

By email

20 November 2015

FMGT-8-257

Doug Fletcher
Environmental Regulation
Greater Wellington
[Internal]

142 Wakefield Street
PO Box 11646
Manners Street
Wellington 6142
T 04 384 5708
F 04 385 6960
www.gw.govt.nz

Dear Doug

Response to further information request under section 92(1) of the RMA 91 - WGN130303 [32316] – Waikanae River and Waimeha Stream Resource Consent Application

I wrote to you on the 17 June 2015 setting out a timetable to meet the further information request.

Table 1 outlines the further information that has been provided. Most of the information is contained in the updated report for the Waikanae River provided to you in September 2015.

The following outstanding matters are addressed below:

- Comparing river communities in the ‘application area’ and in ‘unaffected reference areas
- Proposed NCI and
- The use of willows

Comparing areas

A comparison between river communities in the ‘application area’ and in ‘unaffected reference areas’ has not been undertaken in any detail as in our view it will not provide information specifically relating to the effects of flood protection activities.

Flood Protection activities are undertaken in parts of the catchment which have been impacted by agricultural and/or urban development. The ‘unaffected reference areas’ referred to by EOS are almost invariably located in undeveloped parts of the catchment. The comparison requested would be between the urbanised main stem of the Hutt River and the relatively pristine upper reaches which is a smaller watercourse and mostly in forested catchments. There will certainly be differences in the aquatic ecology, but these will be

[HTTP://OURSPACE.GW.GOV.TZ/WS/FLOODMGT/_LAYOUTS/15/DOCIDREDIR.ASPX?ID=FMGT-8-257](http://ourSPACE.GW.GOV.TZ/WS/FLOODMGT/_LAYOUTS/15/DOCIDREDIR.ASPX?ID=FMGT-8-257)



primarily related to deforestation, loss of riparian vegetation, agricultural landuse, urban development, inputs of nutrients and other contaminants, introduced pest species, as well as flood protection activities.

The approach taken, as described in the AEE, is to undertake a series of targeted before-after-upstream and downstream investigations of flood protection activities which are specifically designed to separate out the effects of those activities. These studies have been undertaken on the Hutt River for fish and invertebrate re-colonisation (Perrie, 2013) habitat quality (Cameron, 2013), and in northern Wairarapa Rivers for sediment deposition, periphyton, invertebrates and fish (Death and Death, 2013). A further study is currently underway on the Hutt River in relation to habitat quality, water quality and fish re-colonisation (Cameron 2015, in progress).

NCI

A paper on the NCI has been submitted to Environmental Regulation for peer review. Additional work on developing this approach will continue.

Options for integration of native trees with willows for bank edge protection

Native species will continue to be used for planting in river corridors where it is appropriate and any planting undertaken will be consistent with the agreed environment strategies (which are outcomes of the Floodplain Management Plans). Where undertaken, the purpose of this planting is primarily for ecological purposes and/or for the aesthetic enhancement of the river berm environment.

It is important to note that it is not proposed to use native species as an alternative to willows for bank edge protection purposes. Willows are one of the key tools currently available nation-wide for river bank protection and river form management. They are a ‘softer’ and more natural alternative to hard-rock and other structural forms of bank control. A change from this methodology would require a major change in the Council’s riverbank management policy, which would need first to undergo significant risk assessment and cost: benefit analysis, and then explanation and discussion through the Floodplain Management Plan public consultation process. It would also need to be supported by scientific research into identification of suitable alternative methodologies and the results of trials of these – no feasible alternative have yet been found. Such work is beyond the scope of these applications.

It is worth noting, by way of background, that willows have been used for riverbank protection in New Zealand from the earliest days of European agriculture and settlement, and have continued to be used for this work by local authorities - initially River Boards, then Catchment Boards and more recently Regional Councils and Unitary Authorities – to the present day. Willows have the advantage of being able to establish quickly and develop a dense root system that has excellent properties for binding and holding bank edges. Willows also have the advantage of being able to be cut and layered to control their size to maintain bank stability and allow regeneration, without disturbance or loss of their bank-binding properties. This is especially useful as a management tool on the edges of large rivers which

are subject to large and frequent floods that subject the bank edges to regular powerful erosive forces. Significant research has been undertaken over the years into selection of the most suitable willow species for this work – this has been carried out by agencies such as the former National Plant Materials Centre, DSIR Fruit and Trees, HortResearch and more latterly, the NZ Poplar & Willow Research Trust.

Although there are many native species that are suitable for soil conservation purposes, there is no particular native species that offers the equivalent benefits of willows at the river bank edge where protection of the bank edge and maintenance of a design channel alignment in a confined flood fairway is a key priority. Thus mere substitution of willows by natives for river edge protection would be both impractical and highly risky as it would threaten the integrity of the current flood management systems, and significantly increase the flood hazard to the surrounding communities.

Native species can, however, be used for restoration or soil conservation purposes in more stable riparian environments (i.e. those which are not likely to be under frequent and direct attack from river flows). For the large rivers managed by the GWRC, this means that the use of native species is more suited to planting in the river corridors away from the bank edges. As noted above, this will be done in accordance with the community's wishes, which are expressed through the ecological strategies within the FMPs. There is also some opportunity to integrate natives at the landward sides of willow bank protection plantings, although the effectiveness and relative benefits of this have yet to be fully tested, and thus it needs to be undertaken with caution in a controlled manner. More work on the latter approach is to be undertaken in future, where it can be monitored through the EMP.

Notification of application

Flood Protection now believes it has satisfied all requests for further information and that the Otaki application can now be notified.

Having said this Flood Protection notes your request for us to provide an Executive Summary for each application. This will be provided by mid-December and we will take this opportunity to make some minor updates to the applications to reflect the changes arising from the further information requests and subsequent consultation. An updated Code of Practice will also be provided.

As discussed if you can provide me with a notification timetable that would be appreciated.

Please feel free to contact me on 04 830 4045 if you have any questions or concerns

Yours sincerely

Tracy Berghan
Principal Planning Advisor

DD: 04 934 1484
tracy.berghan@gw.govt.nz



<p>Fish – Please provide more information on what fish species are most abundant in the reaches of the Waikanae River and Waimeha Stream that are subject to this resource consent application; and more information outlining what fish species spawn within these reaches. Please provide greater detail on the fish species whose habitats are affected by gravel extraction and beach contouring. Please compare the data for impacted and reference reaches of the Waikanae River. Tables of NZFFD records provided in the application and the AEE report give no indication of where each species has been found in relation to the area covered by the consent application. Please split the records into those from within the application area and those from outside. Please provide a map of site locations.</p> <p>Please provide abundance data (relative abundance, rank abundance) rather than just presence/absence, so that which species are more abundant and the general community composition can be determined.</p> <p>Please provide a map of the inanga spawning locations, and information on any other species that may spawn in the reaches affected by gravel extraction and bed recontouring (eg. torrentfish or bully species).</p> <p>Please provide a map showing the survey reaches for the annual drift diving trout surveys.</p> <p>Please provide details of the level of customary, recreational and commercial fishing for eels in the Waikanae River and Waimeha Stream.</p> <p>Water quality – Please provide the water quality data that exists from 2004 and an analysis of the trends.</p> <p>Gravel bar and beach flora and fauna - Please provide additional information on the flora and fauna of gravel bars and beaches that might be affected by gravel extraction and beach recontouring. Riparian vegetation – Please provide additional information on riparian vegetation in the application area, including the tributary waterways. Please describe in detail and shown on maps any remnant native vegetation in the area or significant areas of native vegetation.</p> <p>Birds – Please provide more detailed information on the bird species (native or endemic) that roost, feed, nest or rest in the area covered by the application. Please provide details of which species feed and rest on gravel bars and which species may be nesting and roosting among the riparian vegetation (including willows) and when. Please include information for the Waimeha Stream also.</p> <p>From the 2012 survey it appears that there is higher resolution bird distribution data available than what has been presented in the AEE report. Please provide this data.</p> <p>Herpetofauna – Please provide full details in relation to herpetofauna that could be present in the areas potentially affected by flood protection works.</p>	<p>Refer to the COP section 3.2.4, Currently, it is intended that Flood Protection (FP) undertake an Inanga Spawning habitat survey in the affected watercourses within 3 years of the consents being granted.</p> <p>However, given the scale of this exercise, further discussions are required with Environmental Science GWRC, as we believe it is more appropriate to replicate the work undertaken by Niwa in 2001 and Environmental Science are best placed to <u>co-ordinate and progress this.</u></p>
<p>Environmental Monitoring Plan</p> <ul style="list-style-type: none"> • Please provide further details in relation to the proposed bird monitoring and its workability including details of the justification for the proposed percentage triggers. • Please provide further details on the proposed pool and riffle counts using aerial photography. Please discuss how features obscured by vegetation are accounted 	<p>September 2015 - with information also to be included in an updated AEE/EMP</p>



<p><i>for, and discuss whether the variability of habitats (depth, area, ecological value) would be noted or whether the proposed methodology simply counts features.</i></p> <ul style="list-style-type: none">• <i>Please provide further justification on how the Natural Character Index (NCI) will be useful in the context of ecological monitoring.</i>• <i>Please provide any information available on the optimal width of willow plantings to achieve the objective of vegetative bank protection. Please identify any areas where willow planting can be retired over time and natives planted instead</i>	<p>Outside scope of current application</p>
--	---