Appendix E

Addendum to the Marine Biodiversity Assessment Report

Memorandum

ARUP

To	Transport for NSW	Date	20 September 2021
Copies		Reference number	273023
From	Andrea McPherson	File reference	Kamay Ferry Wharves
Subject	Addendum to Marine Biodiversity Assessment Report (Appendix H of the EIS)		

The following provides an addendum to the Marine Biodiversity Assessment Report (MBAR) (Appendix H of the Environmental Impact Statement (EIS), for the Kamay Ferry Wharves project. This addendum responds to the submission raised by the Department of Primary Industries (DPI) Fisheries, regarding the significance assessment of *Posidonia australis*.

Significant impacts to *Posidonia australis*

The MBAR identified in Section 5.4.1 (Appendix H of the EIS) that there would be a significant impact to *Posidonia australis* and as identified in Section 5.4.2 of the MBAR (Appendix H of the EIS), it was concluded there would also be a residual impact. The MBAR stated that there was the potential significant impact:

"(d) in relation to the habitat of a threatened species, population or ecological community—

(i) the extent to which habitat is likely to be **removed or modified** as a result of the proposed development or activity, and

(ii) whether an area of habitat is likely to become **fragmented** or isolated from other areas of habitat as a result of the proposed development or activity, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the threatened species, population or ecological community in the locality."

The potential significant impact to *Posidonia australis* would be at Kurnell only. The large meadow to the southwest of the proposed wharf would be 'fragmented' from the patches of mixed *Posidonia australis* to the east of the proposed wharf. The permeant structure would shade this area and inhibit the meadow from extending eastward. The construction activities would also impact the patches to the east of the large meadow.

The area of *Posidonia australis* to the east of the proposed wharf is exposed to dynamic coastal processes and as such the seagrass is continually changing in density, cover and position. This area is naturally patchy with distances of up to 30 metres between seagrass patches. The proposed wharf would impede rhizome spread, but it would not restrict the movement of seeds that would disperse around the Bay.

The MBOS presents the methods and expectations of offsetting *Posidonia australis* through direct offsets of rehabilitation. The MBOS' intention is to replace all *Posidonia australis* that would be lost due to the project with an end goal of improving 2000 square metres of existing habitat. The replaced *Posidonia australis* would result in a net gain of improved habitat to further reinforce the viability of the meadow and protect it for long-term survival.

Table 1 displays the variation that occurred between the two surveys conducted, where areas of *Posidonia australis* significantly changed. In recent surveys carried out for pre-construction monitoring purposes, the seagrass has further changed around the proposed wharf, which suggests a shift in location of the patches and dominance of species present. With the commitments of the MBOS, the movement of seagrass would be continually monitored for five years after construction. This information would provide a better understanding of fringing habitat of *Posidonia australis* and how it responds to costal processes.

With the high natural variation of seagrass at this site and the proposed commitments as part of the MBOS, the final impact would not be significant.

Table 1.Variation of the seagrass beds and natural distribution and variation at Kurnell.

1 July 2019	12 April 2020
Eastern edge of the meadow is dark and intact (a.) with patches of dominant *Posidonia australis* to the east (approximately 30m from the meadow) (b.).	The following year the seagrass has been significantly impacted by sediment movements and storm activity (a.). Although most of the *Posidonia australis* rhizomes are likely still intact the region was stripped of much of the surface foliage (b.).