Submission to Water Corporation 17 May 2019
copy to: info@dwer.wa.gov.au

SEPIA DEPRESSION OCEAN OUTLET LINE DUPLICATION (SDOOL2) PROJECT PROPOSED NATIVE VEGETATION CLEARING ASSESSMENT UNDER CPS185/8

Submission by the Urban Bushland Council WA Inc concerning clearing activities at variance to the Clearing Principles under the state-wide clearing purpose permit CPS 185/8.

The Water Corporation states that it has applied the mitigation hierarchy of avoid, minimise and reduce to the SDOOL2 project. While the clearing has been reduced from 9.44ha as proposed in 2013 to 3.44ha, we submit that ***the clearing and especially the risks to Lake Richmond could be completely avoided by relocating the pipeline along Fisher Street to Parkin Street, then along Parkin Street to Point Peron Road.***
Further, the pipeline could and should be located in the road reserves rather than in the bushland adjoining the roads. This would be a proper application of the **avoid** principle.

Lake Richmond is of international and national conservation significance.
The international, national and state significance of the Lake Richmond Bush Forever Area 358 has not been recognised in the Water Corporation's assessment of this proposal.

Because of the outstanding and unique conservation values of the Conservation Category Wetland Lake Richmond and its ***critically endangered thrombolites***, there must be no risk whatsoever of threats to this site. Lake Richmond contains **the only known example of the particular microbial community in its thrombolites**. Thus they are truly unique. And significantly, they are a 'living museum' display of the origins of life on Earth, thought to be dated back to some 3.5 billion years before present (see DEC leaflet *'The threatened microbial community of Lake Richmond: a significant wetland*', May 2010). This status must be respected.

The Lake Richmond ecosystem is of scientific and evolutionary importance; it is a location for JAMBA and CAMBA species; was entered on the Register of the National Estate; and is subject to protection under the EPBC Act (*refer Bush Forever Volume 2, Directory of Bush Forever sites, pages 396-398, Government of Western Australia December 2000*).

As most of the bushland proposed to be cleared is in Bush Forever sites, they are Environmentally Sensitive Areas (ESA's) and the **avoid** principle applies. It is unacceptable for **avoidable impacts** on Bush Forever sites, TECs, and wetland buffer zones to be proposed and permitted.

Therefore it is of paramount importance that there be no disturbance and thus no location of the pipeline adjacent to Lake Richmond as proposed. Any ground disturbance and pipeline construction in the buffer zone of the Lake as proposed will disturb and change the soil stratigraphy and groundwater hydrology and thus have an impact on the freshwater Lake ecosystem. The expert

scientific advice by the Wetlands Research Association Inc. is commended to you (see copy attached).

ASSESSMENT UNDER THE CLEARING PRINCIPLES

Principle (a): Native vegetation should not be cleared if it comprises a high level of biological diversity.

Your assessment states that there are 50 species of native flora in the project area. This is a high level of flora diversity for the Quindalup Dunes (*G. J. Keighery pers comm. 2019*). The presence of 9 vegetation associations within the area is highly diverse (*Ibid)*. Just because some of these areas to be cleared may currently be in poor condition does not discount their significance as to their diversity of vegetation type and species richness.

2.54ha of PECs 29a and 29b would be cleared and this is another significant element of the proposed biodiversity loss in vegetation communities of conservation significance.

Thus for flora and vegetation alone, there is a high biological diversity and the proposal is therefore at variance to Principle (a)

The likely presence of up to 373 species of vertebrate fauna is very high indeed and must therefore be considered a high level of biological diversity. From just one survey, 28 vertebrate species were recorded and this would be a significantly underestimate especially for birds and small ground dwelling fauna (reptiles etc) being only one survey. At least 7 fauna species of conservation significance are known to be in the area. Migratory birds (JAMBA and CAMBA) are significant at the Lake Richmond area.

Therefore the clearing proposal is at variance to Principle (a) for both flora and fauna.

Notably the statement at the end of comments under this Principle is not a logical conclusion: 'Based on this assessment, it is considered that the 3.44ha of native vegetation within the clearing footprint does not represent a level of biological diversity greater than the remnant native vegetation in the surrounding areas, nor does it contain exceptional biodiversity values and is therefore not likely to be at variance to this principle.'

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.

The presence of 28 vertebrate species with 4 of conservation significance as recorded in the area is high. The area provides habitat - especially foraging habitat - for the iconic endangered Carnaby's Cockatoo and the Forest Red-tailed Black Cockatoo. From other surveys quoted, many more species have been recorded. Thus there are many fauna species of conservation significance and the area proposed for clearing *'is part of'* their habitat.

The proposal includes clearing of 12 habitat Tuart trees. Tuarts provide a complex ecosystem and highly significant habitat for many species of fauna, - so their removal will have a significant impact on fauna. We submit that any loss of Tuarts results in a significant loss of fauna, especially now that little remains of Tuart communities. Indeed Tuart Woodlands of the Swan Coastal Plain

COPY

are likely imminently to be listed as a *critically endangered* Threatened Ecological Community (TEC) under the EPBC Act.

Your assessment claims that clearing of 3.44 ha of habitat is not at variance to this Principle because none of the species would rely solely on this area. This is irrelevant. Principle (b) does not state this as a reason for allowing clearing. The area proposed to be cleared *is part of significant habitat* for fauna.

Therefore the proposal is at variance to Principle (b).

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

Under your assessment for Principle (a), it states that 11 species of conservation significance may occur in the area according to desktop assessments. With the limited field surveys conducted, there may be presence of some of these species in the areas proposed to be cleared. There is insufficient data for proper assessment under this Principle.

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

As your assessment states, buffer zones for four TECs, of which three are critically endangered (CE), overlie the project area. The likely imminent listing of the Tuart Woodlands of the Swan Coastal Plain as a CE TEC under the EPBC Act is not mentioned. The presence of all these TECs is a highly significant matter.

Indirect impacts: With clearing of vegetation within the buffer zones of these TECs, there will be significant edge effects in the Bush Forever sites from the disturbance due to lateral tree root destruction, weed invasion, risk of dieback invasion, soil erosion etc. Dewatering would have a significant impact of groundwater drawdown on adjacent vegetation. Thus the clearing would likely also degrade the adjoining TECs.

The Lake Richmond fringing sedgelands and thrombolites are especially at risk. While there is mostly grassland in the area to be disturbed in the Lake Richmond buffer zone, this clearing and soil disturbance has the potential risk of erosion sediments being washed into the freshwater Lake in the event of a rain or storm during or after pipeline installation works. This risks the health of the thrombolites as well as nutrient enrichment from stormwater runoff. The sedgelands CE TEC are also similarly at risk. This risk is totally unacceptable.

ASS, PASS: Any dewatering before clearing vegetation or trench digging would likely have a significant impact on surrounding vegetation in the whole project area. There would be localised groundwater drawdown under the adjacent native vegetation of the Bush Forever sites and other patches. *Areas of ASS and PASS must not be dewatered at all* as the acidification is irreversible, and would acidify stormwater runoff and associated drains.

The risk of acidification of drains into Lake Richmond must be avoided as the thrombolite microbial assemblage could be damaged or even killed.

The *'appropriate management controls and monitoring'* as described cannot remove these potentially catastrophic risks to the thrombolite assemblage.

COPY

There will be indirect impacts, with some potentially catastrophic - of clearing on all the adjacent TECs in the project area.

Therefore the proposal is very seriously at variance to Principle (d).

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

While the assessment states there is 37% Quindalup Dune vegetation remaining in the City of Rockingham, the EPA (*EPA Interim Strategic Advice* July 2015) states that only 15.4% of remaining Quindalup vegetation is in secure tenure for conservation in the Perth – Peel Region. The percentage remaining in Rockingham is not a relevant consideration, and does not justify a clearing loss as well as edge disturbance impacts on a Bush Forever site. Notably the pipeline transects Bush Forever Area 355 and is in the buffer zone of Bush Forever Area 358.
Indeed the Perth- Peel Region has already been significantly cleared.

Therefore the proposal is at variance to Principle (e).

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

The pipeline project and clearing is clearly ***'in association with'*** a significant wetland, Lake Richmond as it is in the buffer zone of the Lake. While most of the clearing and earthworks adjacent to the Lake does not involve native vegetation, the clearing is in association with the wetland. There is some clearing of native vegetation associated with the wetland.

This reality must be recognised. Clearing and soil disturbance should not be permitted within the buffer zone and therefore in association with this very high conservation value wetland being Lake Richmond.

Therefore the proposal is at variance to Principle (f).

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

The assessment states that a portion of the project areas near Lake Richmond is mapped as ASS risk by DWER (2018). With potential for pH change >3, this would be a significant impact. Given the sensitivity of Lake Richmond to any change in pH even for part of the area and the Lake, such a risk in lowered pH could have a catastrophic impact on the microbial community's functioning of the thrombolites. It might kill some of the bacteria and/or fungi and **might even kill the living thrombolite ecosystem. This would be a catastrophic impact of land degradation on the unique thrombolite community which is of both international and national and state significance.**

Also acidification and smothering of any of the surrounding CE sedgelands TEC as a result of and wind or water erosion is a risk.

Runoff and erosion is also a risk to the vegetation adjacent and downslope in Bush Forever Area 355 and other patches of vegetation.

COPY

A risk of 'appreciable land degradation' as a result of acidification and/or damage from erosion is totally unacceptable.
Therefore the proposal is seriously at variance to Principle (g).

Principle (h): Native vegetation should not be cleared if the clearing of vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area
Given the risks of acidification and erosion damage described above, as well as the edge effects of any proposed dewatering, soil disturbance, and clearing and diseases etc there will be impacts on the surrounding and adjacent conservation areas of Bush Forever sites 355 and 358.
Just because the pipeline alignment is in reserve 42518 which is vested in the Water Corporation does not nullify nor justify the impacts on the surrounding conservation areas. Clearing of 2.77ha in Bush Forever site 355 has a direct impact of net loss and further edge effects of degradation. Bush Forever sites are supposed to be retained and protected as part of the conservation estate. The clearing will definitely have impacts on the environmental values of the conservation areas of both Bush Forever Areas 355 and 358 which includes the JAMBA and CAMBA site.

Soil disturbance in the wetland buffer zone and clearing of the 0.19 ha in Lake Richmond Bush Forever 358 will have an impact on the environmental values of Bush Forever 358. The soil disturbance with trench digging will change and have an impact on the complex stratigraphy and groundwater hydrology adjacent to Lake Richmond. This means there will be changes to the environmental values of the groundwater and Lake ecosystem which is unacceptable for such a sensitive and critically endangered ecosystem. The letter concerning this aspect by the Wetlands Research Association Inc. is commended to you

The commitment to have a 'Construction Environmental Management Framework' (CEMF) does not remove a residual risk. Thus the assessment states that the proposal 'may be at variance' to Principle (h). A CMEF is not justification for granting a permit which is or may be at variance to this Principle.

The proposal is seriously at variance to Principle (h).

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
The assessment states the clearing in association with Lake Richmond has potential to impact surface and underground water by:

- contributing sedimentation to Lake Richmond's endangered TEC stromatolite-like microbialite community (which is actually **critically endangered** under WA criteria, **not** endangered as stated)
- the potential for low pH waters and/or acid sulphate soils (ASS) to form as a result of disturbing areas of ASS that have potential to occur in the vicinity of the Lake.

The risk of these impacts to the water quality of surface and underground water exists. Our statements made above under Principles (f), (g) and (h) apply here. All these matters are inter-related. The risk of acidification of the surface runoff, drainage and groundwater would result in its deterioration. Runoff and drainage may also be of increased nutrient levels resulting in exacerbation of eutrophication of Lake Richmond which could have an adverse impact of the thrombolite microbial community. This risk of changes at any level is totally unacceptable because

COPY

of the risk to the health of the unique thrombolite microbial community.
With the small area of 0.19 ha of clearing proposed in Lake Richmond Bush Forever site 358 being within Reserve 42518, does not justify its clearing with the associated risks of deterioration of water quality from acidification and/or eutrophication and/or sediment deposition.

The proposed CEMF and Management Plans are not justification for the clearing. *Areas of ASS and PASS must never be dewatered*. If there is a major heavy rainfall event during or soon after clearing, there may be unusual discharges with sediments to the drains leading to Lake Richmond.

Any risk of deterioration of the water quality of Lake Richmond either directly or indirectly is unacceptable because it threatens the thrombolite community.
Therefore the clearing is seriously at variance to Principle (i).
Please note that we strongly disagree with the Water Corporation's assessment that the clearing for the project is unlikely to be at variance to Principle (i).

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
As stated above, in the event of a major rainfall event during or after ground disturbance and clearing adjacent to Lake Richmond, there could be increased sediment runoff into Lake Richmond and some flooding. Although this risk may be low, it exists and therefore there could be increased flooding associated with clearing and soil disturbance.

Therefore the proposal is at variance to Principle (j).

CONCLUSIONS
1. The SDOOL2 proposal is at variance to 9 Clearing Principles: (a), (b), (d), (e), (f), (g), (h), (i), (j) and of these, is *seriously* at variance to 4 principles (d), (g), (h), (i). Therefore the clearing and disturbance must not be permitted. This means the proposed route for SDOOL2 is totally unacceptable and must be completely changed and re-aligned.

2. Of paramount importance: the risks to the unique Lake Richmond critically endangered ecosystem with its unique thrombolite microbial assemblage are totally unacceptable and therefore the avoid principle applies and clearing and soil disturbance as proposed must be refused. As detailed in the letter by the Wetlands Conservation Society Inc., the SDOOL2 pipeline will likely lead to the demise of the internationally significant thrombolite microbial communities. This advice must be respected.

3. Using the avoid principle, all the impacts at variance to the Clearing Principles could be almost completely avoided by relocating the pipeline along Fisher Street to Parkin Street, then along Parkin Street to Point Peron Road. This would avoid impacts on both Bush Forever Areas 355 and 358.

4. Where the SDOOL2 pipeline is proposed to be located in native vegetation adjacent to roads such as Pt Peron Road, the clearing should be avoided by locating the pipeline along the road. This will avoid the clearing and its associated impacts as long as there is no dewatering.

COPY