

# METRONET on Swan Ferry Expansion: Perth to Applecross

NVCP Supporting Document

16-Sep-2025

# METRONET on Swan Ferry Expansion: Perth to Applecross

## NVCP Supporting Document

Client: Public Transport Authority of Western Australia

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## 1.0 Introduction

### 1.1 Background

The Public Transport Authority of Western Australia (PTA) (the Applicant) is undertaking an expansion of the existing ferry service, which currently operates between Elizabeth Quay and South Perth.

The METRONET on Swan Ferry Service Expansion: Perth to Applecross (the Proposal) is situated within in-river environments, with minimal terrestrial and landside works proposed in already developed areas. The Proposal will introduce new ferries, potentially powered by water jet propulsion and electric systems and will include the expansion and operation of the existing Elizabeth Quay jetty to connect services to new ferry terminals at Matilda Bay and Applecross.

Key components of the Proposal will include:

- Expanding the ferry fleet to include five new electric ferries;
- Expanding boarding facilities at the existing Elizabeth Quay terminal;
- New ferry terminals at Matilda Bay and Applecross;
- Modifying road access at Matilda Bay terminal (Hackett Drive) including a new roundabout, bus embayments, public ablution facilities and parking bays;
- Operating the new ferry service between Elizabeth Quay, Matilda Bay and Applecross; and
- Berthing of new ferries at the redeveloped Barrack Square Jetty 1 facility (an existing Department of Transport and Major Infrastructure (DTMI) project).

Subject to necessary approvals, the proposed upgrade of the Elizabeth Quay terminal and development of the Matilda Bay and Applecross terminals is scheduled for completion in time for the new ferry service to commence at the end of 2027.

To enable the construction and installation of the proposed new jetty and ferry terminal infrastructure, removal of existing seagrass and macroalgae vegetation is required across the Proposal's Matilda Bay and Applecross locations. No seagrass was recorded at the Elizabeth Quay site. Terrestrial ground disturbing works associated with the Proposal will not impact any native vegetation.

### 1.2 Purpose

This report has been prepared to support an application for a Native Vegetation Clearing Permit (NVCP) (area permit). The applicant is seeking approval to disturb up to 0.63 hectares (ha) of seagrass and macroalgae vegetation across two designated areas (forming the disturbance area) at the Proposal's Matilda Bay and Applecross sites (Figure 1). The disturbance area represents the maximum potential impacts, subject to final design and construction requirements. Within this area, the application of avoidance measures during design and mitigation strategies during construction is expected to limit actual disturbance to an Indicative Disturbance Footprint (IDF) estimated at 0.03 ha, reflecting the anticipated disturbance to benthic communities (Figure 2). The larger disturbance area provides flexibility to accommodate potential adjustments in construction methodology and site conditions.

### 1.3 Location

The Proposal spans across the City of Perth and City of Melville Local Government Areas (LGAs) and sits within the Swan-Canning Estuary and adjacent foreshore, situated within the Swan coastal plain region of Western Australia. The Swan-Canning Estuary is approximately 50 km long and covers an area of approximately 55 km<sup>2</sup>. The disturbance area is located across the Proposal's Matilda Bay (City of Perth) and Applecross (City of Melville) sites and shown on Figure 2.

Table 1 Site details

| Property         | Description          |
|------------------|----------------------|
| Land description | Swan-Canning Estuary |

| Property           | Description                                          |
|--------------------|------------------------------------------------------|
| Disturbance area   | 0.63 ha                                              |
| Zoning             | Metropolitan Region Scheme (MRS) Waterways           |
| Owner              | State of Western Australia (DBCA responsible agency) |
| Method of Clearing | Mechanical                                           |

## 1.4 Applicant

The PTA is proposing to disturb up to 0.63 ha of seagrass and macroalgae across the City of Perth and City of Melville. The PTA contact for this NVCP application is detailed in Table 2.

Table 2 Applicant details

| Subject        | Detail |
|----------------|--------|
| Contact        |        |
| Title          |        |
| Company        |        |
| Address        |        |
| Postal address |        |
| Office phone   |        |
| Email          |        |





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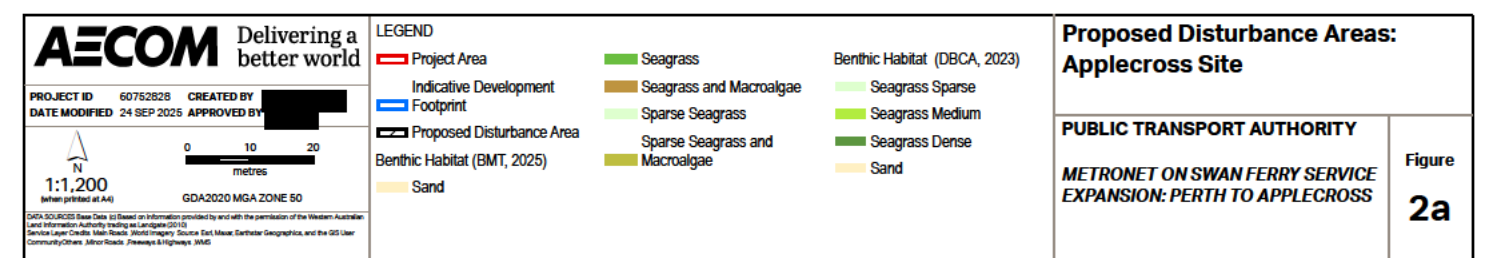
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LEGEND  
 Project Area

|                                                                                                                     |                           |
|---------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Site Location</b>                                                                                                |                           |
| <b>PUBLIC TRANSPORT AUTHORITY</b><br><b>METRONET ON SWAN FERRY SERVICE</b><br><b>EXPANSION: PERTH TO APPLECROSS</b> | <b>Figure</b><br><b>1</b> |









## 2.0 Measures to Avoid and Minimise

### 2.1 Direct and Indirect Impacts

The expected direct and indirect impacts to native vegetation through implementation of the Proposal are summarised below:

#### Direct Impacts:

- Pile installation and construction vessel mooring will result in direct disturbance to native vegetation BCH with impacts localised associated with construction activities.
- Shading of 0.09 ha under the jetty structures at Matilda Bay and Applecross (0.03 ha) from the shadow cast from infrastructure at winter solstice (0.04 ha) and summer solstice (0.02 ha), leading to reduced light availability and limiting suitable conditions for BCH including native vegetation (seagrass and macroalgae).

#### Indirect Impacts

- Increased smothering of BCH from construction-related Total Suspended Solids (TSS) plumes & inability of native seagrass and/or macroalgae to recover.
- Decreased light availability for BCH due to TSS levels increasing in water column from construction-related activities, causing decreased growth and/or covering of native seagrass and/or macroalgae.

### 2.2 Environmental Assessments

#### 2.2.1 Project Surveys

PTA has commissioned a number of environmental surveys, listed below and shown in Figure 1.

- Benthic Communities and Habitats Mapping (BMT, 2025), 4.94 ha Survey Area (Appendix A);
- Sediment Chemical Characterisation (BMT, 2025), 4.87 ha Survey Area (Appendix B); and

#### **Benthic Communities and Habitats Mapping**

BMT undertook a benthic communities and habitats (BCH) survey for the Proposal in March 2025. The survey covered 4.94 ha across three locations at Matilda Bay, Applecross and Elizabeth Quay<sup>1</sup>. The survey was scheduled for the late summer peak BCH growth period, to capture seasonal and ephemeral benthic flora at their most representative condition.

High-definition towed video data was collected using Spot X Real-Time Underwater Video System ~0.5 m above the seabed to record seabed features. At the Matilda Bay and Applecross sites, video transects were conducted at a speed of 1-5 knots to ensure the best quality footage was captured, using a Global Positioning System (GPS), recorded transect paths via a tracklog. Side scan sonar was also run and recorded for each transect to confirm benthic profile.

Video footage was then analysed and classified by a specialist, using Transect Measure software, allowing a single benthic habitat type to be assigned to each frame of video footage. The BCH scoring system included two components, with habitat initially classified by identifying the dominant habitat category and minor categories, where possible, as outlined in Table 3 below.

**Table 3 Benthic communities and habitat classes and percent cover classification, as per BMT (2025)**

| Major class | Minor class                                                   | Cover                                                                       |
|-------------|---------------------------------------------------------------|-----------------------------------------------------------------------------|
| Seagrass    | Mixed <i>Halophila</i> spp. (likely <i>Halophila ovalis</i> ) | Very sparse (<5%)<br>Sparse (5-35%)<br>Moderate (35-70%)<br>Dense (70-100%) |

<sup>1</sup> The Proposal development envelope is 8.66 ha and refers to the combined boundaries of all land parcels where consent has been granted for development of the Proposal. The disturbance area is contained within the Proposal development envelope.



| Major class    | Minor class                   | Cover |
|----------------|-------------------------------|-------|
|                | Other                         |       |
| Mixed          | Mixed seagrass and macroalgae |       |
| Macroalgae     | Macroalgae                    |       |
| Filter feeders | Sponges/hydroids/other        |       |
| Wrack          | Seagrass/Macroalgae wrack     |       |
| Sand           | Bare sand Shell debris, rocky | None  |
| Rock substrate | Bare rock reef/rubble         | None  |

### Sediment Chemical Characterisation

BMT also conducted sediment sampling across the 4.87 ha survey area in April 2025. Samples were collected using a Van Veen grab, which collected sediments at the proposed sampling locations from ~0.2 m depth. Three samples were collected across both Proposal sites. Default guideline values were adopted from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, based on species protection levels and environmental characters at the site (ANZG, 2018).

#### 2.2.2 Other Surveys

Other environmental assessments that are publicly available have also been reviewed to support this assessment including:

##### Indo-Pacific Dolphin Monitoring

A study undertaken by Kent and Chabanne in 2021 used a dataset generated over 10 years by Dolphin Watch to evaluate sighting patterns for the Indo-Pacific Dolphin in the Swan Canning River.

The monitoring data indicated that both the Matilda Bay and Applecross areas had relatively high numbers of dolphin sightings, although sightings from scientific vessels were in deeper water set back from the shoreline (Kent and Chabanne, 2021).

##### Updated seagrass density and distribution map for the Swan Canning Estuary

Seagrass mapping was undertaken by DBCA in 2023 (Phelps et al, 2025) which involved combining satellite imagery and ground truth data with computer modelling to assign seagrass distribution and density across the Swan Canning Estuary. Approximately 590 ha of seagrass communities were found in the shallow areas of the Swan Canning Estuary (Phelps et al, 2025). The mapping data was also used to infill a portion of the Applecross DE that wasn't originally surveyed by BMT due to an amendment to the development envelope post survey.

##### Marine Fauna

A desktop assessment of Matters of National Environmental Significance (MNES) was conducted using the Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool (PMST) interactive map, by selecting a polygon capturing all direct impact zones within the disturbance area. A 10 km buffer zone was applied to capture significant areas and species that may also be impacted within a broader likelihood of occurrence. This includes Biologically Important Areas (BIAs) within theoretical range of adverse impacts and screens for species that may either temporarily reside or migrate through regions that may be indirectly impacted by the Proposal.

Historical surveys of Bottlenose Dolphins, completed annually since 2001, across the Melville Water, Swan River and Canning River areas were also utilised.

## 2.3 Avoidance measures (design)

The PTA has commissioned an extensive program of environmental surveys for the Proposal, encompassing the disturbance area, to understand the Proposal's impact to environmental values, including BCH mapping to identify areas of seagrass.



The Proposal's design and constructability have evolved through an iterative process, with the design footprint minimised as far as practicable to reduce any unnecessary disturbance to BCH and locations suitable for ephemeral seagrass propagation. The terminal design has also been refined to eliminate the requirement for dredging or removal of sediment during the Proposal's construction and operation.

The extent of direct proposed seagrass disturbance during construction has been reduced to include only what is necessary for the piling to enable construction and installation of the Matilda Bay and Applecross jetty and terminal infrastructure.

Direct disturbance will occur through:

- Piling activities during construction of the jetties.
- Installation of a construction vessel mooring at Applecross.
- The shading of existing patches of seagrass by the completed jetties preventing re-establishment/growth.

The disturbance area (0.63 ha) reflects the maximum potential extent of disturbance, with the actual disturbance extent likely to be contained within the IDF (Figure 2). A total of 0.03 ha of seagrass and macroalgae has been mapped within the IDF across both Applecross and Matilda Bay sites combined.

## 2.4 Mitigation measures (construction)

The PTA is committed to ensuring no additional (direct or indirect) environmental impacts occur during construction. To support this commitment, the following mitigation measures will be implemented as required:

- Implementation of a Construction Environmental Management Plan (CEMP) (Appendix C), which includes:
  - Use of spatial data of the construction area to ensure approved impact areas are adhered to. Delineation and fencing of the disturbance area will be undertaken to prevent unintended disturbance.
  - Visual monitoring on water and land during piling works for any turbidity or pollution discharge. In particular ongoing monitoring for turbidity plumes will be undertaken regularly to ensure turbid water does not go beyond the established works boundary.
  - Water quality monitoring of TSS and other physical parameters (at a minimum – to be confirmed with DBCA prior to works commencing) prior to, during and post development.
  - Marine mammal observations during construction. Marine mammal observation procedures outlined in the CEMP (Appendix D).
  - Deployment of silt curtains during construction, within all marine sections of the Proposal's development envelope.
  - Twelve-month post construction monitoring of BCH to ensure no long-term effects of construction activities.
- Implementation of an Operational Environmental Management Plan which will include procedures for managing potential impacts associated with pollution, waste and vessel operations.

More detailed site-specific CEMP's will also be developed in consultation with DBCA prior to the commencement of site works.

## 3.0 Existing Environment

### 3.1 IBRA Region

The largest regional vegetation classification scheme recognised by the Environmental Protection Authority (EPA) is the Interim Biogeographical Region of Australia (IBRA). The IBRA regions provide the planning framework for the systematic development of a comprehensive, adequate and representative national reserve system. There are 89 recognised IBRA regions across Australia that have been defined based on climate, geology, landforms and characteristic vegetation and fauna (IBRA7 2012). The Proposal occurs in the Perth subregion of the Swan Coastal Plain IBRA region.

The Perth subregion is situated on a low lying coastal plain and consists of colluvial and aeolian sands, alluvial river flats, and coastal limestone. The region is mostly covered in woodlands, dominated by *Banksia* or Tuart on sandy soils, *Casuarina obesa* on outwash plain, and paperbark in swampy areas. In the eastern parts of the subregion, the plain rises to duricrusted Mesozoic sediments dominated by Jarrah woodland. The region has a high degree of flora and fauna species diversity, notably on the eastern side of the coastal plain (CALM 2003).

### 3.2 Geology and Soils

The terrestrial components of the Proposal are situated on the Spearwood System in the Perth Coastal Zone, which occurs within the Swan Province. The Spearwood System is described as sand dunes and plains, with yellow deep sands, pale deep sands and yellow/brown shallow sands.

Soil mapping data is not available for the Proposal's in-river environments.

#### 3.2.1 Acid Sulfate Soils

The Department of Water and Environmental Regulation has mapped Acid Sulfate Soils (ASS) risk within the disturbance area (DWER 2025). There is High to Moderate risk of ASS occurring within the disturbance area of both the Matilda Bay and Applecross sites.

Preliminary assessment of landing site sediments to determine the presence of ASS and Monosulfidic Black Oozes (MBO's) and establish the general magnitude and extent of their distribution has been undertaken by BMT with results and findings presented in the Sampling and Analysis Plan Implementation Report (SAPIR) (BMT, 2025) (Appendix B). The initial preliminary sediment assessment works have established that modification of riverbed stratigraphy through construction activities (including but not limited to piling) have the potential to disturb in-situ ASS and MBO's at the Applecross and Matilda Bay sites.

Water quality monitoring (including pH and other physical parameters) will be undertaken with management/contingency measures put in place during construction to assist in limiting the rate and spatial extent of acid generation resulting from the oxidation of inorganic sulfur compounds (predominantly iron disulfide and iron monosulfide minerals) associated with ASS and MBO's which have been identified in shallow nearshore sediments.

### 3.3 Environmentally Sensitive Areas (ESAs)

Environmentally Sensitive Areas (ESAs) are classes or areas of native vegetation where the exemptions for disturbance vegetation under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations) do not apply. ESA classifications may include World Heritage Properties, Conservation Category Wetlands, Threatened flora, TECs and Bush Forever Sites. They also include areas protected under specific Environmental Protection Policies, such as:

- Gngangara Mound Crown Land;
- Western Swamp Tortoise Habitat;
- Southwest Agricultural Zone Wetlands; and
- Swan and Canning Rivers (relevant to the disturbance area).

### 3.3.1 Swan-Canning River Reserve

Both the Matilda Bay and Applecross sites are located within the Swan-Canning River system which is identified as a DBCA legislated reserve (R 48325 and R 48327) for the purpose of Landscape Protection protected under the *Swan and Canning Rivers Management Act 2006* (SCRM Act).

### 3.3.2 Matilda Bay Foreshore

Disturbance of up to 0.37 ha of seagrass and macroalgae, associated with the Matilda Bay site, will occur adjacent to the Matilda Bay foreshore Reserve (R 17375), listed as an 'A Class' reserve for the purpose of recreation and vested with the Conservation and Parks Commission.

### 3.3.3 Swan Estuary Marine Park

The Swan Estuary Marine Park is a shallow water, A-Class Marine Park that encompasses three BIAs within the Swan Canning estuary near the Proposal area, which are Alfred Cove, Pelican Point and Milyu (DCLM, 1999). These locations are considered BIAs due to their ecological diversity, cultural significance and recreational value. The BIAs support a rich ecosystem, hold deep cultural, mythological, and historical importance for the Whadjuk people and provide opportunities for recreational activities such as swimming, fishing and boating. To protect these sensitive environments, restrictions on recreational use are in place and actively managed.

The Matilda Bay and Applecross sites are located approximately 900 m and 2,300 m from the Swan Estuary Marine Park respectively.

## 3.4 Wetlands and Water

### 3.4.1 Wetlands

The Geomorphic Wetlands of the Swan Coastal Plain mapping (DBCA, 2025a) identifies the Swan River Estuary as a Conservation Category Wetland (CCW) (Unique Feature Identifier (UFI) 13316) (Figure 3), listed as a basin landform and Estuary waterbody. CCWs are those that support a high level of attributes and functions. The majority of the disturbance area intersects the CCW (Figure 3).

The Swan Canning River system is also listed in the Directory of Important Wetlands in Australia (Site WA091) (Landgate, 2025).

### 3.4.2 Groundwater

The disturbance area occurs within the Perth Groundwater Proclamation Area (DWER, 2022). Disturbance of up to 0.63 ha of seagrass and macroalgae will not impact this groundwater area.

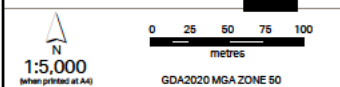
No Public Drinking Water Source Areas intersect the disturbance area.





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DATA SOURCES: Base Data (2) Based on information provided by and with the permission of the Western Australian Land Information Authority (LIDAR 2015)  
Service Layer Credits: Main Roads, Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) Harlequin, SLIP Future, Planning, Coastal, Conservation, Ecology and Environment, Geomorphic (2), Main Wetlands, DPM, DCA, Other, Motor Roads, Freeways & Highways, World Imagery, Microsoft

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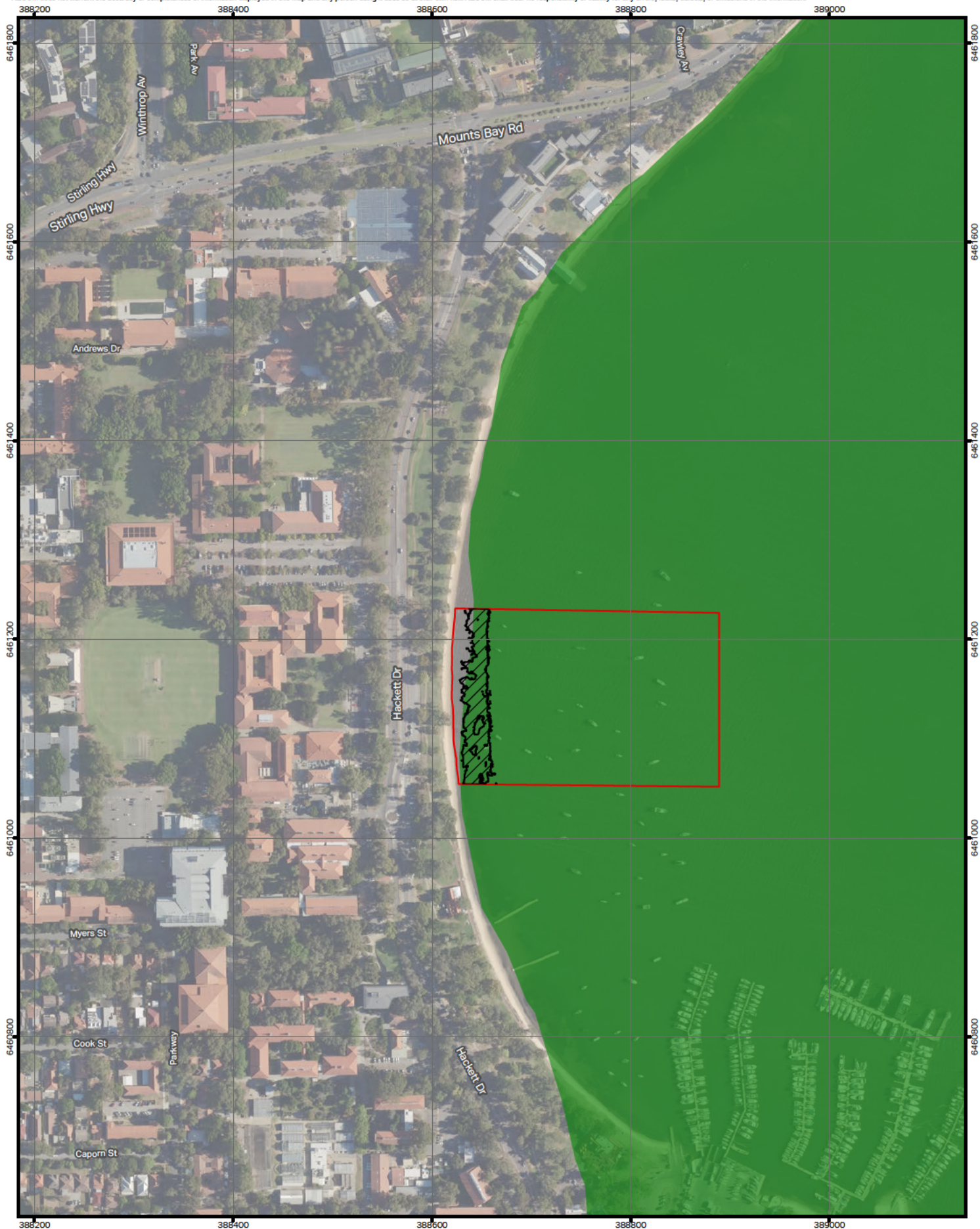
- Project Area
- Proposed Disturbance Area
- Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)
- Conservation

Geomorphic Wetlands:  
Applecross Site

PUBLIC TRANSPORT AUTHORITY  
**METRONET ON SWAN FERRY SERVICE  
EXPANSION: PERTH TO APPLECROSS**

Figure  
**3a**





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Service Layer Credits: Main Roads, Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) Harvested, SLP Future, Planning, Coastal, Conservation, Ecology, Environment, Geomorphic, Air, Water, Wetlands, DPM, DCA, Other, Motor Roads, Freeways & Highways, World Imagery, Microsoft.

LEGEND

- Project Area
- Proposed Disturbance Area
- Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)
- Conservation

**Geomorphic Wetlands:  
Matilda Bay Site**

**PUBLIC TRANSPORT AUTHORITY**  
**METRONET ON SWAN FERRY SERVICE  
EXPANSION: PERTH TO APPLECROSS**

Figure  
**3b**



### 3.5 Water Quality

A review of freshwater catchment inputs into the Swan-Canning Estuary for the period 2013-2016 shows that freshwater flow into the Swan River was much greater than that recorded in the Canning River, accounting for 84% of the total flow. Total monthly discharge in the period peaked in September 2013 (111 GL), although the month of peak flow varied between years, depending on timing of storms. Freshwater flows were relatively low (<5 GL per month) between November and April each year, supporting the view that catchment flows in summer periods were significantly reduced (Crisp, Loneragan, Tweedley, D'Souza, & Poh, 2018).

Nutrient inputs that are mobilised into the system are typically derived from catchment flows, stormwater drainage outfalls and marine tidal inputs, with stormwater drainage contributing greater proportions of the nutrient inputs in summer (Twomey & John, 2001).

### 3.6 Benthic Communities and Habitat

Benthic composition of the Swan Estuary varies across its length and is influenced by river inflows and tides. The upper part of the estuary generally contains more silts, clays, and organic matter, while the lower reaches tend to have sandier sediments colonised by ephemeral seagrasses and macroalgae estuary (DoW, 2010; Hilman, McComb, & Walker, 1995; Novak & Hoeksema 2022). The Proposal, and the disturbance area are located within the lower reaches of the Swan-Canning Estuary, in areas designated as Melville Water (Matilda Bay) and Heathcote (Applecross).

Currently, seagrass health in the Swan-Canning estuary is managed under the River Protection Strategy for Derbal Yirragan Djarlgarro (DPaW 2015), which is a requirement of the SCRM Act. Annual surveys are conducted by DBCA at monitoring locations in the Swan-Canning Basin area to infer annual changes in abundance and distribution of seagrass and macroalgal species. These locations also include areas near the Swan Estuary Marine Park zones of Pelican Point and Milyu. Historically, seagrass meadows within the estuary covered 598 ha in 1982, an increase from 568 ha in 1976. Recent mapping undertaken in 2023 by DBCA suggests the current extent is approximately 590 ha (Phelps, et al., 2025).

Results from the BMT (2025) BCH survey showed that across the entire Proposal development envelope, bare sand was the dominant BCH category – particularly further offshore within the Matilda Bay and Applecross sites. Across these sites, BCH displayed similar distribution of bare sand with patches of seagrass, macroalgae or mixed seagrass and macroalgae in the nearshore, transitioning to bare sand further offshore as the bank deepens (Appendix A).

Seagrass and macroalgae are classified as native vegetation; therefore, disturbing any seagrass requires a NVCP prior to commencement of works.

#### Matilda Bay

BMT (2025) recorded benthic habitat at the Matilda Bay site beyond the intertidal zone as being predominantly characterised by a band of moderate to dense seagrass, extending between ~ 20-40 m offshore. Ground-truthing via classified video analysis determined the seagrass assemblage contains mixed species of *Halophila*. Within the intertidal zone and areas further offshore, bare sand was identified as the dominant BCH category (Table 4).

Minor temporal variations in seagrass extent were observed between ground truthing data and the Nearmap imagery. These differences are likely due to seasonal discrepancies between the timing of the BCH field survey and the Nearmap image capture, combined with the highly seasonal productivity and biomass fluctuations of ephemeral seagrass species.

The Matilda Bay site comprises a maximum disturbance extent of 0.37 ha seagrass as summarised in Table 5 below (Figure 2). The actual extent of seagrass disturbance is anticipated to be 0.02 ha within the IDF at Matilda Bay.

Table 4 BCH in disturbance area (Matilda Bay site)

| Habitat  | Maximum disturbance in hectares (% represented) |
|----------|-------------------------------------------------|
| Seagrass | 0.37 (7.5%)                                     |



| Habitat | Maximum disturbance in hectares (% represented) |
|---------|-------------------------------------------------|
| Sand    | 4.55 (92.5%)                                    |

### Applecross

The predominant habitat type at the Applecross site was sand (BMT, 2025) with the BCH classified into three main categories:

- Predominately bare sand habitat with isolated patches of mixed seagrass and macroalgae in the nearshore zone.
- Connected patches of predominately moderate to dense seagrass (*Halophila* spp.) within the transition zone.
- Predominately bare sand in the offshore area.

The Applecross site comprises a maximum disturbance extent of 0.26 ha comprising seagrass, seagrass and macroalgae, and sparse seagrass and macroalgae communities as summarised in Table 5 below (Figure 2). The actual extent of seagrass and macroalgae disturbance is anticipated to be 0.012 ha within the IDF at Applecross.

**Table 5 BCH in the disturbance area (Applecross site)**

| Habitat                        | Maximum disturbance in hectares (% represented) |
|--------------------------------|-------------------------------------------------|
| Seagrass                       | 0.11 (12%)                                      |
| Seagrass and Macroalgae        | 0.14 (15%)                                      |
| Sparse Seagrass                | 0.01 (1%)                                       |
| Sparse Seagrass and Macroalgae | 0.003 (0.33%)                                   |
| Sand                           | 0.66 (71.5%)                                    |

### 3.7 Marine Fauna

The Swan-Canning Estuary is home to a variety of species, many of which have social, cultural, conservation, recreational and commercial importance. The Open Water habitats present across the Matilda Bay and Applecross sites are characterised as being marine microtidal estuary locations that are subject to increases in catchment flows. While these habitats are not considered to be part of BIAs under State legislation they are recognised for providing temporary foraging and refuge for a range of endemic fish and crustacea species. Additionally, these areas are periodically utilised by marine mammals, such as bottlenose dolphins, which are known to hunt within these waters.

A search of the DCCEE PMST identified the following species as potentially occurring within the Proposal development envelope. shark species including:

- Freshwater Sawfish (*Pristis pristis*), listed as Vulnerable and Migratory under the EPBC Act
- Scalloped Hammerhead (*Sphyrna lewini*), listed as Conservation Dependent under the EPBC Act
- Giant Manta Ray (*Mobula birostris*), listed as Migratory under the EPBC Act
- Reef Manta Ray (*Mobula alfredi*), listed as Migratory under the EPBC Act
- Porbeagle (*Lamna nasus*), listed as Migratory under the EPBC Act

Four turtle species including:

- Green Turtle (*Chelonia mydas*), listed as Vulnerable, Migratory and Marine under the EPBC Act
- Flatback Turtle (*Natator depressus*), listed as Vulnerable, Migratory and Marine under the EPBC Act
- Loggerhead Turtle (*Caretta caretta*), listed as Endangered, Migratory and Marine under the EPBC Act
- Leatherback Turtle, (*Dermochelys coriacea*), listed as Endangered, Migratory and Marine under the EPBC Act

The threatened shark and turtle species identified in the PMST are not expected to be present within the disturbance area, as the disturbance area does not provide suitable habitats to support these species.

Additionally, the PMST identified nineteen migratory bird species as potentially occurring in the proposal development envelope. While some migratory birds may pass through the disturbance area temporarily on their transit to more suitable habitats, the Matilda Bay and Applecross sites are characterised by high levels of recreational activities and dense infrastructure. These conditions, including elevated noise and artificial lighting, reduce the likelihood of the sites supporting permanent or breeding populations or serving as significant foraging areas.

Although seagrass beds within the Swan Estuary Marine Park may offer occasional foraging opportunities for migratory birds, the small extent of the disturbance area is not expected to support large resident populations of marine fauna or contribute substantially to the overall seagrass coverage within the estuary.

## 3.8 Heritage

### 3.8.1 Aboriginal Heritage

The Proposal lies entirely within Whadjuk Country, one of six defined regions in Noongar Country. Whadjuk spans approximately 5,580 km<sup>2</sup>, covering metropolitan Perth from Two Rocks in the north to Jervoise Bay in the south, extending west to Rottnest Island and east to the Darling Scarp. Two major waterways—Derbal Yerrigan (Swan River) and Dyarlgarro Beeliar (Canning River)—are central to this region.

Aboriginal spirituality is deeply connected to the land, which is believed to have been shaped during the Dreamtime by ancestral beings. In Noongar mythology, the Waugal, a snake or rainbow serpent, is a key spiritual figure. It is considered the giver of life and guardian of all freshwater sources, and it is through the Waugal that Noongar people are seen as custodians of the land.

The Waugal is believed to inhabit all natural water sources such as rivers, springs, and rock holes. When approaching these places, Noongar people perform customary rituals, often led by Elders, to ensure safety and show respect. These practices reflect the enduring spiritual and cultural significance of water in Noongar traditions.

Historical accounts highlight the importance of the Swan River and surrounding wetlands for Noongar people, not only for sustenance but also for cultural and seasonal movement. Aboriginal groups travelled between the coast and the Darling Scarp to access resources, fulfill cultural duties, and engage in social and spiritual activities. The river served as a vital corridor for camping, hunting, fishing, and gathering for communal events.

The Proposal is located within the Whadjuk People Indigenous Land Use Agreement (ILUA) Area established under the South West Native Title Settlement. The Whadjuk Aboriginal Corporation (WAC) manages the Whadjuk Indigenous Land Use Agreement (ILUA) on behalf of the Whadjuk community. The PTA is a signatory to the Noongar Standard Heritage Agreement (NSHA) with the South West Aboriginal Land and Sea Council, which applies to PTA activities in the Whadjuk People ILUA Area.

One registered Aboriginal Cultural Heritage (ACH) site intersects with the development areas at Matilda Bay and Applecross, identified as the Swan River (ID 3536) and registered as a Mythological site (Figure 4).

Additional consultation will be completed prior to construction of the Proposal. This will inform additional approvals required under the *Aboriginal Heritage Act 1972* and associated management of impacts to ACH.

### 3.8.2 European Heritage

Two State Registered Places, the Canning Bridge (16178) Raffles Hotel (1544) are both located adjacent to the disturbance area. Both sites are classified as registered heritage sites under the *Heritage Act 2018* Figure 4.

The entirety of the Matilda Bay Reserve and an associated Archaeological site (09209) within the area are on the assessment program for consideration by the Heritage Council of Western Australia.





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PROJECT ID 60752828 CREATED BY [REDACTED]  
DATE MODIFIED 24 SEP 2025 APPROVED BY [REDACTED]

1:5,000  
metres  
GDA2020 MGA ZONE 50

DATA SOURCES: Data is based on information provided by and with the permission of the Western Australian Land Information Authority (LIDAR) and the Department of Transport (DTP).  
Service Layer Credits: Main Roads - Heritage Council WA - State Register (DPLH-006), © Government of Western Australia 2014. State Heritage Office (LIDAR) and the Creative Commons Attribution 3.0 Australia License. Others: Minor Roads, Freeways & Highways, World Imagery, Mosaic, Aboriginal Cultural Heritage - Register.

Project: L:\Legacy\Projects\60752828\_PTA\_Ferry\_Approvals\900\_CAD\_GIS\920\_GIS\02\_APPR\01\_IAP\_Report\_Figures\60752828\_PTA\_Ferry\_Approvals\_CPS\_V4.aprx (rob.mcgovern)  
Layout: 60752828\_CPR\_004\_A4P\_v4, Last exported: 24/09/2025 9:24 AM

**LEGEND**

- Proposed Disturbance Area
- Project Area
- Aboriginal Cultural Heritage - Register (DPLH-099)

Heritage Council WA - State Register (DPLH-006): Individual Place

**Aboriginal and European Heritage: Applecross Site**

**PUBLIC TRANSPORT AUTHORITY**

**METRONET ON SWAN FERRY SERVICE EXPANSION: PERTH TO APPLECROSS**

Figure  
**4a**





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DATE MODIFIED 24 SEP 2025 APPROVED BY [REDACTED]

1:10,000  
GDA2020 MGA ZONE 50

DATA SOURCES: Base Data (2) Based on information provided by and with the permission of the Western Australian Land Information Authority (LIDAR) and the Department of Transport (2023).  
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Project: L:\Legacy\Projects\60752828\_PTA\_Ferry\_Approvals\900\_CAD\_GIS\920\_GIS\02\_APRX\01\_IAP\_Report\_Figures\60752828\_PTA\_Ferry\_Approvals\_CPS\_V4.aprx (rob.mogregon)  
Layout: 60752828\_CPR\_004\_A4P\_v4, Last exported: 24/09/2025 9:24 AM

#### LEGEND

- Proposed Disturbance Area
- Project Area
- Aboriginal Cultural Heritage - Register (DPLH-099)

Heritage Council WA - State Register (DPLH-006): Individual Place

#### Aboriginal and European Heritage: Matilda Bay Site

#### PUBLIC TRANSPORT AUTHORITY

**METRONET ON SWAN FERRY SERVICE EXPANSION: PERTH TO APPLECROSS**

Figure  
**4b**



## 4.0 Proposed Clearing

### 4.1 Schedule

The applicant intends to commence construction in 2026 and is expected to be completed by the end of 2027. Disturbance and other construction activities will not commence until relevant approvals are obtained.

### 4.2 Disturbance area

This application seeks approval to clear up to 0.63 ha of seagrass and macroalgae for the construction and installation of jetty and ferry terminal infrastructure for the Matilda Bay and Applecross sites with an Indicative Development Footprint (IDF) of 0.03 ha across both locations.



## 5.0 Assessment against the 10 Clearing Principles

### 5.1 Principle (a) - Native vegetation should not be cleared if it comprises a high level of biological diversity

Table 6 Assessment against Principle (a)

| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Conclusion       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <p>The PTA is proposing to disturb up to 0.63 ha of seagrass and macroalgae within the disturbance area, with an indicative disturbance footprint of 0.03 ha. The disturbance area is located in the Swan-Canning Estuary, in the City of Perth and City of Melville LGAs (Figure 1).</p> <p><b>Benthic Communities and Habitats</b></p> <p>The Proposal and disturbance area are located within the lower reaches of the Swan-Canning Estuary, in areas designated as Melville Water (Matilda Bay) and Heathcote (Applecross). BMT (2025) conducted a BCH survey in March 2025, which included mapping of seagrass using underwater video footage (Appendix A).</p> <p>Bare sand was recorded as the dominant BCH category across the disturbance area with patches of seagrass communities in the nearshore, transitioning to bare sand further offshore as the bank deepens (BMT, 2025). The seagrass assemblage recorded during the BMT (2025) survey was identified as <i>Halophila</i> spp. <i>Halophila</i> has previously been mapped as the dominant species in monitoring events by DWER across the Swan-Canning Estuary and is noted as being a fast-growing species that can readily take advantage of improved conditions (Kilminster &amp; Forbes, 2014).</p> <p>The disturbance area represents the maximum potential impacts to seagrass and macroalgae to accommodate the Proposal. The implementation of avoidance and mitigation measures during design and construction is expected to limit actual disturbance to an IDF estimated at 0.03 ha seagrass and macroalgae. In total the 0.63 ha of maximum disturbance extent represents 0.1% of the seagrass coverage across the Swan-Canning Estuary based on the 2023 seagrass mapping estimate (Phelps et al., 2025) and therefore the proposed disturbance to seagrass and macroalgae is unlikely to impact on the ecological integrity of the seagrass within the Swan-Canning estuary.</p> <p><b>Marine Fauna</b></p> <p>The Proposal is located within the Swan-Canning Estuary, which supports a variety of marine species. A search of the DCCEW PMST identified seventeen (17) threatened marine fauna species as potentially occurring within the Proposal area.</p> <p>Threatened shark and turtle species are not expected to be present within the disturbance area, due to absence of suitable habitats. While migratory birds may occasionally pass through the disturbance area on their route to more suitable environments, the disturbance area is characterised by high levels of recreational activity and dense urban infrastructure. Therefore, the disturbance area is not expected to support permanent breeding populations, nor serve as significant foraging areas, due to existing disturbances such as noise and artificial lighting.</p> <p>The disturbance area is not considered to be part of a Biologically Important Area (BIA) for Marine Species under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) and is unlikely to support large residential populations of marine fauna species or contribute substantially to the overall seagrass cover in the Swan-Canning Estuary.</p> <p><b>Summary</b></p> <p>The disturbance area comprises up to 0.63 ha of seagrass and macroalgae; however, the actual anticipated disturbance footprint is limited to approximately 0.03 ha. No conservation significant marine flora species or vegetation communities occur within the disturbance area</p> | Not at variance. |

| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Conclusion |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <p>and no conservation significant marine fauna species are expected to be impacted by the proposed disturbance to seagrass and macroalgae. Therefore the seagrass and macroalgae relevant to the disturbance area is not more biologically diverse than other areas of the Swan River.</p> <p>Given the ecological characteristics of <i>Halophila</i> species, previously identified as the dominant seagrass species within the Swan-Canning Estuary (Kilminster &amp; Forbes, 2014), it is expected that any areas impacted during Proposal construction will naturally re-colonise over time. Long term impacts are expected to be minimal and primarily limited to any residual shading beneath the constructed jetty or terminal structure. The estimated area of shading impacts has been calculated as being 0.09 ha.</p> <p>As a result, the proposed disturbance to seagrass and macroalgae does not comprise a high level of biological diversity and is therefore not at variance with this principle.</p> <p>Sources: BMT (2025) (Appendix A)</p> |            |

## 5.2 Principle (b) - Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia

Table 7 Assessment against Principle (b)

| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Conclusion                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <p><b>Benthic Communities and Habitats</b></p> <p>The disturbance area, is located within the lower reaches of the Swan-Canning Estuary, in areas designated as Melville Water (Matilda Bay) and Heathcote (Applecross). BMT (2025) conducted a benthic communities and habitats (BCH) survey in March 2025, which included mapping of seagrass using underwater video footage (Appendix A).</p> <p>Bare sand was recorded as the dominant BCH category across the entire Proposal Development Envelope, particularly further offshore within the Matilda Bay and Applecross sites. Both sites displayed a similar distribution of bare sand with patches of seagrass, macroalgae or mixed seagrass and macroalgae in the nearshore, transitioning to bare sand further offshore as the bank deepens (BMT, 2025).</p> <p>The maximum disturbance extent at Matilda Bay is 0.37 ha of seagrass. At the Applecross site, seagrass (0.12 ha) and mixed seagrass with macroalgae (0.14 ha) collectively cover 0.26 ha of the maximum extent of disturbance.</p> <p>In addition, areas of seagrass habitat, including those protected within the Swan Estuary Marine Park, support more diverse and intact ecosystems that offer greater habitat value for native fauna than the proposed disturbance areas. For example, Pelican Point, located less than 800 m from the Matilda Bay site and just over 3 km from the Applecross site, was found to have seagrass coverage ranging from 42.8% to 58.9% in surveys conducted between 2012 and 2013 (Kilminster &amp; Forbes, 2014).</p> <p><b>Marine Fauna</b></p> <p>A search of the DCCEEW PMST identified seventeen (17) threatened marine fauna species as potentially occurring within the Proposal area. This included two species of shark, four species of turtles and eleven species of birds.</p> <p>The threatened shark and turtle species are not expected to be present within the Proposal area, due to absence of suitable habitats. While migratory birds may occasionally pass through the Matilda Bay and Applecross sites on their way to more suitable habitats and environments, these locations are characterised by high levels of recreational activity and</p> | Not likely to be at variance. |



| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Conclusion |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <p>dense urban infrastructure. Therefore, these sites are not expected to support permanent breeding populations nor serve as significant foraging areas, due to existing disturbances such as noise and artificial lighting.</p> <p>The disturbance area is not located within BIAs as defined under the EPBC Act and is unlikely to support large resident populations of marine fauna or contribute substantially to the overall seagrass coverage within the Swan-Canning Estuary.</p> <p>The Indo-Pacific bottlenose dolphin (<i>Tursiops aduncus</i>) utilises the estuary for foraging and breeding (Holyoake et al., 2011). Monitoring for Indo-Pacific bottlenose dolphins in the Swan Canning Riverpark (Kent and Chabanne, 2021) indicated that both the Matilda Bay and Applecross areas had relatively high numbers of dolphin sightings, although sightings from scientific vessels were in deeper water set back from the shoreline.</p> <p>Temporary disturbance to marine fauna and their habitat is expected during construction of the jetties and ferry terminals, including minor and temporary impacts to fauna habitat and potential noise related impacts to marine fauna including the Indo-Pacific dolphin. These impacts will be managed through the implementation of a CEMP (Appendix C), which outlines procedures to minimise impacts to marine fauna throughout the construction phase. More detailed site-specific CEMP's will also be prepared to address specific impacts to environmental aspects in consultation with DBCA prior to commencement of site works.</p> <p>Following development, the jetties and ferry terminals are expected to result in minimal long-term disturbance to marine environment, with direct impacts limited to the footprint of steel piles supporting the structures. Marine fauna will be able to move freely underneath the jetties and terminals, and benthic habitats are anticipated to recover post construction, except in areas subject to ongoing shading from the built infrastructure. The installation of the jetties may also encourage some fish species and other marine life to congregate around the pylons.</p> <p><b>Summary</b></p> <p>The proposed disturbance area will result in the removal of up to 0.63 ha of seagrass and macroalgae within an indicative disturbance footprint of 0.03 ha. However, as bare sand identified as the dominant BCH, the disturbance area is considered unlikely to support habitat for conservation significant marine fauna species.</p> <p>Other potential impacts to marine fauna habitat from construction activities, including increase in turbidity, or accidental pollution from construction equipment will be managed through the implementation of a CEMP. This will include measures such as the installation of a silt curtain, visual and water quality monitoring during construction and other contingency and management measures. The CEMP has been provided as Appendix C. More detailed site-specific CEMP's will also be prepared to address specific impacts to environmental aspects in consultation with DBCA prior to commencement of site works</p> <p>In addition, disturbance to marine fauna habitat will primarily be minor and temporary with limited long-term impacts associated with the installed jetty piles.</p> <p>Given the above, the proposed disturbance areas are unlikely to represent significant habitat for native marine or terrestrial fauna. This proposal is not at variance with this principle.</p> |            |
| Sources: BMT (2025) (Appendix A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |

### 5.3 Principle (c) - Native vegetation should not be cleared if it includes or is necessary for the continued existence of, rare flora

Table 8 Assessment against Principle (c)

| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Conclusion       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <p>The disturbance area is located within the Swan Canning River marine environment. Based on available data, there are no known Rare or Threatened marine flora species present in the Swan Canning River system and none are expected to be impacted by the disturbance area.</p> <p>The proposed disturbance to seagrass and macroalgae does not impact on any threatened flora, or suitable habitat for such species and is therefore not considered to be at variance with this Principle.</p> | Not at variance. |

### 5.4 Principle (d) - Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a Threatened Ecological Community

Table 9 Assessment against Principle (d)

| Assessment Results                                                                                                                                                                         | Conclusion       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <p>The disturbance area does not contain any Threatened Ecological Communities. Proposed disturbance to seagrass and macroalgae is not considered to be at variance to this principle.</p> | Not at variance. |

### 5.5 Principle (e) - Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been significantly cleared

Table 10 Assessment against Principle (e)

| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Conclusion       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <p>The disturbance area is located within the marine environment, is not situated within any BIAs and is not considered to be part of a significant ecological linkage in the local context.</p> <p>In total the 0.63 ha of maximum disturbance extent represents 0.1% of the seagrass coverage across the Swan-Canning Estuary based on the 2023 seagrass mapping estimate (Phelps et al., 2025).</p> <p>The disturbance area is predominantly characterised by bare sand, with only minor disturbance proposed to up to 0.63 ha isolated patches of seagrass, macroalgae or mixed assemblages. As such, the proposed disturbance to seagrass and macroalgae is not considered to be at variance with this principle.</p> | Not at variance. |
| Sources: BMT (2025) (Appendix A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |



## 5.6 Principle (f) - Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or a wetland

Table 11 Assessment against Principle (f)

| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Conclusion   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p>The disturbance area is located within the Swan River Estuary (UFI 13316) CCW (DBCA, 2025). The Swan-Canning River system is also listed in the Directory of Important Wetlands in Australia (Site WA091) (Landgate, 2025).</p> <p>There are no additional Ramsar sites, or Nationally Important Wetlands, within 50 meters of the disturbance area.</p> <p>The proposed disturbance will impact marine vegetation growing on the seabed (i.e., seagrass and macroalgae) and is minor in scale (0.63 ha, with an IDF of 0.03 ha).</p> <p>Although riparian habitats were identified by GHD (2025) within the foreshore areas of the Proposal, no riparian vegetation is proposed for clearing. Nonetheless, due to the mapped wetland, the proposal is considered to be at variance with this principle.</p> <p>Sources: DBCA (2025), Landgate (2025), GHD (2025)</p> | At variance. |

## 5.7 Principle (g) - Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation

Table 12 Assessment against Principle (g)

| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Conclusion                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <p>The Proposal involves disturbance of up to 0.63 ha of seagrass with an IDF of 0.03 ha, across the Matilda Bay and Applecross sites within the Swan-Canning Estuary.</p> <p>There is a High to Moderate risk of ASS risk within the disturbance area and river environment of both the Matilda Bay and Applecross sites (DWER, 2025). In river works will not require any dredging or excavation; however, sediment sampling indicated that there is a risk of acidic soils within the disturbance area. While this is a relatively low risk, water quality monitoring will be undertaken prior to, during and post development to ensure any exceedances of relevant ecological criteria (on agreement of DBCA) are captured and where required mitigation or contingency measures put in place to minimise the risk of disturbing acidic soils and impacting on the environment. A high level CEMP (Appendix C) has been prepared to guide the development of site specific CEMPs that will be prepared for each site and will outline specific monitoring and management requirements in consultation with DBCA.</p> <p>The proposed disturbance to seagrass and macroalgae is not expected to result in appreciable land degradation because no riparian vegetation is proposed for removal, and the marine-based construction activities, such as pile installation, will be managed through the CEMP to minimise sediment disturbance and protect benthic habitats. The site is not prone to erosion or instability, and mitigation measures will be implemented to ensure landform and water quality are maintained throughout construction.</p> <p>The disturbance area relates to the disturbance of up to 0.63 ha of seagrass and macroalgae. Given the minor scale of disturbance, the dominance of bare sand across the surrounding area and the implementation of appropriate management to minimise risk of disturbing acidic soils, clearing is not likely to cause appreciable land degradation and is not likely to be at variance with this principle.</p> | Not likely to be at variance. |

| Assessment Results                                         | Conclusion |
|------------------------------------------------------------|------------|
| Sources: DWER (2025a), GHD (2025), BMT (2025), DWER (2025) |            |

## 5.8 Principle (h) - Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area

Table 13 Assessment against Principle (h)

| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Conclusion                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <p>The disturbance area is located within the Swan-Canning River system which is identified as a DBCA legislated reserve (R 48325 and R 48327) under the SCRM Act. A total of 0.63 ha of disturbance is proposed within the reserve with an IDF of 0.03 ha.</p> <p>A total of up to 0.37 ha of seagrass will be disturbed at the Matilda Bay site, adjacent to the Matilda Bay Reserve (R 17375), listed as an A-Class reserve by the Conservation and Parks Commission for recreational purposes. The proposed seagrass disturbance and the intended future use of the jetties for public transport align with the reserve's objectives. Seagrass disturbance at the Matilda Bay site will not directly impact this reserve, nor it is expected to indirectly impact its environmental values.</p> <p>The disturbance area at the Matilda Bay and Applecross sites are also located approximately 900 m and 2,300 m respectively from the Swan Estuary Marine Park, an A-Class Marine Park and a designated BIA. No direct or indirect impacts on the Swan Estuary Marine Park are anticipated as a result of the application.</p> <p>No other conservation areas are located within or in proximity to the disturbance area.</p> <p>Proposed disturbance to 0.63 ha seagrass and macroalgae is unlikely to affect any adjacent or nearby conservation areas and is therefore not at variance with this principle.</p> <p>Sources: DBCA (2025b), DPLH (2019)</p> | Not likely to be at variance. |

## 5.9 Principle (i) - Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water

Table 14 Assessment against Principle (i)

| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Conclusion                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <p>Piling works associated with the Proposal to enable the construction of the jetties and terminals at Applecross and Matilda Bay are expected to result in a temporary localised increase in turbidity, estimated to be within 5-20 m of the pile location. Installation of a silt curtain, visual observations and ongoing water quality monitoring (as outlined in the CEMP, Appendix C) will ensure that any localised impacts are adequately managed and do not spread beyond the disturbance area.</p> <p>Sediment sampling results indicate that other than high nutrient levels which are expected, sediment quality is generally within relevant criteria (Australian &amp; New Zealand Guidelines for Fresh and Marine Water Quality) and therefore is unlikely to introduce any contaminants or toxicants above existing levels.</p> <p>Sediment sampling results identified a number of exceedances of the National Assessment Guidelines for Dredging Screening Levels. While dredging is not required for implementation of the Proposal, these findings will inform the water quality monitoring program during piling</p> | Not likely to be at variance. |



| Assessment Results                                                                                                                                                                                                                                                                                                                                                                        | Conclusion |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <p>activities to ensure that any suspended sediments do not adversely affect surrounding water quality.</p> <p>As such, the predicted impacts are considered minor and short-term, and are unlikely to result in any deterioration in surface water quality within the disturbance area.</p> <p>This proposal is therefore not considered likely to be at variance to this principle.</p> |            |
| Sources: BMT (2025)                                                                                                                                                                                                                                                                                                                                                                       |            |

## 5.10 Principle (j) - Native vegetation should not be cleared if the clearing of the vegetation is likely to cause or exacerbate the incidence or intensity of flooding

Table 15 Assessment against Principle (j)

| Assessment Results                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Conclusion       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <p>As the disturbance area is entirely within marine environments and does not intersect with flood-prone terrestrial zones, the proposed disturbance to seagrass and macroalgae is not expected to cause or exacerbate the incidence or intensity of flooding. The nature and location of disturbance activities are such that they will not alter surface water flow or drainage patterns.</p> <p>The proposal is not considered to be at variance with this principle.</p> | Not at variance. |
| Sources: DWER 2025b                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                  |

## 6.0 Conclusion

The Public Transport Authority proposes to disturb up to 0.63 ha of seagrass and macroalgae for the construction and installation of new jetty and ferry terminal infrastructure at the Matilda Bay and Applecross sites as part of the METRONET on Swan Ferry Service Expansion: Perth to Applecross Proposal.

To minimise environmental impacts, the PTA has commissioned technical surveys of the Proposal development envelope which encompasses the disturbance area. The surveys informed the selection of jetty locations to avoid areas of high environmental values wherever practicable. The Proposal design has prioritised the use of existing bare sand areas and has reduced the disturbance footprint to the lowest extent reasonably practicable.

Removal of seagrass and macroalgae will not affect any significant vegetation communities, threatened flora, or critical habitats for native fauna. Although the Proposal is located within the potential distribution range of several threatened marine fauna species, the disturbance area does not provide suitable habitat to support resident populations.

An assessment against the 10 clearing principles under Schedule 5 of the *Environmental Protection Act 1986* found that the proposed disturbance to seagrass and macroalgae is not, or is not likely to be, at variance with 9 of these principles. However, disturbance to seagrass and macroalgae is at variance with principle (f), which relates to the clearing of vegetation growing in association with wetlands or watercourses. The Swan River is mapped as a CCW, and the proposed disturbance of seagrass and macroalgae may fall within this category.

Despite this, the scale of disturbance is considered very minor (up to 0.63 ha, with an IDF of 0.03 ha), and is unlikely to significantly reduce the extent of remnant local native seagrass and macroalgae habitat within the Swan Canning River system.

To further mitigate impacts, the PTA has committed to:

- Avoidance of high-value seagrass beds through site selection and design refinement.
- Minimisation of disturbance through careful planning and use of existing unvegetated areas.
- Ongoing environmental monitoring and implementation of best-practice construction methods as outlined in the Construction Environmental Management Plan (CEMP). More detailed site-specific CEMP's will also be prepared to address specific impacts to environmental aspects in consultation with DBCA prior to commencement of site works

The proposed disturbance to seagrass and macroalgae is essential for the delivery of critical public transport infrastructure to support Perth's growing passenger ferry network and has been designed to balance infrastructure needs with environmental protection.

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