



STAFF REPORT

TO: Environment & Planning Subcommittee
Commissioner Hearing

FROM: Neil Tyson, Consent Planner

REFERENCE: RM060937, RM060938, RM060939, RM060940, RM060941,
RM060942

SUBJECT: **NEW ZEALAND ENERGY LIMITED - REPORT EP09/02/02** - Report prepared for hearing of 9 to 13 February 2009

INTRODUCTION, SUMMARY AND RECOMMENDATION

LOCATION

Matiri Valley, Murchison

LEGAL DESCRIPTION

Section 1 SO 15298, Section 2 BLK IX of Matiri SD, Section 1 and Section 3 of Blk V Matiri SD, marginal strip, bed of Lake Matiri, bed of Matiri River and bed of west branch of Matiri River, Block V, Matiri Survey District

TASMAN RESOURCE MANAGEMENT PLAN

Land Zone: Rural 2, Conservation

Area: Land Disturbance 1

Water Zone: Upper Buller (Water Management) Zone

NOTIFIED APPLICATIONS

To undertake the following activities associated with the construction, operation and maintenance of a proposed hydroelectric power scheme at Lake Matiri and the Matiri River. For this report, the Matiri Hydro Scheme will be referred to by the acronym "MHS".

Land Use Consent – RM060942

To undertake an industrial activity being the operation of a power station (at or about M29 538474); and to construct a power station building of approximately 100 square metres adjacent to the Matiri River (at or about M29 538474). Approximately four kilometres of new power line will be constructed on private land to extend the existing Network Tasman pole line from its current northern most extent to the power station.

Land Use Consent – RM060938

To remove indigenous vegetation and undertake earthworks and land disturbance for construction of the MHS, which includes a new access track and upgrading of the existing access track and access road and culverts, construction of a 1.6 metre diameter penstock, a power station and tailrace; and to stockpile soil and overburden material at various identified lay down areas. The vegetation removal includes approximately 50 Beech trees from the penstock and access track routes.

To extract gravel from four sites located on the river terraces of the Matiri River and the West Branch of the Matiri River.

Land Use Consent - RM060937

To construct three weirs, an intake structure and spillway in the bed of Lake Matiri (at or about M29 546492) and to disturb the bed of Lake Matiri during construction of the weirs and structures. To construct a penstock in the bed of the Matiri River and disturb the river bed during construction for a distance of 100 metres downstream of the lake intake structure and again at the sweeping bend in the Matiri River.

To construct a (power station) tailrace in the bed of the Matiri River (at or about M29 538474); and to disturb the bed of the Matiri River during construction of the tailrace; and to construct a temporary ford (Baigent bridge) structure in the bed of the west branch of the Matiri River (at a location approximately 300 metres upstream of confluence with the Matiri River); and, following construction, to use the bed of Lake Matiri and the Matiri River to the extent of the permanent MHS structures, including allowing for the ongoing maintenance of the structures.

Water Permit (Dam) – RM060939

To dam Lake Matiri behind three weirs at the Lake Matiri outlet (at or about M29 546-492). The lake will not be operated below its natural minimum level. However, the presence of the weirs will raise the maximum level of Lake Matiri by up to 0.4 metres (in a 100 year flood). The applicant has applied for an exemption to the Water Conservation (Buller River) Order 2001 for these rare events.

Water Permit (Take and Use) – RM060940

To take and use water from Lake Matiri for hydro-electric power generation purposes at rates up to 6.3 cubic metres per second.

Discharge Permit – RM060941

To discharge water from the tailrace to the Matiri River (at or about M29 538474) at rates up to 6.3 cubic metres per second.

REPORTING OFFICERS

Technical reports are provided on the following subjects by:

- Water damming, taking, use and discharge - Neil Tyson, Consent Planner Water, with input from Council's Resource Scientist - Environmental Quality, Trevor James
- Land disturbance, river and lake bed activities - Leif Pigott, Consent Planner Natural Resources, with input from Eric Verstappen (Resource Scientist – River and Coastal Hazards) and Trevor James

- Landuse activities – Jack Andrew, Coordinator Landuse Consents
- Roading – Dugald Ley, Development Engineer

For consistency, the above technical reports adopt the same six landscape segments as New Zealand Energy Limited (NZEL) in their Tasman Carter Ltd report. The reader is referred to the NZEL application for the map of these six landscape segments.

SUBMISSIONS

The application was publicly notified in The Nelson Mail with submissions closing on 8 August 2008. There are a total of 255 submissions with 12 in opposition, two either neutral or in conditional support, and the remaining 241 are in support.

Eight submissions were received after the formal deadline, with one in support and seven opposing. Two over time submissions opposing the application from the South Island Eel Industry Association Inc and the New Zealand Recreational Canoeing Association gave a change of address mix up as the reason for their late submissions. Some of the other over time submissions were critical that the Council's public notification did not include the national papers and that they had missed the public notice.

Acting under delegated authority from the Council, the then Resource Consents Manager (Rob Lieffering) has considered and accepted all eight over time submissions and granted a waiver and extension of time limits under Section 37 of the Act.

In Support

Most of the 241 submissions in support state the following two reasons:

- I am concerned at the prospect of both energy shortages and global warming and I believe that as a nation we need to pursue sustainable development of energy based on the self-renewing and non-polluting sources that are available to us.
- I believe New Zealand Energy has demonstrated the Matiri hydro development can be operated and deliver significant benefits to society with less than minor adverse effects on the environment, and in doing so will contribute materially to the public enjoyment of the associated conservation land and Kahurangi National Park.

Of the 241 submitters in support, 12 advise they wish to be heard. **Trustpower** (#90) state similar and additional reasons for their supporting the granting of consent and, while originally wishing to be heard, have since advised (ie 13 January) they do not.

Neutral or Conditional Support

The following submissions were neutral or stated conditional support:

- (i) **John L and Beverley J Falkner** (#81) support the application but seek that the Matiri Valley Road be widened to two lanes and sealed to address an already overburdened road in summer and particularly the increase in tourist traffic that improved access will attract. They note a section of the road needs raising above flood levels and that the applicant should contribute to the road upgrade cost.

(ii) **Nelson Marlborough Fish and Game Council (FandG) (#240)** neither supports nor opposes the applications but has concerns which, if addressed by the applicant, could result in its withdrawing its right to be heard. FandG has the following concerns:

1. About the adverse effects of fluctuating flows from MHS operation on trout in the Matiri River and safety issues for fisherman, particularly in the gorge areas of the river.
2. About the potential for adverse effects on paradise shelduck during MHS construction in the summer moulting season.

and:

3. FandG lists four issues relating to weir/intake construction and MHS operation for which it seeks conditions to address if the consents are granted.
4. The submitter wishes to be heard.

In Opposition

A summary of the submissions in opposition follows:

(i) **William S Murray (#80)** gives the following reasons for his opposition:

1. Has fished the river for 35 years and opposes the proposal and the adverse effects on the trout stream, trout spawning and habitat and raises safety issues for fisherman from river flow fluctuation particularly in the gorge areas in the Lower Matiri River.
2. The submitter wishes to be heard.

(ii) **Stephen Wood (#230)** opposes the applications and gives the following reasons:

1. Opposes the adverse effects of fluctuating flows from MHS operation (hydro-peaking) on the river ecosystem and trout in the Matiri River and will provide a significant hazard to fisherman.

And:

2. The submitter seeks that consent be declined or MHS operation be restricted to reduce flow fluctuation below the station tailrace discharge.
3. The submitter wishes to be heard.

(iii) **Te Runanga o Ngati Waewae (#82)** gives the following reasons for its opposition:

1. Waewae is concerned regarding impact on the Taonga Manu (treasured birds), Whio (Blue Duck) and Putangitangi (Paradise Shelduck) and seek further information to gauge impact on Mauri degradation of the Awa (river) and Roto (lake).

2. Waewae questions the absence of mitigation of the adverse effects and suggests pest management and further consultation with tangata whenua.
 3. The submitter does not state whether it wishes to be heard.
- (iv) **The Department of Conservation (DoC) (#101)** gives the following reasons for its opposition to the proposal in its current form:
1. DoC is critical of the lack of assessment in the landscape report of the loss in natural character in the dewatered sections of the Matiri River. In addition, it is concerned about the potential and actual effects of the proposal on natural character including the presence of the proposed structures.
 2. DoC is critical of the apparent lack of assessment of the effects of MHS construction on both lake edge vegetation and freshwater mussel populations and the potential for the introduction and spread of weed species. Also, whether the Landcare Research report (Peter A Williams), which assessed the effects of MHS operation on lake edge vegetation, was based on the most up-to-date hydrological data.
 3. DoC lists various actual and potential effects of the proposal and the MHS operating regime that it is concerned about including adverse effects on fish passage and instream habitat and particular concern regarding the adequacy of the proposed residual flow regime and maintenance of a permanent river flow connection up to Lake Matiri. The reader is referred to the full submission for further detail.
 4. DoC is critical of the lack of fish passage at two of the lake outlets and the potential for fish entrainment at the intake.
 5. DoC wishes to see safe public access maintained during construction and public access enhanced post-construction.
 6. DoC is critical of the non-adoption by the applicant of various recommended measures to avoid, remedy and mitigate various actual and potential effects that are contained in various technical reports including the Cultural Impact Report (CIA).
 7. DoC notes that the decision to amend the Water Conservation (Buller River) Order 2001 is still pending but changes are recommended to the provisions relating to both Lake Matiri and Matiri River.
 8. DoC states that unless its concerns are addressed, the application should be declined and lists conditions it requires if the consents are granted.
 9. The submitter reserves the right to be heard.

(v) **Royal Forest and Bird Protection Society (F&B)(#97)** gives the following reasons for its opposition:

1. F&B is critical of the lack of ecological assessment at the two eastern lake outlets and Coal Creek and the actual and potential effects of the proposal, including fish passage, on these.
2. F&B is critical of the assessment of effects of MHS construction, particularly of the weirs and intake.
3. F&B is critical that there is no mention of proposed residual flow from weirs 2 and 3.

Note: F&B raises a discrepancy issue relating to information on the proposed weir heights provided to DoC, which will need to be clarified.

4. F&B is critical of the effect on natural character of the proposed MHS including construction effects, the removal of trees and boulders, and the enormous visual and physical modification of the natural environment.
5. F&B is critical of the effect on avifauna recorded on the lake and list various actual and potential effects of the proposal and the MHS operating regime, that it is concerned about. These include adverse effects on eel migration and fish passage, on freshwater mussel populations in the lake. The reader is referred to the full submission for further detail.
6. F&B states it opposes the applications as they are in direct contravention of the Water Conservation (Buller River) Order 2001 relating to the maintenance of eels and fish passage and the lake level being raised; and

The applications do not comply with the TRPS and TRMP; and

The proposed activities are not sustainable and the applicant has not shown the effects can be avoided, remedied or mitigated.

7. The submitter wishes to be heard.

(vi) **South Island Eel Industry Association Inc (#247)**

The South Island Eel Industry Association Inc opposes the application and wish to be heard.

The Association advises it has concerns about the passage of eels and other native fish both upstream and downstream past the MHS.

At the time of lodging its submission, the Association had yet to study the full application.

(vii) **Mick Hopkinson** (#250) gives the following reasons for his opposition:

1. Opposes the loss of amenity that will result from the MHS particularly the “gateway” nature of the Matiri Valley into the Kahurangi National Park, that will be visually blighted by the MHS-related works for a mere 6 megawatts.
2. Opposes the non-renewable nature of the proposed MHS.
3. Opposes the destruction of the fishery in the Matiri Valley and the deleterious affects on the Lake Matiri Wildlife Reserve.
4. The submitter wishes to be heard.

(viii) **Jessica Brown** (#251) gives the following reasons for her opposition:

1. Opposes the potential adverse effects on the important kayak amenity in the Matiri River and on the wild and scenic nature of the Matiri Valley. Also opposes the non-renewable nature of the proposed MHS and the poor use of natural resources.
2. The submitter does not wish to be heard.

(ix) **NZ Recreational Canoeing Association** (#252) Maree Baker on behalf of the Association gives the following reasons for its opposition:

1. Opposes the potential adverse effects on the important kayak amenity in the Matiri River.
2. The submitter does not state if it wishes to be heard.

(x) **Zachary D M Shaw** (#253) gives the following reasons for his opposition:

1. Considers the proposed MHS will kill the river and that the loss of amenity values and wild and scenic value in the Matiri Valley is not justified by the expected hydro energy generation.
2. The submitter is particularly critical of the proposed residual flow.
3. The submitter states they wish to be heard.

(xi) **John Rice** (#254) gives the following reasons for his opposition:

1. Opposes the MHS as outlined by NZEL and is particularly critical of the proposed residual flow and the adverse effects that will result on instream habitat. The reduction in energy generation if a higher residual was adopted is minimal according to the submission.
2. The submission outlines issues relating to possible consent conditions and their monitoring, including of the residual flow.

3. The submitter is concerned about the proposed design and location of the penstock within the river flood channel and effects on waterway efficiency and on natural character.
4. The submitter wishes to be heard.

(xii) **Whitewater Canoe Club (#255)** gives the following reasons for his opposition

1. Potential adverse effects on the important kayak amenity in the Matiri River.
2. The submitter does not state if it wishes to be heard.

Comment: Some of the opposing submissions e.g F&B, are seeking levels of protection for the Matiri River downstream of the lake to the East Branch, that have previously been rejected by the Planning Tribunal under the Water Conservation Order process.

BACKGROUND

Lake Matiri was identified for its hydro power potential many years ago and, in 1981, the Tasman Electric Power Board (TEPB) obtained from the Westland Catchment Board water rights to dam the lake, divert flow and to discharge water back into the Matiri River. This water right (WLD 810039) has never been exercised but the scheme proposed by Tasman Energy (the successor of TEPB) was recognized and provided for during both the drafting of and in the final Water Conservation Order (Buller River).

Note: The evidence presented to the Planning Tribunal by Tasman Energy makes for interesting and invaluable reading if and when there is a need to interpret the intent of the WCO. Council files contain some evidence and this can be made available to the Hearing Committee if requested.

The Tasman Energy water right WLD 810039 was transferred to NZEL in 2000 and it had an expiry date of 16 March 2006. Under the Act, NZEL were required to lodge their replacement applications a minimum of six months prior to the expiry date of WLD 810039, a date which they meet but not to the extent of the full suite of applications required by a unitary council. As a result, in May 2007, Council agreed to apply the provisions of the Act and allow NZEL to “operate” under Water Right WLD810039 until either, their new consents are granted or declined, and all appeals are determined. This was in recognition of the circumstances and the commitment by NZEL to the project and the consent process.

Importantly, the WCO recognizes and provides for a hydro electric power scheme utilising Lake Matiri and the Matiri River below the lake, provided that the values identified in the WCO, including the 2008 amendments, are protected.

The original NZEL applications lodged with the Council on February 2005 have been changed particularly relating to the location of the penstock below the prominent sweeping bend in the Matiri River. Below this sweeping bend for the lower (1.3km) section down to the power station site, the penstock has been relocated out of the active river channel onto the applicant’s own land. The taking and use of large boulders from within the Matiri River bed to armour the penstock’s supporting embankment has also been deleted from the notified application.

Importantly, NZEL have not provided detailed engineering plans in support of their applications. Therefore, various of the Council staff reports necessarily rely on sketchy details including from the applicant's experts. For example, there is very limited information regarding actual weir construction, penstock construction, rock and gravel availability etc. Given this, if the decision is to grant consent, there will need to be an engineering design approval stage involving TDC staff. For example, to ensure that appropriate fish passage has been provided at the road culverts. It is likely that full engineering design investigations will trigger the need for some changes to any granted consents.

Importantly, independent of the (DoC) concession process, the DoC is a submitter opposed to the NZEL resource consent applications through their statutory responsibility for native fish, habitat etc.

In contrast to the RMA consent process, the writer understands that the DoC concession process does not require specified time frames to be met and there is no right of appeal such as for (RMA) resource consent applications.

Once Council had both sufficient information and all the identified applications required for the NZEL proposal, the applicant confirmed that they wanted the resource consent process to continue independently of the DoC concession process and for the applications to be notified.

WATER CONSERVATION (BULLER RIVER) AMENDMENT ORDER (2008)(WCO)

The purpose of Water Conservation Orders provided for under Part 9 of the Act, is to recognize and sustain outstanding amenity and intrinsic values afforded by specified rivers and lakes and to preserve and protect the specified characteristics including habitat and fishery values, wild scenic and natural characteristics.

The WCO in Schedule 3 recognizes Lake Matiri as "Protected Waters" for the outstanding characteristics and features Wild and Scenic, Wildlife Habitat and Native Fishery values and, between the Lake Matiri outlet and the Buller River, the Matiri River is a Protected Water for its Contribution to Outstanding Native Fishery value. As Schedule 3 Protected Waters, restrictions and prohibitions apply under Clauses 11 and 12 WCO, which are assessed in the writer's attached report on NZEL water applications RM060939, RM060940 and RM060941.

WCO Exemptions

NZEL confirm they are seeking as part of this application, two exemptions from the Hearing Committee under Section 14 of the Water Conservation (Buller River) Order 2001 (WCO), as follows:

- (i) To lower Lake Matiri to RL 339.2m (approximately 0.88m below its minimum recorded level) for a period of 7 days during construction, for ongoing maintenance and in an emergency.

NZEL advise that construction is exceptional in that it is temporary and of short duration and will not compromise the outstanding characteristics and features identified in the WCO. In reply to a further information request (15 January 2009) NZEL advise that maintenance lowering is exceptional in that it will occur rarely (not annually as proposed in their application). Examples given were for the removal of trees that could become lodged and for the repair of damage to the outlet weirs and intake. NZEL envisage that periodic

clearance of debris and maintenance, particularly at Outlet 1, will be done without lowering the lake level by utilizing the stoplog.

(ii) To increase the 100 year flood level of Lake Matiri by up to 0.4m.

This increase in lake level results from the proposed weirs. NZEL advise that the effect could be avoided by design and built structures such as flood gates or downstream modification of the bed of lake outlets 2 and 3 so they would carry the flood water away faster. NZEL advise that the exemption sought is essential for the operation of the MHS as designed and proposed by them.

NZEL believe the effect of allowing the 0.4m increase in lake level for approximately a few hours every 100 years is exceptional in that it will occur extremely rarely and expert witnesses have determined this will not have an adverse effect on the values protected by the WCO.

Note: The Water Conservation (Buller River) Amendment 2008 has been notified with changes relating to both Lake Matiri and Matiri River effective from the end of September 2008. A copy of both the WCO and the 2008 Amendment are appended.

Discussion

NZEL confirm they are applying to Council as consent authority for an exemption under 14 of the WCO. In order to grant an exemption, the WCO requires that the Consent authority be satisfied (see 14(a)(i), Appendix 3) that there are exceptional circumstances to justify the granting of the consent.

The Committee needs to decide if the exemptions sought and the reasons given by NZEL are exceptional and whether it can therefore grant the Section 14(a)(i) exemption.

The writer is sympathetic with NZEL's position regarding the lowering of the lake during construction. Regarding raising of the lake, the writer is concerned that it does not comply with the WCO with regard to "exceptional circumstances". In section 12 of the WCO, the wording seems quite specific about the operation of a scheme being within the range of the natural lake level fluctuation, not 0.4m greater than the natural range. The applicant has chosen to design a scheme that has the effect of raising the lake by 0.4m greater than the natural range which is hardly an "exceptional circumstance".

Council's files also contain some of the evidence presented to the Planning Tribunal hearing of the draft WCO relating to then scheme design and operation. The evidence from Tonkin and Taylor (ie Geoffrey Alan Pickens) on behalf of Tasman Energy stated that the scheme intake would comprise:

- an earth embankment at the lake outlet capable of managing the lake water level within its natural range
-
- a gated control structure at one or more outlets to enable floods to be passed without exceeding the maximum natural lake level
-
- a screened and gated intake structure adjacent to the control structure

Mr Pickens stated in 2.5.2 of his evidence that:

- “This gate will be opened in freshes and floods to allow flood flows to pass downstream without causing the lake to exceed levels that it would reach under natural conditions.” (The writer’s underlining)

An issue is therefore whether the Hearing Committee can be satisfied that there are exceptional circumstances to justify the grant of the resource consent; or whether the MHS is able to be operated so that the natural range of the lake is not exceeded.

The Committee is likely to hear further from NZEL regarding the above exceptions including an expansion on the above reasons. At the time of writing, it was understood that NZEL envisage:

- Planned lowering of the lake for maintenance will no longer occur annually but NZEL continue to seek a maximum occurrence of once per calendar year; and
- Unplanned lowering of the lake for repairs will occur as necessary. All lowering events will be reported to TDC and the effects of these events will be reported on in monitoring of the effects of the scheme on the environment; and
- A review of the “unplanned lowering” condition will be triggered by more than 2 unplanned lowering events in any calendar year.

NZEL advise that they will not want to lower the lake unnecessarily or for long as it is their interests to have 100% availability of the generating plant it does not make them money when the lake is lowered. NZEL advise that “..However, such unplanned events cannot be predicted and opportunity must be provided for the operator to put in place fixes to any problems that may arise. As proposed this can be facilitated with a formal review following a repeat failure during a calendar year.”

The writer’s assessment is that lake lowering events, except for one-off construction and for emergency repair, are unlikely to constitute an “exceptional circumstance” as envisaged by the WCO.

Lake Outlet Location

As identified in the Cultural Impact Report (CIA), the position of the proposed weirs is critical so as not to compromise the WCO. Water permit application RM060939 is to dam Lake Matiri behind three weirs, one in each of the three outlet channels immediately downstream of the lake. The most precise location for each of the three proposed weirs is shown marked on a very poor quality aerial photo in Section 2.2 of the NZEL AEE.

The aerial photo shows the weirs will be located some distance downstream of the lake proper, which will be necessary to avoid compromising of the Wild and Scenic values of Lake Matiri protected under the WCO.

Importantly, the WCO provides no defined location for where Lake Matiri ends and the Matiri River begins, and only refers to the lake “outlets”. The applicant states a six figure map reference in their AEE (ie “at or about M29 546492”), which appeared in the public notice. However, this one map reference applies to quite a large area (ie a radius of 50m) but does appear to include all three proposed weir sites.

At the time of writing, NZEL have been requested to provide a better quality aerial photo of the lake outlets but none have been located so far.

In order to avoid compromising the Wild and Scenic values of Lake Matiri it is assumed that the protection under the WCO extends downstream of the lake/river spill point and into the three individual outlets. As a result, the protected waters would be overlying (by the above definition) the “river bed” at this location.

River/Lake Bed Definition

The definitions of “river” and “lake” in the Act are not particularly helpful for the purpose of specifying where the lake ends and the river begins. Under the Act, a “river” is a flowing body of fresh water while a “lake” is a body of fresh water surrounded by land.

Perhaps the more useful definition from the Act is that of the “bed”, which for a “river” means the space of land which the waters of the river cover at its fullest flow without overtopping its banks. In relation to a “lake”, it means the space of land which the waters of the lake cover at its highest level without exceeding its margin.

Given the actual lie of the land and the above, for the purposes of these applications under the Act, Lake Matiri includes all surrounding land up to its highest level of 344.48m RL (staff gauge height 1443.5m AMSL) while the Matiri River begins at the spill point at the lake outlet ie where there is measurable or visibly flowing water.

The reader is also referred to the comments of the Planning Tribunal and Landscape experts at the Planning Tribunal hearing of the draft WCO. The Tribunal report stated that regarding Lake Matiri, “..Ms Lucas (for Maruia Society) described Lake Matiri as a very special and remote place which she regarded as both outstandingly wild and outstandingly scenic. The Tribunal noted that the evidence regarding Lake Matiri was not strong but that it was uncontested, and the Tribunal saw no reason to depart from the agreed position that Lake Matiri was both outstandingly wild and scenic.”

Particular care will be required regarding the Section 13 applications (see Leif Pigott’s report) and at construction not to disturb the lake and river bed or the lakeside and surrounding vegetation in a manner that would compromise the Lake Matiri’s Wild and Scenic values. With regard to the proposed location of the three weirs, these appear to be sufficiently downstream of the lake proper that they will not be visible from the lake.

1. STATUTORY FRAMEWORK

1.1 Resource Management Act 1991

The applications before the Committee are either Restricted Discretionary Activities or full Discretionary Activities. Under the Act, the NZEL application therefore defaults to consideration as a fully Discretionary Activity.

The Committee may grant or decline an application for a Discretionary Activity, pursuant to Section 104(B) of the Act and if consent is granted, conditions may be imposed pursuant to Section 108.

In making such a decision, the Committee is required to first consider the matters set out in Section 104(1) of the Act, in addition to the matters set out in Section 7.

Primacy is given to Part II of the Act, “the purpose and principles of sustainable management of natural and physical resources.”

Any decision should therefore be based, subject to Part II of the Act, on:

- The actual and potential effects on the environment of allowing the activity;
- Any relevant provisions of national or regional policy statements;
- Relevant objectives, policies, rules or other provisions of a plan or proposed plan; and
- Any other matters the Committee considers relevant and reasonably necessary to determine the application.

In addition, Section 104(1)(a) “*any actual and potential effects on the environment of allowing the activity*” can be qualified by the permitted baseline concept in Section 104(2) which states:

“When forming an opinion for the purposes of subsection (1)(a), a consent authority may disregard an adverse effect of the activity on the environment if the plan permits an activity with that effect.”

A comparison between the proposed activity and what other activities could take place on the subject site as of right is relevant to the assessment of the land use consent applications in Jack Andrew’s staff report.

No written approvals have been provided in support of the application.

1.1.1 Purpose and Principles of the Act (Part II Matters)

The purpose and principle of the Act is to promote the sustainable management of natural and physical resources. Sustainable management means:

“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;*
- b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems;*
- c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment”.*

The “Section 104 matters” are to be considered subject to Part II of the Act. This includes the purpose and principles in Section 5 of the Act, and other matters to be recognised and provided for in Section 6, or had regard to in Section 7, or taken into account in Section 8 of the Act.

An analysis of Part II is necessary to assess whether the MHS meets the overarching purpose of the RMA. Sections 6 to 8 of the RMA are now commented upon, prior to a final evaluation of Section 5 of the RMA. This approach is in line with *Tainui Hapu v Waikato Regional Council A063/2004 at (163)*. This stated: “because the Act has a single purpose, and so Sections 6 to 8 are subordinate and ancillary to (Section 5), we apply the relevant provisions of those sections first, then come to the overall judgement.” This approach has been taken in this report, beginning with Matters of National Importance (Section 6); other Specific Matters (Section 7); then the Principles of the Treaty of Waitangi (Section 8) and then commenting on Section 5.

Although there are tensions inherent in the provisions of Part 2, the provisions broadly indicate the level of weight to be given, effectively establishing a hierarchy by giving priority to the matters of national importance in Section 6 over the matters set out for having particular regard to in Section 7 and taking into account in Section 8.

1.1.2 Matters of National Importance – Section 6 of RMA

The matters of National Importance are set out in Section 6 of the Resource Management Act. For this application, the following matters are seen to be relevant:

- (a) *The preservation of the natural character of lakes and rivers and their margins and the protection of them from inappropriate use and development;*
- (b) *The protection of outstanding natural features and landscapes from inappropriate use and development;*
- (c) *The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;*
- (d) *The maintenance and enhancement of public access to and along lakes and rivers*

The writer’s understanding is that Section 6(e) concerning the relationship of Maori and their culture with the land, water etc, Section 6(f) concerning protection of historic heritage and Section 6(g) requiring recognition and provision for protection of recognised customary activities are not offended by the application.

1.1.3 Other Matters – Section 7 of RMA

Section 7 of the Resource Management Act sets out the other matters that any person exercising powers or functions must have regard to in relation to managing the use, development and protection of natural and physical resources. Matters that are particularly relevant to this application are as follows:

- (a) *kaitiakitanga:*
 - (aa) *the ethic of stewardship:*
 - b) *the efficient use and development of natural and physical resources;*
 - ba) *the efficiency of and the end use of energy:*
 - c) *the maintenance and enhancement of amenity values;*
 - d) *intrinsic values of ecosystems:*
 - f) *maintenance and enhancement of the quality of the environment;*
 - g) *any finite characteristics of natural and physical resources;*
 - j) *the benefits to be derived from the use and development of renewable energy.*

These other matters have direct relevance and in particular those relating to amenity values and the quality of the environment. These are reflected in the policies and objectives in the Tasman Resource Management Plan and other planning instruments. Relevant (Section 7) matters are assessed in each of the officer's reports but are most relevant to Jack Andrew's report.

1.2 Relevant Plans and Status of Applications

1.2.1 Tasman Regional Policy Statement (TRPS)

Council has prepared a RPS in accordance with the provisions of the Resource Management Act and this became fully operative in July 2001. The RPS takes national policies and refines and reflects them through to the local area, making them appropriate to the Tasman District. Council is required to have regard to the RPS as an overview of resource management issues.

Key TRPS Objectives and Policies relevant to an assessment of the MHS are outlined in Table 1 below:

Table 1 – Provisions of the Regional Policy Statement

Section	Objectives	Policies
Matters of significance to tangata whenua	General objective 7	4.2
Land Resources	6.1, 6.2, 6.3, 6.5,6.6	6.1, 6.3, 6.4, 6.6
Fresh Water Resources	7.1	7.2, 7.3 and 7.4
River and lake resources	8.1, 8.2,8.3	8.1, 8.2, 8.3
Contamination and Waste	10.1, 10.2	10.1, 10.2, 10.3, 10.5
Environmental Hazards	11.1	11.2, 11.3, 11.4
Energy Issues	12.1, 12.2	12.1,
Transport Issues	12.4	12.5*
Resource Management Processes	13.2	13.7

The above policies and objectives are set out in Appendix 1 to this report.

1.2.2 Tasman Resource Management Plan (TRMP)

The TRMP has been prepared and has progressed to the point that it is fully operational or effectively operational. The TRMP was developed to be consistent with the TRPS.

Key TRMP Objectives and Policies relevant to an assessment of the MHS are outlined in Table 2 below:

Table 2 – Summary of TRMP Objectives and Policies

Chapter	Objectives	Policies
5 Site Amenity Effects	5.1.2 5.2.2 5.3.2	5.1.3.1 5.1.3.8 5.1.3.9 5.1.3.14 5.2.3.9 5.2.3.10 5.3.3.3
7 Rural Environment	7.2.2 7.4.2	7.2.3.1 7.2.3.2 7.4.3.1
8 Margins of Rivers and Lakes and Wetlands	8.1.2 8.2.2	8.1.3.1 8.1.3.2 8.1.3.3 8.1.3.5 8.1.3.7 8.2.3.1 8.2.3.2 8.2.3.4 8.2.3.6 8.2.3.7 8.2.3.12 8.2.3.14 8.2.3.20
9 Landscape	9.1.2 9.2.2	9.1.3.1 9.1.3.3 9.1.3.4 9.1.3.5 9.1.3.6 9.2.3.1 9.2.3.3 9.2.3.4 9.2.3.5
10 Significant Natural Values and Cultural Heritage	10.1.2	10.1.3.2 10.1.3.3
11 Land Transport Effects	11.1.2 11.2.2	11.1.3.2 11.1.3.7 11.2.3.3 11.2.3.6
12 Land Disturbance Effects	12.1.2	12.1.3.1 12.1.3.2 12.1.3.3 12.1.3.4
13 Natural Hazards	13.1.3.1	13.1.3.1 13.1.3.4 13.1.3.7 13.1.3.10 13.1.3.11 13.1.3.12

Chapter	Objectives	Policies
30 Fresh Water Resources	30.1.0 30.2.9 and 30.2.9A	30.1.1, 30.1.2, 30.1.7, 30.1.9, 30.1.10-11, 30.1.17, 30.1.18, 30.2.9 and 30.2.9A
33 Discharges to Land and Freshwater	33.1.0, 33.2.0 33.3.0	33.1.1, 33.1.2, 33.1.4, 33.1.5, 33.1.6, 33.1.10 33.2.1,33.2.2 33.3.1, 33.3.2, 33.3.4, 33.3.5
34 Discharges to Air	34.2.0	34.2.1, 34.2.1A, 34.2.4, 34.2.5A

The above policies and objectives are set out in Appendix 2 to this report.

Because the TRMP was developed to be consistent with the RPS, it is considered that an assessment under the TRMP will, in a general way, also be part of the assessment against the RPS, except for energy matters, which are still being developed in the TRMP and (Section 13) activities in the bed of rivers and lakes.

The above relevant policies and objectives are assessed fully in the individual staff technical reports and only the key issues will be summarised and discussed in this report, along with the overall staff recommendation relating to the MHS project .

Some more general objectives and policies crossover into other individual staff technical reports and some issues such as avoiding the spread of pest weeds are addressed for efficiency reasons in just one of the technical reports.

1.2.3 Status of Applications

1.2.3.1 Water Permits

The water permit components of the application ie to dam, take and use water, are Restricted Discretionary activities under Rule 31.2.3 (relating to damming) and Rule 31.1.6 (relating to taking and use).

Consent for the taking of water for construction purposes e.g. gravel and truck wash, hydro-seeding, concrete batching etc will be required only if the daily volumes exceed 20 cubic metres, which is the permitted activity volume under Rule 31.1.2 TRMP for this zone.

1.2.3.2 Landuse Consents (Section 13 RMA)

Council's TRMP does not currently extend to activities in river and lake beds (ie Section 13 of the RMA) and, therefore, pursuant to Section 77C of the Act, are deemed to be discretionary activities under the Act and resource consent for all activities in the bed of rivers and the lake, are required.

1.2.3.3 Landuse Consents

The existing Network Tasman overhead power line extending from the Transpower sub station on the Matiri Valley Road at the base of the Matiri valley to the northern most house on the west bank of the Matiri River will have its capacity upgraded from 11kV to 22kV and 1 MVA to 5MVA. The existing poles will be utilised with slightly larger insulators and thicker conductors. This activity does not lie within the definition of upgrading because the voltage will be altered. It therefore complies with Rule 16.6.2.1.

The new extension of this line from its present northern most extent in the Matiri valley to the proposed power station site (approximately 4km) will be identical to the upgraded existing line and also complies with Rule 16.6.2.1.

The use of the proposed power station within Rural Zone 2 falls within the scope of the TRMP's definition for an Industrial Activity. In this context the use of the power station is a discretionary activity in terms of Rule 17.6.2.3.

The removal of indigenous vegetation such as beech trees and understorey shrubs during construction of the access routes and turning bays is considered to be a discretionary activity in terms of Rule 17.6.5.2 of the TRMP as this activity will occur within 10 metres of the bed of Lake Matiri and the bed of the Matiri River, thereby contravening Rule 18.5.2.1.

The proposed quarrying activities involve gravel extracted from sites situated on river terraces adjacent to the Matiri River and the West Branch. The quantity of material extracted from each site exceeds that specified under permitted activity Rule 18.5.2.1 (n) and is therefore a discretionary activity in terms of Rule 18.5.2.5.

Removal of indigenous vegetation and earthworks associated with the construction of the headworks and access tracks is proposed within 10 metres of the bed of Lake Matiri and the Matiri River, which exceeds the conditions for a permitted activity. NZEL advise they will carry out these works in a fashion that is consistent with the standards specified under controlled activity Rule 18.5.2.2. However, it is more likely that the applicant will be unable to meet all the conditions particularly Rule 18.5.2.2 (c) and the application is considered to be a discretionary activity in terms of Rule 18.5.2.5.

1.2.3.4 Discharge Permits

The discharge from a dam spillway and a discharge for residual flow and/or fish passage purposes are Permitted Activities under Rule 36.2.7(f)(i) and (ii). Rule 36.2.7 states that the discharge of water into water is a permitted activity that may be undertaken without a resource consent if it complies with the following relevant conditions:

- (a) *The discharge does not cause erosion of the bed of any river or stream*
- (f) *Where the discharge is from a dam that is authorised under rules 31.2.1, 31.2.2 and 31.2.3:*
 - (i) *the discharge during floods does not exceed the natural inflow;*

- (ii) *the discharge does not exceed the amount required on any resource consent to dam water.*

The writer's understanding is that the NZEL are not seeking to operate their weirs other than in accordance with the above relevant conditions including (f)(i) and (ii) above. Consent conditions will need to be adopted for the damming consent that comply with (f)(i) and (ii) otherwise a separate discharge consent would be required.

Under Rule 36.2.7, the discharge of water from culverts is also a permitted activity.

NZEL state that they propose to undertake the earthworks and vegetation removal activities in a sufficiently sensitive manner so as to not cause more than minor erosion of the bed of the Matiri River and destruction of any habitat in the Matiri River. Appropriate relevant work practices to be implemented by NZEL are set in the AEE and the Sediment Control Plan, and is considered to be consistent with permitted activity Rules 36.2.4 and 36.2.5.

NZEL require consent to discharge water from the tailrace to the Matiri River (at or about M29 538474) at rates up to 6.3 cubic metres per second.

The discharge of mineral debris (and water) via the scour valve requires consent as discussed below and elsewhere in this report.

1.3 Other Consents and Approvals

NZEL lodged a suite of applications required by the Tasman District Council (TDC) acting as a Unitary Council for their proposed MHS. In addition, NZEL advise they will require a building consent application under the Building Act for the power station building, which will be applied for in due course if the RMA consents for the MHS are approved.

NZEL are not seeking resource consent for the taking of water for construction related purposes or, as discussed in Leif Pigott's report, for the discharge of sediment during construction activities as they consider they can comply with the Council's permitted activity rules including, for sediment discharge, Rules 36.2.4 and 36.2.5 during construction and maintenance.

NZEL confirmed in their further information reply to Council in January 2009 that they are seeking consent for the discharge of water and mineral debris from the dam scour valve at Outlet 1. This activity was not specifically identified and referred to in the notified applications but NZEL confirm it was envisaged by them from the outset and that this is demonstrated by the design of the intake structure showing a sloping concrete floor and associated scour valve. The intake design is in recognition of the proximity of Coal Creek, which will generate mineral debris during flood events, which NZEL need to discharge. This naturally generated debris will typically be discharged at high flow during flood recessions to below their intake weir via the scour valve to avoid build up and avoid debris entering the penstock intake.

This scour valve discharge activity does not comply with a permitted activity rule under the TRMP and it requires consent. The writer's assessment is that the activity can be considered by the Hearing Committee as it is integral to the overall MHS and

no party is prejudiced by the inclusion of the activity and any effect of the activity on the environment is considered minor. An application number RM090023 has therefore been allocated if the Committee agrees that the discharge activity can be considered. The activity is combined with the damming consent RM060939.

1.3.1 Building Act (2004)

Three proposed weirs will dam Lake Matiri as shown on the applicant's plans. The proposed weir at Outlet 1 is shown as having a 4 metre crest height, while the other two are approximately half this height (ie 1.8 metres). The proposed storage behind the weirs in the 60 hectare Lake Matiri is estimated at (60 X 10,000 X 1.8) 1 million cubic metres, based on the stated water depth of 1.8 metres.

Under the Building Act (2004). a building consent is required for "large" dams, which are dams with greater than the 20,000 cubic metres of storage and greater than 3 metres of water depth. The writer consulted the Department of Building and Health (DBH) to confirm whether the weir at Outlet 1 was a "large" dam and was advised that it was not as the stored water is just 1.8 metres in depth.

1.3.2 Conservation Act (1987)

NZEL require, and are currently applying for, a concession from the Department of Conservation (DoC) to construct and operate the proposed MHS where it lies within DoC controlled land.

2. ACTUAL AND POTENTIAL EFFECTS OF ALLOWING THE MHS

2.1 Summary of Key Issues

A summary of the key issues is provided below. However, the lack of detailed scheme design and engineering plans provided by NZEL means that a full assessment of the actual effects, particularly of scheme construction and maintenance, has not been possible. Notwithstanding this, the key issues identified in the various staff technical reports are:

- (i) There should be no compromising of any outstanding characteristic or feature under the WCO being wild and scenic values, wildlife habitat and native fishery of Lake Matiri or eel passage in both directions (Buller River to Lake Matiri) in the Matiri River; and
- (ii) The exemptions NZEL are seeking from Council are an important related issue; as is
- (iii) Undertaking the construction and maintenance works in such a way that the applicant complies with the WCO. In particular, NZEL shall avoid adverse visual effects on the lake bed including while accessing weir sites 2 and 3 and adverse effects of sediment generation and accidental or unavoidable contaminant discharge e.g. from cement, during construction of the weirs etc .
- (iv) Adverse effects on landscape and natural character are avoided, remedied or mitigated

- (v) Adopting an appropriate residual flow and (MHS) operating regime that maintains, for the Matiri River below the Lake:
- reasonable fishery values
 - the kayaking amenity particularly at high flow
 - the mauri of the river

Provision for fish passage potentially at all three weirs

- (vii) Construction and operation issues including avoiding effects on shelduck and mussel populations.
- (viii) Operation of the MHS that ensures public safety including the safety of downstream river users including no sudden changes in flow that could affect river users including fisherman.
- (ix) Ongoing monitoring particularly of the taking and use and discharge of water, ensuring that water taken is used efficiently and monitoring actual effects on the environment.
- (x) Securing practical legal public access over NZEL land to Lake Matiri.
- (xi) Ongoing scheme maintenance and issues related to public liability insurance.

The various staff technical reports address the above key issues.

3. SUMMARY OF ENVIRONMENTAL EFFECTS

The remainder of this report summarises the overall findings from the staff technical reports and includes an overall recommendation by Council staff to the Hearing Committee. Draft resource consents and conditions are attached to each technical report if the Committee is of a mind to grant resource consent.

Benefits/Positive Effects

MHS will contribute materially to local and regional energy production and contribute materially to improved public access and the public enjoyment of the associated conservation land and Kahurangi National Park. Once completed, improved access is likely to create new recreational opportunities and encourage more people to access the recreational opportunities of the area.

It is relevant that Matiri Valley residents have not submitted in opposition to the MHS.

However, NZEL has not demonstrated that the MHS can be operated and deliver these benefits to society with less than minor adverse effects on the environment. Council staff have therefore recommended changes to the scheme proposed by NZEL and draft conditions of consent are aimed at reducing or avoiding and mitigating the adverse effects particularly of construction and operation.

WCO

The Hearing Committee's decision must provide for, and not compromise, the ongoing protection of the values identified in the WCO for Lake Matiri and for eel passage in both directions in the Matiri River between the Buller River and the lake. In addition, construction and operation of the MHS shall not compromise the values identified in the WCO for Schedule 2 Buller River below the confluence with the Matiri River.

The Committee needs to decide if the exemptions sought and the reasons given by NZEL amount to exceptional circumstances. Staff's assessment based on the information available is that both a one-off lowering event to construct the weirs and the rare emergency event would fall within the definition of "exceptional circumstances" envisaged by the WCO and the evidence is that the effects of rare, short duration lowering events will be minor.

However, regular "maintenance" lake lowering events would not, in our opinion, constitute an "exceptional circumstance" as such events must compromise wild and scenic values particularly when coupled with the noise typically associated with mechanical diggers and/or other maintenance machinery and equipment.

Raising of the lake level as a result of the design and operation of the weirs is also unlikely to constitute an "exceptional circumstance" (Clause 14(a)(i)). Based on the available evidence, it is acknowledged that such lake raising will not have an adverse effect on the values protected by the WCO (Clause 14(b)).

After hearing all the evidence and submissions, the Hearing Committee will be in a position to determine if it can be satisfied that the requirements of both Clause 14(a)(i) and (b) can be met.

The WCO provides an imprecise map reference for where Lake Matiri ends and the lower Matiri River begins and requires that there be no compromising of the Wild and Scenic values of Lake Matiri. Staff assume that the protection under the WCO extends downstream of the natural lake spill point into each of the three individual outlets. It is Council staff's assessment that scheme infrastructure, including the three weirs, need to be sited, designed and constructed such that they are not visible to the naked eye from the lake proper including the part of the weirs exposed when the lake level is lowered by generation and scheme operation.

If consent is granted, particular care will also be required regarding construction not to disturb the lake and river bed or the lakeside and surrounding vegetation in a manner that would compromise the Lake Matiri's Wild and Scenic values. During construction, there will inevitably be some compromising of the Wild and Scenic values.

With regard to the conditions imposed by the WCO restricting lake level fluctuations, the proposed MHS fully complies with these conditions.

Natural Character

Protection of the natural character of lakes, rivers and wetlands and their margins from inappropriate use and development and maintenance of public access to and

along these waters are matters of national importance. The TRMP recognises and emphasises this in its objectives and policies.

There will be an effect on natural character by the proposed MHS including short term construction effects. However, the effects of the proposed removal etc of identified trees and boulders, and the visual and physical modification of the natural environment will in time be largely absorbed and mitigated by proposed eco plantings and natural regeneration.

Regarding the proposed flow regime this would also have an adverse effect on natural character. However, provided this flow is increased as recommended then the adverse effects on natural character and on mauri will be avoided. It is considered that the MHS will then comply with the TRPS and TRMP regarding natural character. Importantly, hydro generation associated with Lake Matiri and the Matiri River below the lake has been proposed for some years and, subject to conditions, is provided for by the WCO.

The weirs, penstock structure, tail race and control building are within the river margin and at sweeping bend the penstock is within the river bank and some loss of natural character is inevitable. However, the design, materials and finished colours of scheme infrastructure including the control hut, weirs and associated structures, penstock pipeline and generation station building are to be recessive and this will help mitigate the impact of these structures on the visual amenity of the riparian margin areas of the lake and river. The same conditions should apply to the new flow recorder while the appearance and impact of the existing lake level recorder (flow recorder 1) needs to be reviewed with a view to rationalisation and removal of any unnecessary structures.

Within the general area of the MHS there are some quite spectacular landscape features that range in size from the huge areas of exposed rock faces uncovered by the earthquake that created Lake Matiri to the quite small scale tufa feature at sweeping bend. The tufa feature is recognised as a feature that is to be left undisturbed and protected from the development.

At the sweeping bend, the new access along the top of the penstock will provide safer public access. Rock protection works will use local rock recovered during the land disturbance operation with the aim of mitigating the visual appearance of the rock work and rock will not be taken from the river bed for this work.

With time, it is expected that the MHS development will be largely absorbed by the environment and not detract from the views of the earthquake features or significantly alter the visual character of the large scale and immediate outstanding landscapes of the area. Furthermore, the loss of natural character can be mitigated and appropriately compensated for.

Effects on Aquatic Ecology

In Council staff's opinion, the adverse effects of the proposed MHS on aquatic ecology requires that the proposed scheme be modified and operate closer to a run-of-the river scheme in dry summer months, while utilizing lake storage particularly outside this period.

The NZEL proposed (1 cumec) residual flow is considered too low and is recommended to be set at $MALF_7$ (ie 1.4 cumecs) to reduce adverse effects on invertebrates, yearling trout and blue duck. The minimum flow is to be measured at proposed recorder site 2 upstream from the power station at a site to be confirmed. Depending on the location, the residual flow may need to be adjusted to account for natural inflows below the recorder site.

A continuous flow path from the lake outlet 1 to where surface flows are over the surface of the rock debris dam is also recommended to operate in conjunction with a purpose designed and built fish passage for guaranteeing eel passage at weir outlet 1.

Council staff have drafted an alternative operating regime for the MHS based on these recommended changes while mindful about the uncertainty relating to the seepage rates etc post weir construction. The revised regime incorporates hydro-peaking restrictions and a cease take in dry summer conditions. The trigger for these restrictions is recommended to be when the residual flow of 1.4 cumecs is unable to be maintained at recorder site 2. Under this operating regime, it is expected that NZEL would first restrict hydro-peaking in order to maintain 1.4 cumecs, and it has been confirmed that hydro-peaking will also be restricted to comply with the WCO in regard to the Schedule 2 Buller River at the Matiri River confluence.

As the dry weather continues, the lake inflow will reduce and the lake level will lower to the point when the 1.4 cumecs cannot be maintained and the lake cannot be lowered further. At that stage, the power station will need to shut down.

Once generation is shut down, the naturally low (lake) inflow is unlikely to be sufficient to fill the lake, particularly when requiring the maintenance of a (scour valve) residual flow release. In a worst case scenario, this residual flow release could potentially result in the lake level being drawdown below its natural minimum level or kept at this level for an excessive period. Under this scenario, the residual flow release from outlet 1 may need to cease.

Staff acknowledge the degree of uncertainty regarding this alternative regime. For example, when the lake has historically been at its lowest level, it is unclear if there is a continuous water flow from the lake or has fish passage been naturally restricted. Perhaps Coal Creek maintains the only permanent water flow from the "lake" at these rare events. Given the level of uncertainty and the significant values needing protection, staff support a conservative operating regime if consent is granted.

Effects on Recreation and Tourism

Recreational use of the Matiri River below the Lake is affected by the MHS (as proposed by NZEL) but the adverse effects can be avoided if the residual flow is increased and hydro peaking is restricted and generation shutdown at low summer flows.

Recreational use of the Matiri River is likely to increase if river flow data is available online and recreational use of Lake Matiri is unaffected or increased as a result of the improved road access.

Effects on Water Quality

Effects on water quality are likely to be negligible except during construction and during maintenance events that require work in or adjacent to the river or lake. This is discussed below.

The natural flushing flow regime will not be affected by the MHS and periphyton or sediment discharge and accumulation will be no more than natural.

Construction and Maintenance Effects

Effects on water quality are likely to be negligible except during construction and during maintenance events that require work in or adjacent to the river or lake.

The WCO limits changes in pH, additional nutrients and limits bacterial level. The only significant risk is from changes in pH due to cement in the river. There are no significant sources of nutrients or bacteria that should be released during construction.

From the limited information provided the adverse effects look manageable. The proposed use of management plans makes it difficult to assess the full extent of the quality of the outcome. NZEL will be providing detailed management plans that will need to achieve full compliance with consent conditions and relevant all relevant rules. Under these circumstances, the analysis of how the outcomes will be achieved is deferred and Council will need to certify the proposed management plans prior to any construction.

NZEL have asked that monitoring by Council staff during construction be mindful of avoiding duplication with the DoC to avoid unnecessary costs. Monitoring costs are recoverable from consent holders. Post construction, NZEL will be required to pay to Council annual charges which are based on the rate of taking under the water permit. In addition, the Consent Holder is responsible for the costs of any specified monitoring required under the various resource consents.

Earthworks, Vegetation and Effects on Terrestrial Ecology

The effects of the proposed earthworks and works affecting vegetation and terrestrial ecology have been assessed to the extent of the described works. The assessment is therefore necessarily incomplete as the full and precise detail is as yet uncertain until engineering investigations and design are complete. At this stage, no significant issues have been identified.

Social Effects

The MHS will result in only minor social effects once construction is complete and any adverse effects are outweighed by improvements, including to the roading infrastructure.

Safe public access needs to be maintained during construction, while public access is enhanced post-construction.

Little information has been provided on public access and public safety issues during and post construction making any assessment of effects difficult. There will need to a purpose built screen system at the intake site and NZEL agree to incorporate these matters in the engineering design.

Traffic and Roothing Effects

It is considered that the roading works proposed as part of the Matiri hydro MHS will meet the transport objectives and policies of the TRMP. The road upgrade and parking area proposed will benefit the general public once the construction phase of the development is completed. The proposed signage at the road head will not prejudice traffic safety and will be informative for the public.

If the MHS is approved, the recommendation of Dugald Ley is that the applicant pay an ongoing one-third share of maintenance costs for the last three kilometres of the new road. This is estimated to be one-third of \$23,000 plus GST and a contract with Council prior to completion and certification of the road will need to be entered into. Council will seek via a separate process to acquire the other two-thirds maintenance sum from the Department of Conservation.

Mitigation Measures

The lack of NZEL volunteered mitigation measures has been addressed and a list of mitigation options are appended. However, the recommendations and conditions to a large degree address these adverse effects and, if adopted, the MHS can be sustainable and any adverse effects can be avoided, remedied or mitigated. Pest management and the potential for the introduction and spread of weed species is such an adverse effect.

Insurance and Bonding

It is considered appropriate that NZEL hold adequate public liability insurance for a scheme of this nature. For MHS, there is some risk of damage to public and private property during both construction and operation that can be minimized through a risk management plan. There is also a small but unavoidable risk to the public particularly recreational users of the river. It is considered that \$1 million dollars would be the minimum amount of cover.

It is also considered appropriate that NZEL be required to establish a bond in favour of the Council for, as a minimum, the period of the construction and commissioning of the MHS to cover the likely cost of rehabilitation of both Council and DoC land and assets in the (unlikely) event of the failure of the project during these stages. A bond could thereafter cover the ongoing MHS, again to cover the likely cost of rehabilitation should the MHS fail at some future point in time. It is considered that \$0.5 million dollars would be the minimum amount of bond for such a scheme.

Note: It is understood that the project infrastructure ie the weirs, penstock etc will not attract the Council's Development Contribution levies.

RECOMMENDATION

Council staff consider that the granting of consent for the MHS as proposed by NZEL does not achieve the purpose of the Act of sustainable management of the region's natural and physical resources.

However, many of the concerns raised by submitters and by staff can be satisfied by modifications to the NZEL proposed scheme, particularly related to the operating regime.

If the Committee is of a mind to grant consent, draft conditions are attached to the individual staff reports.

If the Committee is of a mind to decline consent then it should be confirmed that the NZEL consent WLD810039 is now considered to be lapsed. This is consistent with the Council's agreement with NZEL that they could "operate" under water right WLD810039 until either, their new consents are granted or declined, and all appeals are determined.

Duration of Consents

The applicant does not state if they accept for their water permits RM060939, RM060940, RM060941 the common expiry date for the Upper Buller catchment water permits in Schedule 31.1A TRMP, which is 31 May 2020. Discharge consent RM090023 should have the same term as these water permits.

All irrigation consents for the Upper Buller Zone have to date been granted subject to this common expiry date and the value of a common date is well established for water management reasons generally. It is relevant that replacement consents are considered as "renewals" under the TRMP and are *controlled* activities which gives significant certainty to Consent Holders.

Following 31 May 2020, the next common expiry date for water permits for the Upper Buller catchment is 31 May 2035.

For landuse consent RM060937 for the river and lake bed activities, the same date as the water permits for expiry is recommended. For both water permits and (S.13) landuse consents, the maximum term provided under the Act is 35 years, which would be an expiry date of 31 May 2044.

The other (S.9) landuse consents have no term and run with the land.

All consents should lapse unless exercised, five years after the date of their granting, which is standard under the Act.

REFERENCE: RM060939, RM060940 and RM060941

SUBJECT: ASSESSMENT OF APPLICATIONS TO DAM, TAKE and USE WATER and TO DISCHARGE WATER – NEW ZEALAND ENERGY LIMITED

1. INTRODUCTION

Four applications are assessed in this report. Water permit application RM060939 is to dam Lake Matiri behind three weirs, one in each of the three outlet channels. The most precise location for each of the three proposed weirs is shown marked on an aerial photo in Section 2.2 of the NZEL AEE. This aerial photo shows the weirs will be located downstream of the lake proper and accurate map references are required for each of these.

Water permit application RM060940 is to take and use water from Lake Matiri for the purposes of hydro-electric power generation, and consent RM060941 is required to discharge this water below the powerhouse back to the Matiri River.

Some effects of these activities are strongly linked e.g. the rate and timing of the take and use, is the same as the rate of discharge, and both affect the amount of dewatering of the Matiri River between the intake and power station discharge.

The fourth application assessed in this report is RM090023 relating to the discharge of mineral debris via the scour valve.

2. RELEVANT SUBMISSIONS and PRINCIPLE ISSUES

Various submitters raise issues relating specifically to the (damming, take and use, and discharge) applications. Submissions relating to the (Section 14 and 15) activities addressed in this report are summarized for each of the landscape segments as follows:

2.1 Landscape Segment A – Lake Matiri

Effects of Damming and MHS Operation - on Lake Matiri.

- 2.1.1.1 Effects of fluctuating levels (including hydro-peaking) on wildlife, native fishery and wild and scenic values
- 2.1.2 Effects on fish passage including at lake outlets 2 and 3 and the potential for fish entrainment at the MHS intake at outlet 1.
- 2.1.3 Ecological effects on Coal Creek
- 1.4 Effects on avifauna recorded for the lake
- 1.5 Reliability/Uncertainty regarding the proposed residual flow of 1 cumec discharging from the natural rock dam post MHS construction

1.6 Effects on the mauri of the place.

2.2 Landscape Segments B, C, D and Part E

Effects of Taking and Use - Lake Matiri outlets to the powerstation

2.2.1 Effects of MHS operating regime, residual flow and flushing flows.

2.2.2 Effects on the trout fishery and native fish. Adequacy of the proposed residual flow regime, and maintenance of a permanent river flow connection from the Buller River to Lake Matiri. One fisher of the river for 35 years submits that it is a very important spawning and trout habitat that will be ruined.

2.3 Safety Issues for River Users Including Fisherman

2.4 Effects on natural character.

2.5 Effects on Whio (Blue Duck)

2.3 Landscape Segments Part E, F and G

Effects of MHS Operation and Discharge - Matiri River downstream of the power station to the Buller River.

2.3.1 F&G and others are particularly concerned about effects on the trout fishery of the proposed flow regime including hydro-peaking resulting from reduced primary food production, reduced adult trout habitat and the effects of rate of change of flow on angler safety.

2.3.2 Effects of the proposed flow regime on the kayaking amenity.

2.4 Decision(s) Sought by Submitters

The decision sought by submitters cover the complete gambit from granting, granting with conditions to full decline of the NZEL applications.

If the applications are granted, suggested conditions of granting include:

From Fish and Game:

2.4.1.1 That construction (and maintenance) activities in the period 1 January to 31 March in any year not occur within 500 metres of moulting shelduck.

2.4.2 Restrictions on the rate of flow increase and decrease and appropriate notice to river users of the flow regime. FandG suggest a warning signal would be appropriate for rapid flow increase events.

2.4.3 That the applicant be required to provide public access points to the river from the upgraded road through their property at 3km intervals.

2.4.4 That during the trout fishing season, restrictions should apply requiring generation to occur at maximum rates for a minimum daytime period of three hours, to enhance trout fishing opportunities.

From DoC:

2.4.5 A higher residual flow not less than MALF7 below the dam plus guaranteed flow connectivity to Lake Matiri.

- Provision for improved legal public access over private land.
- Restrictions on the rate of flow increase and decrease
- Extensive restrictions to prevent the introduction of pests and weeds and monitoring but refer to the DoC submission.

From Te Runga o Ngati Waewae:

- pest management
- that a full suite of conditions be discussed with iwi to offset the loss of mauri.

3. ASSESSMENT OF EFFECTS

3.1 Additional Statutory Provisions

Under the Labour government, a proposed National Policy Statement for Freshwater Management (NPSFM) (submissions to close 23 January 2009) identified five key problems it considered need to be addressed within the existing RMA framework. None of these are considered to be particularly relevant to this application and the writer's assessment is that the proposed NPS may not lead to significant changes to either the Council's TRPS or the TRMP. Prior to the election, the National party announced that the NPSFM process would be put on hold, but the writer understands this may not be the case.

Part V of the TRMP which deals with water is not yet fully operative but it is considered that any remaining appeals do not apply to this application.

Amendments to the Act in 2005 have created additional procedures (sections 124A to 124C) which allow regional councils to consider natural resource allocation. In relation to water, councils may have regard to "the efficiency of the person's use of the resource" and "the use of industry good practice by the person". These amendments come into effect on 9 August 2008, so they will not be fully reflected in either the TRPS or the TRMP. It is unclear what impact they will have on freshwater management, but they do potentially offer a wider range of tools to councils.

3.1.1 Tasman Regional Policy Statement (TRPS)

The reader is referred to Appendix 1, Objective 7.1 TRPS and Policy 7.4 the later of which states:

The Council will:

- (i) *preserve the natural character of wetlands, rivers and lakes, and*

- (ii) *protect and enhance or support the protection and enhancement of natural, recreational, cultural, intrinsic, and instream features and values of wetlands, rivers (including karst rivers), and lakes, in particular those that are of international, national, or regional significance;*

Implementation of Policy 7.4 requires the Council to evaluate the significance of natural, recreational or cultural values for water bodies in the District including the Upper Buller River and tributaries including the Matiri River.

The Council is then to declare as a future amendment to this policy those water bodies that it regards as worthy of appropriate protection for their outstanding or otherwise significant natural, recreational or cultural values or features. Council will also develop policies and rules in regional plans or support provisions in any relevant water conservation order and make decisions on resource consent applications to protect the identified water bodies.

Council has yet to undertake the evaluation required under Policy 7.4 but, in the case of the Upper Buller, this is considered to be partly addressed by the WCO.

The effect of the MHS on natural character is assessed particularly in Jack Andrew's report.

3.1.2 Tasman Resource Management Plan (TRMP)

The reader is referred to Chapter 30 of the TRMP for the full list of policies and objectives relating to water. Particularly relevant policies are in Appendix B, including as follows:

30.1.9 When assessing resource consent applications to take water, particularly those applications to take water from water bodies where no allocation limit has been established, to take into account actual and potential adverse effects, including cumulative adverse effects of the proposal in combination with any existing authorised takes, on:

- (a) natural character of the water body and its margins;*
- (b) associated wetlands;*
- (c) cultural and spiritual, amenity and recreational values;*
- (d) aquatic habitat, including plants and animals;*
- (d) other water users;*
- ((f) hydrological regime of the water body;*
- (h) uses and values identified in Schedule 30.1*

Neither the WCO nor the TRMP contain a stated allocation limit relating to the Matiri River. The TRMP Policies 30.1.10-11 are therefore relevant as they provide a mechanism for the setting of an appropriate allocation limit for the taking and use of rivers which is based on the recognized aquatic habitat value of the Matiri River as identified in Schedule 30.1, Chapter 30 of the TRMP.

The following abbreviated extract from Schedule 30.1 TRMP does not include the 2008 Amendment of the WCO, which now recognizes the value of the Matiri River below the lake for its "Contribution to outstanding native fishery". Furthermore, as identified by DoC, the WCO now requires that any new structure in the river provide

for eel passage in both directions. However, these amendments do not alter that the aquatic habitat value of the Matiri River is not considered to be regionally or nationally significant in either the WCO or the TRMP and FandG describe the Matiri River below the lake as a locally important trout fishery.

Table 3: TRMP Schedule 30.1

(16) Buller River and tributaries including the Gowan, Mangles, Matakitaki, Matiri, Maruia, Fyfe, Travers, Owen, Glenroy, Tiraumea, and Tutaki and Lakes Matiri, Rotoiti and Rotoroa.	Instream Uses and Values	
	<ul style="list-style-type: none"> • Trout fisheries of national importance in the Buller River, nationally significant native fishery of Lake Matiri and regionally important trout spawning in the Travers, Owen, Maruia and Fyfe Rivers. • Native fisheries, eel and wildlife habitat, including regionally significant blue duck or water fowl habitat in the Buller, Matiri, Travers, and Owen rivers and Lakes Matiri, Rotoiti and Rotoroa and nationally significant blue duck habitat in the Fyfe River. • Contact and non-contact recreation. • Cultural, spiritual and landscape values. 	<ul style="list-style-type: none"> • Maintenance of flows and levels consistent with the National Water Conservation Order (Buller River). • Protection of aquatic habitat especially blue duck and, trout spawning habitat. • Protection of cultural, spiritual and landscape values.
	Other Uses and Values	
<ul style="list-style-type: none"> • Human consumption • Irrigation supply. • Community water supply. • Stock and farm water supply. • Small scale hydroelectric power generation. 	<ul style="list-style-type: none"> • 	

TRMP Policies 30.1.10-11 indicate that an appropriate allocation limit for the taking and use of water from the Matiri River would be 10% of the 5 year 7 day low flow but that this could increase up to a maximum of 33% provided the adverse effects can be avoided, remedied or mitigated.

Importantly however, MHS is not abstracting for consumptive use and the same volume taken at lake outlet 1 will be discharged back to the river below the power station. Furthermore, an IFIM has been completed for the Matiri River below the lake which can provide specific information on instream values for the setting of an appropriate allocation limit and/or operating regime.

From the above table, the TRMP requires the maintenance of flows and levels consistent with the WCO. This is relevant to an issue raised by DoC (see 5.13) in their submission and discussed later in this report regarding the alteration of flows in the Buller River below the Matiri River confluence.

The following TRMP policy is also considered relevant notwithstanding that it was particularly drafted with Moutere Catchment gully dams in mind:

30.1.17 To avoid, remedy or mitigate the adverse effects of water damming either by itself or cumulatively with other dams, including adverse effects on:

- (a) the flow regime or water levels in rivers, lakes and wetlands;*
- (b) passage of fish and eels*
- (c) other water users;*
- (d) aquatic ecosystems and riparian habitat;*
- (e) water quality;*
- (g) adverse effects of dam failure on (a) to (f) above.*

3.2 WCO Restrictions

WCO Clause 11(2) restricts the granting of discharge consent relating to Schedule 3 rivers if the discharge would change or adversely affect various stated parameters including pH, suspended solids, bacterial and fungal growth etc.

The 2008 Amendment to the WCO now recognizes the Matiri River below the lake in Schedule 3 Item 2 and the restrictions on the alteration of water quality in Clause 11 now apply.

The writer understands that the NZEL discharge from the power station tailrace back to the river will be unchanged in quality and is uncontaminated and complying with Clause 11(2). Furthermore, the writer understands that the NZEL discharge from the scour valve will also comply with Clause (2).

WCO Clause 12 specifically addresses Lake Matiri and the Matiri River downstream of the lake. The writer's assessment is that the NZEL applications comply with the restrictions under Clause 12 with only one possible exception. The exception relates to new Clause 12(3) that any structure at the Lake Matiri outlet provide for eel passage in both directions. Fish passage in both directions at the three proposed weirs is discussed elsewhere in this report.

3.3 Assessment of Technical Matters

3.3.1 Flow Data

All parties are fortunate to have a relatively long record of flow data from the Lake Matiri site. Furthermore, since the original application was lodged the available river flow data has been audited and the revised statistics now provide a good indication of the true situation (Council Hydrologist Martin Doyle *pers comm*). It is understood that the dataset is accepted by all parties to the application.

The reader is referred to the table of flow frequencies for the Matiri River in the applicant's AEE in the *Envirolink Ltd* report (17 Sept 07). The site is 93214 Lake Matiri @ Lake Outlet.

3.3.2 Climate Change Rainfall Trends

Council has recently agreed to accept NIWA advice on climate warming effects contained in a report that the Council had commissioned for the district. Council's Environmental Information Manager Rob Smith offered the following comments related to the reports findings:

The District may see a possible 1°C increase in temperature by 2040, and 2°C by 2090, with a corresponding increase in the ability of the atmosphere to carry water. This results in a potential 5% increase in annual rainfall totals for Richmond, and a change in how this is distributed across the year, along with increased severity of storms. As you move south and west in the district, there should be an increase in the westerly weather pattern resulting in greater winter rainfall for Matiri, along with slightly more in spring and autumn.

Adjustments are able to be made to the standard set of rainfall intensity figures from the 'HIRDS' rainfall design software, which all engineers should now be using.

3.3.3 MHS Operating Regime

The applicant (eg *EnviroLink* report 17 Sept 07) proposes a residual river flow of 1 – 1.2 cumecs resulting from leakage through the natural rock dam, and that this be measured at the slackline site immediately upstream of the power station.

While not stated, the applicant appears to assume that the construction of the three outlet weirs and the proposed MHS operating regime will have little or no effect on the existing leakage rates. However, in 2.12.3 of the AEE the applicant also volunteers that any shortfall will be made up by spilling via the sluice gate.

The lack of detail regarding the effects of weir construction on leakage rates is an issue but, understandably, the required information is only likely to become available at the design and engineering plan stage and perhaps not until the weirs are actually constructed and operational.

NZEL propose three operating scenarios:

Scenario 1: Above 7.3 cumecs Inflow – for 159 days per year (mostly during winter) the MHS will operate at maximum output of 6.3 cumecs with no lake drawdown and a minimum of 1 cumec residual flow, with any surplus flow spilling over the weirs.

Scenario 2 Below 7.3 cumecs Inflow – for 157 days per year the MHS will operate at up to maximum output of 6.3 cumecs for a variable number of hours per day to ensure the lake refills to approximately the same level each day while maintaining the lake level above the required RL 340.08m. The minimum 1 cumec residual flow is assumed to continue to discharge from the natural rock dam emerging downstream of the weirs; and

Scenario 3 - for 49 days per year prior to anticipated rain events, MHS operation will gradually draw the lake down to its minimum lake level of RL 340.08m. The minimum 1 cumec residual flow is assumed to continue.

The WCO requires that no consent or rule allow the level of Lake Matiri to exceed the natural range. From the application, the natural range is 520 – 4921 (4.5m approx) and the natural mean lake level is RL 341.1m. The WCO allows for the mean lake level to be increased by 0.5 m, but this is not proposed by NZEL.

The WCO also allows for a maximum daily lake level fluctuation of 50% of the natural range of 4.5m, which is (4.5/2) 2.25m. However, NZEL proposed that the maximum daily fluctuation be (RL 341.1 to RL 340.08) 1.02m.

NZEL advise (Page 16 Envirolink Ltd report) that generation will involve a gradual on and off to soften the effect of flow changes on the river and river users. Conditions specifying all aspects of the operating regime had not been volunteered at the time of writing this report but NZEL had advised (David Inch pers comm.) that the ramping rate envisaged was in the order of 5-10 minutes to change the flow from zero take to the maximum 6.3 cumecs.

3.3.4 Recorder Site 2

NZEL propose that the residual flow below the lake be measured at the slackline site immediately upstream of the power station site.

The Council's hydrologist Martin Doyle has been consulted regarding the most appropriate recorder site and, in his opinion, this site is unlikely to achieve the Council's minimum requirements for flow recorders, particularly due to the uneven river bed nearer to the power station.

The purpose of flow recorder site 2 requires is to monitor the residual flow in the de-water section between the lake and the power station and Martin Doyle advises that this requires further investigation. If the best site is upstream of the sweeping bend this will mean that any inflow downstream of the recorder eg. from the spring at the sweeping bend, will not be measured and will result in a higher residual flow.

The exact location of recorder site 2 needs to be identified by the Council's hydrologist on-site and this can be in consultation with the Consent Holder.

Note: The draft (1995) WCO proposed a minimum flow below the lake of 1 cumec measured at map reference M29 540 488, which is a site immediately upstream of the Sweeping Bend on Matiri River. However, this provision or any other residual flow provision did not make the final WCO, and the reasons for monitoring the proposed residual flow at this proposed site are unknown

3.3.5 WCO Flow Alteration

An issue raised by DoC (see DoC Submission 5.13) is concerning the alteration of flows in the Buller River below the Matiri River confluence. The Buller River at this location is a Schedule 2 river.

Section 8(3)(a) and (b) of the WCO requires no more than a 15% change in the *naturally occurring instantaneous flow* of the Buller River. The following Table 4 shows flow data for both the Matiri River and the Buller River. Given the proposed maximum rate of taking of 6.3 cumecs, the hydro-peaking operation by MHS will need to be restricted when the flow in the Buller River is below approximately 42 cumecs in order to comply with the WCO.

Table 4: Flow Statistics (Litres per Second)

	MALF	5 Year 7 Day	10 Year 7 Day	50 Year 7 Day
Matiri River (below West Branch)	1,877	1,408	1,350	
Buller River (below Matiri River)	45,499	37,257	32,796	

From the above table, hydro-peaking by MHS will need to be restricted most summers for variable periods of time given a MALF of 45,499 litres per second for the Buller River at this location.

To achieve compliance will require the monitoring of flow at the *Buller River @ Longford* site as well as downstream flow contributions from the Mangles and Matakaitaki River. Furthermore, water metering data from irrigation use (and other abstractive water users) will be required to confirm compliance with the WCO.

The DoC submission that MHS can during hydro-peaking affect the Buller River by more than the 15% of the naturally occurring instantaneous flow is therefore correct.

3.3.6 Fish Passage

Fish passage at the proposed weirs at Lake Matiri need only be provided for eels, which are good climbers. NZEL agree to incorporate the following matters for the three weirs in the engineering design.

- a steep gradient is permissible but avoid near-vertical and no overhang.
- Water velocities should not be accelerated and average water velocity should be no more than 0.3 metres per second.
- Provide roughness features in the wetted channel.
- Ensure the longevity of the structure

NZEL propose a purpose built fish passage structure at the Outlet 1 weir at Lake Matiri where a scour valve is proposed to provide additional residual flow if and when required. Guaranteeing eel passage between the power station and the lake is of concern, particularly the absence of a continuous flow path from the lake outlet 1 to where surface flows emerge to the surface from the rock debris dam. To guarantee eel passage requires, in staff's opinion, a guaranteed residual flow release from the dam scour valve associated with a wetted path over the fish pass in Outlet weir 1.

3.3.7 Intake Screening

Intake screening is an issue for all surface takes to protect pumps and, in this case, turbines and where fish are likely to be present. The proximity of Coal Creek, the provision of fish passage at weir Outlet 1 and the sharing of this weir with the penstock intake confirms that intake screen design will be complex. No information has been provided on screen mesh size and flow velocity at the screen's outer surface which can be problematic for some schemes, as can remotely controlled screen cleaning.

Means of compliance are otherwise stated in Note 2, Rule 31.1.2 in the TRMP, and a condition for the water permit (take and use) is required.

Public access and public safety issues will also require a purpose built screen system about which there is currently little detail in the application.

NZEL agree to incorporate these matters in the engineering design of the penstock intake.

3.3.8 Lake and Instream Values and Flow Regime Requirements

Various submitters including DoC, are particularly concerned about the residual flow regime proposed by NZEL and the applicant's Cultural Impact Assessment concludes that a dry river bed immediately below the weirs does not, in their opinion, promote sustainable resource use.

Council's Resource Scientist - Environmental Quality, Trevor James, has reviewed NIWA's (IFIM) report dated May 2007 and had discussions with DoC's Martin Rutledge and Ian Jowett. In his opinion, the potential effects of the proposed MHS given all associated mitigations (both offered by the applicant and suggested by TDC) are minor. Trevor James' comments are contained in the following sections.

3.3.8.1 Effects on the Matiri River

Section 7(d) requires Council to have regard to the intrinsic values of ecosystems and Section 7(h) to protect the habitat of trout. The IFIM report shows a 15% loss of invertebrate and yearling trout habitat resulting from the proposed operating regime and the proposed residual flow. FandG, DoC and various opposing submitters consider this adverse effect is significant.

FandG, DoC and other submitters are also very concerned about the effects of hydro-peaking on food production, trout habitat and trout population and safety of recreational users (particularly anglers and kayakers) for the 11.7 km stretch downstream of the power station.

Staff's assessment is there is likely to be an adverse effect that will not be able to be mitigated on invertebrate productivity, yearling trout and Blue duck in the reach from the lake to the outlet of the tailrace and potentially the wide and shallow reaches in the lower stretch of the river (downstream of the furthest downstream road bridge). This effect is due to the reduced water levels rather than any fluctuation of river flows.

The effect of reduced flow on invertebrates in the river between the lake and power station could be more significant if the substrate was more cobbly in this stretch (it is dominated by boulders), or if the reduced flows were for much more extended periods.

The bed in the lower stretch of the river is dominated by cobbles and some riffles are wide and shallow. Life in this type of riffle is more vulnerable to reduced flows as the proportion of habitat lost for a given water level drop is greater. Adverse effects from reduced flows in this lower reach are likely when the MHS has finished generating

and the lake level is filling again. However, the effects in this reach are considered minor for the following reasons:

- It is important to look at the whole river. This type of riffle in this reach only makes up about 500 metres which is about 4% of the total length of river below the powerhouse (11.7 kilometres total length).
- The time it takes to fill the lake is five days under a system outage scenario. However, it is considered by the applicant to be very unlikely for this situation to occur and the maximum time for system outage would be 1 day. This means that the invertebrates and periphyton will be vulnerable to desiccation for a period of about 20 hours (given about 3-4 hours for flows to subside) which is considered a short enough time to avoid significant death of these organisms.
- Fish passage through these shallowed reaches is not likely to be an issue as water depths will be sufficient.
- The minimum flow in this situation results in water levels and habitat in these riffles similar to naturally in dry periods (Q3-5). The effect is likely that annual low flow may be reduced to Q2-3.

Guaranteeing eel passage between the power station and the lake requires, in staff's opinion, a guaranteed residual flow release from the dam scour valve combined with the wetted path over the fish pass in Outlet weir 1.

With regard to the natural flushing flow regime, this will not be affected by the MHS and periphyton or sediment accumulation will be no more than natural. Furthermore, the spread of *Didymo* is not considered to be a high risk if basic precautions are taken.

3.3.4.2 Operating Regime Discussion and Suggested Changes

In Council staff's opinion, the adverse effects of the proposed MHS on aquatic ecology are sufficiently significant that the scheme as proposed by NZEL needs to be modified and operated closer to a run-of-the river scheme during critical (low flow) periods while utilizing lake storage particularly outside this period.

The NZEL proposed (1 cumec) residual flow is considered too low and is equivalent to a 1 in 10 year low flow event. It is recommended this flow be increased to the MALF₇ (ie 1.4 cumecs) to reduce adverse effects on invertebrates, yearling trout and to increase blue duck by about 10%. The minimum flow should also be measured at a recorder site 2 located upstream of the sweeping bend rather than at the power station. This also results in a higher residual flow at the power station due to natural inflows below the recorder site.

At low flow and to comply with the WCO, hydro-peaking restrictions will need to apply to the MHS operation and a cease take is also recommended. The trigger for these restrictions is recommended to be when the residual flow of 1.4 cumecs is unable to be maintained at the recorder site as a result of both natural seepage from the natural rock dam and residual flow release by NZEL from the scour valve at Outlet 1.

Under this revised operating regime, it is expected that NZEL would first restrict hydro-peaking in order to maintain 1.4 cumecs while drawing down the lake level. If the dry weather continued to the extent that the lake level approached its minimum level then 1.4 cumecs could no longer be maintained and it is recommended that at this point the power station should shut down. In other words, at all times that the residual flow is below 1.4 cumecs, NZEL would need to demonstrate that the station was shutdown.

In addition, at the point the power station shut downs, the residual flow release from the scour valve will need to cease in order to avoid further lowering of the lake level below its minimum level. A consequence of this revised operating regime is therefore that fish passage cannot be guaranteed whenever the station is shutdown ie due to the residual flow falling below 1.4 cumecs.

An alternative regime could require the station to shutdown earlier than the above trigger. With the station shutdown and the residual flow stopped (or reduced), this would allow for refilling of the lake. However, at low natural inflow to the lake it is unlikely that the lake would refill such that the weirs began to spill. This would be the ideal situation. However, it may be that fish passage has been naturally restricted in the river section immediately below the lake when the lake level was at historical low levels.

To avoid, remedy or mitigate adverse effects, Trevor James suggests the additional following matters should be addressed by conditions if consent is granted:

1. During extended dry periods (annual low flow), the length of time that the MHS is not running and there is no spillage from the lake should be limited to 2 days except under exceptional circumstances.
2. During hydro-peaking practice in dry periods in the year after start-up, monitoring should be undertaken determine if there are any fish strandings and any stranded fish should be transferred to pools in the river.
3. For fish passage through proposed culverts, designs to be supplied to Council for approval prior to the installation being undertaken. A condition relating to monitoring of the culverts to be included. Such monitoring should occur after a Q10 rainfall event or after 5 years, whichever is the shortest.
- 4 Allow for higher flows below the power station during daylight hours to avoid effects on recreation values.

3.3.4.2 Effects on the lake

Trevor James agrees with Brian Sorrell et al that the ecological effects on the lake will be minor if any. There is even a possibility of positive effects. Dr Sorrell and the others in the NIWA team are very experienced (possibly the most experienced in NZ) to comment on these matters.

Council staff are however concerned about the lack of detailed information from NZEL relating to the actual weir construction particularly relating to sediment generation and effects on the lake bed. Staff are also concerned about possible extended lowering of the lake during construction, which has the potential to cause

adverse ecological effects that are more than minor. For example, it will take a period of some days to lower the lake sufficiently to allow construction to commence depending on inflow rates. Weir construction is then proposed to take 7 days. If lake inflows are naturally low, it will then take 3-4 days to refill the lake to its minimum natural level (RL 340.08m) or above. This is a period of up to and possibly exceeding two weeks.

Lowering of the lake post-construction (for maintenance and in emergencies) should have less ecological effect as the lake lowering period can be significantly shorter owing to the lowering of the lake spill point, taking water via the penstock (@ 6.3 cumecs) and discharge via the scour valve. Again, the refilling period will be determined by natural actual inflow rates.

The mussels in the lake should be monitored to determine whether they migrate as expected or whether they may need to be moved in order to keep wetted.

3.3.9 Water Quality

As identified in the AEE, no application has been lodged to discharge contaminated water and NZEL propose that construction activities with regards to contaminant will comply with the Council's permitted activity rules.

NZEL have confirmed they are applying to discharge mineral debris from the dam scour valve at Outlet 1. At Outlet 1, the proximity of Coal Creek will result in gravel and other mineral debris etc generated particularly in floods, accumulating at this location. In addition, fine sediment will build up over time.

The writer's assessment is that, subject to conditions, any effects of such a discharge will be minor provided the discharge occurs in a manner that mirrors what occurs naturally. For example:

The Consent Holder may only discharge mineral debris from behind the dam via the dam scour valve and only when all of the following circumstances exist:

- i) the flow of the Matiri River, as measured at recorder site 2 exceeds XX cumecs;
and*
- ii) the waters of both Coal Creek and the Matiri River are naturally discoloured.*

Records

The Consent Holder shall keep a record of each discharge event including the date, time and duration of the discharge and the flow recorded at the recorder site referred to in Condition 2(i). This recorded data shall be incorporated in the annual report under the heading discharge of mineral debris to be submitted to the Council each year.

3.3.10 Dam Safety

The existing natural dam that created Lake Matiri is understood by the writer to be some 30 metres deep and composed of large sandstone boulders and rock debris in a clay matrix. NZEL have provided few details as to the construction methodology for the three proposed weirs.

NZEL propose that the top of all three weirs be set at the mean lake level of RL 341.00m and the bottom of the sluice gate in the main intake weir is 4m below this.

NZEL propose to undertake works in the bed of Lake Matiri to smooth and lower the natural spill point height from RL 340.31m to RL 339.31m, which is 1.67 metres below the mean lake level of RL 341.00m. The area of the lake is approximately 53 hectares and the storage volume that would be discharged by failure of the main weir is therefore the volume of water above the proposed new spill point height. The volume of this storage is approximately 885,000 cubic metres of water.

While outside the definition of a “large” dam under the Building Act and outside the regulations under the Dam Safety Scheme, the writer’s assessment is the proposed structure poses a risk, albeit small, to downstream river users in the event of a failure of one or more weirs.

Note: The existing natural dam that has created Lake Matiri is not defined as a “large” dam under the Dam Safety Scheme as it is not “ a natural feature that has been significantly modified to function as a dam”.

Limited information has been provided by NZEL regarding safety issues downstream of the proposed weirs. In January 2009, NZEL provided an assessment of a worst case, dry weather failure of Outlet weir 1. NZEL advise that a complete failure of this weir would result in the discharge of 19 cumecs at a full lake level of RL 341.1m. This discharge would continue until the lake had discharged to the new lake spill level of RL 339.3m.

At the time of writing, NZEL had not provided their assessment of the time of travel of such a (dam break) discharge or the increase in water level and velocity at various downstream sites.

Staff’s estimate is that it will take under 30 minutes for the 19 cumecs to reach the power station site and it would raise the water level by some 0.5 metres, with a flow velocity of 1 metre per second. To reach the road bridge it will take a further 30 minutes and another hour to reach the Buller River. This is a total time of 2 hours. This combination of flow and velocity would pose a significant risk to fisherman as the river would be unwadeable..

Notwithstanding the above, the writer’s assessment is that dam failure is not a significant issue due to the low risk of failure and the relatively small volume of water that would discharge. The location is remote with no existing houses or infrastructure (other than the proposed scheme) likely to be affected by dam failure. The worst case scenario results in a flood wave which would be a significant risk for downstream river users but probably little different to what can naturally as a result of a localized rainfall event.

3.3.11 Ramping Rates

A related issue, is the proposed ramping rate that NZEL propose when commencing and ending generation. NZEL advise that they propose ramping generation to full over a period of 5-10 minutes.

From the power station downstream to the Buller River, the riverbed is less steep and travel time will be slower. Furthermore, travel time will vary and increase as river flow increases. Staff's estimate is that it will take one hour (ie double the above time) for a maximum 6.3 cumec discharge from the power station to reach the bridge and the increase in water level will clearly be significantly less than 0.5 metres as will the flow velocity be less than 1 metre per second. To reach the Buller River will take around 4 hours. This combination of flow and velocity would pose a significantly lesser risk to fisherman.

The writer's assessment is that appropriate public signage is clearly required and this could extend to the MHS operating regime. In addition, a consent condition should require appropriate signage and restricted ramping rates to give some warning to river users. The use of sirens is not considered appropriate in this area.

Council's hydrologist Martin Doyle has suggested that it may be appropriate, if consent is granted, to require a temporary third water level recorder at a downstream site on the Matiri River between the bridge and the Buller River. The purpose of flow recorder site 3 would be just to monitor water level fluctuation post construction to answer questions such as travel time and flow attenuation. Again, if adopted the exact location of recorder site 3 needs to be identified by the Council's hydrologist on-site and this can be in consultation with the Consent Holder.

3.3.12 Other Part II Matters

Various matters in Section 7 and matters of national importance in Section 6 are relevant to the taking and use of water. The Committee is required to have regard to the relevant matters, to weigh the pros and cons of the scheme as proposed and decide whether the purpose of the Act is achieved. For this application, particularly relevant is the need to safeguard the existing river and lake ecosystem and avoid, remedy or mitigate any adverse effects. Various opposing submitters are critical of the lack of volunteered mitigation by NZEL. If the Committee uphold these submissions, it may decline the application or impose restrictions on scheme operation and/or require mitigation.

3.3.12.1 Amenity

With regard to the amenity value of the river for canoeing, NZ Recreational Canoeing Association and submissions from individual canoeists oppose the potential adverse effects on the kayak amenity in the Matiri River and consider the effects are not justified by the expected hydro energy generation.

The writer understands that it is common ground that the highly regarded canoeing amenity during flood flows in the Matiri River is unaffected by MHS and, in fact, it could benefit if real time river flow data was available online for canoeists. Improved access to the Matiri River from the upgraded road is also a plus.

The writer's understanding is that the proposed operating regime will have adverse effects. If there was no hydro-peaking, river flow would be unaffected and therefore canoeing would be unaffected as it occurs on the Matiri River downstream of the West Branch confluence ie downstream of the power station discharge.

The adverse effects of hydro-peaking on river users will be greatest at flows under NZEL's "Scenario 2" and below 7.3 cumecs inflow, which is for 157 days per year:

".. when MHS will operate at up to maximum output of 6.3 cumecs for a variable number of hours per day to ensure the lake refills to approximately the same level each day.."

The adverse effects on canoeing (and other river users) ranges from strictly safety issues from fluctuating flows to adverse affects on "enjoyment" of the river for fishing and swimming etc. These adverse affects could be mitigated in part by the provision of appropriate signage and a well advertised (eg on-line) operating regime that would notify river users of the timing and duration of the flow. There could also be a restriction placed on hydro-peaking at weekends.

If consent is approved it would be appropriate that NZEL provide real time data (refreshed hourly) on a website for their recorder sites 1 and 2 (ie lake level and residual flow) plus real time generation data converted to flow. This will allow the public to maximise the available amenity value of the Matiri River.

3.3.12.2 Mauri

Section 7(e) requires Council to have regard to the relationship of Maori regarding water. In this regard, a decision requiring a higher residual flow and a reduction in hydro peaking will address, in the writer's opinion, the impact of the proposed damming, taking and use on the mauri of the Matiri River below the outlets.

3.3.13 Mitigation

Several submitters are critical of the lack of volunteered mitigation.

Given the 15% loss in invertebrate productivity and yearling brown trout (Jowett in Assessment of Environmental Effects) it is appropriate that some off-set mitigation be provided. Options for this include setting up a Blue Duck recovery programme for the Matiri catchment in cooperation with Department of Conservation. A list of mitigation options is in Appendix 5 and includes this option.

3.3.14 Insurance and Bonding

Some submitters raise the example in countries such as the USA where owners have abandoned schemes eg the Eileen dam on the Moyie River in Northern Idaho. Built in 1926, this dam, penstock and power house were never commissioned because it became cost inefficient just as they finished building it and a new improved scheme with bigger, better turbines was built downstream.

Part of the left side of the dam has since been blown out to allow river flow and for flooding, which was the case for the Brooklyn dam above Motueka. There are reportedly around 2,500 of such abandoned schemes and submitters see this

situation occurring in NZ and the TDC inheriting abandoned schemes including this Matiri proposal. Other existing Nelson examples include those that DoC has inherited including Maruia, Druggans Dam and Para Para. All are quite small schemes compared to some of the USA examples including the Eileen dam.

Tools available to TDC include requiring from applicants financial contributions or bonds and conditions requiring public liability insurance to be held.

Public liability insurance is commonly required for large dams in Tasman District if there is a risk to public and private property assets if the dam were to fail.

4. RECOMMENDATION AND DRAFT CONSENT CONDITIONS

The overall assessment of the damming, taking and use and discharge activities assessed by the writer in this report is that the MHS proposal does not achieve the purpose of the Act of sustainable management of the region's water resources. Various of the submitter's concerns assessed in this technical reports are considered to be upheld and both the writer and Trevor James are of the opinion that the MHS requires modification if the Committee is of a mind to grant resource consent to NZEL.

The writer's recommended conditions of consents relating to the damming, taking, use and discharge of water are attached below.



Neil Tyson
Consent Planner

Attachment: Draft Consents and Conditions

Damming Water Permit RM060939

(Scour Valve) Discharge Consent RM090023

Details of the following draft consents to be confirmed by Committee



Resource Consent Decision

Resource Consent Number: RM060939 and RM090023

Pursuant to Section 104B of the Resource Management Act 1991 (“the Act”), resource consent is hereby granted to:

New Zealand Energy Limited
(hereinafter referred to as “the Consent Holder”)

Activity authorised by this consent:

To dam Lake Matiri for the purposes of hydro-electric power generation behind three weir structures

To discharge mineral debris and associated water from the dam scour valve

Location details:

Address of property: Matiri Valley, Murchison

Valuation number: Crown land (and possibly DoC 1862051000)

Legal Description: Sec 1 SO 15298 (and possibly DoC Sec 39 SO 15250)

Pursuant to Section 108 of the Act, RM060939 and RM090023 are granted for a term expiring on **31 May 2019** and subject to the following conditions:

Note: For this consent, the acronym “MHS” refers to the Matiri Hydro Scheme.

Conditions

1. Site and Dam Details:

River or Stream Being Dammed:	Matiri River – immediately below Lake Matiri
Zone, Catchment:	Upper Buller, Buller Catchment
Catchment Area (km ²):	134
Live Storage (m ³):	540,000 (53ha x 10000 X 1.02)
<u>Dam Details</u> - Weir Outlet 1:	
Crest Level (m):	341 RL
Dam storage (m ³):	885,000 cubic metres approx (53000 X 1.67m)
Maximum Crest Height (m):	4
Crest Length (m):	20
Location: Easting:	Northing: (NZ Map Grid)

Dam Details - Weir Outlet 2:

Maximum Crest Height (m): 1.8
Crest Length (m): 20
Location: Easting: Northing: (NZ Map Grid)

Dam Details - Weir Outlet 3:

Maximum Crest Height (m): 1.8
Crest Length (m): 20
Location: Easting: Northing: (NZ Map Grid)

Advice Note:

Consent RM060939 authorises the “damming” of water, and the dam structure(s) (behind which the water is being dammed and stored) is authorised by separate resource consent (RM060937).

Outlet 1 Structures

2. Outlet 1 weir shall be designed and constructed to include, amongst other things, a scour valve suitable for the release of a variable residual flow from this dam and a fish ladder and provision of a wetted surface sufficient for eel passage over this weir at all flows when the weir is not spilling.

The design of the Outlet 1 weir shall be by a suitably qualified expert in eel passage and the design shall be submitted to the Council and written approval obtained prior to any construction.

MHS Operation

3. At no time shall this consent be exercised in a manner that contravenes the Water Conservation (Buller River) Order 2001 and, in addition, the following shall apply:
 - 3.1 Generation shall involve a gradual on and off water take not exceeding the rate of 600 litres per minute; and
 - 3.2 The maximum daily lake level fluctuation of Lake Matiri shall not exceed the range RL 341.1m to RL 340.08m (ie 1.02m); and
 - 3.3 The minimum water level of Lake Matiri shall not fall below RL 340.08m.

Advice Note

The Consent Holder is authorized under separate consent RM060937 to lower the level of Lake Matiri to RL 339.58 during initial construction of the weirs only.

Residual Flow Release

4. The Consent Holder shall release sufficient water from the scour valve at Outlet 1 such that:
 - 4.1 the flow of the Matiri River, as measured at the flow recorder site 2 required to be operated in accordance with Condition 9, is at all times equal to or greater than 1,400 litres per second; and

- 4.2 eel passage between Lake Matiri and the (Matiri River) East Branch is maintained and, as a minimum, the Consent Holder shall release sufficient water from the dam scour valve to maintain a continuous wetted surface(s) of at least 200mm wide to the point where continuous surface flow has emerged from the natural rock dam.

In addition, a wetted surface sufficient for eel passage shall be provided and maintained over the Outlet 1 weir which shall connect and operate in conjunction with the fish ladder; and

A plunge pool shall be provided at the bottom of the continuously wetted surface to provide for downstream-migrating fish.

5. Notwithstanding Condition 3, in the event that the residual flow as measured at recorder site 2 is unable to be maintained then the residual flow may fall below 1,400 litres per second provided that the power station is shutdown (ie no taking and use of water) a minimum of one week (seven days) prior to the flow falling below 1,400 litres per second and provided that the power station remains shutdown for the entire period that the flow is less than 1,400 litres per second.

Note: The intention is that generation is restricted during low flow events including that hydro-peaking ceases and the power station shutdowns down when the Matiri River falls below 1,400 litres per second.

6. In the event that the station is shutdown in accordance with Condition 5, the residual flow required to maintain eel passage under Condition 4.2 shall cease only if the minimum water level of Lake Matiri has fallen to the minimum level of RL 340.08m. The residual flow release required under Condition 4.2 shall recommence when the lake level recovers to RL 341.00m.

Maintenance Lake Lowering

7. Notwithstanding Condition 3.3, subject to the following the water level of Lake Matiri may be drawn down below RL 340.08m for maintenance purposes provided:
- 7.1 The Consent Holder having fully considered the reasons for the proposed lowering considers there is no practical alternative; and
- 7.2 The Consent Holder shall first notify the Council's Co-ordinator Compliance Monitoring and the Department of Conservation in writing at least one week (seven days) prior to such proposed drawdown event and give the reasons for the proposed lowering and obtain the Council's written approval; and
- 7.3 The Consent Holder shall, in addition, notify the Council's Co-ordinator Compliance Monitoring by telephone or email when the lake level reaches RL 340.08m; and
- 7.4 The lowering of the lake below RL 340.08m for maintenance reasons shall be for a maximum period of 24 hours and all practical effort shall be made to avoid hot, drying weather.

- 7.5 Public notice of the proposed lowering shall be provided on the consent holder's webpage giving the date of the proposed event a minimum of 24 hours prior to the event.

Advice Note

Mussels (kakahī) and marginal lake vegetation and wetlands are most vulnerable during lake lowering and when ambient air temperatures are over 18°C on sunny days.

Emergency Lake Lowering

8. Notwithstanding Conditions 3.3 and 7, the water level of Lake Matiri may be drawn down below RL 340.08m for emergency repairs because of any unforeseen dam safety issue provided the Consent Holder shall notify the Council's Co-ordinator Compliance Monitoring of the event; and of the cause of the event, within 12 hours of the drawdown and all practical effort shall be made to minimize the period of drawdown.

Advice note:

The Council may grant exemptions to the Water Conservation (Buller River) Order 2001 pursuant to Clause 14 of that Order.

Flow Recorders

9. The Consent Holder shall operate and maintain two flow recorders at the following locations:
- Flow recorder site 1: Lake Matiri (lake level) Recorder: at the existing site in Lake Matiri at or about grid coordinates XXXXXXXXE: XXXXXXXXN, located approximately 70 metres upstream of the weir at Outlet 1; and
 - Flow recorder site 2: Matiri River (residual flow) Recorder: Up stream of the East Branch of the Matiri River in the dewatered zone (the exact location to be identified by the Council's Co-ordinator Environmental Monitoring (Martin Doyle) in consultation with the Consent Holder).
 - Flow recorder 1 shall be fully operational no later than six months prior to construction commencing while flow recorder 2 shall be fully operation prior to the starting of the construction of the scheme and the recorders shall comply with the requirements for flow recorders specified in Schedule 1 of the Monitoring Programme that forms part of this consent.

Monitoring Programme

10. The Consent Holder shall monitor the exercise of this consent in accordance with the Monitoring Programme specified in Schedule 1 attached to, and forming part of, this consent.

Annual Report

11. The Consent Holder shall prepare an annual report each year during the currency of this consent which summarises the results of monitoring required by and undertaken in accordance with this consent. This report shall be submitted to the Council's Co-ordinator Compliance Monitoring by 1 July of each year. The report shall cover the preceding period 1 May – 30 April.

The annual report shall include statements relating to the parameters identified in the Monitoring Programme in Schedule 1.

Exceedance Reporting

12. If monitoring results indicate the exceedance of the maximum limits specified in the consent conditions, the Consent Holder shall immediately notify the Council's Co-ordinator Compliance Monitoring and follow-up with a written report to that identifies why and how this exceedance occurred. If the exceedance is caused by the exercise of this consent, or by the MHS generally, then a further report shall be provided within three months detailing what measures will be employed to avoid, remedy, or mitigate any future exceedance.
13. Any non-compliance shall be reported to the Council's Co-ordinator Compliance Monitoring within 72 hours of the event occurring unless a condition of this consent requires a different reporting timeframe.

Emergency Action Plan

14. The Consent Holder shall prepare prior to the commissioning of the MHS and, thereafter, have in place at all times an MHS Safety and Emergency Action Plan which may be reviewed from time to time and modified by agreement between the Consent Holder and the Tasman District Council.
15. The initial Emergency Action Plan shall be supplied to the Council no later than three months following commissioning of the MHS.
16. The Consent Holder shall review the Emergency Action Plan five yearly and supply a copy of the updated document to the Tasman District Council.

MHS Maintenance

17. Until such time as the scheme is removed, the Consent Holder and/or the owner is required to maintain the weirs and all associated structures and scheme infrastructure in a good state of repair.

Review

18. Council may, for the duration of this consent and within the three month period following the anniversary of its granting each year, review the conditions of the consent pursuant to Section 128 of the Resource Management Act 1991 for the purposes of:
 - a) To address any unexpected adverse effect on the environment which may arise from the exercise of this consent, including adverse effects on the uses and

values of Lake Matiri, on fish passage, on downstream landowners, downstream water users and/or on instream values. Any such review may include a review of the continuation flows required to be maintained downstream of the dam as specified in conditions of this consent; and

- b) To change or add best practicable options to remove or reduce any adverse effect on the environment; and
- c) To change any aspects of this consent following any event that causes the Emergency Action Plan to come into effect; and
- d) To change part of the monitoring programme on the basis of the appropriateness or usefulness of the monitoring or the need for further monitoring; and
- e) To address any adverse effect on the freshwater mussels including requiring a recovery plan to be written and any reasonable recommendations acted on.

Discharge from Scour Valve

19. The Consent Holder is hereby authorised to discharge mineral debris from upstream of the dam via the dam scour valve provided that the following circumstances exist:
- i) the flow of the Matiri River at the dam exceeds approximately 35 cumecs; and
 - ii) the colour of the discharged water is not appreciably different to that of Coal Creek; and
 - iii) The Consent Holder shall keep a record of each discharge event including the date, time and duration of the discharge and this shall be incorporated in the annual report under the heading discharge of mineral debris.

Insurance Cover

20. The Consent Holder shall obtain, and provide evidence of, a minimum \$2 million public liability insurance cover to Council before commencing work and shall maintain this cover throughout the life of the MHS and produce evidence of cover on request.

Bond

21. The Consent Holder shall enter into and provide a bond of a minimum \$1 million to cover the Council should the MHS fail for any reason with the bond paid prior to commencing any construction work.

SCHEDULE 1

MONITORING PROGRAMME

The Consent Holder (or its authorised agent) shall monitor Resource Consents RM060939, RM060940, RM060941 and RM090023 in accordance with the following monitoring programme and an annual report shall be provided.

1. Sites

The following sites shall be monitored:

Site Number	Location Description	Grid Reference	Reason for site
1	Lake Matiri margin (to be identified)		To assess the health of vegetation that may indicate any adverse effects from lake level fluctuation
2	Lake Matiri (to be identified) to include an area of Mussels		To assess the health of mussel beds that may indicate any adverse effects from lake level fluctuation
3*	Lake Matiri at the lake outlet	50m each side of a line from: E2454520 N5949280 to E2454645 N5949260	To assess sedimentation and visual effects of vehicle and machinery across this area.
4*	Matiri River ~1.5km upstream of Matiri River East Branch (200m upstream of the sweeping bend)	E2454055 N5948770	To assess the effects of sediment discharges from the works around the lake outlet and above the works associated with roading and penstock construction.
5*	Matiri River ~500m upstream of Matiri River East Branch	E2453890 N5948070	To assess the effects of sediment discharges from the works associated with roading and the penstock construction
6	East Branch (comparable riffle site to be identified)	TBA	Reference site for trends in invertebrate community. Note: Although this river is not lake-fed, and therefore will have different invertebrate and fish communities, it will be useful to explain whether any changes over time are related natural environmental factors.
7	Matiri River ~500m downstream Matiri River East Branch (downstream powerhouse)	E2453670 N5947100	To assess the effects of water level fluctuations.
8*	Matiri River Immediately upstream of the confluence with the Matiri River West Branch		During scheme construction
9	Matiri River ~1km downstream lower road bridge	E2454220 N5938275	To assess the effects of water level fluctuations in a riffle most vulnerable to water level fluctuations.
10*	Matiri River immediately downstream of the confluence with the Buller River. titi		During scheme construction

* At these sites during scheme construction only.

2. Monitoring Parameters and Methodologies

2.1 Invertebrates

At sites 4, 5, 6, 7 and 9 a macro-invertebrate sample shall be collected using a hand-net (0.5 mm mesh). Sample collection shall follow “*Protocol C1*” and these samples shall be processed according to “*Protocol P1 (Coded Abundances)*” as outlined in “*Protocols for sampling macroinvertebrates in wadeable streams*” (Stark *et al*, 2001: New Zealand Macroinvertebrate Working Group Report No. 1. Prepared for the Ministry for the Environment. Sustainable Management Fund Project No. 5103). Macroinvertebrates shall be identified to the taxonomic level required for calculation of the Macroinvertebrate Community Index (MCI) or better.

Data analyses shall include calculation of taxa richness (*i.e.*, number of taxa per sample), EPT richness and EPT percent (*i.e.*, the number of **E**phemeroptera (mayfly), **P**lecoptera (stonefly) and **T**richoptera (caddisfly) taxa present in the sample), and the two biotic indices: MCI and SQMCI.

2.2 Mussels

Freshwater mussels in the lake shall be monitored to determine their abundance and distribution before and after the construction of the scheme and 1-3 months after each lake lowering event.

2.3 Lake Margin Vegetation

A appropriately qualified expert shall:

2.3.1 Undertake a survey of the forest edge at the lake margin sufficient to detect if any woody plants are dying. This survey shall be done at several sites around the lake at a similar time of the year. Set photographic points shall be set up (fixed location, zoom and viewing angle) to enable photos to be compared over time. Photos should be taken in similar weather (light conditions) to make comparisons possible. GPS coordinates for these points shall be provided. If any death of trees appeared to be occurring, ground surveys could then be conducted via fixed plots or transects.

2.3.2 Herbaceous sedges. Photographic analysis shall be proved using the methods in 2.3.1 above. Comments shall be made as to the change in short vegetation that waterfowl use to loaf on.

2.4 Fish

Native fish shall be monitored. The presence or absence of fish shall be recorded and compared to their distribution as recorded in the IFIM and AEE.

At each site, a tape shall be laid out to ensure a 30 metre reach is being fished, but upstream and downstream stop-nets need not be used. The entire reach shall be fished methodically (working back and forth across the river using a battery-powered backpack electric fishing machine) in an upstream direction, and the catch retained. This process shall be repeated until at least a 50% reduction in the most common

species has been achieved. Usually this occurs with two passes, but sometimes three are required.

All fish shall be identified to species level (including elvers and small bullies), measured, and returned alive to the reach at the end of sampling. The relative abundances (abundant, common, occasional, rare or none) of koura shall be recorded. Five wetted width measurements taken along the reach shall be used to calculate the area fished, and the maximum water depth shall be recorded as a spot measurement. Other records shall be taken according to the NZ Freshwater Fish Database forms.

The number of each species in each reach is estimated using the multi-pass data and standard equations. This shall be reported as fish per 100 m² or per linear metre of stream.

The river from upstream of the big bend to the downstream end of the penstocks shall be inspected on at least three occasions immediately after a hydro-peaking event for fish strandings. Number of fish, fish species and size shall be recorded.

A series of observations shall be carried out at the weirs during eel migration to determine the effectiveness of the fish pass.

Data shall be supplied to the National (NIWA) Freshwater Fish Database.

2.5 Sediment

2.5.1 Bed substrate

At sites 3, 4 and 5 stream substrate particle size composition (*i.e.* % boulder, cobble, gravel, fine gravel, sand, silt), based upon visual estimation in 10 quadrants distributed at random within the wetted perimeter at each of the sampling sites referred to in Section 1.0 (above), shall be assessed.

2.5.2 Fine sediment bedload

Within cobble riffle habitat in the Matiri River re-suspendable solids shall be sampled using the modified Quorer method shall be used (see appendix A). *It may not be possible to sample using this method at site 4 due to the dominance of boulders.*

2.5.3 Suspended Sediment

Turbidity, suspended solids and water clarity measurements taken at the same time can determine the source of sediment.

Automated turbidity sensors should be placed within an in-line darkened stilling chamber of continuously pumped river water. Note: This ensures fouling does not occur and helps reduce the occurrence of erroneous spikes in the data. A quality control plan for the continuous turbidity measurements shall be provided to Compliance Monitoring Coordinator for approval one month prior to any works in the lake or river.

3. Monitoring Frequency

Macro-invertebrate community monitoring and sediment analyses shall be monitored **bi-annually during either March or April and October or November** for the first three years following commissioning and a year prior to commissioning and thereafter a minimum of 5 yearly. Monitoring shall be carried out following a period of at least 10 days of stable or receding flow conditions in the Matiri River. The preceding weather and flow conditions shall be recorded.

Fish populations shall be monitored **bi-annually during either March or April and October or November** for the **first three years** following commissioning and a year prior to commissioning and then at **five yearly** intervals thereafter.

Table 1: Sampling Frequency and Compliance Limits

Parameter	Method	Sampling Frequency	Compliance Limit	Site	Note
Water level and flow	See Martin D	15 minutes	Residual flow >1.4 cumecs	Flow recorder sites 1 and 2	
Rainfall	See Martin D	30 minutes	n/a		
Turbidity (continuous)	Proprietary automated turbidity probe	5 minute sampling intervals Monthly calibrations	<50 NTU median over any 20 minute period* or <20 NTU median over any 40 minutes# or <10 NTU median over any 2 hour period^	Flow recorder sites 1 and 2 and logging data sonde moved downstream of construction as this activity moves	* Median of 3 consecutive measurements # Median of any 6 consecutive samples ^ Median of any 24 consecutive samples
Turbidity (discrete)	APHA 21 st Edn 2130 B	Weekly during construction and bi-annually in spring and autumn thereafter	<50 NTU for any sample and <10 NTU for the median of 4 consecutive samples	Sites 3, 4, 5, 6, and 7	
Water Clarity	Horizontal sighting of a 200mm black disc	Weekly during construction and bi-annually in spring and autumn thereafter	Not more than 40% change between upstream and downstream sites	Sites 3, 4, 5, 6, and 7	
Suspended Solids (FSS and VSS)	APHA 21 st Edn 2540D	Weekly during construction and bi-annually in spring and autumn thereafter	<50 g/m ³ for any sample and <10 g/m ³ for the median of 4 consecutive samples	Sites 3, 4, 5, 6, and 7	FSS and VSS measured separately and summed to give the TSS
Bed substrate	Random quadrats	Weekly during construction and bi-annually in spring and autumn thereafter	No more than 30% change of any fine sediment (particles less than 2mm) upstream compared to downstream	Sites 3, 4, 5, 6, and 7	
Bed fine sediment	See Appendix	Weekly during construction and	No more than 30% change upstream	Sites 3, 4, 5, 6, and 7	Composite sample

	A	bi-annually in spring and autumn thereafter	compared to downstream		acceptable
pH	APHA 21 st Edn 4500 HB	Daily during concrete pours within 2m of the waterway	No more than 1 pH unit change to cause pH to be outside the range 6.0 and 8.5	Sites 3, 4, 5, 6, and 7 (as applicable)	Intensive monitoring in the day before, during and after any concrete pouring within 2m of the waterway.
Lake marginal vegetation	TBA	One month after each lake lowering event (unless the event is for less than one day and not during hot and dry weather)	No adverse effect	Site 1	Surveys before and after lake lowering events. Design of monitoring programme to be determined
Mussels	TBA	As above	No adverse effect	To be determined but Site 2 should be one site	Surveys before and after lake lowering events
Macro-invertebrates	Protocol C1 and P1 in: the NZ Protocols for Sampling Macro-invertebrates in Wadeable Streams, 2001"	Bi-annually spring and autumn	No adverse effect	Sites 4, 5, 6, 7, and 9	
Fish	Electric fishing machine and spotlighting	Bi-annually spring and autumn	No adverse effect	Sites 4, 5, 6, 7, and 9	

4. Flow Recorder Requirements

The Consent Holder is required to operate and maintain a minimum of two flow recorders at the sites specified in consent RM060939. Each recorder shall be capable of recording flow or lake level at intervals of 15 minutes. The following standards and requirements shall apply as a minimum:

- Continuous flow data refreshed hourly shall be made available provided on a publicly accessible website.
- Audited and verified data shall be provided to Council at an interval not greater than (3) months and any missing record accounted for.

- The Consent Holder shall aim to have less than 2% missing data and any missing data in any three month period.
- With regard to measuring natural stream flow, this will require a suitable river gauging site and installed staff gauge, recorder, data supply etc.
- Water level shall be recorded at an interval of not more than 15 minutes, utilising a sensing device capable of measuring water level to within +/- 3mm without accuracy drift over time and generally in accordance with ISO 1100- 1 (Establishment and Operation of a gauging station).
- Flow measurements to create and check the rating curve should be carried out within an accuracy of +/- 8%, and at a frequency to fully define the rating curve for the site at least 98% of the time. Gauging accuracy shall be calculated by ISO 748 (Measurement of liquid in open channels – Velocity-area method)
- Flow measurements and derivation of the rating curve should be carried out by a suitably experienced practitioner acceptable to the Council. The results of the flow measurements shall be provided to Council as soon as practicable after they have been completed.
- The rating curve shall be given with each water level dataset that is provided to Council as shall the flow measurements that make up that relationship, and any changes to previous relationships that have been calculated since that relationship was last provided to Council.
- Water level data shall be presented in a Tideda file, or as a comma separated ASCII file that can be read into Tideda, or the time series database currently used by Council.
- The relationship between water level and flow shall be provided as a Tideda rating, or as a series of paired points suitable for importation into Tideda.
- The accuracy and makeup of the data provided to Council shall meet the approval of the Co-ordinator, Compliance Monitoring.

5. Generation Record Requirements

The Consent Holder shall record and provide on their website either the rate of taking and use or the rate of discharge of water passing through the power station. The data may be derived from the generation record or it may be actual water flow recorded for the tailrace or penstock. However, the data shall be accurate to +/- 5%.

This data shall also be captured and recorded such that the ramping rate can be monitored. Given the authorised ramping rate, an appropriate recorder is therefore an event recorder capable of logging at one minute intervals during ramping but other only recording changes in the rate of taking or discharge.

6. Annual Report

The Consent Holder shall prepare an annual report each year during the currency of this consent which summarises the results of monitoring required by and undertaken in accordance with this consent and other relevant consents. This report shall be submitted to the Council's Co-ordinator Compliance Monitoring by 1 July of each year. The report shall cover the preceding period 1 May – 30 April.

To summarise, the annual report shall include the following:

- a summary of the monitoring required by the conditions of this consent and the results of any such monitoring. An analysis of that information in relation to compliance with all scheme related consents is required.
- a comparison of the monitoring information with that from previous reporting periods to identify any trends in effects, particularly in relation to aquatic ecosystems in Lake Matiri and the Matiri River. Such trend analysis shall be based on all monitoring data collected including information provided in the Assessment of Environmental Effects or elsewhere.
- In the event of a result which does not comply with conditions in the consent a detailed description of reasons why this may have occurred and every corrective action taken to avoid any subsequent non-compliance or further monitoring to determine reasons for the non-compliance.
- a summary of any complaints received regarding any of the activities authorised by this consent. A summary of any action taken by the consent holder in response to all complaints received.
- an outline of the maintenance schedules for the current year together with an outline of any other such works that are proposed to be undertaken during the following 18 months to improve environmental or safety performance.
- a summary of discharges from the dam set out on daily basis and an explanation of any continuous discharge to maintain the residual flow.
- the results of any Operational Review or Emergency Action Plan Review undertaken. Notice of any such reviews to be undertaken over the following 18 months.
- any recommendations regarding alterations to the monitoring and reporting conditions attaching to the consents. Any other issues considered important by the consent holder.
- All calibration and monitoring equipment and maintenance records as well as quality control samples such as duplicates (to be appended).

The annual report shall be provided in both hard copy and electronic format and in a format that is acceptable to the Council.

8. Complaints Register

The Consent Holder shall maintain and keep a Complaints Register to record all complaints received by the Consent Holder (or any of its agents, employees, contactors or assigns) about any activities that arise out of the exercise of this and other scheme related consents including , but not limited to, in relation to: the degradation of water quality; adverse effects on aquatic ecosystems or wildlife; the impedance of public access to or along watercourses and/or the safety of any structures or operational practices. The register shall record:

- i) the name of and any known expertise or qualifications held by the complainant;

- ii) the location of the complainant when the incident was detected, and the subject matter of the complaint.
- iii) the date, time and duration of the incident or matter that resulted in the complaint;
- iv) the likely or possible cause or causes of the incident (if known);
- v) the nature of any corrective action undertaken by the Consent Holder in response to the complaint.

The register shall be available to the Tasman District Council on working days.

Complaints received by the Consent Holder that indicate non-compliance with the conditions of this resource consent shall be forwarded to the Tasman District Council within 48 hours of receipt.

A summary of any complaints received regarding any of the activities authorised by this consent and a summary of any action taken by the consent holder in response to all complaints received shall be provided each year in the annual report.

Appendix A

Resuspendable Solids Field Method

Based on a method by Quinn JM, Cooper AB, Davies-Colley RJ, Rutherford JC, Williamson RB, 1997. Land Use effects on habitat, water quality, periphyton and benthic invertebrates in the Waikato, New Zealand, hill-country streams. NZ Journal of Marine and Freshwater Research 1997 Vol 31: 579-597

Select one reach (or two if the situation is highly variable or critical) upstream of a discharge or earthworks activity (or in a reference catchment if this is not possible) and the one or more reaches downstream. Select 5 sub-sample sites within a typical run or runs within the test reach.

At each sub-sample site carry out the following:

1. Work a cylinder (such as a barrel with the base cut out) of at least 23cm diameter into the stream bed to a depth of approx. 5cm. Large cobbles can be removed from the cylinder and placed against the cylinder on the outside to help anchor the cylinder.
2. Determine the volume of water in the cylinder by taking 10 depth measurements from the water surface to the bed.
3. Vigorously stir the bed sediments to 5-20cm depth from the top of the bed so the water inside the cylinder is well-mixed.
4. In its mixed state take a 1 litre sample.
5. Sub-samples from each reach may be composited prior to analysis. Care must be taken to maintain cleanliness in vessels used to mix samples to form the composite.
6. In some circumstances it may be useful to analyse the sample for dry mass and ash free dry mass and calculate suspended inorganic sediment ($\text{g inorganic sediment m}^{-2}$) ie if the discharge has a certain proportion of inorganic versus organic sediment this can be matched to that in the receiving stream.



Resource Consent Decision

Resource Consent Number: RM060940 and RM060941

Pursuant to Section 104B of the Resource Management Act 1991 (“the Act”), resource consent is hereby granted to:

New Zealand Energy Limited
(hereinafter referred to as “the Consent Holder”)

Activities authorised by these consents:

RM060940 - Take surface water and storage from Lake Matiri and use water for the purposes of hydro-electric power generation.

RM060941 - Discharge water to water from the hydro-electric power station.

Location details:

Address of property:	Matiri Valley, Murchison
Valuation number:	Crown land (and possibly DoC 1862051000)
Legal Description:	Sec 1 SO 15298 (and possibly DoC Sec 39 SO 15250) and (possibly)(NZEL land) Sec 3 Blk V Matiri SD

Pursuant to Section 108 of the Act, RM060940 is granted for a term expiring on **31 May 2019** and subject to the following conditions:

Note: For this consent, the acronym “MHS” refers to the Matiri Hydro Scheme.

CONDITIONS

Site and Take Details

1. Category of Water Source: Surface and Storage
Name of Source: Lake Matiri and Matiri River
Catchment: Upper Buller
Maximum rates of take authorised: 6,300 litres per second
River number: R.594
Location Co-ordinates: Easting: Northing: (New Zealand Map Grid Datum)
2. The Consent Holder is hereby authorised to take and use water up to a maximum rate of 6,300 litres per second for the purpose of hydro power generation.

Scheme Operation

3. The Consent Holder shall restrict their taking and use of water such that at no time shall it contravene the Water Conservation (Buller River) Order 2001 and, in addition, the following shall apply:
 - 3.1 Generation shall involve a gradual on and off water take not exceeding the rate of 600 litres per minute; and
 - 3.2 The maximum daily lake level fluctuation of Lake Matiri shall not exceed the range RL 341.1m to RL 340.08m (ie 1.02m); and
 - 3.3 The minimum water level of Lake Matiri shall not fall below RL 340.08m.

Maintenance of Residual Flow

4. The Consent Holder shall restrict their taking and use of water such that:
 - 4.1 the flow of the Matiri River measured at the flow recorder site 2 (see location details in Condition 9 RM060939) is at all times equal to or greater than 1,400 litres per second; and
 - 4.2 there is adequate flow for eel passage between Lake Matiri and the (Matiri River) East Branch in both directions.
5. Notwithstanding Condition 4, in the event that the residual flow in the Matiri River measured at recorder site 2 is unable to be maintained then the residual flow may fall below 1,400 litres per second provided that the power station is shutdown and there is no taking of water pursuant to this consent a minimum of one week (seven days) prior to the flow falling below 1,400 litres per second and provided that the power station remains shutdown for the entire period that the flow is less than 1,400 litres per second.

Note: The intention is that generation is restricted during low flow events including that hydro-peaking ceases and the power station shutdowns down when the Matiri River residual flow falls below 1,400 litres per second.

6. Once the power station is shutdown in accordance with Condition 5, generation shall only recommence if the lake has refilled to RL 341.00m and only if all other conditions of consent are complied with.

Maintenance Lake Lowering

7. Notwithstanding Condition 3.3, subject to the following the water level of Lake Matiri may be drawn down below RL 340.08m for maintenance purposes provided:
 - 7.1 The Consent Holder having fully considered the reasons for the proposed lowering considers there is no practical alternative; and
 - 7.2 The Consent Holder shall first notify the Council's Co-ordinator Compliance Monitoring and the Department of Conservation in writing at least one week (seven days) prior to such proposed drawdown event and give the reasons for the proposed lowering and obtain the Council's written approval; and

- 7.3 The Consent Holder shall, in addition, notify the Council's Co-ordinator Compliance Monitoring by telephone or email when the lake level reaches RL 340.08m; and
- 7.4 The lowering of the lake below RL 340.08m for maintenance reasons shall be for a maximum period of 24 hours and all practical effort shall be made to avoid hot, drying weather.
- 7.5 Public notice of the proposed lowering shall be provided on the consent holder's webpage giving the date of the proposed event at least 24 hours prior to the event.

Advice Note

Mussels (kakahī) and marginal lake vegetation and wetlands are most vulnerable during lake lowering and when ambient air temperatures are over 18°C on sunny days.

Emergency Lake Lowering

8. Notwithstanding Conditions 3.3 and 7, the water level of Lake Matiri may be drawn down below RL 340.08m for emergency repairs because of any unforeseen dam safety issue provided the Consent Holder shall notify the Council's Co-ordinator Compliance Monitoring of the event; and of the cause of the event, within 12 hours of the drawdown and all practical effort shall be made to minimize the period of drawdown.

Other flows

9. Provided the other conditions of consent are complied with, during the summer months (November to April inclusive) there shall be minimum period of 4 hours continuous generation during daylight hours each weekend, on both Saturday and Sunday, and generation times shall be advertised on the Consent Holder's publicly accessible website 24 hours prior to the event.

Records

10. The Consent Holder shall keep records of the instantaneous rates of taking and use or the discharge of water. The Consent Holder shall make these records available to the Council's Co-ordinator Compliance Monitoring upon request. The Consent Holder may use power generation figures as a surrogate for instantaneous rates of taking as provided for in Conditions 12 and 13 of this consent. In the event that power generation figures are used as a surrogate for rates of taking, the Consent Holder shall convert the record of the power generated within the power station to flow to an accuracy of +/-5%.

Advice Note:

The Consent Holder is not required to separately record the rate of discharge from the power station to the Matiri River versus the rate of taking and use as they will always be the same.

The records of instantaneous taking, using of discharge of water is recorded each minute. This sampling frequency is to provide sufficient detail to show ramping of the water take.

If the applicant installs more than one turbine we expect that the discharge from each turbine will be logged to provide an accurate flow rate.

11. The Consent Holder shall prepare an annual report which summarises the rates of water taken or discharged for power generation, based on the records required to be kept in accordance with Condition 6 and this report shall be submitted to the Council's Co-ordinator Compliance Monitoring by 1 July of each year. The report shall cover the preceding period 1 May – 30 April. The report shall also summarise the shutdowns (both planned and unplanned) that have occurred during the previous year and include a statement of the condition of the penstocks following an annual inspection.

Advice Note:

The Consent Holder is also required provide an annual report for each of the resource consents RM060939, RM060940, RM060941 and RM0909923. The Council acknowledges that a single monitoring report covering the monitoring and reporting requirements for all the resource consents associated with the power station may be presented and as such would fulfil the requirements of all the relevant reporting conditions.

12. The Consent Holder shall, prior to commissioning of the Scheme, provide to the Council's Co-ordinator Compliance Monitoring a report that shows the relationship between power generation and water flow rates through the turbine in the power station. In the event that any modifications are made to the turbine which results in a change in efficiency, the Consent Holder shall, within one week, undertake further calibration tests and provide a revised "water flow rate – power generation" relationship and provide a copy of the new relationship to the Council's Co-ordinator Compliance Monitoring within two weeks. The Consent Holder may use this relationship as a surrogate measure of the instantaneous rate of taking. If the applicant installs more than one turbine we expect that the discharge from each turbine will be logged to provide an accurate flow rate.

Take and Discharge Records

13. The Consent Holder shall record and provide on their publicly accessible website either the rate of taking and use, or the rate of discharge, of water passing through the power station. The data may be derived from the generation record or it may be actual water flow recorded for the tailrace or penstock. However, the data shall be accurate to +/- 5%.

This data shall be captured and recorded such that the ramping rate can be monitored and, given the authorised ramping rate, an appropriate recorder is therefore an event recorder capable of logging at one minute intervals (during ramping) but at other times only recording changes in the rate of taking or discharge.

Intake Screening

14. The (stream) penstock intake shall be screened so as to avoid the entrainment of fish and the screen shall have a mesh size not greater than XX millimetres and shall be constructed such that the intake velocity at the outermost surface of the outermost screen is less than 0.3 metres per second.
15. The Consent Holder and/or the dam owner is required to maintain the intake screen and all associated structures in a good state of repair.

Review of Conditions

16. Council may, for the duration of this consent and within the three month period following the anniversary of its granting each year, review the conditions of the consent pursuant to Section 128 of the Resource Management Act 1991 for the purposes of:
 - (a) dealing with any unexpected adverse effect on the environment that may arise from the exercise of the consent including requiring a greater maintenance flow and which is appropriate to deal with at a later stage; and
 - (b) to reduce the quantities and rates of water authorised to be taken and used and discharged if the as-built scheme is smaller capacity than proposed and the consent is not fully exercised; and
 - (c) when relevant national environmental standards have been made under Section 43 of the Resource Management Act 1991; and
 - (d) to comply with the requirements of a relevant operative rule in the Tasman Resource Management Plan or its successor, including
 - (e) to require changes to the intake or discharge system if there is shown to be an adverse effect on fish passage.

Additional Monitoring

17. The Consent Holder shall keep such other records as may be reasonably required by the Council and shall, if so requested, supply this information to the Council's Co-ordinator Compliance Monitoring. If it is necessary to install measuring devices including a water meter to enable satisfactory records to be kept, the Consent Holder shall, at his or her own expense, install, operate and maintain suitable devices.
18. Council reserves the right to require from the Consent Holder a Matiri Hydro Scheme (MHS) Management Plan identifying the accurate location of the various as-built components of the MHS including the location of the MHS relative to Council's Road Reserve or other Council assets.
19. Council reserves the right to require from the Consent Holder a MHS Management Plan identifying and documenting measures adopted to achieve efficient water use including leak detection programs, repairs and maintenance and measures to achieve full compliance with these consent conditions.

20. This consent shall lapse upon not less than three months' notice in writing by the Council if the consent remains unexercised without good reason for any continuous period exceeding five years.

Specific Discharge Conditions

21. The Consent Holder is responsible for the design, construction and maintenance of any erosion control works within the Matiri River between the lake and the Buller River that become apparent and necessary as a direct result of the exercise of this resource consent and in addition the following shall apply:

21.1 The rate of generation discharge shall involve a gradual on and off not exceeding the rate of 600 litres per minute.

21.2 The Consent Holder shall maintain a website from which the public can access in real time the scheme generation regime including 24 hours notice of changes to the hydro-peaking regime including generation times and changes that will alter the river flow by more than 2.5 cumecs.

21.3 The turbidity of the discharged water shall be unchanged to the source water when measured at a point 200m downstream of the discharge compared to a site immediately upstream of the intake. The Consent Holder shall monitor turbidity relating to this discharge if requested by the Council's Co-ordinator Compliance Monitoring.

Monitoring Programme

22. The Consent Holder shall monitor the exercise of this consent in accordance with the Monitoring Programme specified in Schedule 1 attached to, and forming part of, this consent.

Annual Report

23. The Consent Holder shall prepare an annual report each year during the currency of this consent which summarises the results of monitoring required by and undertaken in accordance with this consent. This report shall be submitted to the Council's Co-ordinator Compliance Monitoring by 1 July of each year. The report shall cover the preceding period 1 May – 30 April.

The annual report shall include statements relating to the parameters identified in the Monitoring Programme in Schedule 1.

Exceedance Reporting

24. If monitoring results indicate the exceedance of the maximum limits specified in the consent conditions, the Consent Holder shall immediately notify the Council's Co-ordinator Compliance Monitoring and follow-up with a written report to that identifies why and how this exceedance occurred. If the exceedance is caused by the exercise of this consent, or by the MHS generally, then a further report shall be provided within three months detailing what measures will be employed to avoid, remedy, or mitigate any future exceedance.

25. Any non-compliance shall be reported to the Council's Co-ordinator Compliance Monitoring within 72 hours of the event occurring unless a condition of this consent requires a different reporting timeframe.

ADVICE NOTE

1. This resource consent only authorises the activity described above. Any matters or activities not referred to in this consent or covered by the conditions must either: 1) comply with all the criteria of a relevant permitted activity rule in the Tasman Resource Management Plan (TRMP); 2) be allowed by the Resource Management Act; or 3) be authorised by a separate resource consent.
2. This resource consent only authorises the taking and use of water and the discharge from the tailrace to the Matiri River and no other taking or discharge from any pipe, reservoir etc was applied for and none is granted.
3. The purpose of measuring the effects of the discharges from the power station is to determine if there are any effects arising from the exercise of the consent(s) on the water quantity, quality and aquatic ecosystems of the Buller River below the Matiri River confluence.

SCHEDULE 1

MONITORING PROGRAMME

The Consent Holder (or its authorised agent) shall monitor Resource Consents RM060939, RM060940, RM060941 and RM090023 in accordance with the following monitoring programme and an annual report shall be provided.

1. Sites

The following sites shall be monitored:

Site Number	Location Description	Grid Reference	Reason for site
1	Lake Matiri margin (to be identified)		To assess the health of vegetation that may indicate any adverse effects from lake level fluctuation
2	Lake Matiri (to be identified) to include an area of Mussels		To assess the health of mussel beds that may indicate any adverse effects from lake level fluctuation
3*	Lake Matiri at the lake outlet	50m each side of a line from: E2454520 N5949280 to E2454645 N5949260	To assess sedimentation and visual effects of vehicle and machinery across this area.
4*	Matiri River ~1.5km upstream of Matiri River East Branch (200m upstream of the sweeping bend)	E2454055 N5948770	To assess the effects of sediment discharges from the works around the lake outlet and above the works associated with roading and penstock construction.
5*	Matiri River ~500m	E2453890	To assess the effects of sediment

	upstream of Matiri River East Branch	N5948070	discharges from the works associated with roading and the penstock construction
6	East Branch (comparable riffle site to be identified)	TBA	Reference site for trends in invertebrate community. Note: Although this river is not lake-fed, and therefore will have different invertebrate and fish communities, it will be useful to explain whether any changes over time are related natural environmental factors.
7	Matiri River ~500m downstream Matiri River East Branch (downstream powerhouse)	E2453670 N5947100	To assess the effects of water level fluctuations.
8*	Matiri River Immediately upstream of the confluence with the Matiri River West Branch		During scheme construction
9	Matiri River ~1km downstream lower road bridge	E2454220 N5938275	To assess the effects of water level fluctuations in a riffle most vulnerable to water level fluctuations.
10*	Matiri River immediately downstream of the confluence with the Buller River. titi		During scheme construction

* At these sites during scheme construction only.

2. Monitoring Parameters and Methodologies

2.1 Invertebrates

At sites 4, 5, 6, 7 and 9 a macro-invertebrate sample shall be collected using a hand-net (0.5 mm mesh). Sample collection shall follow “*Protocol C1*” and these samples shall be processed according to “*Protocol P1 (Coded Abundances)*” as outlined in “*Protocols for sampling macroinvertebrates in wadeable streams*” (Stark *et al*, 2001: New Zealand Macroinvertebrate Working Group Report No. 1. Prepared for the Ministry for the Environment. Sustainable Management Fund Project No. 5103). Macroinvertebrates shall be identified to the taxonomic level required for calculation of the Macroinvertebrate Community Index (MCI) or better.

Data analyses shall include calculation of taxa richness (*i.e.*, number of taxa per sample), EPT richness and EPT percent (*i.e.*, the number of **E**phemeroptera (mayfly), **P**lecoptera (stonefly) and **T**richoptera (caddisfly) taxa present in the sample), and the two biotic indices: MCI and SQMCI.

2.2 Mussels

Freshwater mussels in the lake shall be monitored to determine their abundance and distribution before and after the construction of the scheme and 1-3 months after each lake lowering event.

2.3 Lake Margin Vegetation

A appropriately qualified expert shall:

2.3.1 Undertake a survey of the forest edge at the lake margin sufficient to detect if any woody plants are dying. This survey shall be done at several sites around the lake at a similar time of the year. Set photographic points shall be set up (fixed location, zoom and viewing angle) to enable photos to be compared over time. Photos should be taken in similar weather (light conditions) to make comparisons possible. GPS coordinates for these points shall be provided. If any death of trees appeared to be occurring, ground surveys could then be conducted via fixed plots or transects.

2.3.2 Herbaceous sedges. Photographic analysis shall be proved using the methods in 2.3.1 above. Comments shall be made as to the change in short vegetation that waterfowl use to loaf on.

2.4 Fish

Native fish shall be monitored. The presence or absence of fish shall be recorded and compared to their distribution as recorded in the IFIM and AEE.

At each site, a tape shall be laid out to ensure a 30 metre reach is being fished, but upstream and downstream stop-nets need not be used. The entire reach shall be fished methodically (working back and forth across the river using a battery-powered backpack electric fishing machine) in an upstream direction, and the catch retained. This process shall be repeated until at least a 50% reduction in the most common species has been achieved. Usually this occurs with two passes, but sometimes three are required.

All fish shall be identified to species level (including elvers and small bullies), measured, and returned alive to the reach at the end of sampling. The relative abundances (abundant, common, occasional, rare or none) of koura shall be recorded. Five wetted width measurements taken along the reach shall be used to calculate the area fished, and the maximum water depth shall be recorded as a spot measurement. Other records shall be taken according to the NZ Freshwater Fish Database forms.

The number of each species in each reach is estimated using the multi-pass data and standard equations. This shall be reported as fish per 100 m² or per linear metre of stream.

The river from upstream of the big bend to the downstream end of the penstocks shall be inspected on at least three occasions immediately after a hydro-peaking event for fish strandings. Number of fish, fish species and size shall be recorded.

A series of observations shall be carried out at the weirs during eel migration to determine the effectiveness of the fish pass.

Data shall be supplied to the National (NIWA) Freshwater Fish Database.

2.5 Sediment

2.5.1 Bed substrate

At sites 3, 4 and 5 stream substrate particle size composition (*i.e.* % boulder, cobble, gravel, fine gravel, sand, silt), based upon visual estimation in 10 quadrants distributed at random within the wetted perimeter at each of the sampling sites referred to in Section 1.0 (above), shall be assessed.

2.5.2 Fine sediment bedload

Within cobble riffle habitat in the Matiri River re-suspendable solids shall be sampled using the modified Quorer method shall be used (see appendix A). *It may not be possible to sample using this method at site 4 due to the dominance of boulders.*

2.5.3 Suspended Sediment

Turbidity, suspended solids and water clarity measurements taken at the same time can determine the source of sediment.

Automated turbidity sensors should be placed within an in-line darkened stilling chamber of continuously pumped river water. Note: This ensures fouling does not occur and helps reduce the occurrence of erroneous spikes in the data. A quality control plan for the continuous turbidity measurements shall be provided to Compliance Monitoring Coordinator for approval one month prior to any works in the lake or river.

3. Monitoring Frequency

Macro-invertebrate community monitoring and sediment analyses shall be monitored **bi-annually during either March or April and October or November** for the first three years following commissioning and a year prior to commissioning and thereafter a minimum of 5 yearly. Monitoring shall be carried out following a period of at least 10 days of stable or receding flow conditions in the Matiri River. The preceding weather and flow conditions shall be recorded.

Fish populations shall be monitored **bi-annually during either March or April and October or November** for the **first three years** following commissioning and a year prior to commissioning and then at **five yearly** intervals thereafter.

Table 1: Sampling Frequency and Compliance Limits

Parameter	Method	Sampling Frequency	Compliance Limit	Site	Note
Water level and flow	See Martin D	15 minutes	Residual flow >1.4 cumecs	Flow recorder sites 1 and 2	
Rainfall	See Martin D	30 minutes	n/a		
Turbidity (continuous)	Proprietary automated turbidity probe	5 minute sampling intervals Monthly calibrations	<50 NTU median over any 20 minute period* or <20 NTU median over any 40 minutes# or <10 NTU median over any 2 hour period^	Flow recorder sites 1 and 2 and logging data sonde moved downstream of construction as this activity moves	* Median of 3 consecutive measurements # Median of any 6 consecutive samples ^ Median of any 24 consecutive samples
Turbidity (discrete)	APHA 21 st Edn 2130 B	Weekly during construction and bi-annually in spring and autumn thereafter	<50 NTU for any sample and <10 NTU for the median of 4 consecutive samples	Sites 3, 4, 5, 6, and 7	
Water Clarity	Horizontal sighting of a 200mm black disc	Weekly during construction and bi-annually in spring and autumn thereafter	Not more than 40% change between upstream and downstream sites	Sites 3, 4, 5, 6, and 7	
Suspended Solids (FSS and VSS)	APHA 21 st Edn 2540D	Weekly during construction and bi-annually in spring and autumn thereafter	<50 g/m ³ for any sample and <10 g/m ³ for the median of 4 consecutive samples	Sites 3, 4, 5, 6, and 7	FSS and VSS measured separately and summed to give the TSS
Bed substrate	Random quadrats	Weekly during construction and bi-annually in spring and autumn thereafter	No more than 30% change of any fine sediment (particles less than 2mm) upstream compared to downstream	Sites 3, 4, 5, 6, and 7	
Bed fine sediment	See Appendix A	Weekly during construction and bi-annually in spring and autumn thereafter	No more than 30% change upstream compared to downstream	Sites 3, 4, 5, 6, and 7	Composite sample acceptable
pH	APHA 21 st Edn 4500 HB	Daily during concrete pours within 2m of the	No more than 1 pH unit change to cause pH to be outside the range	Sites 3, 4, 5, 6, and 7 (as	Intensive monitoring in the day before, during and after any

		waterway	6.0 and 8.5	applicable)	concrete pouring within 2m of the waterway.
Lake marginal vegetation	TBA	One month after each lake lowering event (unless the event is for less than one day and not during hot and dry weather)	No adverse effect	Site 1	Surveys before and after lake lowering events. Design of monitoring programme to be determined
Mussels	TBA	As above	No adverse effect	To be determined but Site 2 should be one site	Surveys before and after lake lowering events
Macro-invertebrates	Protocol C1 and P1 in: the NZ Protocols for Sampling Macro-invertebrates in Wadeable Streams, 2001"	Bi-annually spring and autumn	No adverse effect	Sites 4, 5, 6, 7, and 9	
Fish	Electric fishing and machine and spotlighting	Bi-annually spring and autumn	No adverse effect	Sites 4, 5, 6, 7, and 9	

4. Flow Recorder Requirements

The Consent Holder is required to operate and maintain a minimum of two flow recorders at the sites specified in consent RM060939. Each recorder shall be capable of recording flow or lake level at intervals of 15 minutes. The following standards and requirements shall apply as a minimum:

- Continuous flow data refreshed hourly shall be made available provided on a publicly accessible website.
- Audited and verified data shall be provided to Council at an interval not greater than (3) months and any missing record accounted for.
- The Consent Holder shall aim to have less than 2% missing data and any missing data in any three month period.
- With regard to measuring natural stream flow, this will require a suitable river gauging site and installed staff gauge, recorder, data supply etc.
- Water level shall be recorded at an interval of not more than 15 minutes, utilising a sensing device capable of measuring water level to within +/- 3mm without accuracy drift over time and generally in accordance with ISO 1100- 1 (Establishment and Operation of a gauging station).
- Flow measurements to create and check the rating curve should be carried out within an accuracy of +/- 8%, and at a frequency to fully define the rating curve for the site at least 98% of the time. Gauging accuracy shall be calculated by ISO 748 (Measurement of liquid in open channels – Velocity-area method)
- Flow measurements and derivation of the rating curve should be carried out by a suitably experienced practitioner acceptable to the Council. The results of the flow measurements shall be provided to Council as soon as practicable after they have been completed.
- The rating curve shall be given with each water level dataset that is provided to Council as shall the flow measurements that make up that relationship, and any changes to previous relationships that have been calculated since that relationship was last provided to Council.
- Water level data shall be presented in a Tideda file, or as a comma separated ASCII file that can be read into Tideda, or the time series database currently used by Council.
- The relationship between water level and flow shall be provided as a Tideda rating, or as a series of paired points suitable for importation into Tideda.
- The accuracy and makeup of the data provided to Council shall meet the approval of the Co-ordinator, Compliance Monitoring.

5. Generation Record Requirements

The Consent Holder shall record and provide on their website either the rate of taking and use or the rate of discharge of water passing through the power station. The data may be derived from the generation record or it may be actual water flow recorded for the tailrace or penstock. However, the data shall be accurate to +/- 5%.

This data shall also be captured and recorded such that the ramping rate can be monitored. Given the authorised ramping rate, an appropriate recorder is therefore an event recorder capable of logging at one minute intervals during ramping but other only recording changes in the rate of taking or discharge.

6. Annual Report

The Consent Holder shall prepare an annual report each year during the currency of this consent which summarises the results of monitoring required by and undertaken in accordance with this consent and other relevant consents. This report shall be submitted to the Council's Co-ordinator Compliance Monitoring by 1 July of each year. The report shall cover the preceding period 1 May – 30 April.

To summarise, the annual report shall include the following:

- a summary of the monitoring required by the conditions of this consent and the results of any such monitoring. An analysis of that information in relation to compliance with all scheme related consents is required.
- a comparison of the monitoring information with that from previous reporting periods to identify any trends in effects, particularly in relation to aquatic ecosystems in Lake Matiri and the Matiri River. Such trend analysis shall be based on all monitoring data collected including information provided in the Assessment of Environmental Effects or elsewhere.
- In the event of a result which does not comply with conditions in the consent a detailed description of reasons why this may have occurred and every corrective action taken to avoid any subsequent non-compliance or further monitoring to determine reasons for the non-compliance.
- a summary of any complaints received regarding any of the activities authorised by this consent. A summary of any action taken by the consent holder in response to all complaints received.
- an outline of the maintenance schedules for the current year together with an outline of any other such works that are proposed to be undertaken during the following 18 months to improve environmental or safety performance.
- a summary of discharges from the dam set out on daily basis and an explanation of any continuous discharge to maintain the residual flow.
- the results of any Operational Review or Emergency Action Plan Review undertaken. Notice of any such reviews to be undertaken over the following 18 months.

- any recommendations regarding alterations to the monitoring and reporting conditions attaching to the consents. Any other issues considered important by the consent holder.
- All calibration and monitoring equipment and maintenance records as well as quality control samples such as duplicates (to be appended).

The annual report shall be provided in both hard copy and electronic format and in a format that is acceptable to the Council.

8. Complaints Register

The Consent Holder shall maintain and keep a Complaints Register to record all complaints received by the Consent Holder (or any of its agents, employees, contactors or assigns) about any activities that arise out of the exercise of this and other scheme related consents including , but not limited to, in relation to: the degradation of water quality; adverse effects on aquatic ecosystems or wildlife; the impedance of public access to or along watercourses and/or the safety of any structures or operational practices. The register shall record:

- i) the name of and any known expertise or qualifications held by the complainant;
- ii) the location of the complainant when the incident was detected, and the subject matter of the complaint.
- iii) the date, time and duration of the incident or matter that resulted in the complaint;
- iv) the likely or possible cause or causes of the incident (if known);
- v) the nature of any corrective action undertaken by the Consent Holder in response to the complaint.

The register shall be available to the Tasman District Council on working days.

Complaints received by the Consent Holder that indicate non-compliance with the conditions of this resource consent shall be forwarded to the Tasman District Council within 48 hours of receipt.

A summary of any complaints received regarding any of the activities authorised by this consent and a summary of any action taken by the consent holder in response to all complaints received shall be provided each year in the annual report.

Appendix A

Resuspendable Solids Field Method

Based on a method by Quinn JM, Cooper AB, Davies-Colley RJ, Rutherford JC, Williamson RB, 1997. Land Use effects on habitat, water quality, periphyton and benthic invertebrates in the Waikato, New Zealand, hill-country streams. NZ Journal of Marine and Freshwater Research 1997 Vol 31: 579-597

Select one reach (or two if the situation is highly variable or critical) upstream of a discharge or earthworks activity (or in a reference catchment if this is not possible) and the one or more reaches downstream. Select 5 sub-sample sites within a typical run or runs within the test reach.

At each sub-sample site carry out the following:

1. Work a cylinder (such as a barrel with the base cut out) of at least 23cm diameter into the stream bed to a depth of approx. 5cm. Large cobbles can be removed from the cylinder and placed against the cylinder on the outside to help anchor the cylinder.
2. Determine the volume of water in the cylinder by taking 10 depth measurements from the water surface to the bed.
3. Vigorously stir the bed sediments to 5-20cm depth from the top of the bed so the water inside the cylinder is well-mixed.
4. In its mixed state take a 1 litre sample.
5. Sub-samples from each reach may be composited prior to analysis. Care must be taken to maintain cleanliness in vessels used to mix samples to form the composite.
6. In some circumstances it may be useful to analyse the sample for dry mass and ash free dry mass and calculate suspended inorganic sediment (g inorganic sediment m⁻²) ie if the discharge has a certain proportion of inorganic versus organic sediment this can be matched to that in the receiving stream.

Memorandum
Engineering Services

To: Chairman and Members/Commissioner, Environment & Planning Hearings Committee

From: Dugald Ley, Development Engineer

Date: 11 December 2008

Reference: RM060940

SUBJECT: LAKE MATIRI – HYDRO ELECTRIC POWER SCHEME

INTRODUCTION

The application has been well covered in the planner's report and the applicant's submission. The main issue for Engineering is access to the site both during construction and after when the project is completed. Issues raised are traffic effects such as noise, dust and increased vehicle use due to the existing paper road being opened up for normal car traffic and enhanced access to the Department of Conservation area.

BACKGROUND

The site is located at the head of the Matiri Valley and is accessed from State Highway 6 by firstly Matiri Valley Road, secondly by Matiri West Bank Road and thirdly by a 4WD road/paper road up to the confluence of the west and each branches of the Matiri River, ie some three to four kilometres from the lake itself.

The following existing attributes can be associated with each section of road

Description	Road and Carriageway	Hierarchy	Vehicles per day	Length
Matiri Valley Road	Sealed – 4.0 to 6.0 m	Collector	50-100 approximately	6.7 km
	Gravel – 3.0 to 4.0 m	Collector	50 approximately	8.3 km
Matiri West bank Road	Gravel – 3.0 m approximately	Access	20 approximately	5 km
Matiri West Bank (paper road)	4WD track	Not classified	2 approximately	3 km

Of note is that the existing 4WD track deviates off the paper road area at a number of locations.

Council has many paper roads in the district and receives a number of applications to "open up" these roads which then allows public access to the area. Each application rests on its own merits and traffic effects generated. The applicant has proposed the following to mitigate the effects that will occur within the roading infrastructure.

“Access Roads and Tracks

New Zealand Energy propose to extend the formed Matiri West Bank Road from its present northern end point to the West Branch of the Matiri River across land owned by New Zealand Energy. The proposed road extension is approximately 3 km long and incorporates 4 stream crossings and a vehicle park at the confluence of the West Branch and the Matiri River.

Where the completed road departs from existing road reserve New Zealand Energy agrees to have the road reserve moved to align with the new road and to vest the new road in the Tasman District Council. This will ensure legal public vehicle access to the west branch of the Matiri River.

From the West Branch to the power station site a private road will provide vehicle access to the power station and a largely separate walking track will provide public access. An unformed ford is proposed to cross the Matiri River West branch, this crossing will not be available for public vehicle access and will be maintained as required by New Zealand Energy.

From the power station to the lake outlets a vehicle maintenance access track will be formed largely using the existing walking track.

The maintenance access track will in normal circumstances be used weekly by a quad bike and occasionally by a small digger. These machines will use approximately 1.5m of the 3m formed track and the full 3m width would only be required for a larger digger if needed for major maintenance or repairs. Wherever it is considered appropriate the outer sections of the access track can be allowed to re-vegetate with species such as grasses that would suffer little damage at the occasional passage of a larger tracked digger.”

And also under this clause:

“Roading

New Zealand Energy propose to extend the formed Matiri West Bank Road from its present northern end point to the west branch of the Matiri River across land owned by New Zealand Energy. The proposed road extension is approximately 3 km long and incorporates 4 stream crossings.

Where the completed road departs from existing road reserve New Zealand Energy agrees to have the road reserve moved to align with the new road and to vest the new road in the Tasman District Council. This will ensure full public vehicle access to the west branch of the Matiri River.

Construction of the proposed road is a discretionary activity under section 18.10.4 of the TRMP because NZ Energy propose to construct the road extension to the standard of the existing TDC formed road that feeds the proposed road.

The proposed extension to the existing TDC formed road starts at the last farm house in the valley. The expected traffic is predominantly light vehicles and the traffic density is conservatively estimated as:

- a) *The farmer accessing leased NZ Energy land, 4 vehicle movements per day (vpd).*
- b) *NZ Energy, 0.2 vpd.*
- c) *Visitors to Kahurangi National Park including DoC staff, 10 vpd.*

At an estimated 14 vehicle movements per day the use of the proposed road will be significantly less than the described design capacity for the lowest TDC road standard (access place, 7 – 19 household lots) specified in figure 18.10A of the TRMP.

Given the very low traffic density the proposed road extension will carry and the fact that the road extension ends in the Kahurangi National Park with no possibility of ever becoming a through route, we believe the proposal will satisfactorily achieve the stated reason for the rules in the TRMP “to promote a safe and efficient roading system”.

Because the road extension will traverse undeveloped private land, rule 6.6 of the TDC engineering standards provides for any developer wishing to subdivide or develop the private land to upgrade the road as part of their consent granted at the time.

Therefore, NZ Energy propose to design and construct the carriageway according to drawing 601 in the TDC engineering standards with dimensions established from the existing road. These specifications are in the order of:

- a) *Carriageway width 3.5m*
- b) *Shoulder width 2 x 0,6m*
- c) *Grassed swales and batters x 2*
- d) *2 coat chip seal (100mm depth base course, 200mm depth sub base).*

The following points will be incorporated in the engineering design of the stream crossings:

1. *Water velocities will not be accelerated through culverts.*
2. *The width of any culvert will be equal to or greater than the average width of the stream bed to prevent bypass or blow out of the culvert.*
3. *Roughness features will be provided in the wetted channels.*
4. *Provision will be made for fish passage at lowest flows.*
5. *Appropriate design will ensure the longevity of the structure by incorporating adequate armouring materials to prevent erosion below the outlet.*

Where culverts are used for stream crossings they will be protected against undercutting, detail of the concrete aprons providing this protection will be provided in the final engineering design.”

Council’s Engineering Standards and TRMP rules require a minimum for a rural access place a 5.0 metre sealed width plus 2 x 600mm gravel shoulders, ie the applicant proposes a road 1.5m less than the TDC requirement. There is no offer by the applicant to alter any other sections of Council’s road leading up to the section as outlined above.

During construction there will be an increased number of construction traffic using the adjacent road and afterwards there is likely to be an increase mainly by visitors to the conservation land. (This will be due to the easier access into the area, ie presently vehicles are parked 2-3 km from the confluence of the two rivers and cutting this walking distance to the lake will enhance visitor potential).

Matiri Lake is reasonably isolated at present and without data from DoC I have to accept the applicant's suggestion that there will be approximately 14 vpd when the new road is completed.

For a rural area such as in this location, this traffic movement is the equivalent of approximately three household units and DoC use is expected to be two-thirds of that traffic. The reasons Council has a minimum standard of road surface are:

- a) expectation of traffic movements;
- b) maintenance costs – edge break, dust etc.
- c) subsidy funding from Government
- d) Safety issues for public.

Council has one or two roads that fall into the category of "tourist" roads. These roads are maintained by Council but costs are shared principally by the main attractions, ie the Department of Conservation. It is my view that as there are, in essence, only two types of users, ie the hydro operation and DoC then it is fair that they pay an ongoing share of maintenance costs for the last three kilometres of the new road. In this case this is likely to be one-third of \$23,000 plus GST and the applicant will be required to enter into a contract with Council prior to completion and certification of the road. Council will request via a separate process to acquire the other two-thirds maintenance sum from the Department of Conservation.

As mentioned the carriageway is generally 1.5 metres less than that required by Council's designs. Council concedes that its road which leads up to this undeveloped area is also substandard. However this is a new 3km road to be constructed and the design proposed should not compromise widening at a future date. To this end the road "basic formation", ie earthworks should be designed using the full design road formation width such that the road "top" formation can be widened at a future date with further major earthworks or land purchase not required.

As mentioned in the applicant's proposal the road deviates off the paper road and the applicants have confirmed that either the road will be repositioned within the paper road or the road reserve moved, ie vested and road closed procedures. There are also a number of stream crossings which will require separate consents. These should be designed so that secondary flow paths are directed back into the stormwater channel.

SUBMISSIONS

One submission has been received in relation to the roading infrastructure:

J and B Faulkner, PO Box 53, Murchison

Their submission relates to the existing road past their property, ie traffic movements and dust plus potential flooding of the road below the dam.

The Faulkners live on the gravel section of Matiri Valley Road, some 2.5 km off the end of the sealed section.

It is envisaged that there will be a slight increase in vehicle numbers past the submitter's land due to the site (Lake Matiri) being more accessible to the public and vehicles.

The applicants are not proposing any improvements to the section of road past the submitter's property.

Council's programme of seal extensions amounts to some 2-5 km per year and these are assisted on an individual basis where the benefit-cost ratio gets above 4. Usually this can be achieved once vehicle movements exceed approximately 200 vehicles per day. With the existing traffic movements in the order of 50 vpd, a possible increase of say an extra 10 vpd will not meet the threshold for sealing.

However Council is using new maintenance gravels which have less "fines" therefore less dust. Council is also investigating a new dust suppressant that has recently come on to the market and which is being used by the New Zealand Transport Agency for dust suppression on the Ruby Bay Bypass construction project.

Should the application be approved it is suggested that the following conditions of consent be imposed in regard to the roading infrastructure:

Road Upgrade

- The extension of Matiri West Bank Road (presently not maintained by Council) from the existing gate outside the existing house owned by GandJ Turnbull on Sec 3 Blk 1X Matiri SD to and including a turnaround and car parking area shown as item (3) on Annexure Plan B – Sheet 4A. The road shall be formed with an overall base carriageway width of 6.2 metres plus side drains and stormwater control draining to appropriately-sized channels.

The carriageway top surface shall be sealed to a 3.5 metre width (centrally on the 6.2 metre width as above) with a 2 coat chip seal, ie grade 4and6 chip.

The turnaround shall be formed with a minimum 16 metre turning head and sealed and sloped to the outside edge. Alternatively the turning head may be enlarged with a grassed island located in the middle. Access off the turning head (for cars) shall be provided to level grassed carparking areas.

- An all-weather grass car parking area shall be formed outside the turning area for at least ten vehicles.
- The applicant shall pay the Council (and enter into an agreement) a yearly sum of \$7666 plus GST (increased by CCI) being the predicted one-third maintenance cost of the road over a 30-year period.
- The new formation as above shall be entirely located with the existing legal road boundaries and/or boundaries shall be relocated to accommodate the new road. (Note no new titles are to be created).

- Culvert and bridge crossings shall be designed for a Q50 storm event and secondary flow paths shall be maintained such that flows are constrained within the channel.
- Fish passage shall be maintained as appropriate.
- All works shall comply with the Tasman District Council Engineering Standards and engineering plans submitted for approval prior to works commencing.
- As-built plans will be required to be submitted for approval on completion of the works.
- All works are to be certified by a Chartered Professional Engineer in their field of expertise.

Dugald Ley
Development Engineer

TANGATA WHENUA

General Objective 7

Recognition and protection of significant traditional interests of the tangata whenua in relation to land, water, the coast and other taonga Maori.

Reasons:

The Council acknowledges the special place in our natural and cultural environment of Maori heritage and current Maori interests in protecting that heritage. These interests include regard for special sites and areas (wahi tapu), and the beliefs, values and principles (wanata, kaupapa) for the conservation of natural resources that are held by Maori, including those who are descended from original Maori tribes by right of occupation or conquest (tangata whenua iwi) in the District. Specific areas and resources are regarded by iwi as taonga or prized treasures, to be safeguarded for the future. The Treaty of Waitangi recognised the interests then held by Maori over resources. Despite the development of statutory powers and responsibilities for resource management, these traditional interests of Maori are still present and require recognition and protection. This objective applies principles in Part II of the Act concerning Maori traditional interests over resources, particularly under the Treaty of Waitangi.

Policy 4.2

Council will seek protection of wahi tapu, water, ancestral lands, sites, coastal resources and other taonga from disturbance or contamination in a manner consistent with tangata whenua kaupapa and tikanga while acknowledging the significance of private interests in land and other resource users.

Explanation and Reasons:

Both the Act and kaupapa Maori require the management of land, water and coastal resources so as to sustain the life-supporting capacity of these resources. The Act also directs the protective management of sites or places of traditional or spiritual significance to tangata whenua. There is a need for such management to recognise the importance of the interests of landowners.

LAND RESOURCES

Objective 6.1

Avoidance of the loss of the potential for land of productive value to meet the needs of future generations, particularly land with high productive values.

Reasons:

The production of stock and crops relies on soil and other site qualities of land, and provides significant economic support to both rural and urban communities. High quality lands are a valuable, scarce and finite resource. The irreversible loss of productive values

can arise through continued land fragmentation or conversion to non-productive land uses. This loss needs to be avoided or limited.

Objective 6.2

Maintenance and enhancement of significant areas of indigenous vegetation, significant riparian lands, significant habitats of indigenous fauna, and significant natural, landscape, and historic features of lands.

Reasons:

Significant natural or conservation values of land contribute to natural ecological processes and provide a rich variety of scientific, heritage and amenity values. Historic resources also have heritage and amenity values. Many areas may be at risk from a variety of modifying influences in connection with land use and development. Significant values or areas need to be protected and in some circumstances, restored.

Objective 6.3

Avoidance, remedying, or mitigation of adverse cross-boundary effects of rural land uses on adjacent activities.

Reasons:

Some rural land uses may generate adverse effects for adjacent properties, including contaminant discharges, emissions of noise or odour, and shading. Such effects need to be managed to an appropriate degree.

Objective 6.5

Avoidance or reduction in damage to natural ecosystems, amenity or productive values of land caused by animal or plant pests.

Reasons:

A variety of animals or plants may cause or contribute to adverse effects on the economic or ecological importance of land and associated biological resources in the District. These organisms need to be managed to avoid, remedy or mitigate such adverse effects.

Addresses Issue 6.7; achieved by Policy 6.6.

Objective 6.6

Maintenance and enhancement of flood mitigation, habitat conservation, water quality, recreational and public access values and opportunities of riparian lands.

Reasons:

Riparian margins of rivers and streams have an important range of flood mitigation, natural, recreational and other uses and values in association with adjacent rivers and streams. Public access to and along rivers is provided by riparian lands. It is important to

allow opportunities to use or value riparian lands in all these ways, in addition to established productive uses of such lands.

Policy 6.1

Council will protect the inherent productive values of land from effects of activities which threaten those values, having particular regard to:

- (i) the effects of land fragmentation on productive values; and
- (ii) the protection of land with high inherent productive values; and
- (iii) the protection of significant natural or heritage values; and
- (iv) the availability of water to support productive values.

Explanation and Reasons:

The use of areas of land with productive value for activities that do not involve soil-based production (for example, increased coverage by structures and roads through residential or industrial uses) may irreversibly restrict the availability of such land for the use of its productive potential.

Rural land in the District that is not part of the national conservation estate, has a range of productive values for stocking, cropping and plantation activities. It also has value for residential and other uses, where because of the size, location or market value of the land holding, there is little incentive for productive uses to continue to be developed. Council wishes to ensure that continued productive uses of rural land result in an appropriate proportion of the area of the District remaining available for a range of productive activities on a sustainable basis. It wishes to ensure that the needs of future generations for the productive land resource will continue to be able to be met.

In particular, the land with high productive values also has high value for a range of non-productive uses (especially resource processing, industrial and residential uses) and there is considerable pressure in the District for further fragmentation of land with a high productive value, where fragmentation may allow non-productive activities to develop.

While seeking to protect the productive values of land, the Council also acknowledges that there may be productive land which has significant natural or historic values and which may need provision to be made for them.

Policy 6.2

The Council will ensure that subdivision and uses of land in the rural areas of the District avoid, remedy or mitigate adverse effects on:

- (i) productivity and versatility of land, particularly in areas of high productive value; and

- (ii) provision of services, including roading, access, water availability, wastewater treatment or disposal; and
- (iii) amenity, natural and heritage values of sites, places or areas including landscape features such as karst terrain; and
- (iv) accessibility of mineral resources; and
- (v) socioeconomic viability of adjacent areas;

and that are not unnecessarily exposed to adverse effects from:

- (a) adjacent land uses across property boundaries; and
- (b) natural hazards.

Explanation and Reasons:

Council wishes to protect and maintain rural land for soil-based production activities. However, it recognises that a high demand exists for large-site residential development in rural areas, generally in close proximity to urban services, and with sufficient space and character for lifestyle choices. There is also a need for Council to ensure that other land uses including buildings, structures, plantings and land disturbance activities in the rural areas of the District avoid, remedy or mitigate adverse effects on visual amenity and heritage values. There are areas in the District where climate, soil type or topography may limit production options, but which may be desirable or appropriate for activities such as rural residential development provided the adverse effects of such development may be managed.

Policy 6.3

The Council will:

- (a) protect and enhance areas of significant indigenous vegetation, significant habitats of indigenous fauna, outstanding natural features and landscapes, and sites, areas, or features of heritage significance, and in determining significance of all such areas, habitats, landscapes, or features, the following criteria shall be applied:
 - (i) size of the area or feature; and
 - (ii) diversity of species and abundance of populations of indigenous flora and fauna; and
 - (iii) representativeness; and
 - (iv) rarity of any species of flora, fauna or of habitat type; and
 - (v) connectedness of habitat with other areas; and
 - (vi) intactness or condition of the area or feature; and
 - (vii) coherence, visibility, and vulnerability to change of any landscape; and

- (viii) special scientific, cultural, historic, or amenity values of any site, area, or feature of heritage significance; and
- (ix) recognised international, national or regional importance of any area or feature; and

in relation to all significant areas or features, the risk of adverse effects on their natural, landscape, or heritage values shall be relevant to achieving such protection; and

- (b) protect and enhance the margins of wetlands, lakes and rivers for the purposes of:
 - (i) preserving the natural character of wetlands, lakes, rivers and their margins; and
 - (ii) maintaining and enhancing natural habitats, water quality and the natural functioning of the adjacent water body; and
 - (iii) maintaining and enhancing public access to or along the margin; and
 - (iv) enabling public recreational use of the margin; and
 - (v) maintaining channel stability and floodway efficiency of any adjacent river.

Explanation and Reasons:

Significant natural or historic values of land, including areas supporting communities of indigenous plants and animals, riparian areas, natural features and landscapes and historic sites, contribute to natural ecological processes and often have important conservation, heritage and amenity values. The Act obliges Council to provide for the preservation, protection or enhancement of significant and outstanding areas, riparian margins, habitats, features, or sites. The natural and historic resources on such areas are in private as well as public ownership and they may be at risk from destruction or modification through land use and development activities.

Riparian margins have an important range of uses and values in association with adjacent rivers and streams. Council is required to address the protection of key natural, recreational and access values of riparian land. Other management purposes of such land are also important, such as continued productive uses, and the Council needs to establish priorities for all uses of riparian land.

Policy 6.4

The Council will avoid, remedy or mitigate adverse effects of adjacent rural land use activities across property boundaries including effects of:

- (i) noise;
- (ii) odour;
- (iii) contaminant discharges;

- (iv) shelter belts;
- (v) fire risk.

Explanation and Reasons:

A number of predominantly intensive rural land use activities may create adverse effects for other adjacent rural uses. Examples of these conflicts are shading from shelterbelts, agrichemical spray drift, offensive odours and noise from various devices. The Council seeks to manage the adverse effects where neighbour or community conflicts are likely.

Policy 6.6

The Council will seek to avoid, remedy or mitigate the adverse effects of harmful animal or plant organisms on land and water resources, animals and plants and amenity values.

Explanation and Reasons:

There are current and future risks to land and water resources, ecosystems and amenities arising from the existence or spread of a variety of animals or plants, including their carriers. Bovine tuberculosis and possums are significant animal pests or carriers and a number of weeds such as Johnson grass and Old Man's Beard have adverse economic or conservation effects. The Council will continue to direct appropriate management efforts at harmful pest organisms.

Freshwater Objectives and Policies

The District's rivers, lakes and wetlands provide valuable habitats for wildlife including both plant and animal communities. Some reaches of rivers, particularly the more remote less contaminated or less modified habitats can be significant in terms of habitats for threatened species including such bird species as Blue Duck. Many rivers also have significant native fish habitats.

Water bodies and the life they support have a high degree of significance for Maori for traditional spiritual reasons. The mauri or life-essence of rivers and lakes is a value sought to be protected, in addition to food gathering, and other customary values (e.g. wahi tapu in or adjacent to rivers). The intrinsic values of rivers and lakes, identified by many non-Maori, are of similar significance: these are values placed on the water bodies for their undisturbed existence.

There are a small number of hydro-electric schemes in Tasman District. The TRPS recognizes further potential for rivers to provide opportunities for hydroelectric generation.

The following objective is considered particularly relevant.

Objective 7.1

Maintenance and enhancement of the natural and cultural values, including natural character, of fresh waters, including recreational, fisheries, wildlife and other instream values.

Reasons:

The District contains water bodies significantly valued for their natural or cultural features, and the Act requires the Council to provide for their protection in sustainable water management.

Achieved by Policies 7.1, 7.2, 7.4, 8.2.

The following policies are considered particularly relevant.

Policy 7.2

The Council will set water allocation limits for abstractive purposes based on a defined standard of availability of water in drought periods, consistent with the instream and life-support values of the water.

Policy 7.3

The Council will promote efficiency in water use.

Explanation and Reasons:

Water is a limited resource in the District of absolute economic and ecological significance. Enhancing its availability by measures to achieve efficient uses is an important way of sustaining the water resource.

Policy 7.4

The Council will:

- (i) preserve the natural character of wetlands, rivers and lakes, and
- (ii) protect and enhance or support the protection and enhancement of natural, recreational, cultural, intrinsic, and instream features and values of wetlands, rivers (including karst rivers), and lakes, in particular those that are of international, national, or regional significance;

and in determining significance of such water bodies for such values, the following criteria shall be applied:

- (i) size of the water body; and
- (ii) diversity of species and abundance of populations of indigenous flora and fauna supported by the water body; and
- (iii) rarity of any species of flora or fauna, or of habitat type, associated with the water body; and
- (iv) condition of the water body; and
- (v) special scientific, recreational, cultural, or amenity values of the water body; and

(vi) recognised international, national, or regional importance of the water body; and

in relation to all significant wetlands, rivers, and lakes, the risk adverse effects on their natural, recreational, cultural, intrinsic or instream values shall be relevant to achieving such protection or enhancement.

ENERGY OBJECTIVES

Objective 12.1

The use and development of natural and physical resources for the generation and distribution of energy, in a manner which is efficient and which avoids, remedies or mitigates any adverse effects on the environment.

Objective 12.2

Conservative and efficient use of energy, and reduced dependence on non-renewable energy resources.

Reasons:

Energy use and development is a necessary part of community wellbeing. There are opportunities for energy production, transmission, and use that are both efficient and able to be continued without significant adverse effects on natural and physical resources. The Council wishes to maximise uptake of such opportunities.

Policy 12.1

The Council will seek to provide for the continuation of energy generation, transmission, or use opportunities, while avoiding, remedying or mitigating the adverse effects of such actions on natural, heritage and amenity values of resources.

Explanation and Reasons:

The Council recognises the need for continuity in energy supply. Council wishes to ensure that the limited stock of resources that may be required for or affected by energy production, transmission, or use is protected to an appropriate degree, where those resources also have important public uses or values.

TRANSPORT OBJECTIVES

Objective 12.4

Maintenance and enhancement of safe and efficient land, maritime, and air transport systems, while avoiding, remedying or mitigating the adverse effects on human health, public amenity and water, soil, air and ecosystems.

Reasons:

Transport systems provide vital access and communications services to the community. Problems of efficiency and safety are created where urban and rural land use activities

interact with the roading network, and space use pressures also arise for air and maritime transport facilities. There is a need to manage both supply of and demand for transport systems, in order to ensure acceptable interactions between developments and the transport system generally.

*Addresses Issues 5.6, 12.4; achieved by Policies 5.6, 12.5.
Related objective is Objective 5.4.*

TRANSPORT POLICIES AND METHODS

Policy 12.5

The Council will ensure that the land transport system efficiently and safely provides for the movement of goods, services, and people, including a reasonable level of access, while avoiding, remedying or mitigating adverse effects on the environment including communities.

Explanation and Reasons:

The land transport system of roads, cycleways and walkways is a significant service for meeting the transport needs of urban and rural communities and the District's economy. Council is able to provide for the maintenance and development of the system to meet appropriate community travel demands, consistent with the minimisation of adverse effects on the environment from the operation of the system.

PROCESS OBJECTIVE AND POLICY

Objective 13.2

Use of effective methods in the development and implementation of resource management plans in fulfilment of duties under the Resource Management Act.

Reasons:

Sound resource management practice demands adoption of good process methods in order to develop and deliver good resource management results. Such methods should be open to the public and Council clients, understandable and fair to all interests, flexible in their response to situations, and efficient in their use of effort. Effective process methods should result in sound decisions on policies, consents and other actions to implement plans. Good process includes adequate environmental investigations, monitoring and enforcement to ensure that good resource management decisions are made and complied with, and to enable progress in achieving resource management results to be established.

Policy 13.7

The Council will adopt a cautious approach to making decisions on plans and consent applications that:

- (a) seeks and utilises all relevant available information; and

- (b) acknowledges uncertainty or inadequacy in the information available about any potential adverse effect (or risk) of activities, including information about the type and level of risk; and
- (c) establishes whether any risk is able to be remedied or mitigated to an acceptable degree or is of a type that must be avoided; and
- (d) ensures that the need for further information about any risk is considered when making judgements under (c) above; and
- (e) results in decisions that are responsive to new information about effects and risks.

Explanation and Reasons:

The Council may have to make decisions on plans or consents where there is inadequate information about the likely effects of proposals or activities, or where the information suggests that there are potential adverse effects (or risks). The Council will acknowledge whenever these uncertainties are present. It will consider whether it can obtain further information, or whether any potential adverse effect can be avoided or reduced to an acceptable degree. The Council recognises the role of further information when making its decisions.

5.1.2 Objective

Avoidance, remedying or mitigation of adverse effects from the use of land on the use and enjoyment of other land and on the qualities of natural and physical resources.

5.1.3 Policies

5.1.3.1 To ensure that any adverse effects of subdivision and development on site amenity, natural and built heritage and landscape values, and contamination and natural hazard risks are avoided, remedied, or mitigated.

5.1.3.9 To avoid, remedy, or mitigate effects of:

- (a) noise and vibration;
 - (b) dust and other particulate emissions;
 - (c) contaminant discharges;
 - (d) odour and fumes;
 - (e) glare;
 - (f) electrical interference;
 - (g) vehicles;
 - (h) buildings and structures;
 - (i) temporary activities;
- beyond the boundaries of the site generating the effect.

5.1.3.14 To provide sufficient flexibility in standards, terms and methods for rural sites to allow for the wide range of effects on amenities which are typically associated with rural activities, and which may vary considerably in the short or long term.

5.1.3 Principal Reasons and Explanation

Subdivision and development commonly occur at locations which share attributes valued by the community such as sustainable management of land for rural activities, or scenic or natural attractions. Subdivision and development commonly occurs at locations which share attributes valued by the community, such as sustainable management of land for rural activities and scenic or natural attractions. Continued urban development at these locations may reduce those values. Sometimes developments may provide an opportunity for more formal protection of valued features and may include other mechanisms for enhancing the environment. Policy 5.1.3.1 is a general policy which addresses the management of effects of change in land use in both the urban and rural environment. Policy 5.1.3.12 limits development on coastal land where it will have an adverse effect on coastal values. Policy 5.1.3.13 limits urban development and other activities which are likely to be incompatible with rural activities, in rural areas.

Water of good quality is needed for domestic use and for natural ecosystems. Policies 5.1.3.2, 5.1.3.4 and 5.1.3.11 seek to achieve that.

Land activities and development will be affected by, or have an effect on, stormwater flows, sedimentation and water quality.

Policy 5.1.3.9 is intended to contain nuisance effects, and 5.1.3.10 addresses a nuisance which can also become a safety issue.

Rural activities are associated with a wide range of effects on amenities. Policy 5.1.3.14 acknowledges that these effects must be provided for on a flexible basis, including making allowance for some changes in effects in both the short and long term.

5.2 Amenity Values

5.2.2 Objective

Maintenance and enhancement of amenity values on site and within communities throughout the District.

5.2.3.9 To avoid, remedy or mitigate the adverse effects of signs on amenity values.

5.2.3.10 To allow signs in residential, rural residential, recreation and rural areas that are necessary for information, direction or safety.

5.2.30 Principal Reasons and Explanation

Signs are an important part of the District in their role in giving information and advertising products. However, they affect safety and visual amenity if not properly designed and located, especially at the entrance to townships.

Signs are generally acceptable in the commercial and industrial areas because they are needed to advertise products and services. For this reason there is a more liberal approach to signage in these areas. However, signs on roofs and verandahs are restricted for amenity reasons.

Advertising in rural, recreation and residential areas is often a detraction from the amenity of these areas and in these areas, signs are restricted as to scale and positioning.

Traffic safety policies for signs are in Chapter 11. Signs on Council roads are controlled by Council Bylaw 1994.1. Signs on state highways are subject to controls specified in New Zealand Transport Agency Bylaw 1987/3.

5.3.2 Objective

Maintenance and enhancement of the special visual and aesthetic character of localities.

5.3.3 Policies

5.3.3.3 To avoid, remedy or mitigate the adverse effects of the location, design and appearance of buildings, signs and incompatible land uses in areas of significant natural or scenic, cultural, historic or other special amenity value.

5.3.30 Principal Reasons and Explanation

In locations such as St Arnaud, Marahau, Lake Rotoroa and Awaroa, natural and scenic values also warrant limits on the nature and scale of development (see Chapter 6.13). Elsewhere, heritage sites or other landmarks may warrant preservation.

As areas are developed within the controls applying to various locations, they take on the character allowed by those controls. These areas may need to be protected against new controls, or new activities, which would cause a departure from that character. For example, the removal of indigenous forest in areas where it is now rare in the coastal environment will adversely affect the character of the locality. Sprawling development along main highway routes leading into settlements may undermine the visual amenity of those settlements.

7.2 Provision for Non Soil-Based Activities

7.2.2 Objective

Provision of opportunities to use rural land for activities other than soil-based production, including papakainga, tourist services, rural residential and rural industrial activities in restricted locations, while avoiding the loss of land of high productive value.

7.2.3 Policies

*Refer to Policy sets 5.1, 6.2, 6.5, 7.1, 7.3, 7.4, 8.2, 9.1, 9.2, 9.3, 14.1 – 14.4.
Refer to Rule sections 16.3, 17.5 – 17.12, 18.1 – 18.13.*

7.2.3.1 To enable activities which are not dependent on soil productivity to be located on land which is not of high productive value.

7.2.3.2 To enable sites in specific locations to be used primarily for rural industrial, tourist services or rural residential purposes (including communal living and papakainga) with any farming or other rural activity being ancillary, having regard to:

- (a) the productive and versatile values of the land;
- (b) natural hazards;
- (c) outstanding natural features and landscapes, and the coastal environment;
- (d) cross-boundary effects, including any actual and potential adverse effects of existing activities on such future activities;
- (e) servicing availability;
- (f) the availability of specific productive natural resources, such as aggregates or other mineral sources;

7.2.30 Principal Reasons and Explanation

People and communities value rural locations for purposes other than soil-based production, and where these purposes can be achieved without compromising productive values, rural character and amenity values, provision can be made for them. This objective, and associated policies, establishes a framework within which Plan provisions such as rules and zones are developed, and consent applications can be evaluated. The policy is supported by methods to encourage responsible management by resource users.

Conservation and ecosystem values may be ranked equivalent to, or higher than, production values, and subdivision or amalgamation for protection purposes is enabled.

7.4 Rural Character and Amenity Values

7.4.2 Objective

Avoidance, remedying or mitigation of the adverse effects of a wide range of existing and potential future activities, including effects on rural character and amenity values.

7.4.3 Policies

7.4.3.1 To ensure that there is sufficient flexibility for a wide range of productive rural activities to take place, while avoiding, remedying or mitigating adverse effects.

7.4.30 Principal Reasons and Explanation

Rural areas are working and living environments. They also provide much of the amenity value and character of the District as a whole.

If rural character is to be protected, it is essential that productive rural activities are not overly constrained by standards and conditions based on amenity value that are set at a much higher level than biophysical necessity. Nevertheless, activities in rural areas should not involve effects that significantly adversely impact on rural character and amenity values. This set of objectives and policies aims to provide a balanced approach.

Inevitably some activities, by their scale, intensity or other effect, have the potential, individually or cumulatively, to adversely affect the environmental qualities and other aspects of the environment that this section protects. Such potential effects can be identified on the basis of activity types, and the effects of individual proposals can be evaluated through the application process.

Subdivision and servicing availability, and the effects of land development and standards associated with these activities, also need to be taken into account when some types of activities are proposed in rural areas.

The Rural 1, Rural 2, and Rural 3 zones include threshold rules, standards and conditions which enable a wide range of activities in rural areas. The rules and standards for subdivision and development (including servicing) also avoid or mitigate cross-boundary effects and provide for maintenance of rural character.

Effects management in rural zones is also addressed by other methods besides rules.

Recognition and appreciation of the character and amenity of rural areas and the overall value that these add to the District's economic, social and cultural attributes, is a relatively recent phenomenon. The District's diverse rural landscape, including the working rural landscape, requires careful consideration in terms of this objective whenever an activity or development is proposed that requires consent. Because of the variety of rural character and landscape types in the District's rural areas, derived from natural features overlain by decades of cultural change, effects on rural character and amenity landscape values beyond those provided for by the Plan's rules, need to be assessed on a case-by-case basis in a local or sometimes regional context. As a result of zoning and decision-making on specific applications, all parts of both the Rural 1 and 2 zones are expected to largely retain their current rural character and amenity landscape values, while the character and landscapes of the Rural 3 Zone is expected to undergo a degree of transformation as a result of increased residential use and development, but no net loss of values. The other zones in the rural area will result in reduced rural character within the zoned areas, but only minor reductions in rural character beyond the zoned area. The amenity values of all rural zones are expected to be maintained, enhanced or protected to a reasonable level by the application of the rules and other management methods in the Plan.

8.1 Public Access

8.1.1 Issue

Provision and enhancement of public access to and along the margins of lakes, rivers, wetlands and the coast, for current and future needs of residents and visitors to the District.

8.1.2 Objective

The maintenance and enhancement of public access to and along the margins of lakes, rivers, wetlands and the coast, which are of recreational value to the public.

8.1.3 Policies

Refer to Policy sets 5.1 – 5.4, 6.1, 6.3, 6.4, 14.1 – 14.4.

Refer to Rule sections 16.1, 16.2, 16.3, 16.4, 17.1, 17.2, 17.5 - 17.8.

8.1.3.1 To maintain and enhance public access to and along the margins of water bodies and the coast while avoiding, remedying or mitigating adverse effects on other resources or values, including: indigenous vegetation and habitat; public health, safety, security and infrastructure; cultural values; and use of adjoining private land.

8.1.3.2 Notwithstanding Policy 8.1.3.1, public access by way of esplanade requirements will not be sought in areas where risks to public health and safety cannot be avoided, remedied or mitigated; or in areas where it is necessary to maintain security, consistent with the purpose of any resource consent, such as operational port areas.

8.1.3.3 To avoid, remedy, or mitigate the adverse effects on public access caused by structures, buildings, and activities in or adjoining water bodies or the coastal marine area.

8.1.3.5 To seek public access linkages between reserves and public access adjoining water bodies or the coastal marine area in the vicinity.

8.1.3.7 To ensure that adequate public access is available to outstanding natural features and landscapes in the coastal environment or the margins of lakes, rivers or wetlands, except where the impact of such access is incompatible with the duty to protect these areas or access across private land cannot be negotiated.

8.1.30 Principal Reasons and Explanation

The maintenance and enhancement of public access to and along lakes, rivers and the coast is a matter of national importance. Public access is not readily available in all localities of the District, and an increasing population is likely to require greater provision for access along water areas. In promoting public access, consideration needs to be given to: disturbance or destruction of habitats; degradation of the values of cultural heritage; public safety and security; and the use of private property.

The Act gives limited opportunity to obtain public access without compensation to landowners. A strategy which identifies priorities for public access will ensure that limited opportunities and funds are used to the best advantage. Acquisition or purchase of reserves, which are the principal means of protecting and extending public access opportunities, are not limited to Council. Other public bodies such as the Department of Conservation can also acquire and provide land for public access purposes. This option would fall under the “other means ... which ... may be used in achieving the purpose of this Act” of Section 32.

Council has made some preliminary assessment of access needs through community consultation. However, further study needs to be undertaken of all streams, rivers, lakes and coastal areas of significant value to determine their values for conservation, for recreation and for public access. Some existing structures impede access to and enjoyment of water margins and may need to be relocated. Limiting the erection of new structures on riparian reserves can also assist in ensuring adequate future access.

Part X of the Act sets out circumstances where an esplanade reserve is to be vested in Council on the subdivision of land, without compensation to the owner, and circumstances where compensation is due. Provision of public access could also be a condition of a land use consent, but in that case would be contestable. In all other cases, public access over private land could not be achieved without the negotiated agreement of the landowner.

Similarly, physical works or services could be required as a contestable condition of a resource consent; otherwise by negotiation between Council and landowner (unless required under other legislation).

8.2 Natural Character

8.2.2 Objective

Maintenance and enhancement of the natural character of the margins of lakes, rivers, wetland and the coast, and the protection of that character from adverse effects of the subdivision, use, development or maintenance of land or other resources, including effects on landform, vegetation, habitats, ecosystems and natural processes.

8.2.3 Policies

8.2.3.1 To maintain and enhance riparian vegetation, particularly indigenous vegetation, as an element of the natural character and functioning of lakes, rivers, the coast and their margins.

8.2.3.2 To control the destruction or removal of indigenous vegetation on the margins of lakes, rivers, wetlands and the coast.

8.2.3.3 To avoid, remedy or mitigate adverse effects of land management practices on the margins of water bodies, including wetlands.

8.2.3.6 To adopt a cautious approach in decisions affecting the margins of lakes, rivers and wetlands, and the coastal environment, when there is uncertainty about the likely effects of an activity.

8.2.3.20 To ensure that where erosion protection works are deemed to be necessary to protect existing settlements or structures that these are designed as much as possible to harmonise with the natural character of the coastline, river bank or lake shore.

8.2.30 Principal Reasons and Explanation

Management of water margins needs to emphasise the maintenance and enhancement of their natural character. This will include maintaining vegetation, particularly indigenous vegetation, removing noxious weeds, and encouraging the replanting of water margins that have been degraded. Maintenance and enhancement of vegetation along riparian margins are also expected to enhance the natural ecological functioning of adjoining water for aquatic life.

Where coastal or riparian land is subdivided, esplanade reserves or esplanade strips will be created in locations identified as priorities for the protection of natural values. The Act specifies circumstances where those instruments can be created without compensation to the landowner. In other circumstances those instruments, and access strips, can only be created through negotiation with landowners.

Setbacks or consent requirements have been imposed on activities that may detract from the natural values of riparian and coastal margins. This is in order that those impacts may be addressed either through conditions to manage the adverse effects, or by refusing consent if it is not practicable for the effects to be managed.

9.1.2 Objective

Protection of the District's outstanding landscapes and features from the adverse effects of subdivision, use or development of land and management of other land, especially in the rural area and along the coast to mitigate adverse visual effects.

9.1.3 Policies

9.1.3.1 To encourage broadscale land uses and land use changes such as plantation forestry and land disturbance to be managed in a way that avoids or mitigates the adverse effects on natural landform, surrounding natural features and on visual amenity values.

9.1.3.3 To ensure that structures do not adversely affect:

- (a) visual interfaces such as skylines, ridgelines and the shorelines of lakes, rivers and the sea;
- (b) unity of landform, vegetation cover and views.

9.1.3.4 To discourage subdivision developments and activities which would significantly alter the visual character of land in outstanding landscapes (including adjoining Abel Tasman, Nelson Lakes and Kahurangi national parks).

9.1.3.5 To promote awareness and protection of landscape (including seascape) values.

9.1.3.6 To manage activities which may cause adverse visual impacts in the general rural area.

9.1.30 Principal Reasons and Explanation

While the Act encourages a focus on protecting outstanding or special landscapes, it is also necessary to recognise and protect visual values in the general rural landscape, as these are important to the community. Some activities, including tracking on steep slopes, mineral extraction, and the erection of high structures such as towers and aerials, create visual effects that justify specific management in the rural area.

Some landscapes (including seascapes) are more vulnerable to change than others. The natural landscape often has highlights and significant features. The coasts are particularly well endowed with them. They may include wetlands, lookouts, peaks, tors, cliffs and steep faces. In the context of protecting Landscape Priority Areas and natural features such as the open river terraces and roche moutonnees of the Upper Buller Valley from inappropriate subdivision, use and development, the main activities with visual effects are:

9.1.30.1 Change in Vegetation Cover

While establishment and removal of shelter belts and amenity trees may have a localised visual impact, the scale of logging and establishment of plantation forestry and removal of indigenous forest is likely to significantly affect the visual character of a landscape. This is especially so in coastal landscapes and landscapes with

distinctive landforms such as the St Arnaud and Takaka Hill landscape and on identified ridgelines and skylines in the District.

9.1.30.2 Land Disturbance

Land disturbance from mining, quarrying, building excavation, road works and tracking can result in stark and unnatural changes in colour and form in the landscape, especially when displayed on hilly landscapes and along coastal and river margins.

9.1.30.3 Structures

Structures, especially in the coastal environment, on identified ridgelines and skylines, and adjoining national parks, have the potential to impact adversely on landscape character through inappropriate location, size, shape and colour. Many of these effects can be mitigated through careful design and use of colour and tree planting. Golden Bay has many sensitive skylines and ridgelines which are generally not built on.

9.2 Rural Landscape Values

9.2.2 Objective

Retention of the contribution rural landscapes make to the amenity values and environmental qualities of the District, and protection of those values from inappropriate subdivision and development.

9.2.3 Policies

9.2.3.1 To integrate consideration of rural landscape values into any evaluation of proposals for more intensive subdivision and development than the Plan permits.

9.2.3.3 To retain the rural characteristics of the landscape within rural areas.

9.2.3.4 To encourage landscape enhancement and mitigation of changes through landscape analysis, subdivision design, planting proposals, careful siting of structures and other methods, throughout rural areas.

9.2.30 Principal Reasons and Explanation

The District's rural landscapes are a valued resource with social and cultural meaning, and with economic value in terms of tourism and recreation, in addition to production from the land.

Rural landscapes in some parts of the district are large and expansive. In other areas they are small and localised. Both scales of landscape may have significant values, with the small intimate landscape in valleys and secluded coastal and inland areas being particularly vulnerable to major change. Larger, highly visible, landscape units may also be vulnerable to change, especially where visually prominent land forms are affected.

The rural landscape changes seasonally and in the longer term as patterns of use change. Land fragmentation and development of structures, roads and utility services can have a major impact on the rural landscape, particularly over time as cumulative effects of more intensive use and development begin to emerge.

10.1.2 Objective

Protection and enhancement of indigenous biological diversity and integrity of terrestrial, freshwater and coastal ecosystems, communities and species.

10.1.3 Policies

10.1.3.3 To foster community responsibility for the protection of the indigenous habitat values of the district.

10.1.30 Principal Reasons and Explanation

The District has a diverse range of habitats particularly within the three National Parks in the District. However some habitats are poorly represented in protected areas and these have been discussed in Issue 10.1.1.1. The Council has a responsibility to recognise and provide for the protection of significant habitats and the assistance of landowners and other interested parties will be required to ensure such areas may be enjoyed by future generations. It is acknowledged that some further work is required on the representativeness of the habitats that remain today. Schedule 10C gives the criteria used to determine significant natural areas listed in the Plan.

11.1 Effects on Transport Safety and Efficiency

11.1.2 Objective

A safe and efficient transport system, where any adverse effects of the subdivision, use or development of land on the transport system are avoided, remedied or mitigated.

11.1.3.2 To ensure that land uses generating significant traffic volume:

- (a) are located so that the traffic has access to classes of roads that are able to receive the increase in traffic volume without reducing safety or efficiency;
- (b) are designed so that traffic access and egress points avoid or mitigate adverse effects on the safety and efficiency of the road network.

11.1.3.7 To ensure that adequate and efficient parking and loading spaces are provided, either on individual sites or collectively, to avoid or mitigate adverse effects on the safety and efficiency of the road network.

11.1.3.11 To ensure that signs do not detract from traffic safety by causing confusion or distraction to or obstructing the views of motorists or pedestrians.

11.1.30 Principal Reasons and Explanation

Intensive traffic-generating activities such as commercial and industrial activities need convenient access to major routes. Because access causes a reduction in the carrying capacity of roads and a potential conflict with passing vehicles, the location and detailed design of access is important. Accesses that are too wide or too narrow, at a position of impaired visibility or located too close to intersections, can cause traffic conflict.

Adequate on-site parking is required for activities to prevent the spread of on-street parking, which can interfere with the safe operation of the transport network and property access to the network.

To reduce accident risk on rural roads where traffic speed tends to be higher, clear visibility needs to be maintained and shading which could cause icing problems avoided.

Signs adjacent to roads have the potential to cause driver distraction. Traffic signs should be easily read. To achieve the highest degree of safety, roadside information directed at road users needs to be kept to a minimum, located in positions with adequate visibility and have clear and concise messages that can be rapidly read by road users.

11.2.2 Objective

The avoidance, remedying, or mitigation of adverse effects on the environment from the location, construction, and operation of the land transport system, including effects on:

- (a) the health and safety of people and communities;
- (b) the amenity of residential areas, workplaces and recreational opportunities;
- (c) air and water quality;
- (d) natural habitats and ecosystems;
- (e) landscapes and natural features;
- (f) aggregate and energy resources;
- (g) the productivity and use of land.

11.2.3 Policies

11.2.3.3 To promote transport routes, and approaches and methods of design, construction, and operation which avoid, remedy, or mitigate adverse effects on:

- (a) the health and safety of people and communities; in particular, cyclists and pedestrians;
- (b) amenity values of neighbourhoods and areas of special character;
- (c) air and water quality;
- (d) natural habitats and ecosystems;
- (e) landscapes and natural features;
- (f) aggregate and energy resources;
- (g) the productivity of land.

11.2.3.6 To promote choice between using roads, walkways or cycleways for walking or biking.

11.2.30 Principal Reasons and Explanation

The existence of the roading network creates adverse effects on adjacent land uses and the quality of living and other environments. Traffic emits fumes and noise, and can generate dust and other contaminants. Traffic is a potential hazard to people's safety. Reduced amenity in the vicinity of roads results from increased road size and traffic volumes and speeds. Demands for extension or upgrade to the network can put space needs for new road alignments in conflict with existing land uses or it may restrict future opportunities. Land resources such as open space, natural habitats or heritage features may be adversely affected by this space need. Aggregate and water are required for road building; space for roads may permanently remove the option for production or living space. Design of additions to the road network must consider the most efficient and safest way of providing route options for future traffic. In some instances the exact location of a future road alignment may not be known but developers need to be aware of locations where connectivity is required to sustain the network. The generation of traffic at certain locations may require consideration of reciprocal effects of the network and of land use activities.

Proposed

Part V - Annexes

4 May 2002

ANNEXES
Amendment Order 2008
This annexe is not part of the Tasman Resource Management Plan but is included for information only.

[Silvia Cartwright]
Governor-General

Order in Council

At Wellington this 18th day of June 2001

Present:

HER EXCELLENCY THE GOVERNOR GENERAL in Council

Pursuant to sections 214 and 423 of the Resource Management Act 1991, Her Excellency the Governor-General, acting on the advice and with the consent of the Executive Council, makes the following order.

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7	Restrictions on damming of waters		Schedule 1
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10	Requirement to maintain fish passage		Protected Waters
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			Protected Waters (Lake Matiri)

1 Title

This order is the Water Conservation (Buller River) Order 2001.

2 Commencement

This order comes into force on the 28th day after the date of its notification in the *Gazette*.

3 Interpretation

In this order, unless the context otherwise requires—

Act means the Resource Management Act 1991

NTU means Nephelometric Turbidity Unit

reasonable mixing means the mixing that occurs—

- (a) within a maximum radius of 200 metres from a discharge into a still water body; or
- (b) within a maximum distance of 200 metres downstream from a discharge into a river

river means the main stem of the waters specified in Schedule 1, 2, or 3; and includes any unnamed naturally occurring still water bodies that lie along the main stem

tributaries means all the tributaries of the rivers or sections of rivers identified in Schedule 1, 2, or 3.

4 Outstanding characteristics and features

The waters specified in any of Schedule 1, 2, or 3 include, to the extent identified in Schedule 1, 2, or 3, the following outstanding characteristics, features, and values:

- (a) outstanding recreational characteristics;
- (b) outstanding wild and scenic characteristics;
- (c) outstanding fisheries or wildlife habitat features;
- (d) outstanding scientific values.

5 Waters to be retained in natural state

Because of the outstanding characteristics, features, and values identified in clause 4, the quality, quantity, level, and rate of flow of the waters specified in Schedule 1 are to be retained in their natural state.

6 Waters to be protected

Because of the outstanding characteristics, features, and values identified in clause 4—

- (a) the waters specified in Schedule 2 are to be protected in accordance with the restrictions and prohibitions in clauses 7 to 11, as specified in Schedule 2;
- (b) the waters specified in Schedule 3 are to be protected in accordance with the restrictions and prohibitions in clauses 7 and 12, as specified in Schedule 3.

7 Restrictions on damming of waters

(1) For the purposes of this clause, damming does not include any intake or deflection structure that does not—

- (a) harm any salmonid fish spawning or prevent the passage of any fish; or
- (b) prevent the use of the waters for rafting or canoeing; or
- (c) reduce the wildlife habitat; or
- (d) intrude visually to the extent that it reduces wild and scenic values.

(2) No resource consent may be granted or rule included in a regional plan permitting the damming of the waters specified in Schedule 2 whenever any of the characteristics in subclause (1) are listed as outstanding in Schedule 2 and that schedule refers to this clause.

8 Restrictions on alterations of river flows and form

(1) No resource consent may be granted or rule included in a regional plan—

- (a) if the effect of the resource consent or rule would not generally maintain the channel cross-section, meandering pattern, and braided river channel characteristics of the form of any river specified in Schedule 2;
- (b) if the effect of the resource consent or rule would alter the naturally occurring instantaneous flow of the water in any river specified in Schedule 2 by more than 5%.

(2) The restriction in subclause (1)(a) does not apply in respect of dams, weirs, roads, fords, bridges, access ways, or fish passes lawfully existing on the date this order comes into force.

(3) Despite anything in subclause (1)—

- (a) any change in flow permitted in that part of the Buller River specified in item 2 of Schedule 2 must not be greater than 10% of the naturally occurring instantaneous flow;
- (b) any change in flow permitted in that part of the Buller River specified in item 3 of Schedule 2 must not be greater than 15% of the naturally occurring instantaneous flow;
- (c) any change in flow permitted in the Gowan River, item 10 of Schedule 2, must not be—
 - (i) greater than 15% of the naturally occurring instantaneous flow whenever that flow is *16 cumecs or more, 9 cumecs or more, or but less than 27 cumecs; or*
 - (ii) greater than *5%* of the naturally occurring instantaneous flow whenever that flow is *less than 9 cumecs, 27 cumecs or more; or*
 - (iii) *greater than 5% whenever the flow is > 16 cumecs.*

9 Restrictions on alteration of lake levels

No resource consent may be granted or rule included in a regional plan for the waters of Lake Rahu, item 22 of Schedule 2, if the effect of that resource consent or rule would alter the mean natural level of the lake or allow a daily fluctuation that exceeds—

- (a) 10% of the natural annual fluctuation; or
- (b) the natural limits of fluctuation.

10 Requirement to maintain fish passage

No resource consent may be granted or rule included in a regional plan for the waters specified in Schedule 2 unless that resource consent or rule maintains—

- (a) adequate natural or artificial passage for trout through those waters where Schedule 2 identifies trout as an outstanding characteristic; and
- (b) adequate natural or artificial passage through those waters for those native fish that require such passage where Schedule 2 identifies native fish as an outstanding characteristic.

11 Restrictions on alteration of water quality

- (1) No resource consent may be granted or rule included in a regional plan permitting a discharge into any of the waters specified in Schedule 2 if, after allowing for reasonable mixing of the discharge with the receiving waters, the discharge would—

- (a) alter the concentration of suspended solids or turbidity in the receiving waters by more than 1 milligram per litre or 1 NTU where the ambient concentration of suspended solids or turbidity is less than or equal to 10 milligrams per litre or 10 NTU respectively; or
- (b) alter the ambient concentration of suspended solids or turbidity in the receiving waters by more than 10 milligrams per litre or 10 NTU where the concentration of suspended solids or turbidity is more than 10 milligrams per litre or 10 NTU respectively; or
- (c) alter the visual clarity of the waters by more than 20%; or
- (d) alter the natural temperature of the receiving waters—
 - (i) by more than 3 degrees Celsius; or
 - (ii) by increasing the water temperature to more than 20 degrees Celsius; or
 - (iii) so as to adversely affect, during their spawning season, the spawning of—
 - (A) rainbow and brown trout;
 - (B) inanga;
 - (C) kōaro;
 - (D) giant, banded, and short-jawed kōkopu;
 - (E) alpine, long-jawed, dwarf, and common galaxias.

- (2) No resource consent may be granted or rule included in a regional plan permitting the discharge into any of the waters specified in Schedule 2 or Schedule 3 unless, after allowing for reasonable mixing of the discharge with the receiving waters—

- (a) any change in the acidity or alkalinity in the receiving waters, as measured by the pH and attributable to that discharge, would either—
 - (i) maintain the pH within the range of 6 to 9 units; or
 - (ii) not allow a change by more than 0.5 units when the natural pH lies outside the range of 6 to 9 units; and
- (b) there would be no undesirable biological growths attributable to the discharge, including—
 - (i) bacterial or fungal slime growths that are visible to the naked eye; or
 - (ii) seasonal maximum covers of streams or river beds by—
 - (A) periphyton as filamentous growth or mats (larger than 3 millimetres thick) exceeding 40%; or
 - (B) biomass exceeding 100 milligrams of chlorophyll-a per square metre; or
 - (C) 40 grams ash-free dry weight per square metre of exposed surface area; and
- (c) aquatic organisms are not made unsuitable for human consumption through the accumulation of excessive concentrations of contaminants; and

- (d) the water is not made unsuitable for recreation by the presence of contaminants, or the median bacterial level of five samples or more taken over a period of 30 days would not exceed 126 E coli per 100 millilitres.
- (3) No resource consent may be granted or rule included in a regional plan permitting a discharge into any of the waters specified in Schedule 2 if, after allowing for reasonable mixing of the discharge with the receiving waters, the discharge would reduce the concentration of dissolved oxygen below 80% of saturation.
- (4) For the purposes of subclause (3), if the natural concentration is less than 80% of saturation, the natural level must be maintained or increased.

12 Conditions applying to Lake Matiri and Matiri River

- (1) No resource consent may be granted or rule included in a regional plan for the waters of Lake Matiri, item 1 of Schedule 3, if the effect of the resource consent or rule would—
 - (a) allow the level of Lake Matiri to exceed the natural range; or
 - (b) allow the mean level of Lake Matiri to exceed 0.5 metres above the naturally occurring mean level.
- (2) A resource consent may be granted or a rule included in a regional plan that has the effect of allowing the level of the waters in Lake Matiri to be controlled within its natural range if—
 - (a) the maximum daily lake level fluctuation, caused by artificial control, would not exceed 50% of the existing natural range; and
 - (b) fluctuations in lake level, caused by artificial control, would not significantly affect riparian vegetation.
- (3) No resource consent may be granted or rule included in a regional plan for a structure in any of the waters specified in Schedule 3 unless the structure allows for the passage of eels and kōaro in both directions.

(4) *No resource consent — in item 2 Schedule 3 unless the structure allows for the passage of eels in both directions.*

13 Scope of order

- (1) This order does not limit section 14(3)(b) and (e) of the Act, which relates to the use of water for domestic needs, for the needs of animals, and for, or in connection with, fire-fighting purposes.
- (2) This order does not restrict or prevent the grant of resource consents to the Department of Conservation or rules being included in a regional plan that would permit minor water uses if those minor uses are necessary for the management of land administered by the Department.
- (3) This order does not restrict or prevent the grant of resource consents for the purpose of—
 - (a) research into, and enhancement of, fisheries and wildlife habitats; or
 - (b) hydrological or water quality investigations; or
 - (c) the construction, maintenance or protection of any road or bridge, or the maintenance or protection of any other network utility operation (as defined in section 166 of the Act); or
 - (d) the construction or maintenance of soil conservation and river protection works undertaken in accordance with the Soil Conservation and Rivers Control Act 1941.
- (4) This order does not prevent the granting of further resource consents for the Maruia Springs Thermal Resort on similar terms and conditions to those imposed on the resource consents held on the date this order comes into force.

14 Exemptions

Nothing in this order prevents the grant of a resource consent that would otherwise contravene the conditions set out in clauses 7 to 12 if—

- (a) a consent authority is satisfied that—
 - (i) there are exceptional circumstances to justify the grant of the resource consent; or
 - (ii) any discharge is of a temporary nature; or
 - (iii) any discharge is associated with necessary construction and maintenance work for works and structures not otherwise prohibited by this order; and
- (b) a consent authority is satisfied that the exercise of any such resource consent would not compromise the preservation and protection of the outstanding characteristics and features identified for the waters specified in the Schedules.

Schedule 1
Waters to be retained in Natural State

Item	Waters	Outstanding Characteristics of Features
1	Travers River	Headwater trout fishery Wild and scenic
2	Lake Rotoiti	Trout fishery Wild and scenic Canoeing Eel fishery
3	Sabine River	Headwater trout fishery Wild and scenic
4	Lake Constance	Wild and scenic
5	D'Urville River	Headwater trout fishery Wild and scenic
6	Lake Rotorua	Trout fishery Eel fishery Wild and scenic
7	Owen River and all tributaries upstream of and including Halfway Creek and Fyfe River upstream of the boundary of the public conservation estate and private land (map reference M28 698 550)	Headwater trout fishery Karst features (scientific values)
8	Matiri River upstream of map reference M28 550 517)	Wild and scenic Native fishery
9	Matakitaki River upstream of the boundary between conservation estate and private land (map reference M30 700 070)	Headwater trout fishery Wild and scenic
10	Nardoo Creek	Trout spawning habitat Wild and scenic
11	Glenroy River upstream of Granity Creek (map reference M30 546 004)	Wild and scenic
12	Maruia River and all tributaries upstream of Alfred River confluence	Blue duck Wild and scenic
13	Lake Daniells	Rainbow trout fishery Wild and scenic Native fishery
14	Deepdale River	Headwater trout fishery
15	Te Wharau Creek (Stony River)	Headwater trout fishery
16	Blackwater River and Ohikaiti River	Wild and scenic Blue duck Native fishery
17	Ohikanui River and all its tributaries	Headwater trout fishery Wild and scenic Native fishery Blue duck

Schedule 3
Protected Waters (Lake Matiri & Matiri River)

Item	Waters	Outstanding Characteristics or Features	Restrictions and Prohibitions
1	Lake Matiri and Matiri River downstream from map reference M28 550 517 to Lake Matiri outlet	Wild and scenic Wildlife habitat Native fishery	cls 11 and 12
2	Matiri Rive from the outlets of L Matiri to the Confluence with the Bulwer Explanatory Note	Contribution to outst. Native fishery	(Dated 1/9/08) cls 11 + 12

This note is not part of the order, but is intended to indicate its general effect.

This order, which comes into force on the 28th day after the date of its notification in the Gazette, declares that—

- (a) the waters described in *Schedule 1* are to be retained in their natural state because of the outstanding characteristics, features, and values of the waters:
- (b) the waters described in *Schedule 2* are waters to be protected because of the outstanding characteristics, features, and values of the waters:
- (c) the waters described in *Schedule 3* are to be protected waters because of the outstanding characteristics, features, and values of the waters.

The order specifies how the waters are to be preserved and protected. The order also specifies the limitations of the preservations and protections.

Issued under the authority of the Acts and Regulations Publication Act 1989.

Date of notification in *Gazette*:

This order is administered in the Ministry for the Environment.

Schedule 2
Protected Waters

Item	Waters	Outstanding Characteristics or Features	Restrictions and Prohibitions
1	Buller River from Lake Rotoiti to Gowan confluence	Trout fishery Canoeing (Lake Rotoiti to Teetotal Creek map reference N29 916 383)	cls 7, 8(1), 8(2), 10, and 11
2	Buller River from Gowan confluence to map reference M29 537 350	Trout fishery Canoeing Rafting	cls 7, 8(1)(a), 8(2), 8(3), 10, and 11
3	Buller River from map reference M29 537 350 to Maruia confluence	Trout fishery Canoeing Rafting Wild and scenic	cls 7, 8(1)(a), 8(2), 8(4), 10, and 11
4	Buller River from Maruia confluence to Iron Bridge	Canoeing Rafting Wild and scenic	cls 7, 8(1), 8(2), 10, and 11
5	Buller River from Iron Bridge to Te Kuha	Rafting	cls 7, 8(1), 8(2), 10, and 11
→ 5A	Black valley stream	Wild and scenic	
6	Speargrass Creek	Trout spawning habitat	cls 7, 8(1), 8(2), 10, and 11
7	Maggie Creek	Trout spawning habitat	cls 7, 8(1), 8(2), 10, and 11
8	Maud Creek	Trout spawning habitat	cls 7, 8(1), 8(2), 10, and 11
9	Station Creek	Trout spawning habitat	cls 7, 8(1), 8(2), 10, and 11
10	Gowan River	Rafting, trout fishing contribute to trout & eels	cls 7, 8(1)(a), 8(2), 8(3)(c), 10, and 11
11	Mangles River	Headwater trout fishery Wild and scenic	cls 7, 8(1), 8(2), 10, and 11
12	Tutaki River and its tributary, the Tiraumea River	Headwater trout fishery	cls 7, 8(1), 8(2), 10, and 11
13	Owen River downstream from the confluence of Halfway Creek	Headwater trout fishery	cls 7, 8(1), 8(2), 10, and 11
14	Fyfe River downstream of map reference M28 698 550, Sandstone Creek, Johnstons Creek, Brewery Creek, and their tributaries	Trout spawning habitat Blue duck	cls 7, 8(1), 8(2), 10, and 11
15	Mole Stream	Trout spawning habitat Wild and scenic	cls 7, 8(1), 8(2), 10, and 11
16	Maruia River downstream of Alfred River confluence and including the Alfred River to the upper end of the Mainstem Gorge at the Jones Creek confluence (map reference L30 434 017)	Headwater trout fishery Wild and scenic	cls 7, 8(1), 8(2), 10, and 11
17	Maruia River Mainstem Gorge from the Jones Creek confluence (map reference L30 434 017) to the Aerial Ropeway (map reference L30 429 120)	Headwater trout fishery Canoeing Rafting	cls 7, 8(1), 8(2), 10, and 11
18	Maruia River from Aerial Ropeway (map reference L30 429 120) to the confluence of the Buller River	Headwater trout fishery Canoeing	cls 7, 8(1), 8(2), 10, and 11
19	Flat Creek, Warwick Creek, Rappahannock River, Station Creek, Woolley River, and Rahu River	Headwater trout fishery Trout spawning habitat Native fishery	cls 7, 8(1), 8(2), 10, and 11
20	Lake Rahu	Wildlife habitat	cls 9, 10, and 11

Water Conservation (Buller River) Amendment Order 2008

ANAND SATYANAND, Governor-General

ORDER IN COUNCIL

At Wellington this 1st day of September 2008

Present:

HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL

Pursuant to sections 214 and 216 of the Resource Management Act 1991, His Excellency the Governor-General, acting on the advice and with the consent of the Executive Council, makes the following Order.

Order

1. **Title**—This order is the Water Conservation (Buller River) Amendment Order 2008.
2. **Commencement**—This order comes into force 28 days after the date of its notification in the *New Zealand Gazette*.
3. **Principal order amended**—This order amends the Water Conservation (Buller River) Order 2001.*
4. **Waters to be protected**—Clause 6(b) is amended by omitting “7” and substituting “11”.
5. **Restriction on damming of waters**—Clause 7(1)(a) is amended by omitting “salmonid”.
6. **Restriction on alterations of river flows and form**—Clause 8(3) is amended by revoking paragraph (c) and substituting the following paragraph:
 - “(c) any change in flow permitted in the Gowan River, item 10 of Schedule 2, must not be:
 - (i) greater than 15% of the naturally occurring instantaneous flow whenever that flow is 16 cumecs or more but less than 27 cumecs; or
 - (ii) greater than 25% of the naturally occurring instantaneous flow whenever that flow is 27 cumecs or more; or
 - (iii) greater than 5% of the naturally occurring instantaneous flow whenever that flow is less than 16 cumecs.”
7. **Restrictions on alteration of lake levels**—Clause 9 is amended by omitting “22” and substituting “20”.
8. **Requirement to maintain fish passage**—Clause 10 is revoked and the following clause substituted:

“(10) No resource consent may be granted or rule included in a regional plan for the waters specified in Schedule 1 or Schedule 2 unless that resource consent or rule maintains:

 - (a) adequate natural or artificial passage for trout through those waters where Schedule 1 or Schedule 2 identifies trout as an outstanding characteristic or identifies those waters as contributing to outstanding trout fisheries; and
 - (b) adequate natural or artificial passage through those waters for those native fish that require such passage where Schedule 1 or Schedule 2 identifies native fish as an outstanding characteristic or identifies those waters as contributing to outstanding native fisheries. To avoid doubt, reference to native fisheries includes eel fisheries.”
9. **Conditions applying to Lake Matiri and Matiri River**—(1) Clause 12(3) is amended by inserting “item 1 of” after “specified in”.

(2) Clause 12 is amended by inserting the following subclause after subclause (3):

“(4) No resource consent may be granted or rule included in a regional plan for a structure in any of the waters specified as item 2 in Schedule 3 unless the structure allows for the passage of eels in both directions.”
10. **Schedule 2 amended**—Schedule 2 is amended as follows:
 - (a) By inserting the following item after item 5:

“5A Black Valley Stream (downstream of GR N29 985345)	Trout spawning habitat	cls 7, 8(1), 8(2), 10, and 11”
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 - (b) By revoking, in item 10, “Rafting” and substituting “Rafting, trout fishery, contribution to outstanding trout fisheries, contribution to outstanding eel fishery”.
11. **Schedule 3 amended**—Schedule 3 is amended as follows:
 - (a) by omitting the heading “Protected waters (Lake Matiri)” and substituting the heading “Protected waters (Lake Matiri and Matiri River)”;
 - (b) by omitting “characteristics” and substituting “characteristics”;
 - (c) by inserting the following item:

“2 Matiri River from the outlets of Lake Matiri to the confluence with the Buller River	Contribution to outstanding native fishery	cls 11 and 12”
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Dated at Wellington this 1st day of September 2008.

REBECCA KITTERIDGE, Clerk of the Executive Council.

**New Zealand Gazette*, 21 June 2001, No. 64, page 1520 (SR 2001/139)

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NOTICE NO: 6487

**APPENDIX 4:
Bonds**

	\$ Amount	When required	Release trigger
Landuse - Roding	10,000	@ engineering plan approval stage	@ Road Reserve vesting
Construction earthworks	500,000	Pre construction	Scheme commissioning
River/lake bed use and Damming	500,000	Scheme commissioning	Ongoing
Total Bond	1,010,000		

Matiri Hydro Scheme (MHS)

Possible Offset Mitigation Options

- Blue Duck recovery programme in conjunction with Department of Conservation - To offset the proposed 15% loss of invertebrate and trout yearling population and blue duck habitat and food and short-term effects from sediment discharges. The programme to apply to upstream and downstream of the lake. The programme to include intensive pest control, particularly for mustelids (eg stoats) and possums, as well as monitoring. A minimum cost of \$8,000 per year and adjusted for CPI.
- Place a covenant on existing bush and scrub on NZEL title – to offset loss of forest on the access track
- Pest animal control programme (stoats, possums, pigs, goats, rats, mice) – to offset the on-going effects of the increased access to the lake and loss of aquatic habitat, invertebrates and trout.
- A bush protection covenant registered against NZEL land prohibiting:
 - i) the removal or damage of native trees, shrubs and other native plants; and
 - ii) the keeping of browsing animals (goats, deer, cattle, horses, sheep);
 - iii) the introductions of exotic plant or animal species.

The bush protection area to be managed as a buffer area that is complementary to the Kahurangi National Park.

- Public Access Covenant - A registered easement in favour of the Crown created over the proposed maintenance access road and the existing formed walking track on Sec 3 Blk V Matiri SD (NL9A/1079). The easements to have a width of 6 metres and to provide for unrestricted non-motorised public access (except that public access can be temporarily closed on the maintenance access road when the Matiri Hydro Scheme resource consent holder requires vehicular access for maintenance purposes and provided alternative walking access is available).
- Extension to Matiri West Bank Road and car park development - Matiri West Bank Road extension and car park for a minimum of 10 car parks with the following:
 - a) sealed carriageway width 3.5m wide; shoulder 2 x 1.35 m; grassed swales and batters x2 ; 2 coat chip seal (100mm depth base course, 200 mm depth sub base dependent upon the underlying geography);
 - b) maximum grade 1:7;
 - c) design speed 50 kilometres per hour;
 - d) provision for stormwater control and dispersal;
 - e) all cut and batter slopes to be stabilised with vegetation as soon as possible after completion of earthworks;
 - f) That the extended road and car parking area for 10 car parks be surveyed by a Registered Surveyor and vested in Council as Road reserve area with the road reserve having a minimum width of 18 metres.

- g) The car park shall be formed to a firm all weather finish.
- That the applicant be required to provide public access points to the river from the upgraded road through their property at 3km intervals

Any program cost to be adjusted annually for CPI.

Direct Avoidance, Mitigation or Remediation

- Eel pass by providing a continuously wetted surface – avoid effects on eel migration
- Vegetation restoration (mostly planting of trees) around powerhouse and any other buildings, work, laydown and turn-around areas and access road – avoid landscape character effects
- Weed avoidance and control
- If it is not possible to cover with natural rock any in-stream structures (weirs and penstocks) should be shaped and coloured to look like the natural substrate boulders - avoid landscape character effects
- Bond – to secure any adverse effects if or when the company ceases operation permanently.
- Protection of the tufa formation
- Minimum flow of MALF₇.
- Moving mussels to ensure that they are continuously wetted (if necessary)
- Continuous flow information and 72-hr advance warnings of flow fluctuations greater than 50% to go to public website – to offset against fluctuations affecting the safety of recreational users of the river and the loss of opportunity by x% for kayaking the river.
- Allow for higher flows during daylight hours – avoid effects on recreation values.
- Screening to prevent entrapment or entry into the penstock or tailrace
- Avoiding the paradise duck moult
-