# No 8 Limited – Concession Decision Report – 53660-OTH

**To:** MARK DAVIES, DIRECTOR OPERATIONS, WESTERN SOUTH ISLAND

**Date:** October 2019

**Subject:** NO 8 LIMITED, CONCESSION APPLICATION FOR A SMALL RUN-OF-RIVER HYDRO SCHEME ON MCCULLOUGHS CREEK, NEAR WHATAROA

**Action Sought:** To make a decision on the concession application.

**Di Clendon**
Senior Permissions Advisor

5/12/2019
**Date**

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## Executive Summary

1 No 8 Limited (the applicant) has applied to construct, maintain and operate a run-of-river hydro-electric power scheme on McCulloughs Creek, which would be located on conservation land near Whataroa. The scheme infrastructure is comprised of intake structures and a weir to divert approximately 75% of the minimum average low flow (MALF) of the creek into penstocks and down to a powerhouse.

2 The applicant has proposed a 40-year term for the concessions to reflect the investment commitment the scheme would require, and which would also tie into the term of the resource consents sought.

3 The process for concession applications is set out in Part 3B of the Conservation Act 1987 (Act). In this case the process has included seeking expert reviews, consulting Iwi and the Conservation Board, requesting further information from the applicant and public notification.

4 Public notification of the application was required under section (s) 17SC of the Conservation Act as the application would require a lease and has a proposed term of 40 years, both triggering the need for public notification. In response to public notification, three submissions were received and two were heard at a hearing.

5 The hearing Chairman has prepared a report (Hearing Report) containing a summary of the objections and comments received and a recommendation as to the extent to which the objections and comments should be allowed or accepted. A copy of this report is included as appendix 1. You are required under s 49(e) of the Act to consider the recommendations and the contents of the Hearing Report before deciding whether or not to proceed with the proposal. The recommendations from the Hearing Panel are provided in section 1.3 of this report with an explanation of how the recommendations have been incorporated into the process and analysed as part of this report. Noted

6 This report and its appendices provide you with all the material information regarding the application and sets out the legal steps and relevant matters you are required to consider in making your decision.

7 This report discusses a number of key effects from the proposed scheme and finds, for the most part, that the potential adverse effects would be adequately avoided, remedied and mitigated. However, the report concludes that there are some key issues around the potential adverse effects on bats and freshwater values. You are asked to consider these issues and make some decisions around the adequacy of the information and whether the methods proposed are adequate to avoid, remedy or mitigate effects on bats and freshwater. You are also given some options to include some additional conditions around these aspects. Noted

8 The application is analysed against Part 3 B of the Conservation Act and includes analysis of the legislation and planning documents, in particular against the purpose for which the land is held and the policies in the CMS. For the most part it is concluded that for consistency

with these considerations it will rely heavily on your decisions around adequate management of effects.

## Section 1 – The Application and Supporting Information

### 1.1 The Proposal

9 The Department (on behalf of the Minister of Conservation) received an application on the 25 October 2017 for the installation and operation of an 1,890 kW run-of-river hydropower scheme at McCulloughs Creek, a tributary of the Whataroa River. The scheme includes intake structures, a powerhouse, and penstocks.

10 The intake of the scheme would be located on the upper reach of McCulloughs Creek at 520metres above sea level (masl), with the powerhouse located 3km downstream at 120 masl. In order to construct the scheme, the applicant is proposing to use a cableway and helicopters.

**Description of Proposed Hydro Scheme**

**Construction**

11 The applicant notes that an access track - route would be established as per Standards New Zealand - New Zealand Handbook for Tracks and Outdoor Visitor Structures - SNZHB8630. There would be no structures, lookout or signs. The path would be a route used during construction and would remain in place after construction for maintenance. Once construction was completed the public would have access, but it would not be promoted. The applicant has stated that there would be no track formation, noting however, there would likely be a path naturally formed from walking (although not obvious or well trodden).

12 The applicant, with the help of its consultants, Ecology New Zealand, has refined its proposed alignment of the penstock route using high aerial lidar mapping which has provided detail into tree heights for the subject penstock area. The alignment of this pipeline would be refined even more during installation under the supervision of an experienced ecologist to enable the avoidance of significant trees. They note further that where avoidance cannot be achieved, the selection of which tree to be pruned or felled can be recommended to them by their on-site ecologist based on multiple significance factors (e.g. threat status, structural integrity, fauna habitat). Refer Ecology NZ -McCulloughs Creek Hydropower Scheme Supplementary Ecology Report [Ecology New Zealand (ENZL), 2018], Section 3.0 and Attachment A.

13 It is noted that the selected route of the lower penstocks has been updated in the August 2018 Supplementary Ecological Report to provide more consideration of avoiding large trees.

14 The upper penstock access track would not require 'below' ground disturbance and the applicant states that below ground disturbance would be limited to the establishment of the powerhouse and lower penstock during construction. The applicant also states that *"The*

*greatest extent of vegetation clearance for the project is associated with the creation of the GRP/Steel Penstock and HDPE pipeline corridor. The potential for below ground forest impacts are largely avoided in these areas by their above ground nature. Given that these structures do not require benching to be installed, below ground impacts are further mitigated."*

### Intake

15 The applicant states that the intake would consist of a concrete overflow weir with a Coanda screen intake design. The crest level would be 521masl. 600l/s would flow through the 2.4m wide Coanda screen. The upstream water level would be 0.3 m above the Coanda crest. An additional outlet would be provided to allow water to flow over the rock banks on the downstream face of the intake to allow fish to pass the weir, up and down, even during low flow periods. Concrete abutments located 0.5-1m above the 100-year flood level would secure the weir structure to the rock banks.

16 The weir is proposed to be 17m long from left abutment to right abutment. A pond area would form above the weir of between approximately 120m² and 58m².

17 The proposed overflow section would feature natural river rock on the downstream face. This is to allow fish passage, to protect the structure from bedload and to blend in with the natural environment.

18 There is an intake laydown area and helipad proposed 30m upstream of the intake weir; the total area for this is given as 219m² (page 22). While the helipad would be removed, the applicant proposes to manage rehabilitation of the helipad site to facilitate its future use, should that be necessary for repair and maintenance activities.

### Intake Construction - Helicopter, cables/winch and Compact Excavator

19 The applicant states that *"Construction of the intake would require a helicopter, cables and winches above the site and possibly a compact excavator. A simple helicopter pad and staging area is proposed on a rock outcrop approximately 30 m upstream. A cable-line from the helicopter pad to the weir site would allow safe transport of materials and equipment and facilitate heavy lifting where required. The compact excavator would be able to be broken down and flown in by helicopter if required."*

20 The applicant states that *"this would allow delivery of cement, aggregates, steel and pipe to the intake site where contractors who could access the site via foot would install them. If required, a small excavator such as a bobcat would be used to assist in moving pipe lengths and equipment. This would be transported via the cableway, or by helicopter."*

21 Sandbags, using in situ sand and gravel, would be used to deflect the water around the main channel into a side flood channel allowing construction of the weir. This combined with the use of a small pump would allow construction to be carried out in the dry. Minimal excavation is expected. The applicant states that *"River gravel, boulders and sand would need to be removed from the riverbed in places to expose the competent rock below. These aggregates may be able to be utilised in the concrete mix, with larger boulders used for placement on the downstream faces of the weir."*

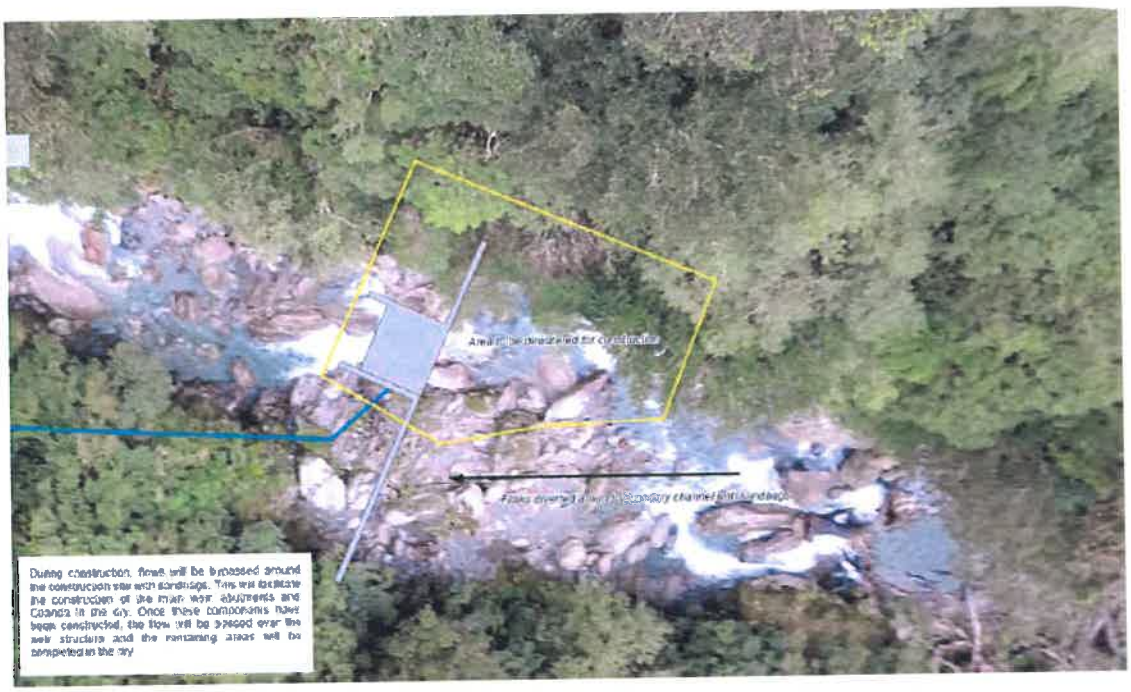


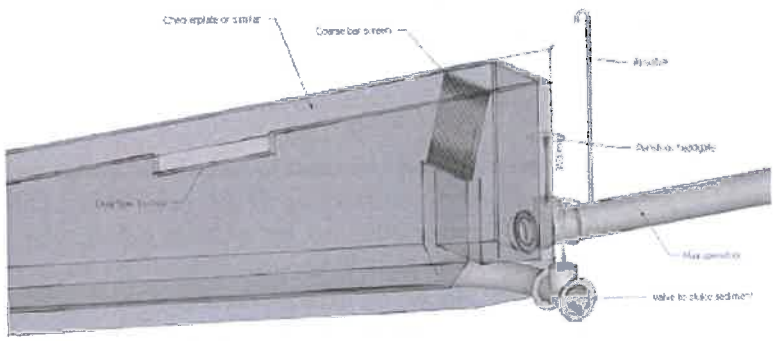

*Figure 6 – Indicative plan of proposed weir and dewatering sequence*

Map 1

## Desander

22 The applicant states that a 625m pipeline encased in concrete would lead from the weir to a desander which would be located downstream, above the riverbank. The desander would occupy an area of approximately 12m x 2m.

23 The desander would include a head pond with sufficient submergence for the main penstock. The function of the desander would be to remove sand particles down to 0.3mm. The desander would allow sediment to be flushed periodically back into the stream. In the event of a station trip, water would overflow via a small spillway back into the stream. Construction of the desander would use similar methods as the intake (cable/winch, helicopter and compact excavator).



Example of the desander

### Penstocks

24 The applicant states that, *"the penstocks for the scheme would be constructed above ground and not require excavation. The pipe would be anchored at various points with stakes and concrete anchors, where required. At river crossings, the pipe would span the crossing with a pipe bridge anchored on either bank. The pipe would be laid above ground on the access track without removing trees over 30 cm dbh."*

25 The penstocks would include a combination of High-Density Polyethelene Penstocks (HDPE) and Glass Reinforced Plastic and Steel Penstocks (GRP). The high density polyethelene is flexible and able to negotiate large canopy vegetation.

26 The applicant comments that the penstocks are able to be welded together and winched along the ground through the forest track as one long section. The applicant states that *"any clearing of vegetation will be limited to small trees and shrubs where possible."*

### High-Density Polyethelene Penstocks (HDPE)

27 The applicant comments that the HDPE would be 1800m long, with a 625 diameter, traversing the valley from the desander to a point at elevation 420m, the pipe would be anchored at various points.

### Glass Reinforced Plastic and Steel Penstocks (GRP)

28 From the 420m elevation point the GRP and steel penstock would continue 910m down to connect with the powerhouse. The pipe diameter would be 550mm tapering to 475mm at the powerhouse. The footprint width for the penstocks is 1500mm wide. The penstocks would be supported at 12m centres by support and thrust blocks that would be 750mm – 1000mm wide. The applicant notes that these blocks would be reinforced concrete encasing the penstock and *"anchoring it strongly to the ground."* and *"This lower penstock section would be installed by making use of the cable way." (page 17)*

29 The applicant states that where the pipes have to span a waterway, a pipe bridge would be constructed which would be anchored to each bank.

### Access Track from DOC Boundary to Powerhouse

30 There were two options to provide for the access to the powerhouse and lower cableway support and laydown area. Both options would be via an unsealed gravel road similar to a basic farm access track.

31 **Option 1** is the applicant's preferred option due to flat access grades. The access track would go from the boundary of public conservation land along the marginal strip (which is predominantly cleared already) adjacent to the State highway and through part of the scenic reserve to the powerhouse.

32 **Option 2** is an auxiliary access point only to be used if required, it is likely the scheme would be able to be constructed with Option 1 access only. Option 2 crosses the adjacent private land and traverses the scenic reserve to the lower cableway support and laydown area, then down to the proposed powerhouse. Both options are shown in the image below:

Map 2 showing the two access options

33 The applicant noted in the original application that option 2 may be used to establish the lower cableway support and laydown area.

34 Page 20 of the first Ecological Assessment (Wildlands, August 2017) states the vehicle access road would be 2m wide. However, the applicant has confirmed in subsequent correspondence that the proposed road/transmission line to the powerhouse during construction would not be wider than 3.5 m. The applicant also has noted that in the scenic reserve, the transmission line would be buried in the road and that, outside the marginal strip, where the road approaches the highway, the transmission line would be on above ground poles, within the road corridor.

**Access Track from lower Cableway support and laydown Area to Intake**

35 The applicant states that the access track from the lower support and laydown cable area to the intake would *"resemble a typical hiking route in New Zealand and would be constructed in a way that would not affect the forest canopy. This approach would be achieved by avoiding vegetation with a dbh (diameter at breast height) of 30 cm or more in order to mitigate potential edge effects and wind throw risks."*

36 The proposed width of the access track is proposed to be 1.8-2m wide (page 18) allowing 0.7 for the penstock and 1.0-1.3 for construction and temporary access. Once operational, the pedestrian access track next to the pipeline is proposed to be around 1.0 to 0.75 m wide. This would allow for foot traffic while making it possible to avoid large vegetation and natural features. The track would serve as access for the construction staff and allow operation and maintenance of the intake and penstock on foot. (page 3)

37 And *"after construction, the shoulder of the path and laydown areas will be allowed to regenerate with lower level vegetation, noting that the canopy would be left intact along the alignment." (Page 18)*

**Cableway**

38 The cableway would be constructed directly above the penstock alignment to allow the transport of materials and pipe. The applicant states that *"The cableway will be installed*

*through the vegetation without removal of the canopy trees larger than 30 cm dbh. (diameter at breast height)."*

39 The Wildlands consultant's report states *"The lattice trusses will be 5-10[m] tall and will be supported by guy ropes attached to trees and dead-man anchors"* (Page 21). The cable way could carry loads of up to 750-1,200kg and would be fitted with a crane.

40 The cableway length is proposed to be 500m and the applicant states that *"The cableway would be fixed to supports comprising steel lattice trusses at either end. The supports will be mounted on concrete block foundations connected to the rock below, which will also serve as a penstock thrust block once completed." (page 19)* and *"The lattice trusses will be temporary (construction phase only) and supported by guy ropes attached to stable trees or dead-man anchors as required."*

41 The cableway appears to require two main cableway support and laydown areas; one approx. 250m along the cableway alignment above the powerhouse requiring an area 10m x 10m (100m$^2$) and one at the top requiring an area of 50m$^2$. There would also likely be a number of intermediate supports required to guide the cable along the penstock alignment and allow for changes in direction and slope. The applicant states that *"These intermediate supports will be secured to trees and rock anchors at appropriate locations."* (page 19) See image below for an example of this.

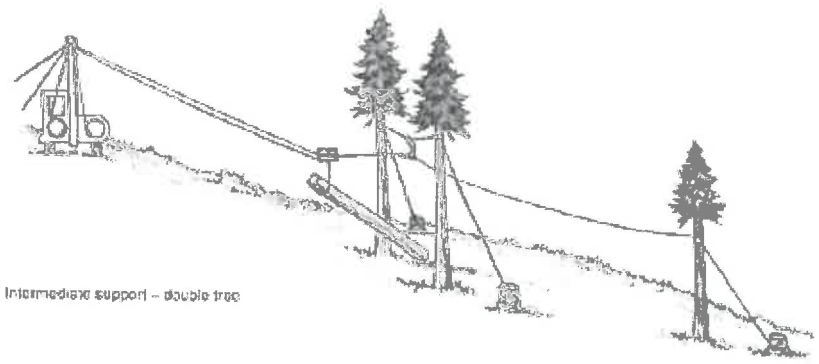



**Image shows an example of how Intermediate supports would be secured**

42 Once the construction of the penstock, intake and desander is complete, the cableway would be removed, and low-level bush allowed to regenerate in areas not used by the scheme.

### Powerhouse

43 The powerhouse would house the turbine and generator. The proposed powerhouse would be on the true left of McCulloughs Creek, 5-10m above the normal water level and above the 100-year flood level. The powerhouse would be 5m tall with a footprint of 7m x 6m and would look like a common colour steel garage on a concrete footing. The applicant notes on page 20 of its application that there would be a 10x10m fenced area around the powerhouse. In the further information (21 August 2018) it is noted the powerhouse would be located in an area of riparian vegetation with trees in this area being between 2.5 and 10 m tall. A small transformer, with a footprint 2.3m x 2.3m and 2 m tall would be located adjacent to the

powerhouse from which an 11kV line would connect the powerhouse to the Westpower network.

Tailrace

44 The applicant states *"the tailrace would be a formed concrete channel, discharging over placed riprap (reviewed by a suitably qualified person before being approved for construction) (page 50)."*

45 On page 25 of the Wildland consultant's report it is stated *"A tailrace will be constructed to enable water to flow out of the powerhouse and back into McCulloughs Creek. This will be a concrete channel that will be elevated above the Creek level, to allow water to flow over a drop and into the Creek. Riprap will be placed below the channel outlet (reviewed by a suitably qualified person before being approved for construction) to reduce the risk of scour and erosion."*

Transmission Line

46 The applicant comments that connection to the network would be via a nearby 11kV network owned by Westpower. The line from the power station to the boundary of the public conservation land would follow the access road. The applicant proposes to bury the distribution line in a conduit in the Whataroa Scenic Reserve within the road corridor. Once the line reaches the Marginal Strip the applicant proposes to use above ground poles which the applicant stated would also be within the road corridor.

Ongoing Maintenance

47 The foot access track would be sufficient to inspect and operate the scheme (for example, to undertake inspection of the intake after flood events or to check slips, debris loads or blockages). However, in the event that more significant works were required three methods are proposed;

1. helicopter,
2. mini excavator flown into the site, or
3. re-instatement of the cableway temporarily

48 The proposed heli pad and staging area (30m upstream of the intake) would allow access to the intake and upper penstock location. A cable line from the helicopter pad to the weir will allow transport of materials and equipment. It is proposed, with approval, that the applicant would manage the rehabilitation of the helipad site to facilitate its future use, should that be necessary for repair and maintenance activities.

## 1.2 The Location/Type of Concession sought

49 Table 1 shows the various proposed scheme components which would be located within the Waitangi Forest Conservation Area (classified as stewardship land), Whataroa Scenic Reserve and McCulloughs Creek Marginal Strip. These lands are public conservation land administered by the Department. See map 3 below for the proposed scheme sitting within the conservation parcel boundaries.

50 Table 1 also shows the legal descriptions, land status and indicative Concession types:

Table 1

| Conservation area | Description of location (if applicable) | Land status | Components of the scheme | Indicative Concession Type |
|---|---|---|---|---|
| Waitangi Forest Conservation Area (Pt Res 1638, Stewardship Land Pt Res 1681, Stewardship Land) | Both in McCulloughs Creek and on the hillside on the true left of McCullough's Creek | Stewardship land (section 25 Conservation Act) | Weir Intake, desander, and approximately 1200m of the flexible polyethelene penstock | • Lease for the power station<br>• Licence for the intake structures, tailrace and temporary structures<br>• Easements for the penstocks, access tracks and transmission line |
| Whataroa Scenic Reserve (Rs 6392 Pt Whataroa Scenic Reserve Res 1635 Pt Whataroa Scenic Reserve Res 1196, Pt Whataroa Scenic Reserve) | A few km's North of Whataroa on the Eastern side of State highway 6 | Scenic Reserve section 19(1)(a) | Approximately 600m of the flexible polyethylene penstock,<br>420m of the rigid GRP penstock<br>Lower cable support and laydown area<br>Powerhouse and tailrace structures<br>Approximately 700m of unsealed gravel access track | |
| Marginal Strip – McCulloughs Creek | Land immediately adjacent to and on the true left of McCulloughs Creek | Marginal Strip (Part 4A Conservation Act) | Approximately 375 m of unsealed gravel access track | |


Map 3: Plan showing the scheme within each land status

**Information Available for Consideration:**

**From the Applicant (s 17S and s 17SD):**

51 An application was received on 20 October 2107. Further Information was requested under section 17S(3) of the Conservation Act. Further information was provided by No 8 Limited and listed below:

Table 2

| | |
|---|---|
| Original Application | 20 October 2017 Original DOC-3198091<br>Environmental Impact Assessment (including Wildlands Ecological assessment) DOC-6009457 |
| Further Information (17SD) | 16 March 2018 includes:DOC-5998034<br>Cover letter, Visual Impact Assessment, Cultural impacts and consultation with Makaawhio and assessment of alternative sites. |
| Further Information | 29 August 2018 includes: DOC-5998027<br>Letter summarising approach and legal issues, Primary response to DOC further information,<br>Supplementary Ecology Report DOC-5566164<br>NIWA Minimum Flows Report DOC-5566173 |
| Further Information | 5 April 2019 includes: Cover letter DOC-5998154<br>Revised Landscape assessment Report (27 March |

| | |
|---|---|
| | 2019) DOC-5998175<br>Appendix to Landscape assessment: DOC-5925849<br>Supplementary Ecological Assessment DOC-5998210 |
| Further Information Clarifications on Freshwater Flows | 22 May 209 Email and attachment - DOC-6005997<br>31 May 2019 Email including photos - DOC-6006012<br>7 June 2019 Email DOC-6003112 |

**Public Notification Process/ Hearing Report Recommendations (s 17SC & s49)**

52 The application was publicly notified for 20 working days on 24 April 2018; submissions closed 24 May 2018. Three submissions were initially received from Federated Mountain Clubs (FMC), Forest and Bird (F&B) and NZ Canyoning. FMC and F&B asked to be heard. The submissions identified some gaps in the application information.

53 The hearing was delayed, allowing time for further information requested independently on behalf of the Minister, on 12 June 2018, to be received. This information was provided to the submitters on 31 August 2018 and submitters were invited to provide further comment. Two updated submissions were received from F&B and FMC. Only FMC requested to be heard. A small hearing was held in Hokitika on 26 September 2018.

54 The hearing Chairman has prepared a report (Hearing Report) containing a summary of the objections and comments received and a recommendation as to the extent to which the objections and comments should be allowed or accepted. A copy of the Hearing Report is attached as appendix 1 of this report and linked here: DOC-5593050. You are required under s49(e) of the Conservation Act 1987 to consider the recommendations and the contents of the Hearing Report before deciding whether or not to proceed with the proposal. Noted

55 The Hearing Report (the Report) recommends that the submissions on the following issues are relevant considerations and should be allowed or accepted, and makes the following recommendations:

| Item | Relevant Legal Test | Specific Issue | Recommendation |
|---|---|---|---|
| 1 | Submissions relating to S17U(2)(b)<br>That there are no adequate or reasonable methods to mitigate the effects. | NZ Canyoning (NZC) implied the application should be declined to protect the site for future use of canyoning. | The panel believes that this potential loss is currently unknown however would likely be minimal and recommends that considerations of the site for future use for canyoning be given little weight. |
| 2 | Submissions related to S17U(3) that the proposal is contrary to | NZC notes that McCulloughs | The Hearing Panel notes that a full analysis of the effects |

| | | | |
|---|---|---|---|
| | the provisions of the Conservation Act or the 'purposes for which land concerned is held'. | Creek has been set aside for the purpose of conservation and the proposed activity conflicts with this purpose | and mitigations of the proposed activity is required to determine whether the hydro scheme would be 'contrary to' the purpose for which the land is held.<br><br>The Hearing Panel recommends that in making a decision a full analysis of the activity against the purposes of the land is undertaken once an assessment of effects is complete. |
| 3 | Submissions relating to S17(U)(4)(a) and (b) that the activity could reasonably be carried out in another location or use an existing structure. | NZC - No evidence of alternative locations provided. | The Hearing Panel considers that alternative locations is a relevant consideration. The Hearing Panel notes that information on alternative locations was provided by the applicant but was withheld from the public due to its commercial sensitivity. The Hearing Panel recommends that this information should be considered by the decision maker. |
| 4 | Submissions related to S17U(2)(a) 'sufficiency/adequacy of information to enable assessment of effects'. | F&B - Insufficient information/data on birds, lizards, bats, koaro, macro invertebrates, other endangered species and questions around validity of correlations with Poerua and Hokitika Gorge for determining MALF. | The Hearing panel notes sufficiency of information is a specific requirement under S17U(2)(a) and recommends that further information is sought on the potential effects on fauna ecology and information on water flow data. |
| 5 | | F&B- The area is a priority site for biodiversity/Would the development | The Hearing panel considers that further information would help assess the effects on the biodiversity values of the site |

| | | | |
|---|---|---|---|
| | | effect the priority site? | and its category as a 'priority site for biodiversity management' |
| 6 | | F&B - Independent landscape architect view should be sought. | The Hearing Panel recommends the decision maker seeks an independent landscape architect review of the applicant's landscape assessment |
| 7 | | No time period given for regeneration of the cleared land. | The Hearing Panel recommends clarification is sought on the time period for regeneration and that conditions include rehabilitation of the areas used for construction but which would not be required for the activity long-term. |
| 8 | Submissions related to S17U(2)(b) 'there are no adequate methods or no reasonable methods for remedying, avoiding, or mitigating the adverse effects of the activity, structure or facility'. | NZC question if the monitoring will be sufficient and accurate to assess ongoing effects (if application is granted). | The Hearing Panel recommends that adequacy of ongoing monitoring is considered by the Department's specialists as part of the assessment and if the concession is granted, conditions are included that require an ongoing monitoring programme. |
| | | F&B states that cumulative effects of the power scheme should be considered, noting a recent hydro scheme application on Parker Creek (adjacent catchment). | The Hearing Panel notes that no concession for a hydro scheme has been granted on Parker Creek and therefore there are currently no hydro schemes on adjacent catchments. The Hearing Panel recommends the report to the decision maker assesses any cumulative effects. |

The remaining issues raised by the submissions where not recommended to be allowed nor accepted as they were not considered relevant considerations under the Conservation Act 1987 and have therefore not been discussed in this report.

The recommendations in the hearing report have been addressed as follows:

56 **Effects on Canyoning**

Recreation effects are considered in section 2.5 of this report. The Hearing Report's recommendation is agreed with and it is noted that as no one currently uses the site for canyoning and it is unknown if the site would even be suitable for canyoning, the effects on future use of the site for canyoning is considered to be minor and given little weight.

57 **Full analysis of the activity against the purposes of the land is undertaken once an assessment of effects is complete.**

A full analysis of the effects is provided in section 2 of this report and analysis of the purpose for which the land is held is provided is provided in section 3.1 of this report.

58 **Alternative Sites to be considered**

noted

The applicant's assessment of alternative sites is assessed in section 3.2 17U(4) of this report and concludes that the activity could not be reasonably undertaken elsewhere.

59 **Further information is sought on the potential effects on fauna, ecology and information on water flow data.**

Further information was sought on both the adverse effects on fauna and flora and information on effects on freshwater values and flow data. The applicant has provided substantial further information which has been analysed throughout this report.

60 **Further information would help assess the effects on the biodiversity values of the site and its category as a 'priority site for biodiversity management'**

Substantial further information has been provided by the applicant as can be seen in the Supplementary Ecology Report received on the 29 August 2018 and Supplementary Ecological assessment received 5 April 2019. The applicant's reports on the biodiversity values and effects on those values have been assessed and are discussed throughout this report. The category of the site being a 'Priority Site for Biodiversity Management' is discussed specifically under the analysis of Section 4.2.7 of the CMS in section 3.3 of this report.

61 **That the decision maker seeks an independent landscape architect review of the applicant's landscape assessment**

The department, on behalf of the Minister, sought an independent review of the applicant's landscape assessment, by Jeremy Head, a registered Landscape Architect based in Christchurch. This landscape assessment, the independent review and recommendations are discussed in section 2.4 of this report.

62 **That clarification is sought on the time period for regeneration and that conditions include rehabilitation of the areas used for construction, but which would not be required for the activity long-term.**

The design and construction of the scheme is focused on minimising the effects on vegetation by using the smallest footprint possible and avoiding high value vegetation and avoiding trees over 30cm dbh where possible. The applicant proposed in its Assessment of

Effects p56-58 that areas of bush or native vegetation removed (including at the helicopter pad, riparian areas at the intake site, on the penstock route, power station and access road) would be left to regenerate naturally from local seed sources post construction and notes that there is an ample seed source of suitable plant species surrounding the site.

The department's ecologist recommended a range of extra conditions but does not note rehabilitation as a necessary condition that would help reduce impacts. He does note the requirement for close supervision of vegetation removal and that weed invasions should be monitored and managed. One of the reasons for this is that natural regeneration would ensure that ecologically inappropriate species are not introduced to the project area.

63 **That adequacy of ongoing monitoring is considered by the Department's specialists as part of the assessment and if the concession is granted, conditions are included that require an ongoing monitoring programme.**
The department's specialists have considered monitoring requirements both during and post construction. These considerations are detailed in Section 2 of this report – Analysis of Effects. A range of monitoring conditions have been proposed.

64 **That the report to the decision maker assesses any cumulative effects.**
Cumulative effects are considered in Section 2.10 of this report.

65 If you are satisfied there are "no show stoppers" as a result of the Hearing Reports' recommendations and under section 49(2)(e) of the Conservation Act, then you can proceed with considering the proposal under the remaining relevant provisions of Part 3B of the Conservation Act relating to concessions.

**Iwi (s4 and s17SE) - Analysis of the Principles of the Treaty of Waitangi**

66 Ngai Tahu are recognised as holding the rangatiratanga (chieftainship) and manawhenua (customary rights) over the lands administered by the department on the West Coast. This is formally acknowledged in the Ngai Tahu Claims Settlement Act 1998. The application area is in the Takiwa of Te Runanga o Makaawhio.

67 The applicant has provided evidence of ongoing consultation including emails and phone calls with Makawhio staff dating back to February 2018.

68 Notification of the application was sent by the department to Makaawhio on the 25 October 2017. No comments were received through this initial process. The application was sent to Makaawhio's Chairman, Paul Madgwick on 21 October 2019 and further consultation was undertaken by the Director of Operations at a meeting with Mr Madgwick on 24 October 2019. Mr Madgwick commented that he was comfortable at this stage with what is being proposed.

69 Section 4 of the Conservation Act 1987 states 'This Act shall be so interpreted and administered as to give effect to the principles of the Treaty of Waitangi'.

70 The key principles of the Treaty of Waitangi that apply to DOC's work are:

1. Partnership – mutual good faith and reasonableness: The Crown and Māori must act towards each other reasonably and in good faith;
   The department has made reasonable attempts to consult with Makaawhio in good faith and Makaawhio.

2. Informed decision-making: Both the Crown and Māori need to be well informed of the other's interests and views;
   The department has provided copies of the application to Makaawhio and provided a number of opportunities to engage in the decision-making process.

3. Active protection: The Crown must actively protect Māori interests retained under the Treaty as part of the promises made in the Treaty for the right to govern;
   Makaawhio have indicated they were comfortable with what is being proposed. No specific cultural interests in the proposal have been identified.

4. Redress and reconciliation: This requires that the Treaty relationship should include processes to address differences of view between the Crown and Māori.
   Makawhio have not raised any specific concerns with the proposal.

71 It is considered that the department has given effect to the treaty principles.

**Conservation Board** (Board) **(s17SE)**

72 The application was sent to the West Coast Conservation Board for comment in April 2018. The Board's initial comment was received 15 May 2018 , DOC-5484916

In May 2018 the Board expressed cautious support of the application. The Board noted that the scheme would add to the public good in general and that the establishment of distributed electricity generation feeding directly into public supply would build resilience into West Coast infrastructure and would have a positive effect on local communities. It also noted that the limited negative environmental impacts of the scheme appear to be outweighed by its benefits.

The Board recommended that attention be given to the following issues:

a. Corroborate the information supplied by Wildlands Consultants Limited... and confirm that there is nothing outstanding within the terrestrial and freshwater ecology of McCullough's Creek and that it is a representative sample of Whataroa River Tributaries.

b. The department needs to ascertain that effects on birds, lizards, bats and the freshwater ecosystem are negligible.

c. The department needs to be satisfied that the visual intrusion of the development, both during construction and subsequent operation, is such that it can be accommodated with the Conservation Act.

d. The department should ascertain the effects of the scheme do not interfere with the Upper Whataroa Priority Site for Biodiversity.

e. The Board noted the variations in the estimated values given for the MALF based on 5 different methods varying from 142l/s to 330l/s. It noted the instream gauge only ran for 6 months and in summary it considered the data used to estimate MALF to be deficient and further gauging and hydrological analysis should be undertaken.

f. The department should be reassured by appropriate geotechnical analysis that the combined 2710m of penstock can be installed across such rugged terrain without destabilising existing features and in such a manner that it can be secured for at least the 40 years duration.

73 Following the hearing and following further information being requested and received from the applicant, this information was provided to the Conservation Board on the 9/7/2019. The Board provided further comment on 27/7/2019. DOC-6024090

74 The Board has made the following additional comments and raised a number of issues which are summarised below:

a. The Board considers that the 'public good' arising from the scheme, the generation of 1,890kW of power, is far outweighed by the negative impacts the scheme would have on ecological, recreational and visual values.
b. The Board comments that the effects of the scheme are sufficient enough for the Board to determine that the proposed activity is not consistent with the purpose for which the land is held being Scenic Reserve and Stewardship Land.
c. The Board comments that it has still not sighted any independent or department analysis of the applicant's Ecological Impact Report or its Landscape Assessment Report.
d. The Board states that it is *"both unhappy and frustrated with a process that ensures it cannot provide informed timely evidence-based advice to the Dept. on this application."*
e. The Board comments that the greatest disturbance and effect on the area would be during the construction of the scheme – the Board comments further that it cannot support the application without a better understanding of how the Dept. would monitor effects of construction and states that *"this is pertinent in the context of recent Dept. failures to adequately monitor other hydro and mining concessions."*
f. The Board made a comment about slips immediately South of McCulloughs Creek and stated it would like an independent overview of land stability in the catchment before supporting the application. The Board also commented that the project's vulnerability to fault rupture needs to be determined by an independent geotechnical assessment.
g. The Board comments that the stewardship land that makes up part of the project's footprint has the potential to be included in either Westland Tai Poutini National Park or the Adams Wilderness Area. The Board considers that a formal assessment of the conservation values of this parcel of land and its potential for inclusion into higher value conservation areas should be undertaken prior to any development being consented.

h. The Board comments that there has been no consideration of climate change effects in the documentation and that the application should provide an analysis of potential risks on infrastructure from more frequent and intense storm events.

i. The Board does not believe that the application is consistent with Part 3B of the Conservation Act and stated that *"before supporting this application, the Board would need a briefing from a Dept. lawyer on the interpretation of this clause of the Conservation Act."*

j. The Board comments that section 17U(4)(a) of the Conservation Act states that the Minister shall not grant any application for a concession for a structure where the Minister is satisfied that the activity can be carried out in another location that is not on public conservation land or in another conservation area where the effect would be significantly less. The Board also make the following statement *"that the department's permissions processes require hydro power applications to be considered in isolation, this precludes consideration of a strategic approach to hydro power generation on PCL. There is currently over 80MW of consented but undeveloped hydro generation on the Coast, including Stockton and the Arnold and Lake Kaniere upgrades. The current process results in a piecemeal approach to hydro that could leave us with a degraded environment and an oversupply of power."*

k. The Board has requested that, if the application is to proceed, the department should note the following advice:

- *"The route for a track and the pipe should be achieved with very little tree removal, and probably none say greater than 20cm dbh.*
- *Some predator control should be undertaken by the operator within the footprint of the scheme to facilitate Whio survival in the area.*
- *The pipeline would need to be installed so that it does not present a barrier on the ground to flightless birds, lizards etc.*
- *Previous versions of the application referred to a recreational opportunity that included a basic track and viewing point. The Board feels that this mitigation effort should be a condition of the consent."*

75 The Board's comments are noted. The application and all further information provided by the applicant was made available to the Conservation Board. Copies of the department's technical advisors' assessments on the application reports and the independent landscape assessment was not sought from the department before the Board provided its comments on the 27 July 2019.

Noted

76 If the application was to be granted the Board's recommendations could be addressed in the following ways:

- Conditions have been proposed to ensure that the route for the track and pipeline would be achieved with very little tree removal and tree removal protocols must be followed for trees >15 DBH to manage potential effects on bats.
- This report recommends that prior to construction the Concessionaire provides a Pest Management Plan to control pest mammals in the project area. Additional Predator trapping is also proposed to occur if an At Risk or Threatened species is found within 50 m of the clearance area. The project ecologist would work with the

project team to install predator traps in the vicinity of any kea nests to increase the chances of the chicks fledging.

- Kiwi are not known to be present in the application area and so no special conditions are proposed but a range of lizard conditions have been proposed. (It is noted that the pipeline being a barrier to lizards has not been identified by the department's ecologist.)
- The applicant's ecologist has noted in the April 2019 Ecology report that blue duck, while not seen in the project area over 5 visits, are likely to be present. The department considers that impacts on Whio would be expected to be minimal and no predator control for Whio has been recommended by the department's terrestrial ecologist.

**From Department staff and external technical contractors (s17SE):**

77 Both internal and external technical experts provided an assessment of the applicant's original application and further information provided. The technical comments are analysed in section 2 of this report - the Analysis of Effects.

| | |
|---|---|
| Flora Ecology Technical Comments | May 2018 DOC-5495436<br>Sept 2018 DOC-5578635 |
| Fauna Technical Comments | June 2018 DOC-5513080<br>September 2018 DOC-5579963<br>July 2019 DOC-6011303 |
| Freshwater Technical Comments | June 2018 DOC-5512909<br>September 2018 DOC-5600811<br>July 2019 DOC-5939633 |
| External Landscape peer review | October 2018 DOC-5601630 |

## Section 2.0 Analysis of Effects (s17U(1)

78 Section 17U(1)(b) and (c) of the Conservation Act require a consideration of the effects of the activity, structure or facility and any measures that can reasonably and practicably be undertaken to avoid, remedy, or mitigate any adverse effects.

79 The applicant has provided an Environmental Impact Assessment with supporting consultants' reports. The applicant's and/or its consultants' assessments are discussed and evaluated under the following headings:

- Effects on Flora
- Effects on Fauna
- Visual and Landscape Effects

- Effects on Historic Values
- Effects on Recreational Values
- Noise Effects
- Effects on Cultural Values
- Effects on Safety

## 2.1 Summary of Effects on Flora

### The Flora Values

80 The McCulloughs Creek Hydropower Project is located within Wilberg Ecological District, which is part of Whataroa Ecological Region (McEwen 1987). The western and southern boundaries of the project area adjoin the Harihari and Glaciers Ecological Districts. The Wilberg Ecological District contains a sequence of vegetation belts that are characteristic of high rainfall areas where beech forest is absent: with mixed podocarp-hardwood forest on the lower slopes of the mountains, rātā-kāmahi forest at higher altitudes, grading into an extensive subalpine scrub zone, then snow tussock grassland, cushion bogs, herbfield and alpine vegetation at high altitudes (McEwen 1987). Vegetation and flora of the district are relatively poorly known (McEwen 1987).

81 A description of the vegetation of Whataroa Scenic Reserve is provided in a report on the Protected Natural Areas of New Zealand (Wassilieff and Timmins, 1984). The report lists the following vegetation types in Whataroa Scenic Reserve:

- Kāmahi forest on steep slopes, with stands of rātā of similar ages on spurs, and scattered rimu emergent on slopes in the south.
- (Rimu-miro (Prumnopitys ferruginea))/kāmahi treeland with pigeonwood (Hedycarya arborea) and supplejack (Ripogonum scandens) on terrace remnants uplifted along the Alpine fault.
- Young kāmahi-pigeonwood-māhoe (Melicytus ramiflorus)-kaikōmako (Pennantia corymbosa) forest on lower fans, with abundant podocarp seedlings.
- Scrub and young forest on recent flats, stream beds and talus.

82 A more detailed description of the vegetation types at the site are given in Appendix A (Wildlands 2017), part of the Ecological Impact Assessment (EIA) for the proposed project. This report concludes that some associations are well represented within PCL, while others are underrepresented. For those areas in the vicinity of the road to the powerhouse and lower penstock the land environments are rare to uncommon but well represented on public conservation land. The land environments at the upper penstock and intake area are very well represented. The native grassland environments likely at the helicopter landing pad is underrepresented.

83 The vegetation associations in most of the proposed areas, except for part of McCulloughs Creek Marginal strip, appear to be entirely natural, as very few weed species were found, and there was no mention of human interference (Wildlands, 2017).

84 No rare or threatened flora have been identified by the ecology report (Wildlands, 2017). As there is no assessment of the bryophyte flora the relative significance of this element of the vegetation is unknown.

**Assessment of Effects**

85 The Wildlands' report identifies that vegetation clearance through the construction phase and permanent vegetation removal during the operation phase are the principal effects on terrestrial vegetation values. A detailed account of the vegetation removal, specifically identifying both riparian zone, and hill slope vegetation is provided. It identifies permanent removal of approximately 0.5 ha of terrestrial vegetation, although this could increase, as the exact routes for the proposed infrastructure and tracks have not been surveyed. Vegetation removal directly affects the ecological values of intactness and naturalness within the proposed area.

86 The applicant's ecology report (Wildlands 2017) concludes that if the activity is carried out with careful planning and careful supervision in place, adverse effects would be reduced to minor or less than minor. The report also concludes that if canopy trees are cleared and substantial gaps are opened up in the canopy this could open it up for wind and weed incursions which would have a significant impact on the area's 'intactness' and could have a more significant negative effect long term. The department's analysis agrees with this conclusion and some recommendations are provided below which together with the applicant's proposed conditions, should minimise the effects.

**Effects - Intake and Landing Pad**

87 The most unusual and significant vegetation type within the proposed area is that located at the upper helicopter landing pad site. This is uncommon riparian grass/sedgeland, due to its habitat preference of disturbed waterway margins. Significant destruction of this vegetation in the area could occur if the helipad construction is not carried out in a sensitive manner. This type of vegetation is very susceptible to weed invasion, as it is characteristic of areas of high-light and disturbance and is also the most likely area to contain threatened or uncommon herbaceous species.

88 The Wildlands' report states that the effects on the vegetation, of the works at the intake site would be less than minor. This is true in terms of the impact of the activity on the vegetation associations. But there is a high likelihood of introducing new weeds into the public conservation land and the activity would result in a reduction of the significant ecological value of intactness. Conditions are recommended below to ensure extra care is taken around the removal of the vegetation in this area and that appropriate rehabilitation takes place post helipad removal along with ongoing weed monitoring and control.

**Effects - Penstock and Pipeline route**

89 The creation of the penstock and pipeline access tracks, as well as the temporary cableway have the potential to cause moderate vegetation damage through the combined effects of felling of trees, cutting of tree roots, and dumping of construction spoil downhill of the tracks. Some effects may be able to be minimised (felling of trees, dumping of spoil), but the effects of cutting of tree roots is very hard to mitigate, unless no digging is involved. The applicant

has clarified that there would be little digging, as the bulk of the penstock is to be located above ground with concrete and wooden footings the only parts having to be dug into the ground. This would have a minor below ground effect on the vegetation along the penstock.

90 The consultant EIA (April 2019) notes that one of the most significant elements that exists within the project footprint is that of mature indigenous specimen trees ... and that careful consideration of these trees is required.

91 The department's assessment notes that if carried out in a sensitive manner the above ground effects on vegetation would be low to moderate during the construction phase, and low in the long term. This would require the penstock route to be carefully positioned to avoid the removal of large trees and/or large limbs. It is recommended that if any large trees/limbs (>30cm DBH) need to be removed this work should be checked and signed off by the Department of Conservation before the applicant is able to proceed with the removal. Additional conditions to ensure this are recommended below.

92 The department's assessment considers that the potential risk of introducing exotic plant weed species through the creation of the tracks, and transportation of building materials is very high, which would leading to a reduction in intactness and naturalness in the area, and the potential to cause lasting harm to the surrounding natural vegetation, if weed species establish in the area. A plan for weed monitoring and eradication is recommended.

93 The department considers that introduced animals such as goats, deer and chamois may also increase their activity in the area due to the ease of access along the pipeline route. A plan for animal pest control is recommended.

**Effects - Road and Powerhouse**

94 The road route to the proposed powerhouse is predominantly on an already cleared part of McCullough's Creek Marginal strip, so would have little effect on an already modified area, but where it traverses through a 200m section of Whataroa Scenic Reserve, it could have more significant impact due to its width, as larger trees may have to be removed, increasing the likelihood of canopy gaps. If the activity is in mature forest, large tree removal is likely to increase the risk of both weed invasion and windthrow.

95 The clearing of a site, and construction of the concrete slab for the powerhouse is likely to have a low to moderate impact, depending on the site chosen. The site would preferably be located in young regrowth forest to avoid large trees and avoid root damage in the construction of the concrete pad. It is recommended that if any large trees/limbs (>30cm DBH) need to be removed this work should be checked and signed off by the Department of Conservation before the applicant is able to proceed with the removal.

**Summary of Effects on indigenous flora**

96 The forest vegetation associations within the footprint are typical for the Ecological District and well represented within the public conservation lands in the Ecological District. The grassland/sedgeland vegetation on the riparian margin near the upper intake site is the most unusual vegetation type and is uncommon within the Wilberg Ecological District but is well represented in Public Conservation Land.

Needs understood

97 A very small area of land (approx. 0.5 hectares) would likely be cleared for the project but nevertheless this would have the significant negative effect of permanently reducing the level of intactness of the wider area, and this effect is not able to be mitigated.

98 The grassland/sedgeland vegetation on the riparian margin near the upper intake site is the most prone to weed invasion due to its nature.

99 The department has recommended some reasonable avoidance and remedial actions during and after the construction phase. If conditions are adhered to the overall effects of the project on terrestrial vegetation values are considered by the department to be medium during the construction phase, and low (very good mitigation implemented) to medium (less dedicated mitigation) long term.

100 The department notes that effects of the project on terrestrial vegetation values in the lower area (power station road) are likely to be low due to the part of this area already having been modified.

101 The applicant has proposed a number of measures to avoid, remedy and mitigate potential adverse effects. These have been drafted into conditions and are listed in Appendix 2 of this report.

102 The Wildlands' ecology report has identified the vegetation associations as common within the Ecological District this is true of the hill slope forest, but less valid of riparian vegetation, and lower altitude terrace forest present in the M1.1 and O1.4 environments in Whataroa Scenic Reserve and McCullough's Creek Marginal strip. The Wildlands' report identifies that the footprint of the project (both temporary and final) is a very small proportion of the ecological district. The department agrees with this, and if appropriate and adequate avoidance and remedial actions are taken focusing on reducing damage to the above and below ground aspects of the vegetation, as well as on-going weed and pest control, then the adverse effects of the project on terrestrial vegetation values will result in medium effects during construction and low effects in the long term. However due to the impact on the important quality of intactness there would be a loss of conservation values in the area.

**Proposed Conditions**

103 A number of conditions are recommended in addition to those proposed by the applicant and the applicant's consultant in the Wildlands Report 2017 to ensure environmental damage is minimised including;

- Stricter guidelines and rules around tree removal and damage should be added to the application conditions, especially around root damage and the removal of large trees to ensure these are avoided at all costs. Proper consultation with the construction team to ensure the team members are clear on what is and isn't acceptable is sought. The removal of any large trees (>30cm DBH), should be assessed and signed off by a qualified D.O.C employee before it is allowed.
- Mitigation measures to ensure the retention of spoil on access tracks and roads
- A plan developed for weed surveillance, and eradication should an incursion occur.

- Stricter rules around the storage and movement of building materials to reduce the risk of weed incursions. All imported concrete aggregate should be stored/mixed on some kind of ground sheet to stop weed seed being transferred onto soil surface.
- A plan developed for pest animal control in the area.
- Extra care taken around the destruction of riparian grass/sedgeland and potential rehabilitation, post removal of helipad.
- During the construction phase regular inspections by a qualified D.O.C staff member should be carried out to check for compliance with conditions, and weeds that may start to establish.

104 The full list of Flora conditions is detailed in Appendix 2.

105 It is considered unlikely that any other proposed options would majorly reduce the impacts on the environment, as any work in the upper catchment would compromise the intactness of the area.

noted

Conclusion on Flora Effects

**It is considered that the effects of the proposed activity on flora are able to be adequately mitigated via concession conditions to the point where they will be low in the long term and no further mitigations are recommended.**

## 2.2 Summary of Effects on fauna

### Fauna Values

106 The department's advisor agrees with the applicant's supplementary EIA (April 2019) that the site contains very high values for terrestrial fauna. It considers that in the context of the natural heritage policies of the CMS, the site triggers significance under Representativeness, Diversity, Threatened Species and Habitat and Taonga species and Habitat criteria.

107 The department notes that the site is reasonably well connected with other habitats and contains bird and bats that are important in maintaining ecological processes. The area identified for the road construction is in the lower altitudes that will be used by the bird community at certain times of year. Birds such as kaka follow the food sources and move from high and mid altitude in winter (invertebrates and sap) (O'Donnell 1993, O'Donnell & Dilks 1989) to low altitude (eg nectar) in spring and then to podocarp fruit in autumn and seed in winter. Kea although thought of as a mountain parrot, spend considerable time feeding on podocarp, seeds and flowers (O'Donnell & Dilks 1994).

108 The applicant's supplementary EIA (April 2019) records three threatened bird species and one threatened bat species in the project area. The most notable are the "nationally critical" long-tailed bat, the "nationally endangered" kea and the "at risk" falcon and fernbird. There are a further eleven threatened bird species and five threatened lizard species potentially in the project area.

109 Long-tailed bats have been recently classified as "nationally critical" and in many areas of the West Coast where they used to be common, they have disappeared eg. Punakaiki. The presence of bats in this area is new and significant and therefore a precautionary approach needs to be applied.

110 The applicant's Supplementary EIA (April 2019, p11) states that the bat recordings are not indicative of local roosts being in the project area and it was likely the detected bats were commuting across the survey site from their core roosting and feeding areas where activity levels would be expected to be much higher. They also note that if long-tailed bats were roosting at higher altitudes, it is anticipated that recordings of bats would have been substantially higher. They also noted that their results indicated that the importance of the survey area for feeding is classified as low for the survey period.

**Effects – Bird, bats, lizards**

111 The department considers that the main effects of the proposed development includes loss of breeding and/or feeding habitats of long-tailed bats, both threatened and representative bird species and lizard species through the felling of trees and clearance of habitats, mainly for the access road and desander, weir, and the penstock/pipeline.

112 The applicant's supplementary EIA (April 2019 p33) provides an assessment of the magnitude of effects and concludes that the effects on terrestrial ecosystems would be negligible, noting further that the 1.5-2m wide penstock corridor would have negligible fragmentation effects on the assessed terrestrial fauna.

113 The applicant has stated the design of the scheme would be ecologically sensitive, and all trees would be avoided if possible, however they have referred to "a number of trees" (Supplementary EIA 2019, pg41) being likely to be cut down within the 5000m² footprint. The department notes that the applicant states that its survey was not indicative of local roosts, however the department considers it was a small sample size to base this assumption on and that this is not necessarily the case.

114 The department considers that the greatest potential effect on bats from the scheme would be if a roosting tree/s were lost. The department notes that as there has been no radiotracking study to identify exactly where bats are roosting the level of risk to bats is unknown noting further that adult female bats congregate in spring to have young within a social colony. Bats tend to roost in discrete areas therefore if one roost is found it is likely that others are nearby. To determine the distribution of any bat colonies in the area acoustic monitoring would have to occur. It is noted that this would be a large piece of work, difficult and expensive to do in that area.

115 If an active roost tree was cut down, it has the potential to wipe out an entire colony of bats. If this was to happen the effects would be "high" not "negligible/ very low" as stated by Ecology 2019 (pg 34). Use of the departments bat tree removal protocols would significantly reduce this risk and is recommended below.

116 The applicant's supplementary EIA (April 2019) note that no lizards were seen during the survey period, but it is acknowledged that they could be present in the footprint of the

scheme. The department considers that if there was clearance of an area containing lizards it could have a significant impact on the lizards and recommends conditions to avoid, remedy and mitigate the risk of this.

### Wildlife Act Permits

117 The department administers the Wildlife Act 1953 and most bird, lizard and all bat species are absolutely protected under the Act. If a concession were approved the applicant may need to apply for a wildlife permits, depending on what activities it intends to undertake to mitigate effects.

### Proposed Mitigation

118 The applicant has offered mitigation through careful consideration of the penstock route and all trees will be avoided if possible and particularly avoiding larger specimen trees. The department agrees with this approach but notes that in the Ecology 2018 report, a specimen tree is defined as over 30 cm diameter at breast height (DBH). However, because Long-tailed bats are known to roost in smaller trees it is now accepted practice that where bats could be present, trees 15cm DBH must be assessed. The department agrees with the applicant that the use of the Vegetation Tree Removal Protocols for bats as stated in the supplementary EIA April 2019 would reduce the risk of cutting down an active roost. This includes restricting removal of any high-risk bat trees to the warmer months October to April under prescribed conditions.

119 The supplementary EIA April 2019 notes that vegetation clearance methodologies shall not use chipping or mulching. Rather, where practical, cleared vegetation should be recycled into the adjacent environment. The report notes further that if chipping or mulching is deemed necessary, an experienced herpetologist/ecologist would be required to inspect the cleared vegetation and salvage the herpetofauna potentially present on site. The department agrees with this and refers to the proposed conditions below for lizard mitigation.

120 The supplementary EIA April 2019 notes that vegetation clearance should be done outside of the nesting period (October to January) and if a nest of a threatened species is found then work in the vicinity should stop immediately and an ecologist will decide on the next steps. If a kea nest is found, then predator traps shall be installed (see Ecology 2019: pg41).

121 The applicant also stated that *"where vegetation clearance is required to be undertaken during this critical season, it is recommended that transect surveys, using the pipeline corridor as the centre line, be undertaken to determine the presence of any At Risk or Threatened species prior to vegetation clearance commencement. In the event an At Risk or Threatened species being found nesting within 50m of the clearance area, works in that immediate vicinity shall cease. Recommencement of vegetation clearance is to take place only on the recommendation of the project ecologist. In addition, the project ecologist will work with the project team to install predator traps in the vicinity of any kea nest that may be discovered to increase the chances of chicks fledging."* The department agrees.

122 The department recommends that conditions to deal with the discovery of at risk birds and potential bat/bird roost trees and the discovery of lizards are included if the concession is granted. These are detailed in Appendix 2 of this report and should include:

- all trees above 15 cm DBH should be considered as wildlife trees and assessed for bat roosts and nests and tree removal protocols must be followed (Tree protocol are

attached in Appendix 3 of this report). It is also recommended that the assessment of trees be done by a Bat Ecologist (competencies attached in Appendix 4 of this report).

- The Concessionaire must ensure that no work is commenced until the Grantor is satisfied all the necessary Wildlife act Authorisations are in place.

- Wildlife Act authorisations must cover the management of lizards and include the provision of a set of lizard salvage procedures which would need to be assessed by the department prior to any habitat clearance. These conditions are detailed Appendix 2.

- A requirement for an experienced herpetologist or ecologist to check the area tagged for vegetation removal prior to any vegetation or soil disturbance and the requirement to stop work pending instructions and management if lizards are found.

- The requirement for predator control if kea nests or Whio are found in the project area.

123 The department considers that this procedure should pick up bird nests as well.

124 The department's ecologist also suggested an extra condition be included to determine the distribution of the bats in the area before work commences – and if this occurs that the layout of the monitors should be approved by a department bat ecologist, the results of the survey should be shared with DOC including the grid references for each monitor. The tree felling protocol is applied when we either know bats are present or think that they could be present and previously this has been considered as adequate mitigation. In this instance we know they are present so the tree removal protocols are recommended.

125 The department notes that although residual effects might be very low there would still be some loss of habitat which compensation should be sought for if the concession is granted.

**Conclusion on Fauna Effects**

126 If an active bat roost was felled the effect would be significant – but with the bat protocols in place the risk of this is unlikely.

127 If there was a colony present in the footprint area and a non-active roosting tree was to be felled it would affect the colony to different degrees depending on the number of non-roosting trees the colony was using. The applicant's assessment showed that bat roosts where not indicative of being in the project area while the department considers the applicant's sample size to base this conclusion on was too small and that it is still a risk.

128 The department considers that if the applicant adheres to the proposed conditions including the tree felling protocols and avoids felling any active bat roost trees then the effects of the proposed activity on fauna would be adequately avoided, remedied and mitigated to the point where the effect would be minor in the long term.

129 However, it should be acknowledged there is still a very small risk that a bat roosting tree could be felled. If you are not satisfied that this risk can be adequately managed through the proposed conditions discussed above, you should consider declining the application under 17U(2)(b) of the Conservation Act (that there are no adequate method

Noted

to mitigate this potential effect).

## 2.3 Summary of Historic effects

130 The applicant states that the historic effects are likely to be minimal, as the area does not have any archaeological or historic sites identified. The department agrees with this assessment that there are no known historic features in the proposed footprint area. Standard conditions to manage any historic features if found are recommended. These conditions are listed in Appendix 2 and cover protocols in the event of discovery of any artefact, historical, cultural or archaeological material during construction activities.

Noted

Conclusion for Historic Effects

131 **The department considers that if the applicant adheres to the proposed conditions including the accidental discovery protocols, effects on historic values would be adequately avoided, remedied and mitigated to the point where the effect would be minor.**

## 2.4 Summary of Visual Landscape Effects

### Values

132 The applicant's consultant provided a Landscape Assessment Report, 16 March 2018 (LAR 2018) as a result of a request for further information. This was peer reviewed by Jeremy Head, Landscape Architect, in March 2018. Mr Head concluded that it was likely the applicant's conclusions were fair and reasonable and that he was not fundamentally in disagreement with them. The LAR 2018 stated the effects during construction would be 'moderate to low' and 'negligible' after construction. However, Mr Head noted inadequacies in methodology, detail and evidence and that the conclusions where not robustly backed up with enough discussion in the assessment process. This resulted in seeking a revised Landscape Assessment Report (27 March 2019) from the applicant. It is considered that the revised assessment corrects the main deficiencies in the first report.

133 The applicant's consultant in the revised Landscape Assessment Report, March 2019 (LAR) assesses both the changes to the visual landscape (visual impacts) and changes to the physical landscape character (landscape effects).

134 The site is defined by the alluvial floodplain associated with the Whataroa River system and McCulloughs Creek, and a steep ridgeline and gully system covered in dense native forest. The alluvial plain consists of a low-density rural landscape with high amenity resulting from the high natural character of the Whataroa River system and the thickly vegetated mountains enclosing the Whataroa valley. McCulloughs Creek is a narrow fast flowing alpine gully stream located within a steeply incised and densely vegetated gully containing indigenous forest cover. The site is considered to have high natural character values.

**The above Map shows the proposed scheme, penstock route and access road**

## Effects – Visual and Landscape Character

135 The applicant's consultant summarises the effect on the landscape stating that "*While the intervention is relatively minor in comparison to the scale of the catchment and the broader Whataroa River Valley landscape, the introduction of permanent structures into an otherwise natural landscape may alter an individual's perception of the landscape as an untouched,*

*natural environment. However, once vegetation removed as a result of the implementation of the proposal has regenerated and the ongoing visual effects from publicly accessible areas are limited to the vehicle access track, the perception of this area as an altered landscape will be limited to those who know of the existence of the proposal and associated structures and the very limited audience who may encounter the various elements of the proposal."*

136 The applicant's consultant notes that the proposed development would be visible during construction with the vehicle access track being the only permanent visual record of the development from the Whataroa Highway and surrounding river plain once development is complete and when vegetation recovery has taken place.

137 The conclusion of the applicant's consultant is that due to the scale and temporal nature of the proposed development, the construction methodology used for the temporary and permanent structures; the weir and inlet structures, penstock and associated access track, gravel vehicle access, support towers and cableway; and the minimisation of any vegetation removal, there would be moderate-low landscape and visual effects during construction and low to very-low landscape and visual effects following construction.

**Change in water Flow**

138 The applicant's consultant (P14) concludes visual effects from the change in water flow would be virtually imperceptible to an individual traversing the creek as there is a wide range of normal flows and the flow when the scheme is operational in that section of the creek will sit within that natural variability. The applicant's consultant also comments that the scheme involves taking 600 l/s noting MALF as 250 l/s and average flow is estimated at 1,100 l/s. The department agrees with the applicant's landscape consultant that because there would always be 200 l/s left in the creek, and because this isn't much less than MALF the visual effects from the change would likely be imperceptible to an individual traversing the creek.

**Intake site, desander and helipad**

139 The applicant's consultant comments that the intake site, desander and helipad would introduce changes to the landscape character of the upper catchment around the intake site. The applicant's consultant notes however that the applicant proposes a number of techniques to mitigate the landscape and visual effects. The applicant's consultant comments that after construction is complete, with the helipad removed, the visual effects of the remaining intake site and desander would be limited to a small section of creek, as the steep banks adjacent to the creek obscure the creek bed from the surrounding gully slopes. The potential viewing audience would therefore be limited to experienced backcountry hikers or hunters who have traversed the length of the creek to the intake site, which is approximately a 4-5 hour hike.

**Cableway and Support Towers**

140 A temporary aerial cableway is proposed to carry construction materials and equipment along the penstock. Support towers would be 5-10m tall and the LAR comments that the applicant used aerial mapping to assess tree height and noted that these would be a similar height to the surrounding forest canopy which is expected to obscure parts of the view of the cableway and laydown areas from SH6.

141 The department notes that following removal of the cable way and support towers by helicopter, the areas would be left to regenerate naturally. One of the reasons for this is that natural regeneration would ensure that ecologically inappropriate species are not introduced to the project area.

142 The applicant's consultant discusses the potential visual effects which are mostly limited to accessible views from the Whataroa Highway and Whataroa Valley. Visual simulations were assessed from three viewpoints. The LAR comments that the effects of the proposed unsealed access track along the marginal strip, would be similar in style and scale to a typical farm race, and would be in keeping with the existing visual character and has been assessed as having a low effect.

143 The applicant's consultant comments that the cableway and penstock would be installed without noticeable canopy gaps being created, with indigenous vegetation allowed to regenerate post-construction, therefore the canopy cover is likely to remain visually intact.

144 The applicant's consultant describes the low impact nature of the scheme and proposed construction methods and narrow footprint of the penstock and comments that these proposed management practices would assist the mitigation of potentially adverse visual and landscape effects vegetation clearance could have. It is also noted that the vegetation clearance anticipated during construction of the scheme would create a pattern of disruption that is of a much smaller scale than that which occurs naturally in this landscape.

145 Once construction is complete with the cableway removed, and the native vegetation has had a chance to regenerate, it is unlikely that the proposed development would be visible or would introduce any major landscape changes from the SH6 viewpoint.

146 The applicant's consultant also states that the *"during construction the cableway and support towers, laydown areas, clamp and cables will be partially visible through the vegetation. The most significant visual effect is likely to come from light reflecting off the support towers, clamp and cable, which will contrast with the natural character of the dense vegetative cover."* And that *"It is possible that the penstock pipeline, associated with the accessway and powerhouse will be visible through the vegetation during construction. However, the scale and colour palette of the elements relative to the landscape context are small, discreet and in natural tones appropriate to the environment."* The consultant states that the relative scale of the proposed development relative to the surrounding vegetation patterns mean the proposal will have moderate landscape and visual effects during construction and a low-effect after construction from this viewpoint.

147 The consultant concludes that with the mitigations in place and following construction the effects on the natural character, natural values, the natural environment, intrinsic values of landscape, scenic interest, beauty, amenity value, visual appeal, distinctive character and sense of identity will be low.

**Mitigations Proposed**

148 The applicant's consultant states that the mitigations proposed including supervision of the pipeline alignment and refinement during installation, professionally monitoring tree pruning or removal and the use of dark recessive tones would ensure that any visual effects would be minimised.

149 The applicant's consultant (p15) states for the intake site that *"Civil works would be constructed in the dry and keyed into the natural rock on site, utilising as much of the natural riverbed as possible. This technique is to reduce the size of the concrete structures and reduce its visual impact."* And that *"Excavation of a clear site and processing of these gravels may present an adverse effect on the landscape and will require sensitive management. To mitigate the impact of excavation the applicant proposes to use excess rock in their concrete mix and*

*use larger boulders for placement on the downstream faces of the weir."* The following conditions are proposed and listed in appendix 2:

- The Concessionaire must ensure that to reduce size of the concrete structures and reduce its visual impact at the intake site Civil works are undertaken in the dry creek bed area and keyed into the natural rock on site, utilising as much of the natural riverbed as possible.

- The Concessionaire must ensure that the extraction of rock and gravel at the intake site during construction is managed sensitively. Large boulders should also be placed on the downstream face of the weir.

150 The applicant's consultant recommends landscape measures include that the towers, cableway and clamps be of low reflectivity and painted in a dark colour palette and the powerhouse and transformer would be dark grey or matt black assisting in mitigation of their visual impact during construction.

151 The applicant's consultant comments that the powerline would be buried in a conduit beside the access road from the powerhouse until it reaches marginal strip.

152 Once construction is complete maintenance of the penstock alignment should be similar to that required for a typical DOC route (hand tools and chainsaws only).

153 It is recommended that the following conditions are also included:

- The vehicle access track be limited to up to a 3.5 m width and be unsealed. The material and colour of the access track must be the same or similar to other access tracks in the area.

- A Liaison Officer is employed to oversee compliance with pre-construction and construction conditions and ensure impacts are minimised

- The access track alongside the penstock be planned and constructed according to the DOC track service standard for a route, which would also provide another level of certainty that the track would be appropriately scaled.

154 The department agrees with the above proposed methods and recommends that if the concession is approved that it would be important that the construction phase is closely supervised by the department and that, a specific Liaison Officer should be employed, paid for by the applicant to act as a liaison contact between the department and the Concessionaire and to oversee the compliance with of preconstruction and construction conditions.

Conclusion for Visual and Landscape Effects

155 **The department's advisors agree with the applicant's consultant that the development would introduce a change to the landscape, however once construction is complete the changes would not adversely alter the natural character of both the visual and landscape values of the area. There would be moderate landscape and visual effects during construction for up to a year and low effects after construction. It is considered that the**

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proposed methods to avoid, remedy and mitigate the potential adverse effects, including a requirement that there is close supervision of construction, are considered adequate.

### 2.5 Effects on Recreational Values and Public

156 The applicant states that the current recreational value is limited by the remoteness and lack of permanent access. The department agrees with this assessment.

157 It is noted that NZ Canyoning implied in its submission the application should be declined to protect the site for future use of canyoning. The Hearing Panel believed that this potential loss is currently unknown however would likely be minimal and recommended that considerations of the site for future use for canyoning be given little weight. The department agrees with the Hearing Panel and as no one currently uses the site for canyoning and it is unknown if the site would even be suitable for canyoning that effects on canyoning are considered nil to minimal.

158 A proposed path alongside the penstock would be 0.75m wide and climb approximately 400m in elevation from the powerhouse. The track would then traverse 1.7km to the proposed intake location. The path would be a route constructed to the track standard SNZHB8630 with no structures, lookout, signs, etc and there would be no track formation. The path would be for construction and ongoing maintenance and available to the public that know the location. The applicant states that it would also provide for public access for pest animal and weed control, ecological monitoring and public enjoyment.

Noted

Conclusion for Recreation Effects

159 **The department considers that the effects on recreational values are low and no further mitigations are recommended.**

### 2.6 Noise Effects

160 The applicant states there would be an audible 'hum' when standing beside the powerhouse but that the roar of the rapids near the proposed powerhouse would drown out any noise from the powerhouse. The applicant concludes that the effect of noise made by the powerhouse is anticipated to be minor. The department agrees with the applicant that noise effects would be minor.

Noted

Conclusion for noise effects

161 **The department considers the effects from noise would be minor and no further mitigations are recommended.**

### 2.7 Effects on Cultural Values

162 The applicant states *"that no information currently exists regarding the cultural and social history of McCulloughs Creek, however, it does not mean that there has been no history there.*

*During site investigations, the area would be checked for items of historical and cultural significance and the scheme and effects would be discussed with the groups in the area. It is envisaged that there would be no offensive aspects of the scheme to Tangata Whenua or members of the public generally."*

163 An accidental discovery protocol has already been recommended by the department as a condition if the hydro scheme is granted and is provided in Appendix 5 of this report. An analysis of the application against section 4 of the Conservation Act and the principle of the Treaty of Waitangi is provided in the Analysis section of this report.

**Conclusion for Cultural Effects**

164 **As long as the applicant adheres to the proposed Accidental Discovery Protocols, the department considers the cultural effects would be low and adequately avoided, remedied and mitigated.**

## 2.8 Effects on Freshwater Values

### Values

165 McCulloughs Creek rises from the western side of Adams Range, and flows in a west-northwest direction to its confluence with the Whataroa River. The tributaries that feed its headwaters appear to drain steep, forested slopes. McCullough's Creek itself follows a tumbling, turbulent path (cascades and pools dominate) through native bush in its upper to middle reaches, before the gradient eases in its lower reaches (that run through farmland). Substrate size appears to be quite large in the middle and upper sections (characterised by large boulders, cobbles, and gravel).

166 The applicant's consultant has carried out fish and aquatic invertebrate surveys, hydraulic-habitat surveys, and an assessment of natural fish passage barriers. Surveys have shown that koaro appear to be the only fish present upstream of a natural barrier (this waterfall is reported to be located approximately 650 m upstream of the proposed outfall). Downstream of the waterfall, the aquatic habitat appears to be of lower gradient, and the fish community is comprised of the following fish species: koaro, torrentfish, longfin eel, and brown trout. All species apart from brown trout are listed as 'At Risk - Declining' (Dunn et al. 2018).

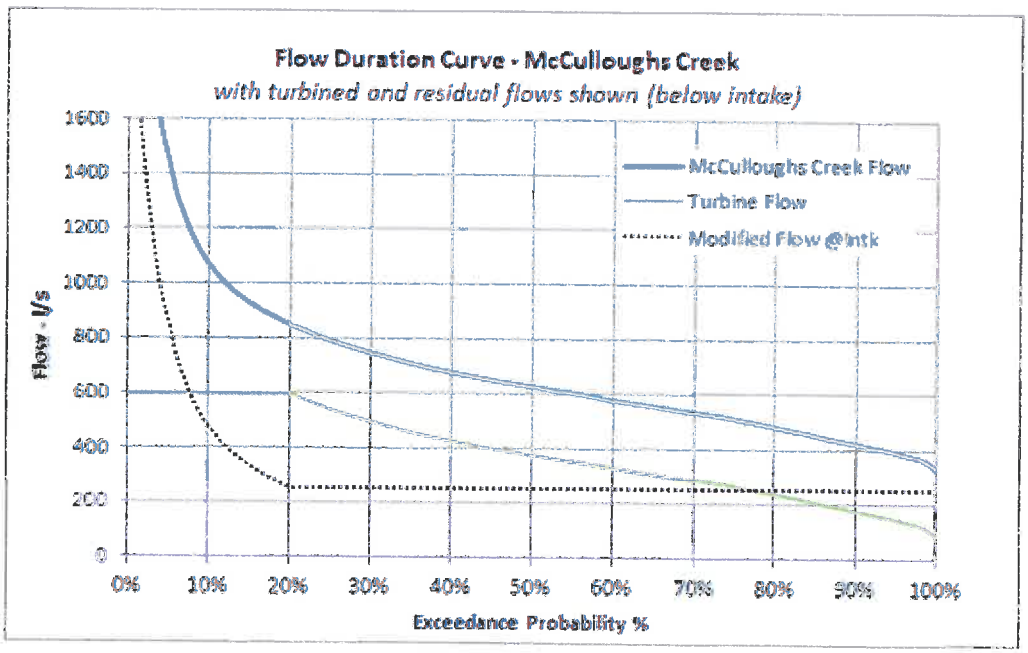
167 The department considers that the Macroinvertebrate Community Index (MCI) scores recorded suggest that stream health is generally in 'Excellent' or 'Good' condition. Further the surveys turned up a number of taxa of conservation interest: an 'At Risk - Naturally Uncommon' stonefly (Megaleptoperla grandis), and a 'Data Deficient' beetle (Hydora nitida) (Grainger et al. 2018).

168 The department considers that the fish surveys (both electrofishing and trapping/netting) and aquatic invertebrates surveys provide an acceptable level of assessment of the aquatic ecological values present in the reach of interest.

169 The applicant's consultant also undertook an assessment of natural fish passage barriers within the abstraction reach. The consultant reports that there are unlikely to be any fish passage barriers emerge in the lower 850 m of the abstraction reach due to reduced flows. Furthermore, the consultant states *"that there is a natural barrier to upstream fish passage approximately 650 m upstream of the proposed outfall. This barrier is characterised by a >2 m high vertical drop, and a relatively shallow plunge pool of <1.5 m depth."*. Apart from koaro (capable climbers), the department agrees that this is likely to be a barrier to upstream fish passage. Due to health and safety concerns, much of the impact reach located above this natural barrier was not assessed/surveyed by ENZ.

## Effects

170 The applicant proposes to divert water from an intake point on McCulloughs Creek for a reach of approximately 2.8km down to the proposed powerhouse. The applicant has proposed to take a maximum of 600 l/s with the minimum residual flow below the intake being set at 75% of the mean average low flow (MALF). The last correspondence dated 13 June 2019 from the applicant's consultant puts the estimated MALF at approximately 334l/s at the intake site; therefore the residual flow would be approximately 250l/s. The graph below shows the estimated frequency of affected flows.




Estimated Flow duration curve from the intake on McCullough's Creek

171 The applicant has carried out hydraulic-habitat survey (1-D modelling) and provided an assessment of how habitat availability for fish species would change in response to changing flow conditions (due to the scheme operation). The applicants consultant concludes that the effects from the reduction in habitat on the local impact reach is expected to be moderate due to the reasonable loss of fish habitat.

172 The department has some reservations with the analysis and has low confidence in the reliability of the hydraulic-habitat assessment and considers it of little use in determining how the operation of the proposed scheme would affect fish populations (inferred from

habitat availability changes) in the abstraction reach. The department considers the effects of scheme on habitat availability for fish could potentially be more than moderate.

173 The department notes that in the initial application the proposed residual flow to be 80% of MALF. The recommendation in the first Wildlands report, however, was that the residual flow should never reduce to below 100% of MALF to be consistent with the Proposed National Environmental Standard on Ecological Flows and Water Levels (MfE 2008) and the National Policy Statement for Freshwater Management (MfE 2014). However, the applicant's consultant in the 2018 supplementary Ecology Report dated August 2018 states the abstraction of 25% of MALF is accepted as permissible; this equates to a residual flow of approx. 252 l/s.

174 The department notes that if the scheme was in place with a minimum residual flow of 75% flows immediately below the intake site, the flows would remain at the proposed residual flow of approximately 250-252l/s (75% of MALF) for extended periods (overall, up to 80% of the time). By keeping the flows at this level for prolonged periods, the living space for fish (and other aquatic biota) would likely be reduced, and with fish concentrated in the remaining habitat, there would be increased competition and risk of predation – potentially resulting in lower growth and survival.

175 The applicant summarises the overall level of unmitigated effects on freshwater values on the catchment as being 'very low'. However, the department considers the effects on freshwater values could be higher than that, as the habitat available to aquatic biota would decline significantly for extended periods.

176 If the application is granted, one option is to require that a more precautionary approach be taken and set an initial minimum residual flow at 100% of MALF which would be 334l/s.

177 The department agrees with most of the applicant's and the applicant's consultants' proposed mitigations; e.g. timing of works, working in the dry where possible, biosecurity, maintenance of fish passage, machinery use, contaminants, management plans, fish passage around the weir structure, etc... (p 48 – 54 of the EIA, p 29 – 31 of Wildlands' Ecological Assessment, and p 42 of ENZ's Supplementary EIA) These are listed in Appendix 2 of this report.

178 The department recommends the following conditions are also included if the proposed scheme is granted:

- A fish management plan must be developed for the construction of any structures that occur within the stream. This plan should detail methodologies to salvage fish from within the stream and detail suitable times to undertake the work to avoid key fish spawning times.
- The proposed monitoring programme (section 9 of ENZ's Suppl. EIA) be listed as a condition. This monitoring programme should include surveys for both fish and aquatic invertebrates at the same sites used in the February 2019 aquatic surveys. The methods used should be the same as those employed during the February 2019 aquatic surveys. This monitoring should be undertaken annually, at a similar time of year (February), for five years post-operation of the scheme.
- If, in the opinion of the Department, the aquatic ecology monitoring demonstrates that the operation of the scheme is having a significant adverse effect on the aquatic conservation values of McCullough's Creek, the department reserves the right to review the minimum flow and design flow and/or apply further restrictions to the activity.

- A flow monitoring site **should be installed immediately below the intake and;**
    - The flow monitoring device must be continuous and telemetered;
    - Flow must be recorded to an accuracy of ± 10%, and at no less than 15-minute intervals;
    - This flow data should be made available online to the Department;
    - This flow data should be audited and verified by a suitably qualified hydrologist;
- If flow reduces below the specified minimum flow (75% MALF being 252 litres per second [at the intake]), then abstraction must cease.
- The intake structure (and associated secondary channel) should be assessed by a suitably qualified freshwater ecologist to ensure it provides for fish passage.
- No works should occur in waterways between September – November (inclusive) to minimise impacts on the peak upstream migration period of juvenile koaro.
- Wet concrete/cement must not be used in flowing water.
- The Coanda screen should have bar spacing no greater than 1.0 mm.
- An Environmental Management Plan (or associated plan, e.g., Construction) should be prepared, which details the measures to be undertaken to achieve the following objectives;
    - Minimising the risk of sediment discharge (and other contaminants, e.g., concrete, hydrocarbons, etc.) to waterways;
    - Minimising the duration of time that works will be occurring within or adjacent to waterways;
    - Managing sediment deposition in the abstraction reach as a result of flushing of the desander;
    - Minimising the risk of scour from the tailrace discharge point(s);
    - Minimising the risk of fish attraction into the tailrace;
    - Minimising disturbance associated with maintenance of the intake structure;
    - Ensuring ongoing fish passage is provided at the intake structure (i.e., checking its integrity after large flood events);
    - Minimising the use of lighting (both during construction and ongoing) (including using lighting that minimises the attraction of insects);
    - No net loss of riparian vegetation;
    - Minimising biosecurity risks.
- Any management plan must be submitted to the Department for certification at least one month prior to intended works being carried out.
- Any monitoring plan must be submitted to the Department for certification at least one month prior to any monitoring activities being carried out.
- Annual monitoring reports (for both aquatic ecology and hydrology monitoring) should be prepared and submitted to the Department by 'date X' each year.

Conclusion for Freshwater Effects

179 For 2150m of the 2800m of proposed extraction reach the only fish found to be present is koaro, for the lower 650m of the abstraction reach koaro, torrentfish, longfin eel, and brown trout were present. This is due to a waterfall acting as a natural barrier. All species apart from brown trout are listed as 'At Risk – Declining' (Dunn et al. 2018). The health of the creek is considered to be in Excellent or Good condition.

180 The department has some reservations with the methodology used to measure the

change in habitat availability and considers the effects could be higher than what the applicant has estimated. The applicant summarises the overall level of unmitigated effects on freshwater values on the catchment as being 'very low'.

181 If the application is granted the department proposes a number of additional conditions that should be adhered to.

182 The Department could take a precautionary approach to residual flow, setting the residual flow at 100% of MALF rather than 75% of MALF.

183 It should be acknowledged that the information is not 'perfect' to assess the level of effects on freshwater values. If you consider the information is insufficient or inadequate to assess the effects on freshwater values, or if you consider that the there are no adequate methods or reasonable methods to avoid, remedy or mitigate the effects, you may decline the application under section 17U2(a).

184 If you consider the proposed freshwater conditions would adequately avoid, remedy and mitigate the effects of the activity on freshwater values then you may grant the concession

## 2.9 Safety Matters

185 The applicant noted in its application that public safety and the scheme's compliance with the NZ Health and Safety Act 2015 is of utmost importance. In order to ensure that the public are kept away from sensitive equipment or dangerous areas, appropriate signage and fencing would be installed. The applicant in further information provided on 29 August 2018, stated *"Fencing, locked gates, security systems with cameras and signage would prevent unauthorised access to the powerhouse, switchyard and adjacent areas. All other parts of the project (which do not propose a risk) would not be fenced and would remain accessible to the public. In addition to these fences and signs, warning signs and other information such as maps will be installed to inform members of the public of the scheme and the associated risks."*

*186* The applicant noted in their application that ramping rates of the turbine unit would be set with consideration for the downstream effects of potential rapid changes to flow, implying that this might be a risk. However, after the preparation of the EIA, the applicant undertook a detailed look at effects of ramping on upstream and downstream water levels and assessed that no rapid changes of flow would occur. The applicant notes further that *"The worst cases (load rejection) would result in less than 12 cm of water level rise taking place over several minutes or longer. This is similar in nature to water level increase during natural rain events. Given the low levels of water level rise and long periods they occur over, there appears minimal safety risk."* They also note that they will however add this to the risk register so that it is identified. And that *"areas around the tailrace (with the most water level at load acceptance effect) will be fenced off, as discussed."*

187 The applicant provided a risk assessment matrix which is attached to this report at Appendix 6.

188 The department notes that there are a number of hazards in this environment, some of them captured in the applicant's risk assessment. Additional ones not identified by the applicant include working and operating in the rough terrain and the risk to infrastructure from earth slips during weather events.

**Proposed mitigations – Safety**

189 The applicant has proposed the following measures:

- A fire protection system is proposed with passive measures (e.g. fire-rated construction materials and methods), active measures (e.g. sprinklers, venting, fire-fighting equipment) and operational measures (e.g. plans, systems and training for fire prevention and response.
- Fences, locked gates, security system and cameras installed around the power station and high voltage equipment.
- Public safety in and around the operational area and structures will be managed under a Safety Plan developed in conjunction with DOC.
- Head gates to prevent water flows in event of pipe burst. Foundation design, evacuation plans, drills and Emergency Management Plans in place
- Health and Safety plan developed for workers, under Worksafe NZ requirements. Training for first aid, working at heights, confined space.
- Bunds arounds transformers to contain spills, oil separators used where required and biodegradable greases used in turbine.
- The applicant also commented in its application that ramping rates of the turbine unit would be set with consideration for the downstream effects from rapid changes to flow.

190 The department notes that there are standard conditions in the lease/licence concession that outline safety requirements. Particularly any concessionaire must comply with the Health and Safety at Work Act 2015 and its regulations and all other provisions or requirements of any competent authority relating to the exercise of a concession. This legislation covers both the safety of concessionaire's workers and others including the public's health and safety from the proposed activity. The following conditions are recommended:

- Prior to the commencement of construction, submit to the Grantor an independently audited Safety Plan which meets the requirements of Schedule 2, Clause 14 of the Standard Lease – Licence document. The Concessionaire must comply with and keep that document in force during the term of this concession.

- The Safety Plan must specifically outline and map any areas proposed to be fenced off due to safety reasons and these areas to be fenced must be agreed to by the department before the Safety plan is finalised.

- Prior to the commencement of construction, the Concessionaire must submit a fire plan which meets the approval of the Grantor. No fires are to be lit on site and extreme care is to be taken with equipment likely to start fires. Full fire extinguishing equipment is to be kept on the Site at all times during construction.

Conclusion for Safety Matters

191 **The department considers, that as long as the applicant adheres to the standard lease/licence conditions requiring compliance with the Health and Safety at Work Act 2015 and its regulations and all other provisions or requirements of any competent authority relating to the exercise of a concession then safety effects would be manage appropriately.**

Noted

## 2.10 Cumulative Effects

192 The applicant has commented that there would be no cumulative impact on the area from the scheme because it would be the only development in the catchment.

193 The department notes that there has been an increasing number of run-of-river hydro inquiries and applications for the West Coast generally however there are no other active hydro concessions in the catchment or nearby catchments. A recently approved application for a hydro scheme in the Parker Creek Catchment, which is immediately to the south of McCulloughs Creek, has not been executed. The closest active schemes on Public Conservation Land are Perivale Hydro Limited near Franz Josef, Amethyst Hydro Limited near Hari Hari and Trustpower Limited's Wahapo power scheme.

194 The department also considers that cumulative effects could be from a growing number of schemes or activities on public conservation land that collectively or cumulatively create an unacceptable level of effects on the conservation values already discussed in this report. The department does not think this is the case for the area under application. Accumulated effects from this type of or similar activity in the area are considered minor or minimal.

### Conclusion for Cumulative Effects

195 Accumulated effects from this type of or similar activity in the area are considered low and that the proposed methods to avoid, remedy and mitigate the effects, discussed above, would adequately limit the accumulated effects from this activity on the conservation values of the area.

## 2.11 Summary of Over-all Conclusions for Effects

### Indigenous Flora

196 If appropriate and adequate avoidance and remedial actions are taken focusing on reducing damage to the above and below ground aspects of the vegetation, as well as on-going weed and pest control then the adverse effects of the project on terrestrial vegetation values will result in medium effects during construction and low effects in the long term. However due to the impact on the important quality of intactness there would be a loss of conservation values in the area.

197 The department considers that the effects of the proposed activity on flora are able to be adequately mitigated via the proposed concession conditions, including close supervision of the construction, to the point where they would be low in the long term.

### Indigenous Fauna

198 The department notes that the confirmation of bats in the area is new and significant and a precautionary approach would need to be applied if the proposed scheme is to be granted.

199 Although the applicant states that its survey was not indicative of local roosts, the department considers it was a small sample size to base this assumption on and that this is not necessarily the case. The department considers there is still a risk that non-active roost tree could be cut down, which, depending on the total number of non-active roost trees used by the colony, could impact on the colony.

200 The department considers that if the applicant adhered to the proposed conditions including the tree felling protocols to avoid felling any active bat roost trees, then the effects of the proposed activity on fauna would be adequately avoided, remedied and mitigated to the point where the effect would be minor in the long term.

201 It should be acknowledged there is still a very small risk that a bat roosting tree could be felled. If an active roost was felled the effect would be significant. If you are not satisfied that this risk can be adequately managed through the proposed conditions including the bat protocols discussed above, you should consider declining the application under 17U(2)(b) of the Conservation Act (that there are no adequate methods to mitigate this potential effect).

**Historic Effects**

202 The department considers that if the applicant adheres to the proposed conditions including the accidental discovery protocols, effects on historic values would be adequately avoided, remedied and mitigated to the point where the effect would be minor.

**Visual and Landscape Effects**

203 The department agrees with the applicant's consultant that the scheme would introduce a change to the landscape, however once construction is complete the changes would not adversely alter the natural character of both the visual and landscape values of the area. There would be moderate landscape and visual effects during construction for up to a year and low effects after construction. It is considered that the proposed methods to avoid, remedy and mitigate the potential adverse effects, including a requirement that there is close supervision of construction, are considered adequate.

**Recreation Effects**

204 The department considers that the effects on recreational values are low and no further mitigations are recommended.

**Noise Effects**

205 The department considers the effects from noise would be low and no further mitigations are recommended.

**Cultural Effects**

206 As long as the applicant adhered to the proposed Accidental Discovery Protocols the department considers the cultural effects would be low and adequately avoided, remedied and mitigated.

**Freshwater Effects**

207 The applicant summarises the overall level of unmitigated effects on freshwater values on the catchment as being 'very low'. However, the department has some reservations with the methodology used to measure the change in habitat availability and considers the effects could be higher than what the applicant has estimated.

208 If the application is granted the department proposes a number of additional conditions that should be adhered to.

209 The Minister could take a precautionary approach to residual flow, setting the residual flow at 100% of MALF.

210 It should be acknowledged that the information is not 'perfect' to assess the level of effects on freshwater values. If you consider the information is insufficient or inadequate to assess the

effects on freshwater values, or if you consider that there are no adequate methods or reasonable methods to avoid, remedy or mitigate the affects you may decline the application under section 17U2(a).

211 If you consider the proposed freshwater conditions would adequately avoid, remedy and mitigate the effects of the activity on freshwater values then you may grant the concession

**Safety Matters**

212 The department considers, that as long as the applicant adheres to the standard lease/licence conditions requiring compliance with the Health and Safety at Work Act 2015 and its regulations and all other provisions or requirements of any competent authority relating to the exercise of the proposed scheme then safety effects would be managed appropriately.

**Cumulative Effects**

213 The department considers that the proposed methods to avoid, remedy and mitigate the effects, discussed above, would adequately limit the accumulated effects from this activity on the conservation values of the area.

## 3.0 Analysis of legislation and Statutory Plans (s17T, 17U, 17V, 17W, 17X, 17Y)

### 3.1 Consistency with the Act and the purpose for which the land is held (17U3)

214 Section 17U(3) of the Conservation Act provides that *"the Minister shall not grant an application for a concession if the proposed activity is contrary to the provisions of the Act or the purposes for which the land concerned is held."*

215 As the decision maker, the first question you must answer is whether the proposed activity would be contrary to the provisions of the Act or the purposes for which the land concerned is held. If it is, you must decline the application. When assessing whether the activity is contrary to the provisions of the Act, your decision will be informed by considering the activity against the criteria in Part 3B.

216 When assessing whether the activity is contrary with the purposes to which the land is held, you are limited to considering the impact of the activity on the conservation areas under application, noting that offsite positive and negative effects are not relevant. All s17U(1) considerations are relevant at this stage. This will involve, among other things, you determining:

- the adverse (conservation-related) effects of the proposal on the conservation areas;
- whether the adverse effects on the conservation area are adequately addressed; and
- the positive (conservation-related) effects of the proposal on the conservation area.

217 Under the Conservation Act land is held for "conservation" purposes. "Conservation" is defined under the Act as:

> *"The preservation and protection of natural and historic resources for the purpose of maintaining their intrinsic values, providing for their appreciation and recreational enjoyment by the public, and safeguarding the options of future generations."*
>
> 'Preservation' and 'protection' are both further defined in section 2 of the Act to mean:

*'**preservation**', in relation to a resource, means the maintenance, so far as is practicable, of its intrinsic values'*

*'**protection**, in relation to a resource, means its maintenance, so far as is practicable, in its current state; but includes—*
*(a) its restoration to some former state; and*
*(b) its augmentation, enhancement, or expansion*

218 The land under application is a mix of Whataroa Scenic Reserve, McCulloughs Creek Marginal Strip and Waitangi Forest Conservation Area (Stewardship Land). The delineation between each conservation area and the various components of the scheme are shown clearly on Map 3 in section 1 of this report and also included as a larger version as appendix 8. The purposes for which each conservation area is managed for are described as:

a. Stewardship land is managed under section 25 of the Conservation Act which is to protect the land's natural and historic resources. This applies to the intake structures, desander, helipad and the first sections of the penstocks.

b. Whataroa Scenic Reserve is managed under the section 19(1)(a) of the Reserves Act 1977 for the purpose of protecting the areas scenic interest, beauty, or natural features or landscape for the benefit, enjoyment, and use of the public. This applies to the proposed power station, tailrace, approximately 200m of the access road and the lower penstock, the cable ways and cableway supports and laydown areas during construction.

c. Marginal Strips are held for the purposes in section 24C of the Conservation Act, in particular for the maintenance of watercourses, water quality and aquatic life, to protect their natural values and enable public access. This applies to approximately 375m of the proposed access track.

219 If you think the various parts of the proposed scheme would be contrary to the above sections of the Conservation Act and / or the Reserves Act then the activity would be contrary to the purpose/purposes for which the land is held and under section 17U(3) should be declined.

220 The wording in sections 25 and 24C of the Conservation Act and section 19(1)(a) of the Reserves Act suggests that it would not be lawful under the Act to allow an activity to occur which undermines the purposes described above. However, in making your decision you also need to consider a number of other matters as set out in Part 3B of the Act.

221 Relevant to reaching your conclusion, is whether, in terms of the conservation areas under application, the activity's effects can be adequately avoided, remedied or mitigated, and whether such adverse effects are outweighed by positive effects on that area. This requires a consideration of the possible safeguards and measures proposed and whether granting the scheme with or without conditions, would provide adequate protection of the conservation values and resources for which they have been protected.

222 The effects of the proposed scheme and measures proposed to avoid, remedy and mitigate these effects are discussed in section 2 of this report - 'Analysis of the Effects'. The 'Analysis of the Effects' section concludes that if the proposed conditions are adhered to the effects on historic, recreation, and cultural values and effects from noise would be low and adequately managed. Effects on safety would need to be managed under the relevant legislation.

223 The effects on flora values and visual and landscape values would likely be moderate/medium during construction and low following construction or in the longer term, noting the impact on intactness of the area. Confirmation of bats in the area was significant and you need to consider if the proposed conditions including tree removal and bat protocols are adequate. For freshwater effects a lack of 'perfect' information is acknowledged and that the effects could be higher than the low effects indicated by the applicant, you needed to decide if you consider the proposed conditions adequate.

Analysis/conclusion for Purpose for which the land is Held

**Whataroa Scenic Reserve**

The reserve is held to protect scenic interest, beauty, or natural features or landscape. This applies to the proposed power station, tailrace, part of the access road and the lower penstock, the cable ways and cableway supports and laydown areas during construction. The Effects Analysis for Visual and Landscape Character concludes that while the development would introduce a change to the landscape, once construction is complete it would not adversely alter the natural character of both the visual and landscape values of the area (assuming the applicant adheres to the proposed conditions). It is acknowledged that there would however be moderate landscape and visual effects during construction.

**McCulloughs Creek Marginal Strip**

The purpose of the marginal strip is to ensure the maintenance of watercourses, water quality and aquatic life, to protect their natural values and enable public access. This land status applies to approximately 375m of the proposed access track and is predominantly already cleared, so this part of the access road would have little effect on an already modified area, therefore would not be contrary to the purpose for which the land is held.

**Waitangi Forest Conservation Area (Stewardship Land)**

Stewardship land is held to protect the lands natural and historic resources. The 'Analysis of the Effects' section concludes that:

- If the proposed conditions are adhered to, the effects on historic, recreation, and cultural values and effects from noise would be low and adequately managed. Effects on safety would need to be managed under the relevant legislation.
- The effects on flora values and visual and landscape values would likely be moderate/medium during construction and low following construction or in the longer term), noting the impact on intactness of the area. Confirmation of bats in the area was significant and you need to consider if the proposed conditions including tree removal and bat protocols are adequate. For freshwater effects a lack of 'perfect' information is acknowledged and that the effects could be higher than the 'low' effects indicated by the applicant.

The applicant noted in its application that it had arranged for a range of expert assessments to identify natural heritage values and implement a range of measures to avoid, remedy or mitigate potential effects. It said, *"These measures have been provided for either through the design, layout and location of the Activity, including through the proposed mitigation."*

The applicant stated that its experts concluded that *"with the design and mitigation, the effects will be minor or less than minor. The resources of Mcculloughs Creek will be protected."*

As noted previously in this report, for the most part the effects would be adequately managed, and it is only the effects on bats and freshwater values that you needed to give careful further consideration to.

If you have decided that you consider the proposed conditions would adequately mitigate the effects on bats and freshwater values then the application could be considered 'not contrary' to the purpose for which the land is held and if all the other relevant tests are met you may grant the application.

If however you have decided that the proposed conditions for managing effects on bats and freshwater values are not adequate and that there are no adequate or reasonable methods for remedying, avoiding or mitigating the adverse effects of the hydro scheme on these values then the application would be 'contrary' to the purposes of the Stewardship Land and you must decline the application.

### 3.2 Structures, Lease, Licence and Exclusive Possession – Section 17U(4), (5), (6) and (7)

224 Section 17U(4) provides that:

*'The Minister shall not grant any application for a concession to build a structure or facility, or to extend or add to an existing structure or facility, where he or she is satisfied that the activity-*

*(a) Could reasonably be undertaken in another location that-*

*(i) Is outside the conservation area to which the application relates; or*

*(ii) Is in another conservation area or in another part of the conservation area to which the application relates, where the potential adverse effects would be significantly less; or*

*(b) Could reasonably use an existing structure or facility or the existing structure or facility without the addition.'*

225 An assessment of alternative sites was provided in the further information dated 16 March 2018. The applicant noted that a viable hydropower site needs to meet a large number of criteria to be acceptable. Since 2014, No 8 Ltd had assessed numerous sites before identifying the McCulloughs Creek which met the appropriate criteria. The criteria include adequate hydrology, constructible terrain, nearby transmission and a site which is free from significant ecological, visual, environmental, cultural or social effects.

226 The applicant has provided a table analysing 11 different sites on the West Coast including in other conservation areas. No 8 have asked to keep this information confidential due to the commercially sensitive nature of the information and have provided reasons why it has not pursued the other 10 sites. A number of the sites had pre-feasibility studies done on them and reasons why they have not been selected have been provided. The issues range from problems with transmission of the power, unsuitable geology and or terrain, effects on conservation values being too high, water flows not being high enough to make a viable scheme and being unable to reach agreements with private landowners.

227 The department considers that No 8 has carried out extensive investigation into a range of alternative sites both on and off public conservation land and concludes that the proposed activity could not reasonably be undertaken outside the conservation areas under application nor in another conservation area or another part of the conservation areas where the potential adverse effects would be less.

228 Sections 17U(5), (6) and (7) are about the tests required to grant a lease or a licence for an interest in that land. In this case where the activity requires exclusive use of some of the areas for fixed structures (the weir and power station for example); and the grant of the lease or licence is required to enable the activity to occur including the exclusive use of some areas for reasons of public safety; and to protect the physical security of power station, and allow the competent operation of the activity to occur, the application clearly meets those tests.

### 3.3 Consistency with the Conservation General Policies 2005

229 The Conservation General Policy 2005 (CGP) was prepared under s 17C of the Act and provides guidance for the implementation of the Act and other conservation related legislation. Part 3B of the Act does not expressly make consistency with the CGP a criterion for considering a concession application. However, the requirement for consistency is implicit, because of -

- section 17A, which requires DOC to manage conservation areas in accordance with the CGP;
- section 17D(1), which requires CMS's to implement general policies, which are found in the CGP;
- section 17D(4), which requires CMS's to "not derogate from" the CGP. CMS's must therefore be consistent with the CGP; and
- section 17N(2) which confirms that the Minister of Conservation is bound by the general polices such as those found in the CGP.

230 In addition, the West Coast Conservation CMS incorporates the CGP into concession decision-making (Objective 1, page 112 of CMS).

231 The applicant concludes in its application that the CGP provides for utilities including structures and infrastructure for energy generation can be provided on public conservation lands and waters and given the nature and design of the proposed activity, the proposal is considered consistent with (if not supported by) the CGP.

232 The relevant provisions of the CGP are summarised and discussed below:

#### CGP Policy 2(e) – Treaty of Waitangi Responsibilities

233 This policy requires tangata whenua to be consulted on specific proposals that involve places or resources of spiritual or historical and cultural significance to them. The application is in the Takiwa of Te Runanga o Makaawhio who have been consulted but have not raised any concerns in terms of cultural effects during the consultation process.

#### CGP Policy 3(e)- Public Participation in Conservation Management

234 Policy 3(e) requires consultation with people and organisations interested in public conservation lands and waters and where the specific proposal would have significance for them. No specific organisations where identified outside of the public consultation process, iwi consultation and the Conservation Board. The application has been publicly notified and the outcomes and recommendations of public notification are discussed in Section 1 of this report.

CGP Policy 4.5 - Geological features, landforms, and landscapes.

235 Policy 4.5 (b) states that: "Activities which reduce the intrinsic values of landscape, landform and geological features on public conservation lands and waters should be located and managed so that their adverse effects are avoided or otherwise minimised."

236 'Intrinsic value' is defined in the CGP as: "A concept which regards the subject under consideration as having value or worth in its own right independent of any value placed on it by humans."

237 The department considers that the proposed conditions would adequately minimise the effects on the intrinsic values of the landscape, landforms and geological features

**CGP Policy 4.6 – Ecosystem Services**

238 Ecosystem services are defined in the CGP as a wide range of conditions and processes "through which natural ecosystems, and the species that are a part of them, help sustain and fulfil life."

239 Policy 4.6(a) states that activities on public conservation lands and waters should be "planned and managed in ways which avoid or otherwise minimise adverse effects on the quality of ecosystem services."

240 CGP Policy 4.6(a) noted above requires an analysis of the effects of the proposed activities on the various conservation values to draw a conclusion in respect of consistency. The analysis in the effects section (Section 2) of this report indicates that many of the potential adverse effects on the quality of the flora are able to be adequately avoided, remedied and mitigated although noting a small loss in the 'intactness'. If you have decided that you consider the proposed conditions would adequately mitigate the effects on fauna and freshwater values then it is considered that the application would meet the requirements of policy 4.6(a) to avoid and minimise effects.

241 If however you have decided that the proposed conditions are not adequate and that there are no adequate or reasonable methods for avoiding, remedying or mitigating the adverse effects of the hydro scheme (that aren't outweighed by any positive effects) then the application would not likely meet the requirements for policy 4.6 (a).

**CGP Policy 11 – Activities Requiring Specific Authorisation**

242 Policy 11.1(a) - (e) deals with activities requiring specific authorisation, including concessions. It specifies that activities should avoid, remedy or mitigate any adverse effects (including cumulative effects) and maximise any positive effects. It requires that both the department and concessionaires monitor effects, including effects on public enjoyment, to inform future management decisions and it requires that concessionaires are to be responsible for the safe conduct of their operations.

243 Again, a decision on avoiding, remedying and mitigating the adverse effects is dependent on the decisions previously discussed in this report on the adequacy of the proposed methods. If this concession is granted a range of conditions providing for appropriate monitoring are proposed and standard conditions in the lease/licence documents on safety would be applied.

244 Policy 11.1(b) provides that adverse effects, including cumulative effects, should be avoided, remedied and mitigated and positive effects on the benefit and enjoyment of the public, including public access should be maximised. The 'Effects Analysis' section of this report concludes that the cumulated effects from this type of, or similar, activity in the area are

considered low and the proposed methods to avoid, remedy and mitigate the effects, discussed above, would adequately limit the accumulated effects from this activity on the conservation values of the area.

245 An access track to 'route' standard would be available to those public that know it exists but there is no requirement proposed to require the access route to be advertised.

**CGP Policy 11.3- Utilities**

246 Under the definition of a utility in policy 11.3 the proposed hydro scheme would be considered a utility. In particular Policy 11.3 (a)-(e) provides that:

- The utility may be provided for if it can't reasonably be located elsewhere (considered later in this report under 17(U)(4) – Structures.)
- That they should be of a scale, design and colour that relates to, and is integrated with, the landscape and seascape. It is considered the scheme's low impact design, conditions requiring careful tree removal, close supervision of construction and use of dark recessive colours would ensure the scheme would be consistent with this policy.
- That public access may be denied for safety, security or competent operation. This is considered later in this report under 17U (5) (6) and (7).
- The utility be located where possible in or added to an existing structure. The department is satisfied that this is not possible as there are no other existing structures to which this structure could be added.
- The utility be removed, and the site restored if they become redundant. It is recommended if the concession is granted that special conditions requiring a bond are included, these have been added to Appendix 1 of this report. Conditions in the standard lease/licence provide for the removal or otherwise of all structures and are therefore not required as Special Conditions. In addition, bond conditions are proposed that would ensure the department has the ability to remove the structures if the Concessionaire was unable too.

247 Utilities are also discussed further below under the West Coast CMS planning provisions 3.7.11 'Utilities'.

Conclusion Conservation General Policy

248 It is considered that the proposed construction and operation of the hydro scheme and associated facilities would be consistent with most of the provisions of the CGP discussed above (assuming adherence to the proposed conditions) however consistency with 4.6 (a) and 11.1 (b) is dependent on your decision in regard to whether you consider the proposed conditions would adequately mitigate the effects on fauna and freshwater and if that is the case then it is considered that the application would be consistent with the CGP.

Noted

### 3.4 Consistency with West Coast *Tai Poutini* Conservation Management Strategy 2010-2020 (CMS) - Section 17W (1)

249 Section 17W(1) of the Conservation Act states – "*Where a conservation management strategy or conservation management plan has been established for a conservation area and the strategy or plan provides for the issue of a concession, a concession shall not be granted in that*

*case unless the concession and its granting is consistent with the strategy or plan."* Key relevant provisions of the CMS are analysed below:

**Section 3.1.2.1 Treaty of Waitangi relationships –**

250 Objectives and policies in this section requires that effect be given to the Treaty of Waitangi and that consultation with Te Runanga o Makaawhio be undertaken for this proposal.

251 Te Runanga o Makaawhio have been consulted and have not raised any concerns with this proposal during the concession consultation process.

noted

**CMS Section 3.3 Natural Heritage Conservation**

252 The CMS describes natural heritage as including all indigenous species, the places they live, the physical and biological systems with which they interact (e.g. air, water, soil, habitats and ecosystems), and geological features, landforms and landscapes.

253 The CMS states that the overall aim of the Department's approach is to prevent further loss of indigenous biodiversity by removing as many human-induced disturbances as possible and using various methods to greatly reduce the impact of threats that cannot be completely removed.

254 The CMS describes the main threats to terrestrial biodiversity values. These include currently present and newly colonising pest species. For freshwater biodiversity values, the CMS states maintenance of the natural character and quality of waterways and wetlands is crucial for the survival of freshwater invertebrates, fish and bird species as well as the continuation of freshwater ecosystem services. The CMS identifies a variety of human activities that can adversely affect geodiversity and landscape values, including earthworks and roading, development of utilities, infrastructure or other buildings in natural settings, and native vegetation clearance.

noted

**CMS Section 3.3.3.2 Maintenance and Restoration of the Indigenous Natural Character of Ecosystems**

255 Objective 1 of this section is to maintain, and restore where practicable, the indigenous natural character of the full range of the West Coast Te Tai o Poutini terrestrial, freshwater and marine ecosystems.

256 To achieve this objective the CMS states a number of policies. Policy 1 is relevant to this application;

> Policy 1
> *Management of threats to terrestrial and freshwater species, habitats and ecosystems across all public conservation lands on the West Coast Te Tai o Poutini should be prioritised, taking into account the need to:*
>
> a) *prevent the loss of indigenous species and the full range of their habitats and ecosystems;*
> b) *maintain contiguous sequences of indigenous ecosystems (e.g. from mountains to sea);*
> c) *maintain representative examples of the full range of indigenous ecosystems;*
> d) *maintain populations of indigenous species, habitats and ecosystems with unique or distinctive values;*

e) *achieve recovery of threatened indigenous species (including their genetic integrity and diversity) and restore their habitats where necessary;*
f) *restore threatened indigenous ecosystems and connections between ecosystems where necessary;*
g) *maintain the ecological integrity of indigenous ecosystems consistent with the purposes for which the land is held;*
h) *protect recreational freshwater fisheries and freshwater fish habitats; and*
i) *achieve integrated management at priority sites.*

257 The potential effects from this scheme on terrestrial and freshwater species and ecosystems have been discussed in this report at Section 2 under effects. The following summarises the main effects of the proposed hydro scheme on indigenous species and their habitats and ecosystems:

**Terrestrial vegetation/habitat**

258 The scheme would result in a permanent loss (at least for the life of the scheme which is 40 years, so for all intents and purposes considered permanent) of approximately 0.5ha of indigenous vegetation. The applicant's consultant concludes that the effects on terrestrial ecosystems would be negligible noting further that the 1.5-2m wide penstock corridor would have negligible fragmentation effects on the assessed terrestrial fauna.

259 The department considers effects on the vegetation would likely be medium during construction and low in the long term and the potential adverse effects on the quality of the flora are able to be adequately avoided, remedied and mitigated through the proposed conditions although noting a potential impact on what is currently an entirely intact site that would result in some loss of conservation values.

**Indigenous Species**

260 The department considers the main effects of the proposed development on indigenous species includes loss of breeding and/or feeding habitats of long-tailed bats, both threatened and representative bird species and lizard species through the felling of trees and clearance of habitats, mainly for the access road and route, the desander, weir, and the penstock/pipeline (0.5 ha). Given the small size of the footprint and the proposed conditions it is considered the effects on birds and lizards would be adequately managed.

261 Confirmation of bats in the area is new and significant. The applicant believes that its survey was not indicative of local roosts in the scheme footprint area, however the department considers it was a small sample size to base this assumption on and that this is not necessarily the case.

262 The applicant's consultant considered that effects on bats would be negligible/very low however the department considers that if there was a colony present in the footprint area and a non-active roosting tree was to be felled it would affect the colony to different degrees depending on the number of non-roosting trees the colony was using. If an active roost was felled, the effect would be significant. The range of conditions proposed including close supervision of construction, adhering to tree removal and bat protocols would minimise effects on bats. The effects section concludes that you need to decide if you consider the proposed conditions would reduce the effects or the risk to bats adequately. If you decide that they would be then the proposed scheme would also be consistent with this CMS policy.

**Freshwater Recreational Fisheries and habitats**

263 The Creek is not known for its recreational fishing values and effects on freshwater habitats is discussed under CMS policy 3.3.3.3 below.

**CMS Section 3.3.3.3 Management of Fresh Water Fisheries**

264 Objective 1 in this section requires the prevention of further extinctions of indigenous freshwater fish species and declines in species abundance and range.

265 To achieve this objective the CMS states a number of policies. Those relevant to this application include;

Policies

1. *"Existing and potential threats affecting indigenous fish populations, including barriers to migration (see Policies 2-4), habitat degradation and loss (see Section 3.3.1.5), introduction of pest species (see Policy 9 and Section 3.3.1.5), and interactions between exotic fish, including sports fish, and indigenous fish (see Policy 9) should be addressed.*

2. *The Department should safeguard fish migration through application of the Freshwater Fisheries Regulations 1983 fish passage provisions, advocacy through local authority planning processes, and monitoring.*

4. *Where of benefit to native fish species, the Department should advocate for the removal of barriers or the installation of fish passes that allow native fish to travel both upstream and downstream, and monitor the effectiveness of such fish passes."*

266 The primary effect of the scheme on the indigenous fish populations is from the intake weir and the reduction in habitat through the 2800m of abstraction reach, leaving a residual flow of between 75% and 100% of MALF just below the intake point. Below this, tributaries would continue to flow into the abstraction reach.

267 In the upper 2150m of the abstraction reach the only fish present is Koaro. In the lower section of the abstraction reach (650m) four of the five species recorded (one being brown trout) are indigenous and listed as 'At Risk' - Declining' (Dunn et al. 2018). The applicant summarises the overall level of unmitigated effects on freshwater values on the catchment as being 'very low'. However, the department considers the effects on freshwater values (in the abstraction reach itself) could be higher than that, as the habitat available to aquatic biota would decline significantly for extended periods. You have been asked to decide whether you consider the proposed conditions would adequately avoid, remedy and mitigate the adverse effects on freshwater values. You have been given an option to add an extra condition increasing the applicant's requested level of residual flow from 75% of MALF to 100% of MALF.

268 If this concession is granted, an application under the Freshwater Fisheries Regulations 1983 for a dam/diversion structure fish facility would be required as this concession does not provide for this. Standard application forms are available for this.

269 If you decide that the proposed range of conditions discussed in Section 2 of this report including; preparation of a fish management plan, specific design requirements for the weir and intake structure to allow for fish passage, a freshwater fish monitoring programme with options to review the minimum residual flow minimum residual flow and the setting of a

specific minimum residual flow, would adequately avoid, remedy or mitigate the adverse effects then the proposed scheme would also be consistent with this CMS policy.

**CMS Section 3.3.3.5 Threatened Species Management**

270 Objective 1 of this section requires the prevention of further extinctions or range contractions of indigenous species. Objective 2 requires the department to ensure, where practicable, that representative populations of all indigenous species have long-term security in predominantly natural habitats within their natural range.

271 To achieve the above objectives this section of the CMS states a number of policies. Policy 3 is relevant to this application and states:

> *"Work on threatened species should focus on preventing extinction and maintaining genetic diversity. Subsequent priorities should include progressively increasing the security, range and population size of species"*

272 A range of methods and conditions have been proposed to avoid, remedy and mitigate the effects on threatened species, in particular; bats, birds and lizards and fish, including the requirement for a plan for pest control in the area. The impacts on threatened species and species genetic diversity are considered for the most part low, it is only the small but potentially significant effect on bats from the very small risk of removing a bat roost that you need to consider here. If you think the tree removal protocols would adequately mitigate this risk then the scheme would be consistent with this section of the CMS.

**CMS Section 3.3.3.6 Biosecurity and Pest Management**

273 Objective 1 this policy requires the department to protect natural heritage values from the adverse effects of unwanted organisms, invasive weeds and animal pests.

274 Policy 3 is relevant to this application and states:

> *"Public and resource user awareness of the adverse impacts of unwanted organisms on indigenous species and ecosystems, and of ways to avoid their introduction and spread, should be enhanced."*

275 Conditions for animal and pest management have been proposed and are considered adequate and would help avoid animal and pest introduction and spread into the surrounding ecosystems. The scheme would be consistent with this section of the CMS.

**CMS Section 3.3.4.3 Management of Geodiversity and Landscapes**

276 Objective 1 of this section requires the department to protect geodiversity and landscapes from adverse effects of human use or management."

277 To achieve the above objective this section of the CMS states a number of policies. Policy 1 and 2 are relevant to this application and states:

1. *"The Department should seek to protect and preserve the natural character, integrity and values of landscapes, landforms, geological and soil features and processes in all aspects of conservation management.*

2. *Landscape assessments should be conducted on an as-needed basis, e.g. when considering proposals to develop utilities on public conservation land."*

278 A visual and landscape character assessment report was prepared by the applicant and reviewed by an external consultant to the department. Following this, the applicant reviewed its assessment taking into consideration the comments made by the department's external consultant. The department is satisfied that the reviewed assessment has provided adequate information to make an assessment of the effects on visual and landscape values.

279 The landscape and visual effects are discussed in Section 2 of this report and conclude that there would be moderate landscape and visual effects during construction for up to a year and low effects after construction. It is also considered that the range of proposed methods to avoid, remedy and mitigate the potential adverse effects, including; a requirement for a final construction and management plan; a restriction on construction methods for the pipeline/penstock corridor to chainsaws and hand tools; the use of a liaison officer and close supervision of construction and refinement during installation, are considered adequate.

280 The department considers that the proposed scheme would be consistent with these objectives and policies.

**CMS Section 3.5 Authorised Uses of Public Conservation Lands**

281 Objectives 1, 3 and 4 and policies 1, 2 and 5 of this section are relevant and discussed below:

282 Objective 1 requires the department to implement the CGP into concession decision making. The relevant considerations from the CGP are discussed earlier in this section of this report.

283 Objective 3 requires protection of recreational opportunities from adverse effects of authorized uses of public conservation lands. The area is remote and there is currently no formed access into the site. The proposed access along the penstock to 'route' standard would be available to public to access the site if they knew about it. The department notes that NZ Canyoning in its submission implied that the application should be declined to protect the site for future use of canyoning. The Hearing Panel noted the opportunity for canyoning at this site was unknown and that the loss of this possible opportunity was likely to be minimal and recommended that this consideration be given little weight. The recreational values of the area are considered to be low by both the applicant and the department and effects on recreational values are considered to be adequately avoided, remedied and mitigated.

284 Objective 4 requires the protection of places and taonga of cultural significance to Poutini Ngai Tahu from adverse effects of authorised uses of public conservation lands. The area under application is in the Takiwa of Ngai Tahu. Makaawhio are the Papatipu Runaka. There are no specific statutory acknowledgement/Deed of recognition sites or Topuni within the area under application however there are a number of Toanga species present within the proposed application area. Methods to avoid, remedy and mitigated the potential adverse effects on flora and fauna are discussed already throughout this report. The standard conditions agreed by Ngai Tahu would be included in the Concession if granted.

285 The following standard condition is particularly relevant:

- 'The Concessionaire must ensure any persons employed by the Concessionaire are requested to recognise and provide for Ngāi Tahu values in the conduct of their activities.'

286 Objective 5 provides for consultation, where necessary, with Papatipu Rünanga, conservation boards, the West Coast Fish and Game Council, authorisation holders, communities and other people and organisations over the consideration and granting of concessions, access arrangements and other authorisations for use of public conservation lands.

287 Section 3.5 Policy 2 states *"When approving concessions or other authorisations, specific conditions may be applied as deemed appropriate."* A range of conditions are recommended throughout this report if the proposed scheme is approved.

288 Section 3.5 Policy 5 states *"Consultation with Papatipu Rünanga, Te Rünanga o Ngäi Tahu and conservation boards on concessions, access arrangements and other authorisations for the use of public conservation lands will be early, ongoing, informed and effective."* Consultation with Makaawhio has occurred as discussed in section 1.3 of this report, no concerns have been raised by Makaawhio.

289 A summary of the Conservation Board consultation is recorded in section 1 of this report under 'Information Available for Consideration' the issues raised by the Board are addressed or discussed throughout the report.

290 It is considered if the proposed special and standard conditions are adhered to then the proposed hydro scheme would be consistent with the objectives and policies in section 3.5 of the CMS.

**CMS Section 3.6.1.4 Backcountry-Remote zone**

291 The proposed scheme would be in the Back-Country Remote Zone. The objectives and policies in these sections of the CMS are mainly about provision of recreational opportunities and policies and provide for the management and provision of facilities and services in the zone to meet the desired outcomes in part 4 of the CMS. The scheme would be within the Te Waihi Pounamu Place. The backcountry-remote zone is a recreation management mechanism and is not intended to relate to other types of activities however the proposed scheme would have negligible effects on recreation opportunities and the proposed access 'route' is not inconsistent with the outcomes of the Te Waihi Pounamu Place nor the Back-Country remote zone.

**CMS Section 3.6.4.2 Aircraft**

292 CMS policies allow for 'Regular Aircraft Landings' to be authorised in the backcountry Remote Zone. The application requires helicopter use during construction. The applicant notes this would be minimal and use would be over a limited period of time. The department considers the use of aircraft landings from the proposed scheme would be consistent with this policy. If a concession is granted it should include authority for such landing. The standard lease/licence concession includes standard special Aircraft conditions which should be included:

- The Concessionaire must ensure that any pilots of the aircraft authorised by this Concession hold the applicable aviation document and privileges to conduct the Concession Activity under the Civil Aviation Rules and must comply with Civil Aviation law requirements applying to the Concession Activity.

- The Concessionaire must ensure that aircraft idle times on the ground are kept to a practicable minimum.

- The Concessionaire must not refuel, leave any fuel drums or construct any fuel dumps on the Land, unless in an emergency situation.

**CMS Section 3.6.4.17 Vehicle Use**

293 The policies in this section provides for authorisation to be granted for the use of motorised vehicles on formed roads and in some circumstances where roads have not been formed. The Department considers that this application is consistent with the Vehicle Use policies.

**CMS Section 3.7.2 Activities on or in beds of Rivers or Lakes**

294 Policy 1 in this section requires that for applications in or on the bed of rivers;

- adverse effects on a range of conservation values (*freshwater and terrestrial species, habitats and ecosystems, historical and cultural heritage values, public access, recreation opportunities and amenity values)* be avoided or otherwise minimised;
- that riparian vegetation should be maintained or enhanced;
- activities should not damage river banks; and
- the activity does not result in pest or weeds being introduced or established; and
- the natural character of the setting should be maintained.

295 The department considers that if the conditions proposed in Section 2 of this report are adhered to and if you decided that the effects on bats and freshwater values would be adequately mitigated then it would also be appropriate to conclude the conservation values described above would be avoided or otherwise minimised.

296 Uncommon riparian vegetation (grass/sedgeland) is found at the upper helicopter landing pad site due to its preference of disturbed waterway margins. If sensitive construction was carried out the effects on the riparian vegetation would be considered less than minor. The risk of weed invasion is acknowledged and a weed management plan providing for weed monitoring and control has been recommended and standard Didymo clause would apply.

297 There have been no specific comments from the department's specialists on the riparian effects at the tailrace site. A small amount of riparian vegetation (about 20 $m^2$) would need to be cleared to form the concrete tailrace. The applicant's EIA 2017 notes that the tailrace would be made of precast concrete and that there is no risk to erosion from the discharge of water back into the stream. Special conditions have been proposed to minimise the risk of scouring from the tailrace discharge point.

298 The effects section of this report concludes that once construction is complete the changes would not adversely affect natural character.

299 Policy 2 provides for the monitoring of biological communities, physical habitat, channel profiles and substrate in order to evaluate and manage the long-term impacts. A programme for monitoring effects including changes in freshwater values is proposed with a right for the department to review the minimum residual flow, it is considered this will help to manage long term impacts as required by policy 2.

**CMS Section 3.7.11 Utilities**

300 In addition to the 'utility' policies already discussed above in this report under CGP 11.3, the following utility policy in the CMS also needs additional consideration. Policy 3 requires that *"The development, installation, maintenance and management of utilities on public conservation lands should be consistent with the desired outcome for the relevant place/s."* (see Chapter 4.2). This is considered below under 'Desired Outcomes'.

301 The footprint of the proposed Hydro Scheme is in the West Coast *Tai Poutini* Conservancy and the Te Wahi Pounamu Place, the outcome statements for the West Coast *Tai Poutini* Conservancy and the Te Wahi Pounamu Place are considered under the CMS Sections below.

**CMS Section 4.1 Desired Outcome for the Conservancy**

**CMS Section 4.1.1 The West Coast *Tai Poutini* Conservancy in 2020.**

302 Policy 4.1.1 allows for the provision of appropriate use and business opportunities consistent with conservation outcomes.

**Section 4.1.1.4 Proactive Management of Conservation Values in 2020.**

303 Section 4.1.1.4 states:

> *"The Conservancy's natural, historical and cultural heritage values are proactively managed, rehabilitated, restored or enhanced. The decline of indigenous biodiversity is halted. The security of threatened species unique to New Zealand and most at risk from extinction is improved. No extinctions of West Coast Te Tai o Poutini indigenous ... freshwater and terrestrial species occur and managed threatened species have a lowered risk of extinction.' ...*
>
> *'The connectivity and natural functioning of mountain-sea ecosystems ... and riparian areas is improving. Advocacy for protection of freshwater fish habitats ... is successful and artificial impediments to fish passage are progressively removed.' ... 'Further spread of unwanted exotic species is prevented, and no new unwanted organisms become established within public conservation lands."*

304 The effects on biodiversity values are discussed earlier in the report and concludes in the main that they would be adequately avoided, remedied and mitigated through a range of measures, noting however, you needed to decide whether the risk to bats and freshwater fish values could be adequately managed. Methods to avoid or minimize effects on any threatened species have been proposed; including the use of tree felling protocols to protect bats; lizard salvage protocols to provide for search and removal of potential lizards, minimum residual flows etc...

305 The connectivity and natural functioning of mountain – sea ecosystems and riparian areas for the abstraction reach in the McCullough's Creek would potentially diminish by a small degree. However, it is unlikely that these impacts would adversely affect the overall connectivity and natural functioning of mountain – sea ecosystems and riparian areas for the Wilberg Ecological District nor the West Coast in any more than a minor way.

306 The need for the passage of koaro over the proposed weir has been acknowledged; conditions require the weir to be designed to provide for fish passage including an additional outlet that allows water to flow over the rock banks on the downstream face of the intake and allows fish to pass the weir up and downstream even at low flow periods. In addition, a freshwater ecologist is required to assess the structure prior to operation and a separate authorisation under the Freshwater Fish Regulations is also required for the weir.

307 Conditions have been proposed to manage pest animals and weeds that would prevent exotic weeds and pests from establishing and spreading.

308 If you have decided that bats and freshwater values would be adequately protected through the proposed conditions, then the application would be consistent with this policy.

**CMS Section 4.1.1.5 Protection of conservation values from adverse effects of authorised uses in 2020.**

309 This section requires conservation values to be identified and safeguarded by managing threats consistent with the desired outcomes for Places described in Chapter 4.2 of the CMS. The potential adverse effects from the proposed hydro scheme conservation values have been identified and discussed in this report, a range of measures have been proposed that would help to avoid, remedy and mitigate the adverse effects. Consistency with the desired outcomes for the Hokitika Place described in Chapter 4.2 of the CMS is discussed below.

**CMS Section 4.2.7 Desired Outcome for Te Wahi Pounamu Place**

310 Section 4.2.7 of the CMS describes what the Te Wahi Pounamu Place will be like in 2020 if the direction of the CMS is followed.

311 The relevant desired outcomes from the CMS for the Te Wahi Pounamu Place are discussed below.

312 Section 4.2.7.6 – 'Geodiversity, landforms and landscapes in 2020' - of the CMS provides that geodiversity, landforms and landscapes are maintained in their 2010 condition. This report concludes in the effects section that once construction was complete the changes to the landscape would not adversely alter the natural character of both the visual and landscape values of the area.

313 The area under application is situated within the 'Upper Whataroa Priority Site' for biodiversity management. Section 4.2.7.7 of the CMS provides that for the Upper Whataroa Priority Site natural heritage values are maintained, and where practicable, protected and enhanced. This section states further that at priority sites for biodiversity management, natural processes occur as free from humans as possible, indigenous species persist without threat of extinction, and people can enjoy the full splendour of natural New Zealand. Further, it says that natural landscapes extending from mountain tops to the sea are maintained throughout much of the place.

314 The vegetation associations in most of the proposed areas, except for part of McCulloughs Creek Marginal strip, appear to be entirely natural, as very few weed species were found, and there is no mention of human interference (Wildlands, 2017). In order to be consistent with 4.2.7.7 of the CMS you would need to be satisfied that the natural heritage values of the area would continue to be maintained. The scheme does not threaten the extinction of any species and given the small scale of impacts after construction and following some regeneration, even with some risk and or uncertainty on bats and freshwater, on the whole the natural heritage values of the Priority Site would be maintained and protected in the long term. The application is considered to be consistent with this policy.

315 Section 4.2.7.10 – 'People's benefit and enjoyment in 2020 - This section notes that recreational facilities and activities in this zone are of low-impact and facilitate people's ability to enjoy and appreciate the internationally significant character of this Place. As previously discussed under section 3.6.1.4 above, the proposed hydro scheme is located in the backcountry-remote zone and the recreation zoning of areas is a recreation management mechanism and is not intended to relate to other types of activities, however the proposed access track to route standard would not be inconsistent with this outcome.

## 4.0 Proposed Operating Conditions

**Concession Activity Description:**

316 The construction and ongoing operation of a hydro-electric power scheme, including maintenance repairs and all activities which are reasonably necessary for the competent operation of the scheme, in the areas shown on the attached plan in appendix 8 of this report or Schedule 4 of the Lease - Licence and subject to the standard conditions for lease, licence and easements and the Special Conditions listed in Appendix 1 of this report.

317 Including the following temporary and permanent structures and concession type:

| Scheme Component | Proposed Concession Type |
|---|---|
| Weir Intake structures and desander | Licence |
| Access road, access track penstocks and transmission line<br>Pipeline leading to the desander (above the riverbank)<br><br>Tailrace structures (except those areas if any that are to be fenced due to H&S issues)<br><br>Permanent structures | Easement |
| Power Station and any areas of the tailrace that need to be fenced due to safety issues (must have been identified through an approved H&S Plan) | Lease |
| Subsurface structures | Lease |
| Temporary additional structures - Cable way, helicopter landing pad | Licence |

Term of Concession

318 Section 17Z of the Conservation Act states:

(1) *A lease or a licence may be granted for a term (which term shall include all renewals of the lease or licence) not exceeding 30 years or, where the Minister is satisfied that there are exceptional circumstances, for a term not exceeding 60 years.*

(2) *A permit may be granted for a term not exceeding 10 years but shall not be renewable.*

(3) *An easement may be granted for a term not exceeding 30 years, but–*

- *(a) in exceptional circumstances, the Minister may grant a term not exceeding 60 years:*

- *(b) where the easement provides a right of way access to a property to which there is no other practical access, the term may be for such longer period as the Minister considers appropriate:*
- *(c) where the easement is for a public work (as defined in the Public Works Act 1981), the term may be for the reasonably foreseeable duration of that public work.*

319 No 8 Limited has applied for a term of 40 years, the reasons given are to reflect the level of investment commitment and represents as efficient use of resources. The investment cost has been put at 6.3 million. In addition, No 8 Limited state that the 40 years is intended to tie into the resource consent term. It is considered that the level of investment required for this sort of activity is exceptional and supports the circumstance where a 40-year term would be considered appropriate. In addition, although not particularly relevant to the situation being exceptional, this term would be similar to other concessions granted for hydro schemes on the West Coast. E.g. The Amethyst Hydro Limited was granted in 2008 for a term of 49 years. A term of 40 years is recommended.

Fees:

320 **Management Fee:**

The standard management fee for this concession type is $400 per annum. This would cover such things as normal invoicing, file management, rent reviews and collecting activity returns.

321 It should be noted that it is proposed that No 8 Limited fund a liaison officer during the construction of the scheme, who would review work plans and monitor compliance with work plans and make recommendations to the Grantor. All costs associated with the liaison officer and the additional administration to facilitate this approach would be recovered from No 8 Limited.

322 In addition to this because the details of the proposed construction and management plans would still need to be provided to the Grantor for audit and certification there could be further time involved in this process prior to any construction. All additional time would be cost recovered at the normal Department's charge out rates.

**Concession Activity Fee:**

323 The pricing book guidance requires the use of the 'Percentage of Revenue Pricing Framework' to establish the fee for hydro-electric concessions. A fee of 5.0% has been supported by the Departments Business Manager.

**Fee during Construction period**

324 The total proposed permanent footprint is approximately 0.5 hectares. It is estimated the hydro scheme would take 18 months to be constructed before it would be able to generate electricity; an activity fee for this period is recommended. A fee of $3 500 per annum is recommended during the construction phase.

325 Once the scheme is operating, an Annual Return form must be submitted to the Grantor 6 monthly each and every year the concession is in force.

**Bond**

326 It has been standard practice to set a bond which should be enough to complete the obligations of the concessionaire if they default, or to undertake remedial actions to return the concession site to its previous condition. It is recommended that if this application is

granted, a bond is established. The bond would be set prior to the Concession Activity commencing and the amount will be set by the Grantor following an independent risk assessment using a methodology approved by the Grantor. Recommended bond conditions are listed in Appendix 2.

**Compensation:**

327 If the Concession is granted there would be a number of residual adverse effects on the area affected by the proposal. It would be appropriate, under 17X(d) of the Conservation Act, to impose a condition requiring No 8 Limited to pay/provide compensation. Compensation of $ 23000 is recommended and supported by the Business Manager

**Standard and Special Conditions**

328 If the concession is approved the Standard lease- Licence or easement conditions will apply. Link - DOC-6014963

The Proposed Special Conditions are listed in Appendix 1 of this report.

## 5.0 Applicant Comments

329 The Applicant provided comments on 14 November 2019, these included some clarifications and corrections as well as comments on more substantive matters.

330 **Applicant Comments on Corrections and Clarifications:**

a) The applicant clarified the size of the proposed pond behind the weir as being between approximately 58m² and 120m²

**DOC Response**
Clarification noted, item 16 of this report has been corrected.

b) And C) The applicant has clarified in regards to the helipad that it was originally intended to be removed together with the cableway after construction was completed. However, they have noted in their comment that it could be prudent to manage the rehabilitation of the helipad area in a way that it could be reinstated relatively easily if necessary, for any repair and maintenance activities. No 8 requests that the conditions provide for the rehabilitation of the helipad area be managed to facilitate future use, at the discretion of the Grantor. It the [Grantor] agrees then the condition could provide that With the Grantor's approval:

*..., the Concessionaire may manage the rehabilitation of the helipad site in a way that would facilitate its future re-use, should that be necessary for repair and maintenance activities.*

**DOC Response**
Clarification is noted and paragraphs 18 and 48 have been updated to reflect this clarification. A new condition 7.15 requires the Concessionaire to seek prior approval from the South Westland Operations Manager if the Concessionaire wants to reinstate the helipad for maintenance and repair.

d) The applicant notes that the report at paragraph 11 states that *"there would likely be a path naturally formed from walking"* and that given the limited maintenance and

inspection requirements, any such path would not be obvious or "well-trodden". The applicant requests that his should be reflected in the paragraph 11 as follows:

"... however, there would likely be a path naturally formed from walking (although it would not be obvious or well- trodden)".

**DOC Response**
Clarification noted, paragraph 11 has been updated.

e) The applicant notes at paragraph [34], the report states that it is not clear how wide the footprint of the proposed access road/transmission line of the powerhouse would be during construction. The applicant can confirm (as noted elsewhere in the application material) that the road will not be more than 3.5m wide. In the scenic reserve, the transmission line will be buried in the road. Outside the marginal strip, where the road approaches the highway, the transmission line will be on above ground poles, within the road corridor.

**DOC Response**
Clarification noted, paragraph 34 has been updated

f) At paragraph [46], the report states that it is not clear how wide an area is required for the transmission line. As indicated above, past the marginal strip, the transmission line will be on poles within the road corridor to link to the Westpower network.

**DOC Response**
Clarification noted, paragraph 46 has been updated to reflect this.

331 **Applicant Comments on Substantive Matters**

**Item 8 -10 – Bats**

The applicant comments that they are totally committed to ensuring that no roosting tree/s for bats are lost as part of its construction activities and that the Department's bat protocols would be put in place and strictly implemented. The applicant states that by doing so, *"it is unlikely, or so unlikely, that any active bat root will be felled"*. And that *"On this basis the effect of such an unlikely outcome is so remote that it can be disregarded."* The applicant also notes that they would *"accept any reasonable additional conditions that would give the Department further comfort in this respect – for example, a peer review of the applicant's proposed implementation of the Department's bat protocols"*.

**DOC Response**
Comments are acknowledged

**Item 11-22 – MALF**

The applicant does not agree with the Department taking a more precautionary approach to the Minimum Residual Flow setting and notes the following reasons:

- The public good component of the scheme far outweighs the negative impacts the scheme would have on ecological, recreational and visual values. And that reducing the MALF will reduce the public good by an amount that equates to the ability to power around 220 homes. And that it would mean that the proposal would be a less efficient use of resources – while still having all the other (minor, or less than minor) impacts that have been identified.

- The applicant notes the proposed condition on the Minimum Residual Flow being 100% MALF and notes that even if the MALF was set at 100% initially, not having certainty around the MALF being able to move to 75% following a review of impacts, has a real potential to impact on the certainty for investment and the delivery of the public good element.

The applicant proposes some changes to conditions, if the Grantor is to set a conservative or precautionary initial minimum residual flow. Stating that it should be *"first set at 90% MALF"* and *"This is consistent with the MfE Eco Flow document, 2008, which provides, for rivers and streams with mean flows less than or equal to 5 m3/s (which this stream is), a minimum flow of 90% of the mean annual low flow."*

In addition, to ensure certainty once further information / data and assessment is provided following the operation of the scheme to demonstrate that any adverse effects are no more than minor, there should be a mechanism for changing the minimum residual flow to 75% MALF as originally sought.

The applicant proposes the following conditions if a precautionary approach with MALF is taken:

- *"In the first year of operation, the Concessionaire must set the minimum residual flow at 90% MALF, which is 300l/s. If the flow reduces in this period below 300l/s, then abstraction must cease.*

  *This minimum residual flow will at the first anniversary of operations be amended to 75% MALF, upon the Grantor being satisfied on reasonable grounds that such a regime will not have any more than minor adverse effects on the fish habitat.*

  *For the purpose of this clause, there are reasonable grounds to find that effects of the scheme will not have any more than minor adverse effects on the fish habitat if an assessment is provided to that effect by a suitably qualified independent expert, and peer reviewed by a further independent expert.."*

The applicant notes that, in support of the adequacy of this condition and evidence to be provided, that by the time of operation, additional data will have been collected during the period of detailed design and construction, etc. In other words, by the time of the condition being triggered, there may have been three more years of data (i.e. two before operation commences, and a year of operation).

**DOC Response**

The Department acknowledges the impact from requiring a higher MALF on the potential for certainty for investment and acknowledges that the concession needs to be commercially viable. Effects outside the area of application not related to conservation effects are not considered relevant.

Currently the proposed condition on residual flow is:

- The Concessionaire must set the minimum residual flow at 75% of MALF, which is 250l/s. If the flow reduces below 250l/s, then abstraction must cease. This minimum residual flow can be reviewed following robust data demonstrating the effects of the scheme on freshwater values are adequately managed.

Noted

With an option to replace this with:

- The Concessionaire must set the minimum residual flow at 100% of MALF, which is 334l/s. If the flow reduces below 334l/s, then abstraction must cease. This minimum residual flow can be reviewed following robust data demonstrating the effects of the scheme of freshwater values are adequately managed.

The Department agrees that if a precautionary approach was to be taken, the conditions could be changed to:

- In the first year of operation, the Concessionaire must set the minimum residual flow at 90% MALF, which is agreed to be 300l/s. If the flow reduces in this period below 300l/s, then abstraction must cease.

- The Minimum Residual Flow can be reviewed at the end of the first year of operation. Prior approval from the Grantor must be sought before changing the Minimum Residual Flow to 75% MALF.

- Approval from the Grantor would be given if an assessment, by a suitably qualified independent expert, demonstrates that effects of the scheme with a Minimum Residual Flow of 75% MALF would not have any more than minor adverse effects on the fish habitat.

## 6.0 Conclusions / Summary /Recommendations

**Notification process**

332 Under section 17U(1)(f) you are required to have regard to relevant submissions. A public process was carried out as required under section 17SC of the Conservation Act. You are also required under section 49(2)(e) of the Conservation Act, to consider the recommendations and the contents of the Hearing Report before deciding whether or not to proceed with the proposal. The hearing report and how the recommendations have been addressed is discussed in Section 1.3 of this report.

**Effects**

333 There would be a range of effects considered to be low or minor on conservation values from the proposed hydro scheme as discussed in this report, that would generally be able to be adequately avoided, remedied and mitigated by adhering to the proposed standard and special conditions. These potential effects for the most part have been assessed as being minor. However, a few potential effects may be greater than minor, and you should give them additional consideration;

334 Bats have been located in the general area, and it is noted that the applicant's survey was not indicative of local roosts, however the department considers it was a small sample size to base this assumption on and that this is not necessarily the case. You need to decide if the proposed conditions including the tree removal protocols for bats would adequately avoid, remedy and mitigated the potential effects on bats.

335 If you are not satisfied that the risk to bats can be adequately avoided, remedied or mitigated through the proposed conditions including the tree removal protocols for bats, you may consider declining the application under 17U(2)(b) of the Conservation Act (that there are no adequate or reasonable methods to mitigate this potential effect).

336 The information on effects on freshwater values is not 'perfect' to assess the level of effects on freshwater values. The applicant summarises the overall level of unmitigated effects on freshwater values on the catchment as being 'very low'. However, the department has some reservations with the methodology used to measure the change in habitat availability and considers the effects could be higher than what the applicant has estimated. If the application is granted a range of additional conditions have been proposed. The Minister could also take a more precautionary approach to the Minimum Residual Flow; by setting the residual flow at 90% of MALF instead of 75% of MALF and allowing for a review after one year of operation to assess if moving to 75% MALF is appropriate.

337 You need to decide, if you consider the information is sufficient or adequate to assess the effects and if the proposed conditions would adequately avoid, remedy or mitigate these effects on freshwater values. If you decide that the information is insufficient or inadequate to assess the effects on freshwater values, you may decline the application under section 17U2(a) (information available is insufficient or inadequate). Or if you consider that there are no adequate methods or reasonable methods to avoid, remedy or mitigate the effects on freshwater values you may decline the application under section 17U(b).

**Purpose for Which land is held section 17U(3)**

338 If you have decided that you consider the proposed conditions would adequately mitigate all the effects then the application could be considered 'not contrary' to the purpose for which it is held, and if all the other relevant tests are met you may grant the application. (17U(3)).

339 If however you have decided that the proposed conditions are not adequate and that there are no adequate or reasonable methods for remedying, avoiding or mitigating the adverse effects of the hydro scheme then the application should subsequently be considered to be 'contrary' to the purposes for which the Land is held and you must decline the application pursuant to section 17U(3).

CGP

340 The proposed construction and operation of the hydro scheme and associated facilities would be consistent with most of the provisions of the CGP, however, consistency with 4.6 (a) and 11.1 (b) of the CGP, which are related to managing effects, is dependent on your decision on whether you consider the proposed conditions would adequately mitigate the effects on bats and freshwater and if that is the case then it is considered that the application would be consistent with the CGP.

CMS

Consistency with a number of the CMS policies is largely dependent on your decision as to whether you considered the proposed conditions to avoid, remedy and mitigate the potential effects on the conservation values flora, fauna, landscape and freshwater where adequate, particularly:

341

- 3.3.3.2 – Maintenance and Restoration of Indigenous Natural Character of Ecosystems
- 3.3.3.3 – Management of Freshwater Fisheries
- 3.3.3.5 -Threatened Species Management
- 3.3.4.3 Geodiversity of landscapes
- 3.7.2 – Requires adverse effects managed, and riparian vegetation maintained),
- 3.7.11 (Requires consistency with the Outcomes for Place Section of CMS)

- 4.1.1.4 (proactive management of conservation values in 2020)
- 4.2.7.7 (requires natural heritage values to be maintained)

342 If you consider that the proposed hydro scheme is inconsistent with these policies then to grant a concession for the proposed hydro scheme would be inconsistent with section 17W(1) of the Conservation Act and you must decline it.

343 You should note that to grant a term greater than 30 years (but not exceeding 60 years) for a lease, licence or easement the circumstances must be exceptional. In this case given the significant investment of approximately 6.3 million required, a 40-year term would allow the scheme to be more viable and is considered to be an acceptable reason for considering this to be an exceptional circumstance in regard to the term.

344 In considering whether to form the intention to grant you should also keep in mind that, if the proposal is granted, No 8 Limited would need to develop a number of detailed management plans in accordance with standards imposed by the proposed special conditions. No 8 Limited would need to determine appropriate methodology in order to demonstrate that each standard can be met. Failure to do so would mean that it would not be able to exercise the consent. In effect it would fail to meet a condition subsequent of the grant.

## 6.0 Decision

1 Deem this application to be complete in terms of section 17S of the Conservation Act 1987;

Agree/~~Disagree~~

2 Confirm that in terms of section 49(2)(e) you have considered the Hearing Panels report and recommendations and decided to proceed with considering the remaining legislative requirements.

Agree/~~Disagree~~

**Either**

<u>Option 1</u>

3 Approve the granting of notified lease, licence and easement concessions for a hydro scheme to No 8 Limited subject to the standard Lease, Licence and Easement concession; and the special conditions identified in this report.

Approve / ~~Decline~~

**and**

4 Agree that in terms of section 17Z (1) that the circumstances are exceptional due to the level of investment required and a term of 40 years is approved.

Agree/~~disagree~~

And

5 Agree that if this Concession is granted the Minimum Residual Flow should be set at 75% of MALF (250l/s)

Agree/Disagree

Or

6 Agree that if this Concession is granted the Minimum Residual Flow should be set at 90% of MALF (300l/s) with a review after one year.

Agree/Disagree

Or Option 2

7 Decline the application

Approve /Decline

pursuant to:

a) Section 17U(2)(b) of the Conservation Act 1987 on the basis that there are no adequate methods or no reasonable methods for remedying, avoiding or mitigating the adverse effects of the activity on bats and/or freshwater values.

Agree/Disagree

b) Section 17U(2)(a) of the Conservation Act 1987 on the basis that the information available on freshwater effects is insufficient or inadequate to fully assess the effects such that the application should be declined.

Agree/Disagree

And

c) Section 17(U)(3) of the Conservation Act 1987 on the basis that some aspects of the proposed hydro scheme are contrary to the purposes for which the land is held; and

Agree/Disagree

And

d) Section 17W(1) on the basis that the application is inconsistent with parts of the Conservation General Policy and the West Coast CMS.

Agree/Disagree

Decision Maker comments/ Rational for decision:

1) I have fully considered the options and have decided on point 6 above MALF be set at 90% with a review after one year. This one year review will allow more data on actual to be considered and a review of the conditions to be considered.

2) I consider the methods proposed to manage effects on flora & fauna, including bats to be adequate, and the assessment completed on the information supplied was sufficient for me to make this decision.

3| I have considered the landscape assessment and potential effects on landscape and visual and agree that they will be low once construction completed and the site regenerates.

Signed: _____

Mark Davies
Director Operations
Western South Island

Date: 14/1/2020

# Appendix 1 Hearing Report

Department of Conservation
*Te Papa Atawhai*

**To:** Mark Davies, Director Operations Western South Island (Minister's delegate)

**From:** Judi Brennan, Permissions Statutory Land Manager, Hokitika,
Chris Hickford, Partnerships Manager, Greymouth Office (Hearing Panel)
(Both as Delegates of Director-General of Conservation)

## Submission Summary/ Recommendation Report

This report is to the Decision Maker pursuant to section 49(2)(d) of the Conservation Act 1987. It provides a summary of all objections and comments received in response to public notification, and recommendations as to the extent to which they should be allowed and accepted.

## Concession Application

## Concession Applicant: No 8 Limited

## Permission Number: 53660-OTH

The purpose of this report is to provide you with:

- A summary of the objections and comments received
- A recommendation as to the extent to which the objections and comments should be allowed or accepted
- Any recommendations of actions as a result of those submissions – e.g. special conditions, further information request etc.

For the purposes of this report, submissions which are **'allowed'** are submissions which are relevant for you to consider pursuant to the Conservation Act. Allowed submissions are then analysed as to the extent to which they should be 'accepted' by the Minister (being you as the Minister's delegate).

The implications of allowed and accepted submissions are noted for you to assist you in forming a view *'before deciding whether or not to proceed with the proposal'*, pursuant to section 49(2)(e) of the Conservation Act.

We note that any recommendation we, as the Director General's delegates, make to you does not fetter your discretion to come to a different view on any issues covered in the report.

### 1.0 BACKGROUND

The Minister has received an application for the installation and operation of an 1,890 kW run-of-river hydropower scheme at McCulloughs Creek, a tributary of the Whataroa River, in the Whataroa Scenic Reserve. The scheme includes intake structures, a power house, and penstocks.

The intake structure would be located on the upper reach of McCulloughs Creek. In order to construct the scheme, the applicant is proposing to use a cableway and helicopters.

- The Application was received: 25 October 2017
- Further information was sought from the Applicant on: 23 January 2018
- Further Information Received: 16 March 2018
- The application was publicly notified: 24 April 2018
- Submissions Closed: 24 May 2018
- Three Submissions were received with two wanting to be heard
- A second further Information Request was made: 12 June 2018
- The hearing was delayed until the further information was provided and made available to submitters
- Further information was received: 29 August 2018
- Letter to submitters with further information and invite to comment: 31 August 2018
- Close date for extra comments: 14 September 2018
- Two updated submissions were received with only one submitter wanting to be heard.

## 2.0 DETAILS OF HEARING

**Date/Time:** A hearing was held in the Wanganui Room in Hokitika, Wednesday 26 September

**Location:** Hokitika DOC Office, Sewell St

**Hearing Panel Chair:** Chris Hickford, Partnerships Manager, Greymouth
**Panel member:** Barry Hughes -West Coast Conservation Board Member

**Submitter that was heard:** Jan Findlayson – Federated Mountain Clubs of New Zealand (Incorporated) (FMC) vice-president and freshwater spokesperson

**Media presence:** None

**Written Record**
A written record of the hearing and notes taken is linked here: DOC-5594148

At the hearing FMC's verbal submission reflected the written submission dated 17 May 2018 and is linked below. A couple of points were expanded on and clarified, these are summarised in the discussion points about the submissions below.

The applicant's responses to submissions provided in the letter dated 29 August 2018 are detailed in section 4 of this report.

## 3.0 SUMMARY OF KEY POINTS FROM WRITTEN SUBMISSIONS AND HEARING

Three written submissions were received as part of the public notification phase.

### Issues Raised by each Submitter:

**(a)** Federated Mountain Clubs (FMC) (Link to first submission: DOC-5593436 , updated submission DOC-5584832 ):

- FMC comments that the proposed activity is not in accordance with purposes for which the lands are held as per S17U(3) Conservation Act.
- FMC notes further that Stewardship Land, despite some recent study, are yet to be fully assessed and therefore are not yet properly understood. FMC claims that were assessment to take place, the land in question could be considered worthy of high or very high classification such as conservation park or becoming part of Westland National Park. FMC recommends the application be declined noting the potential for harm to presently unknown values.
- FMC notes further the application is inconsistent with the Act and Part 3B tests are not met - FMC refers to the 2015 Baldwin Report - 'Assessment of Financial Viability and Alternative locations' and lists a range of other West Coast hydro schemes that have been commissioned or approved. FMC states that it is clear that the activity could take place in alternative locations and therefore is inconsistent with S17U(4)(b) of the Conservation Act.
- FMC also notes that national power availability exceeds demand and noted further at the hearing that the current power network is fine and there is no need for more power.
  And therefore, the application is unlawful/not appropriate to grant under S17S(g)(ii) Conservation Act.
- FMC noted at the hearing that economic benefits cited by the applicant in the application are not relevant considerations.

**(b)** Forest and Bird (F&B) (Link to first submission DOC-5593443, updated submission DOC-5580105):

- F&B notes that the need for a power scheme is not addressed in the application and notes further that there are consented schemes already. F&B states that the applicant needs to justify the need for a power scheme.
- F&B notes that cumulative effects of power schemes need to be considered and that Parker Creek located in the catchment just north of McCulloughs Creek was recently applied for.
- F&B notes the area is in a priority site for biodiversity management. It asked the question –*"would this development effect the priority site?"*.
- F&B commented that there is insufficient information on potential effects on birds and lizards; that bats are not assessed; and further information requested by the Department had not been provided.
- F&B commented further that a DOC Assessment of potential effects on both terrestrial and freshwater environments is required.
- F&B commented that the Department should seek the views of an Independent landscape architect on visual intrusion both during construction and after – given that it's in a scenic reserve.
- F&B questions the validity of correlations with the Poerua and Hokitika Gorge for determining MALF, both on catchment, local environment and distance from McCulloughs Creek.
- F&B also comment that MALF at the intake is an estimate, not measured as asked for by the DOC further information request.
- F&B commented that the NZ Ecology report just refers to desk top studies and that the surveys requested by DOC have not been done and more information is needed to determine effects on Koaro.

- F&B comment further that macroinvertebrates have not been further investigated and the Ecology NZ report itself states that an increased survey effort is needed to understand and establish species diversity.
- F&B commented that the data is insufficient, and the effects cannot be properly assessed.

**(c)** NZ Canyoning (NZC) (Link to full submission DOC-5593614)

- NZC comment that its key role is in protection of canyon environments for future use and that McCulloughs Creek is a pristine watercourse that has strikingly similar characteristics to canyons that NZC work to actively to protect.
- NZC also commented that it considers the proposed activity is inconsistent with the Purpose for which the lands are held.
- NZC believe Stewardship Lands should be assessed for their conservation values prior to allowing them to be modified for commercial gain - therefore inappropriate to approve – not in accordance with purposes of Conservation Act.
- NZC comment that it believes declining this application will set a precedent and therefore will help protect the recreational and environmental values of canyons on conservation land at risk of future hydropower development.
- NZC also commented that there is insufficient information on flows and no time period for regeneration on the cleared land is given.
- NZC question if ongoing adverse effects occur, *"will the monitoring be sufficient and accurate to establish this."*
- NZC question if there has been sufficient monitoring to establish if there are other endangered species using this habitat e.g. whio.
- NZC commented that there was no evidence of alternative locations.
- NZC conclude that No 8 has not proven a need for the activity at this site and NZC note that the proposal involves use of high value conservation land for relatively small commercial gain and recommend the application be declined.

## 4.0 APPLICANT'S REPLY

At the end of the hearing the applicant was given the opportunity to provide any clarifications, corrections or respond to questions raised.

The applicant did not make a formal reply at the hearing itself, however made the following points via its legal representative:

- The applicant had a different view of the statutory tests than FMC expressed and that these have been addressed in a letter provided with the further information to the Department dated 29th August 2018. It commented further that most of the matters raised by FMC have been addressed by the applicant in this letter. The full letter is linked here DOC-5566151.
- Information on economic aspects were not put forward in the application.

The applicant's legal representative also noted that for matters of transparency, he provides advice to the Taranaki Conservation Board on mining matters, however he didn't consider there was any conflict of interest.

The applicant's responses to submissions provided in the letter dated 29 August 2018 are detailed below.

## 5.0 ANALYSIS OF SUBMISSIONS

The extent to which the comments should be allowed/accepted are analysed and recorded below, the submissions have been broken down into issues and grouped where possible under the relevant legal tests in Part 3B of the Conservation Act.

Keeping in mind SI7U(1)(f) and S49(2)(d) of the Conservation Act, we have also made recommendations to you in respect of the extent to which submissions should be (i) allowed and (ii) accepted. These recommendations are summarised in the table below and, where relevant, this considers the applicant's reply. We have taken the approach that comments can be allowed if they are relevant to the matters to be considered under S17U (1).

**Summary of issues raised and recommendations on whether they should be allowed/accepted**

| Issue/legal test | Specific issue raised | Allowed/accepted and any recommendations |
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| Issue 1<br>Comments relating to S17S(g)(i) and (ii) - reasons and sufficient information to be satisfied that (in terms of S17U of the Act) it is both appropriate and lawful to grant | No need for the activity/more power and therefore the application is unlawful/not appropriate to grant under S17S(g)(ii). | It is noted that although the submitters referred to S17S, decisions under that section relate to what information is provided in the application and what extra information can be sought. The decision maker has to consider whether the application is appropriate and lawful under S17U.<br>The Hearing Panel is not satisfied that the need for power, or not, is a matter required to be considered for concession applications under Part 3B, S17U of the Conservation Act (Matters to be Considered). The Hearing Panel notes that the applicant has provided further information about the need for the proposed activity in a letter dated 29 August 2018. However, the applicant has also stated that *"There is no clear statutory requirement to demonstrate need ..."*<br><br>The Hearing Panel recommends that FMC, F&B and NZC comments on the 'need for power' not be allowed or |

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| | | accepted, although notes that the activity (being the building of a structure for the purposes of generating electricity) will have to be considered against the purpose for which the land is held. |
| | Economic benefits not relevant considerations | The Hearing Panel is not satisfied that the economic benefits of an activity fall under any of the matters required to be considered for a concession application under Part 3B, S17U of the Conservation Act (Matters to be considered by the Minister).<br><br>The applicant has noted in its application at p28 that *"the scheme would use local contractors as much as practical for construction and local labour for on-going operations and maintenance works, benefitting the West Coast in general."*<br><br>The Hearing Panel agrees with FMC that economic benefits are not relevant and recommends this comment not be allowed and the economic benefits of the application not be considered in making a decision on the proposal. |
| Issue 2<br>Submissions relating to S17U(2)(b)<br>That there are no adequate or reasonable methods to mitigate the effects. | NZC note its role in the protection of canyon environments for future use, and that McCulloughs Creek is a pristine watercourse that has strikingly similar characteristics to canyons the NZC work to actively protect. It appears the implication from NZC is that the application should be declined to protect the site for future use of canyoning. | The Hearing Panel notes that one of the potential effects of the proposed scheme could be the loss of the abstraction reach for future canyoning opportunities.<br><br>However, the Hearing Panel notes that NZC stated that the site *"does not have much interest to canyoners for recreational activity at this point in time"*, nor did it appear the NZC representative had visited the site.<br><br>The Hearing Panel believes that this potential loss is currently unknown however would likely be minimal and recommends that considerations of the site for future use for canyoning be given little weight. |

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| Issue 3<br>Submissions related to S17U (3) that the proposal is contrary to the provisions of the Conservation Act or the 'purposes for which land concerned is held'. | Stewardship land should be assessed for its conservation values first, before accepting concession applications, the land potentially worthy of higher classification. | The Hearing Panel does not consider FMC and NZC's comments on the issue of reclassifying stewardship land are relevant considerations under Part 3B, S17U of the Conservation Act (Matters to be considered by the Minister for concession applications).<br><br>The Hearing Panel notes that S17T of the Conservation Act details when an application must be considered by the Minister and that there is no requirement for conservation values to be assessed before applicants can apply, outside of the considerations under S17U.<br><br>The Hearing Panel recommends that comments that stewardship land needs to be assessed before accepting concession applications not be allowed or accepted.<br>The Hearing Panel notes however that S17U does require a consideration of the effects of the activity and structures on the conservation values of the land under consideration irrespective of its land status and that these effects on the values and any measures that can reasonably or practically be undertaken to avoid, remedy or mitigate any adverse effects of the activity must be taken into consideration. |

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| | NZC notes that McCulloughs Creek has been set aside for the purpose of conservation and the proposed activity conflicts with this purpose. | The Hearing Panel acknowledges that comments on the purpose of the land are relevant, however does not accept this comment per se, noting that the lands under application include Marginal Strip, Scenic Reserve and Stewardship land and that a full analysis of the effects and mitigations of the proposed activity is required to determine whether the hydro scheme would be 'contrary to' the purpose for which the land is held.<br><br>The Hearing Panel notes the applicant's response to the submitter comments on this and recommends that in making a decision a full analysis of the activity against the purposes of the land is undertaken once an assessment of effects is complete. |

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| Issue 4<br>Submissions relating to S17(U)(4)(a) and (b) that the activity could reasonably be carried out in another location or use an existing structure. | Power could be generated at alternative locations. Other schemes are listed such as; the Arnold River, Stockton, Amethyst, Inchbonnie, Griffin Creek. | The Hearing Panel believes it would not be 'reasonable' nor practical or feasible to expect No 8 to undertake this activity at the alternative locations suggested, as the alternatives are owned by other electricity generation companies that the applicant does not have any control over.<br><br>Therefore, the alternative locations suggested are not thought to be relevant considerations under S17(U)(4). |
| | No evidence of alternative locations provided. | The Hearing Panel recommends that NZC's comment is allowed as considering alternative locations is a relevant consideration under S17U(4)(a). The Hearing Panel notes that information on alternative locations was provided by the applicant but was withheld from the public due to its commercial sensitivity. The Hearing Panel recommends that this information should be considered by the decision maker. |

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| Issue 4<br>Submissions related to S17U(2)(a) 'sufficiency/adequacy of information to enable assessment of effects'. | Insufficient information/data on birds, lizards, bats, koaro, macro invertebrates, other endangered species and questions around validity of correlations with Poerua and Hokitika Gorge for determining MALF. | The Hearing Panel recommends that these comments are all allowed. Sufficiency of information is a specific requirement under S17U(2)(a). The Hearing Panel recommends that further information is sought on the potential effects on fauna ecology and information on water flow data.<br><br>The Hearing Panel notes the site as pointed out by F&B is a priority site for biodiversity management and that further information would help assess the effects on the biodiversity values of the site and its category as a 'priority site for biodiversity management'.<br><br>The Hearing Panel notes F&B has suggested an independent landscape architect review of the applicant's landscape assessment, and recommends the decision maker does this.<br><br>The Hearing Panel recommends that if a decision is made to grant the concession, clarification is sought on the time period for regeneration and that conditions include rehabilitation of the areas used for construction but which would not be required for the activity long-term. |
| | The area is a priority site for biodiversity/Would the development effect the priority site? | |
| | Independent landscape architect view should be sought. | |
| | No time period given for regeneration of the cleared land. | |
| Issue 5<br>Submissions related to S17U(2)(b) 'there are no adequate methods or no reasonable methods for remedying, avoiding, or mitigating the adverse effects of the activity, structure or facility'. | NZC question if the monitoring will be sufficient and accurate to assess ongoing effects (if application is granted). | The Hearing Panel acknowledges this is a relevant question and recommends that adequacy of ongoing monitoring is considered by the Department's specialists as part of the assessment and if the concession is granted, conditions are included that require an ongoing monitoring programme. |
| | Cumulative effects of the power scheme should be considered, with submitter noting a recent hydro scheme application on Parker Creek (adjacent | The Hearing Panel recommends that the F&B's submission on cumulative effects is allowed, as the meaning of 'effect' in the Conservation Act 1987 includes *"any cumulative effect which arises over time or in combination* |

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| | catchment). | *with other effects - regardless of the scale, intensity, duration, or frequency of the effect".*<br><br>However, the Hearing Panel notes that no concession for a hydro scheme has been granted on Parker Creek and therefore there are currently no hydro schemes on adjacent catchments. The Hearing Panel recommends the report to the decision maker assesses any cumulative effects. |
| Issue 6<br><br>Precedent effect. | NZC comment that it believes declining this application will set a precedent and therefore will help protect the recreational and environmental values of canyons on conservation land at risk of future hydro development. | The Hearing Panel does not accept NZC's view on precedent, nor that this is a relevant consideration.<br><br>Each concession application must be considered under on its own merits as provided for under Part 3B of the Conservation Act.<br><br>The Hearing Panel notes that the applicant's legal representative has provided a view on 'precedent' and agrees that NZC comments on precedent should be 'set aside'. |

Chris Hickford, Panel Chairperson,
Delegate of the Director General of Conservation (on behalf of and in agreement with the Panel members)

Date: 30/11/2018

# Appendix 2 – Special Conditions

1. **General Construction**

1.1. Before construction can start the Concessionaire must provide final Construction and Operational Plans to the Grantor for the Grantors Certification. The Grantor will audit these plans to ensure that final construction does not differ substantially in location, scale or level of effect to the concession application lodged by the Concessionaire. The Concessionaire must ensure that these plans are prepared by a suitably qualified person. The concession application lodged by the Concessionaire comprises those documents listed in schedule X (Appendix 9 of this report).

1.2. The Construction and Operational Plans must meet the requirements of the conditions in this concession.

1.3. Once audited and approved by the Grantor, the Management Plans must form part of this Concession, and the Concessionaire must not deviate from these plans without prior written approval of the Grantor.

1.4. The Concessionaire must pay the costs incurred by the Grantor in auditing and approving all plans required pursuant to this Concession.

1.5. The Grantor may require plans provided pursuant to this concession to be independently audited by an auditor approved by the Grantor. The auditor must certify that the plans have been prepared in accordance with best practice for the relevant discipline. The costs of independent audit must be borne by the Concessionaire.

1.6. All plans provided pursuant to this Concession must be provided by the Concessionaire to the Grantor within reasonable time frames and at least one month prior to any works being carried out to allow the Grantor time to review these plans.

2. **Bond**

2.1. Prior to commencing the Concession Activity, the Concessionaire must provide as surety a trading bank, insurance company or bond guarantor who is acceptable to the Grantor.

2.2. The surety must execute (in the case of two or more jointly and severally) in favour of, and on terms acceptable to, the Grantor a performance bond initially set at NZ$_____ (_____dollars) for due and faithful performance by the Concessionaire of the obligations under the Concession and/or reinstating any disturbed area of the Land to a standard satisfactory to the Grantor where disturbance has been caused by the Concessionaire or any agent of it and/or otherwise remedying or mitigating any adverse effects of the Concession Activity.

2.3. If the initial amount of the bond has not been set in clause 2.2 then prior to the Concession Activity commencing that amount will be set by the Grantor following an independent risk assessment provided by the Concessionaire. The methodology for the risk assessment must be approved by the Grantor. The Risk Assessment must be submitted to the Grantor for review and approval.

2.4. The initial amount set under either Conditions 2.2 or 2.3 may be reviewed at the discretion of the Grantor at any time.

2.5. The cost of any independent risk assessment or review will be paid by the Concessionaire within 10 working days of being given a notice by the Grantor.

2.6. Notwithstanding the expiry, surrender or termination of the Concession document, the bond will not expire and is to remain in full force and effect until such time as all obligations of the Concessionaire under the Concession document have been complied with to the satisfaction of the Grantor.

2.7. If the Concessionaire breaches any condition or fails to carry out any condition of the Concession or in carrying out the Concession Activity there arise adverse effects not authorised or reasonably foreseen in the Concession document the Grantor may call on the bond entered into under this Document or any portion of it to ensure compliance with the conditions of the Concession document or to remedy or mitigate those adverse effects referred to above.

3. Liaison Officer

3.1. The Concessionaire must fund a Department of Conservation employee or external contractor who will act as a liaison contact between the Concessionaire and the Grantor during the term of construction of the Scheme. The exact role, brief of service and level of remuneration of the Liaison Officer will be agreed between the Concessionaire and the Grantor, and failing agreement will be determined by arbitration under Condition # of Concession Documents standard conditions.

3.2. The Concessionaire and the Grantor record that the role of the Liaison Officer includes:

a) reviewing Management Plans and risk assessments and other documentation submitted to the Grantor under this concession or otherwise associated with the Concessionaire's activities and operations under this concession, and making appropriate recommendations to the Grantor based on those documents;
b) monitoring compliance by the Concessionaire with Plans required pursuant to this concession and any other requirements of the Grantor; including arranging regular inspections during the construction phase by qualified Department of Conservation staff members to check for compliance with conditions.
c) monitoring compliance with the Rehabilitation Plan, monitoring and liaising over the success or otherwise of ongoing restoration works and making recommendations to the Grantor regarding successful progressive and long term restoration and rehabilitation of the Site.

3.3. The appointment of the Liaison Officer will be by the Grantor following consultation with the Concessionaire, and the Liaison Officer will report to the Granter who in this case will be the Operations Manager South Westland.

3.4. The Concessionaire and the Grantor agree that the Liaison Officer will be a senior position, requiring a range of professional skills necessary for liaising effectively and autonomously with the Concessionaire, the Grantor, the West Coast Regional Council and Westland District Council, other external consultants, insurance companies and bondsmen. The Liaison Officer must have a strong proven performance in relationship management for large-scale developments in environmentally sensitive areas.

3.5. The Liaison Officer must be appointed by the commencement date of construction for this concession. Pending such appointment the Grantor may, if considered necessary and desirable by the Grantor, appoint an interim liaison person at any time between the date of execution of this Concession and the commencement of this concession; and such interim liaison person will carry out the role of the liaison officer as envisaged by condition 3.2 of the Special Conditions for this concession.

3.6. The Liaison Officer may, with the prior approval of the Grantor, call on additional independent external consultants for specialist advice on matters reasonably raised by the Concessionaire's operations carried out under this concession. The Liaison Officer will advise anticipated costs of consultants to both the Concessionaire and Grantor. The Concessionaire must meet the costs reasonably charged by such consultants.

4. Flora

4.1. The Concessionaire must ensure that the construction footprint is kept as small as possible and low impact construction methods are used and that the construction phase is carefully planned and supervised.

4.2. Construction methods for the pipeline/penstock corridor are restricted to manual clearance with chainsaws and hand tools. Mechanical excavation (with a digger) should not be used for construction of the pipeline and penstock corridor. If there are specific parts of the GRP pipeline/penstock corridor where it is not possible or practical to use hand tools, then approval to use a small digger must be sought from the grantor through the Liaison Officer.

4.3. The Concessionaire must ensure any excavated materials (rocks, soil, vegetation) are contained, by the use of appropriate tree felling methods, barriers and fences, and carefully disposed of during construction in order to ensure that debris does not fall downslope onto adjacent vegetation or end up in McCullough's Creek.

4.4. The construction plan must detail the precise route of the access tracks to the power station and penstock and must demonstrate that indigenous plants that should be avoided have been identified by a department approved ecologist. The selection process must involve onsite monitoring and marking of trees >30cm DBH. During this process consideration must be given to avoiding large trees and damage to tree roots.

4.5. In addition to condition 5.1 - Tree removal Protocols for Bats, the removal of any trees >30cm DBH must be assessed and approved by a Department approved ecologist.

4.6. The Concessionaire must develop strict rules and guidelines around the storage and movement of building materials and keep the amount of gravel and building materials brought in for construction to a minimum particularly at the intake site, helicopter landing pad and along the penstock corridor.

4.7. The Concessionaire must ensure that all concrete aggregate is stored/mixed on some kind of ground sheet to stop any weed seed being transferred onto soil surface.

4.8. The Concessionaire must ensure that all vehicles, equipment and materials are sourced carefully and inspected and cleaned thoroughly prior to entering the site.

4.9. Prior to construction the Concessionaire must provide to the Grantor (with the Construction and Operational Plans) a weed monitoring Plan that includes;

i. Identified key sites for monitoring during and after construction.
ii. Timing and frequency of monitoring.
iii. What methods would be used to carry out weed eradication should a weed incursion be found and how this would avoid adverse effects on indigenous vegetation.

4.10. The weed monitoring must be carried out by suitably trained and qualified persons.

4.11. The Concessionaire must ensure that extra care is taken around the helipad site to ensure minimal damage to riparian grass/sedgeland areas occurs and potential rehabilitation, post removal of the helipad is maximised.

4.12. Prior to construction the Concessionaire must provide to the Grantor (with the Construction and Operational Plans) a Pest Management Plan to the Grantor to control pest mammals in the project area. This pest control plan must be developed in consultation with suitable qualified professionals and the Department of Conservation.

4.13. Prior to construction the Concessionaire must provide a Fire Management Plan to the Grantor (with the Construction and Operational Plans) No fires are to be lit on the Site and extreme care is to be taken with equipment likely to start fires. Full fire extinguishing equipment is to be kept on the Site at all times during construction.

## 5. Fauna Conditions

### Bats/Birds

5.1. The Concessionaire must consider all trees above 15 cm DBH as wildlife trees and assess them for bat roosts and nests. The tree removal protocols in Schedule X (Appendix 6 of this report) must be followed. The assessment of trees must be carried out by a Bat Ecologist (competencies attached in Appendix 7 of this report).

5.2. The Concessionaire must obtain all the necessary Wildlife Act permits prior to commencing operations, which must include conditions and arrangements for the handling and release procedures of any bats/birds/geckos/skinks found, prior to any habitat destruction.

### Lizard Conditions

5.3. The Concessionaire must write a set of Lizard Salvage Procedures for the project and include these in the Construction Management Plan for DOC approval prior to construction commencing. The Procedures should include the following:

i. procedures for searching for and salvaging lizards, including capture and handling techniques to be applied
ii. Works must stop if any lizards are found, the Concessionaire must contact the Liaison Officer, the Liaison Officer will work with the department to provide further instruction on management or monitoring requirements.
iii. provision of post-release monitoring and management
iv. reporting which must include:
    a. the species and number of any animals collected and released;
    b. the GPS location (or a detailed map) of the collection point(s) and release point(s);

c. copies of approved Species Specific Management Plans; and
d. results of all surveys, monitoring or research.
e. Completed Amphibian and Reptile Distribution System (ARDS) cards for all herpetofauna sightings and captures (http://www.doc.govt.nz/conservation/native-animals/reptiles-and-frogs/species-information/herpetofauna-data-collection/ards-card/) must be sent to Herpetofauna, Department of Conservation, National Office, PO Box 10420 Wellington 6143 or herpetofauna@doc.govt.nz.

5.4. The concessionaire must check the area tagged for vegetation or earth clearage for lizards by a qualified herpetologist, no more than two weeks prior to habitat clearance. In the event that any lizards are discovered in the footprint area then the pre-approved lizard salvage procedures must be used for: searching, capture and handling. Release and management protocols must be developed with the department if lizards are found.

5.5. Vegetation clearance methodologies should not use chipping or mulching, rather where practical, cleared vegetation should be recycled into the adjacent environment. If chipping or mulching is deemed necessary, approval must be sought from the granter through the Liaison officer and an experienced herpetologist/ecologist would be required to inspect the cleared vegetation and salvage any herpetofauna potentially present.

5.6. The Concessionaire must ensure that vegetation clearance is done outside of the nesting period (October to January) (except for the situation outlined in condition 5.7) and if a nest of a threatened species is found then work in the vicinity should stop immediately and an ecologist must decide on the next steps. If a kea nest is found, then traps must be installed (see Ecology 2019: pg41).

5.7. Where vegetation clearance is required to be undertaken during this critical season, transect surveys, using the pipeline corridor as the centre line, must be undertaken to determine the presence of any At Risk or Threatened species prior to vegetation clearance commencement. In the event an AT Risk or Threatened species being found nesting within 50m of the clearance area, works in that immediate vicinity must cease. Continued vegetation clearance is to take place only on the recommendation of the project ecologist. In addition, the project ecologist will work with the project team to install predator traps in the vicinity of any kea nest that may be discovered to increase the chances of chicks fledging. The requirement for predator control in this situation must be provided for in the 'Pest Management Plan' as required in Condition 4.12.

5.8. In addition, the Concessionaire must instigate a trapping programme to protect Whio if Whio are found in the project area including the extraction reach.

## 6. Historic Conditions

6.1. Prior to construction an investigation must be undertaken using both on-site techniques and literature research for any historical or cultural sites. Any finds will be reported to Grantor and studied further.

6.2. The Concessionaire must be familiar with and follow the accidental discover protocols provided in Schedule 8. (see appendix 5 of this report)

7. **Freshwater Conditions**

7.1. The Concessionaire must ensure that prior to construction an Erosion and Sediment Control Plan must be provided to the Grantor for certification (with the Construction and Operational Plans). The objectives of the Plan are to:

a) Maintain water quality in the McCulloughs Creek
b) Minimise the duration of activities occurring within and adjacent to McCulloughs Creek
c) Undertake construction and operational activities in a way that minimises sediment runoff entering McCulloughs Creek
d) Ensure any greywater and runoff including from hard surfaces (e.g. the access road, powerhouse building and associated grounds) is directed into drainage channels through or into sediment detention ponds, soak holes, silt fences, other devices or suitable vegetated areas as required.
e) Manage sediment deposition in the abstraction reach resulting from sediment flushing.

7.2. Prior to Construction the Concessionaire must develop a fish management plan for the construction of any structures that occur within the stream, this plan should detail methodologies to salvage fish from within the stream and detail suitable times to undertake the work to avoid key fish spawning times.

7.3. The Concessionaire must ensure that no contaminants including but not limited to fuels, oils, cement, hydraulic fluids be released into or near the water. Any contaminants used during construction must be contained by sediment control traps and bunds.

7.4. The Concessionaire must ensure that no machinery or equipment is cleaned, stored or refuelled within 10 m of the creek and machinery must be well maintained to prevent leakage or spill. A response plan must be developed to provide for containment or spill.

7.5. The Concessionaire must ensure that works are carried out to cause minimal disturbance to the waterway banks and substrate, with access/movement of vehicles or other machinery in the waterway kept to a minimum. Any damage/erosion that is attributable to the works is to be repaired.

7.6. The Concessionaire must ensure that construction of any structure within the Creek is carried out in dry areas of the waterway. If this requires water to be temporarily diverted and area/s of the Creek to be dewatered, then fish will need to be actively salvaged and relocated from the dewatered area into clear water well away from the works area, and appropriate bunds/fences installed to prevent water and fish re-entering the dewatered area.

7.7. The Concessionaire must ensure that works, and associated temporary structures, are undertaken in such a manner that will provide for fish passage. Any fish trapped by the works must be immediately relocated into clear water, well away from the works area.

7.8. The Concessionaire must use Sandbags as much as possible using in-situ sand and gravel.

7.9. As far as is practicable, the Concessionaire must ensure that in-stream works, and the intake structures/weir construction are carried out during low flow summer months outside of upstream and downstream fish spawning times. See Schedule X for these times (Appendix 7 of this report).

7.10. The Concessionaire must ensure that all machinery and other equipment is cleaned before and after use at the site, using standard biosecurity protocols such as those developed by the Ministry of Primary Industries (Check, Clean, Dry) www.biosecurity.govt.nz/cleaning.

7.11. In addition to 7.10 any digger being brought onto the site must be steam cleaned beforehand.

### Intake Structure/Weir Design

7.12. The Concessionaire must design the intake structure and associated elements with the seven key principles of good practice for surface water intakes in mind. The seven key principles are intake location, approach velocity, sweep velocity, fish bypass design at screen, fish bypass design for connectivity, screening materials, and operations & maintenance.

7.13. The Concessionaire must ensure that the Coanda screen is designed in such a way that fish cannot be entrained during operation, bar spacing must be no more than 1.0 mm.

7.14. The intake structure/weir must not take up the whole width of the Creek (calculated as wetted width during mean annual low flow (MALF)) and must be designed with an additional outlet that allows water to flow over the rock banks on the downstream face of the intake and allows fish to pass the weir up and downstream even at low flow periods. The intake structure/weir and additional outlet should, prior to operation, be assessed by a suitably qualified freshwater ecologist and to ensure it provides for fish passage, this should be approved by the grantor.

### Helipad

7.15. The Concessionaire must remove the helipad after construction has finished. If the Concessionaire wants to reinstate the helipad for future repair and maintenance, they must seek prior approval from the Operations Manager South Westland.

### Additional Fresh Water Operational Conditions

7.16. The Concessionaire must as far as possible plan maintenance of the intake structures/weir during low flow summer months outside of upstream and downstream fish spawning and migration times. see Schedule X for these times (Appendix 7 of this report).

7.17. The Concessionaire must ensure that only minor amounts of oil and grease are used in the turbine and that biodegradable lubricants such as Panolin are used wherever practicable.

7.18. The Concessionaire must ensure that lubricants are prevented from entering the river or surrounding land by using oil and grease traps.

7.19. The Concessionaire must ensure that the flushing of sediment from the desander only occurs during flood flows when the stream will be carrying elevated sediment loads. As a guide this should be when the flow is at FRE3 flows (three times the median) or higher.

7.20. The Concessionaire must ensure that no works occur in waterways between September – November (inclusive) to minimise impacts on the peak upstream migration period of juvenile koaro.

7.21. The Concessionaire must ensure that no wet concrete/cement is used in flowing water.

7.22. An Environmental Management Plan (or associated plan, e.g., Construction Plan) should be prepared, which details the measures to be undertaken to achieve the following objectives;

i. Minimising the risk of sediment discharge (and other contaminants, e.g., concrete, hydrocarbons, etc.) to waterways;
ii. Minimising the duration of time that works will be occurring within or adjacent to waterways;
iii. Managing sediment deposition in the abstraction reach as a result of flushing of the desander;
iv. Minimising the risk of scour from the tailrace discharge point(s);
v. Minimising the risk of fish attraction into the tailrace;
vi. Minimising disturbance associated with maintenance of the intake structure;
vii. Ensuring ongoing fish passage is provided at the intake structure (i.e., checking its integrity after large flood events);
viii. Minimising the use of lighting (both during construction and ongoing) (including using lighting that minimises the attraction of insects);
ix. No net loss of riparian vegetation;
x. Minimising biosecurity risks.

**Tailrace**

7.23. Prior to construction the Concessionaire must update the tailrace design to disperse the terminating flow through several discharge points; reducing the volume entering the stream at any one point alone. (In order to reduce the flow trigger that may result in species being drawn to the discharge point(s) and also ensuring there is no risk to erosion from the discharge of water back into the stream.

7.24. The tailrace must be formed from concrete channelling, discharging over placed riprap and the design of the tailrace must be reviewed by a suitably qualified person before being approved by the grantor for construction.

**Monitoring Programme**

7.25. The Concessionaire must develop a monitoring program to assess the change in population dynamics within the stream prior to and during the operation of the Hydro Scheme. This monitoring programme must:

i. include surveys for both fish and aquatic invertebrates at the same sites used in the February 2019 aquatic surveys.
ii. use the same methods used as those used during the February 2019 aquatic surveys.
iii. This monitoring must be undertaken annually, at a similar time of year (February), for five years post-operation of the scheme.

7.26. If, in the opinion of the Grantor, the aquatic ecology monitoring demonstrates that the operation of the scheme is having a significant adverse effect on the aquatic conservation values of McCullough's Creek, the Department reserves the right to review the minimum flow and design flow and/or apply restrictions to the activity.

7.27. A flow monitoring site should be installed immediately below the intake.,

i. The flow monitoring device must be continuous and telemetered;
ii. Flow must be recorded to an accuracy of ± 10%, and at no less than 15-minute intervals;
iii. This flow data must be made available online to the Department and be audited and verified by a suitably qualified hydrologist and if necessary approved by the grantor;

7.28. Any monitoring plan must be submitted to the Department for certification at least one month prior to any monitoring activities being carried out.

7.29. Annual monitoring reports (for both aquatic ecology and hydrology monitoring) should be prepared and submitted to the Department by 'date X' each year.

**Residual Flow**

7.30. The Concessionaire must set the minimum residual flow at 75% of MALF, which is 250l/s. If the flow reduces below 250l/s then abstraction must cease. This minimum residual flow can be reviewed following robust data demonstrating the effects of the scheme on freshwater values are adequately managed.

**Optional Conditions to replace 7.29 (to be decided by decision maker)**

7.31. In the first year of operation, the Concessionaire must set the minimum residual flow at 90% MALF, which is agreed to be 300l/s. If the flow reduces in this period below 300l/s then abstraction must cease.

7.32. The Minimum Residual Flow can be reviewed at the end of the first year of operation. Prior approval from the Grantor must be sought before changing the Minimum Residual Flow to 75% MALF.

7.33. Approval from the Grantor would be given if an assessment, by a suitably qualified independent expert, demonstrates that effects of the scheme with a Minimum Residual Flow of 75% MALF would not have any more than minor adverse effects on the fish habitat.

**Landscape/Visual Effects**

7.34. The Concessionaire must ensure close supervision of the pipeline alignment and refinement during installation.

7.35. The Concessionaire must ensure that there is professional monitoring of any tree pruning and/or removal.

7.36. The Concessionaire must ensure the towers, cableway and clamps be of low reflectivity and painted in a dark colour palette and the powerhouse and transformer should be dark grey or matt black.

7.37. The Concessionaire must ensure that the powerline is buried in a conduit beside the access road from the powerhouse until it reaches marginal strip.

7.38. The Concessionaire must ensure that to reduce size of the concrete structures and reduce its visual impact at the intake site Civil works are undertaken in the dry creek

bed and keyed into the natural rock on site, utilising as much of the natural riverbed as possible.

7.39. The Concessionaire must ensure that the extraction of rock and gravel at the intake site during construction is managed sensitively. Large boulders should also be placed on the downstream face of the weir.

7.40. The Concessionaire must ensure that any materials used for the helicopter landing area are removed and the area left to regenerate from local seed sources.

7.41. The Concessionaire must plan and construct the access track alongside the penstock according to the New Zealand Handbook for Tracks and Outdoor Visitor Structures standard SNZHB8630 for a route with no structures, lookout, signs, etc and no track formation.

7.42. The Concessionaire must ensure that once construction is complete maintenance of the penstock alignment should be similar to that required for a typical Department route (hand tools and chainsaws only).

7.43. The Concessionaire must ensure that the vehicle access track is unsealed and is limited to a maximum width 3.5 m width. The material and colour of the access track must be the same or similar to other access tracks in the area.

## 8. Safety

8.1. Prior to the commencement of construction, submit to the Grantor an independently audited Safety Plan which meets the requirements of Schedule 2, Clause 14 of the Standard Lease – Licence document. The Concessionaire must comply with and keep that document in force during the term of this concession.

8.2. The Safety Plan must specifically outline and map any areas proposed to be fenced off due to safety reasons and these areas to be fenced must be agreed to by the department before the Safety plan is finalised.

8.3. Prior to the commencement of construction, the Concessionaire must submit a fire plan which meets the approval of the Grantor. No fires are to be lit on site and extreme care is to be taken with equipment likely to start fires. Full fire extinguishing equipment is to be kept on the Site at all times during construction.

## 9. Aircraft Access

9.1. The Concessionaire must ensure that any pilots of the aircraft authorised by this Concession hold the applicable aviation document and privileges to conduct the Concession Activity under the Civil Aviation Rules and must comply with Civil Aviation law requirements applying to the Concession Activity.

9.2. The Concessionaire must ensure that aircraft idle times on the ground are kept to a practicable minimum.

9.3. The Concessionaire must not refuel, leave any fuel drums or construct any fuel dumps on the Land, unless in an emergency situation.

## 10. Geotechnical

10.1. The Concessionaire is responsible for the structural integrity and maintenance of all structures or development activities associated with the Concession Activity.

10.2. The Concessionaire shall either at its sole cost meet all responsibilities and requirements, or reimburse the Grantor in respect of any costs of it meeting any responsibilities or requirements, under either the Building Act 2004 or the Resource Management Act 1991, in respect of any dam and weir structures associated with the concession activity, and will at its sole cost meet all statutory, regulatory of common law responsibilities, requirements or legal obligations arising in relation to such facilities, and indemnify and reimburse the Grantor or the Department of Conservation in respect of any costs or liabilities arising out of its statutory, regulatory or common law responsibilities, requirements or legal obligations in relation to such facilities.

# Appendix 3

**Tree removal protocol for areas where bats are present**

**Context**
Tree removal protocols have become a standard part of bat management plans for development projects in areas with bat activity. Ecological consultants are engaged to write and implement tree removal protocols. The Department of Conservation may be involved in assessing these protocols through the RMA process or an application for a Wildlife Act permit. It is useful to have a document that sets out the minimum requirements for tree removal procedures, agreed by DOC's bat experts, for comparison. This will save time when assessing tree removal protocols and ensure consistency.

**Purpose**
To set out the minimum requirements for tree removal protocols for areas where bats are present.

**Intention of the protocol**
The intention of the tree removal protocol is, in the first instance, to avoid felling bat roost trees, secondarily to move roost trees, and only if unavoidable, fell roost trees (but only once vacated by bats).

**Are bats potentially at risk?**

| 1. Is it a 'bat zone'? | Who can make this assessment? | When? |
|---|---|---|
| If, there is appropriate and sufficient evidence collected that there is no bat activity within the area, trees can be felled without developing and implementing a removal protocol. | Evidence must come from an appropriate ecological assessment or study carried out by a qualified person. | Ecological assessments must be undertaken when bats are most active (October 1st to April 30th), with a focus on the breeding period (November to February) |

| 2. Do the trees proposed to be removed have potential bat roost characteristics? | Who can make this assessment? | When? |
|---|---|---|
| 1. Is the tree >=15 cm dbh (diameter at breast height)?<br>If no, the tree can be removed at any time.<br>If yes, further assessment is required (2) | Anyone who can measure a tree dbh. | Any time |
| 2. On visual inspection from the ground, does the tree have features that indicate roost potential? These features include:<br>• hollows<br>• cavities<br>• knot holes<br>• cracks<br>• flaking bark<br>• epiphytes<br>If no, the tree can be removed at any time under | An approved bat expert | Any time |

| | | |
|---|---|---|
| the supervision of an approved bat expert who can identify if a potential bat roost become apparent during the removal process that was not previously observed. In this case, felling must stop until the tree has been further assessed.<br>If yes, further assessment is required to determine if bats roost in the tree (3 or 4).<br>If visual inspection from the ground is not possible because the tree is obscured in some way, further assessment is required (3 or 4). | | |

**Do bats roost in the tree?**

There are two ways in which a tree can be assessed for bat roosting activity:

- Climbing the tree and inspecting features – this is usually most suitable when there are a small number of trees that are safe to climb and can be visually inspected.
- Using ABMs (Automatic Bat Monitoring devices) to check if bats are present close to the time of tree removal.

Either method can be implemented as in 3 and 4 below:

| **3. Can a roost be identified on closer inspection when the tree is climbed?** | **Who can make this assessment?** | **When** |
|---|---|---|
| NB: Care must be taken while climbing trees to avoid disturbing, removing or destroying tree features with bat roost potential such as large sections of loose bark or cavities in dead wood. | | |
| a) Do possible roost features observed from the ground still show potential on closer inspection when the tree is climbed? For example:<br>• Cracks, holes and splits may lead to cavities or may be superficial.<br>• A cavity may be wet indicating no potential.<br>• Cobwebs may be across a cavity indicating it is not used.<br>• Other incompatible animals may be occupying the cavity (e.g. rats).<br>If no, the tree can be removed.<br>If yes, further assessment must be done (3.b or 4). | An approved bat expert or an experienced tree-climber (e.g. an arborist) working with an approved bat expert. If the latter, the tree-climber provides information along with photographs or video footage, which the bat expert assesses. | Any time |
| b) Are potential features being used by roosting bats?<br>• Can bats be seen?<br>• Can bats be heard - either audible squeaking or using a hand-held bat detector listening at 25 (for social calls) and 40 kHz (for echolocation calls?<br>• Is guano present or urine staining?<br>If no, the tree can be removed on the day of the tree inspection following the method in 5.<br>If yes, the following communication procedures must be implemented:<br>• If bats are sighted or sign detected, the approved bat expert, as soon as possible, | An approved bat expert or an experienced tree-climber (e.g. an arborist) working with an approved bat expert. If the latter, the tree climber provides information along with photographs or video footage, which the bat expert assesses. | Between October 1st and April 30th only |

| | | |
|---|---|---|
| shall:<br>i. Call the tree felling supervisor to inform him/her which affected tree(s) cannot be felled due to detection of bat sign.<br>ii. Send an email to the site manager, and a bat expert representing the council and DOC detailing the results of the survey and outlining the measures for protection or relocating the roost tree.<br>• A record (including photos) of any vegetation containing bat roosts shall be kept detailing the size, location and type of tree. | | |

| 4. Is there bat activity close to trees indicating roosting potential? | Who can make this assessment? | When |
|---|---|---|
| NB: Prior to the commencement of surveys, ABMs must be checked for correct operation at a site where bat activity is known to be high. Faulty or suspect ABMs must not be deployed. | | |
| Is bat activity recorded at any time during two consecutive, valid survey nights proceeding tree felling?<br>Bat activity can be recorded using ABMs or trained observers with handheld detectors. Location of ABMs or observers must provide sufficient coverage to be able to determine if bat roosts are present in one or more of the trees.<br>'Valid' survey nights must have the following features:<br>• Begin one hour before official dusk and end one hour after official dawn<br>• Temperature between 10 and 17°C<br>• Relative humidity > 70 %<br>• Precipitation < 2.5mm in the first 2 hours after dusk<br>• No full moon<br>If no, the tree/s can be removed on the day immediately following the survey nights using the method in 5.<br>If yes, roost features of each tree must be visually assessed via climbing as in 3, or, survey must continue until no bat activity is recorded for two consecutive nights prior to felling. | An approved bat expert | Between October 1st and April 30th only |

Tree removal

| 5. Does the tree have to be removed? | Who can make this assessment? | When |
|---|---|---|
| NB: Tree removal must take place on the day of tree inspection or the day immediately following night surveys. | | |
| a) Is the tree known to provide a roost location for bats or has potential to do this? | Only under supervision of an approved bat expert. | Between October 1st and April 30th only |

| | | |
|---|---|---|
| If no, remove as in 5.b.<br>If yes, consider whether any changes can be made to maintain the tree, or consider carefully relocating the tree, or part of the tree, when bats are not present (not detected for two valid survey nights prior), to continue to provide future roosting opportunities. This is particularly important where roosting opportunities are limited.<br>Trees must only be relocated when the following conditions are met during the preceding two nights:<br>• Temperature between 10 and 17°C<br>• Relative humidity > 70 %<br>• No Precipitation<br>• No full moon<br>Follow 6 should bats appear during tree relocation. | | |
| b) Is the only option to remove the tree entirely?<br>If no, consider leaving or relocating the tree, revisit 5.a.<br>If yes, the tree can be removed under supervision of an approved bat expert when the following conditions are met during the preceding two nights:<br>• Temperature between 10 and 17°C<br>• Relative humidity > 70 %<br>• No Precipitation<br>• No full moon<br>Trees must be inspected again for signs of bats once felled and before removing from the site.<br>Follow 6 should bats be detected during tree removal. | Only under supervision of an approved bat expert. | Between October 1st and April 30th only |

**What if bats are detected during tree relocation or removal?**

| 6. At what stage have bats been detected? | Who can make this assessment? | When |
|---|---|---|
| a) Have bats been detected prior to the tree being completely felled?<br>If no, 6.b.<br>If yes, felling must stop, and DOC must be contacted. See 6.c if bats do not fly away or are injured. | Only under supervision of an approved bat expert. | Between October 1st and April 30th only |
| b) Bats have been detected once the tree has been felled.<br>All further work must stop and DOC must be contacted.<br>Any live bats that are not immediately able to fly away must be collected and placed in cloth bat bags or cloth-lined bat boxes.<br>The felled tree must be thoroughly inspected for | Only under supervision of an approved bat expert. | Between October 1st and April 30th only |

| | | |
|---|---|---|
| further bats.<br>See 6.c if bats do not fly away or are injured, or 6.d if they are dead. | | |
| c) Do any captured bats have injuries?<br>If no, keep the bat in a secure bat bag in a safe, temperature-controlled environment and release at a safe location close to the site of capture the following evening.<br>If yes, take the bat to a nearby vet to be examined. Vets must euthanase bats whose injuries are causing suffering and are not likely to heal sufficiently to allow rehabilitation and return to the wild. The bat expert and vet must consult with DOC to consider appropriate rehabilitation options where suffering is minimal and chances of return to the wild are high.<br>Euthanased bats must be handed to DOC. | Approved bat expert in consultation with vet and DOC. | Between October 1st and April 30th only |
| d) Dead bats have been found.<br>Dead bats must be handed to DOC. | Approved bat expert | Between October 1st and April 30th only |

# Appendix 4

**Competencies for undertaking bat work for Wildlife Act Authorities**

From time to time DOC is asked about whether people are competent to undertake bat work associated with Wildlife Act (1953) Authorities.

Competency is generally defined as competent with techniques described in the DOC Best Practice Manual.

Therefore, in conjunction with DOC planners, we have come up with some Conditions suitable to put in an Authority.

The intent is that contractors can only employ people suitably competent at the different tasks in different permits (for example, people who have to assess whether a cavity is likely to be a bat roost or not are competent for the job).

The Conditions we are using are:

1. Only people certified as Competent Bat Ecologists can operate under a Wildlife Authority.
2. There are 5 classes of competency (below). Note that the first two Classes are not directly related to disturbing, handling, injuring or killing fully protected wildlife, but are included here for completeness:

**Bat competency classes**

| Class | Key field activity | Competency | Individual Experience/Knowledge |
|---|---|---|---|
| A | ABMS | • Setting up Automatic Bat Detector Monitoring Systems (ABMS). | Recent previous experience in installing ABMS in at least 2 comprehensive surveys. |
| B | Analysing ABMS | • Setting up ABMS, and analysing and interpreting results. | Recent previous experience at analysing and interpreting ABMS results in at least 2 comprehensive surveys. |
| C1 | Identifying bat roosts (short-tailed bats) | • Finding and identifying short-tailed bat roosts that are either occupied or unoccupied. This competency may also include arborists. | Recent extensive experience in searching for and finding active and inactive roosts (by radio tracking, exit observations, and/or visual inspections) |
| C2 | Identifying bat roosts (long-tailed bats) | • Finding and identifying long-tailed bat roosts that are either occupied or unoccupied. This competency may also include arborists. | Recent extensive experience in searching for and finding active and inactive roosts (by radio tracking, exit observations, and/or visual inspections) |
| D | Handling bats | • Handling bats (in one or more field methods), as outlined in Department of Conservation's (DOC) best practice manual (DOC, 2012).(Pages 58-108 of the Department of Conservation Best Practice Manual of Conservation Techniques for Bats Version 1.0 (Sedgeley et al. 2012 - http://www.doc.govt.nz/Documents/science-and-technical/inventory-monitoring/im-toolbox-bats/im-toolbox- | Has undertaken field training from a competent trainer demonstrating the required technique to the trainer's satisfaction and meets DOC's best practice manual standards (DOC, 2012) to carry out the following specialised field methods:<br>• Extracting bats from mist nets; |

| Class | Key field activity | Competency | Individual Experience/Knowledge |
|---|---|---|---|
| | | bats-doc-best-practice-manual-of-conservation-techniques-for-bats.pdf). | • Use of harp traps at roost sites;<br>• Handling bats<br>• Marking bats (e.g. forearm band, temporary marks);<br>• Wing biopsies for genetic sampling;<br>• Attaching transmitters;<br>• Inserting transponder tags; and<br>• Release techniques. |
| E | Trainer for Class X | • Competent at the relevant class plus capable of training staff. | • Has a high level of knowledge and experience regarding the competency they are training people in.<br>• Ability to teach well. |

3. Competency can be certified by the Leader of the Department of Conservation Bat Recovery Group or any other Class E Bat Ecologist. A register of certified people is kept by the Recovery Group leader.
4. Only personnel certified at the appropriate level may undertake tasks as 'Bat Experts' involved in tree felling protocols that may be included in Wildlife Act Authorities. Thus, only personnel at Class C or above are certified to undertake tree roost inspections and make decisions about whether a potential roost is deemed occupied (not allowed to be felled) or unoccupied (allowed to be felled).

If anyone would like to be assessed against these competencies, please get in touch with the Bat Recovery Group Leader (Colin O'Donnell codonnell@doc.govt.nz).

For the requests we have received to date we have asked for (1) a CV, (2) a summary of bat experience and have sought a recommendation from an independent bat researcher/manager if not familiar with the person's expertise.

Register:

| Person | Affiliation | Email | Competency Class | Date | Certified by |
|---|---|---|---|---|---|
| Colin O'Donnell | DOC | | Class E in all | 2016 | |
| Moira Pryde | DOC | | Class E in all | 2016 | Colin O'Donnell |
| Tertia Thurley | DOC | | Class E in all | 2016 | Colin O'Donnell |
| Abi Quinnell | DOC | | Class E in all | 2017 | Tertia Thurley |
| Warren Simpson | DOC | | Class E in all | 2016 | Colin O'Donnell |
| Hannah Edmonds | DOC | | Class E in all | 2016 | Colin O'Donnell |
| Gillian Dennis | Massey University | | Class E in all | 2016 | Colin O'Donnell |
| Stuart | Queensland | | Class E | 2016 | Colin |

| | | | | | |
|---|---|---|---|---|---|
| Parsons | University of Technology | | in all | | O'Donnell |
| Kerry Borkin | Wildlands | Kerry.Borkin@wildlands.co.nz | Class E in all | 2016 | Colin O'Donnell |
| Brian Lloyd | Contractor | brianlloyd@xtra.co.nz | Class E in all | 2016 | Colin O'Donnell |
| Rebecca Jackson | DOC | | Class E in all | 2016 | Colin O'Donnell |
| Maddie Van de Wetering | Contractor | | Class E in all | 2016 | Colin O'Donnell |
| Jo Carpenter | Contractor | carpenter.jk@gmail.com | Class E in all | 2016 | Colin O'Donnell |
| Emma Williams | Matuku Ecology | bittern.wills@yahoo.com | Class E in all | 2016 | Colin O'Donnell |
| Ian-Davidson Watts | Gore District Council | | Class E in all | 2017 | Colin O'Donnell |
| Gerry Kessels | Kessels Ecology | gerry@kessels-ecology.co.nz | Class A, B, C2, D | 30/9/16 & 26/1/18 | Colin O'Donnell |
| Hannah Mueller | Tonkin & Taylor | | Class A, B, C2, D | 30/9/16 | Colin O'Donnell |
| Wiea van der Zwan | Kessels Ecology | wiea@kessels-ecology.co.nz | Class A, B, C2, D | 26/1/18 | Colin O'Donnell |
| Jo Monks | DOC | | Class E | 2016 | Colin O'Donnell |
| Jess Scrimgeour | DOC | | Class E | 2016 | Colin O'Donnell |
| Simon Chapman | Ecology NZ Ltd | simon.chapman@ecologynz.nz | Class E | 2016 | Colin O'Donnell |
| Jono More | Contractor | jono.more.nz@gmail.com | Class E | 2016 | Colin O'Donnell |
| Zenon Czenze | Auckland University | | Class D | 30/9/16 | Colin O'Donnell |
| Richard Gillies | Wildlands | | Class C2 | 16/12/16 | Colin O'Donnell |
| Tim Martin | Wildlands | | Class A | 16/12/16 | Colin O'Donnell |
| Jennifer Murray | Wildlands | | Class A | 16/12/16 | Colin O'Donnell |
| Des Smith | Wildlands | | Class A | 16/12/16 | Colin O'Donnell |
| Nick Goldwater | Wildlands | | Class B | 16/12/16 | Colin O'Donnell |
| Astrid van Meeuwen-Dijkgraaf | Wildlands | | Class A | 16/12/16 | Colin O'Donnell |
| Rachel | Wildlands | | Class A | 16/12/1 | Colin |

| | | | | | |
|---|---|---|---|---|---|
| McClellan | | | | 6 | O'Donnell |
| Steve Rate | Wildlands | | Class A | 16/12/16 | Colin O'Donnell |
| Frances Forsyth | Wildlands | | Class A | 16/12/16 | Colin O'Donnell |
| Trevor Connolly | Tonkin & taylor | | Class A, B, C2, D | 27/2/17 | Jo Carpenter |
| Liz Deakin | Tonkin & Taylor | | Class A, B, C2, D | 27/2/17 | Jo Carpenter |
| Lucy Bridgeman | DOC | | Class A, B, C1, C2, D | 6/4/17 | Colin O'Donnell |
| Darrell Haworth | DOC | | Class A, B, C2, D | 6/4/17 | Colin O'Donnell |
| Bronwyn Slack | DOC | | Class A, B, C2, D | 6/4/17 | Colin O'Donnell |
| Glen Newton | DOC | | Class A, B, | 6/4/17 | Colin O'Donnell |
| Natasha Bedford | DOC | | Class A, C2, D | 6/4/17 | Colin O'Donnell |
| Gavin Collis | DOC | | Class A, B, C2, D | 6/4/17 | Colin O'Donnell |
| Adam Ross | DOC | | Class A, B, C2, D | 6/4/17 | Colin O'Donnell |
| Marc Choromanski | Ecology NZ Ltd | marc@ecologynz.nz | Class A, B, C1/C2, D | 6/4/17 20/6/18 | Colin O'Donnell |
| Rebecca Stirnemann | Kessels Ecology | | Class A, B, C2, D | 6/4/17 | Colin O'Donnell |
| Gerard Hill | Edge Effect | edgeeffect.gh@gmail.com | Class A, B, | 11/5/17 | Colin O'Donnell |
| Chris Wedding | Bioresearches Groups LtD | Chris.Wedding@bioresearches.co.nz | Class A, B, | 11/5/17 | Colin O'Donnell |
| Caitlin Golder | Fletcher Construction | | Class A, B, | 11/5/17 | Simon Chapman |
| Kate Richardson | Wildlands | | Class A, B, C1,C2,D | 12/5/17 | Colin O'Donnell/Tertia Thurley |
| Georgia Cummings | Boffa-Miskell | Georgia.Cummings@boffamiskell.co.nz | Class A, B, C1, C2, D | 31/7/17 3/4/18 | Colin O'Donnell |
| Andrew Blayney | Boffa-Miskell | | Class A, B | 31/7/17 | Colin O'Donnell |
| Michael Jones | DOC | | To Class E | 26/1/18 | Colin O'Donnell |
| Samantha Gale | DOC | | Class C2, D | 26/1/18 | Colin O'Donnell |
| Dane Simpson | DOC | | Class C1, C2, D | 26/1/18 | Colin O'Donnell |

| | | | | | |
|---|---|---|---|---|---|
| Isobel Oldfield | DOC | | Class C2, D | 26/1/18 | Colin O'Donnell |
| Matthew van Achterbergh | Ecology NZ Ltd | | Class A, B, | 11/6/17 | Colin O'Donnell |
| Adam Purell | Kessels Ecology | adam@kessels-ecology.co.nz | Class A, B, | 12/4/18 | Colin O'Donnell |
| Andree Hickey-Elliott | Kessels Ecology | | Class A, B, | 12/4/18 | Colin O'Donnell |
| Christine Ulrich | Kessels Ecology | | Class A, B, | 12/4/18 | Colin O'Donnell |
| Athene Irvine | DOC | | Class C1, C2, D | 21/5/18 | Colin O'Donnell |
| Jamie MacKay | Wildlands | | Class A, B, C2 | 26/10/18 | Kerry Borkin |
| Jacqui Wairepo | Wildlands | | Class A, C2 | 26/10/18 | Kerry Borkin |
| Ruby Bennett | Boffa-Miskell | | Class A, B, C1, D | 26/10/18 | Tertia Thurley |
| Kathleen Collier | Auckland University | | Class C1, D | 7/3/19 | Stuart Parsons |
| Kathryn Longstaff | Tonkin & Taylor | | Class A, B | 4/4/19 | Wiea van der Zwan Colin O'Donnell |
| Sam Heggie-Gracie | Tonkin & Taylor | | Class A, B | 4/4/19 | Wiea van der Zwan Colin O'Donnell |
| Mark Hansen | Ecology New Zealand | | Class A, B C2, D | 8/4/19 | Colin O'Donnell |


**Reference**

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http://www.doc.govt.nz/Documents/science-and-technical/inventory-monitoring/im-toolbox-bats/im-toolbox-bats-doc-best-practice-manual-of-conservation-techniques-for-bats.pdf


**Updates:**

Last updated 5 March 2018

Appendix 5

# Department of Conservation Accidental Discovery Protocol for Archaeological Sites

It is an offence under S87 of the Heritage New Zealand Pouhere Taonga Act 2014 to modify or destroy an archaeological site without an authority from Heritage New Zealand irrespective of whether the works are permitted or a consent has been issued under the Resource Management Act.

*An archaeological site is defined as any place in New Zealand (including buildings, structures or shipwrecks) that was associated with pre-1900 human activity, where there is evidence relating to the history of New Zealand that can be investigated using archaeological methods.*
*Evidence of archaeological sites can include:*

- *oven stones*
- *charcoal*
- *bone*
- *shell midden*[1]
- *ditches and banks*
- *pits*
- *Maori tools or artefacts*
- *old building foundations*
- *bottle glass*
- *iron/metal artefacts*
- *crockery*
- *wells and drains*
- *human remains/koiwi tangata*

***Example of a shell midden***

***Maori artefacts***

***Discoloured soild indicating burning***

**STOP - TAKE A PHOTO - TAKE GPS POINTS - LEAVE IN PLACE - PICK UP THE PHONE**

[1] A midden is an archaeological rubbish tip. Many of these items can be found consolidated together. Evidence of disturbance of a midden can be a scattering of shell across a wide area. Particular care needs to be taken near beach locations.

In the event that an archaeological site is found during works, all DOC staff/contractors must follow the following protocol:

1. Work will cease immediately in the area of discovery. Including works within a 20m buffer zone of the discovery.

2. The staff/contractor must shut down all machinery and take immediate steps to secure the area to ensure the archaeological remains are undisturbed.

   **Immediately contact the DOC Liaison Officer:**

3. The DOC liaison Officer must immediately notify the Departments South Westland Operations Manager and Senior Heritage Advisor, Department of Conservation. The Senior Heritage Advisor shall notify the Heritage New Zealand Regional Archaeologist.

   **Contact Senior Heritage Advisor: Francesca Bradley** - 027 284 3360

   *If an archaeological site is confirmed no further works can procced that will affect that site without first obtaining an authority from Heritage New Zealand to do so.*

4. If the site is of Maori origin the Liaison officer shall notify Makaawhio of the discovery and ensure site access to enable appropriate cultural procedures and tikanga to be undertaken.

   Contact Susan **Wallace** - 03 755 7885 or Susan.Wallace@ngaitahu.iwi.nz

5. If human remains (koiwi tangata) are uncovered the liaison Officer shall advise the Departments South Westland Operations Manager, Senior Heritage Advisor and Pou Tairangahau, the Heritage New Zealand Regional Archaeologist, NZ Police, Te Hapū o Ngāti Wheke or kaitiaki representative. Human remains will not to be moved until confirmation from Heritage New Zealand and iwi has been provided. The area must be treated with discretion and respect and the kōiwi tangata dealt with according to law and tikanga.

6. Works affecting the archaeological site shall not resume until Heritage New Zealand, the Police (if human remains are involved) and Te Hapū o Ngāti Wheke have each given the appropriate approval for work to continue. This approval will be provided to the Concessionaire by the Senior Heritage Advisor unless otherwise arranged.

## STOP - TAKE A PHOTO - TAKE GPS POINTS - LEAVE IN PLACE - PICK UP THE PHONE

# Appendix 6

## McCulloghs Creek Hydropower Project Risk Register

| Risk Number | STEP 1 - RISK IDENTIFICATION | | | | STEP 2 - RISK ASSESSMENT BEFORE TREATMENT | | | | STEP 3 - RISK MITIGATION STRATEGY | STEP 4 - RISK ASSESSMENT AFTER MITIGATION | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Risk Category | Activity | Risks | Potential Consequences | Likelihood (1-5) | Consequence (1-5) | Rating (1-25) | Is the Risk significant? Yes/No | RISK MITIGATION Elimination Measure, Design Initiative or Control | Likelihood (1-5) | Consequence (1-5) | Rating (1-25) |
| RISK1 | Operation | Station evacuation | Where required, people must be able to get out of a hydropower station safely. | Injury/death of employee. | 3 - Possible | 4 - Major | 12 - High | Yes | Two independent ways to exit. If one route becomes inaccessible, an alternative emergency escape route is always available. Adequate emergency lighting around powerhouse, for example. | 1 - Rare | 3 - Moderate | 3 - Low |
| RISK2 | Operation | Flooding | Flooding of powerhouse while operations present | Injury/death of employee. | 3 - Possible | 3 - Moderate | 9 - Medium | No | Head gates to automatically stop the hydro plant before the water levels become critical. Exit routes clearly marked. | 2 - Unlikely | 2 - Minor | 4 - Low |
| RISK3 | Operation | Fire | Fire in or adjacent to powerhouse and transformer | Injury/death of employee. | 3 - Possible | 4 - Major | 12 - High | Yes | A fire protection system is proposed with passive measures (e.g. fire-rated construction materials and methods), active measures (e.g. sprinklers, venting, fire-fighting equipment) and operational measures (e.g. plans, systems and training for the prevention and response. | 2 - Unlikely | 2 - Minor | 4 - Low |
| RISK4 | Operation | Public Safety | Member of public coming close to electrical equipment | Damage to plant/injury/death of employee. | 3 - Possible | 3 - Moderate | 9 - Medium | No | Fences, locked gates, security system and cameras installed around powerstation and high voltage equipment. Public safety in and around the operational area and structures will be [illegible] Station Plan. | 2 - Unlikely | 2 - Minor | 4 - Low |
| RISK5 | Operation | Vandalism | Vandalism of plant, especially electrical equipment | Damage to plant/injury/death of employee. | 3 - Possible | 2 - Minor | 6 - Medium | No | Fences, locked gates, security system and cameras installed around powerstation and high voltage equipment. | 3 - Possible | 1 - Negligible | 3 - Low |
| RISK6 | Operation | Earthquake | Earthquake shaking causing personal rupture, shaking, collapse of slopes and structures. | Damage to plant/injury/death | 4 - Likely | 4 - Major | 16 - High | Yes | Head gates to prevent water flows in event of pipe burst. Foundation design, evacuation plans, drills. Emergency Management Plans in place | 4 - Likely | 2 - Minor | 8 - Medium |
| RISK7 | Operation | Workplace accidents | Accidents while working in confined space, heights, or around equipment | Injury/death of employee. | 3 - Possible | 4 - Major | 12 - High | Yes | Health and Safety plan developed for workers, under WorkSafe NZ. Training for first aid, working at heights, confined space. | 2 - Unlikely | 2 - Minor | 4 - Low |
| RISK8 | Operation | Oil spills | Bunds around transformers to contain spills. | Pollution or contamination | 2 - Unlikely | 2 - Minor | 4 - Low | No | Bunds around transformers to contain spills, oil separators used where required. Biodegradable greases used in turbine. | 2 - Unlikely | 2 - Minor | 4 - Low |

# Appendix 7

## KEY FRESHWATER FISH SPAWNING AND MIGRATION TIMES

The table below lists critical spawning and migration times for all freshwater fish species found in McCulloughs Creek during the May 2017 survey and for selected species from the Whataroa catchment as recorded in the New Zealand Freshwater Fish Database (June 2017). Some species recorded in the Whataroa Catchment (inanga, brown mudfish, giant kōkopu, banded kōkopu and common bully) are not included in the table because they are unlikely to be present in McCulloughs Creek near the proposed works (McDowall 1990 and 2000).

The most important months to avoid in-stream works are in **bold type**. These are months when eggs and larvae are likely to be present in or near the substrate, and when very young juveniles are migrating (Charteris 2006; McDowall 1990 and 2000). These life stages are more vulnerable to destruction and less able to avoid danger in the way that adult fish can.

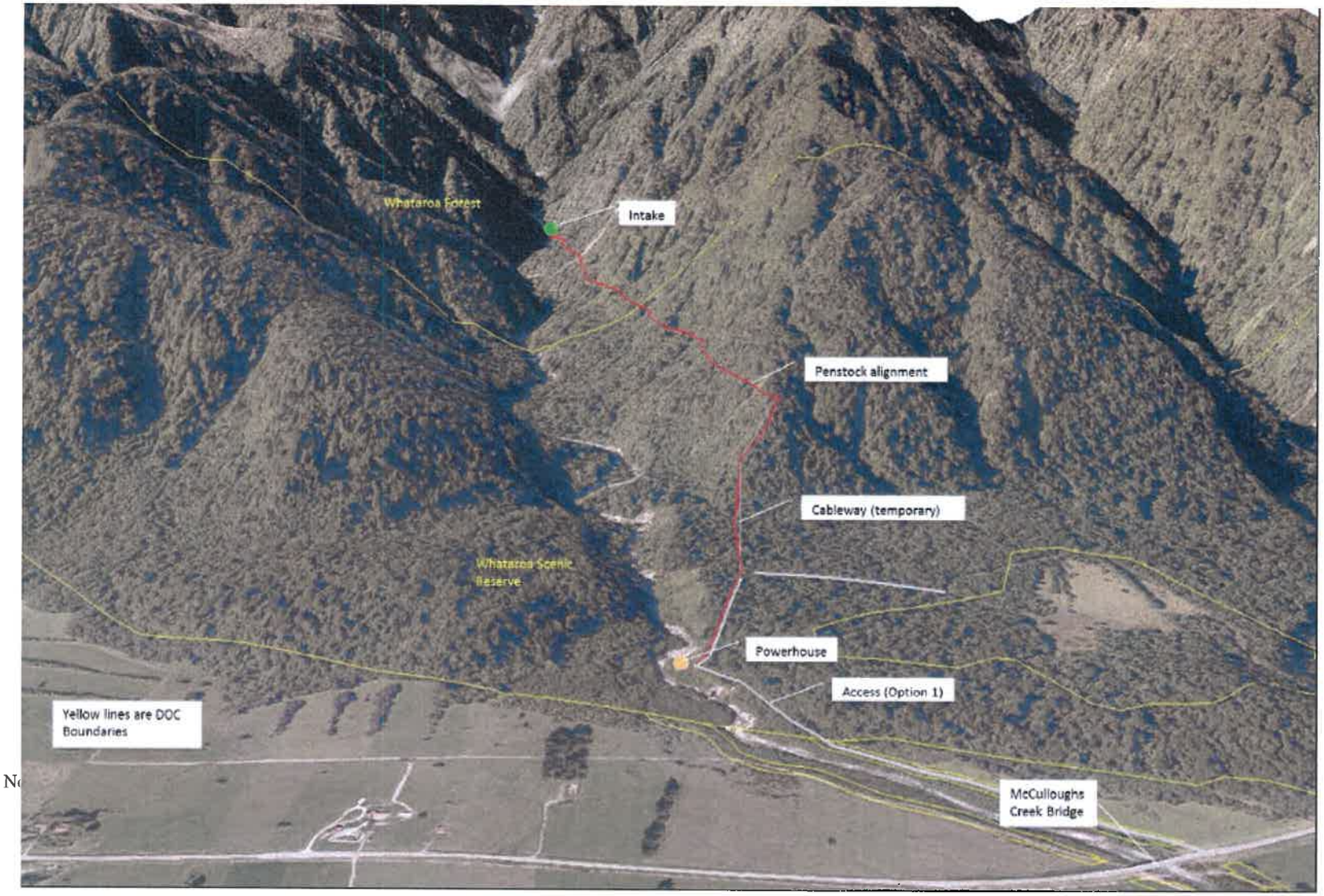
| Common Name | Scientific Name | Spawning Times | Migration Direction | |
|---|---|---|---|---|
| | | | Upstream | Downstream |
| Longfin eel/tuna | *Anguilla dieffenbachii* | Autumn to winter | **July to November** | February to June |
| Shortfin eel/tuna | *Anguilla australis* | Autumn to winter | **July to November** | February to June |
| Kōaro | *Galaxias brevipinnis* | Autumn to winter | **August to October** | March to June |
| Torrentfish | *Cheimarrichthys fosteri* | Summer to autumn | **June to November** | February to May |
| Brown trout | *Salmo trutta* | Autumn to winter | **June to October** | n/a |

# Appendix 8


Map 3 – showing the land status of the various components of the scheme

# Appendix 9

| | |
|---|---|
| Original Application | 20 October 2017 Original DOC-3198091<br>Environmental Impact Assessment (including Wildlands Ecological assessment) DOC-6009457 |
| Further Information (17SD) | 16 March 2018 includes:DOC-5998034<br>Cover letter, Visual Impact Assessment, Cultural impacts and consultation with Makaawhio and assessment of alternative sites. |
| Further Information | 29 August 2018 includes: DOC-5998027<br>Letter summarising approach and legal issues, Primary response to DOC further information, Supplementary Ecology Report DOC-5566164<br>NIWA Minimum Flows Report DOC-5566173 |
| Further Information | 5 April 2019 includes: Cover letter DOC-5998154<br>Revised Landscape assessment Report (27 March 2019) DOC-5998175<br>Appendix to Landscape assessment: DOC-5925849<br>Supplementary Ecological Assessment DOC-5998210 |
| Further Information Clarifications on Freshwater Flows | 22 May 209 Email and attachment - DOC-6005997<br>31 May 2019 Email including photos - DOC-6006012<br>7 June 2019 Email DOC-6003112 |


Whataroa Forest
Intake
Penstock alignment
Cableway (temporary)
Whataroa Scenic Reserve
Powerhouse
Access (Option 1)
Yellow lines are DOC Boundaries
McCulloughs Creek Bridge

N

# A4_ SITE & LAYOUT PLAN




RESILIO STUDIO

Appendix 9

- 1- No 8 - 20 October 2017 Application forms 1a and 7a DOC- 3198091
- 2 - No 8 - 20 October 2017 Application EIA October 2017
- 3 - No 8 - 16 March 2018 Further Info - DOC-5998034
- 4 - No 8 - 29 August 2018 -Further Info, letter and primary response - DOC-5998027
- 5 - No 8 28 August 2018 ENZL McCulloughs Creek Supplementary Ecology Report - DOC-5566164
- 6 - No 8 28 August NIWA - Minimum Flows Report - 53660-OTH - DOC-5566173
- 7 - No 8 - 5 April 2019 Letter to DOC accompanying further information - DOC-5998154
- 8 - No 8 - 5 April 2019 - Revised Landscape Assessment report (march 2019) - DOC-5998175
- 9 - No 8 - 5 April 2019 - Landscape Visual Assessment -Appendix-A-RevB - DOC-5925849
- 10 - No 8 - 5 April 2019 Supplementary Ecological Impact Assessment - DOC-5998210
- 11 - No 8 - 22 May 2019 Clarifications - 53660-OTH - DOC-6005997
- 12 - No 8 - 31 May 2019 clarifications email and photos - DOC-6006012
- 13 - No 8 - 7 June 2019 Further info clarifications on Freshwater effects - DOC-6003112