greater WELLINGTON
THE REGIONAL COUNCIL

Assessment of resource consent applications for the continued operation of Henley Lake

WAR 930028 – Masterton District Council

Attachment to Report 03.668

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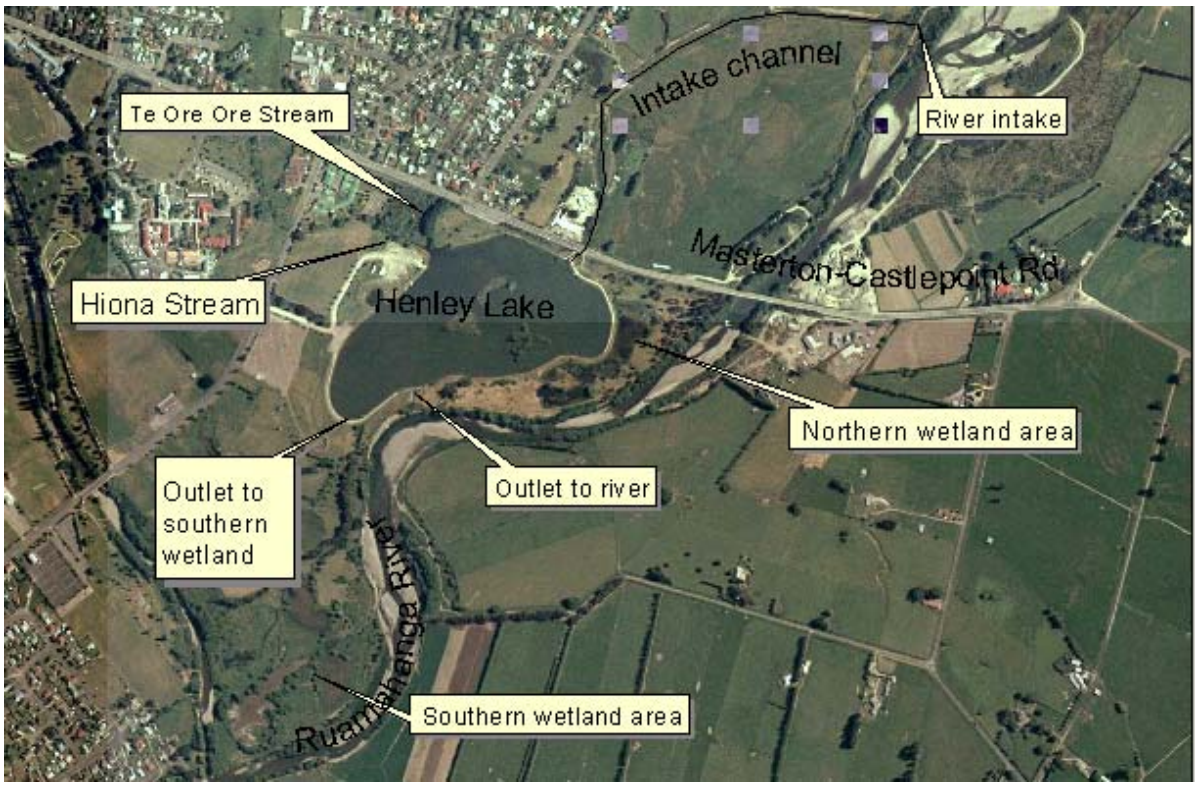
Resource Advisor
5th November 2003

1.0 Background - Description of Activity

Henley Lake is located on the outskirts of Masterton adjacent to the Ruamahanga River (see Map 1 below).

Map 1: Location Map – Henley Lake



Henley Lake and its surrounding margins is a significant recreational reserve area for both Masterton and the Wairarapa. The vision for Henley Lake was initiated in the 1960's and the project was completed in 1991, however there are constant improvements being made to the lake and its surrounding margins. The main recreational uses of the lake are model boating, canoeing, sailing, fishing, outdoor education, picnicking, walking, and bird watching.

In order to sustain its operation, Henley Lake and its surrounding margins require a water source. Hence water is taken from the Ruamahanga River approximately 600 metres upstream of the Te Ore Ore bridge. At the intake, a gravel weir extends into the bed of the Ruamahanga River in order that water can be adequately taken from the Ruamahanga River. From the intake, water flows for approximately 1200 metres in an artificial channel through Gary Daniell's property to the northern side of Henley Lake.

Approximately 200 metres downstream of the intake, a culvert and control penstock in the artificial channel allow for regulation of the flow into Henley Lake. The penstock remains open at all times during normal river flow conditions in the Ruamahanga River. The penstock is closed during heavy rainfall and high river flow events in the Ruamahanga River. This is to prevent as far as practicable, sediment laden water entering the lake.

There are a few watercourses and drains that input water into either Henley Lake itself or the artificial channel leading to Henley Lake. There are two stormwater drains that flow into the

artificial channel between the inlet and Henley Lake. These drains collect runoff from adjacent agricultural land and urban stormwater runoff. It is understood that these drains contribute no flow to the artificial channel during summer conditions. There are two natural watercourses that flow directly into Henley Lake. The Te Ore Ore Stream collects stormwater from the Lansdowne area and flows into Henley Lake, whilst Hiona Stream receives overflow water from the Opaki water race north of Masterton and flows through Lansdowne before entering Henley Lake.

There are three discharge points from Henley Lake, of which only one of those discharges flows directly back to the Ruamahanga River. The northern most discharge point distributes water to a wetland area via a six-inch valve control. This valve is normally half open, but it fully opens when there is increased flow into Henley Lake. The southern most discharge point distributes water to a wetland area via a ten-inch valve control, with similar operating procedures for the northern wetland area. The southern wetland area also receives urban stormwater from drains adjacent to Colombo Rd. The AEE report submitted with the application stated that there is a direct discharge from the southern wetland area back to the Ruamahanga River. A site inspection showed that there is no direct discharge back to the river. The only direct discharge back to the Ruamahanga River is from the main spillway between the northern and southern discharge points. Nevertheless, it is recognised that there is likely to be some seepage from the two wetland areas into the Ruamahanga River. The volume of seepage however, cannot be quantified.

2.0 Statutory Reasons for Consent Requirements

Sections 13-15 of the Resource Management Act 1991 (RMA) states the restrictions in certain river and lake beds, restrictions relating to water, and discharges of contaminants in to the environment.

Masterton District Council have applied for four resource consents to replace a previous consent issued for the operation of Henley Lake as described in section 1. The applications are required under sections 13-15 of the Resource Management Act 1991 and rules in the Regional Freshwater Plan (RFP). The applications made and the relevant rules in the RFP are summarised in Table 1 below:

Table 1: Resource Consent Applications

Application No.	Activity	Activity Status
WAR 930028 (4993)	Water permit to take up to 1000 litres/sec from the Ruamahanga River at or about map reference NZMS 260 T26: 2736913-6025864.	Discretionary (RFP – Rule 16)
WAR 930028 (2233)	Discharge permit to discharge overflow which may contain contaminants, to the Ruamahanga River via two wetland areas at or about map reference NZMS 260 T26: 2736611-6024922 and T26: 2735387-6024476.	Discretionary (RFP – Rule 5)
WAR 930028 (2234)	Discharge permit to discharge overflow which may contain contaminants, to the Ruamahanga River at or about map reference NZMS 260 T26: 2735606-6024822.	Discretionary (RFP – Rule 5)
WAR 930028 (3492)	Land use consent to periodically disturb the bed of the Ruamahanga River to enable water to flow into Henley Lake at or about map reference NZMS 260 T26: 2736913-6025864.	Discretionary (RFP – Rule 49)

3.0 Resource Consent Process

3.1 Previous consent

A previous consent for the operation of Henley Lake was issued to the Henley Trust in October 1978 for a ten year term. Applications including an `Assessment of Environmental Effects' (AEE) report to replace the previous consent were lodged by Masterton District Council (MDC) in June 1995.

3.2 Pre-notification process

Further information was requested from MDC in July 1997. Due to a number of staff changes at MDC, that information was not provided and the application was not progressed until a meeting was arranged in August 2000. Further advice and information was requested from MDC following the meeting. The matter was not progressed by MDC until July 2001, when MDC engaged professional assistance from Good Earth Matters (GEM) to prepare a revised AEE, given that more than 6 years had passed since the previous AEE was submitted.

A draft AEE report was submitted for comment in August 2001. Further information was requested in September 2001 as a result of reviewing the draft AEE report. Although the final AEE report was submitted in October 2001, Greater Wellington still had concerns about the level of information in the AEE report, particularly in regard to the effects on water quality on the Ruamahanga River. Following a meeting with MDC, an intensive water quality monitoring programme was initiated for the 2002 summer period.

When the draft AEE report was prepared, the applicant consulted extensively with a number of identified interested and affected parties. Informal submissions were received by the applicant and included with the applications in the final AEE report. These informal submissions do not have any status under the processing of the applications, but are summarised in Table 2 below:

Table 2: Summary of Informal Submissions to Applicant

Person / Organisation	**Comments**
Wellington Fish & Game Council	Have concerns about the amount of water diverted
Department of Conservation	No concerns
Rangitaane o Wairarapa	No concerns
Ngati Kahungunu ki Wairarapa	Would prefer a 10 year term
Wairarapa Outdoor pursuits	No concerns
Wellington Dragon Boat Festival	No concerns
Model Yacht Club	Expressed concern about the lack of water after floods
Diane Mason	Would like lake used for jet skiing and water skiing
James Mason	Would like lake used for jet skiing and water skiing

Further information from that water quality monitoring programme was supplied in September 2002, and MDC requested at that stage whether the applications could be processed as non-notified. Follow considerable deliberation, Greater Wellington decided in June 2003 at a meeting with MDC, that the applications would be notified.

3.3 Notification

The applications were notified on Wednesday 25th June 2003. An advertisement was placed in the Wairarapa Times Age and Wairarapa News and three signs were placed at the following sites:

- Percys Reserve adjacent to the Ruamahanga River.
- Henley Lake adjacent to where the artificial channel from the Ruamahanga River enters the lake.
- Henley Lake adjacent to the main spillway where water returns to the Ruamahanga River.

Copies of the applications and the AEE report were publicly displayed at the Masterton District Council office, Masterton Library, and the Greater Wellington office in Masterton.

The following parties were also individually notified:

- Wellington Fish & Game Council
- Department of Conservation
- Rangitaane O Wairarapa
- Ngati Kahungunu ki Wairarapa
- NZ Historic Places Trust
- Choice Health
- Royal Forest & Bird Protection Society
- Te Puni Kokiri
- Ministry for the Environment
- Opus International Consultants Ltd
- Federated Farmers
- Greenpeace NZ
- Wairarapa Outdoor Pursuits
- Identified users of Henley Lake
- All adjacent landowners to Henley Lake
- All adjacent landowners to the Ruamahanga River between the inlet and outlet

The period for lodging submissions closed on Wednesday 23rd July 2003.

3.4 Submissions

Eight formal submissions were received on the applications when the applications were notified. A summary of each of the submissions is given in Table 3 below:

Table 3: Summary of Formal Submissions Lodged

Submitter Name	Support/ Oppose	Summary of submission
Masterton Radio Yacht Club	Support	• Club uses lake as a leisure activity for radio controlled yachts and would like to see that continued through the issuing of consents for a 35 year term
T C Dennison – Henley Trust	Support	• Henley Lake and its associated wetlands is one of the best bird viewing sites in the Wairarapa with over 43 species present, hence full support given to all consent applications made.
Rangitaane o Wairarapa	Not specified	• Believes Henley Lake has bacterial pollution settling on the bottom of the lake, and therefore the lake needs to be cleaned and lined. • Monitoring of water quality of the lake and water sources to the lake needs to be completed to assess whether the bacterial

		pollution is dangerous to humans and aquatic life. • Suggests piping of the Hiona and Te Ore Ore Streams directly to the wetlands for treatment prior to entering the Ruamahanga River. • Submitted extracts from Boffa Miskell study and Times Age highlighting potential water quality problems when lake was in planning/construction phase.
Wellington Fish & Game Council	Conditional support	• The Ruamahanga River provides important habitat for trout, and is recognised in the RFP for regionally significant amenity/recreation values and water quality that requires enhancement for contact recreation. The river is the third most visited fishery in the lower North Island. • Henley Lake has a coarse fishery with perch and possibly rainbow trout from previous releases. • The abstraction is large and the amount of water returned to the river is variable given the potential losses to evaporation, groundwater, and one irrigation take. The flow in the length of river between the abstraction and discharge points can be reduced by one-third. • Concerned over the use of WAIORA to determine the effects of abstractions on the Ruamahanga River in the Upper Ruamahanga River Water Allocation Plan. • Drains and streams entering the lake system have poor water quality and suggests fencing the intake channel and diverting drains and streams directly to wetland areas. • Would like to know how often the gravel weir at the intake is maintained, and questioned whether a more permanent structure would be appropriate. • Requests that machinery be kept out of the river between 1st May and 30th September. • Supports proposed continued monitoring of e-coli and add suggestions regarding the frequency of monitoring and monitoring additional water quality parameters. • Requests that the consent term coincide with the expiry of the Upper Ruamahanga River Water Allocation Plan (URRWAP), and review conditions subject to any changes in the URRWAP and RFP.
Choice Health	Not specified	• Believes that Henley Lake is used for contact recreation purposes and not non-contact recreation purposes as described in the AEE. • Concerned that current signage may not be proactive enough for public awareness of the potential health risk. • Would like to see conditions place on any consents issued to require monitoring in accordance with microbiological guidelines for freshwater recreation and provision of adequate advice to the public and user groups on lake water quality in relation to monitoring undertaken.
Wellington Conservation Board	Oppose	• Concerned about impact of abstraction during low flow periods and would like to see a reduced abstraction during such times. • Concerned about the quality of discharge back to the Ruamahanga River. • Concerned about the quality of lake water for contact recreational activities.
G E Daniell	Conditional support	• Supports applications provided the existing right to take water from the intake channel is maintained and the channel does not prejudice any subdivision proposal.
Department of Conservation	Conditional support	• An equilibrium has been established between river, streams and groundwater in the area due to the long period of time that Henley Lake has been operating for.

		• Aquatic habitats have been created in wetlands around the discharge points, hence any alternative options would result in destruction of these wetlands and may adversely impact groundwater levels and other ecosystems that have responded to the equilibrium that has been established. • Would like to see the abstraction rate reduced during low flows in the Ruamahanga River. • Supports further investigations of contaminant contributions from drains and streams. • Considers a consent term of 35 years to be too long, hence it recommends a 10 year term.

A letter was received from Ngati Kahungunu ki Wairarapa stated that they had no concerns with the proposal. As the letter wasn't in the form of a formal submission it was not accepted as such, however their comments will be taken into consideration.

3.5 Pre-Hearing meeting & resolution of submissions

Following the submission period, a pre-hearing meeting was arranged for the applicant and submitters in order to discuss issues raised in the submissions. Greater Wellington outlined a number of issues and options/identified suggestions as summarised in Table 4 below:

Table 4: Issues and Options/Identified Suggestions Discussed at Pre-Hearing Meeting

Issues	Options / Identified Suggestions
Water quality in Henley Lake	Piping Hiona & Te Ore Ore Streams
Water quality back to Ruamahanga River	Fencing intake channel
Amount of water taken and returned to river	Reducing take during low flows
Current public advice given on water quality	Investigations into sources of poor water quality
Monitoring	Water quality and quantity monitoring
Consent term	Better and more permanent intake structure
	Ten year consent term

It was agreed at the pre-hearing meeting that there was no submitters objected in principle to the operation of Henley Lake, and that all issues or concerns raised could be appropriately addressed by consent conditions or the review of the Henley Lake Management Plan. At the conclusion of the meeting, Greater Wellington said that they would draft some consent conditions for comment.

Draft consent conditions were then developed by Greater Wellington and sent out for comment in late August. Comments (both verbal and written) were received by a number of submitters and the applicant. As a result of reviewing the comments provided, some minor alteration were made to the consent conditions. At that point Greater Wellington distributed a final set of proposed consent conditions for written approval to the applicant and those submitters who requested to be heard at a hearing.

All submitters who requested to be heard at a hearing (Rangitaane o Wairarapa, Wellington Fish & Game Council, Choice Health, Wellington Conservation Board, and Department of Conservation) withdrew their requested to be heard at a hearing by providing written approval to the proposed consent conditions. Hence a formal hearing is not required to decide

on the resource consent applications. The decision can now be made by the Rural Services and Wairarapa Committee.

Further discussion of the submitters concerns and how those concerns have been appropriately addressed through the proposed consent conditions is given in the assessment of the application, found in section 5 of this report. Copies of the notes of the pre-hearing meeting and written approvals provided by submitters is available on request.

4.0 Matters To Be Considered

4.1 Decisions on Resource Consent Applications (Sections 104-108 of Resource Management Act 1991)

Section 104(1) of the RMA outlines the matters that a consent authority is to have regard to when considering any resource consent applications and any submissions received. This section is subject to Part II (sections 5-8) of the RMA – the purpose and principles. A summary of Part II is outlined below:

Section 5 of the RMA defines sustainable management as:

> *"managing the use development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well being and for their health and safety while:*
>
> *(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
> *(b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and*
> *(c) Avoiding, remedying or mitigating any adverse effects of activities on the environment."*

Section 6 concerns matters of national importance including the natural character of and public access to the margins of waterbodies, protecting outstanding features, significant indigenous vegetation and fauna, and the relationship of the tangata whenua with ancestral lands, water, sites, waahi tapu and other taonga.

Section 7 addresses other matters, such as kaitiakitanga, efficient use and development of natural and physical resources and their finite characteristics, amenity values and ecosystems, heritage values, quality of the environment, and the habitat of trout and salmon.

Section 8 requires that the principles of the Treaty of Waitangi be taken into account.

Under **section 104(1)**, the relevant matters in considering these applications are:

(1) Subject to Part II, when considering an application for a resource consent and any submissions received, the consent authority shall have regard to-

(a) *Any actual and potential effects on the environment of allowing the activity;* This is discussed further in section 5 of this report

(c) *Any relevant … regional policy statement …*The Regional Policy Statement is operative - relevant sections are discussed in section 4.2 of this report.

(d) *Any relevant objectives, policies, rules or other provisions of a plan or proposed plan;* The Regional Freshwater Plan is operative - relevant sections are discussed in section 4.3 of this report.

(e) *Any relevant district plan or proposed district plan, where the application is made in accordance with a regional plan;* There are no additional matters in the Masterton District Plan that relate to this application that are not covered under other planning documents.

(i) *Any other matters the consent authority considers relevant and reasonably necessary to determine the application.* The only other matter considered relevant and reasonable necessary to determine the applications is the non-statutory Upper Ruamahanga River Water Allocation Plan (May 2000). This is discussed further in section 4.4 of this report.

Furthermore, **section 104(3)** of the RMA states that where an application is for a discharge permit, the consent authority shall have regard to the following when considering the actual or potential effects of the activity on the environment:

- The nature of the discharge and sensitivity of the receiving environment, and the applicant's reasons for making the proposed choice.
- Any possible alternative methods of discharge including discharge into any other receiving environment.

Under **Section 105(1)(b)** of the RMA, the consent authority may grant or refuse a consent application for a discretionary activity and (if granted) may impose conditions under Section 108 of the RMA. In this case all the resource consent applications made are discretionary activities as discussed in section 2 of this report.

Also under **Section 105(2)(a)** of the RMA, the consent authority shall not grant a resource consent which is contrary to the provisions of the Section 107 of the RMA. This section outlines the restrictions on the granting of discharge permits. The relevant parts of this section state:

1) *A consent authority shall not grant a discharge permit … allowing—*

(a) *The discharge of a contaminant or water into water…*
if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

(c) *The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:*

(d) *Any conspicuous change in the colour or visual clarity:*

(e) *Any emission of objectionable odour:*

(f) *The rendering of fresh water unsuitable for consumption by farm animals:*

(g) *Any significant adverse effects on aquatic life.*

This matter is discussed further in section 5.2 of this report.

4.2 Relevant Provisions of the Regional Policy Statement for the Wellington Region

The applicant in the AEE report identified one objective and three policies in the Regional Policy Statement (RPS) that were relevant to the applications. I have assessed the RPS and believe that all three objectives and eight policies below are relevant in assessing and considering the applications made.

The three objectives relating to freshwater in the RPS are:

(1) The *quantity* of fresh water meets the range of uses and values for which it is required, safeguards its life supporting capacity, and has the potential to meet the reasonably foreseeable needs of future generations.
(2) The *quality* of fresh water meets the range of uses and values for which it is required, safeguards its life supporting capacity, and has the potential to meet the reasonably foreseeable needs of future generations.
(3) Freshwater resources of significance or of high value for cultural, spiritual, scenic, ecosystem, natural, recreational, or other amenity reasons are protected or enhanced.

The eight policies that are relevant in considering and assessing the applications are summarised below:

- Policy 1 - Manage fresh water quantity and quality for a wide range of uses and values. In particular for surface water any adverse effects on aquatic ecosystems are avoided, remedied or mitigated.
- Policy 2 – Promote the conservation and efficient use of water.
- Policy 4 – Maintain and protect quality of fresh water so that it is available for a wide range of uses and values. In particular for surface water any adverse effects on aquatic ecosystems are avoided, remedied or mitigated.
- Policy 6 – Ensure that effects of contaminants in point source discharges on fresh water quality and aquatic ecosystems is avoided, remedied, or mitigated, and allow for reasonable mixing.
- Policy 9 – Avoid, remedy, or mitigate the adverse effects of modification of river beds on water quality, aquatic ecosystems, and the amenity and cultural values of water.
- Policy 11 – Ensure that any adverse effects on amenity values or intrinsic values of ecosystems are avoided, remedied, or mitigated.
- Policy 12 - Avoid, remedy, or mitigate any adverse effects on natural character of wetlands, lakes, or rivers and their margins.
- Policy 13 - Recognise cultural relationship of tangata whenua with rivers including managing significant sites.

The full policies identified above are available on request.

4.3 Relevant Provisions in the Regional Freshwater Plan for the Wellington Region

The Regional Freshwater Plan (RFP) identifies issues, objectives, policies, rules, and methods for managing freshwater resources in the Wellington Region.

Section four of the RFP outlines general provisions for the use and development of fresh water resources. These general provisions are grouped into tangata whenua values, natural values, amenity values, and use and development. There are certain policies that are pertinent to these applications:

- Policy 4.2.1 – Manage sites of special value to tangata whenua.
- Policy 4.2.4 – Avoid, remedy, or mitigate any adverse effects on habitats of species traditionally harvested by tangata whenua.
- Policy 4.2.9 – Have regard to natural characteristics of wetlands, rivers, lakes, and their margins. In particular ecosystems, habitats and species, water quality, natural flow characteristics and hydraulic processes, and topography and physical composition of the environment.
- Policy 4.2.11 - Avoid, remedy, or mitigate the adverse effects of the use and development of water bodies by having regard to maintenance of biological and physical processes, habitat, diversity, fish movement and spawning, and prevention of irreversible adverse effects.
- Policy 4.2.14 – Avoid, remedy, or mitigate any adverse effects on important trout habitat (includes Ruamahanga River) by having regard to other water quality and water quantity policies.
- Policy 4.2.15 – Avoid, remedy, and mitigate any adverse effects on regionally significant recreational values (angling in the Ruamahanga River) by having regard to other water quality and water quantity policies.
- Policy 4.2.16 – Ensure that there is no reduction in quality of lawful public access to river and lake beds.
- Policy 4.2.23 - Have regard to benefits arising from the proposal.
- Policy 4.2.24 - Have regard to effects on other established activities.
- Policy 4.2.26 – Adopt a precautionary approach where information in incomplete or limited.
- Policy 4.2.27 – Encourage restoration or rehabilitation of freshwater resources including establishment of wetlands.
- Policy 4.2.28 – Have regard to objectives and policies in section 4 of the RFP when considering resource consent applications.
- Policy 4.2.29 – Recognise needs of existing lawful users o f freshwater
- Policy 4.2.31 - Ensure that the process for making decisions is fair and transparent;
- Policy 4.2.33 – Provide for activities which have no more than minor adverse effects on the environment.
- Policy 4.2.34 – Avoid, remedy, or mitigate any adverse effects on cultural, natural, amenity, and recreational values by placing conditions on resource consents.
- Policy 4.2.35 – Have regard to a number of matters when placing conditions on resource consents.
- Policy 4.2.36 - Avoid, remedy, or mitigate any adverse effects by placing conditions on resource consents relating to certain activities.

Section five of the RFP outlines issues, objectives, policies, and methods for water quality. Relevant policies in this section are:

- Policy 5.2.4 – Manage water quality for contact recreation purposes in the Ruamahanga River.
- Policy 5.2.6 – Manage water quality of all surface water bodies for aquatic ecosystem purposes.
- Policy 5.2.8 – Have regard to Water Quality Guidelines in *Appendix 8* of the RFP.
- Policy 5.2.9 – Manage water quality in the Ruamahanga River so that water quality is enhanced for contact recreation purposes.
- Policy 5.2.11 – Ensure that the determination of any mixing zones have regard to management purposes of receiving waters; tangata whenua values; volume and concentration of contaminants; and physical, hydraulic, and hydrological characteristics of the receiving water.

Section six of the RFP outlines issues, objectives, policies, and methods for water quantity and the taking of fresh water. Relevant policies in this section are:

- Policy 6.2.1 – Manage allocation of water and flows in Upper Ruamahanga River.
- Policy 6.2.7 – To encourage users to take groundwater as an alternative to surface water resources.
- Policy 6.2.13 – Manage water levels and lakes and wetlands by having regard to the significance, scale/magnitude, and reversibility of any adverse effects on natural, amenity, and tangata whenua values.
- Policy 6.2.18 – To have regard to whether the amount of water required is reasonable given the intended use.

Section seven of the RFP outlines issues, objectives, policies, and methods for water quantity and the taking of fresh water. Relevant policies in this section are:

- Policy 7.2.1 – Allow various uses of river and lake beds.
- Policy 7.2.7 – Avoid any adverse effects on the structural integrity and effectiveness of lawful flood mitigation structures.
- Policy 7.2.10 – Ensure that all structures are visible and adequately maintained.

The full relevant policies for the RFP identified above are available on request.

4.4 Upper Ruamahanga River Water Allocation Plan (May 2000)

The Upper Ruamahanga River Water Allocation Plan (URRWAP) is a non-statutory document developed following extensive consultation with resource users, interest groups, and the wider community. The key provisions in the plan are now incorporated in the RFP. The plan is considered relevant when assessing these resource consent applications. The plan contains issues, objectives, and policies.

The URRWAP details a core allocation, supplementary allocation, and minimum flows for takes from the catchment as shown below:

(1) Minimum Flow - Restrictions on Abstractions (50% of allocation)	2700 litres/sec[1]
(2) Minimum Flow - All Abstractions Suspended (0% of allocation)	2400 litres/sec[2]

(3) Core allocation	800 litres/sec[3,4]
(4) Supplementary allocation flow level	5000 litres/sec

1. Abstractions for the water races and Henley Lake (and appropriate restrictions) will be considered individually when these resource consents are process.
2. Restrictions on groundwater takes that are shown to have an effect on surface water flow in the Upper Ruamahanga River will be imposed.
3. The core allocation assumes that 100 litres/sec is lost from Henley Lake water take and discharge.
4. No further allocation of water is considered sustainable upstream of the Waingawa River.

The Rural Services and Wairarapa Committee is required to have regard to Sections 104-108 of the RMA and the relevant provisions of the RPS, RFP, and URRWAP when considering the applications made by the Masterton District Council.

5.0 Assessment of Resource Consent Applications

As explained earlier the applicant has submitted an AEE report to support the applications made. The assessment includes information provided in the AEE report and other additional information held by Greater Wellington. The assessment is broken down into the following categories:

- Effects of taking water from the Ruamahanga River.
- Effects of discharge back to Ruamahanga River.
- Effects of intake structure and maintenance on bed of Ruamahanga River.
- Effects on tangata whenua values.
- Alternative methods.

Within each assessment category discussions is provided on submitters relevant concerns and consent conditions are suggested to avoid, remedy, or mitigate any potential adverse effects.

5.1 Effects of taking water from Ruamahanga River

5.1.1 How much water is taken & discharged back to the Ruamahanga River?

The applicant has applied to take up to 1000 litres/sec from the Ruamahanga River. The AEE report states the average take is 584 litres/sec, and the maximum and minimum take is 993 litres/sec and 135 litres/sec respectively. This information is based on flow gaugings completed in the intake channel upstream of the lake.

Henley Lake is a dynamic system whereby the amount of water taken from the river and returned to the river via the discharge outlet, seepage from the lake, and surrounding wetlands, will be variable. The AEE report estimated the average net take by evaluating the average flow reduction in the Ruamahanga River. This was estimated to be 162 litres/sec and

was based on flow information collected in 1993-94. Hence the conclusion drawn in the AEE report was that on average approximately 75-80% of the original take is returned to the river.

Flow gaugings completed since 1998 by Greater Wellington show the average inflow to Henley Lake at Te Ore Ore Rd to be 162 litres/sec. A targeted investigation was completed in 2002 where a series of flow gaugings attempted to evaluate the inputs and outputs of Henley Lake. This is summarised in Table 5 below:

Table 5: Inputs and Outputs to Henley Lake in 2002

Date	Inputs - flow in litres/sec	Outputs – flow in litres/sec	% water returned to Ruamahanga River
28th January 2002	99	263	266%
18th February 2002	104	47	45%
11th March 2002	107	58	54%
2nd April 2002	156	51	32%
22nd April 2002	47	22	47%

It should be noted that the output to the northern wetland area could not be measured. This information shows that the flow rate into Henley Lake is much less than the amount of water applied for. Also the amount of water taken from and returned to the Ruamahanga River is highly variable. This confirms that the Henley Lake water flow regime is dynamic and will change from day to day.

I am satisfied with the estimates of average net take or reduced flow in the Ruamahanga River provided in the AEE report. Estimates provided in the URRWAP were that 100 litres/sec is considered part of the core allocation of the Upper Ruamahanga River. Based on information provided in the AEE report and further information gained by Greater Wellington, I believe the net take or core allocation for Henley Lake should be conservatively reassessed as 150 litres/sec. This is important to know when assessing the cumulative effects of all takes on the river environment, which is discussed in section 5.1.4 of this report.

5.1.2 What are the potential losses of water from Henley Lake?

The AEE report assessed potential water losses as a result of the water take activities. The two key components of water loss assessed were evapotranspiration and losses to groundwater. It was estimated that during summer, up to 20 litres/sec of water could be lost to evapotranspiration, while 110 litres/sec could be lost to groundwater. Essentially the potential peak water losses is the long term net take for Henley Lake. The estimate of 130 litres/sec is similar to the net take or core allocation of 150 litres/sec assessed above.

5.1.3 What are the potential effects of taking water between the intake and outlet?

Limited assessment was provided in the AEE report about the potential effects of the taking of 1000 litres/sec between the intake and outlet. Although this is only a short stretch of the Upper Ruamahanga River, there is the potential for significant effects on the river environment. The Wellington Fish & Game Council, Wellington Conservation Board, and Department of Conservation expressed concerns in their submissions about these potential downstream effects, particularly during summer low flow periods.

The URRWAP estimated the Mean Annual Low Flow[1] (MALF) at various locations along the Upper Ruamahanga River. At Black Rock Rd immediately upstream of the intake, the MALF at this point in the river was estimated to be 2120 litres/sec. Hence, during summer low flows periods the taking of up to 1000 litres/sec could mean that up to 50% of the flow in the Ruamahanga River would be diverted into Henley Lake. I consider this to be excessive and would agree with the concerns raised by submitters.

This issue was discussed at a pre-hearing meeting and it was agreed that a stepdown allocation regime should be enacted during summer low flow periods. The AEE report outlined mitigation measures which included reducing the take when minimum flows in the Upper Ruamahanga River were reached. I considered the proposed mitigation measures did not go far enough to appropriately mitigate this potential effect, hence following assessment of the URRWAP and RFP the following stepdown allocation regime was proposed to the applicant and submitters:

Flow in Ruamahanga River @ Wardells Bridge	**Maximum take**
Greater than 5000 litres/sec	1000 litres/sec
Between 2700 litres/sec and 5000 litres/sec	300 litres/sec
Less than 2700 litres/sec	150 litres/sec

The proposed stepdown allocation regime considers the taking of up to 1000 litres/sec as a supplementary take only. Below the supplementary take flow level of 5000 litres/sec, the taking of water is restricted to 300 litres/sec during normal low flow periods, and only 150 litres/sec when the Upper Ruamahanga River is below its minimum flow. This proposed stepdown allocation regime means that no more than 20% of the available flow in the Ruamahanga River could be diverted into Henley Lake above the supplementary take flow level, and no more than 10%-15% of the available flow is taken during low flow periods. The submitters who expressed concern about this potential effect have agreed to this flow regime.

5.1.4 What are the cumulative effects of all takes on the Upper Ruamahanga River?

The AEE report provided detailed assessment of the potential cumulative effects of the take. This assessment was essentially the assessment provided in the URRWAP. No additional or new assessment was provided by the applicant.

Other resource consents and the application for taking water from the Upper Ruamahanga River catchment are given in Table 6 below:

Table 6: Resource Consents for Taking Water from Upper Ruamahanga River

Consent No.	**Consent Holder**	**L/sec**	**Comments**
WAR010203	MDC (Opaki water race)	170	Core allocation assessment only
WAR010204	MDC (Te Ore Ore water race)	250	Core allocation assessment only
WAR970003	S J & J E McLachlan	70	
WAR990120	J Dyhrberg & S McLean	3	
WAR980039	G & L Daniell	17	
WAR970224	Oldfield Aggregates Ltd	15	
WAR990141	J F Ashby & Co	23	
WAR020017	Taumata Trust	40	
WAR960223	R A J Ireland	3.5	
WAR930028	*MDC (Henley Lake)*	*150*	*Core allocation assessment only*

[1] The MALF is the average of lowest flows recorded for each calendar year of record of flows obtained.

Total take (core allocation) 741.5 l/sec

The assessment of cumulative takes above is for takes below the supplementary take flow level only, for which the core allocation in the RFP applies. There are other supplementary takes (including increased take levels for the water races and Henley Lake) not specified in this table. Note that a core allocation of 150 litres/sec is used for Henley Lake as discussed earlier in this report. The total take or core allocation is 741.5 litres/sec. The URRWAP and RFP provides for a core allocation of 800 litres/sec. Hence I am satisfied, that in terms of the cumulative effects of all takes from the Ruamahanga River, the core allocation provisions in policy 6.2.1 of the RFP are satisfied.

The AEE report evaluated the cumulative effects of all takes on instream habitat and water quality in the Upper Ruamahanga River. The assessment of cumulative takes on instream habitat provided (based solely on the use of the WAIORA modelling programme used in the development of the URRWAP) tested the compliance of cumulative takes against various environmental guidelines for instream habitat. This showed that:

- Although reductions could be expected in active flowing channel depth and width, this was considered minor as the reduction was less than 10%.
- Flow velocity would only decrease by 4%.
- The temperature change as a result of the cumulative takes would only increase the temperature by less than 0.5 ^{0}C or 2%.
- Minimum dissolved oxygen concentration would decrease by only 2% as result of the cumulative takes.

Apart from flow velocity, all other factors assessed above were compliant with environmental guidelines for instream habitat. The Upper Ruamahanga River only has optimum flow velocity conditions for 41% of the time even without the effect of cumulative takes. The flow velocity guideline is based on the water velocities required to ensure that fine material isn't readily accumulated on the active river channel. Accumulated fine material on the active river channel can restrict food habitat for fish species. In the case of the Upper Ruamahanga River, this environmental guideline is less critical than other guidelines, as there are frequent freshes in the Upper Ruamahanga River that "clean out" fine material from the active river channel.

The Wellington Fish & Game Council raised concerns in their submission about the use of WAIORA in the development of the URRWAP. These concerns have had the opportunity to be expressed through the change to the RFP completed last year, in which the core allocation and minimum flows developed in the URRWAP were proposed to be inserted into policy 6.2.1 of the RFP. There has been no appeals on the Council decision to include the core allocation and minimum flows of the Upper Ruamahanga River, hence I do not consider that this concern is relevant to this particular application.

The key issue in the development of the URRWAP was the impact of cumulative takes on water quality in the river. During low flow conditions, water quality parameters monitored by Greater Wellington were non-compliant with environmental guidelines. In particular, periphtyton growths exceeded Ministry for the Environment guidelines. These guidelines state that if more than 40% periphyton cover is noted that the site is unsuitable for contact recreation. Because non-compliance was observed during these low flows periods, minimum flows were determined at the levels specified in section 4.5 of this report.

5.1.5 What are the effects of taking water during extreme low flow periods?

The applicant proposes to continue taking water below the minimum flows in the URRWAP and RFP. This could have a potential effects on water quality in the Upper Ruamahanga River. No additional assessment or information was provided in the AEE report (over and above the assessment provided in the URRWAP) that evaluated this potential effect. However, the AEE report stated that the net take should not have a significant impact on water quality parameters as nitrogen and coliform levels are likely to be a direct consequence on farming activities and dissolved reactive phosphorus and periphyton are likely to be a direct consequence of discharges (primarily of human origin).

The proposed stepdown allocation regime outlined earlier, provides for the taking of 150 litres/sec below the first minimum flow in the Upper Ruamahanga River (i.e. below 2700 litres/sec). In the absence of any information that shows that the net take of for Henley Lake does not have an adverse effect on the environment a precautionary approach should be taken as specified in policy 4.2.26 of the RFP.

In this case, it is important to weigh the potential adverse effects of taking 150 litres/sec during these periods against the positive effects of taking water. As Henley Lake is an important recreational asset, particularly during summer periods, I consider that the taking of 150 litres/sec below the minimum flow level in the Upper Ruamahanga River is appropriate in this instance. The taking of water continuously is critical to ensure appropriate lake water levels and sufficient water movement within the lake itself to minimise water quality deterioration in the lake. Policy 6.2.1 in the RFP which specifies the minimum flows, does allow for the operation of Henley Lake and the Opaki and Te Ore Ore water races below minimum flows to be considered on a case by case basis.

All the submitters who raised concerns about the taking of water during extreme low flow periods, have provided their written approval to the proposed stepdown allocation regime. All parties in this case recognise the importance of taking water (albeit restricted to 150 litres/sec) at all times. The Council however still reserves the right to issue a water shortage direction under section 329 of the Resource Management Act 1991. This is specified as a note to the consent condition which outlines the propose stepdown allocation regime.

5.1.6 What are the effects of taking water during high flow periods?

During periods of high flow in the Upper Ruamahanga River, there is potential for sediment laden water from the Ruamahanga River to enter the lake. This has the potential effect of increasing nutrient loadings unnecessarily into the Henley Lake system. The AEE report states that the applicant's contractor has a policy to minimise sediment being introduced into the intake channel. One submitter, Garry Daniell, expressed concerns about the level of sediment entering the lake. To avoid this potential effect, I proposed a consent condition that requires penstock to be closed when the stage height in the Ruamahanga River (at Mt Bruce) exceeds 2 metres. This level was determined in conjunction with the Resource Investigations Section of Greater Wellington and assessing turbidity readings in the Waiohine River. Although concerns continued to be expressed by Garry Daniell after the drafting of consent conditions, when the basis of this particular consent condition was explained to Garry Daniell, he was satisfied with the final proposed consent condition relating to this matter.

5.1.7 How will the water take be monitored?

In terms of monitoring the water take, only visual assessment of the water take was proposed by the applicant in the AEE report. The Rural Services & Wairarapa Committee has recently requested that all takes over 40 litres/sec have water meters. Although a water meter is considered impracticable in this case because the take is not in a closed pipe, a water flow monitoring site should be installed in the intake channel. Consent conditions require the water flow monitoring site to be rated and installed to the satisfaction of Greater Wellington and in accordance with the Hydrologists Field Manual. Weekly readings of the site are to be completed when the flow in the Ruamahanga River is below 5000 litres/sec, and results of readings are to be submitted to the Council annually. The applicant has agreed to the monitoring requirements of the water take.

5.2 Effects of discharge back to Ruamahanga River.

In considering the effects of the discharge back to the Ruamahanga River, primary consideration is given to the direct discharge to the river. It is too difficult to determine or monitor any effects of the discharge to the river via the wetland systems surrounding the lake, as there is no direct discharge to the river from the wetlands. Any discharge to the river will be through seepage.

5.2.1 What is the state of water quality around Henley Lake and its associated effects?

A one-off sampling run was completed on 5 July 2001 to assess the effects of the discharge in terms of physical and chemical water quality parameters. The results are shown in Table 7 below:

Table 7: Water Quality Sampling – 5 July 2001

	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7
PH	7.6	7.62	7.72	7.72	6.48	7.18	7.52
Conductivity (µs/cm)	170	168	168	172	192	190	137
Ammonia Nitrogen (mg/m^3)	<5	12	<5	7	13	10	8
Nitrite Nitrogen (mg/m^3)	<2	<2	<2	2	6	3	4
Nitrate Nitrogen (mg/m^3)	738	723	776	732	3671	674	250
Total Nitrogen (mg/m^3)	821	852	819	905	3756	1023	585
DRP (mg/m^3)	8	8	8	8	17	9	4
Total Phosphorus (mg/m^3)	13	14	13	19	28	23	31
BOD5 (g/m^3)	<0.1	<0.1	<0.1	<0.1	0.22	0.15	1.62
Dissolved Oxygen (mg/m^3)	12.6	12.4	12.7	12.7	7.8	12.2	11.6
Temperature (C)	6.0	6.2	6.2	5.3	9.2	5.3	6.5
% saturation	101.7	100.4	102.3	99.9	67.6	96.5	94.2

Site 1: Ruamahanga River at intake
Site 2: Ruamahanga River downstream of outlet
Site 3: Ruamahanga River upstream of outlet
Site 4: Inlet to Henley Lake
Site 5: Te Ore Ore Stream
Site 6: Hiona Stream
Site 7: Outlet to Ruamahanga River

This one-off sampling run showed that both the Te Ore Ore Stream and the Hiona Stream contribute pollutants into Henley Lake, particularly the Te Ore Ore Stream.

Following this one-off sampling run, a more rigorous water quality monitoring programme was implemented over the 2001-2002 summer period. The median results from this programme are shown in Table 8 below:

Table 8: Water Quality Sampling (Median Results) – 2001-2002

	Site 1	**Site 2**	**Site 3**	**Site 4**	**Site 5**	**Site 6**	**Site 7**
PH	7.68	7.74	7.73	8.15	6.76	7.53	8.83
Conductivity (µs/cm)	77	77	77	77	123	77	92
Ammonia Nitrogen (mg/m^3)	8	14	5	9	34	10	11
Nitrite Nitrogen (mg/m^3)	1	1	1	2	4	2	1
Nitrate Nitrogen (mg/m^3)	237	264	264	189	3378	56	14
Total Nitrogen (mg/m^3)	397	351	340	382	4025	314	450
DRP (mg/m^3)	10	7	5	13	28	33	5
Total Phosphorus (mg/m^3)	19	9	8	22	39	52	62
BOD5 (g/m^3)	1.45	1.55	1.55	2.10	0.99	1.95	4.2
Dissolved Oxygen (mg/m^3)	10.12	10.21	10.33	11.19	8.27	11.19	9.90
Temperature (C)	14.3	15.0	14.8	15.8	17	17.5	19.0

Site 1: Ruamahanga River at intake
Site 2: Ruamahanga River downstream of outlet
Site 3: Ruamahanga River upstream of outlet
Site 4: Inlet to Henley Lake
Site 5: Te Ore Ore Stream
Site 6: Hiona Stream
Site 7: Outlet to Ruamahanga River

This monitoring programme (consisting of only five complete samples) showed similar results to the one-off sampling programme completed in July 2001, in that although the discharge quality to the river was poorer than the intake quality, other sources contribute significant contaminant loadings (in terms of physical and chemical water quality parameters) to Henley Lake.

In terms assessing the effects of the discharge on bacterial water quality, there has been some bacteriological sampling completed at various point within the Henley Lake system at random intervals and methods since 1995. Because there has not been a co-ordinated approach to this monitoring, only limited conclusions can be drawn from the data collected. The AEE report concluded that in terms of enterococci:

- The lake inlet has significantly higher concentrations than the intake at the Ruamahanga River.
- The Te Ore Ore and Hiona Stream have significantly higher concentrations than the lake outlet.
- There is no significant difference in concentration between the intake and the outlet (although it is noted that there is some difference in concentrations).

Further monitoring is still required in order to fully determine the effects of the discharge back to the Ruamahanga River. However, preliminary assessment shows although there is some degradation in water quality between the intake and the outlet, the effects on the Ruamahanga River are relatively minor.

5.2.2 Concerns raised by submitters regarding water quality

A number of submitters were concerned about water quality within the Henley Lake system and its associated effects on the discharge back to the Ruamahanga River. There was much discussion about these issues at the pre-hearing meeting. As the resource consent application made is for discharging back to the river only, it was agreed that there many of the concerns raised about water quality within the lake could not be directly dealt with through consent conditions.

Nevertheless, it was agreed between the applicant and submitters that a review of the management plan for Henley Lake would be the appropriate forum for addressing these concerns. Hence a consent condition was developed to require a review of the Henley Lake Management Plan prior to the second anniversary of the grant date of consent. The review would encompass at a minimum the following matters raised as concerns in submissions:

- Public communication initiatives on water quality within the lake.
- A review of the grading of the Henley Lake i.e. whether water quality was to be managed for non-contact or contact recreation purposes.
- Investigating contamination sources into Henley Lake and proposing measuring to mitigate any contamination sources.
- Investigating maintenance methods in order to improve water quality.

A number of the other concerns raised by submitters can be dealt with effectively through consent conditions. Conditions have been proposed to deal with discharge standards and monitoring of the discharge, which is discussed in section 5.2.4 of this report. Following minor alterations to the draft consent conditions sent to the applicant and submitters after the pre-hearing meeting, all submitters were satisfied with the consideration of the effects of the discharge and associated consent conditions to which written approval was provided.

5.2.3 Mitigating measures

The AEE report discussed a number of mitigation measures to improve the discharge quality back to the Ruamahanga River. Consideration was given to treatment or "polishing" processes at the discharge outlet to the river, however this was considered impractical. If the E.coli discharge standard is not complied with, the applicant may have to revisit this option in the future.

As an alternative, the applicant proposed in the AEE report to reduce the loading of contaminants discharged to the Ruamahanga River, by diverting more water through the wetland systems surrounding the lake. Water quality staff in the Resource Investigations Section agree with this proposal particularly during low flow periods, hence a consent condition is proposed that ensures that no water is discharged from the main outflow when the Ruamahanga River reaches its minimum flow of 2700 litres/sec.

5.2.4 Discharge standards

The consents for discharging can only be granted if minimum standards specified in section 107 of the RMA are included as a consent condition, which has been done in this case. An additional discharge standard is specified for E.coli, a commonly used indicator for bacterial pollution. The standard of a maximum of 550 cfu/100ml is taken from the Ministry for the Environment and Ministry of Health Microbiological Water Quality Guidelines (Draft). The

condition is considered essential to ensure that policies in the RFP are satisfied, namely policy 5.2.4 and policy 5.2.9. Those policies state that the water quality in the Ruamahanga River is to be managed for contact recreation purposes.

I am satisfied that through the implementation of the discharge standards specified above, that the requirements of section 107 of the RMA and relevant policies in the RFP (including Water Quality Guidelines) are satisfied.

5.2.5 How will the discharge be monitored?

In terms of water quality monitoring, the AEE report specified a number of water quality monitoring sites. Those sites are:

- Ruamahanga River at intake
- Intake channel immediately downstream of Te Ore Ore Rd
- Te Ore Ore Stream at lake inlet
- Hiona Stream at lake inlet
- Lake water within 5 metres of main outflow to Ruamahanga River
- Ruamahanga River immediately upstream of main outflow
- Ruamahanga River immediately downstream of 30 metre mixing zone of main outflow.

Although the AEE report did not specify the frequency of monitoring, I consider it appropriate to specify monthly monitoring of physical and chemical water quality parameters and fortnightly monitoring of microbiological water quality parameters (E.coli). This is to be completed between October and March inclusive for the term of the consent. It is noted that the scale and frequency of monitoring is consistent to the consent conditions for the Queen Elizabeth Park Lake in Masterton.

5.3 Effects of intake structure and maintenance on bed of the Ruamahanga River

5.3.1 Assessment of effects of maintenance works

The AEE report stated that maintenance on the intake structure is minimal and is required normally after a major flood or when there is significant changes in the river bed level. Such maintenance requires the regrading of the river bed to ensure that sufficient water is conveyed to the lake.

The AEE report identified that the two principle effects would be the discoloration of water (and corresponding increase in suspended sediment load) and the potential restriction on fish passage. Consent conditions are proposed to minimise the impact on the active flowing channel and therefore reduce the sediment loading in the river. A consent condition is proposed that requires fish passage to be maintained at all times.

The timing of the works could potentially affect public access and recreational users. I would consider the area to be of high frequency and value in terms of recreational use and public access. For that reason, a consent condition is proposed that requires public access to not be unnecessarily restricted. Also a consent condition is proposed that regulates the timing of the

works that excludes public holidays, weekends, and after 5 p.m. unless the works are essential and unavoidable.

Wellington Fish & Game Council requested in their submission that works should not be completed during the trout spawning period. Although the RFP does not specify the Upper Ruamahanga River as an important trout spawning habitat, I believe that such a consent condition is appropriate. The condition proposed states that works shall not be undertaken during the trout spawning period unless the works are essential and unavoidable once the Wellington Regional Council and Wellington Fish & Game Council have been notified. Both the Wellington Fish & Game Council and the applicant are satisfied with this condition.

The use of mechanical equipment in the river bed has the potential to release contaminants into the river environment, hence a consent condition is proposed that requires the consent holder to minimise the risk of contaminants entering water from mechanical equipment.

The assessment of maintenance works and consent conditions that are proposed to avoid, remedy, or mitigate any potential adverse effects are consistent with conditions set down for a consent issued to the Operations Department, Wellington Regional Council for gravel extraction in the Ruamahanga River catchment.

5.3.2 Long term management of intake to Henley Lake

The Wellington Fish & Game Council questioned whether a more permanent structure be placed in the bed of the Ruamahanga River to facilitate the diversion of water into the intake channel. This would reduce the frequency of maintenance and associated disturbance of the river bed considerably.

In recent years, the diversion of water into the intake channel has been difficult due to a lowering of bed levels in this stretch of the Ruamahanga River. Bed levels most recently have stabilised due to a reduction in the allocation of gravel for extraction purposes in this area. I consider that it is appropriate for the applicant to investigate long term management options for the intake. This has been specified as a consent condition and should be completed in consultation with the Wellington Fish & Game Council. This is to be done prior to the second anniversary of the grant date of the consent.

5.4 Effects on tangata whenua values

The applicant has consulted with both iwi authorities in the Wairarapa – Rangitaane o Wairarapa and Ngati Kahungunu ki Wairarapa. As a result of the pre-application consultation process, Ngati Kahungunu ki Wairarapa expressed that they would like to see a 10 year term. This matter is discussed separately in section 6.2.

Rangitaane o Wairarapa lodged a submission opposing the application. They expressed concern about bacterial pollution in the lake and suggested that monitoring of water quality is essential to assess whether any bacterial pollution is dangerous to humans and aquatic life. They also suggested the sources of contamination (the Te Ore Ore and Hiona Streams) could be piped away from Henley Lake. This matter is discussed further in section 5.5.

I am satisfied that the potential effects on tangata whenua have been appropriate considered during both the preparation and assessment of the applications, and consideration of the submission lodged by Rangitaane o Wairarapa. It is noted that Rangitaane o Wairarapa have now withdrawn their right to be heard at a hearing through providing written approval to the proposed consent conditions.

5.5 Alternative methods

The AEE report provided a detailed assessment of alternative methods. That assessment stated that there were no complete alternatives to the Henley Lake system, however there were some alternatives to parts of the Henley Lake system. These alternative and a brief assessment of them are noted below:

- *Alternative water source*. Groundwater is the only available water source for the lake, and given the large volume of water required to sustain the operation of the lake, this was not considered viable.
- *Alternative water intake*. A piped intake was considered to avoid the contaminant loadings from the two stormwater drains that enter the intake channel. The cost (estimated to be in excess of $300,000) was considered prohibitive.
- *Complete diversion of the Te Ore Ore and Hiona Streams*. Diverting these streams would again reduce contaminant loadings to the lake and significantly improve water quality. Again the costs (estimated at between $150,000 - $200,000) were considered prohibitive.

In general I agree with the assessment of alternative methods presented in the AEE report, in particular the assessment of an alternative water source and water intake.

Rangitaane o Wairarapa noted in their submission that the Te Ore Ore and Hiona Streams could be diverted away from Henley Lake. I would agree that this option should be given further consideration. There are already wetlands to the south of Henley Lake which would provide some treatment to the poor water quality observed in these streams. There is a drain close to the existing confluence of the two streams, hence the creation of a new open channel connecting the streams and the drain to the wetland could be a relatively cost effective exercise. The cost estimates provided in the AEE report for this alternative option do seem high. Hence as part of the review of the Henley Lake Management Plan, further investigation into this matter is required.

6.0 Monitoring and Consent Term

6.1 Monitoring

The level of water quantity and water quality monitoring has been described in sections 5.1 and 5.2 of this report. The applicant is required to submit monitoring information on an annual basis.

The consents will be inspected annually as required under the Resource Management Charging Policy.

6.2 Consent Term

The applicant has applied for consents for a 35 year term. I recommend that the consents expire in May 2017 for the following reasons:

- The effects of the discharge back to the Ruamahanga River are still somewhat unclear as not enough water quality monitoring has been completed to make a clear determination as to the nature of these effects. Hence a precautionary approach should be adopted when considering the consent term.
- There were a number of concerns raised by submitters, particularly in regard to water quality issues. One submitter suggested that a 10 year consent term is more appropriate than 35 years.
- Consents issued to the Masterton District Council for the operation of the Queen Elizabeth Park Lake expire in May 2017. It is appropriate for these consents to expire concurrently given the similar activities involved.

The applicant and submitters have agreed to consent term proposed.

7.0 Concluding Remarks

Following assessment of the applications (and AEE report) and submissions lodged, I am satisfied that the application should be approved subject to the proposed consent conditions. In particular I consider that the continued operation of Henley Lake subject to the proposed consent conditions satisfies:

1. The underlying principles in Part II of the Resource Management Act 1991, namely the sustainable management of natural and physical resources.

2. All relevant objectives and policies in the Regional Policy Statement for the Wellington Region.

3. All relevant objectives and policies in the Regional Freshwater Plan for the Wellington Region. Key policies in the determination of these applications that have been met are policies 5.2.4 and 5.2.9 (which require water quality in the Ruamahanga River to be managed for contact recreation purposes) and policy 6.2.1 (which specifies the minimum flow regime and core allocation for the Upper Ruamahanga River).

4. All other matters that are required to be taken into consideration when assessing resource consent applications in accordance with Sections 104-108 of the Resource Management Act 1991.

Both the applicant and submitters have been extensively involved in the development of the proposed consent conditions. All parties have provided their written approval to the proposed

consent conditions. As a final comment, I would to commend the openness and willingness of these parties to come to agreement on the way forward for the management of the Henley Lake through the resource consent applications made.