

11 March 2019

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Nelson City Council  
C/- Landmark Life Ltd  
PO Box 343  
Nelson 7040  
**Attn: Mark Lile**

Resource Consent Number: 165122,  
165192 & 165193  
Contact: Helen Anderson  
DD:04 914 8462  
Email: [helen.anderson@jacobs.com](mailto:helen.anderson@jacobs.com)  
[www.nelson.govt.nz](http://www.nelson.govt.nz)

Dear Mark,

**RM165122, 165192 & 165193: DECISION ON NOTIFIED RESOURCE CONSENT**

Pursuant to Section 114 of the Resource Management Act 1991 ("the Act"), please find enclosed a copy of the Council's decisions on your application for resource consent referred to above.

The attached documents are as follows:

1. Resource Consent Decisions which states the nature and location of the activity and lists the consent conditions that you must comply with; and
2. Section 42A Report of Helen Anderson (Consultant Planner) on behalf of the Nelson City Council (processing), which explains the reasons for the Council's decisions on your application and summarises the Council's decisions on your application the matters raised in submissions, and the Council's finding on each of these matters.

Section 120 of the Act provides you with the right of lodge an appeal with the Environment Court in respect of this decision and/or any associated conditions. Section 121 of the Act requires that any such appeal:

1. Be made in the prescribed form;
2. Must state the reasons for the appeal, the relief sought; and
3. Be lodged with both the Environment Court (PO Box 5027, Wellington 6145); Phone (04 9188480) and the Council within 15 working days of receiving this letter.

If you receive a copy of an appeal from another party and you wish to be involved in the appeal process (i.e. to be a "party to the proceedings") then you need to advise the environment court of this within 30 working days. Section 274 of the Act outlines the process to become a party to the appeal proceedings.

An invoice will be posted out within the next working week (if not included with the decision letter). Please note that under Section 125 of the Act, your consent will lapse in five years unless you have given effect to it before then. Please feel free to contact me if you have any questions regarding any aspect of your consent or its conditions. My contact details are listed at the top of this letter.

Yours faithfully



P.P.

Helen Anderson  
**Consultant Planner**

## RESOURCE CONSENT DECISION

### **Resource Consent number: RM165122 (Land Use)**

Pursuant to section 104B of the Resource Management Act 1991 ("the Act"), the Nelson City Council ("the Council") hereby **GRANTS** resource consent to:

*Nelson City Council*

#### **The activity to which this decision relates:**

- Land use consent for the existing dam on the North Branch of the Maitai River; and
- Land use consent for the existing weir on the South Branch of the Maitai River.

#### **Glossary**

**Compensation water** – means water released from the reservoir at the south branch weir as compensation for the water abstracted (the "backfeed")

#### **Location details:**

Address of property:	Maitai Valley Road, Nelson
Legal description:	Section 44 & Section 46-47 Square 18 Lot 1-2 DP5441 Pt Sec 7, Pt Sec 48-50 and Pt Sec 52 Square 18 Sec 60-62 Square 18 Pt Sec 48-50 Square 18 Lot 3-4 DP 5441 DP3465 Sec 1 Blk II Maungatapu SD Pt Sec 6 & Pt Sec 8 Sq 18 Pt Sec 50 Sq 18 Pt Sec 50 & Pt Sec 52 Sec 1 SO 13551
Certificates of title:	NL168/99, NL133/45, NL133/55, NL1A/267, NL69/207, NL8B/61, NL133/46, NL74/230, NL85/245, NL69/208, NL69/209
Location co-ordinates:	As identified on Map titled 'Ecological Monitoring Sites', prepared by the applicant dated August 2018. Control Site - E1630835 N5427894 Site A - E1630700 N5428055 Site B - E1630741 N5428490

#### **CONDITIONS**

Pursuant to Section 108 of the Act, this consent is issued subject to the following conditions:

##### **General**

1. The activity shall be carried out in general accordance with the application lodged with the Consent Authority ('the Council') on 17 June 2016 and the additional information received post lodgement (listed in Appendix 1 of the s.42A report) and the following plans prepared by the Nelson City Council ('the Consent Holder');

<b>Titled</b>	<b>Dated</b>
Context Map – Map 1	June 2016
Designation and Key Infrastructure – Map 2	June 2016
Maitai Dam Area – Map 3	June 2016
Maitai pipeline service points – Map 6	June 2016

And as modified by the following conditions of consent. Where there is any apparent conflict between the application and consent conditions, the consent conditions shall prevail.

### **Duration**

2. This consent is granted for a term of 35 years.

### **Access for Council staff and Agents**

3. The Consent Authority ('the Council'), its staff or agents, shall be permitted access to all structures and monitoring equipment associated with the Maitai Water Supply Scheme at all reasonable times for the purpose of carrying out inspections, taking measurements and collecting samples.

### **Review of Conditions**

4. The Council may, under Section 128 of the Resource Management Act 1991, initiate a review of the conditions of this consent within the 3 month period following the end of each year (i.e. between 1 August and 31 October of each year) for the purposes of:
  - (a) Dealing with any unexpected adverse effect on the environment which may arise from the exercise of the consent and which is appropriate to deal with at a later stage;
  - (b) Addressing relevant national environmental standards or regulations that have been made under Section 43 of the Resource Management Act 1991;
  - (c) Requiring the adoption of the best practical option to remove or reduce any adverse effects on the environment;
  - (d) To comply with the requirements of a relevant proposed or operative rule(s) in the Nelson Resource Management Plan or any subsequent Plan, including, but not limited to, the maximum or minimum levels or flows or rates of use of water, water metering requirements, or minimum standards of water quality;
  - (e) carrying out a review of the riparian enhancement programme and the success of the planting such review to be carried out in conjunction with both DOC and Fish and Game New Zealand; and
  - (f) putting into effect an annual review of the effectiveness of the fish management programme and its monitoring, including such matters as the extent of releases, and the enhancement of the fish populations.

## **Fish Passage**

- 5.1 Any structures used for the purpose of this consent shall be operated and maintained or modified if necessary in such a manner that will facilitate the passage of fish. Any modifications required to structures to facilitate and improve fish passage shall occur within 12 months of being identified.

Should resource consent and/or other regulatory approvals be required for any modifications the 12 month implementation timeframe shall commence on the date resource consents and/or other regulatory approvals are obtained.

- 5.2 The South Branch weir shall be modified within 6 months of the commencement of this consent to provide continuous flow from the 'Backfeed' splash zone past the weir, consistent with the recommendations set out in section 4.2.3 of Cawthron Report 2601.

## **Maintaining of Structures**

6. The Consent Holder shall ensure that the structural integrity and safety of the dam and associated ancillary structures (including spillways, pipelines, inlet and outlet structures) is monitored and maintained in accordance with the original design and maintenance specifications.

## **Safety Inspections and Independent Safety Reviews**

7. The Consent Holder shall engage a suitably qualified independent engineer or firm of engineers to undertake an annual inspection and a five yearly review, of the safety of the dam and ancillary structures. Copies of the inspection and review reports are to be forwarded to the Nelson City Council's Group Manager Environmental Management by the end of each calendar year.

## **Fish Management**

8. Subject to obtaining any necessary permit or authorisation to do so, the Consent Holder shall in each year following the commencement of this consent carry out fish relocation from the Maitai River below the Spillway-South Branch confluence to the dam reservoir. The Nelson City Council's Group Manager Environmental Management shall be given at least 20 working days of notice prior to the fish relocation occurring. The fish relocation shall include:
- a) an average of at least 500 elvers per year based on a rolling average of the last 5 years;
  - b) either 20 koaro, or a night time trapping effort of three hours on four different occasions by an appropriately experienced freshwater ecologist, whichever comes first;
  - c) either 20 redfin bully, or a night time trapping effort of three hours on four different occasions by an appropriately experienced freshwater ecologist, whichever comes first; and
  - d) before carrying out the relocation the Consent Holder shall consult with the Department of Conservation and Cawthron Institute in respect of the timing, duration and method of the relocation.

## **Environmental Enhancement**

- 9.1 Subject to obtaining any necessary permit or authorisation to do so from Nelson City Council, a landowner or other regulatory authority, the Consent Holder shall carry out an environmental enhancement programme along the Maitai River below the dam. The Consent Holder shall engage suitably qualified technical expertise (e.g. freshwater and/or terrestrial ecologist) to prepare the programme. The programme shall make provision for (but need not be restricted to) the planting of native species along banks and rock protection and bank enhancement. The programme may integrate with,

contribute to and build upon existing or planned works to be undertaken by Nelson City Council.

The programme shall be agreed upon by the Consent Holder and the Department of Conservation, in consultation with Fish and Game New Zealand and Te Tau Ihu iwi. If the Consent Holder and the Department of Conservation are unable to agree upon the programme, the programme shall be determined by the Nelson City Council's Group Manager Environmental Management after consultation with the Consent Holder, the Department of Conservation, Te Tau Ihu iwi, and Fish and Game New Zealand.

The sum set out in Condition 9.2 shall be disbursed through the programme as agreed upon by the Consent Holder and the Department of Conservation.

- 9.2 The Consent Holder shall expend a sum of not less than \$10,000 per year in giving effect to the enhancement programme referred in Condition 9.1 above.
- 9.3 The agreed programme referred to in Condition 9.1 above shall be submitted to the Nelson City Council's Group Manager Environmental Management within 6 months of the commencement of this consent for approval. No works may commence under the programme until the Consent Holder has received written confirmation that the programme is to the satisfaction of the Council's Group Manager Environmental Management.
- 9.4 The Consent Holder shall commence the environmental enhancement programme in the year commencing 1 July of the year following agreement of the environmental enhancement programme but no later than 1 July 2020.

#### **ADVICE NOTES**

1. This is not a building consent, and the Consent Holder shall meet the requirements of the Council for all Bylaws, Regulations and Acts.
2. It is possible that the activity could trigger the need for an archaeological authority (permit) under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014).

Section 42 of the HNZPTA 2014 requires an authority be sought where the modification or destruction of an archaeological site is proposed (this includes a place that is reasonably suspected to be an archaeological site).

An archaeological site is essentially defined as any place in New Zealand (including any building/structure, or part of a building/structure) that was associated with pre-1900 human activity and may provide historical evidence through archaeological investigation.

It is important to determine whether or not the proposed work requires an authority prior to physical works commencing; if in doubt the applicant is advised to contact Heritage New Zealand Pouhere Taonga (Central Regional Office, Wellington). The HNZPTA 2014 contains penalties for unauthorised site damage.

3. This resource consent authorises only the activity described above. Any matters or activities not consented to by this consent or covered by the conditions above must either:
  - (a) comply with all the criteria of a relevant permitted activity in the Nelson Resource Management Plan (NRMP) or subsequent plan; or
  - (b) be allowed by the Resource Management Act 1991; or
  - (c) be authorised by a separate resource consent.
4. This consent is granted to the Consent Holder, but Section 134 of the Act states that such land use consent "attach to the land", and accordingly, may be enjoyed by any subsequent owners and occupiers of the land. Therefore, any reference to "Consent Holder" in any conditions shall mean the current owners and occupiers of the subject land. Any new

owners or occupiers should therefore familiarise themselves with the conditions of this consent, as there may be conditions that are required to be complied with on an ongoing basis.

5. The Consent Holder should note that this resource consent does not override any registered interest on the property title.
6. The Consent Holder is advised that the council is proposing to apply environmental monitoring charges to resource consent holders to recover annual environmental monitoring and science costs. For further information please contact Council's Environmental Programmes Adviser.

## RESOURCE CONSENT DECISION

### **Resource Consent number: RM165192 (Water Permit)**

Pursuant to section 104B of the Resource Management Act 1991 ("the Act"), the Nelson City Council ("the Council") hereby **GRANTS** resource consent to:

*Nelson City Council*

#### **The activity to which this decision relates:**

- Water permit to dam the flow of the of the North Branch of the Maitai River;
- Water permit to divert the flow of the North Branch of the Maitai River over the dam spillways and to the South Branch via the backfeed;
- Water permit to dam the flow of the South Branch of the Maitai River;
- Water permit to divert the flow of the South Branch of the Maitai River over the weir;
- Water permit to take up to the full flow of the North Branch of the Maitai River;
- Water permit to take up to 300 litres per second of water from the South Branch of the Maitai River;

#### **Glossary**

**Compensation water** – means water released from the reservoir at the south branch weir as compensation for the water abstracted (the "backfeed")

**Enhancement water** – means water released, over and above the compensation water, to achieve minimum flow requirements.

**Surplus water** – means water released that exceeds the minimum flow requirements.

#### **Location details:**

Address of property:	Maitai Valley Road, Nelson
Legal description:	Section 44 & Section 46-47 Square 18 Lot 1-2 DP5441 Pt Sec 7, Pt Sec 48-50 and Pt Sec 52 Square 18 Sec 60-62 Square 18 Pt Sec 48-50 Square 18 Lot 3-4 DP 5441 DP3465 Sec 1 Blk II Maungatapu SD Pt Sec 6 & Pt Sec 8 Sq 18 Pt Sec 50 Sq 18 Pt Sec 50 & Pt Sec 52 Sec 1 SO 13551
Certificates of title:	NL168/99, NL133/45, NL133/55, NL1A/267, NL69/207, NL8B/61, NL133/46, NL74/230, NL85/245, NL69/208, NL69/209
Location co-ordinates:	As identified on Map titled 'Ecological Monitoring Sites', prepared by the applicant dated August 2018. Control Site - E1630835 N5427894 Site A - E1630700 N5428055 Site B - E1630741 N5428490

## CONDITIONS

Pursuant to Section 108 of the Act, this consent is issued subject to the following conditions:

### General

1. The activity shall be carried out in general accordance with the application lodged with the Consent Authority ('the Council) on 17 June 2016 and the additional information received post lodgement listed in Appendix 1 of the s.42A report, and the following plans prepared by the Nelson City Council ('the Consent Holder');

<b>Titled</b>	<b>Dated</b>
Context Map – Map 1	June 2016
Designation and Key Infrastructure – Map 2	June 2016
Maitai Dam Area – Map 3	June 2016
Maitai pipeline service points – Map 6	June 2016

And as modified by the following conditions of consent. Where there is any apparent conflict between the application and consent conditions, the consent conditions shall prevail.

### Duration

2. This consent is granted for a term of 35 years.

### Maintenance of Monitoring Equipment and Maintain and Supply Records

- 3.1 The Consent Holder shall maintain suitably calibrated equipment and sufficient records to monitor compliance with the consent conditions. An annual summary report assessing compliance with consent conditions shall be provided to the Nelson City Council's Group Manager Environmental Management by the end of each calendar year. Copies of the records and summary reports shall be made available for viewing by any other interested party on request.
- 3.2 Water level and flow records shall be collected to the latest version of the Land Air Water Aotearoa's (LAWA) National Environmental Monitoring Standards (NEMS).
- 3.3 At the Consent Holder's cost, all water level and flow data shall be telemetered in real time and be made available to the public on request.

### Access for Council Staff and Agents

4. The Consent Authority, its staff or agents, shall be permitted access to all structures and monitoring equipment associated with the Maitai Water Supply Scheme at all reasonable times for the purpose of carrying out inspections, taking measurements and collecting samples.

## **Review of Conditions**

5. The Council may, under Section 128 of the Resource Management Act 1991, initiate a review of the conditions of this consent within the 3 month period following the end of each year (i.e. between 1 August and 31 October of each year) for the purposes of:
  - a) Dealing with any unexpected adverse effect on the environment which may arise from the exercise of the consent and which is appropriate to deal with at a later stage;
  - b) To reduce the quantities and rates of water authorised to be taken if the consent is not fully exercised;
  - c) Addressing relevant national environmental standards or regulations that have been made under Section 43 of the Resource Management Act 1991;
  - d) Requiring the adoption of the best practical option to remove or reduce any adverse effects on the environment;
  - e) To comply with the requirements of a relevant proposed or operative rule(s) in the Nelson Resource Management Plan or any subsequent Plan, including, but not limited to, the maximum or minimum levels or flows or rates of use of water, water metering requirements, or minimum standards of water quality; and
  - f) An assessment of the water abstraction volumes and rates detailed in the conditions of this consent against any future allocation policy.

## **Fish Passage**

- 6.1 Any structures used for the purpose of this consent shall be operated and maintained or modified, if necessary, in such a manner that will facilitate the passage of fish, including but not limited to:
  - a) continuous wetted surface from the reservoir to the river at all times;
  - b) no structural barriers to fish passage; and
  - c) provision of a minimum of two mussel spat ropes.
- 6.2 The Consent Holder shall ensure that an annual inspection is undertaken by the end of each calendar year, by a suitably qualified freshwater ecologist to assess the performance of the fish passage measures and provide recommendations for any required improvements. The results of the annual inspection shall be provided to the Nelson City Council's Group Manager Environmental Management within 20 working days of completion of the annual inspection.

Any modifications required to structures to facilitate fish passage identified by the freshwater ecologist shall occur within 12 months of the annual inspection results being provided to the Nelson City Council's Group Manager Environmental Management. Should resource consent and/or other regulatory approvals be required for any modifications the 12 month implementation timeframe shall commence on the date resource consents and/or other regulatory approvals are obtained.

## **Ecological Monitoring**

- 7.1 Monitoring of the effects of the abstraction on the physical, chemical, and ecological conditions of the Maitai River shall be carried out on an annual basis at the following sites (as shown on the attached Map titled 'Ecological Monitoring Sites', dated August 2018), and for the following determinands:

Control site (E1630835 N5427894):

- Dissolved Oxygen;
- Turbidity;
- Total dissolved inorganic nitrogen;
- Total nickel (Ni);
- Total chromium (Cr);
- Total iron (Fe);
- Total Manganese (Mn);
- Periphyton;
- Macroinvertebrates; and
- Fish.

Immediately above South Branch Weir:

- Temperature.

Site A (E1630700 N5428055):

- Temperature;
- Dissolved Oxygen;
- Turbidity;
- Total dissolved inorganic nitrogen;
- Total iron (Fe);
- Total manganese (Mn);
- Total nickel (Ni);
- Total chromium (Cr); and
- Dissolved reactive phosphorus.

Site B (E1630741 N5428490):

- Periphyton;
- Macroinvertebrates; and
- Fish.

The monitoring programme shall be approved by the Nelson City Council's Group Manager Environmental Management.

7.2 The Consent Holder shall provide an annual monitoring report to the Nelson City Council's Group Manager Environmental Management by 1 October each year. The report shall include:

- (a) the results of the monitoring programme;
- (b) a discussion of the results and a comparison with previous year's results, including the identification of any relevant receiving environment trends or patterns;
- (c) any commentary on the effectiveness and appropriateness of the conditions of the consent; and
- (d) any recommendations for amendments to the monitoring programme, or physical or operational improvements that could be made to improve water quality and ecological values; and
- (e) details of how implementation of recommendations or improvements will be undertaken at the Consent Holder's expense.

Copies of the report shall be provided to any other interested parties on request.

**Advice Note:** One annual report shall be prepared to report on the results of ecological monitoring required under RM165192 and RM165193.

### **Water Abstraction**

- 8.1 Water shall be abstracted from the South Branch Weir at a maximum rate of 300 litres per second.
- 8.2 Compensation water shall be released from the reservoir (sourced from intakes 1, 2 or 3) into the South Branch immediately downstream of the intake weir at the same time as water is being abstracted pursuant to this consent; and at a rate not less than the abstraction rate.

### **Dissolved Oxygen**

9. That within 5 years of the date of the commencement of this consent, the Consent Holder shall ensure the concentration of dissolved oxygen in the North Branch Reservoir is maintained at or above 50% saturation at all depths, by implementing measures identified such as mixing or hypolimnetic aeration).

Within 2 years of the commencement of this consent the Consent Holder shall provide a report to the Nelson City Council's Group Manager Environmental Management detailing the measures to be implemented to achieve the concentration of dissolved oxygen throughout the North Branch Reservoir is maintained at or above 50% saturation at all depths.

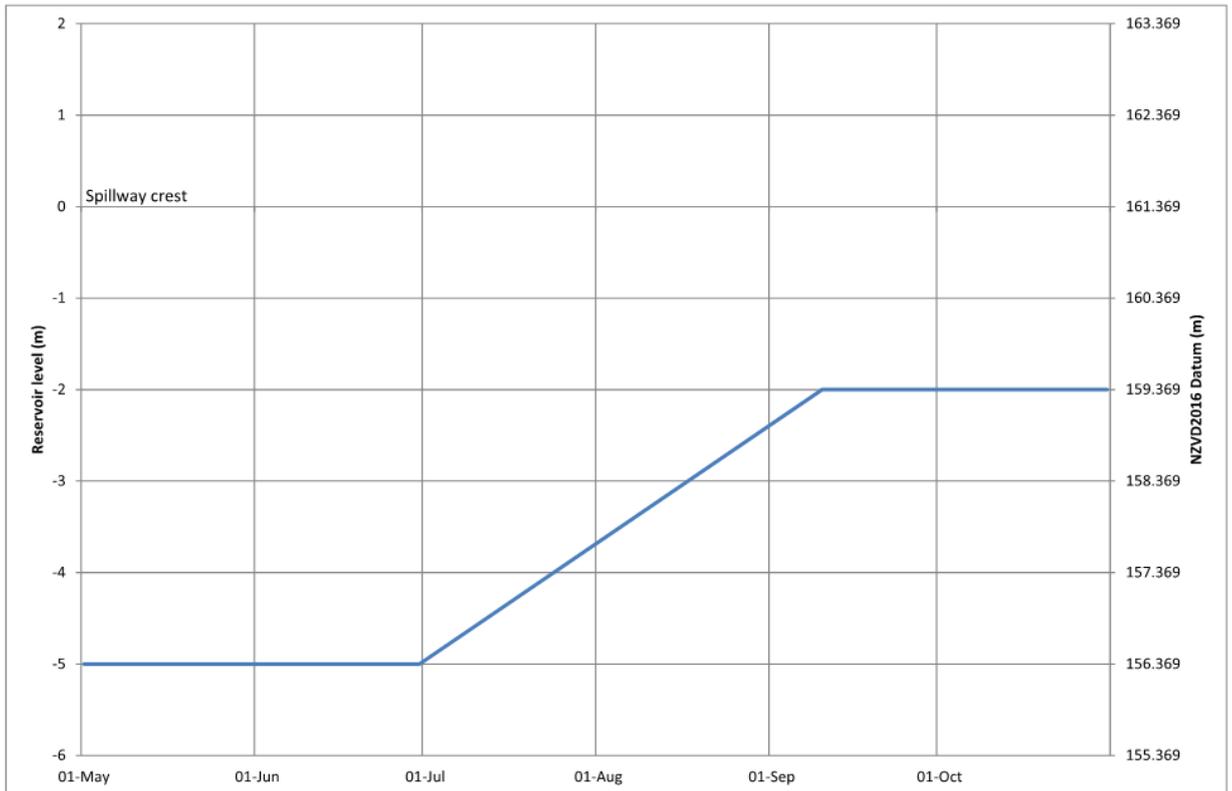
### **Maximum Storage Level**

10. The maximum retained storage level of the North Branch Reservoir shall be 162 metres above mean sea level, unless it is raised by natural geological or geomorphic processes.

### **Minimum Flow Requirements**

11. The following minimum flows shall be maintained in the Maitai River immediately below the Forks:
  - a) From 1 May to 31 October [Winter] -  
The flow in the South Branch shall be measured at the existing water level recording station and:
    - i. when the South Branch mean daily flow exceeds 140 litres per second (l/sec), the minimum flow at the Forks shall be 300 l/sec;
    - ii. when the South Branch mean daily flow is less than or equal to 140 l/sec, the minimum flow at the Forks shall be 230 l/sec. This minimum flow shall remain effective until the South Branch flow exceeds a mean daily flow of 140 l/sec and the water level in the North Branch Reservoir exceeds the level shown in **Figure 1**.

**Figure 1**



- b) From 1 November to 30 April a minimum flow of no less than 230 l/s shall be maintained at the Forks recorder site.
- c) The minimum flow in (a) and (b) above shall be subject to reductions in minimum flows, as allowed for in Condition 14 of this consent.

**Determination of South Branch Instantaneous Flow and Backfeed Adjustment**

- 12. Flow is to be continuously monitored and adjusted, as required, so that the flow does not fall below the minimum flows set out in Condition 11 of this consent, for a period in excess of 60 minutes (which is the delay in flow change between intake and measuring point) or 4 samples taken at 15 minute intervals.

**Installation and Maintenance of Flow Recorders**

- 13. The Consent Holder shall be responsible for the installation and maintenance of structures and equipment required to measure and record both the rates of abstraction direct to the City supply and the rates of discharge to the river other than discharges from the spillway and the release of scour water. The recorded information shall be made available to the Consent Authority on request.

**Water Conservation and Drought Security**

- 14. When the water level in the North Branch Reservoir drops below the trigger levels for each Water Conservation Stage set out in **Table 1** below, the Consent Holder shall as soon as possible implement the corresponding Water Conservation Measures identified in **Table 1**.

**Table 1: Trigger Levels and Water Conservation Stages and Measures**

North Branch Reservoir level (metres above mean sea level NZVD2016)	Water Conservation Stage	Water Conservation Measures
156.3	1	Advertise drought condition-save water. Sprinklers only every second day (odd/even property numbers to match appropriate day)
154.7	2	Sprinkler Ban. Hand held hose only
153.8	3	Sprinkler and Hosing ban. Industrial and commercial property restrictions
153.1	4	Reduce minimum flow at the Forks to 200 l/s, in addition to Water Conservation Stage 3 measures.
152.7	5	Reduce minimum flow at the Forks to 180 l/s in addition to Water Conservation Stage 3 measures.

**ADVICE NOTES**

1. This is not a building consent, and the Consent Holder shall meet the requirements of the Council for all Bylaws, Regulations and Acts.
2. It is possible that the activity could trigger the need for an archaeological authority (permit) under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014).

Section 42 of the HNZPTA 2014 requires an authority be sought where the modification or destruction of an archaeological site is proposed (this includes a place that is reasonably suspected to be an archaeological site).

An archaeological site is essentially defined as any place in New Zealand (including any building/structure, or part of a building/structure) that was associated with pre-1900 human activity and may provide historical evidence through archaeological investigation.

It is important to determine whether or not the proposed work requires an authority prior to physical works commencing; if in doubt the applicant is advised to contact Heritage New Zealand Pouhere Taonga (Central Regional Office, Wellington). The HNZPTA 2014 contains penalties for unauthorised site damage.

3. This resource consent authorises only the activity described above. Any matters or activities not consented to by this consent or covered by the conditions above must either:

- (a) comply with all the criteria of a relevant permitted activity in the Nelson Resource Management Plan (NRMP) or subsequent plan; or
  - (b) be allowed by the Resource Management Act 1991; or
  - (c) be authorised by a separate resource consent.
4. This consent is granted to the Consent Holder, but Section 134 of the Act states that such land use consent “attach to the land”, and accordingly, may be enjoyed by any subsequent owners and occupiers of the land. Therefore, any reference to “Consent Holder” in any conditions shall mean the current owners and occupiers of the subject land. Any new owners or occupiers should therefore familiarise themselves with the conditions of this consent, as there may be conditions that are required to be complied with on an ongoing basis.
  5. The Consent Holder should note that this resource consent does not override any registered interest on the property title.
  6. The Consent Holder is advised that the Council is proposing to apply environmental monitoring charges to resource consent holders to recover annual environmental monitoring and science costs. For further information please contact the Council’s Environmental Programmes Adviser.

## RESOURCE CONSENT DECISION

### **Resource Consent number: RM165193 (Discharge Permit)**

Pursuant to section 104B, of the Resource Management Act 1991 ("the Act"), the Nelson City Council ("the Council") hereby **GRANTS** resource consent to:

*Nelson City Council*

#### **The activity to which this decision relates:**

- Discharge permit to discharge up to 400 litres per second of water from the North Branch Reservoir to the South Branch via the backfeed;
- Discharge permit to discharge scour water, mixing box overflow, and enhancement water to the historic North Branch channel below the dam whereafter it flows into the Maitai River at the Forks;
- Discharge permit to discharge overflow water from the North Branch Reservoir to the Maitai River via the spillways; and
- Discharge permit to discharge water, sediment and gravel from pipeline service valves and surge towers to water or to land where it may enter water.

#### **Glossary**

**Compensation water** – means water released from the reservoir at the south branch weir as compensation for the water abstracted (the "backfeed")

**Enhancement water** – means water released, over and above the compensation water, to achieve minimum flow requirements.

**Surplus water** – means water released that exceeds the minimum flow requirements.

#### **Location details:**

Address of property:	Maitai Valley Road, Nelson
Legal description:	Section 44 & Section 46-47 Square 18 Lot 1-2 DP5441 Pt Sec 7, Pt Sec 48-50 and Pt Sec 52 Square 18 Sec 60-62 Square 18 Pt Sec 48-50 Square 18 Lot 3-4 DP 5441 DP3465 Sec 1 Blk II Maungatapu SD Pt Sec 6 & Pt Sec 8 Sq 18 Pt Sec 50 Sq 18 Pt Sec 50 & Pt Sec 52 Sec 1 SO 13551
Certificates of title:	NL168/99, NL133/45, NL133/55, NL1A/267, NL69/207, NL8B/61, NL133/46, NL74/230, NL85/245, NL69/208, NL69/209
Location co-ordinates:	As identified on Map titled 'Ecological Monitoring Sites', prepared by the applicant dated August 2018. Control Site - E1630835 N5427894 Site A - E1630700 N5428055 Site B - E1630741 N5428490

## CONDITIONS

Pursuant to Section 108 of the Act, this consent is issued subject to the following conditions:

### General

1. The activity shall be carried out in general accordance with the application lodged with the Consent Authority ('the Council') on 17 June 2016 and the additional information received post lodgement listed in Appendix 1 of the s.42A report, and the following plans prepared by the Nelson City Council ('the Consent Holder');

<b>Titled</b>	<b>Dated</b>
Context Map – Map 1	June 2016
Designation and Key Infrastructure – Map 2	June 2016
Maitai Dam Area – Map 3	June 2016
Maitai pipeline service points – Map 6	June 2016

And as modified by the following conditions of consent. Where there is any apparent conflict between the application and consent conditions, the consent conditions shall prevail.

### Duration

2. This consent is granted for a term of 35 years.

### Maintenance of Monitoring Equipment and Maintain and Supply Records

- 3.1 The Consent Holder shall maintain suitably calibrated equipment and sufficient records to monitor compliance with the consent conditions. An annual summary report assessing compliance with consent conditions shall be provided to the Nelson City Council's Group Manager Environmental Management by the end of each calendar year. Copies of the records and summary reports shall be made available for viewing by any other interested party on request.
- 3.2 Water level and flow records shall be collected to the latest version of the Land Air Water Aotearoa's (LAWA) National Environmental Monitoring Standards (NEMS).
- 3.3 At the Consent Holder's cost, all water level and flow data shall be telemetered in real time.

### Access for Council Staff and Agents

4. The Consent Authority ('the Council'), its staff or agents, shall be permitted access at all reasonable times for the purpose of carrying out inspections, taking measurements and collecting samples.

## Review of Conditions

5. The Council may, under Section 128 of the Resource Management Act 1991, initiate a review of the conditions of this consent within the 3 month period following the end of each water year (i.e. between 1 August and 31 October of each year) for the purposes of:
  - (a) Dealing with any unexpected adverse effect on the environment which may arise from the exercise of the consent and which is appropriate to deal with at a later stage;
  - (b) Addressing relevant national environmental standards or regulations that have been made under Section 43 of the Resource Management Act 1991;
  - (c) Requiring the adoption of the best practical option to remove or reduce any adverse effects on the environment; and
  - (d) To comply with the requirements of a relevant proposed or operative rule(s) in the Nelson Resource Management Plan or any subsequent plan, including, but not limited to, the maximum or minimum levels or flows or rates of use of water, water metering requirements, or minimum standards of water quality.

## Fish Passage

6. Any structures used for the purpose of this consent shall be operated and maintained or modified, if necessary, in such a manner that will facilitate the passage of fish. The Consent Holder shall engage a suitably qualified freshwater ecologist to assess the performance of the fish passage measures and provide recommendations for any required improvements.

Any modifications required to structures to facilitate and improve fish passage identified by the freshwater ecologist shall occur within 12 months of being identified. Should resource consent and/or other regulatory approvals be required for any modifications the 12 month implementation timeframe shall commence on the date resource consents and/or other regulatory approvals are obtained.

## Ecological Monitoring

- 7.1 Monitoring of the effects of the discharge on the physical, chemical, and ecological conditions of the Maitai River shall be carried out on an annual basis at the following sites (as shown on the attached Map titled 'Ecological Monitoring Sites'), and for the following determinands:

Control site (E1630835 N5427894):

- Dissolved Oxygen;
- Turbidity;
- Total dissolved inorganic nitrogen;
- Total nickel (Ni);
- Total chromium (Cr);
- Total iron (Fe);
- Total Manganese (Mn);
- Periphyton;
- Macroinvertebrates; and
- Fish.

Immediately above South Branch Weir:

- Temperature.

Site A (E1630700 N5428055):

- Temperature;
- Dissolved Oxygen;
- Turbidity;
- Total dissolved inorganic nitrogen;
- Total iron (Fe);
- Total manganese (Mn);
- Total nickel (Ni);
- Total chromium (Cr); and
- Dissolved reactive phosphorus.

Site B (E1630741 N5428490):

- Periphyton;
- Macroinvertebrates; and
- Fish.

The monitoring programme shall be approved by the Nelson City Council's Group Manager Environmental Management.

7.2 The Consent Holder shall provide an annual monitoring report to the Nelson City Council's Group Manager Environmental Management by 1 October each year. The report shall include:

- (a) the results of the monitoring programme;
- (b) a discussion of the results and a comparison with previous year's results, including the identification of any relevant trends or patterns;
- (c) any commentary on the relevance and appropriateness of the conditions of the consent;
- (d) any recommendations for amendments to the monitoring programme, or physical or operational improvements that could be made to improve water quality and ecological values; and
- (e) details of how implementation of recommendations or improvements will be undertaken at the Consent Holder's expense.

Copies of the report shall be provided to any other interested parties on request.

**Advice Note:** One annual report shall be prepared to report on the results of ecological monitoring required under RM165192 and RM165193.

### **Abstraction Condition**

8. Compensation water shall be released from the North Branch Reservoir (sourced from intakes 1, 2 or 3) into the South Branch immediately downstream of the intake weir at the same time as water is being abstracted pursuant to this consent; and at a rate not less than the abstraction rate.

### **Water Temperature**

9.1 Water temperature in the South Branch shall not exceed 21°C at Site A (E1630700 N5428055) due to the backfeed discharge, and river temperatures shall not exceed 19°C for 99 percent of the time due to the backfeed discharge at Site A. If the temperature above the South Branch weir exceeds 19°C then a breach at Site A shall not constitute a breach of this condition.

- 9.2 The backfeed discharge shall not increase the temperature of the receiving water by more than 3°C downstream of the discharge at Site A (E1630700 N5428055) when compared to the temperature monitoring site immediately above the South Branch weir, as shown on the attached Map titled 'Ecological Monitoring Sites', dated August 2018.

### **Dissolved oxygen**

10. Dissolved Oxygen saturation at the point of discharge to the South Branch of the Maitai River shall be maintained at or above 50 percent.

### **Turbidity**

- 11.1 The discharge shall not cause the turbidity of the receiving waters to be increased by more than 3 nephelometric turbidity units between the Control Site (E1630835 N5427894) and Site A (E1630700 N5428055) as shown on the attached Map titled 'Ecological Monitoring Sites', dated August 2018, when measured on an annual rolling median basis (the statistical median of the last 12 monthly measurements).

#### **Advice Note:**

Assessing on a rolling median basis allows for extreme cases when the North Branch Reservoir is highly turbid.

- 11.2 Following the implementation of Condition 9 of RM165192, the turbidity at Site A (E1630700 N5428055) shall be monitored for three consecutive summer periods (between 1 November to 30 April). The results of the turbidity monitoring at Site A shall be assessed by a qualified specialist and a report shall be provided to the Nelson City Council's Group Manager Environmental Management that shall include:

- (a) a discussion of the results and a comparison with previous year's results, including the identification of any relevant trends or patterns; and
- (b) any recommendations with respect to the continued monitoring of turbidity at the Control Site (E1630835 N5427894) and Site A (E1630700 N5428055).

The Consent Holder shall not implement any recommendations made in the report until written notification is received from the Nelson City Council's Group Manager Environmental Management.

### **Discharge Concentrations**

12. The discharge shall not result in the following concentrations being exceeded in the receiving waters at Site A (E1630700 N5428055):
- (a) Total iron concentrations shall not exceed 0.30 grams per cubic metre (g/m<sup>3</sup>);
  - (b) Total manganese concentration shall not exceed 1.0 g/m<sup>3</sup>;
  - (c) Dissolved inorganic nitrogen concentration shall not exceed 0.120 g/m<sup>3</sup>;
  - (d) Dissolved reactive phosphorus concentration shall not exceed 0.009 g/m<sup>3</sup>;
  - (e) Total nickel concentration shall not exceed 0.011 g/m<sup>3</sup>; and
  - (f) Total chromium concentration shall not exceed 1 g/m<sup>3</sup>.

### **Notification of Scouring Events**

13. Other than in emergencies, the discharge of scour water up to 3 cubic metres per second (m<sup>3</sup>/s) shall only occur when the flows at the Forks flow recorder site are more than 2 m<sup>3</sup>/s (FRE3 flow), so as to provide a flushing flow. No discharge of scour water of more than 3m<sup>3</sup>/s shall occur, other than during emergencies.

### **Responsibility for Cost or Remedial Works**

14. If, in the opinion of the Nelson City Council's Group Manager Environmental Management, based on advice received from a suitably qualified expert, the discharge causes unacceptable erosion or deposition in the river channel at the point of discharge or immediately downstream, the Consent Holder shall be responsible for the cost of remedial works.

### **Enhancement Water Source**

- 15.1 All enhancement water discharged under this consent shall be taken from the spillway, and/or North Branch Reservoir intake numbers 1, 2 or 3.
- 15.2 The Consent Holder shall be responsible for the installation of a measuring device to clearly show the rate of enhancement discharge below the dam. This device shall be installed within 6 months of commencement of this consent. The outputs from the measuring device shall be provided annually to the Nelson City Council's Group Manager Environmental Management by the end of each calendar year.

### **ADVICE NOTES**

1. This is not a building consent, and the Consent Holder shall meet the requirements of the Council for all Bylaws, Regulations and Acts.
2. It is possible that the activity could trigger the need for an archaeological authority (permit) under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014).

Section 42 of the HNZPTA 2014 requires an authority be sought where the modification or destruction of an archaeological site is proposed (this includes a place that is reasonably suspected to be an archaeological site).

An archaeological site is essentially defined as any place in New Zealand (including any building/structure, or part of a building/structure) that was associated with pre-1900 human activity and may provide historical evidence through archaeological investigation.

It is important to determine whether or not the proposed work requires an authority prior to physical works commencing; if in doubt the applicant is advised to contact Heritage New Zealand Pouhere Taonga (Central Regional Office, Wellington). The HNZPTA 2014 contains penalties for unauthorised site damage.

3. This resource consent authorises only the activity described above. Any matters or activities not consented to by this consent or covered by the conditions above must either:
  - (a) comply with all the criteria of a relevant permitted activity in the Nelson Resource Management Plan (NRMP); or
  - (b) be allowed by the Resource Management Act 1991; or
  - (c) be authorised by a separate resource consent.
4. This consent is granted to the Consent Holder, but Section 134 of the Act states that such land use consent "attach to the land", and accordingly, may be enjoyed by any subsequent owners and occupiers of the land. Therefore, any reference to "Consent Holder" in any conditions shall mean the current owners and occupiers of the subject land. Any new owners or occupiers should therefore familiarise themselves with the conditions of this consent, as there may be conditions that are required to be complied with on an ongoing basis.

5. The Consent Holder should note that this resource consent does not override any registered interest on the property title.
6. The Consent Holder is advised that the Council is proposing to apply environmental monitoring charges to resource consent holders to recover annual environmental monitoring and science costs. For further information please contact the Council's Environmental Programmes Adviser.

## DECISION OF THE COMMISSIONERS

### INTRODUCTION

This is the report and decision of Mr Julian Ironside (Chair), Mr David McMahon and Ms Sharon McGarry. We were jointly appointed by the Nelson City Council ('the Council') as Independent Commissioners, pursuant to section 34A of the Resource Management Act 1991 (RMA or 'the Act'), to decide consent applications RM165122, RM165192 and RM165193 lodged by the Nelson City Council's Infrastructure Department (the Applicant') to authorise the activities associated with the operation of the Maitai Water Supply Scheme (MWSS).

The applications were prepared on behalf of the Applicant by Landmark Lile Limited and included a number of technical reports produced by the Cawthron Institute.

A report under section 42A of the RMA was prepared by Helen Anderson, a Principal Planner with Jacobs New Zealand Limited, which set out the relevant considerations under the RMA. The s42A report is appended to this decision at **Attachment A**. The 's42A report' stated that the effects of the proposal had be thoroughly assessed by the Applicant through a range of technical reports and that these assessments were considered to be complete and robust.

The s42A report concluded that the effects of the proposal would be avoided, mitigated and remedied by improvements to fish passage, increasing minimum flows, 'backfeed' (compensation water discharge) management, implementing mixing/aeration of the reservoir water, monitoring and water losses; and that the proposal is consistent with the statutory planning documents and the purpose of the RMA. The report recommended the resource consents sought should be granted for 35 years, subject to conditions.

In making our determination we have considered all of the application documentation, AEE and technical reports, the s42A report and technical reviews, and all submissions received. The issues raised by the applications are well covered in the materials that were available to us and we did not consider it necessary to undertake a site visit.

For the purposes of economy, this decision report adopts and adds to both factual and evaluative content in the s42A report. In particular, and unless otherwise stated for a given issue or matter, our decision adopts the assessment and findings in the s42A report.

### Description of the Proposed Activity

The application documentation and the s42A report described the activities and the resource consents sought.

In summary, the Applicant (Nelson City Council) is applying for a range of resource consents (land use consents, water permits and discharge permits) to re-authorise the Nelson Water Supply Scheme on the Maitai River. The application was received on 17 June 2016. The scheme is currently consented under a package of resource consents that expired on 1 February 2017. Pursuant to section 124 of the RMA 1991, the Council (as consent holder) can continue to operate this scheme as this application was made at least six months prior to the expiry of the existing consents (i.e. before 1 August 2016).

The proposal includes a number of options for improvements to the Maitai Water Supply Scheme (MWSS). These improvements are expected to lead to better environmental outcomes for the operation of the scheme, and include matters relating to fish passage, increased minimum flows, backfeed management/reservoir mixing or aeration to improve water quality and reducing water losses from the reticulation system.

The MWSS is a part of the wider Nelson Water Supply Scheme (NWSS). The NWSS also sources water from the Roding River. The MWSS includes a range of infrastructure components to source fresh water from the Maitai North Branch and the Maitai South Branch. This includes, significantly, a dam and water reservoir on the North Branch and a weir on the South Branch.

The operation of the MWSS is such that most of the water is sourced from the Maitai South Branch, with a backfeed discharge from the North Branch reservoir used to maintain the flow in the South Branch. This backfeed process is set out in more detail below. The MWSS provides approximately 60 percent of the water to the Nelson supply, with approximately 40 percent coming from the Maitai South Branch, and 20 percent from the on the North Branch Reservoir.

The Applicant seeks a 35 year term for these consents.

The resource consents for the Roding River water abstraction were granted in May 2017 for 35 years and expire in 2052.

### **Site and Locality**

The application site is located within the vicinity of Maitai Valley Road, Nelson. The Maitai Dam is located at the end of Maitai Valley Road, approximately 8 kilometres east from the centre of Nelson.

The water supply infrastructure and structures associated with the operation of the MWSS include a dam, intake structures, and various spillways, scour discharge points, pump station, storage tank, surge tank, screen house and weir.

The North Branch reservoir covers an area of approximately 32 hectares (at full capacity), has a maximum depth of 29 metres and a total volume of 4.0 million cubic metres. The land occupied by the Maitai Dam and associated water supply infrastructure is owned by Nelson City Council.

### **NOTIFICATION AND SUBMISSIONS**

The assessment of the application under sections 92 and 95 of the RMA concluded that the application should be publicly notified. This was on the basis that the assessment of the effects undertaken for the proposal determined that the MWSS would have more than minor adverse effects. Pursuant to section 95A(2)(a), the application was required to be publicly notified. The Sections 92 and 95 Report is included in Appendix 3 of the s.42A Report.

The adverse environmental effects that would be more than minor were in relation to:

- Water quality;
- Periphyton and aquatic ecosystems;
- Aquatic ecosystems;
- Fish Passage; and
- Hydrology, flow and habitat if the low flow permitted by the current conditions of consent were allowed to continue.

While mitigation options were proposed, including improving water quality through backfeed management or aeration (either via mixing or hypolimnetic aeration of the reservoir), this mitigation had not been confirmed at the time the application was lodged. Accordingly, at the time of notification, there was uncertainty as to whether the proposed mitigation would maintain the existing water quality standard (Class C).

The application was publicly notified on 27 August 2016.

### Submissions

Eleven submissions were received on the application following public notification. The submissions received were summarised in **Table 6** of the s42A report and are reproduced below as Table 1.

**Table 1: Summary of submissions**

#	Submitter	Submission summary
1.	Fish and Game New Zealand	<p>The submitter supports the granting of the resource consents for the proposal.</p> <p>The submitter acknowledges the thoroughness of the information supporting the application.</p> <p>The submitter notes the historic use of the Maitai River as a recreational trout fishery, and the declines in native and trout fisheries over the last two decades.</p> <p>The support for the consent application is based on the view that Nelson City Council is doing all that is possible to avoid, remedy and mitigate adverse effects.</p> <p>Support is noted for initiatives that will improve the health of the Maitai system and may help to restore native and trout fisheries. Increasing summer low flows and aeration are noted.</p> <p>The submitter supports release of brown trout and would like to discuss opportunities to do so with the applicant. While acknowledging concerns of predation on native fish, the submitter states that this is not a significant issue, as both native and trout fisheries will improve with better water quality, and states that releases would cease if predation occurs.</p> <p>The submitter requests that consent conditions retain the initiatives offered by the applicant.</p>
2.	Nelson Residents Association	<p>The submitter is neutral on the proposal, but states that the Association would like to be informed of what Nelson City Council is contemplating regarding future upgrade and supply.</p>
3.	Richard Gaskell	<p>The submitter is neutral on the proposal but would like better management of stored water.</p> <p>The submitter supports water aeration to improve water quality.</p> <p>The submitter notes degradation of water quality in the Maitai through operation of the scheme. Effects on aquatic life are noted in particular.</p> <p>The submitter requests improvements to water quality through conditions on consent.</p>
4.	Te Runanga o Ngati Toa Rangatira	<p>The submitter opposes the proposal, specifically the Cultural Impact Assessment included as Attachment O to the application.</p> <p>The submitter notes that Ngati Toa have statutory acknowledgement over the Maitai River, and that no appropriate consultation was conducted to allow Nelson City Council to have regard to the acknowledgement.</p>

		The submitter requests a RMA s92 process to allow development of a CIA by Ngati Toa.
5.	Royal forest and Bird Protection Society of NZ Inc.	<p>The submitter does not state whether they support or oppose the proposal.</p> <p>The submitter states that better fish passage techniques are required, and seeks that trap and transfer be implemented to move native fish up and down the river system.</p> <p>The submitter states that more is needed to ensure water temperature and chemistry of feedback water does not shock native fish, and seeks that a water aeration system be commissioned. Water quality management is also stated as being needed to minimise impacts on native fish, other fauna/flora and habitats.</p> <p>The submitter seeks that the minimum low flow be increased to 225 l/sec below the Maitai Dam to address water quality and fish habitat concerns.</p> <p>The submitter states that summer low flow periods lead to growth of algae, and seeks monitoring of water discharge and work to find solutions to minimise adverse effects of algal blooms.</p> <p>The submitter also opposes trout release in the river system due to competition with native species.</p> <p>The submitter supports a comprehensive catchment assessment for native fish movement.</p>
6.	Tasman District Council	The submitter supports the proposal in its entirety, and seeks its approval. It notes the linked nature of Nelson City's and Tasman District's water supplies, and the importance to local communities and the region. The importance of the supply from the Maitai to avoid pressure on the Roding supply is noted.
7.	Andrea Hay	<p>The submitter supports the proposal and seeks the granting of consent subject to conditions.</p> <p>The submitter supports aeration of the reservoir and increasing minimum flows. The submitter would like the health of the river improved.</p> <p>The submitter notes they would like Council to encourage rainwater collection for household use.</p>
8.	Peter Hay	<p>The submitter supports the proposal and seeks the granting of consent subject to conditions.</p> <p>The submitter supports aeration of the reservoir and increasing minimum flows to address water quality issues.</p> <p>The submitter requests incentives to encourage household water conservation and rainwater storage, as well as more efficient council use of water.</p> <p>The submitter notes the ecological, recreational and spiritual value of the Maitai River.</p>
9.	Friends of the Maitai	<p>The submitter supports the proposal. Consent conditions are requested to address points raised.</p> <p>The submitter recognises the need for a safe and clean water supply.</p> <p>The submitter supports; aeration of the dam water, fish passage improvements in the Maitai, trap and transfer of fish around the dam, and increases in the minimum flow. The submitter also would like recharge water taken from the top of the dam as this is presumed to be better quality water.</p> <p>The submitter also raises home rainwater tanks as method to reduce demand on dam water.</p>

10.	Jacquetta Bell	<p>The submitter notes the Maitai River as a taonga, with visual and recreational values. The submitter encourages reducing effects of the dam on water quality, and supports investment in an aeration system and increasing minimum flows below the dam.</p> <p>The submitter also raises home rainwater tanks as method to reduce summer demand on dam water.</p>
11.	Friends of Nelson Haven and Tasman Bay Inc	<p>The submitter supports the land use consent for the dam and weir, subject to fish passage improvements.</p> <p>The submitter supports the water take consent. Conditions on consent for minimum temperatures and aeration of discharged water are supported.</p> <p>The submitter supports conditions on the discharge consent for minimum water quantities in the South Branch and augmentation limits to maintain ecosystem health.</p> <p>The submitter supports conditions for fish passage past the spillway, including trap and transfer, and fish passage improvements to the weir.</p> <p>The submitter does not support trout releases due to predation effects. The submitter notes that trout fishing has never been a major activity on the Maitai.</p>

### Obligation to Hold a Hearing

Of the eleven submissions received, ten were either in support or were neutral. The submission received from Te Runanga o Toa Rangitira opposed the application with respect to Attachment O of the assessment of environmental effects (AEE), relating to the Cultural Impact Assessment prepared by Chetham Consulting Limited; however Te Runanga o Toa Rangitira did not wish to be heard with respect to their submission. A number of submitters who supported the application also indicated that they wished to be heard at a hearing of the application, including Fish and Game New Zealand which indicated that it wished to be heard in the event of a hearing being held.

Following the close of submissions, the Applicant's consultant liaised with those submitters and provided additional information to address their concerns. Subsequently, the Nelson Residents Association and Royal Forest and Bird Protection Society of NZ Inc. indicated that they no longer wished to be heard. Andrea Hay also confirmed that she did not wish to be heard. The statement by Fish and Game New Zealand was not considered to be a request to be heard pursuant to section 100 of the RMA.

A section 100 RMA assessment report with respect to the requirement to hold a hearing was attached as **Appendix 2** to the Council's s42A report. This report concluded that a hearing on the proposal was not necessary. The report stated the reasons for this included the revised positions of those submitters in support who initially indicated they wished to be heard, and that the one submitter in opposition did not wish to be heard. It was also considered that the matters that would be considered at a hearing and the nature of the potential effects and proposed mitigation options could be adequately understood through the technical reports provided with the application. The report concluded there were no areas of contention or disagreement which would require hearing the technical or other evidence.

## **Relevant Plan Rules – Nelson Resource Management Plan**

The s42A report stated that under the Nelson Resource Management Plan, the following apply to the Maitai Water Supply Scheme:

Zoning:	Rural Zone, Conservation Zone
Designations:	DN3 - Water supply purposes, Water supply purposes and works
Rules:	Rule Fwr.6 - Instream dams Rule FWr.12 - Take, use, or diversion of surface water Rule FWr.20 - Point source discharges to freshwater bodies (other than stormwater)
Status:	Discretionary

We accept that the applications should be considered as discretionary activities.

## **REASONS FOR THE DECISION**

### **Principal Issues and Main Findings**

The principal issues associated with the actual and potential effects on the environment of the activities were assessed in the s42A report as follows:

- Hydrology, flow and habitat;
- Water quality;
- Periphyton communities;
- Aquatic ecosystems;
- Fish passage;
- Aesthetic values;
- Maori cultural values;
- Historic heritage;
- Recreational values;
- Network utilities;
- Public safety; and
- Positive effects.

We consider the conclusions reached in the s42A report in relation to these principal issues below.

### **Hydrology, Flow and Habitat**

The effects of the Maitai water supply scheme and the influence of the Maitai Reservoir on the hydrology, flow and habitat suitability of the Maitai River were assessed by the Cawthron Institute in sections 2.3 and 2.4 of Report 2810, and summarised in section 6.2 of the AEE. These assessments were subject to independent technical reviews by Laura Keenan, a Senior Hydrologist with Jacobs and Matt Hickey, a Freshwater Ecologist with Water Resource Management Ltd. These reviews concluded that the hydrological analysis and habitat modelling undertaken by the Cawthron Institute were thorough and technically robust.

The assessments provided by Cawthron concluded the existing minimum flow of 175 litres per second (l/s) in the Maitai River over the summer period (From 1 November to 30 April)

significantly reduces available habitat for flow demanding fish species. The Cawthron Report recommended maintaining a minimum flow of no less than 230 l/s at the Forks recorder site at all times (subject to maintaining the 60 year drought capacity in the reservoir). This recommendation has been accepted by the Applicant and increased minimum flows in line with this have been proposed by conditions of consent.

### ***Findings***

On the basis of the above referenced evidence, we accept that this increase to the minimum flow will result in positive physical habitat improvements in the Maitai River, compared to the current operating regime.

### **Water Quality**

The effects of the Maitai water supply scheme on the water quality of the Maitai River was assessed by the Cawthron Institute in section 2.5 of Report 2810, and summarised in section 6.3 of the AEE. The independent technical review of the information, by Matt Hickey, generally agreed with the conclusions presented.

#### *North Branch Reservoir*

The s42A report noted that generally water quality in the North Branch Reservoir is good and reflects the catchment use above it, which is predominantly beach forest vegetation. However, it is noted that due to thermal stratification within the Reservoir, which generally occurs between October and April each year, the Reservoir can have high temperatures in the upper layer (above 3m) and very low dissolved oxygen (DO) levels at depths below 10m (Cawthron Report 2810, Section 2.2.3). The s42A report noted that these low DO (anoxic) periods provide favourable conditions for solubilisation of trace metals and nutrients. It stated that while iron and manganese concentrations were normally at or below the consented limits, manganese concentrations in the backfeed discharge had breached these limits on three sampling occasions. The report stated that raised contaminant concentrations in the deoxygenated water in the deeper part of the reservoir could result in the formation of precipitates of iron and manganese when discharged to the Maitai River.

The s42A report noted that as a result of the lack of mixing in the North Branch Reservoir, caused by thermal stratification, the hypolimnion (below thermocline) deoxygenates due to the biodegradation of organic matter in the lake and results in adverse effects for ecological values within the reservoir. It noted that elevated temperatures in the water above 3m depth can be too warm for a number of fish species, particularly trout and Koaro; and that the deeper cooler waters are oxygen depleted making it difficult for fish to breathe. The report stated that the summer thermal stratification is resulting in an anoxic hypolimnion that is not meeting DO limits of water quality standards for classification 'C' waters.

The assessments undertaken by Cawthron explored options for improving the water quality and habitat availability in the Reservoir. Cawthron recognised that the key water quality parameter to be met is DO. In this respect, the s42A report noted that while the option to be adopted to achieve a minimum of 50% concentration of dissolved oxygen throughout the North Branch Reservoir at all depths, has not yet been confirmed, the Applicant has committed to achieving this limit within 5 years of the commencement of the new consent.

In relation to temperature, the Cawthron Report 2810 noted that river water temperature tends to increase immediately downstream of the spillway discharge pool and that "during

summer can be in a range likely to induce thermal stress in some sensitive species". However, the Cawthron Report also states that, "[t]he influence of the dam and its operation on water temperature is attenuated quite rapidly, and unlikely to affect water temperature in the mid to lower river".

The s42A report concluded that achieving a minimum standard of 50 percent DO concentration in the water contained in the North Branch reservoir at all times would significantly improve water quality and increase habitat available in the reservoir. It also noted that the 5 year timeframe for implementation proposed by the Applicant will enable a more detailed engineering assessment of options and will require a significant level of investment will be required (over \$1 million design and installation cost, excluding ongoing annual operational costs), and will enable the applicant to tie this expenditure in to the Council's Long Term Plan funding process.

### ***Findings***

On the basis of the evidence before us, we accept that improving the water quality in the North Branch reservoir to a minimum standard of 50 percent DO concentrations will significantly improve the life sustaining capacity of the stored water and available habitat. We accept that 5 years is a reasonable timeframe to investigate, fund and implement options to achieve the required improvements to DO concentrations.

### ***Maitai South Branch***

It is clear from the Applicant's assessments that the Maitai River is currently being adversely affected by the water quality discharged via the Backfeed to the South Branch, particularly during the summer months. The key issues identified were elevated temperature, low DO and increased dissolved nutrients and minerals. These are identified by Cawthron in Report 2810<sup>1</sup>.

It is apparent from the technical reports prepared by Cawthron that the operating regime of the Backfeed discharge can have significant implications for the effects measured downstream. It is clear that often there is a trade-off between discharging low DO and cooler water from the Backfeed to ensure temperatures aren't elevated above 20°C in the receiving waters of the South Branch. The evidence also acknowledged that these low DO waters are also elevated in dissolved nutrients and dissolved minerals which are likely to be contributing to increased growth of periphyton and reductions in the macroinvertebrate community immediately downstream of the Backfeed discharge.

The s42A report noted that existing consent Condition 8 of Consent No.960396, seeks to limit temperature changes in the receiving waters of the South Branch. It stated that the Applicant had agreed to adopt a more simplified condition with respect to setting appropriate temperature change limits in the South Branch due to the Backfeed discharge.

The s42A report also noted that DO concentrations in the backfeed discharge can be very low due to the North Branch Reservoir becoming stratified and the deepest water becoming anoxic. It recorded that in order to address the issue of low DO in the Backfeed discharge, the Applicant proposes to implement measures to ensure DO concentrations are maintained at or above 50 percent at the point of discharge to the South Branch. The s42A report concluded

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<sup>1</sup> Cawthron Institute, Report No. 2810, section 2.5.7

this limit would assist in maintaining an environment that is not inhospitable to fish, particularly during summer.

The s42A report concluded that the increase in the turbidity in the receiving waters at the point of discharge and immediately downstream of the backfeed discharge was principally due to the precipitation of soluble metals under oxic conditions in the receiving waters of the river and light scattering; and that inputs of dissolved humic organic material from the reservoir was reducing water transparency. However, the s42A report also noted that the data provided showed that the increase in turbidity affected only a relatively short reach of river immediately downstream of the point of discharge.

### **Findings**

On the basis of the evidence, we accept that ensuring that DO concentrations are maintained above 50 percent saturation throughout the North Branch Reservoir at all depths (either via mixing or hypolimnetic aeration) should significantly reduce turbidity immediately below the Backfeed discharge compared to what has historically occurred. We agree that the imposition of more robust discharge standards and an improved ecological monitoring regime will ensure existing adverse effects on water quality and ecological communities in the receiving waters is reduced. We note the monitoring includes concentration limits for dissolved inorganic nitrogen (DIN), manganese, iron, nickel and chromium, combined with controls on temperature and DO saturation and monitoring periphyton and macroinvertebrate communities in the receiving waters.

We consider these improvements in the water quality in the Backfeed discharge and the imposition of appropriate receiving water standards will significantly improve water quality and ecological values in the South Branch downstream of the point of discharge.

### **Periphyton Communities**

The effects of the Maitai Water Supply Scheme on periphyton were assessed by the Cawthron Institute in section 2.6 of Report 2810, and summarised in section 6.4 of the AEE. The Cawthron Report noted that algal growth in the receiving waters may be encouraged by the Backfeed discharge through the release of DIN and the contaminants such as iron and manganese from the anoxic layers of the North Branch Reservoir.

Cawthron Report 2810 noted that downstream algal growth may be encouraged by the Backfeed discharge. It stated that relevant water quality standards were regularly exceeded at a monitoring site 800m downstream of the backfeed discharge and that no exceedances occur upstream at the control site above the South Branch weir.

The s42A report concluded that the Backfeed discharge was likely to be encouraging algae growth in the receiving waters through the release of DIN and the introduction of contaminants from the anoxic layers of the North Branch Reservoir. It also considered that the existing consent conditions for nutrients and contaminants are not achieving the desired water quality and ecological protections outcomes.

The s42A report noted the Applicant had agreed to implement a more robust ecological monitoring regime in order to understand the effects of the abstraction and backfeed discharge on the physical, chemical and ecological conditions of the Maitai River. It noted this regime will include monitoring against a number of additional discharge standards, including total

iron, total manganese, DIN, dissolved reactive phosphorus (DRP), total nickel and total chromium.

### **Findings**

On the basis of the evidence, we are satisfied that the proposed new ecological monitoring regime will improve understanding of the effects of the Backfeed discharge and will measure predicted improvements in water quality and the life supporting capacity of the receiving waters. We accept that the water quality limits to be imposed after the mitigation measures to improve water quality in the reservoir, particularly in relation to minimum DO concentrations and temperature changes, will reduce the precipitation of contaminants, reduce the growth of nuisance periphyton and increase the life supporting capacity of the receiving waters. We consider this will result in a significant reduction in adverse effects on the Maitai River.

### **Aquatic Ecosystems**

The effects of the Maitai Water Supply Scheme on macroinvertebrate communities were assessed by the Cawthron Institute in section 2.7 of Report 2810, and summarised in section 6.5 of the AEE. The Report concluded that the current operating regime of the Backfeed discharge is having a negative impact on stream biota and the point of discharge and downstream of the Reservoir both over time and spatially.

The s42A report noted the mechanism for this effect is likely to be due to the periphyton growth noted above, which may be caused by the deoxygenated, nutrient enriched water taken from the lower levels of the reservoir and being discharged to the South Branch via the Backfeed discharge.

The s42A report concluded that maintaining a mean daily flow of 230 l/s, in conjunction with minimum DO concentrations and maximum temperature changes, there will be positive effects to the Maitai River from improvements in quantity and quality of the aquatic habitat, compared to the current operating regime.

### **Findings**

On the basis of the evidence, we accept that the proposed increase in minimum flow and improved water quality of the backfeed discharge will mitigate existing adverse effects on aquatic ecosystems. We are satisfied the proposed monitoring regime will enable predicted improvements to be recorded and measured.

### **Fish**

The effects of the Maitai Water Supply Scheme on fish distributions, passage and fisheries were assessed by the Cawthron Institute in section 2.8 of Report 2810, Report 2730, and Report 2601, and were summarised in section 6.6 of the AEE.

The Cawthron Report 2810 noted that both the Maitai Dam and South Branch weir are partial barriers to fish passage. Recent work to improve fish passage undertaken by Nelson City Council in 2015 is acknowledged in the Cawthron Report, with monitoring showing that some elvers are climbing the structures successfully, but that numbers are likely to still be low and the structures remain a barrier for non-climbing fish species.

Cawthron Report 2730 noted that the key issue for fish passage past the weir is the Backfeed discharge creating an attractant flow for migrating fish, leading them away from the potential passage routes.

The s42A report noted that the existing consent conditions require fish passage structures to be maintained and operated, or modified if necessary, in such a manner that will facilitate the passage of fish. It noted conditions also require eel management (i.e. eel relocation from lower reaches of the Maitai River to the North Branch Reservoir) and environmental enhancement along the Maitai River below the dam.

The s42A report noted the Applicant proposes to continue the trap and transfer programme, in conjunction with further improvements to ensure elvers, koaro and red fin bully are transferred in greater numbers from the Maitai River into the North Branch Reservoir.

The s42A report noted additional measures to enhance fish passage have been agreed to by the Applicant, including:

- Continuous wetted surface from the Reservoir to the river at all times;
- No structural barriers to fish passage; and
- Provision of a minimum of two mussel spat ropes.

The s42A report noted annual inspection by a suitably qualified freshwater ecologist to assess the performance of the fish passage measures and provide recommendations for any required improvements is also proposed by the Applicant.

The s42A report concluded that with the improvements to fish passage already made and those yet to be implemented, the effects of the Maitai Dam and South Branch Weir on fish passage would be less than minor.

### ***Findings***

On the basis of the evidence, we accept that the conditions proposed will result in ongoing efforts to improve fish passage where water scheme structures form barriers to fish movement along the river. We are satisfied that improving fish passage in conjunction with improving water quality and habitat availability will reduce adverse effects on fish species.

### **Aesthetic Values**

The effects of the Maitai Water Supply Scheme on the aesthetic values of the Maitai River were assessed in section 6.7 of the AEE. The aesthetic values were assessed in relation to flow volumes, water colour and clarity, odour, and periphyton growth.

The Applicant concluded the effects on flow volumes in the river are considered to be less than minor, as the water abstracted from the South Branch is fully supplemented by the backfeed discharge from the Reservoir.

In terms of effects on the water clarity of the Maitai River, the AEE noted the conclusion of the Cawthron Report 2810 that there is only a minor effect on the Maitai River from the backfeed discharge, with turbidity consent conditions generally being met in the receiving

waters. However, it noted In the AEE that metals dissolved in the deoxygenated Reservoir water precipitate out of solution when discharged to the South Branch, which has led to a coating of the rocks around the discharge point. The AEE stated that this had resulted in a noticeable change in colour from upstream of the South Branch weir to the downstream reach because of the colour of rocks that make up the bed.

In relation to periphyton growth, the AEE noted the conclusion of Cawthron Report 2810 that nuisance periphyton growth is increased downstream of the weir because of the Backfeed discharge. It noted the increasing dominance of periphyton growth with distance from the weir is linked to adverse effects on aesthetic values.

The s42A report considered that ensuring that DO is maintained above 50 percent saturation, both within the North Branch Reservoir and at the point of discharge to the receiving waters of the South Branch would significantly improve water colour and clarity, odour, and periphyton growth immediately below the backfeed discharge.

### **Findings**

On the basis of the evidence, we accept that the proposed improvements to water quality in the North Branch Reservoir will mitigate existing adverse effects on the aesthetic values of the Maitai River downstream of the backfeed discharge. We are satisfied that the monitoring proposed will record and measure predicted improvements in water quality and a reduction in the growth of nuisance periphyton.

### **Maori Cultural Values**

The effects of the Maitai Water Supply Scheme on cultural values were assessed in the Cultural Impact Assessment (CIA) provided with the application, and summarised in section 6.8 of the AEE.

The CIA noted that adverse effects on water quality and fish passage may affect the mauri of the Mahitahi/Maitai River. For the Reservoir, effects on the water quality noted included the build-up of metals and thermal stratification. The CIA stated the preferred mitigation method identified by Ngāti Kuia was aeration of the whole Reservoir; and that this is aligned with the provisions of the relevant iwi management plans. In relation to fish passage, the CIA noted that there should be ongoing discussion between NCC, mana whenua/tangata whenua, and Cawthron advisors on further improvements to and mitigation of fish passage, as iwi have views on these matters.

In terms of cultural effects, the CIA stated that the most important consideration was to safeguard the mauri of the river. It noted the cultural integrity of the river had been compromised by the existing structures, such as the weir in the South Branch. The CIA noted the mitigation options proposed by Cawthron were supported by iwi because of their expected positive effects on water quality, fish, and cultural values. Furthermore, the CIA recommended that opportunities to practice kaitiakitanga be considered throughout the consent process.

In relation to social and economic effects, the CIA noted the importance of the water supply for the whole community, including iwi, while also noting the link of mana whenua/tangata whenua social and cultural wellbeing to ecological and cultural health. It stated the effects of the water takes and structures were having "significant adverse effects on customary practices

and mahinga kai in the Mahitahi” and that these effects are linked to social and economic effects through impacts on subsistence and/or cultural harvest.

The AEE assessed the recommendations contained in the CIA and noted a high level of alignment between the Applicant and the recommendations contained in the CIA report.

The s42A report noted that many of the mitigation measures proposed by the Applicant, including increasing the minimum flow and maintaining a minimum DO concentration at the discharge point to the South Branch, are expected to have positive effects on water quality and fish, and therefore cultural values.

### **Findings**

On the basis of the evidence, we accept that the improvements to water quality and quantity in the receiving waters will mitigate existing adverse effects on the mauri of the river and cultural values. We consider that improvements to the life supporting capacity of the river will reduce adverse effects on tangata whenua’s ability to practise cultural harvest and to exercise kaitiakitanga.

### **Historic Heritage**

The AEE noted at section 6.9 that while there are archaeological values present in the area, any effects occurred at the time of construction, with no potential for further effects as no physical disturbance works are proposed.

### **Findings**

We accept there will be no adverse effects on historic heritage values.

### **Recreational Values**

The effects of the Maitai Water Supply Scheme on the recreational values of the Maitai River were assessed in section 6.10 of the AEE. The recreational values of the Maitai as set out in the NRMP include access and recreation.

The baseline recreational values of the Maitai were established for the assessment of effects through a report commissioned by the Applicant, prepared by Rob Greenway & Associates<sup>2</sup>. The report noted that overall, the Maitai River is identified as a being highly valued for recreational, natural, and scenic values. The report noted the results of the surveys undertaken had indicated that algae (periphyton) growth and water quality were the main areas of concern for recreational users, and that flow levels were shown to be of lesser concern.

The s42A report concluded that in consideration of water quality, minimum flow, and potentially fishery enhancement the adverse effects on recreational users are considered to be less than minor, with minimum flow changes being considered to be a positive outcome.

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<sup>2</sup> Nelson City Council Roding and Maitai River User Survey 2015, prepared by Rob Greenway & Associates, dated 3 June 2015, Attachment P AEE.

### **Findings**

On the basis of the evidence, we accept that improvements in water quality and quantity in the receiving waters will reduce adverse effects on recreational values.

### **Network utilities**

The AEE assessed effects on network utilities at section 6.11 of the AEE, with no other network utilities considered to be potentially affected.

The s42A report concluded there would be no adverse effects on other network facilities.

### **Findings**

We accept there will be no adverse effects on other network facilities.

### **Public safety**

The AEE addressed effects on public safety at section 6.12. This section related to the risk posed by the existing dam and weir structures. In relation to the South Branch weir structure, the AEE noted that the weir is a small structure and in good condition and concluded the safety risks were *de minimus*. Overall the AEE concluded that the existing dam and weir structures do not pose a significant risk to public safety. It noted that the Applicant is required to maintain the structural integrity and safety of the dam and associated ancillary structures and must undertake an annual inspection and five yearly review of the safety of the dam and ancillary structures.

The s42A report noted that a number of dam safety reports were required to be completed under existing consent conditions or other legislation. It noted that a Comprehensive Safety Review undertaken in 2014 had concluded the existing dam is in good condition and was performing well. It noted that a regular inspection and maintenance programme for the South Branch weir had been volunteered by the Applicant.

### **Findings**

On the basis of the evidence, we accept the existing dam and weir structures do not pose a risk to public safety. We are satisfied that the conditions proffered by the Applicant regarding regular inspection and maintenance are appropriate.

### **Positive Effects**

The positive effects of the proposal were addressed at section 6.13 of the AEE. It highlighted the importance of a safe and reliable water supply to community; and environmental health and wellbeing, human health, and economic, social and cultural wellbeing this provides, which is essential to community and environmental health and wellbeing.

The s42A report highlighted the acknowledgement of the importance, value and positive effects of the water supply in the relevant planning documents, in the Cultural Impact Assessment, and embedded within the RMA's definition of sustainable management. The

report concluded the positive benefits of the water supply scheme were significant and fundamental to the wellbeing, health and safety of the community.

### **Findings**

We accept the importance of a safe and reliable water supply to community health and wellbeing.

### **Evaluation and Conclusion**

Overall, it is considered that the current adverse effects of the Maitai Water Supply Scheme water supply take on the downstream environment of the Maitai River and South Branch are more than minor. These adverse effects result principally from the following factors, being;

- the existing maximum flow of 175 litres per second in the Maitai River over the summer period which significantly reduces available habitat for flow demanding fish;
- summer thermal stratification in the North Branch Reservoir resulting in elevated temperatures in shallow waters and very low DO concentrations at depth;
- the water quality discharged via the backfeed to the South Branch being of low DO concentrations, increased dissolved nutrients and elevated temperature contributing to increased growth of periphyton, and reductions in the macroinvertebrate community immediately downstream of the backfeed discharge;
- partial barriers to fish passage created by Maitai Dam and South Branch weir.

The Applicant has proposed through these applications a number of mitigation measures which have been discussed under the relevant headings within the above assessment and within the s42A report. These mitigation measures include the following:

- maintaining a minimum flow of no less than 230 l/s at the Forks recorder site at all times (subject to maintaining a 60 year drought capacity in the Reservoir);
- implementing measures to ensure DO concentrations are maintained at or above 50 percent at the point of discharge to the South Branch;
- achieving a minimum of 50% concentration of DO throughout the North Branch Reservoir at all depths, within 5 years;
- incorporating more robust discharge standards and an improved ecological monitoring regime to ensure existing adverse effects on water quality and ecological communities in the receiving waters is reduced;
- improving the water quality in the backfeed discharge and the imposition of appropriate receiving water standards; and
- improving fish passage through implementation of additional fish passage measures at the Maitai Dam and the South Branch Weir.

We accept the assessment contained in the section 42A report that with the adoption of these mitigation measures by the Applicant, and the imposition of proposed consent conditions, the overall adverse environmental effects of the Maitai Water Supply Scheme will be minor. We conclude that overall there will be positive effects and measurable improvements to the receiving environment under the new operating regime, in addition to the positive benefits of security of potable water supply for Nelson City.

We acknowledge that there is some uncertainty arising out of the proposal to maintain a 60 year drought capacity in the Reservoir, particularly in relation to the requirement to maintain increased minimum flows in the Maitai River. However, we are satisfied that the *Minimum*

*Flow Requirements* and the *Water Conservation Measures* identified, respectively, in condition 11 and Table 1 of condition 14 of water permit RM165192 addresses this uncertainty satisfactorily. In addition, should drought conditions recur more regularly than anticipated, condition 5(a) would enable the consent authority to review the operation of conditions 11 and 14, as appropriate. Accordingly, we accept the reporting officer's assessment and recommendations.

## **RELEVANT STATUTORY PROVISIONS**

Section 7 Of the s42A report addressed the relevant statutory considerations. The s42A report noted that the application includes a comprehensive assessment against relevant planning documents in section 7 of the AEE, and agreed with the analyses. Overall, we agree and adopt the conclusions of the s42A report in this regard.

We consider the relevant provisions of the National Policy Statement for Freshwater Management 2014 (2014) and the National Environmental Standard for Sources of Drinking Water (2008) are applicable to this application. We find that with the imposition of the conditions discussed in the s42A report, and the improvements proposed, the application is consistent with relevant objectives and policies these documents.

We have also considered the relevant objectives and policies of the Nelson Resource Management Plan, as set out in sections 7.17 to 7.19 of the s42A report. We find the application is consistent with these provisions.

## **Part 2 Matters – Purpose and Principles of the Act**

The relevant Part 2 matters were set out in sections 7.23 to 7.52 of the s42A report. The matters referred to have by and large been particularised in the relevant planning documents and we are satisfied that all relevant Part 2 matters have been appropriately identified and reported on.

## **Section 104**

Subject to Part 2, we are required to have regard to those matters set out in section 104. Section 104(1) states we must have regard to:

- (a) *Any actual and potential effects on the environment of allowing the activity;*
- (ab) *Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment offset or compensate for any adverse effects on the environment that will or may result from allowing the activity;*
- (b) *Any relevant provisions of a national environmental standard, other regulations, a national policy statement, a New Zealand coastal policy statement, a regional policy statement or a proposed regional policy statement, a plan or proposed plan; and*
- (c) *Any other matters the consent authority considers relevant and reasonably necessary to determine the application.*

We have assessed sections 104(1)(a), 104(1)(ab) and 104(1)(b) matters above in our consideration of the principal issues. Section 104(1)(c) - other matters - are addressed below.

### **Section 104(1)(c) Other Matters**

We are required to consider any other matters which the we (as the consent authority) consider are relevant to the determination of the applications. We consider all other relevant matters have been adequately covered within the s42A report. We note that there are four environmental management plans which are relevant to our determination. These were addressed by the Applicant's combined cultural impact assessment (CIA). The findings of this CIA were discussed at sections 6.68 to 6.73 of the s42A report and the conclusions reached are adopted as part of our determination.

### **Section 104(2A)**

In considering applications made under section 124 (exercise of resource consent while applying for a new consent) we are required to have regard to the value of the investment of the existing consent holder. We accept that the NCC have invested significant funding into the MWSS infrastructure.

### **Section 104B of the Act (Determination of applications for discretionary or non-complying activities)**

In accordance with section 104B, we may grant or refuse applications for discretionary activities, and if granted may impose conditions under section 108 of the Act.

We have considered the conditions proposed by the Applicant and recommended in the s42A report. We are satisfied that these conditions are necessary, enforceable and achievable, and that they serve valid resource management purposes. Having taken into account all relevant matters set out in s104 we are satisfied that it is appropriate to grant consent for the ongoing operation and improvement of the MWSS, subject to the conditions which we consider it is necessary to impose.

### **Section 105 Matters**

When considering discharge activities Section 105 requires us to have regard to:

- a) *the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
- b) *the applicant's reasons for the proposed choice; and*
- c) *any possible alternative methods of discharge, including discharge into any other receiving environment.*

The nature of the water takes and discharges has been discussed in section 2.35 of the s42A report. The primary discharge activity is associated with the backfeed discharge of water from the North Branch Reservoir to the South Branch at the weir. The discharge of poor quality reservoir water is shown to have degraded receiving water quality and reduced habitat quality and availability downstream of the point of discharge. It is also acknowledged by the Applicant that previously consented minimum flows in the Maitai River have been insufficient to protect environmental values at times of low flows. It is also acknowledged that these adverse effects associated with poor water quality and insufficient water quantity have been occurring intermittently for several decades. We accept that the operation of the MWSS has altered the sensitivity of the South Branch receiving environment downstream of the backfeed point of

discharge, from what would have naturally been the case, and that which occurs upstream of the discharge.

The existing degraded state of the receiving waters downstream of the discharge and the relatively natural state of the waters upstream of the backfeed discharge is reflected in Appendix 28 of the NRMP. The NRMP identifies the existing South Branch water quality as 'Class A' above the weir and above the upper margins of the North Branch Reservoir (the Conservation Zone boundary); 'Class C' below the Conservation Zone boundary; and 'Class C' below the South Branch weir. This classification recognises the backfeed discharge has resulted in physicochemical changes in the receiving waters downstream of the backfeed discharge.

The application noted that the reason for the backfeed discharge to provide water to compensate for the abstraction of water to ensure minimum flow levels are maintained in the Maitai River at the Forks recorder site. It noted the operation of the MWSS relies on an backfeed pipeline that runs from the North Branch Reservoir back to the base of the South Branch weir to allow compensation water to be discharged into the river at the point where water is abstracted from the South Branch; and that the existing resource consent conditions require any abstraction of water from the South Branch is compensated for with an equal volume of water from the North Branch Reservoir. It is noted that the Maitai and Roding Rivers are considered to be the only reliable sources of potable water capable of meeting the needs of the Nelson community and that there are not currently considered to be any other viable alternative sources of potable water.

Changes to parts of the MWSS have been volunteered in direct response to the specialist advice received and the AEE undertaken. This has followed detailed consideration of alternatives and best practicable options to address the identified adverse effects in the receiving waters. The AEE has identified the opportunity for some staged improvements to the system that are expected to lead to better environmental outcomes. The key improvements generally relate to:

- (a) fish passage, and trap and transfer, to mitigate the adverse effects of the structures (dam and weir) on fish migration;
- (b) a commitment to increase the minimum flows in the river as a means of enhancing the aquatic habitat, so long as the 1 in 60 year drought security can be maintained;
- (c) a commitment to improve the current adverse effects caused by the backfeed discharge, through the use of improved backfeed management and/or reservoir aeration with five years of the commencement of the consent; and
- (d) continued measures to reduce water losses as a part of ensuring water is efficiently used.

The location of the existing discharges have been long established. The applicant has considered other discharge locations within the South Branch and Main Stem of the Maitai River, but has discounted these alternative locations as they would not resolve the existing effects and would only replicate the existing effects in a new location. We therefore accept that the proposed staged improvements are the best practicable option for mitigating and remedying adverse effects, while allowing for the continued operation of the MWSS. The proposed conditions require increased minimum flows to be implemented on commencement of the new consents, ongoing improvements to fish passage, and improved backfeed discharge quality and management within 5 years.

## Section 107 Matters

Pursuant to section 107(1) of the Act we are prevented from granting a discharge permit if the discharge is likely to give rise to any of all of the following effects in the receiving waters after reasonable mixing:

- (c) *The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;*
- (d) *Any conspicuous change in the colour or visual clarity;*
- (e) *Any emission of objectionable odour;*
- (f) *The rendering of fresh water unsuitable for consumption by farm animals;*
- (g) *Any significant adverse effects on aquatic life.*

We note the AEE and technical reports acknowledge that the existing backfeed discharge is resulting in adverse effects in the receiving waters that breach of s107(1) after reasonable mixing.

Section 107(2) states that we may to grant a discharge permit to something that would allow any of the effects described in s107(1)(a)-(g) if we are satisfied –

- (a) *That exceptional circumstances justify the granting of the permit; or*
- (b) *That the discharge is of a temporary nature; or*
- (c) *That the discharge is associated with necessary maintenance work –*  
*And that it is consistent with the purpose of this Act to do so.*

The reporting officer's assessment is that while effects consistent with those set out in section 107(1)(c) – (g) are anticipated in relation to the discharge of water from the backfeed to the South Branch, at least in the short term (up to 5 years), until measures are implemented in the North Branch Reservoir to achieve a minimum of 50% concentration of DO throughout the North Branch Reservoir at all depths, there are exceptional circumstances which justify the granting of the discharge consent. The reporting officer relies on section 107(2)(a) and sets out the following reasons to justify the grant of the discharge permit for the backfeed discharge:

- The wider water supply scheme for Nelson is a critical resource that contributes significant positive social and economic effects. The discharge of reservoir water to the South Branch of the Maitai River is a part of that scheme's operation;
- The scheme has operated for many years, with the current scheme established since 1989.
- The historic context of the establishment of the dam and backfeed discharge was to mitigate the effects of the water take from the South Branch in terms of water flow and its subsequent effects through augmentation;
- If the discharge was not provided for, other, potentially more significant, effects would be experienced in the South Branch from the reduction in river flow levels without augmentation from the reservoir;
- The adverse effects of the discharge can largely be attributed to the process occurring within the reservoir resulting in anoxic conditions that affect the water quality once discharged;
- The applicant has committed to backfeed management practices to mitigate the discharge water quality issues, or directly addressing the processes and resulting anoxic conditions within the reservoir through aeration. These can be ensured through conditions on the consents.

- Section 107(2)(a) has been relied on in the granting of previous consents for the same activities.

We acknowledge the reporting officer's assessment. However, we consider that section 107(2)(b) is more directly applicable, given the short duration of the anticipated adverse effects arising from the backfeed discharge (up to a maximum of five years) when assessed against the proposed duration of the consents for operation of the MWSS, including the backfeed discharge permit. We consider that we are able to consider the grant of consent for the backfeed discharge permit pursuant to section 107(2)(b), and do so accordingly.

### **Duration**

The Applicant has requested that these resource consents (which are to supersede the previous consents upon commencement) are granted for a period of 35 years in recognition of the value of the investment, the nature of the activities involved, and the strategic importance of the MWSS to Nelson City.

In considering duration, we note that Policy WA2.3.3 of the Nelson Regional Policy Statement recognises the importance of allocating water for abstractive uses which provide for the social, economic and cultural well-being of the people of Nelson City where adverse effects can be avoided, remedied or mitigated. This Policy confirms the strategic importance of the MWSS. It provides the certainty and security of a potable water supply, which is critical to the economic and social well-being of Nelson's communities. Accordingly, we consider that in granting these consents for the continued operation of the MWSS, it is appropriate to grant them for the 35 year term sought.

We have considered whether it would be appropriate to tie the duration of the consents to the expiry date of the consents for the Roding River scheme to enable the requirements for Nelson City's municipal water supply to be addressed jointly on expiry. However, we agree with the reporting officer's view that as the schemes operate in different catchments and independently of one another, that there is no compelling reason to link the expiry dates, and we do not do so.

**DECISION**

Having considered all of the matters above, our decision is to **GRANT** the consents sought subject to the conditions included as part of this decision.



Julian Ironside  
Independent Commissioner (Chair)



David McMahon  
Independent Commissioner



Sharon McGarry  
Independent Commissioner

**Attachment A – Section 42A Report**