

MEMO – Pinehaven stream improvements consent application review

TO Josie Burrows, Resource Advisor
COPIED TO Dr Megan Oliver, Team Leader Marine and Freshwater
FROM Dr Evan Harrison, Senior Environmental Scientist (Freshwater)
DATE 10/10/19
FILE NUMBER WGN200083

This memo identifies areas where I require additional information from the applicant to assess the Pinehaven Stream improvements consent in relation to the effects on water quality and aquatic ecology. Below in response to your questions I have outlined where I require further information from the applicant. I'm happy to discuss any of the below with yourself or the applicant before completing my review.

- 1. Has the applicant provided sufficient detail to understand the proposed structures and effects on the environment in regards to effects on aquatic habitats and fish passage? If not, please list the further information and/or assessment required.**

Yes I'm satisfied with the information provided. I am supportive of the removal of the potential fish barrier at the confluence with Hulls Creek and removal or redesign of the weir structures within the works site to allow for fish passage. This should be done according to the NZ Fish Passage Guidelines and approved by a freshwater ecologist. The NZ Fish Passage Guidelines should be referenced in conditions referring to fish passage remediation (e.g. proposed conditions 50 and 51).

- 2. Has the applicant adequately described and accurately assessed (with appropriate methods) the aquatic habitat and ecology at Pinehaven Stream? If not, what further information/assessments is required?**

Yes I'm satisfied with how Dr Alex James from EOS Ecology has described the habitat and ecology of Pinehaven Stream. Dr James' assessment has been based on previously collected information to inform his assessment. I am satisfied with this approach, because the information from the Jacobs (2017) and Kingnett Mitchell (2005) studies is still relevant.

- 3. Has the applicant provided an adequate assessment of effects of the construction effects on the aquatic habitat and ecology of the Pinehaven Stream, Hulls Creek and the Hutt River? If not, what further information is required?**

How will the sheet piles be driven into the bed and what controls are in place for this to manage ecological and water quality effects (e.g. will this be in a dry bed)? From the application I couldn't tell from the information provided.

4. **Has the applicant provided an adequate assessment of effects of the ongoing operational effects of the structures on the aquatic habitat and ecology of the Pinehaven Stream? If not, what further information is required?**

Yes I'm satisfied with the information provided.

5. **Do you agree with the applicant's overall assessment of level of effects on aquatic ecology during construction and post construction?**

Yes I'm satisfied with the assessment.

One minor question I have is can it be confirmed in what direction the works will one occur. One part of the application says upstream to downstream and another says the opposite (page 123 sections 10.7.2.1.3 and 10.7.2.1.6)

6. **Has the applicant proposed appropriate measures to remediate compaction of the stream bed as a result of works?**

No. Can this question please be put back to the applicant?

Can more information please be provided on the method for remediating stream compaction and how the sediment effects will be controlled from any remediation works?

7. **Has the applicant proposed an appropriate monitoring plan, trigger and cease work triggers in relation to manage sediment effects on ecological values during works?**

The potential effect on ecology will be from sediment and possibly concrete/grout wash

Can more information please be provided for:

What is the logic behind the 30% increase between upstream and downstream sites from the baseline concentration (I could not find any information on this)?

Proposed condition 32g reference the ANZECC Guidelines for trigger levels. It should be noted that these guidelines have now been updated (<https://www.waterquality.gov.au/anz-guidelines>) and are called the Australian and New Zealand Guidelines for Marine and Fresh and Marine Water Quality. Can the applicant please confirm if these guidelines will be used to set trigger values or if they are using the 30% increase between upstream and downstream sites as the trigger value?

Will pH level just be measured with a field metre or confirmed in the lab as well with a water sample (field metres can sometimes be unreliable)?

In the application it says TSS will be measured with a field metre. Does the applicant mean turbidity for an indication of the sediment level and TSS will be measured in the lab with a water sample?

Given that there is a risk of fine sediment deposition which will have a long term ecological impact downstream of the workshop any monitoring should include observations of fine sediment deposition. Could the applicant propose methods and triggers for this?

Will ammonia also be measured with water samples given the risk with concrete runoff (as outlined in the ecological assessment)?

8. **Has the applicant suggested adequate and appropriate methods to avoid, remedy, mitigate or offset the effects on aquatic habitat and ecology from the construction and operational effects of structures? If not, what other methods could be used (i.e. could be placed on the consent as conditions)?**

Yes I'm satisfied with what has been provided in terms of fish rescue and fish barrier remediation options for mitigating the effects of the construction in the report produced by Dr Alex James. Post works it is likely that macroinvertebrate from good quality habitat upstream will recolonise the area.

In terms of the fish rescue this has been referenced in proposed conditions 40-44. Some minor questions I have on the fish rescue are:

-If a fish exclusion screen breaks will fishing start again?

-In the application it is stated that fish are expected to leave the area. Can it please be confirmed that fishing will take place until the ecologist is satisfied no fish remain?

-Will sports fish also be relocated (there is a small chance they may be present at the site even though not captured previously)?

-Will any sediment removed from the river during construction be checked for fish?

The application hasn't clearly outlined linkages with the report by Dr Alex James. For example in section 10.7.2.1.6 can more detail please be provided on:

-How fish passage will be maintained/impacted during construction? It is noted in the application when damming occurs this will be short in duration. Can more details please be provided on how long this will be?

- It is also noted that if works are to occur in fish migration periods manual trap and transfer will be undertaken. Can this please be confirmed because in Dr James' report the it shows that the works will always be occurring in spawning/migration periods. Is the proposed mitigation for this following construction the remediation of the downstream fish barrier?

-How does monitoring of fine sediment mitigate impacts (e.g. what actions are needed)?

- How will habitat reinstatement be done? More details need to be provided here such as what will be done in riparian, pool and riffle areas, as well as compaction management. I note that some details are provided in proposed conditions 45 – 51.

-For modifications to the riparian area can more details (e.g. maps/cross sections) be provided to show locations of planting within rock walls to show planting post construction?

Any other comments?

Will there be an assessment of the effectiveness of the works with post construction monitoring through the monitoring plan?

As per my comments above in places the linkages between the report by Dr Alex James and the application assessment of environmental effects aren't clear. Can it please be confirmed if all his recommendations are being implemented?

In the application there is no mention of the new channel being constructed or bank habitat. Can more details be provided on these designs in terms of ecology and instream habitat values?