there is no suitable habitat in the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of habitat within survey area.
Tasmanian devil (<i>Sarcophilus harrisii</i>)	Endangered	Medium-sized carnivorous marsupial that inhabits forest, woodland and agricultural areas across Tasmania.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: Tasmanian devils use hollow logs, caves, dens or burrows as shelter and maternal den sites, and are known to occur in the Tasmanian survey area. Suitable habitat includes wet and dry forests which have rotting logs or rock outcrops to provide den sites. Generally wet eucalypt forests have the highest density of rotting logs suitable for den sites. Suitable habitat found within survey area. Records of the species within 5 km of proposed route.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Clearing of vegetation for the converter station has the potential to impact on habitat, however this is unlikely given the existing disturbance to the site. Implementation of appropriate avoidance and mitigation measures mean that post-mitigation, impacts are expected to be low.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit. A management protocol will be prepared based on current industry practice for the mitigation of impacts to Tasmanian devils, including those set out in EPBC Act Policy statement 3.6 Nationally Threatened Species and Ecological Communities: Tasmanian Devil (<i>Sarcophilus harrisii</i>) 2006 and Survey guidelines and management advice for development proposals that may impact on the Tasmanian devil (<i>Sarcophilus harrisii</i>) (PCAB, 2015).	Assessment of habitat and den sites in areas of suitable habitat (dry forest habitat, grasslands and heathlands).
Swamp Antechinus (<i>Antechinus minimus</i>)	Vulnerable	The Swamp Antechinus has a head to body length of 95-140mm with a tail length 70% of the head to body length. It is a thickest antechinus with a long slender muzzle, long foreclaws, short ears that do not protrude far beyond the fur and pale eye-rings. The Swamp Antechinus (SE mainland) has eight teats whilst the Tasmania and the Bass Strait Islands population has six teats. The upperparts are brown with a yellow or rufous wash, particularly on the rump, flanks and hindlegs, with paler buff or grey-yellow underparts and pale claws.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: The species mainly occurs in damp areas with dense vegetation at about 1-2 m above ground level, including dense wet heathlands, tussock grasslands, sedgelands, damp gullies, swamps and some shrubby woodlands. The species is found in coastal Victoria as far east as Wilson's Promontory and there is potential for it to occur in larger patches of native woodlands and forests near the coast.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated, however further impact assessment will be completed as part of future assessment phase for the project.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment of vegetation types and habitat will be completed within the survey area. Assessment of bird density will also be completed if deemed necessary.
Sei whale (<i>Balaenoptera borealis</i>)	Vulnerable Migratory Marine	Sei whales have a long, sleek body that is dark bluish-grey to black in colour and white or cream-colored on the underside. The body is often covered in oval-shaped scars (probably caused from cookie-cutter shark and lamprey bites) and sometimes has subtle "mottling," or discoloured spots or blotches. Sei whales have a tall, hooked dorsal fin located about two-thirds down their back.	PMST: Foraging, feeding or related behaviour likely to occur within PMST search area. Ecological assessment: Foraging, feeding or related behaviour likely to occur within the study area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated.	Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring.	Detailed impact assessment to be completed.
Fin whale (<i>Balaenoptera physalus</i>)	Vulnerable Migratory Marine	Fin whales have long, slender bodies that can grow up to a whopping 80 feet in length. With a distinct ridge running behind the dorsal fin, in some countries they have earned themselves the nickname "razorbacks" and cut through the water with ease. Like other baleen whales, fin whales have expandable pleats that allow them to take in huge amounts of water and food.	PMST: Foraging, feeding or related behaviour likely to occur within PMST search area. Ecological assessment: Foraging, feeding or related behaviour likely to occur within the study area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated.	Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring.	Detailed impact assessment to be completed.
Blue whale (<i>Balaenoptera musculus</i>)	Endangered Migratory Marine	The blue whale is an extremely large marine mammal, with a long, torpedo-shaped body. They have blue-grey coloured skin, with a slightly lighter coloured underside; they have two pectoral fins, a small dorsal fin on their backs, and a large fluke.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: Species or species habitat likely to occur in the study area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated.	Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring.	Detailed impact assessment to be completed.
Southern right whale (<i>Eubalaena australis</i>)	Endangered Migratory Marine	Southern right whales can grow to about 17 metres long and weigh up to 100 tonnes. They have dark skin, with irregular white patches on the throat and belly and a round body which tapers to a relatively narrow tail stock. They have a broad tail, with flukes which form a wide triangle with a notch in the middle large, broad pectoral fins, which have a rectangular shape.	PMST: Species or species habitat known to occur in PMST area Marine ecological assessment: Species or species habitat known to occur in the study area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated.	Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring.	Detailed impact assessment to be completed.
Humpback whale (<i>Megaptera novaeangliae</i>)	Vulnerable Migratory Marine	The Humpback whale is a moderately large whale weighing up to 45 tonnes. The Humpback whale can be readily distinguished from other whales by its large flippers which are almost one third of the body length. The flippers are black/white mottled on the upper side, mostly white underneath and heavily scalloped on the leading edge. Other distinctive features include enlarged sensory hair follicles on the upper and lower jaw, prominent serrations on the rear margin of the tail, and individually distinctive black and white patterns on the underside of the tail flukes.	PMST: Species or species habitat known to occur in PMST area Marine ecological assessment: Species or species habitat known to occur in area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated.	Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring.	Detailed impact assessment to be completed.
Southern greater glider (<i>Petaurus volans</i>)	Vulnerable	The Southern Greater Glider is Australia's largest gliding mammal. Greater Gliders have thick, dark grey-brown fur on their back and creamy white fur on their underside, and can be found in different dark and light-coloured morphs. They have a long, furry prehensile tail and large furry ears.	PMST: Species or species habitat known to occur within area. Ecological assessment: There is suitable habitat for the southern greater glider within the survey area and there is potential for the species to occur in the Mirboo North Regional Park, west of the survey area, adjacent forest and woodland, and further to the east near Ashford Road between Melville River and Hazelwood in the northern section of Victoria. The population occurs as far west as the Wombat State Forest. Typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows. The survey area supports similar vegetation types and some sections are contiguous with those supporting known southern greater glider populations.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	The species is sensitive to fragmentation due to poor dispersal capabilities (determined by its gliding distance), small home range size, and reliance of hollow-bearing large trees, which are rare in the landscape. Narrow corridors potentially connect known populations and suitable habitat. There is a potential to impact on the species through loss of large hollow-bearing trees and loss of functional ecological connectivity between populations through gaps in habitat created by clearance for the underground cable.	There is currently insufficient information on the current distribution and size of populations within the survey area and area of disturbance to determine whether significant impacts can avoided through the implementation of management measures.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Long-nosed Potoroo (<i>Potorous tridactylus</i>)	Vulnerable	Adult long-nosed potoroos have a head and body length of about 360 mm and a tail length between 200 - 260 mm. Its fur is greyish-brown above and light grey below. It is distinguished from the slightly larger, but very similar long-footed potoroo in a number of subtle ways including its shorter tail (less than 250 mm long) and smaller hind-foot (shorter than its head). Also, unlike the long-footed potoroo the long-nosed potoroo lacks a leathery pad on the sole of its foot, just behind the inner toe (a hallucal pad).	PMST: Species or species habitat likely to occur within area. Ecological assessment: In Victoria, the Long-nosed Potoroo (SE Mainland) occurs in six discrete regions, including the South-western region, Grampians, Otways, Western Port, Wilsons Promontory and east Gippsland. The species most commonly inhabits heath-woodland grading into heath. There are no records in the local area and restricted occurrences across the state as well as a low likelihood of suitable heath habitat being present.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	The project is not likely to have a significant impact to this species	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Assessment of vegetation types and habitat will be completed within the survey area.
Grey-headed Flying-fox (<i>Pteropus poliocephalus</i>)	Vulnerable	The Grey-headed Flying-fox is the largest Australian bat, with a head and body length of 23 - 29 cm. It has dark grey fur on the body, lighter grey fur on the head and a russet collar encircling the neck. The wing membranes are black and the wingspan can be up to 1 m. It can be distinguished from other flying-foxes by the leg fur, which extends to the ankle.	PMST: Species or species habitat may occur within PMST search area; foraging, feeding or related behaviour may occur within area. Ecological assessment: Found throughout eastern Mainland Australia in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Suitable foraging habitat present.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	With the implementation of appropriate avoidance and mitigation measures (to be determined as part of the impact assessment phase), impacts are expected to be low.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Assessment of vegetation types and habitat will be completed within the survey area.
New Holland Mouse, Poollia (<i>Pseudomys novaehollandiae</i>)	Vulnerable	The New Holland Mouse is similar in size and appearance to the introduced house mouse, although it can be distinguished by its slightly larger ears and eyes, the absence of a notch on the upper incisors and the absence of a distinctive 'mousy' odour. The species is grey-brown in colour and its dusky-brown tail is darker on the dorsal side.	PMST: Species or species habitat may occur within area. Ecology assessment: Disjunct species distribution. Nearest isolated historical records are 50 km away from the study area.	The proposed route has been selected to avoid species habitat as much as practicable.	Clearing of vegetation is unlikely to impact the species due to the lack of habitat used by the species and lack of records within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Assessment of vegetation types and habitat will be completed within the survey area.
Threatened flora							
Clover Glycine, Purple Clover (<i>Glycine latrobeana</i>)	Vulnerable	Small perennial herb up to 10 cm tall that grows in dry forest, woodlands and low open woodlands with a grassy ground layer, on sand or loamy sand soils.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: Found across south-eastern Australia in native grasslands, dry sclerophyll forests, woodlands and low open woodlands with a grassy ground layer, on sand or loamy sand soils. The project is outside of known range of species and there is no suitable habitat. Suitable habitat occurs within the survey area. No records within 5 km of proposed route.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	The project is not likely to have a significant impact on this species	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Assessment of vegetation communities and threatened flora will be completed within the survey area, to confirm TasVeg mapping and identify locations for threatened flora to inform design and development of mitigation measures.
River Swamp Wallaby Grass (<i>Amphibromus Juitensis</i>)	Vulnerable	A perennial grass to 0.8 m tall that spreads by both underground and above-ground stems. Flowering stems tend to be somewhat sprawling, except for the flowering portion of the stalk, which is erect and up to 10 mm long. The flower is rough to touch and deeply ribbed. The structure that breaks away from the flower-stalk is two-toothed, with a straight bristle arising about half way up its back. The species is virtually aquatic, often with only the flower heads above the water.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: River swamp wallaby-grass is considered likely to occur within the Victorian survey area. Suitable habitat includes permanent and semi-permanent waterbodies (particularly swamps, lagoons, billabams, dams and roadside ditches) which experience regular inundation and/or seasonally-fluctuating water levels. Should this species occur it is likely associated with waterbodies intersecting the alignment.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Assessed against EPBC Act criteria, the project has potential to have a significant impact on river swamp wallaby-grass. Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project

Marinus Link EPBC Act referral
Preliminary MNES impact assessment table

Threatened species or ecological community	EPBC Act listing	Description ^a	Likelihood of occurrence ^b	Avoidance measures	Potential impacts ^c	Mitigation to be applied	Further assessment to be completed ^d
Tailed Spider-orchid (<i>Calodenia caudata</i>)	Vulnerable	The tailed spider orchid is a ground orchid with a single hairy leaf and up to four red, or yellow and red flowers with dark red to almost black tips.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: Species is found mainly in dry heathland and healthy woodland habitats, in lowland areas of northern, eastern and southeastern Tasmania. No records from within 5 km of either route and no suitable habitat	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Thick-lipped Spider Orchid (<i>Calodenia tessellata</i>)	Vulnerable	The Thick Lip Spider Orchid is from a group of orchids characterised by five long spreading petals and sepals around a broad down-curved labellum (lip). It has cream coloured petals with reddish stripes, and the yellowish labellum is broad with a few darker stripes. The long, sparsely-hairy, narrow leaf is about 6 cm long and 5 mm wide. Column base with two prominent yellow glands.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: Confined to eastern Victoria. Found in near-coastal healthy woodlands to open forest, on well drained sandy soils. Habitat may be present through damp forests in the northern section. Known from a National Park nearby, however few records and habitat in study area more highly modified.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Matted flax-lily (<i>Dianella aemona</i>)	Endangered	A tufted, mat-forming perennial lily with grey-green leaves which are often crimson at the base. Flowerstem to 45 cm tall with numerous pale-dark blue scented flowers to 20 mm wide. Small round whitish to dark blue berries.	PMST: Species or species habitat known to occur within area. Ecological assessment: Matted flax-lily is considered highly likely to occur within roadsides and remnant woodland patches within the Latrobe Valley and northern foothills of the Strzelecki Ranges. Suitable habitat includes grassy woodland, or derived native grasslands, which have experienced limited modification, as a result of changed land management (e.g. vegetation clearance or grazing).	Should these values be present within the study area, they will be restricted to narrow corridors of vegetation associated with roadsides, waterways or unused road reserves which intersect the alignment, and/or 'introduce invasive species that are harmful to the species'.	Due to the relatively isolated nature of <i>Dianella aemona</i> populations and restricted dispersal potential (reliant on threatened native bees) unmitigated construction could result in the removal of habitat and individuals resulting in a 'long-term decrease in the size of a population', 'reduction in the area of occupancy of the species' and/or 'introduce invasive species that are harmful to the species'.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. National Recovery Plan for Matted Flax-lily.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Strzelecki Gum (<i>Eucalyptus strzeleckii</i>)	Vulnerable	Tree to 40 m tall; bark smooth, whitish with red-brown mottling, usually with a short stocking of loose, semi-persistent rough bark.	PMST: Species or species habitat known to occur within area. Ecological assessment: The vulnerable Strzelecki gum is considered highly likely to occur within the Victorian survey area, within vegetated roadsides and small woodland patches from the southern-most foothills of the Strzelecki Ranges, south of Meeniyan, through to and including the Latrobe Valley in the north. Suitable habitat for this species includes deep soils in hilly, often wet sites, in areas of high annual rainfall and the banks of watercourses or on river flats where soils are seasonally waterlogged.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	The likely area of disturbance is located adjacent to or intersects areas of habitat likely to support either individual <i>Eucalyptus strzeleckii</i> trees or more-significant populations. As a result, there is a considerable potential to impact on an unknown number of individuals near Stony Creek, the Lower Tarwin East Branch, the Little Morwell River valley where remnant vegetation has been retained along minor drainage lines. This impact may be considered significant as it could 'lead to a long-term decrease in the size of an important population' and/or 'adversely affect habitat critical to the survival of a species'. Due to varying constraints along the Victorian route (e.g. steep terrain, high cover of native vegetation), the viability of avoidance and minimisation measures through sections of the route are uncertain and further investigations, including undertaking a detailed tree census, will likely be required to further understand likely impacts on the species. Consequently, there is potential for residual impacts of the project to be considered a moderate impact to this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. National recovery plan for the Strzelecki Gum.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Maroon leek-orchid (<i>Prasophyllum frenchii</i>)	Endangered	The Maroon Leek-orchid is a tall, slender, deciduous terrestrial orchid endemic to south-eastern Australia.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: The species occurs in grassland, heathland and open forest on well-drained or water-retentive sand or clay loams. Suitable habitat may occur near coastline in healthy woodland and there are records at Wilsons Promontory.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. National Recovery Plan for the Maroon Leek-orchid.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed (<i>Lepidium hypsochilum</i>)	Endangered	Upright multi-branched herb growing to 50 cm tall and 50 cm wide. Narrow leaves at base very divided or toothed. Stem leaves are rough, narrower, 1-4 cm long with an ear-like lobe at their base. Tiny green inconspicuous flowers held on softly hairy stalks.	PMST: Species or species habitat may occur within area.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. National recovery plan for the Basalt Peppercress	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Dense Leek-orchid (<i>Prasophyllum spicatum</i>)	Vulnerable	The Dense Leek-orchid <i>Prasophyllum spicatum</i> is a tall, slender, deciduous terrestrial orchid endemic to south-eastern Australia	PMST: Species or species habitat likely to occur within area.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. National recovery plan for the Dense Leek-orchid	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Green-striped Greenhood (<i>Pterostylis chlorogramma</i>)	Vulnerable	A terrestrial, perennial, deciduous, herb with an underground tuber. Non-flowering plants have a rosette of between three and six lance-shaped to narrow egg-shaped leaves. Flowering plants have up to seven translucent green flowers with darker green stripes on a flowering spike 200–450 mm high.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: The species grows in moist areas of healthy and shrubby forest, on well-drained soils. Suitable habitat may occur in southern half of alignment, in small patches of healthy forest but there are no records in the survey area.	Clearing of woodlands and suitable habitat is likely to be minimal in southern parts of the route due to fragmented and sparse cover.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Leafy Greenhood (<i>Pterostylis caulata</i>)	Vulnerable	A terrestrial, perennial, deciduous, herb with an underground tuber. It has between four and seven egg-shaped to oblong leaves, some of which form a rosette at the base and some partly wrap around the flowering stem. The leaves are 40–100 mm long and 15–30 mm wide, dark green, fleshy and flat. A single white, green and reddish-brown flower is borne on a flowering stem 50–250 mm high. The flowers are 35–40 mm long, 20–25 mm wide.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: The species is widely distributed but disjunct, mostly occurring in small groups in coastal areas, sometimes near inland watercourses. There is the potential for suitable habitat to occur in southern near-coastal section, and near Shallow Inlet and there is a population present in Wilsons Promontory	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. National recovery plan for the Leafy Greenhood	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Swamp Greenhood (<i>Pterostylis tenuissima</i>)	Vulnerable	The Swamp Greenhood <i>Pterostylis tenuissima</i> has a single translucent white flower up to 20mm long, with dark green stripes and toning. Flower stems are green, grow to approximately 30cm tall and have up to six small stem sheathing leaves.	PMST: Species or species habitat may occur within PMST search area. Ecological assessment: Habitat for the species occurs in south-west Victoria and Wilsons Promontory and Cape Schanck in the east. There is low potential for habitat along roadside vegetation in the near-coast section of study area.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Swamp Fireweed (<i>Senecio psilocarpus</i>)	Vulnerable	An erect perennial herb growing to 80 cm tall that grows in swampy habitats.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: There is low potential for habitat within project area.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Swamp Everlasting (<i>Xerochrysum palustre</i>)	Vulnerable	The Swamp Everlasting is a perennial herb, to 100 cm tall. It has narrow leaves along more or less erect stems, and large yellow 'paper daisy flowers' at the ends of branches. The leaves are alternate, stalkless and partially clasp the stems. The leaves are lance-shaped, to 10 cm x 8 mm, and more or less hairless, except for cobwebby hairs along their edges. Flowers appear from November to March. Flower-heads are up to 50 mm across, and consist of numerous, small, tubular florets in a central 'button', surrounded by a ray of numerous, glossy yellow, broad, overlapping, papery bracts. The fruit is a narrow, dry seed, to 3 mm long with a crown of yellow bristles about twice as long as the seed.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: The species occurs in lowland swamps, usually on black cracking clay soils, scattered from near the South Australian border north-west of Portland to Balnardsale district, but rare due to habitat depletion. Few high-quality lowland swamps in the alignment to provide suitable habitat, and the species is therefore unlikely to occur within project area.	The proposed route has been selected to avoid native vegetation and areas of conservation value as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. National recovery plan for the Swamp Everlasting	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Metallic Sun-orchid (<i>Thelymitra epipactoides</i>)	Endangered	The metallic sun-orchid is a rare orchid (Orchidaceae) that grows 21 – 52 cm tall and produces one long, fleshy, narrow leaf which is tubular at the base. It is a herbaceous perennial geophyte. The metallic sun-orchid's leaf arises annually from a summer dormant tuber. The metallic sun-orchid occurs across south-eastern Australia.	PMST: Species or species habitat may occur within area. Ecological assessment: No records within study area and likely to be outside species range.	The proposed route has been selected to avoid species habitat as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Spiral Sun-orchid (<i>Thelymitra matthewsii</i>)	Vulnerable	The Spiral Sun-orchid <i>Thelymitra</i> is a deciduous, perennial, terrestrial orchid emerging annually from an underground tuber. It has a single, linear, spirally-twisted, dark green leaf which is ovate and sheathing at the base. The slender purple flower stem grows to 20 cm tall, has a single small sheathing bract, and bears a single (rarely two) deep bluish to reddish purple flower with darker stripes. In Australia, <i>T. matthewsii</i> is widely but sporadically distributed in Victoria and South Australia, from Genoa in East Gippsland (Vic). The species occurs in the Victorian Midlands, South East Coastal Plain, South East Corner, Naracoorte Coastal Plain and Kanimantoo IBRA bioregions.	PMST: Species or species habitat may occur within area. Ecological assessment: Suitable habitat may be present in sandy soils in the southern 5km near-coastal habitats.	The proposed route has been selected to avoid species habitat as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Grassland Greenhood, Cape Portland Greenhood (<i>Pterostylis siegerlei</i>)	Vulnerable	Terrestrial orchid with a basal rosette of dark-green, oval leaves that produces a flowering stem with several small, green and white hooded flowers. In the Midlands it occurs in Themeda triandra native grassland and grassy woodland while, in coastal areas, it occurs on the slopes of low stabilised sand dunes and in grassy dune swales.	PMST: Species or species habitat may occur within area. Ecological assessment: Potential for suitable habitat in near-coastal healthy woodlands surrounding Waratah Bay.	The proposed route has been selected to avoid species habitat as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Sky-blue Sun-orchid (<i>Thelymitra jonesii</i>)	Endangered	The Sky-blue Sun-orchid is a terrestrial orchid, which grows to 40cm high and dies back to subterranean tubers after flowering. Flowering occurs from October to early December. The flowers are light blue to azure blue. Sun-orchids are so named because the flowers of most species open only in warm to hot weather, particularly on bright, sunny days.	PMST: Species or species habitat may occur within area. Ecological assessment: No records from the study area and no suitable habitat.	The proposed route has been selected to avoid species habitat as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Native Wintercress, Riverbed Wintercress (<i>Barbarea australis</i>)	Endangered	<i>Barbarea australis</i> , Family Brassicaceae, also known as native wintercress, is an annual or short lived perennial. It has a cluster of broad dark green leaves at the base of an erect 50–100 cm high flowering stem. The flowers are yellow with 2–8 mm long petals. The many seeded capsules are 20–40 mm long and 2–2.5 mm wide. Native wintercress is found near river margins, creek beds and along flood channels in shallow alluvial silt on rock slabs, rocky ledges, or between large cobbles.	PMST: Species or species habitat may occur within area. Ecological assessment: No records from the study area and no suitable habitat.	The proposed route has been selected to avoid species habitat as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Scrambling Ground-fern (<i>Hypolepis distans</i>)	Endangered	<i>Hypolepis distans</i> has a creeping, slender rhizome that is covered in dark, red-brown hairs. Fronds are distributed along the rhizome, erect, herbaceous, 30–60 cm long; stipe fine and rough, red-brown, glossy, with sparse hairs.	PMST: Species or species habitat may occur within area. Ecological assessment: No records from the study area and no suitable habitat.	The proposed route has been selected to avoid species habitat as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Hoary Sunray (<i>Leucochrysum albicans</i> var. <i>tricolor</i>)	Endangered	The Hoary Sunray (<i>Leucochrysum albicans</i> var. <i>tricolor</i>) is a perennial everlasting daisy belonging to the daisy family Asteraceae. The yellowish flower heads are surrounded by numerous white overlapping ovate-oblong bracts, with the outer layer often tinged purple or brown. The fruits are brown, ovoid, 2–3 mm long, with 14–20 pappus bristles.	PMST: Species or species habitat may occur within area. Ecological assessment: No records from the study area and no suitable habitat.	The proposed route has been selected to avoid species habitat as much as practicable.	Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further information on population size and distribution in the survey area and ultimate area of disturbance is required to determine whether management measures can avoid significant impacts on the species. This will be assessed as part of further detailed ecological studies to be completed to support the assessment phase of the project
Reptile species							

PMST: Refers to outcomes of the Protected Matter Search Tool (PMST) results
Ecological assessment: Information from Marinus Link Terrestrial Ecology Report (ELA 2021) and the Species Profile and Threats Database (Department of Agriculture, Water and the Environment)
Marine ecological assessment: Information from Marinus Link Marine Ecology and Resource Use Desktop Assessment Study (EnviroGulf 2021)

Marinus Link EPBC Act referral
Preliminary MNES impact assessment table

Threatened species or ecological community	EPBC Act listing	Description ^a	Likelihood of occurrence ^b	Avoidance measures	Potential impacts ^c	Mitigation to be applied	Further assessment to be completed ^d
Loggerhead turtle (<i>Caretta caretta</i>)	Endangered Migratory Marine	The loggerhead turtle is dark brown above, sometimes irregularly speckled with darker brown. The top of the head is dark brown, becoming pale on the sides with irregular darker blotches and white, cream or yellowish below. The shell is somewhat elongated and more or less heart-shaped.	PMST: Foraging, feeding or related behaviour known to occur within PMST search area Marine ecological assessment: Species or species habitat known to occur in area	The proposed route has been selected to avoid areas of conservation value as much as practicable.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, habitat disturbance, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Green turtle (<i>Chelonia mydas</i>)	Vulnerable Migratory Marine	Green turtles are olive-green above, usually variegated with brown, reddish-brown and black. They are whitish or cream below. The green turtle is named for the greenish colour of its fat, caused by its diet of seagrass. They have a smooth, high domed shell with non-overlapping scutes.	PMST: Foraging, feeding or related behaviour known to occur within PMST search area Marine ecological assessment: Species or species habitat known to occur in area	The proposed route has been selected to avoid areas of conservation value as much as practicable.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, habitat disturbance, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Leatherback turtle (<i>Dermochelys coriacea</i>)	Endangered Migratory Marine	The leatherback is the largest turtle in the world, and has a primarily black rubbery skin with pinkish-white colouring on its underside. They are the only species of sea turtle that lack scales. Their shell consists of small, interlocking dermal bones beneath the skin that overlie a supportive layer of connective tissue and fat and the deeper skeleton. Their carapace has seven ridges along its length and tapers to a blunt point.	PMST: Foraging, feeding or related behaviour known to occur within PMST search area Marine ecological assessment: Species or species habitat known to occur in area	The proposed route has been selected to avoid areas of conservation value as much as practicable.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, habitat disturbance, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Sharks							
Great White Shark (<i>Carcharodon carcharias</i>)	Vulnerable Migratory Marine	The great white shark is a very large shark with a robust, large, conical snout. The upper and lower lobes on the tail fin are approximately the same size which is similar to some mackerel sharks. A great white displays countershading, by having a white underside and a grey dorsal area (sometimes in a brown or blue shade) that gives an overall mottled appearance.	PMST: Foraging, feeding or related behaviour known to occur within PMST search area; species or species habitat known to occur within area Marine ecological assessment: Species or species habitat known to occur in area	The proposed route has been selected to avoid species habitat as much as practicable.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Migratory species							
Satin flycatcher (<i>Myiagra cyanoleuca</i>)	Migratory Marine	Glossy blue-black bird. Inhabit heavily vegetated gullies in eucalypt-dominated forests and taller woodlands and migrate to coastal forests, woodlands, mangroves and drier woodlands and open forests.	PMST: Breeding known to occur within area. Ecological assessment: Suitable habitat within survey area. Species recorded within 5 km of proposed route.	The proposed route has been selected to avoid species habitat as much as practicable.	Clearing of vegetation has the potential to impact on habitat. This impact is likely to be under the threshold for a significant impact as it is below 1% of habitat or 4,400 ha as defined in the Draft referral guidelines for 14 birds listed as migratory species under the EPBC Act.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Common sandpiper (<i>Actitis hypoleucos</i>)	Migratory Marine	A small sandpiper found along all coastlines of Australia and in many areas inland. The population, when in Australia, is concentrated in northern and western Australia.	PMST: Species or species habitat likely to occur within PMST search area. Ecological assessment: Marine and coastal species unlikely to be found in the survey area. No records from within 5 km and no suitable habitat within survey area.	The proposed route has been selected to avoid species habitat as much as practicable.	Impacts are unlikely as the marine and coastal species is unlikely to be found within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Sharp-tailed sandpiper (<i>Calidris acuminata</i>)	Migratory	A medium sized wader that spends the non-breeding season in Australia. Prefers muddy edges of shallow fresh or brackish waters with inundated or emergent sedges, grass, saltmarsh or other low vegetation. In Tasmania they mostly occur in coastal areas.	PMST: Species or species habitat may occur within PMST search area. Ecological assessment: Potential suitable habitat along waterways and smaller wetlands/waterbodies. High-energy beach at Waratah Beach not optimal habitat but may be used occasionally.	The proposed route has been selected to avoid species habitat as much as practicable.	Clearing of vegetation is unlikely to impact the species due to the lack of habitat used by the species and lack of records within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Marsh sandpiper (<i>Tringa stagnatilis</i>)	Migratory Marine	The marsh sandpiper inhabits swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, intertidal mudflats, sewage farms and saltworks, reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes.	PMST: Species or species habitat may occur within PMST search area. Ecological assessment: Most occurrences of the marsh sandpiper in Victoria have been in Port Phillip Bay, west of the project area, however there have been records in Gippsland, and suitable habitat has been identified in flooded pasture north of Waratah Bay.	The proposed route has been selected to avoid species habitat as much as practicable.	There is a low likelihood of significant impact to this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Latham's snipe (<i>Gallinago hardwickii</i>)	Migratory Marine	Medium-sized wader that is found in permanent and ephemeral wetlands up to 2000 m above sea level. Found in a variety of vegetation types including tussock grasslands, coastal and alpine heathlands, ligum or tea-tree scrub, button-grass plains, alpine herbfields and open forest. Species is widespread in Tasmania with large colonies in the Central Plateau.	PMST: Species or species habitat known to occur within PMST search area. Ecological assessment: Suitable habitat unlikely within survey area. No records of the species within 5 km of proposed route.	The proposed route has been selected to avoid species habitat as much as practicable.	Clearing of vegetation is unlikely to impact the species due to the lack of habitat used by the species and lack of records within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Fork-tailed Swift (<i>Apus pacificus</i>)	Migratory Marine	The fork-tailed swift has a slender body and a long deeply forked tail, usually held closed. Dark-brown above and whitish below. Often seen in groups and invariably near stands of palm trees in urban and rural areas in which they nest. Steals feathers from the bodies of other live birds in flight.	PMST: Species or species habitat likely to occur within PMST search area.	The proposed route has been selected to avoid species habitat as much as practicable.	Clearing of vegetation is unlikely to impact the species due to the lack of habitat used by the species and lack of records within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Flesh-footed shearwater (<i>Ardenna carneipes</i>)	Migratory Marine	The Flesh-footed Shearwater is dark brown on its upper side, being darkest on its head and outer wings. The under side is dark brown and underwings greyish brown. The blackish tail is gently wedged, or rounded. It has a dark-tipped pale horn coloured beak and pink legs and feet. It is also known as Fleshly-footed Petrel or Shearwater, Big or Lord Howe Island Muttonbird or Pale-footed Shearwater.	PMST: Foraging, feeding or related behaviour likely to occur within area	The proposed route has been selected to avoid species habitat as much as practicable.	Clearing of vegetation is unlikely to impact the species due to the lack of habitat used by the species and lack of records within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Sooty shearwater (<i>Ardenna grisea</i>)	Migratory Marine	The Sooty Shearwater is an entirely dark brown-grey bird, apart from a broad pale stripe down the centre of each underwing. It has a long slender bill, a slender head and a longish neck. Its tail is short and rounded. In flight it has a cuculiform shape, with its feet trailing slightly behind its tail.	PMST: Species or species habitat may occur within PMST search area.	The proposed route has been selected to avoid species habitat as much as practicable.	Clearing of vegetation is unlikely to impact the species due to the lack of habitat used by the species and lack of records within the survey area.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Little tern (<i>Sterna albiblons</i>)	Migratory Marine	The Little Tern is mainly white with a dark crown, pale grey back and underwings. The eye is dark brown. When breeding, the bill is yellow, the crown black with a short, pointed white brow and the black eye-line reaches the bill. In non-breeding plumage the crown is mottled with white and the bill blackish. The wing tips are two-toned grey to black on the outer primaries (flight feathers).	PMST: Species or species habitat may occur within area. Ecological assessment: The little tern breeds in spring and summer along the entire eastern coast of Australia, and inhabits sheltered coastal environments, harbour, inlets and rivers. Suitable habitat has been identified at Waratah Bay Beach, which may be impacted by the project.	The proposed route has been selected to avoid species habitat as much as practicable.	Low likelihood of the project having a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Salvin's Albatross (<i>Thalassarche salvinii</i>)	Migratory Marine	All ages have grey hood, narrow black leading edge on the underwing (wider and messier on immature). Adult has a dirty pale yellowish bill with dusker sides and a black spot near tip.	PMST: Foraging, feeding or related behaviour likely to occur within area Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to avoid species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
White-capped Albatross (<i>Thalassarche steadi</i>)	Migratory Marine	The largest black-backed albatross with proportionally longer wings, slightly fuller body, stouter bill and less manoeuvrable flight.	PMST: Foraging, feeding or related behaviour likely to occur within area Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to avoid species habitat as much as practicable.	Unlikely that the project will an impact on habitat as it is an oceanic species, and thus unlikely the project will have a significant impact on the species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Pygmy Right Whale (<i>Caperea marginata</i>)	Migratory Marine	Pygmy right whales have small, flat and ridged heads that are heavily accentuated by their strongly arched jawlines. Extremely pronounced, their jawlines are unmistakable and become more exaggerated as they grow older.	PMST: Foraging, feeding or related behaviour likely to occur within area. Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to avoid species habitat as much as practicable.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Shortfin mako (<i>Isurus paucus</i>)	Migratory Marine	The shortfin mako shark is cylindrical in shape, with a vertically elongated tail. This species exhibits countershading, with brilliant metallic blue coloration dorsally and white ventrally. The line of demarcation between blue and white on the body is distinct. The underside of the snout and the area around the mouth are white.	PMST: Species or species habitat likely to occur within area Marine ecological assessment: Highly migratory species. Species or species habitat likely to occur in area	The proposed route has been selected to avoid species habitat as much as practicable.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Dusky dolphin (<i>Lagenorhynchus obscurus</i>)	Migratory Marine	Their faces are cone-shaped; the forehead slopes gently to the tip of the very short, dark-coloured beak. Dusky's look like they are wearing eyemasks as they have distinctive dark lips, snout tip, and patch around each eye which stand out on the lighter face. Their bodies are also patterned – the back is dark grey to bluish-black, the belly is white, and the sides are grey. The dorsal fin is tall and curved and is two-toned; it has a darker leading edge and a lighter-coloured trailing edge. The flippers are dark, long and curved with pointed tips. The tail flukes have pointy ends and are dark all over.	PMST: Species or species habitat may occur within area Marine ecological assessment: Species or species habitat may occur in area	The proposed route has been selected to avoid species habitat as much as practicable.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Porbeagle, Mackerel shark (<i>Lamna nasus</i>)	Migratory Marine	The porbeagle has an upper tail lobe slightly larger than the lower. The porbeagle can easily be distinguished from the mako and the great white by its teeth which are smooth and have little cusps on each side at the base. The back is blue-grey or brown, fading down to the belly, which tends to be off-white.	PMST: Species or species habitat likely to occur within area Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to avoid species habitat as much as practicable.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Killer whale (<i>Orcinus orca</i>)	Migratory Marine	Killer whales are mostly black on top with white undersides and white patches near the eyes. They also have a grey or white saddle patch behind the dorsal fin. These markings vary widely between individuals and populations. Adult males develop disproportionately larger pectoral flippers, dorsal fins, tail flukes, and griths than females.	PMST: Species or species habitat likely to occur within area Marine ecological assessment: Species or species habitat likely to occur in area	The proposed route has been selected to avoid species habitat as much as practicable.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Black-faced Monarch (<i>Monarcha melanopsis</i>)	Migratory	The Black-faced Monarch has a distinctive black face that does not extend across the eyes, grey upperparts, wings and upper breast, contrasting with a rufous (red-orange) belly. The dark eye has a thin black eye ring and a lighter area of pale grey around it. The blue-grey bill has a hooked tip.	PMST: Species or species habitat known to occur within area. Ecological assessment: Mainly associated with rainforest habitats but may also occur in open eucalypt forests, dry sclerophyll forests and woodlands, gullies in mountain areas or coastal foothills, brigalow scrub, coastal scrub, mangroves, parks and gardens. Suboptimal habitat may be present in the survey area but there are no recent records.	The proposed route has been selected to avoid species habitat as much as practicable.	There is a low likelihood of the project having a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Yellow Wagtail (<i>Motacilla flava</i>)	Migratory	A slender 15–16 cm long bird, with the characteristic long, constantly wagging tail of its genus. The breeding adult male is basically olive above and yellow below. In other plumages, the yellow may be diluted by white. The heads of breeding males come in a variety of colours and patterns depending on subspecies.	PMST: Species or species habitat may occur within area.	The proposed route has been selected to avoid species habitat as much as practicable.	There is a low likelihood of the project having a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Rufous fantail (<i>Rhipidura rufifrons</i>)	Migratory	The Rufous Fantail is a small, active bird which has a distinctive reddish brown rump and continuously fanned tail. The crown, face, neck and shoulders are grey-brown, shading to reddish brown on the lower back, rump and upper tail. The eyebrow is reddish-brown, the chin and throat are white, grading into a dappled black and white breast, and the rest of the underparts are white tinged red-brown. The wings are grey-brown and the tail feathers have red-brown bases, but are otherwise dark grey, tipped white.	PMST: Species or species habitat likely to occur within area. Ecological assessment: The rufous fantail is found in south and central Victoria, in wet sclerophyll forests, subtropical and temperate rainforests. Suitable habitat has been identified within the Victorian survey area, and there is a moderate likelihood that this species occurs in the area, limited to larger patches of native forest and woodland and vegetated waterways.	The proposed route has been selected to avoid species habitat as much as practicable.	The project is unlikely to substantially modify, destroy or isolate an area of important habitat for migratory bird species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link' Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.

Marinus Link EPBC Act referral
Preliminary MNES impact assessment table

PMST: Refers to outcomes of the Protected Matter Search Tool (PMST) results
Ecological assessment: Information from Marinus Link Terrestrial Ecology Report (ELA 2021) and the Species Profile and Threats Database (Department of Agriculture, Water and the Environment)
Note: Marine ecological assessment: Information from Marinus Link Marine Ecology and Resource Use Desktop Assessment Study (EnviroGulf 2021)

Threatened species or ecological community	EPBC Act listing	Description ^a	Likelihood of occurrence ^b	Avoidance measures	Potential impacts ^c	Mitigation to be applied	Further assessment to be completed ^d
Pectoral sandpiper (<i>Calidris melanotos</i>)	Migratory	A stout, medium-sized shorebird with a moderately long, fairly thick-based bill and long wings. Adults are patterned in brown, gold, and black above, with white belly and neat dark-brown rows of stipples on the breast that stop sharply at the white belly. Juveniles are similar but with some rusty-edged feathers above. The legs are yellowish. In flight, shows little to no wingstripe.	PMST: Species or species habitat may occur within area. Ecological assessment: Rare winter visitor to Tasmania. Occurs in a wide range of island and coastal wetlands. Mainly associated with estuaries and large coastal mudflats.	The proposed route has been selected to avoid species habitat as much as practicable.	The Project is unlikely to substantially modify, destroy or isolate an area of important habitat for migratory bird species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Osprey (<i>Pandion haliaetus</i>)	Migratory	The Osprey is a medium-sized fish-eating raptor (bird of prey). It has dark brown upperparts contrasting with pale underparts. There is a black band through the eye, separating the white throat from the pale crown. The Osprey has a rather small head and neck and typically swivels its head around or sways its head from side to side. When it is perched, there is a short bristly crest. The eyes are placed well forward on the head. The fingered wings in flight are narrow and angled distinctively. There are dark carpal patches on the underwing (at the bend in the wing). The beak is strongly hooked and the legs are powerful. The female is similar to the male but is larger and has a fuller, darker breast band.	PMST: Species or species habitat likely to occur within area. Ecological assessment: Osprey is a marine bird which makes rare occurrences in Victoria and may make use of the shoreline at Waratah Bay. It inhabits rocky shorelines, islands, reefs, mouths of large rivers, lagoons and lakes. There is a moderate likelihood of occurrence within the Victorian survey area	The proposed route has been selected to avoid species habitat as much as practicable.	The Project is unlikely to substantially modify, destroy or isolate an area of important habitat for migratory bird species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Common Greenshank (<i>Tringa nebularia</i>)	Migratory	The Common Greenshank is a large, rather heavily built wader. When not breeding, it is mainly grey-brown above and pale below. The head and neck are flecked with dark grey. The bill is dark to green-grey and is long with a slight upward curve. There is a narrow white eye ring and the long legs are yellowish-green.	PMST: Species or species habitat likely to occur within area. Ecological assessment: Widespread in coastal regions, mainly between Gippsland Lakes and Port Phillip Bay. Inhabits terrestrial wetlands (swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans, saltflats, sewage farms and saltworks dams, inundated rice crops and bays) and sheltered coastal habitats (mudflats, saltmarsh, mangroves, embayments, harbours, river estuaries, deltas, lagoons, tidal pools, rock-flats and rock platforms). Small wetlands and swamps within study area. Limited records associated with estuaries. There is a moderate likelihood of occurrence within the Victorian survey area.	The proposed route has been selected to avoid species habitat as much as practicable.	The Project is unlikely to substantially modify, destroy or isolate an area of important habitat for migratory bird species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Marinus Link Easement Management Plan will set out mitigation measures to be implemented during operations to mitigate impacts such as spreading of weeds and pathogens. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Marine species							
White-bellied sea-eagle (<i>Haliaeetus leucogaster</i>)	Marine	The White-bellied Sea-Eagle has white on the head, rump and underparts and dark grey on the back and wings. In flight the black flight feathers on the wings are easily seen when the bird is viewed from below. The large, hooked bill is grey with a darker tip, and the eye is dark brown. The legs and feet are cream-white, with long black talons (claws).	PMST: Species or species habitat likely to occur within area. Ecological assessment: Suitable foraging habitat for the white-bellied sea-eagle has been identified within the Victorian survey area.	The proposed route has been selected to avoid species habitat as much as practicable.	The Project is unlikely to substantially modify, destroy or isolate an area of important habitat for migratory bird species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Minke whale (<i>Balaenoptera acutorostrata</i>)	Marine	The minke whale is a black/grey/purple colour. The body is usually black or dark-grey above and white underneath. Most of the length of the back, including dorsal fin and blowholes, appears at once when the whale surfaces to breathe.	PMST: Species or species habitat may occur in area. Marine ecological assessment: Species or species habitat may occur in area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated, however further impact assessment will be completed for the project.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
False killer whale (<i>Pseudorca crassidens</i>)	Marine	The false killer whales have long, slender, black or dark grey bodies, a narrow pointed head with no beak and a prominent bulbous forehead, or 'melon'. They have long, slim S-shaped flippers that make them look as though they have elbows and a tall, tapered dorsal fin. These dolphins will usually have a slightly paler neck and some individuals have a pale 'W' shape on their chest.	PMST: Species or species habitat may occur in area. Marine ecological assessment: Species or species habitat may occur in area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated, however further impact assessment will be completed for the project.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Common dolphin (<i>Delphinus delphis</i>)	Marine	Common dolphin are medium-sized dolphins; adults range between 1.9 and 2.5 m long, and can weigh between 80-235 kg, although the range between 80-150 kg is more common. The back is dark and the belly is white, while on each side is an hourglass pattern coloured light grey, yellow, or gold in front and dirty grey in back.	PMST: Species or species habitat may occur in area. Marine ecological assessment: Species or species habitat may occur in area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated, however further impact assessment will be completed for the project.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Risso's dolphin (<i>Grampus griseus</i>)	Marine	Very stocky dolphins with blunt heads and no discernible beak. Although they start out in life a grey/olive brown colour, as they get older they get whiter and whiter.	PMST: Species or species habitat may occur in area. Marine ecological assessment: Species or species habitat may occur in area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated, however further impact assessment will be completed for the project.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin (<i>Tursiops aduncus</i>)	Marine	The bottlenose dolphin weighs an average of 300 kg; it can reach a length of just over 4 meters. Its colour varies considerably, is usually dark grey on the back and lighter grey on the flanks, but it can be bluish-grey, brownish-grey, or even nearly black, and is often darker on the back from the rostrum to behind the dorsal fin.	PMST: Species or species habitat may occur in area. Marine ecological assessment: Species or species habitat may occur in area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated, however further impact assessment will be completed for the project.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Short-finned pilot whale (<i>Globicephala macrorhynchus</i>)	Marine	The short-finned pilot whale has a bulbous melon head with no obvious beak. Its dorsal fin is far forward on its body and has a relatively long base. The body is black or dark brown, with a large grey saddle behind the dorsal fin.	PMST: Species or species habitat may occur in area. Marine ecological assessment: Species or species habitat may occur in area	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated, however further impact assessment will be completed for the project.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Great Egret (<i>Ardea alba</i>)	Marine	The Great Egret's overall plumage is white, and, for most of the year, when not breeding, the bill and facial skin are yellow. The feet are dark olive-grey or sooty black as are the legs. During the breeding season, the bill turns mostly black and the facial skin becomes green. Also at this time, long hair-like feathers (nuptial plumes) hang across the lower back, and the legs become pinkish-yellow at the top.	PMST: Species or species habitat likely to occur within area. Ecological assessment: Widespread in Australia. Inhabits swamps and marshes, grasslands, margins of rivers and lakes, salt pans, estuarine mudflats and other wetland habitats. Most records are associated with more heavily vegetated wetlands although one record is associated with the nearby Hazelwood Cooling Pond. This species may infrequently use Eel Hole Creek or when flooded, agricultural land, and vegetated margins of waterways within study area.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Cattle Egret (<i>Ardea ibis</i>)	Marine	A relatively small snowy-white egret, the Cattle Egret is distinguished during breeding season by its orange crown, neck and breast, with similarly tinted long loose neck plumes. The long sharp, slightly down-curved bill is yellow to pinkish yellow, but becomes bright red during breeding season. The legs are normally grey-green out of breeding season, turning bright red or orange-brown during breeding.	PMST: Species or species habitat likely to occur within area.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Great Skua (<i>Catharacta skua</i>)	Marine	Resembles a dark, heavily built immature gull; feeds by pirating gulls and other seabirds, also by scavenging at fishing boats. Dark brown overall with big white flashes in outer half of wings; adult has variable pale mottling on upperparts.	PMST: Species or species habitat may occur within area.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Rainbow Bee-eater	Marine	A striking, colourful bird, the Rainbow Bee-eater is medium sized, with a long slim curved bill and a long tail with distinctive tail-streamers. It has a golden crown and a red eye set in a wide black stripe from the base of the bill to the ear, which is edged with a thin blue line. The throat is orange-yellow, with a broad black band separating it from a green breast. The upperparts are green, with the flight feathers coppery and black tipped. The underwings are bright orange, with a black edge. The lower abdomen is blue. The tail is black, including the long tail streamers, with a blue tinge.	PMST: Species or species habitat may occur within area.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. HDD or other trenchless construction methods is proposed at targeted crossing sites such as shore crossings, waterways, sealed roads, areas of roadside vegetation, and where geotechnical conditions permit.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish (<i>Heraldia nocturna</i>)	Marine	The upside-down Pipefish is brown or yellowish-brown and has the dorsal fin closer to tail tip than the head, a large spiky caudal fin, and raised spiny edges on the body rings.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heylbridge is patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Surveys to map vegetation types and habitat will be completed within the survey area. Bird density surveys will also be completed if deemed necessary.
Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse (<i>Hippocampus abdominalis</i>)	Marine	The Bigbelly Seahorse is the largest seahorse in Australia. It has a low triangular coronet, low, rounded bumps above the eyes, and fleshy filaments off the head. Adult males have a very prominent abdomen, whereas females have a compressed abdomen with a keel down the middle. Individuals range in colour from almost white to a mottled yellow, redfish or even brown, with irregular darker spots and blotches, and a broadly banded tail.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heylbridge is patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.

Marinus Link EPBC Act referral
Preliminary MNES impact assessment table

PMST: Refers to outcomes of the Protected Matter Search Tool (PMST) results
Ecological assessment: Information from Marinus Link Terrestrial Ecology Report (ELA 2021) and the Species Profile and Threats Database (Department of Agriculture, Water and the Environment)
Note: Marine ecological assessment: Information from Marinus Link Marine Ecology and Resource Use Desktop Assessment Study (EnviroGulf 2021)

Threatened species or ecological community	EPBC Act listing	Description ^a	Likelihood of occurrence ^b	Avoidance measures	Potential impacts ^c	Mitigation to be applied	Further assessment to be completed ^d
Short-head Seahorse, Short-snouted Seahorse (<i>Hippocampus breviceps</i>)	Marine	A small, well-camouflaged seahorse with a short snout, a distinctly tall coronet, and fleshy tendrils on the head and body.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Bullneck Seahorse (<i>Hippocampus minotaur</i>)	Marine	A very small, orange seahorse.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	Little is known about its natural habitat and is has never been found in the wild. Avoiding common seahorse habitat is the best avoidance measure for this species.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Crested Pipefish, Briggs' Pipefish (<i>Histogamphelus briggsii</i>)	Marine	A well-camouflaged pipefish that resembles decaying or encrusted seagrass leaves, algae and detritus. The high rounded snout ridge that only extends to the area between the eyes is distinctive.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish (<i>Histogamphelus cristatus</i>)	Marine	The species is mottled brown in colour. Females have bluish blotches on the sides of the body. Juveniles have a rhino-like hump on the snout.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Knifesnout Pipefish, Knife-snouted Pipefish (<i>Hypsognathus rostratus</i>)	Marine	A large mottled brown pipefish sometimes with indistinct pale bars across the back, and pale spots along the underside. Knifesnout Pipefish have a low ridge along the top of the snout.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Deepbody Pipefish, (<i>Kaupus costatus</i>)	Marine	A reddish to reddish-brown pipefish with tiny blue, yellow and white dots on the back and fine wavy lines on the head and tail. The deep-bodied females have bluish streaks, bars and small ocelli above the lateral trunk ridge, and prominent blue markings on each trunk ring below the lateral ridge.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Trawl Pipefish, Bass Strait Pipefish (<i>Kimbleura bassensis</i>)	Marine	The Trawl Pipefish, the only species in the genus Kimbleura, is only known from a few specimens taken in dredges on rubble or shelly bottomed substrates. Body orange with a few darker orange spots on the head and broad brownish-orange bands on body.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Brush-tail Pipefish (<i>Leptochthys fistularius</i>)	Marine	A large well-camouflaged pipefish with a large "brush-like" tail and a long snout.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Australian Smooth Pipefish, Smooth Pipefish (<i>Lissocampus runa</i>)	Marine	Although the Smooth pipefish is widespread along Australia's southern coast, it is rarely seen due to its small size and cryptic coloration, often mimicking seagrass leaves and macroalgae.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Javelin Pipefish (<i>Lissocampus runa</i>)	Marine	The Javelin Pipefish has an extremely elongate slender body that is encased in bony rings. The length of the body posterior to the dorsal fin is longer than that before the dorsal fin. The dorsal margin of the snout is concave. Colouration of the species is variable. It is usually plain, but may have dark bars on the sides of the body.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Sawtooth Pipefish (<i>Maroubra perserrata</i>)	Marine	A greyish to brown pipefish with a pale stripe along the head and back, a brown stripe on the side of the head, and often two narrow reddish-brown lines along the side. The common name refers to the spiny ridges on the body.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Halfbanded Pipefish (<i>Mitotichthys semistriatus</i>)	Marine	The Halfbanded Pipefish lives in very shallow seagrass and eelgrass beds in southern Australia.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Tucker's Pipefish (<i>Mitotichthys semistriatus</i>)	Marine	Tucker's Pipefish is endemic to New South Wales and northern Tasmania where it lives in kelp beds and amongst floating Sargassum algae	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Red Pipefish (<i>Notocampus ruber</i>)	Marine	A dusky pink, red or maroon pipefish peppered with minute whitish to yellowish or reddish dots, a short snout, large eyes, and no pectoral fins.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.

Marinus Link EPBC Act referral
Preliminary MNES impact assessment table

Threatened species or ecological community	EPBC Act listing	Description ^a	Likelihood of occurrence ^b	Avoidance measures	Potential impacts ^c	Mitigation to be applied	Further assessment to be completed ^d
Leafy Seadragon (<i>Phycodurus eques</i>)	Marine	The lobes of skin that grow on the leafy seadragon provide camouflage, giving it the appearance of seaweed.[4] It is able to maintain the illusion when swimming, appearing to move through the water like a piece of floating seaweed. It can also change colour to blend in, but this ability depends on the seadragon's diet, age, location, and stress level.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Common Seadragon, Weedy Seadragon (<i>Phyllopteryx tamiolatus</i>)	Marine	The Common Seadragon is large and colourful with a long tubular snout and simple leaf-like appendages on the body that resemble kelp fronds.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Pugnose Pipefish, Pug-nosed Pipefish (<i>Pugnaso curtirostris</i>)	Marine	The Pugnaso Pipefish is endemic to southern Australia and is the only species in the genus Pugnaso.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Robust Pipehorse, Robust Spiny Pipehorse (<i>Solegnathus robustus</i>)	Marine	This rare pipehorse is endemic to South Australian waters and nothing is known of its biology.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	Little is known about its biology. Avoiding common pipefish habitat is the best avoidance measure for this species.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Spiny Pipehorse, Australian Spiny Pipehorse (<i>Solegnathus spinosissimus</i>)	Marine	Body pink, reddish or orange, with about 7 darker bars, blotches or pairs of spots on back; sides with many narrow yellow bars continuing onto tail as blotches or spots; middle of underside bright red; anus surrounded by a reddish-brown blotch. Spiny Pipehorses are sometimes washed ashore after storms.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Spotted Pipefish, Gulf Pipefish, Peacock Pipefish (<i>Stigmatopora argus</i>)	Marine	A slender greenish-brown pipefish, usually with evenly scattered small dark or pale spots, sometimes ocellated spots, often covering all but the underside, and an almost prehensile tail that lacks a caudal fin.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish (<i>Stigmatopora nigra</i>)	Marine	A slender pipefish with a variable colour pattern ranging from overall greenish to brownish and even bright red depending on the habitat. Females have a series of bar bands across the underside of the wide part of the body, and often an orange line along the side. Wide-body Pipefish lack a caudal fin, and cling to seagrass fronds and algae with their almost prehensile tails.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Ringback Pipefish, (<i>Stigmatopora cristatus</i>)	Marine	An mottled brownish pipefish with 9–11 irregular narrow pale bars or blotches along the back, pale irregular blotches along the sides of the tail, and a dark blotch on the dorsal fin. The Ringback Pipefish also has an elevated snout ridge.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Hairy Pipefish (<i>Urocampus carinirostris</i>)	Marine	A small, sedentary pipefish covered in hairy appendages which provide camouflage amongst eelgrass and seagrasses. Hairy Pipefish use their prehensile tails to cling to vegetation on the substrate.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Mother-of-pearl Pipefish (<i>Vanacampus margaritifer</i>)	Marine	A brown to greyish-brown pipefish with pale bars across the back, small pearly spots along the side and distinct pale markings on the ventral ridges. The Mother-of-pearl Pipefish has a long snout, a small tail fin and low ridges on the body.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Port Phillip Pipefish (<i>Vanacampus phillipi</i>)	Marine	This endemic pipefish has a moderately long snout. It is brownish with indistinct bars and spots, and blue bars on the sides, especially in larger individuals. Males and females are similar.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Longsnout Pipefish (<i>Vanacampus peciololaemus</i>)	Marine	A pale brown pipefish with 6–9 rows of small dark-edged ocelli on the side of the trunk; side of snout with faint diagonal pale bars or blotches in adult males, distinct dark bars and spots in adult females.	PMST: Species or species habitat may occur within area. Marine ecological assessment: In the Victorian nearshore in Waratah Bay, the sandy seabed has a sparse distribution of seagrasses and macroalgae and is unlikely to be suitable habitat for many syngnathid species. However, the Tasmanian nearshore at Heybridge as patches of seagrass and dense covers of macroalgae on the rock platforms and reefs, where syngnathid species diversity may be expected to be higher.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Long-nosed Fur-seal (<i>Arctcephalus forsteri</i>)	Marine	Long-nosed fur seals have external ears and hind flippers that rotate forward, which visibly distinguish them from other seals. They have a pointy nose with long pale whiskers. The fur seals are covered by two layers of fur. The coat is grey-brown on their back, and lighter on their belly. Some have white tips on longer upper hairs, which can give them a silver-like appearance.	PMST: Species or species habitat may occur within area. Marine ecological assessment: Species is rare in Tasmanian waters of Bass Strait and is mainly found along the south and east coasts of Tasmania, as well as the coast of South Australia. In Victoria, long-nosed fur seal breeding is known to occur at Kanowna Island near Wilsons Promontory.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.
Australian Fur-seal (<i>Arctcephalus pusillus</i>)	Marine	Adult males can reach up to 100 kg. Fur Seals also varies between male and female, with the male being dark grey to brownish with a paler underside. They have a dark mane of coarse hair over the neck and shoulders. Females can vary from pale fawn to greyish brown with a paler yellowish throat and underside.	PMST: Species or species habitat may occur within area. Marine ecological assessment: Species known to occur within area. There are ten established breeding colonies of the Australian Fur-seal, which are restricted to islands in the Bass Strait; six occurring off the coast of Victoria and four off the coast of Tasmania.	The proposed route has been selected to avoid species habitat as much as practicable.	It is considered unlikely that the project, completed with appropriate management measures, will have a significant impact on this species.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.

PMST: Refers to outcomes of the Protected Matter Search Tool (PMST) results
Ecological assessment: Information from Marinus Link Terrestrial Ecology Report (ELA 2021) and the Species Profile and Threats Database (Department of Agriculture, Water and the Environment)
Note: Marine ecological assessment: Information from Marinus Link Marine Ecology and Resource Use Desktop Assessment Study (EnviroGulf 2021)

Marinus Link EPBC Act referral
Preliminary MNES impact assessment table

Threatened species or ecological community	EPBC Act listing	Description*	Likelihood of occurrence*	Avoidance measures	Potential impacts*	Mitigation to be applied	Further assessment to be completed*
Bottlenose Dolphin (<i>Tursiops truncatus s str.</i>)	Marine	The bottlenose dolphin weighs an average of 300 kg. Its colour varies considerably, is usually dark grey on the back and lighter grey on the flanks, but it can be bluish-grey, brownish-grey, or even nearly black, and is often darker on the back from the rostrum to behind the dorsal fin. This is called countershading and is a form of camouflage. Older dolphins sometimes have a few spots.	PMST: Species or species habitat may occur within area. Marine ecological assessment: species or species habitat may occur within area.	Identify breeding times and areas and conduct any work outside of this time.	Potential impacts on this species may occur from construction and operation of the project, including from vessel noise, behavioural disruption, and generated electromagnetic fields. Significant impacts on this species are not anticipated.	A Construction Environmental Management Plan will be prepared, detailing mitigation measures to be implemented during construction to avoid and mitigate impacts. Adopt National Guidance on the Management of Whale and Dolphins Incidents in Australian Waters. Adopt measures outlined in EPBC Act Policy Statement 2.1 - Interaction between offshore seismic exploration and whales; including presence of a marine mammal observer (MMO), timing works during daytime with good visibility, use of spotter vessel and aircraft, increased precaution and buffer zones, and passive acoustic monitoring. Comply with the regulations under the International Convention for the Prevention of Pollution from Ships (MARPOL). Implement a quarantine management plan, which includes requirements for vessels to comply with Australian and International Maritime Organisation guidelines and standards for ballasting, hull cleaning and antifouling requirements.	Further assessment will be completed to assess potential impacts on the species and identify appropriate mitigation measures to be implemented during construction.