

## JOBS FOR NATURE

# Horowhenua Freshwater Management Unit Water Quality Interventions

## Community Stakeholder Group meeting

Tuesday 21<sup>st</sup> June 2022, Rimu Room, Te Takeretanga o Kura-hau-pō, Levin (and via Zoom).

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## NOTES

### In Attendance

#### Community Stakeholder Group members:

Sam Ferguson (Co-Chair), Michelle Sands (Zoom), Adam Duker, Charles Rudd, Vivienne Bold, Phil Teal, Mike Campbell (Zoom), Trevor Hinder, David Blakiston, and Dan Tuohy.

#### Support:

Logan Brown, Eric Fa'anoi.

#### Apologies:

Geoff Kane, Dean Wilson.

### Welcome

Sam opened the meeting with a karakia, welcomed everyone to the meeting and covered the ground rules.

### Actions:

- Charles to provide his address in order to receive minutes and meeting packs. These are to be mailed out the same time as the rest of the group is emailed.

Logan provided an overview of the process for the selection of the preferred wetland complex/s and the MCA that was currently in progress. The information from this meeting will be provided through to the Governance Group to feed into their decision making on the selection of the preferred option/s. Each of the options being considered will have sediment traps, or sediment treatment devices prior to the treatment wetland complex.

The notes below reflect the comments provided during the meeting:

<b>Option 1: Terraced Wetland</b>	<b>Trevor:</b> Shared concern about the market gardens along the boundary of the proposed wetland complex and how sediment traps will need to be capturing the run-off along the south-eastern boundary of the proposed wetland complex.
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	<p><b>Adam:</b> Shared concern RE the tributary channels that feed into the Arawhata.</p> <p><b>Michelle:</b> sought clarification from Charles as to whether there was a connection between terrace wetlands and the Maori meaning of Arawhata "steps to heaven".</p>
<b>Option 2: Infiltration Wetland</b>	<p><b>Phil:</b> Shared concern about how closely connected the surface water and ground water would be.</p>
<b>Option 3: Overland flow Wetland</b>	<p><b>Trevor:</b> Suggestion around pumping the nutrient rich water back over the market gardens and arable land at the top of the catchment to fully utilize the nutrients. Careful consideration around which plants to use in the wetland as some non-indigenous species are better at nitrate removal than native plants. Need to be innovative with plant choices.</p> <p><b>Michelle:</b> Queried as to what methods would be used to irrigate the wetland. Logan outlined the potential to utilize more natural features such as weirs, channels but also pumps.</p> <p><b>Adam:</b> had questions around the vegetation types used and around the capacity for on-going maintenance of the wetland.</p> <p><b>Viv:</b> Look to the Arawhata covenant bush block to see what sort of species should be used in the wetland. Not keen to see any more harakeke.</p>
<b>Option 4: Restoration Focused – "overland flow"</b>	<p><b>Adam:</b> the effects on neighbouring properties specifically upstream properties should be carefully considered when looking to fill in drainage channels etc. Captured within the consenting process. Logan noted that groundwater effects are one of the main effects considerations for wetland design.</p>
<b>Option 5: Hybrid ("Natural")</b>	
<b>Option 6: Hybrid ("managed")</b>	
<b>Option 7: Hybrid with surface flow near lake</b>	<p><b>Charles:</b> hapua (Lagoon) and repera (wetland). The differences between them should be carefully considered. A more natural wetland design is preferred over any "man-made"</p>

	options. Be careful around wording i.e. "Hybrid and Man-made"
<b>Option 8: Diverting Arawhata Stream so no flow enters Lake Horowhenua from the Arawhata catchment.</b>	<b>Trevor:</b> Although not one of the options being considered Trevor proposed an additional option to be considered. Trevor noted that the problem is around the flushing flows that are conveyed down the Arawhata mainstem and then into the lake. The high flows and flows over time cause nutrients to enter the lake. Therefore, an option for the wetland design is diverting the Arawhata mainstem away from the lake and therefore no flows from the Arawhata entering the lake at all. Keeping the flow from entering the lake will solve the nutrient problem and the lake degradation problem. Do not worry too much about the technicalities of the design but focus more on which plants are used and where.

General comments/questions:

**Phil:**

- The objectives for nutrient and sediment removal have to be defined and measureable even when biological processes are involved. Then how this anticipated removal of sediment and nutrients will translate to positive outcomes for the lake.
- The wetland option we should consider should be the one with the best retention times.
- With reference to plants careful consideration should be given to which plants are used and how these will be maintained and managed over the life of the wetland.
- What is the anticipated effectiveness of nutrient removal from plants (each species either native or non-native)? Is there a contingency for plant harvesting? Also issues of weed control management and sourcing of plants (i.e. local seed source).
- Has there been consideration around including gravel bacteria denitrification into the constructed wetland design.
- Are there any benefits to using the modular type designs over the other type of wetlands.
- It would be worth incorporating biodiversity values where possible over the design process.
- Rainfall pulses contribute to a majority of the problem so understanding properly what the wetland must be capable of receiving.
- Support for the incorporation of sediment traps within the design.
- Is the data being collected going to be relevant to the overall design process is there enough data analysis to provide guidance to the best wetland design.

- Hybrid options.
- What habitat values for fish and birds can be incorporated into each design – a secondary benefit but important objective.

**Viv:**

- Use nurse plants at the start of planting to help foster the larger species later.
- The wetland should be a meander design not straight and allow for a longer retention time.
- Suggestions around using a larger range of plants as oppose to just flax e.g. honeysuckle and rewa rewa. Preference for bush wetland complex.

**David:**

- Important for sediment trap at the start.
- Preferred option natural hybrid with sediment trap at the beginning and keeping the general feel of the wetland native and natural. While also incorporating the biodiversity values throughout and allowing for the capacity to build on the project further down the track i.e. walkway through the wetland to the two lakes.
- Creation of the meandering stream through the wetland complex.

**Adam:**

- Hybrid option looks like the preferred option.
- Important for sediment trap at the top of the wetland complex.
- Out of scope of the project but implementing a larger scale effective catchment management plan to look at reducing sediment introduction to the lake.
- Designing in the capacity to build in biodiversity values.
- Fit within the landscape such as a meandering stream through the wetland complex.

**Michelle:**

- Having a more managed area and a more natural area so a preference to a combination of those two elements.
- Has concern around looking at how the water is entering the wetland.
- Could pumping to certain area be a viable option?
- Has reservations around the higher ground water in areas and whether this is fully understood.
- Suggests a “staged approach” where for example you start with a sediment trap at the top then at the edge of the lake and work your way to the top of the wetland.

**Mike:**

- Look at which option best achieves the aim of the project and move on that logic.

**Trevor:**

- Sediment trap prior to the wetlands to treat high flows.
- One of the aims of the funding is job creation for the area so incorporating this where possible.

- The aim of the project is to reduce the nutrient load in the lake so reducing nutrient is money well spent.
- Has no preference to what it looks like at the end only that it functions as intended with the best and highest prioritised outcomes.

**Dan:**

- Opportunities for the connection between Lake Horowhenua and Waiwiri through the wetland complex.

Sam closed the meeting at 1949.

**Feedback after the meeting from others not present for the presentation:**

**Forest and Bird National Office:**

“Thanks for reaching out. We've been following the progress sent through the committee so it's nice to be able to feedback directly about this.

First point is to note that Logan's required feedback seems 'cart before horse'. How can we provide feedback on wetland options when no detail has been provided about how effective each wetland design might be/or not at achieving the outcome desired?

We acknowledge that this is about the establishment of the wetland complex and not a wider catchment discussion but we must continue to point out that this is the ambulance at the bottom of the cliff and the pollution coming from the intensive horticulture absolutely needs to be front of mind when considering how to address the situation.

We'd support the wetland option that supports the most natural and suitable wetland type for the environment it is in – i.e. what will put it back like it was before, and provide the best habitat for fish, birds, etc. That's our priority, alongside nutrient removal (though, as previously stated, we think this should occur upstream, rather than just relying on the ambulance at the bottom of the cliff).

We are interested in pursuing the most 'natural' restoration option, and we seek Horizons and ecologists' guidance on that.

Finally, and this might be a bit early but should be flagged, we would want to see a comprehensive management plan associated with any wetland establishment. It should be long-term i.e. 30-50 years or longer. Thereby ensuring the wetland remains fit for purpose into the future and doesn't become a weed infested disaster that, over time, no longer achieves the outcomes it was originally designed to.”