Marine SOLUTIONS TASMANIA PTY LTD

www.marinesolutions.net.au

SIGNIFICANT IMPACT ASSESSMENT

SPOTTED HANDFISH (*BRACHIONICHTHYS HIRSUTUS*)

LORDS BEACH FERRY TERMINAL, SANDY BAY

prepared for

Hobart City Council

April 2026

Table of Contents

Version	Contributor/s	Date reviewed	Reviewed by	Notes
1	A. King	18/07/2025	A. Erskine	
		23/09/2025	S. Ibbott	
		25/09/2025	Hobart City Council	
		01/04/2026	L..Lyte (Hobart City Council)	New plans provided
2	A. King	29/04/2026	B. Manicom	Addition of Addendum with updated design plan.

Cover photo: Spotted handfish at Lords Beach (Marine Solutions, 2025).

Table of Figures

1 Note

This assessment of Matters of National Environmental Significance (MNES) for the spotted handfish (*Brachionichthys hirsutus*) in relation to a proposed commuter ferry terminal at Lords Beach, Sandy Bay was drafted by Marine Solutions in September 2025 and was based on preliminary plans for the proposed ferry terminal, provided by Hobart City Council (Figure 1).

After the completion of the MNES assessment the preliminary plans were revised and now incorporate mitigation measures for the spotted handfish. Revised plans and details are included in an addendum to this document (see Section 7).

2 Introduction

Marine Solutions were engaged by Hobart City Council to conduct a Significant Impact Assessment of the proposed development of a commuter ferry terminal at Lords Beach, Sandy Bay (Figure 1) on the resident population of spotted handfish (*Brachionichthys hirsutus*) at the site.

The proposed terminal is designed to be an addition to the Derwent River Ferry Network, which is currently operating within the Derwent Estuary. It is our understanding that the proposed structure will extend approximately 60 m from the shoreline and will comprise a 26-m boardwalk, a terminal platform supported by a reinforced concrete slab covering approximately 120 m^2, and a 14 m x 2.5 m hydraulic boarding ramp (Figure 2).

The spotted handfish is known to reside within the proposed terminal area. A Natural Values Assessment (NVA) completed by Marine Solutions in mid-2025 confirmed the presence of 17 handfish in the surveyed area at Lords Beach (Marine Solutions 2025). This survey was in addition to an NVA completed over a smaller area at the proposed development site in August 2024, which recorded three spotted handfish (Marine Solutions 2024).

The spotted handfish is listed as endangered under the *Threatened Species Protection Act 1995*[1] (*TSPA*; Tasmania) and critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999*[2] (*EPBC Act*; National). Any species listed under the *EPBC Act* is considered a Matter of National Environmental Significance (MNES) and is protected.

The *Matters of National Environmental Significance – Significant Impact Guidelines 1.1* (Department of Environment 2013) provide guidance on determining whether an action is likely to have a significant impact on a matter protected under national environment law. If a significant impact is likely to occur, under the *EPBC Act,* the action will require approval from the Australian Government Environment Minister.

[1] Under the *TSP Act*, no listed species is allowed to be collected, disturbed, damaged or destroyed without a permit.

[2] Under the EPBC Act, any action with significant impact on a listed threatened species and/or community is prohibited without approval (Section 18 and 18A).

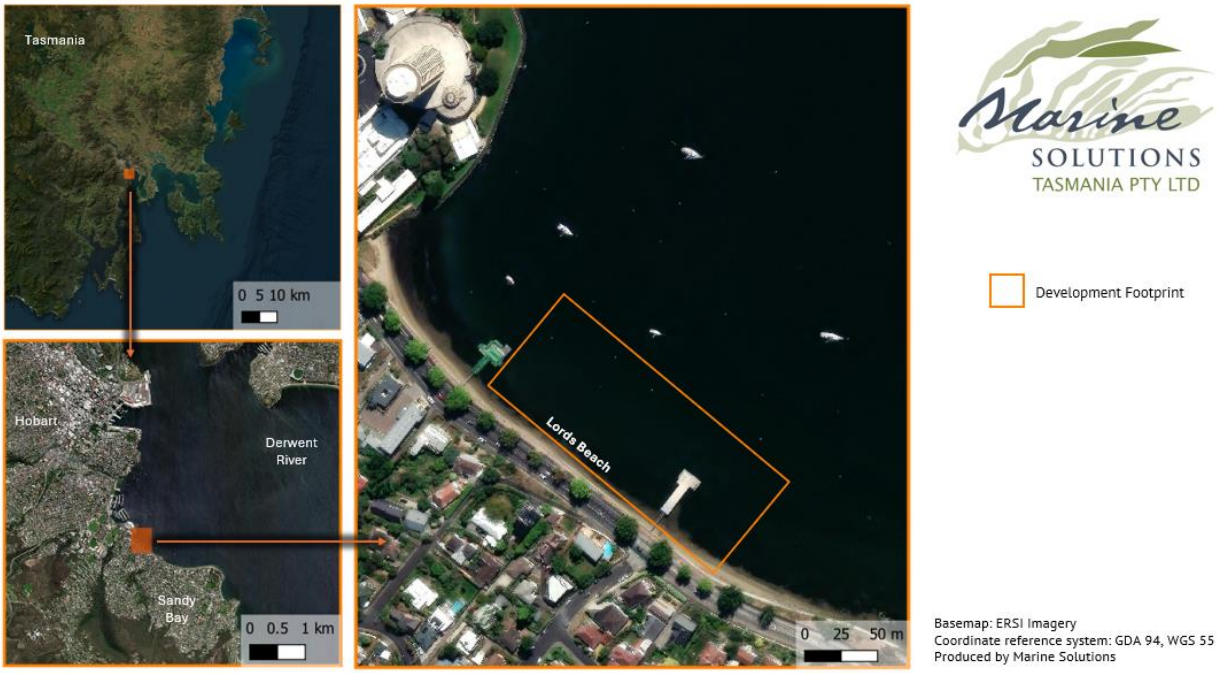

Figure 1. The location of the 2025 marine natural values assessment survey area at Lords Beach, Sandy Bay.

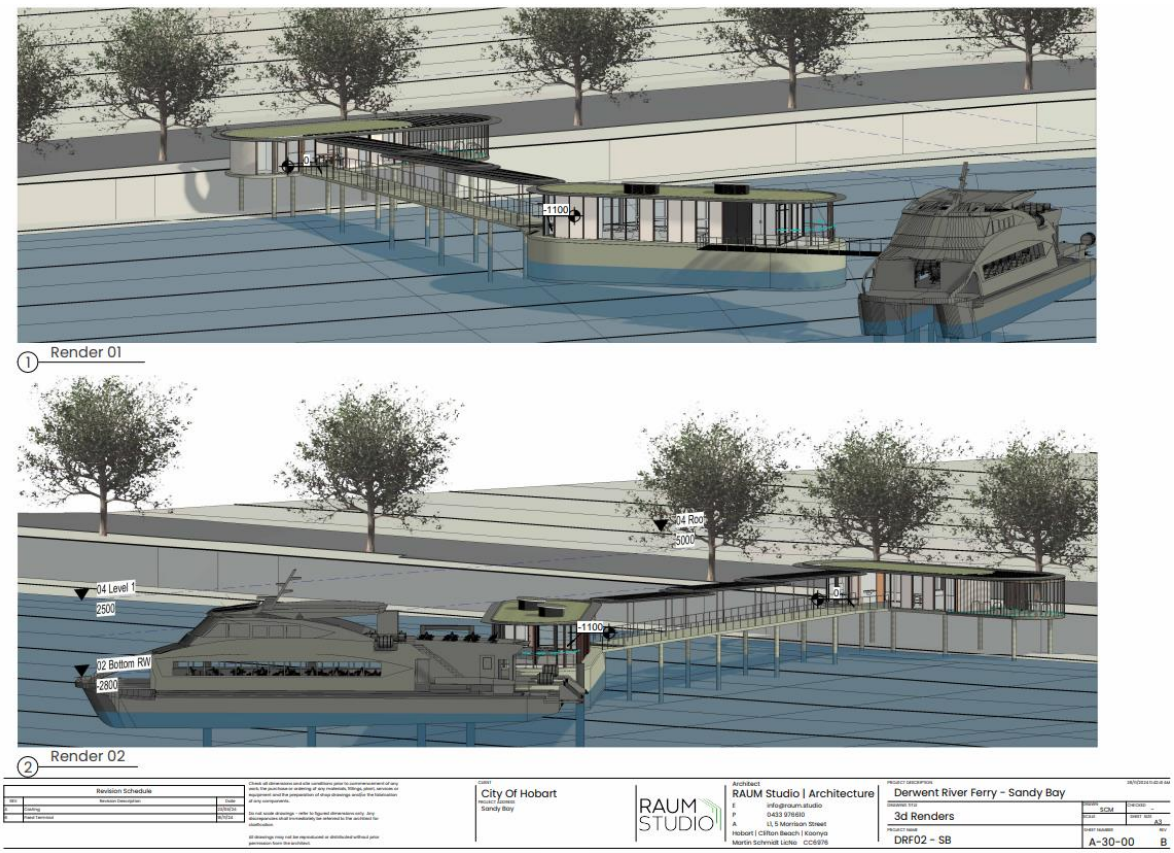

Figure 2. Design of the proposed Sandy Bay commuter ferry terminal (provided by Hobart City Council, September 2025).

2.1 Purpose and Scope

This report assesses the potential impacts of the proposed commuter ferry terminal, including impacts resulting from construction and expected operations against EPBC Significant Impact Criteria (the Australian Government's *Matters of National Environmental Significance: Significant Impact Guidelines*).

The scope of this report includes potential impacts relating to the spotted handfish only. It does not extend to any other Matters of National Environmental Significance, or other protected matters.

3 Spotted Handfish

3.1 Background

There are several species of handfish present in southern and eastern Tasmania, each of these species has a restricted known distribution, and are listed as either threatened or protected. Three species of handfish are covered by the Handfish Recovery Plan including the spotted handfish (*Brachionichthys hirsutus*), red handfish (*Thymichthys politus*) and the ziebells handfish (*Brachiopsilus ziebelli*) (DoE 2015) Due to their very small size and cryptic nature, it is possible that other undiscovered populations may exist.

The current published distribution of the spotted handfish is restricted to sand, silt, and shell-grit environments of the Lower Derwent Estuary between approximately 2 - 30 m depth, south of the Tasman Bridge (Spotted Handfish Recovery Team 2002; Stuart Smith et al 2021), however recent sightings recorded on the Natural Values Atlas extend this range to include Storm Bay and the D'Entrecasteaux channel at depths down to 45 m (NVA 2025). The breeding season for spotted handfish is mid-July to mid-November inclusive (NRE Tas (formerly DPIPWE) 2021). They are reliant on spawning substrate for attachment of eggs, preferring stalked ascidians *Sycozoa* sp., but also utilise sponges and seagrass and algae such as *Caulerpa* sp. (Spotted Handfish Recovery Team 2002). Availability of suitable spawning substrata is considered critical to their reproductive success (Pogonoski et al 2002). After laying the egg mass, the female guards the eggs until they hatch (6 - 7 weeks). The spotted handfish does not have a larval dispersal phase; juvenile hatchlings are thought to settle in the immediate vicinity of the hatch-site (Bruce et al 1997).

The spotted handfish is listed as critically endangered under the EPBC Act 1999. As such, the species is considered a Matter of National Environmental Significance (MNES). The species has suffered from a decline in distribution and abundance coinciding with the introduction of the northern Pacific seastar (Whitehead 2008; Pogonoski et al 2002). Remaining individuals today exist in fragmented sub-populations within the species' historic range (Last and Gledhill 2009). The principal threats to handfish are habitat loss and degradation, water pollution, siltation, the spread of the northern Pacific seastar and the cumulative impacts of boating including from traditional moorings (DCCEEW 2025). The handfish's high site fidelity, limited dispersal capabilities and reliance on suitable spawning substrata makes them particularly susceptible to localised disturbances.

In August 2024, three spotted handfish individuals were recorded by Marine Solutions during targeted dive surveys at Lords Beach, Sandy Bay (Figure 3, Marine Solutions 2024). In mid-2025, during an expanded search, 17 individuals were observed within the vicinity of the proposed development at Lords Beach (Figure 4, Marine Solutions 2025).

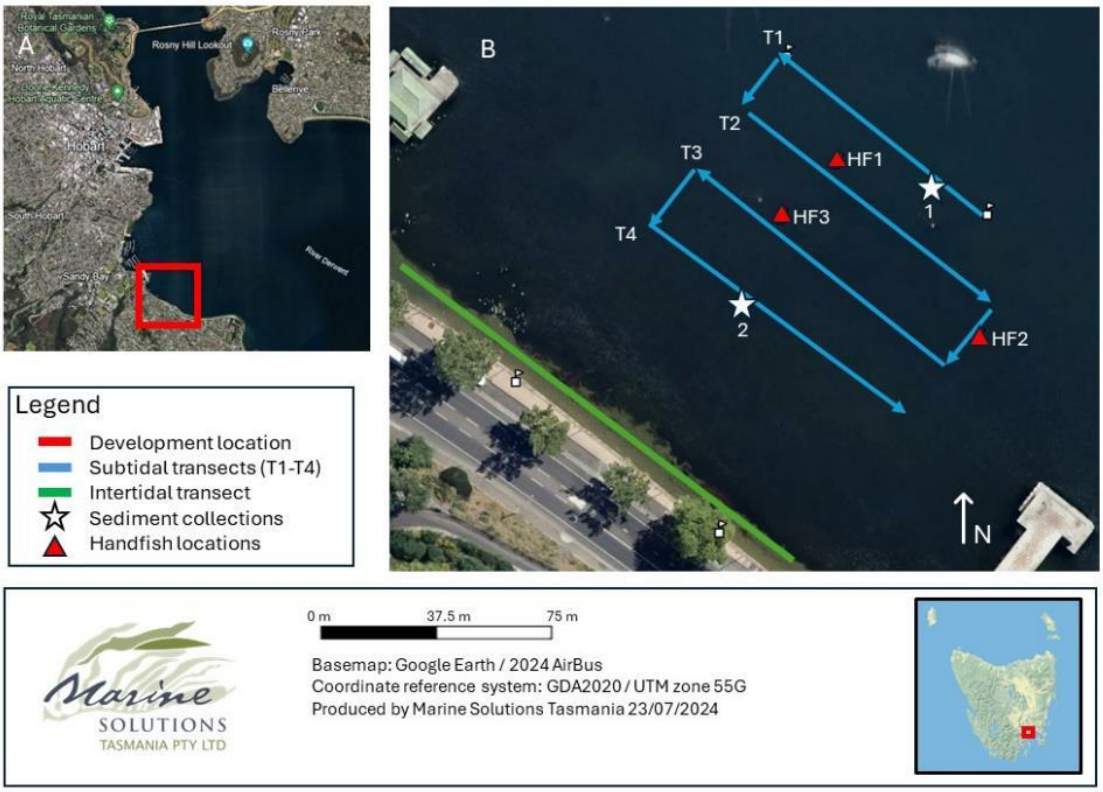

Figure 3. Handfish observations by Marine Solutions during a targeted survey in August 2024 (Marine Solutions 2024). Surveyed transect belts (approximate) are shown by blue arrows.

Figure 4. Handfish observations by Marine Solutions during targeted surveys between 17 July – 4 August 2025 (Marine Solutions 2025). Surveyed transect belts are shown as GPS tracks coloured by dive area / survey day.

3.2 Threats to Spotted Handfish relating to the Proposed Development

3.2.1 Habitat Degradation and Loss

Loss of essential habitat for spotted handfish, like sandy substrate and seagrass beds, reduces available habitat for feeding, breeding, and shelter. Any reduction in spawning substrate (e.g., stalked ascidians and *Caulerpa spp.*) has been defined as a principal threat to spotted handfish (DCCEEW 2015). Proliferation of other species (such as butterfly oysters *Electroma georgiana* and filamentous algae) that may compete with handfish for habitat have also been associated with handfish habitat degradation and loss (DCCEEW 2015).

Threats related to habitat degradation and loss from the proposed project include direct habitat loss from the addition of physical structure to the area, and indirect loss due to the addition of structure that supports habitat for organisms with the ability to compete or interfere with handfish habitat. For example, structures may increase fallout from biofouling to the benthic environment. Biofouling fallout occurs when organisms that have colonised structures (e.g. mussels and sponges) grow to a point where they can no longer remain attached, detach, and settle on the seafloor, where they can alter the benthic habitat. This fallout may then provide food for species such as the northern Pacific seastar. In addition, indirect impacts to habitat resulting from the addition of structures may include reduction of seagrass from shading.

3.2.2 Pollution and Siltation of Waterways

Anthropogenic activities in the Derwent Estuary such as land clearing, dredging, industrial discharge, and urban runoff, have directly impacted spotted handfish populations by degrading their shallow coastal habitats. Increased sedimentation from runoff can bury or smother the soft, sandy substrates the handfish rely on for movement and spawning. Pollution in the Derwent Estaury, particularly from historic and ongoing heavy metal contamination, poses physiological risks to handfish through gill damage, disrupted osmoregulation, and reduced reproductive success (DCCEEW 2025).

Threats related to pollution and siltation resulting from the proposed project include increased siltation resulting from vessel movements and disturbance and suspension of contaminated sediments from vessel movements and construction works.

3.2.3 Invasive Species – Northern Pacific Seastar (*Asterias amurensis*)

The northern Pacific seastar (NPS) has been identified as a potential contributing factor in the decline of spotted handfish due to their ability to reduce availability of handfish spawning substrate , NPS predate on the stalked ascidians which the fish use as spawning habitat (DCCEEW 2015). The Derwent Estuary is known to have high abundances of NPS with congregations often observed around structures and where organic matter is available for food. NPS are opportunistic generalist predators known to reduce the abundance of a broad range of benthic species in their native habitats,

including molluscs, ascidians, bryozoans, sponges, crustaceans, polychaetes, fish, and other echinoderms (DCCEEW 2015).

The proposed project may alter NSP populations at Lords Beach through the addition of food supply from biofouling fallout.

4 Significant Impact Assessment

The Australian Government's *Matters of National Environmental Significance: Significant Impact Guidelines* provides a framework for assessing whether a proposed activity will have a significant impact on a MNES (and therefore require approval from the environment minister under the EPBC Act). Under the significant impact criteria, an action is likely to have a significant impact on a *critically endangered* species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of a population
- reduce the area of occupancy of the species
- fragment an existing population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of a population
- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
- introduce disease that may cause the species to decline, or
- interfere with the recovery of the species.

An assessment of the proposed development impact on spotted handfish against the Significant Impact Criteria for critically endangered species is provided in Table 1.

This assessment adopts the following assumptions:

- There is no feasible option for relocation of the proposed development. Ideally, the development would occur in an area free of spotted handfish, however the following assessment and resulting mitigations assume that avoidance is not an option.
- The development may occur anywhere within the proposed surveyed area (Figure 1). This area is to be determined.
- The proposed structure will extend approximately 60 m from the shoreline and will comprise a 26-m boardwalk, a terminal platform supported by a 7.5 x 16 m reinforced concrete slab, and a 14 x 2.5 m hydraulic boarding ramp. Only the terminal platform footprint (7.5 x 16 m) will be impassable across the benthic environment. The remainder of the structure will have a minimal subsurface footprint that is restricted to piles, which will not result in any major fragmentation of habitat. The structure will cause shading of habitat directly within the footprint.
- Any in-water construction work will *not* occur in the spotted handfish breeding season (mid-July to mid-December inclusive).
- No dredging work will occur during construction.
- Once operational, vessels will dock at the proposed commuter ferry terminal multiple times daily but will only access the terminal platform (located furthest offshore).
- The spotted handfish observed at Lords Beach are a resident population at the site.

Table 1. Response to significant impact criteria for the proposed development at Lords Beach on the spotted handfish population, including assessment and recommendations for potential mitigations and/or offsets.

	Significant Impact Criteria	Likelihood: (rare, unlikely, possible, likely, almost certain)	Assessment	Potential Mitigations
1	Lead to a long-term decrease in the size of a population	Possible	The proposed development may decrease the local spotted handfish population at Lords Beach, through both construction and ongoing vessel operations. Although the development footprint is relatively small and most impacts will be localized, it is important to consider indirect and ongoing impacts that may fragment or disturb the spotted handfish population and its habitat. Primary causes of population decline related to the proposed development may include: - Mortalities from direct impact during marine construction, particularly via the installation of the concrete terminal. - Mortalities related to indirect impacts of construction, such as degradation in	Development design considerations: - Design structure to have minimal contact with the benthic environment. - Ensure structure is built at an appropriate depth to reduce benthic disturbance from prop wash. Draft and engine power of vessels expected to use the proposed terminal should be considered in this design. A vertical buffer zone should be adopted. Mitigating direct mortalities: - Local relocation of spotted handfish by divers prior to marine construction activities. Mitigating indirect mortalities during construction:

Significant Impact Criteria	Likelihood: (rare, unlikely, possible, likely, almost certain)	Assessment	Potential Mitigations
		water quality or habitat (i.e., increased turbidity from re-suspended sediments). - Mortalities related to vessel operations including benthic disturbance from vessel propellers. Secondary and ongoing causes of population decline related to the proposed development may include: - Reduced recruitment due to spawning habitat degradation (e.g., increased predation from NPS, reduction in seagrass due to shading), disruption of breeding behaviours, and fragmentation of populations and habitat.	- Best practice marine environmental construction methods should be adopted, including use of silt screens and implementation of turbidity monitoring. Managing ongoing impacts: - Develop a management plan to consider ongoing impacts from the development. This could include spotted handfish population monitoring and invasive species (i.e., NPS) eradication and/or monitoring programs. Utilise offsets to increase suitability of surrounding benthic habitat for handfish: - Increasing the available suitable handfish habitat in the broader area may offset the reduced habitat caused by the development footprint. An investigation into feasible offsets

	Significant Impact Criteria	Likelihood: (rare, unlikely, possible, likely, almost certain)	Assessment	Potential Mitigations
				could be conducted and may include removal of large anthropogenic debris items, replacement of existing traditional moorings with environmental moorings in the vicinity of the site, seagrass restoration programs, implementation of artificial spawning habitat, or NPS seastar removals.
2	Reduce the area of occupancy of the species	Almost certain	Without the implementation of any offsets, the recorded suitable spotted handfish habitat within the development area (the area of occupancy) will be reduced in the immediate vicinity of the development including: - The footprint of concrete terminal (7.5 x 16 m) and any other sub-surface structures (e.g., piles). - Where the footprint of the development causes shading, influencing cover of habitat forming photosynthetic organisms such as seagrass.	The proposed development will likely reduce the area of available habitat for spotted handfish within the immediate vicinity of the development structure. To offset the potential habitat removed from the presence of the new structure and related impacts, environmental offsets may be designed to increase the suitability of surrounding benthic habitat. See *Development design considerations* from Criterion 1 (above) for details.

	Significant Impact Criteria	Likelihood: (rare, unlikely, possible, likely, almost certain)	Assessment	Potential Mitigations
			- A buffer zone around where fallout of biofouling occurs (near any subsurface structures). - A buffer zone around the region of vessel use where propeller wash might disturb the benthic habitat. -	
3	Fragment an existing population into two or more populations	Possible	Given the limited dispersal and high site fidelity of the spotted handfish, it is possible that fragmentation may occur due to the ferry terminal structure. Any subsurface structure that is in contact with the benthic substrate (e.g., the proposed 120 m^2 concrete slab at the end of the terminal) may limit handfish movement, depending on the width of the structure and the individual dispersal capability of handfish.	As for Criterion 1: Development design considerations: - Design the structure to have minimal contact with the benthic environment. - Ensure the terminal structure is built at an appropriate depth to reduce benthic disturbance from vessel prop wash (vertical buffer zone). Management of biofouling fallout: - Choice of subsurface material and design to consider minimization of biofouling (for

	Significant Impact Criteria	Likelihood: (rare, unlikely, possible, likely, almost certain)	Assessment	Potential Mitigations
			Furthermore, any fallout of biofouling may make habitat surrounding the structure impassable, meaning the entire length of the structure may cause a barrier to movement up to 60 m from the shoreline. If the structure does impact suitable habitat along its entire length, it is possible that the existing spotted handfish population may be fragmented into two parts (either side of the structure).	example, minimizing surface area of subsurface structures). - Routine maintenance may be conducted to remove biofouling from subsurface structures that may result in fallout.
4.	Adversely affect habitat critical to the survival of a species	Almost certain	All areas in which spotted handfish are found (including those currently known and any new areas identified in the future) represent habitat critical to the survival of the species, as outlined in the Recovery Plan for Three Handfish Species (DCCEEW 2015). As per Criteria 1 and 2, the proposed development may adversely affect critical habitat in the immediate vicinity of the development.	Appropriate mitigations and offsets can reduce the likelihood of impact on critical habitat. As per mitigations in Criteria 1-3 above: - Development design considerations (e.g., reduced subsurface structure and benthic footprint, vertical buffer at terminal end). - Best practice construction methods (e.g., silt curtains and turbidity monitoring to reduce impacts on habitat from sediment resuspension).

	Significant Impact Criteria	Likelihood: (rare, unlikely, possible, likely, almost certain)	Assessment	Potential Mitigations
				- Routine maintenance or monitoring to reduce biofouling and NPS populations. - Offset impacts, e.g., upgrade existing traditional swing moorings (which scour the seabed and mobilise sediments) to be environmentally sensitive moorings.
5.	Disrupt the breeding cycle of a population	Possible	It is possible that the breeding cycle of spotted handfish may be impacted by the proposed development at Lords Beach. Potential disruptions to the spotted handfish breeding cycle may occur via population fragmentation (reducing interactions between breeding pairs), habitat degradation resulting in loss of spawning substrate, and increased predation on spawning habitat from NPS. Breeding may also be impacted by direct construction noise from activities such as piling.	As per Criteria 1-4 above, including: - Development design considerations to reduce likelihood of fragmentation or habitat disturbance. - Best practice construction methods. In particular, no construction work or investigation will occur in the spotted handfish breeding season. - Routine maintenance or monitoring to reduce the predator NPS populations. - Investigate appropriate offsets, including installation of artificial spawning substrate.

	Significant Impact Criteria	Likelihood: (rare, unlikely, possible, likely, almost certain)	Assessment	Potential Mitigations
6	Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline.	Unlikely - Possible	As described in Criteria 1, 2 and 4, it is likely that, without the implementation of any offsets, the recorded suitable spotted handfish habitat within development area (the area of occupancy) will be reduced in the immediate vicinity of the development. If the development results in fragmentation of habitat to the extent that the population is also fragmented, then it is possible that the handfish population at Lords Beach may decline. Other populations of spotted handfish exist throughout the Derwent Estuary and Storm Bay. It is unlikely that this development in isolation will result in decline of the species.	Adopt recommendations as per Criteria 1, 2 and 4.
7	Result in invasive species that are harmful to a	Possible	Invasive species are prevalent throughout the Derwent Estuary and spotted handfish habitat, including at the proposed development site in Lords Beach. In particular, the NPS is known to impact on spotted handfish populations by	Standard biosecurity protocols will be adopted during construction. Invasive species monitoring may be implemented.

	Significant Impact Criteria	Likelihood: (rare, unlikely, possible, likely, almost certain)	Assessment	Potential Mitigations
	critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat		consuming spawning substrate and competing for suitable habitat (Spotted Handfish Recovery Team 2002, Stuart-Smith et al 2020). Without adopting standard cleaning and biosecurity protocols, the development may result in new invasive species being translocated to the site. However, the largest threat to the population is likely the NPS which already exists at the site in high numbers.	Additionally, as in Criterion 3: - Design structure to reduce biofouling potential. - Management of biofouling fallout (e.g., via removal of biofouling and fallout to reduce prey that may act as an NPS attractant). - Implement actions to reduce NPS numbers, which may include monitoring and removal efforts.
8	Introduce disease that may cause the species to decline	Unlikely	There are no foreseeable circumstances whereby the proposed project would introduce disease that may cause the species to decline. Lords Beach is already a highly modified environment that is subject to urbanisation and	Standard biosecurity protocols will be adopted during construction.

	Significant Impact Criteria	Likelihood: (rare, unlikely, possible, likely, almost certain)	Assessment	Potential Mitigations
			anthropogenic use. Vessels already frequent the area, and debris is common on the seabed. Although unlikely, it is possible disease introduction may occur through translocation on vessels moving to and from the area, particularly during the construction phase.	
9	Interfere with the recovery of the species.	Unlikely	Without appropriate mitigations as outlined above, there is a possibility that the proposed development would interfere with the local population of spotted handfish at Lords Beach. However, if the appropriate mitigations and offsets (as outlined in this report) are adopted, it is unlikely that the proposed development would interfere with the recovery of the spotted handfish species as a whole.	See mitigations from Criteria 1 -8.

5 Conclusion

Based on the results of the self-assessment against the *Matters of National Environmental Significance: Significant impact guidelines 1.1*, *Environment Protection and Biodiversity Conservation Act* 1999 the proposed commuter ferry terminal development is likely to have an impact on spotted handfish populations if the appropriate mitigations are not implemented. The mitigations provided in Table 1 are designed to be general, covering all potential impacts across the surveyed area. Final environmental management plans should be developed according to the final construction design and in consultation with relevant bodies.

Given the EPBC significant impact criteria have been triggered, it is our assessment that an EPBC referral is necessary.

6 References

Bruce, B. D., Green, M. A., and Last, P. R. (1997). Threatened fishes of the world: Brachionichthys hirsutus (Lacepede, 1804) (Brachionichthyidae). Environmental Biology of Fishes 52, 418. doi:10.1023/ A:1007415920088

Department of the Environment (DoE) (2015a). Recovery Plan for Three Handfish Species, Commonwealth of Australia.

Department of Environment (2013) Matters of National Environmental Significance: Significant Impact Guidelines 1.1, Australian Government, Canberra

Last, P.R. & D.C. Gledhill (2009). A revision of the Australian handfishes (Lophiiformes: Brachionichthyidae), with descriptions of three new genera and nine new species. *Zootaxa*. 2252:1-77.

Marine Solutions (2024) Derwent Ferries Sandy Bay Ecological Assessment Report. Report to Burbury Consulting, May 2024.

Marine Solutions (2025) Natural Values Assessment of a Proposed Commuter Ferry Terminal at Lords Beach, Sandy Bay. Report to Hobart City Council, September 2025.

Natural Resources and Environment Tasmania (NRE Tas) (September 2025) Natural Values Atlas Report: Authoritative, comprehensive information on Tasmania's natural values.

Stuart Smith J., T. Lynch, F. McEnnulty, M. Green, C. Devine, A. Trotter, T. Bessell, L. Wong, P. Hale, A. Martini. R. Stuart-Smith, N. Barrett (2021). Conservation of handfishes and their habitats – final report 2020. Report to the National Environmental Science Program, Marine Biodiversity Hub. University of Tasmania.

Spotted Handfish Recovery Team (2002). Draft Spotted Handfish Recovery Plan. Department of Primary Industries, Water and Environment, Hobart

Pogonoski J.J., Pollard D.A. and Paxton J.R. (2002). Conservation Overview and Action Plan for Australian Threatened and Potentially Threatened Marine and Estuarine Fishes. Environment

Australia, Canberra, Australia. www.environment.gov.au/coasts/publications/marine-fish-action/pubs/marine-fish.pdf.

Whitehead J. (2008) Derwent Estuary introduced marine and intertidal species: Review of distribution, issues, recent actions & management options. Derwent Estuary Program, October 2008.

7 Addendum – April 2026

The assessment of Matters of National Environmental Significance (MNES) was drafted by Marine Solutions in September 2025 and was based on preliminary plans for the proposed commuter ferry terminal at Sandy Bay, provided by Hobart City Council (see Figure 1).

Since the completion of the MNES assessment in 2025, the preliminary plans have been revised to incorporate mitigation measures for risk to the spotted handfish (Figure 5). Changes to preliminary design plans relevant to the impacts on handfish include:

- The previously proposed 120 m^2 reinforced concrete platform and kiosk have been replaced with a floating pontoon. This modification is expected to reduce the potential for population fragmentation of local spotted handfish.
- The walkway to the terminal has been extended, resulting in increased water depth at the berthing location. This greatly reduces the risk of seabed scouring associated with vessel operations.

These design plan changes address some of the potential mitigation required for multiple Significant Impact Criteria (Criteria 1 to 6, see Table 1), specifically the development design considerations (i.e., design the structure to have minimal contact with the benthic environment, and ensure the terminal structure is built at an appropriate depth to reduce benthic disturbance with a vertical buffer zone).

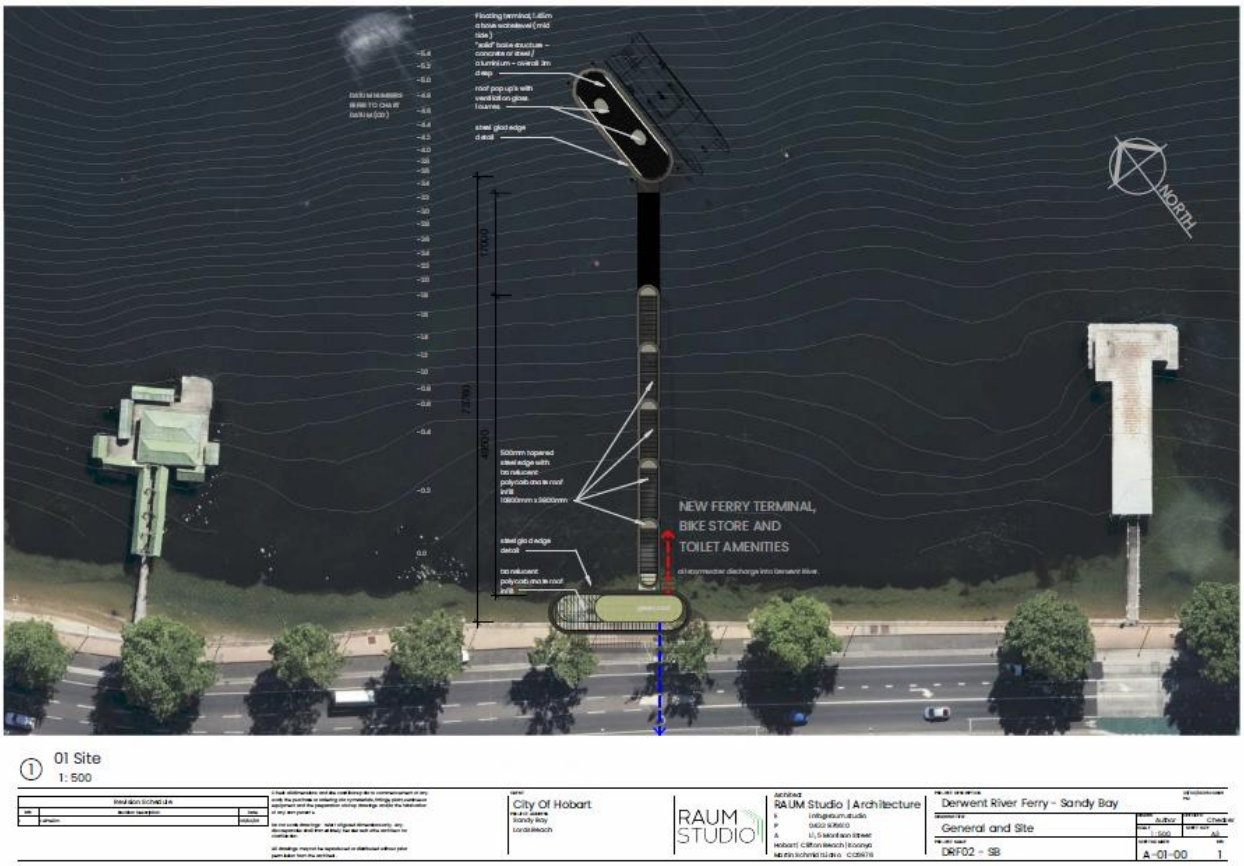

Figure 5. Revised plans for the proposed Sandy Bay ferry terminal (provided by Hobart City Council April 2026)

Additional details regarding mitigation measures to reduce impacts on the spotted handfish are provided in the *Sandy Bay Ferry Terminal Environmental Management Plan*, Section 9.

The MNES assessment criteria have been updated to reflect revisions to the proposed design and are presented in **Referral 03429**.