

Māpua Boat Ramp Community Trust, Response by Elspeth Collier to Additional Information related to Contamination

My name is Elspeth Collier. I live on a peninsula in the Waimea Inlet. I have lived here off and on since 1967 and have lived here permanently since 2001. I am co-chair of the Waimea Inlet Forum Working Group. My interest is in protecting the future health of the Waimea Inlet. I am a member of the Friends of Māpua Waterfront Group.

I am commenting on T01A, *Construction Methodology and Erosion and Sediment Control Plan Overview*, Gary Stevenson, 30 January 2025 and T01G, *Supplementary Detailed Site Investigation*, Gareth Oddy, 14 April 2025.

Quotes from T01A start with a “T”.

Quotes from T01G start with a “G”.

Introduction

The results in T01G from the testing of the marine sediment in the Māpua Channel confirm high levels of contamination. The total DDT concentrations in nearly all sediment samples were well above relevant guidelines, exceeding the ANZG (Australia /New Zealand) high sediment quality guideline in all but one sample. T01G also reported that “*Aldrin and Dieldrin concentrations in the majority of samples also exceeded the ANZG sediment guideline values-GV-high, within the higher concentrations (>0.06 mg/kg) encountered at a depth of 0.4 or deeper*”. (G p 11, para 3.2)

The confirmation of high levels of organochlorides in the marine sediment is a game changer for both the construction phase and ongoing operation of the proposed boat ramp.

Both documents (T01G and T01A) give the impression that the Applicants have little or no idea about:

- a) how to safely remove the contaminated sediment from the boat ramp footprint in the channel without mobilising contaminants around the excavation site.
- b) What the ongoing tidal effects of scour around the ramp structure would be.
- c) What the future environmental impact on the Waimea Inlet would be of boat propeller activity stirring up contaminated sediment.

Gary Stevenson in T01A uses uncertain language such as “may”, and “anticipated”.

For example:

- *"The purpose of this report is to outline the construction methodology and sediment control measures which may be applied to the Māpua Coat Ramp construction at 3 and 11 Tahi Street, Māpua. (A p5, para 1.1)*
- *The objective of this plan is to describe anticipated construction methodology to be employed by a competent contractor" (A p5, para1.1).*
- *The plan discusses the boat ramp and accessway development site, and provides an overview of practices which may be employed onsite (A p5, para1.1)*
- *"coffer dam 1.5 m high may be used to ensure excavation can be kept dry either side of low tide. (A p9, para 5.b.i).*

These words provide nothing more than an expectation, they provide no certainty and give the applicants an out, so to speak, with construction methodologies. This is not sufficiently certain given the nature of the contaminants and the risks to the environment.

The receiving environment

The commissioners asked the applicant for details of the mitigation proposed to reduce the extent of any contamination and "assess the resulting effects of excavation on the receiving environment". It is my assessment that the further information provided by Mr Oddy fails to provide this in any detail, apart from a brief reference to ingestion of contaminated sediment by organisms. (G p13, para 4.2) He does not elaborate on what the effects of ingestion might be.

The receiving environment is the Waimea Inlet, and the benthic habitat that contains the shellfish and crustaceans that the birds of the Inlet feed on. The disturbance and mobilisation of sediment containing organochlorides pose a considerable risk to the long term environmental well-being of the Waimea Inlet, as they are persistent chemicals entering a food chain.

Mr Oddy says that the concentration of contaminants is typically greater in the finer sediment fractions. *"The <63µm contaminant concentration is therefore of greatest concern and was analysed in our assessment"* (G p 8, para 2.4)

"The <63µm sediment particle size fraction (clay and silt) is considered a suitable representation of the sediment materials that are most readily resuspended or potentially ingested by organisms". (G p13, para 4.2)

There are 3 SNAs within 400 metres of the proposed ramp. MO79-Māpua Inlet, MO64-Bullivant Island, and MO63-No Man Island. Tōrea Pango/ variable oystercatchers nest nearby at the mouth of Seaton Valley Stream, and feed their chicks at the shellbank on the edge of the channel. The start of the delta at the Māpua Embayment where many birds feed is 250 metres from the site of the proposed ramp.

It is important to categorise the effects on the environment as those coming from **construction** versus those from **long-term operation of the ramp structure**.

Environmental risk during construction phase

The removal of 150 tonnes of contaminated sediment would need to be removed within one low tide, otherwise the risk of mobilisation of sediment containing organochlorides would be uncontrollable. Gareth Oddy says “*control of this sediment will be critical to preventing the discharge of sediment and contaminants to the marine environment*” (G p13, para 4.2). He adds that “*The proposed excavation of approximately 150 tonnes of contaminated sediment does have the potential to produce an environmental effect if handled inappropriately*”(G p14, para 5.0).

It is unlikely that the window of time within one low spring tide is long enough to remove approximately 110 cubic metres of contaminated sediment. This would leave the finer more contaminated sediment exposed to tidal movements until a reno mattress was put in place. (The most contaminated sediment is at lower levels, and attached to finer sediment. When undisturbed as it currently is, it remains buried and relatively stable beneath a layer of coarser surface gravels).

If the sediment removal and placing of a reno mattress can't be done at one low tide a **cofferdam** would need to be constructed. There are multiple problems using a cofferdam in this location. The cofferdam that Gary Stevenson proposes is 1.5 metres high, and would be overtopped at high tide, causing mobilisation of contaminants within the cofferdam.

Putting a cofferdam in place will upset the natural tidal flows in the channel. Currents will be diverted from flowing parallel to the shore, and will be diverted out to the channel. At high tides the cofferdam will be submerged, and the current will cause local erosion (scour) around the structure. This will disturb and mobilise the more contaminated finer sediments that are currently at deeper levels. Any structural change in the flow paths in that area will cause erosion which will lead to the mobilisation of contaminated sediments. Numerical modelling such as TUFLOW would evaluate the potential scour caused by tidal movement around the cofferdam.

Another contamination risk during construction is that the existing rock protection that holds sediment within the waterfront park area would be removed for the construction period. A total of 21 metres would be exposed. (5 metres either side of the finished ramp width). It would be temporarily “held in” with A39 bidim_a geotextile cloth. (ref T01A, p10, c.ii). A failure in this erosion control would be a serious risk to the marine environment.

Environmental risk from long-term operation of the boat ramp

Mr Oddy claims in his conclusion that the removal of contaminated sediment in the footprint of the proposed ramp and concrete capping of the ramp will be a long term gain for the marine environment. But he also admits that “*this is only likely to be a small proportion of the contaminated sediment on the foreshore*” (G P12, para 4.1)).

Mr Oddy does not address the potential mobilisation of the remaining contaminated sediment either side of the ramp from the subsequent operation of the boat ramp. This will involve vessels regularly powering on and off trailers, with associated prop-wash highly likely to mobilise intertidal sediments and any associated contaminants. Because of the bio-accumulative nature of organochlorine pesticides, even small exposures can concentrate in the food chain and end up causing significant adverse effects. This has not been addressed in the evidence. The ramp would protrude well above the current seabed, especially close to the shore. This would likely exacerbate the tidal erosion and deposition processes on either side of the ramp. Other boat ramps such as those at Kaiteriteri or Totaranui, where the tidal flows are not nearly as fast as in the Mapua Channel, end up with erosion on one side and deposition on the other.

Conclusion

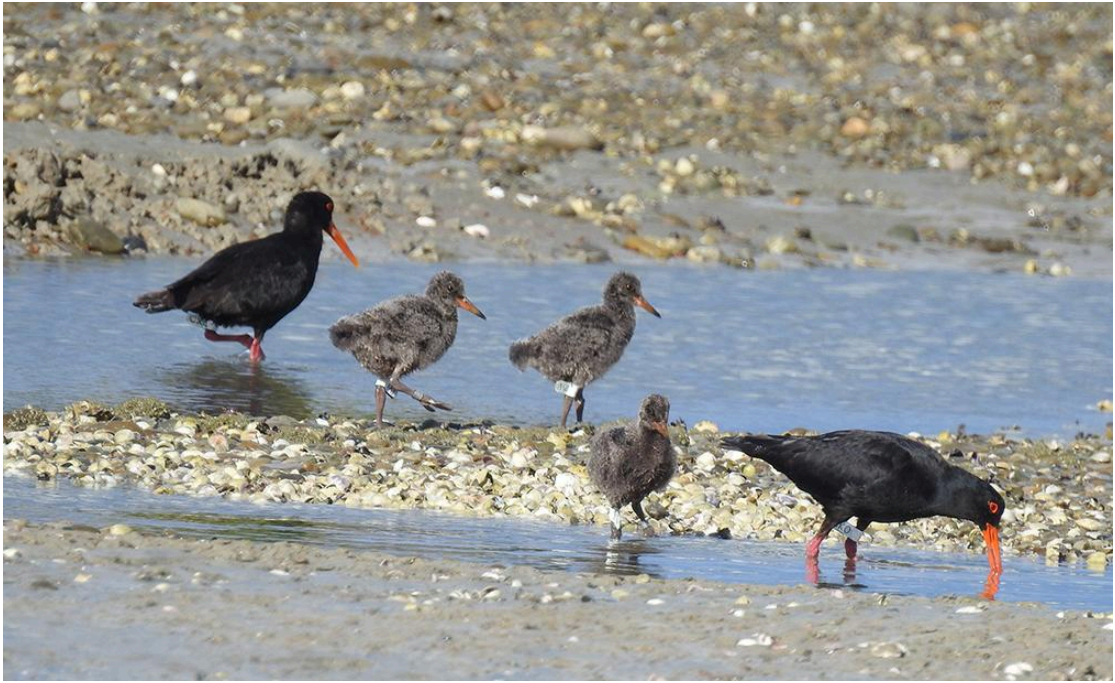
Due to the contaminants found in the marine sediment I don't believe there is any way of constructing and operating a boat ramp in this location without unacceptable risk to the natural environment both now and in the future, regardless of any conditions imposed.

Images of the receiving environment on the next page.

1. Tōrea pango feeding at the Māpua Embayment



2. Tōrea pango family feeding at the shellbank



3. Kōtuku
fishing at the
Māpua
Embayment



4. Kōtuku
ngutupapa
feeding at
the Māpua
Embayment



5. Kuaka feeding at No man Island



6. The shellbank



7. Tōrea
pango
feeding at
the proposed
ramp site

