NSW GOVERNMENT | Department of Primary Industries

Our Ref: C21/250

Your Ref: SSD-5916

13 May 2021

Pamela Morales
Principal Planning Officer, Industry Assessments
Planning and Assessment

Dear Pamela,

Proposal: **Raphael Shin Enterprises Pty Ltd v Minister – The Bay Resort, Anna Bay (SSD-5916) - Land and Environment Court Proceedings No 2020/328548 – Amended Environmental Impact - Statement**
Property: **4177 Nelson Bay Road, Anna Bay - Lot 2 DP 747399**

Thank you for your referral of 8 April 2021 seeking comments on the proposal from the NSW Department of Primary Industries – Fisheries (DPI Fisheries).

DPI Fisheries is responsible for ensuring that fish stocks are conserved and that there is no net loss of key fish habitats upon which they depend. To achieve this, DPI Fisheries ensures that developments comply with the requirements of the *Fisheries Management Act 1994* (FM Act) (namely the aquatic habitat protection and threatened species conservation provisions in Parts 7 and 7A of the Act, respectively), and the associated *Policy and Guidelines for Fish Habitat Conservation and Management (2013)*. DPI Fisheries is also responsible for ensuring the sustainable management of commercial, recreational and Aboriginal cultural fishing, aquaculture, Marine Parks and Aquatic Reserves within NSW.

DPI Fisheries has reviewed the proposal based on those provisions and **objects** to the proposal based on the following issues:

- **Location**;

  A significant part of the site is regularly inundated by saltwater tides from Tilligerry Creek. Previous landowners built drains and floodgates, which are no longer in place, and now that these have been removed, the site is once again regularly inundated by saltwater, changes in the vegetation type are apparent.

  The most obvious vegetation on the site is saltmarsh community, listed as 'vulnerable' under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and as an **Endangered Ecological Community**, under the NSW *Threatened Species Conservation Act* in 2004. This community is recognised worldwide as occurring in the intertidal zone.

  Fisheries would also note that:

  - "tidal lands" as defined under the *Marine Estate Management Act* means any area of land that is covered from time to time by tidal waters and that is above the lowest astronomical tide level.
  - And that the regulations contain
    "Part 2 Description of the area to be known as Port Stephens-Great Lakes Marine Park

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> The boundary encompasses all tidal and coastal waters within the area set out below, together with all the lands beneath the waters within that area to mean high water mark:……
> Including;
> (e) then generally in a northerly direction along the coast **at mean high water mark (including all rivers, estuaries, bays, lakes, lagoons and inlets upstream to their tidal limit, and tidal lands, and including but not limited to the whole of Port Stephens,** Myall Lakes and Smiths Lake) to the commencement point described in paragraph (a) above.

Series of aerial photography from the previous drought shows that there is always water lying on the site and the descriptions of the site in the various documents in the EIS identify that the land is tidal.

This does raise the concerns that the development is actually sited within the Marine Park.

Policy and Guidelines for Fish Habitat Conservation and Management (2013) (P&G's) define, in Table 1 of the P&Gs, saltmarsh, mangroves, aquatic habitats within 100mm of a Marine Park and fresh and brackish water wetlands as Key Fish Habitat (KFH).

The Department policies are clearly set out and include (most relevantly):

5.2.2 1) NSW DPI will generally not support or approve reclamation of TYPE 1 and 2 or CLASS 1-3 fish habitat (see Tables 1 and 2) (including freshwater, estuarine and marine) for private development such as roads, walkways, housing or commercial development, foreshore or beach improvement.

3.1 7) No net loss of key fish habitat – Significant environmental impacts (direct and indirect) are to be offset by environmental compensation. Compensation to offset fisheries resource or habitat losses will be considered only after it is demonstrated that the proposed loss is unavoidable, in the best interests of the community in general and is in accordance with the FM Act, Regulations and these policies and guidelines. Habitat replacement (as a compensation measure) will need to account for indirect as well as direct impacts of development to ensure that there is "no net loss" of key fish habitats

3.2.3.2 2) NSW DPI will generally not approve any new developments or activities that will harm TYPE 1 and TYPE 2 marine vegetation (see Table 1) without adequate mitigation and compensation measures in place

- **Biodiversity**;

  Biodiversity offsets

  Mangroves should not be included and any offsets for marine vegetation should be negotiated with Fisheries NSW. Offset ratio of 2:1 as outlined in the Departments Policy and Guidelines.

  DPI Fisheries would highlight that marine vegetation mangroves and saltmarsh are ecosystems with the richest ecosystem service values for community wellbeing. These services cover key fish habitat, fisheries production, improving water quality, carbon sequestration and storage. Marine vegetation systems also have biodiversity values for birds, bats and terrestrial animals including those threatened species managed under the *Biodiversity Conservation Act 2016*.

  Appropriate offsets in accordance with DPI Fisheries policy and guidelines will be required as part of these works. These offsets are focussed on maintaining aquatic habitat and associated production values. DPI Fisheries understands how the approach taken towards the offsetting could be reached in this instance. However, it s.1.4 of the *Biodiversity Conservation Act* needs to be considered in terms of its application to terrestrial animals and plants and not fish and marine vegetation.

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DPI Fisheries offset strategies focus towards rehabilitation of impacts to marine vegetation in the first instance, either within the catchment area of the development or more broadly (say within a Local Government Area). It is important that the marine vegetation in the area being considered for an offset is protected in perpetuity (ie. forever) in public ownership and is within a Coastal Management SEPP Wetland area.

To ensure management of the broad offset investigation area in a way that satisfies DPI Fisheries offset policy, the proponent will need to centre an offset proposal that will address the key threats and direct risks to marine vegetation at that site.

It is the area of habitat that is improved through on-ground habitat offsets that will be considered to count towards the DPI Fisheries offset requirement. The department wold point out that the saltmarsh area has already significantly recovered after the removal of the floodgate and grazing livestock and that the development would be damaging or removing this recovered saltmarsh habitat.

DPI Fisheries does not support the Biodiversity offsets outlined for this development as it does not meet the Departmental Policies

- **Mosquitos**

Methoprene is moderately toxic to some fish and low in toxicity to others. Methoprene can accumulate in fish tissues. It is slightly toxic to crustaceans such as shrimp and crayfish, and very highly toxic to freshwater invertebrates. (Note: Mosquitos are fish as defined under the FM Act.)

Sunlight and micro-organisms break down methoprene. In water, it takes 1-28 days for methoprene residue to break down by half, depending on the availability of sunlight.

The Department has concerns that this may have an impact on the fish and invertebrates that inhabit the Sanctuary Zone of the Marine Park and also enter the receiving waters of Port Stephens and potentially impact on the oyster industry if the chemical is widely used.

It should also be noted that the saltmarsh mosquito will fly 10km to feed, so a 100m buffer zone will have little effect.

The Department would also note the potential increased risk of mosquito habitat creation due to the dieback of the saltmarsh under the proposed cabin structures. This die back has the potential to create low lying areas, similar to scalds in natural saltmarsh areas, that will pond water during rain events or during tidal events potentially creating ideal breeding habitat for mosquitos.

- **Earthworks**

The geotechnical report indicates the presence of three main soil layers around the proposed area to be filled; topsoil with organics on the surface, then very soft to soft clays transitioning to clayey sand and then sand to the termination depth of the investigation, 2.3 - 2.5m. The report recommends the inclusion of a program of subsurface investigation in proposed building areas to assess the variability in the thickness of soft clay and the most appropriate improvement option.

The Department assumes this is to determine the amount of sinking that will occur when 41,00 cubic metres of sand is placed on this soft clay and to also determine if land heave occurs when this site is loaded.

The Department requested this be answered in the EIS as land heave has a potential to significantly modify water movement across the site and impact on the potential saltmarsh recovery/survival. The Department would expect that a suitable independent soil engineer would assess this issue before any approvals are issued

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- **Flooding**

  The Department still has serious concerns about the filled parts of the site creating ponding of water during floods and the potential for generation of black water, which will be released into the Marine Park Sanctuary Zone.

- **Sewage impacts on the oyster industry**

  The proposed project is situated in immediate proximity to Priority Oyster Aquaculture Areas located to its north in Fenninghams Island Creek and more broadly in Tilligerry Creek. The primary constructed drainage channel north-west of the proposed project site drains directly to priority oyster aquaculture lease areas located at the immediate head of the drain. Wallis Creek located to the east of the drainage channel and proposed project area drains into Tilligerry Creek, near the head of Fenninghams Island Creek

  The Department has concerns on the development of a sewerage system below tidal levels and would require the system to be constructed as a fully sealed system with macerators and pumping to ensure potential leakage is minimise. The system should be design to a capacity of 120 litres /person/day when the resort is at full capacity with redundancy included. This is recommended by Safe Food Authority and included here for completeness.

- **Stormwater discharges**

  The Department is concerned about the management of stormwater from the roofs of all buildings and would expect the discharges to be managed in a manner that precludes localised impacts on the saltmarsh areas of the site.

- **Water movement across the site**

  The installation of the service roads and boardwalks need to be constructed in a manner that does not cause either ponding or create concentrated flows on the site

  What is also unclear is the effect, if any, that removing a number of constructed drainage channels will have on water movement from the project site to Fenninghams Island Creek and Tilligerry Creek

- **Acid Sulphate Soil Management**

  The EIS states;
  - investigation of the site found the presence of both Potential Acid Sulfate Soils (PASS) and Actual Acid Sulfate Soils (AASS).
  - it is expected that acid sulfate soils will be encountered during construction of the footings for the walkways and accommodation.
  - it is also possible that through the constant wetting and drying cycles and the low elevations within the drainage channels, that acid is being flushed into downstream receiving waters.

  Mitigation measures were identified to reduce the risk of AASS or PASS mobilisation in accordance with the Preliminary Acid Sulfate Soils Management Plan. While the Preliminary ASS Plan includes a Contingency Procedure Plan with the intention to clearly set out the process governing what should happen if the acid sulfate soil management strategies fail, the Contingency Procedure Plan does not include a risk assessment to adequately identify worst case scenario events and appropriate responses.

  What remains unclear about the project proposal is:

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- the number of holes required to be dug for pier footings for 68 units, 51 villas and hundreds of metres of boardwalks;
- the number of metres of trenches required to be dug for services; and
- the amount of excavation material likely to arise from these and similar ground disturbing activities.
- if mitigation measures have the ability to prevent the risk of acidic water or soils mobilising into Fenninghams Island Creek and Tilligerry Creek in the event of a 1 in 100 year rainfall event
- the likely behaviour and chemical composition of acidic water and soil if it leaves project construction areas if risk mitigation measures fail, and its potential impact on priority oyster aquaculture areas in Fenninghams Island Creek and Tilligerry Creek

If you, Crown Lands or Council require any further information, please do not hesitate to contact me on 4916 3931.

Yours sincerely,

Scott Carter
Senior Fisheries Manager – Coastal Systems Central/Metro
Authorised delegate of the Minister for Primary Industries

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