

# SOUTH WAIRARAPA DISTRICT COUNCIL

20 FEBRUARY 2013

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## AGENDA ITEM C7

### MOROA AND LONGWOOD WATER RACES

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#### **Purpose of Report**

To advise Councillors of current developments in regard of water races, likely future practices and limitations around existing systems.

#### **Recommendations**

Officers recommend that the Council:

1. *Receive the information.*
2. *Council note the impacts that Fonterra requirements may impose on water race users and approve officer's actions aimed at acquiring an extension of time.*
3. *That no additional use of water races beyond what is prescribed in current consents be considered until the new Bylaw is finalized.*
4. *That consideration is given to a more equitable rating mechanism for water race users through the Annual Plan process.*

#### **1. Executive Summary**

Background independent reporting was sought to establish additional uses that may be able to be made of the existing water race systems.

This followed a request from a ratepayer who wishes to use the Moroa system as a conduit for additional water required for a land irrigation scheme and the Council's subsequent wish to review all issues associated with the water race service.

Key points reported include:

- Using the current resource consents as a reference point, both the Longwood and Moroa systems usage is for non-potable domestic and stock watering. The Moroa approval only in two tailrace locations (Dock Creek and Otakura Stream) refer to an approved and presumably existing irrigation practice at the time the consents were renewed in 2005. It is not known whether or not this practice is ongoing.
- For both water race approvals, there is no mention of any other usage than above.

- Other potential uses include domestic (non commercial) with treatment for potable use, rural firefighting protection, water harvesting and irrigation.
- Constraints around these potential usages particularly an irrigation take over and above the water race take volume, include insufficient channel capacity and bank erosion potential at various locations within both networks.
- There is the prospect that the Wairarapa Water Use project may wish to use some of existing allocation or part of the existing network in the future

The approved consents are clear that any usage outside of the approved usage and not described in the consent application will require a change of use consent application.

Separately the issue of fencing off water races to meet Fonterra environmental policy requirements is a matter that Council will need to give consideration.

## **2. Background**

- 2.1 The existing Moroa and Longwood Water Race Bylaw and Code of Practice are under review. It is desirable that both networks be administered under one set of rules via one Bylaw and one Code of Practice for ease of management and maintenance.
- 2.2 In addition there may be merit in reviewing the rating charge across both networks enabling Council to manage owner maintenance issues more effectively. Presently the Longwood rating charge (based on land value) is nearly three and one half times that of the Moroa rate charge and there is significant resistance from Longwood users toward self system maintenance.
- 2.3 Within the Moroa system in the Greytown urban area, there is a variety of local opinion as to the reason for and the future of the water race channels. Any new bylaw therefore must be clear as to the intent and future of the systems in the urban area.
- 2.4 Advised separately recently, water race usage from a perception and environmental aspect on rural dairying land is under scrutiny from Fonterra. They seek to have water races fenced off as a condition of supply and it is intended that all suppliers have water races fenced off by December 31 2013 as a condition of supply.

Officers from the three Councils have met with water race user representatives and Fonterra officials to consider this requirement and how it might impact upon water race users and future maintenance needs

It was agreed that a joint submission on behalf of the three Councils be made to Fonterra requesting an extension of time allowing the Councils to undertake further investigation into the impacts of their policy upon water race users.

### **3. Discussion**

#### **3.1 Consultation**

Consultation will occur within the context of the making and adoption of a new bylaw and code of practice. It is anticipated that additional uses of the water race systems will

Specific efforts and feedback will help establish the needs and requirements of the Greytown urban area.

#### **3.2 Financial Considerations**

Funding of water race management and operational costs can be considered further within current Council's Annual Plan processes.

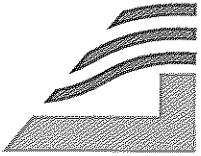
### **4. Appendices**

Appendix 1 – Eastern Consulting Ltd. Letter Report dated 22 November 2012.

Contact Officer: Bill Sloan, Asset Manager, Infrastructure Services

Reviewed By: Mark Allingham Group Manager, Infrastructure Services

**Appendix 1 – Eastern  
Consulting Ltd. Letter  
Report dated 22 November  
2012.**



# EASTERN CONSULTING LIMITED

## CONSULTING CIVIL & STRUCTURAL ENGINEERS

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South Wairarapa District Council,  
P O Box 6,  
Martinborough 5741

Attention: Mr B Sloan

22 November 2012.

Dear Bill,

**RE: Water Race Review** **DRAFT**

### **Background**

Eastern Consulting has been engaged to report on the potential use of the existing water race network, including alternative uses and possible future constraints.

The South Wairarapa District Council operates and is responsible for two water race networks.

The Moroa water race takes its water supply from the Waiohine River and the Longwood water race network takes its supply from the Tauherenikau River, in both cases upstream of the respective railway bridges.

Water for urban use is also extracted from the upstream end of the Moroa water race. Monitoring of the flow in the Moroa network required to comply with the approved consent for the Moroa water race water take occurs downstream of the urban water supply extraction point to ensure there is a clear distinction between what water is taken for water supply purposes and for use throughout the water race network.

The northern section of the Moroa water race runs through the town of Greytown via a system of open channels, pipes and culverts. The balance of the system runs through rural land with all water race end points discharging to natural open channels which ultimately discharge to a named river or stream.

The Longwood network flows only through rural land but does pass under State Highway 2 between Featherston and the Tauherenikau River road bridge.

The South Wairarapa District Council has consents for the operation of both of these water race networks.

These consents were renewed in 2005 for a period of 20 years. My experience is that it would be very difficult to get consent for this period if you were trying to renew now without providing extensive flow and water quality data, and even then a long term consent would be likely difficult to obtain.

I have summarised the approved consents in the tables below

### **Moroa WAR 010200**

<b>Category</b>	<b>Consent Number</b>
Water permit – surface water take/use	21378
Water permit - divert	21379
Land use consent – bed disturbance	21587
Discharge permit - water	21586

### **Longwood WAR 010201**

<b>Category</b>	<b>Consent Number</b>
Water permit – surface water take/use	21377
Water permit - divert	21593
Land use consent – bed disturbance	21595
Discharge permit - water	21594

### **Discussion**

Unlike other water race networks, the Moroa and Longwood water races do not use part of an existing natural channel to convey water from one section of water race to another section.

They are fully self-contained within their own right, but do discharge typically into some form of natural channel. In all cases, this discharge point is the official end of that branch of the water race channel.

The approved consents generally summarise what the approved function of each water race network is.

I have briefly summarised this for each network below, with respect to what the water can be taken for, prior to then discussing in a general sense what the potential opportunity could be for additional usage around the existing network.

#### ***Moroa***

Clause 9, point four indirectly indicates that water from the water race can be used for domestic purposes, but not before some form of prior treatment.

Clause 17, point two mentions domestic and stock water as the main usage group.

Clause 20 states that water can only be extracted for domestic and stock water purposes, with the exception of some irrigation as detailed in the application consent. This usage is not summarised in the approved consent.

Clause 21 refers to approved irrigation from the tail races entering Dock Creek and Otakura Stream. Again, there is no detail, so it must be assumed that the application documents contain some detail on what was proposed or what was happening at the time of the application. The wording of this clause would suggest that perhaps additional irrigation could take place, but only as long as the summarised minimum flows are met in the streams. It would further suggest that perhaps the responsibility and approval or extension or permission of additional irrigation would rest with the SWDC. It is likely to be worded this way because in essence SWDC can do mostly what it likes with the water that it has approval to extract at the head of the water race, as long as it meets the agreed flow and quality parameters. The by-laws and other governing documentation may, or should contain information on how this would be approved, managed and monitored.

Clause 22 indicates an understanding that stormwater will enter the water race system at least some of the time and under certain circumstances. The approved discharge permit forming part of the approved consent appears to be mostly or exclusively related to the discharge of the 'un-used' water flowing in the water race network. Typically, an approved consent must be sought for general stormwater discharges to natural water bodies.

### ***Longwood***

This is very similar to the approved consent for the Moroa water race network.

The only exception is that there is no clause to permit any form of irrigation from this network.

In this case, clause 20 refers to the only approved extraction being for domestic and stock usage.

Clause 21 refers to the understanding regarding stormwater flow in the water race. This clause is the same as clause 22 for the Moroa network.

For both water race approvals, there is no mention of any other usage.

### **Possible alternative uses**

Because of the extensive nature of the area covered by these water races, there would be the potential without any other changes to also list the taking of water from the network for fire protection purposes as a vital and important consideration, especially as the demand for further sub-division in the rural area occurs.

The permitted domestic usage is not defined, but it is likely that this would include using the water for garden watering, toilet flushing and general wash down functions. The water is generally considered to be non potable, although clause 9 suggests that after treatment it could be potable. I suspect that any treatment required to ensure the water was potable would be extensive and possibly impractical.

It must be assumed that domestic use relates only to dwellings where the usage is very local and small in scale.

This would not permit usage by agricultural, commercial or industrial users for purposes such as truck washing, machinery washing, log yard washing, cowshed wash-down, nursery plant watering, pasture irrigation (apart from that permitted by clause 21 for the Moroa water race), frost protection and similar activities where the usage could be variable, frequent or infrequent and larger in scale.

There is nothing to suggest that SWDC is precluded from allowing others to flow their approved and consented water in its water race network – the only constraint would be that it did not affect the quality of the water any more than the approved usage does, and that the quality monitoring results fit within the approved parameters. It would also be anticipated that any additional water did not cause scouring of the channel banks. There would be other constraints such as ensuring the channel had sufficient capacity to carry the additional flow and that if the channel had to be and was crossing other properties some form of approval process would be required. Clearly any rent charged for something like this would have to cover at least operating and maintenance costs and possibly capital costs depending on the structure of any agreement. The by-law would have to permit this.

Water harvesting, where excess stormwater is diverted from the water race into a storage reservoir is possible. It is noted that Greater Wellington have indicated to me in other areas that this would require an amended consent application by the holder of the water race consents. The issue of the owner of the water race network renting the channel to another entity was not canvassed with GW at that time.

The development of wetlands, amenity ponds and indigenous habitats are features that I believe could reasonably be developed around the water race network. Unfortunately the approved consent is silent on these features. Generally this type of development is non consumptive and should be possible subject to some form of approval from SWDC. Again, the by-law should address these to ensure that where developed, the developments are properly implemented and managed to ensure they do not lead to greater 'leakage' from the network and that they do not encroach onto adjacent properties.

The approved consents are clear than any usage outside of the approved usage and not described in the application AEE will require a change of consent condition application. Refer to the note at clause 20 and also clause 3.

Any by-law and other managing documentation will need to ensure that these requirements are summarised and understood by existing users during any consultation process.

Any new application now or change of use application will likely be required to be consulted with all potentially affected stake holders. This could lead to more stringent conditions.

### **Possible Accommodation of Alternative Uses**

There are a number of potential methods for accommodating additional usage of the water race network.

There would likely be at least two levels of approval or acknowledgement that these other uses could require.

These other uses could range from permitted, such as irrigation from the tail races of some branches of the Moroa network where it would appear that sign off from SWDC only is required so that SWDC could manage the rate of take within the approved consent limits to for example stormwater harvesting proposals that would require possible approval and/or consenting by Greater Wellington and SWDC depending on how the application was structured.

There would appear to be some potential for property owners to perhaps lease or rent some capacity (on the assumption that 'spare' capacity is available) from the channel to convey their water from one location to another as long as it is on the area serviced by a branch of the existing network. This would assume that the property owner gets their own consent (if required) to take water from the relevant authority, in this case Greater Wellington. I am sure GW would prefer that the SWDC made the application, but this would then 'open 'up' the existing consent to review.

This method of extending the usage could be very messy as it would require that all controlling documents that SWDC has for operation of the water races would need to identify these potential alternative uses, that there was some process for requiring maintenance to ensure flow was maintained and there was an agreed cost sharing process.

The development of wetlands, while not mentioned should be possible within the constraints of the approved consents, subject to some form of agreement by SWDC as long as this was documented by SWDC in a by-law or code of practice agreed by the benefitting community.

The advantages of wetlands are that they can strip out sediments and nutrients, but they also present a larger surface area and slower moving water that could increase evaporation. Any increase in evaporation is likely to be small relative to the overall surface area of the water race network.

The current approved rate and volume of water consented for each water race network is a constraint that would have to be worked within unless an application is made to vary these amounts.

Any variation to the current amounts will require the presentation of good data on flow and usage. This is not likely to be available.

### **Conclusion/Recommendation**

The current approved consents appear to have a relatively narrow definition of what the water can be extracted and used for.

I have not discussed any of this with Greater Wellington.

If alternative uses are considered and approved, this may set a precedent that presents a problem for SWDC in that it may not have the available water or channel capacity to meet other similar requests.

During my inspections it is clear that size (depth and breadth) of the channel, the maintenance of the channel, access to the channel, treatment of the channel (for example boulder lining) are all very variable. There is evidence of excessive siltation and over grown trees/shrubs in many areas that is causing a severe restriction to flow through the network.

I believe that Greater Wellington are applying a precautionary principle to any consent renewals and to new proposals on the basis that the Wairarapa Water Use Project may need or want to use the water allocated by existing consents and it may even want to use some sections of the network channels to convey water. This project is still in its very preliminary stages and I suspect is some time away from providing a more clear understanding of its needs and subsequent constraints.

Greater Wellington will not approve open ended consents that permit the taking of water for potential future uses not yet identified when the application is made.



The SWDC governing documents, such as codes of practice and by-laws will also need to identify the overall extent of how the system is governed, operated, funded and how it approves other proposed uses.

There is unresolved debate about the effectiveness and efficiency of open channel systems compared to the use of piped systems.

Overall, I am of the opinion that a multidisciplinary approach to any proposed alternative uses of the network would be required and would involve planning input, engineering input and consultation with the benefiting community, in addition to likely input and possible approval/consenting by GW.

It is my experience that this process is best achieved using an elected committee of rate payers from the benefiting community.

Yours faithfully

M R Hewison  
EASTERN CONSULTING LIMITED