MITCHELL DAYSH

FAST TRACK APPROVALS ACT 2024

WAITAHA HYDRO SCHEME

Substantive Application of a Listed Project

8 August 2025

Westpower

NGĀTI WAEWAE ARAHURA
TE RŪNANGA O NGĀTI WAEWAE

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LIST OF TERMS AND ACRONYMS

Acronym/Term	Definition
AEE	Assessment of Environmental Effects
AMP	Avifauna Management Plan
Application	The document titled "Westpower Limited Waitaha Hydro Project: An Application made under the Fast-track Approvals Act 2024" dated 8 August 2025, including all technical assessments and supporting reports.
BMP	Bat Management Plan
CEMP	Construction Environmental Management Plan
Commencement of Construction	The time when any Project Construction Work Component (excluding Enabling Works) first starts (see also Start of Construction).
Commencement of Generation	The date when the Project first transmits electricity onto the local network for customer supply.
Consents	Any resource consents granted under the Fast-track Approvals Act that would otherwise have been granted under the RMA.
Concessions	Any Concessions granted under the Fast-track Approvals Act that would otherwise have been granted under the Conservation Act.
Concession Area	Area of the Project located on land administered by the Department of Conservation.
Completion of Construction	The time when the Waitaha Hydro Project has been built and commissioned and is available to generate electricity for customer supply.

Acronym/Term	Definition
Consent Area	The total area of land covered by the Consents – equivalent to the total area of land used for the construction and operation of the Project.
Construction	All activities related to constructing the Project excluding Enabling Works and Pre-Construction activities.
CNMP	Construction Noise Management Plan.
Consent Authorities	Westland District Council, in respect of land use consents administered by Westland District Council; or West Coast Regional Council, in respect of resource consents administered by West Coast Regional Council.
Construction Staging Areas	Areas developed prior to or during Construction and used for plant, materials and equipment laydown, construction contractor and staff offices and amenities, staff parking, helicopter landings and take-offs and other general construction-related activities. Construction Staging Areas within the Project Construction Site include: > Construction Staging Area 1 (Headworks); > Construction Staging Area 2 (Power Station Site); and > Construction Staging Area 3 (McLean Farm).
CTMP	Construction Traffic Management Plan
DOC	Department of Conservation
DMP	Dust Management Plan
Enabling Works	Construction related activities (or any part thereof) NOT requiring removal of indigenous vegetation AND occurring outside the following locations:

Acronym/Term	Definition
	> Any land within 10m of any stream; > Any land within 20m of any natural wetland
ESCP	Erosion and Sediment Control Plan
FEMP	Freshwater Ecology Management Plan
FlushMP	Flushing Management Plan
FMP	Flight Management Plan
FTAA	Fast-track Approvals Act 2024
Headworks	The physical structures within the Scheme situated above Morgan Gorge comprising a low-profile weir and intake structure together with an access tunnel portal and access road.
LMP	Landscape Management Plan
LINZ	Land Information New Zealand
LizMP	Lizard Management Plan
McLean Farm	Land within the Consent Area located north of, and adjacent to, the true right bank of McGregor Creek described as LOT 1 DP 339 LOT 2 DP 376096 SECS 1-4 SO 11859 RSEC 1 SO 481569 URAL SECS 933 4047 4023.
NZTA	New Zealand Transport Agency (Waka Kotahi)
Power Station	The physical structures within the Scheme situated immediately adjacent to, and in the vicinity of, the Waitaha River and the lower end of the Tunnels generally comprising the: > Powerhouse; > Tailbay; > Tailrace;

Acronym/Term	Definition
	> Switchyard; and > All ancillary structures.
Power Station Site	The area comprising the Power Station
Power Station Access Road	The vehicle access road between the Anderson Road vehicle crossing and the Power Station Site.
Pre-Construction activities	Any activity associated with investigative drilling or geophysical investigations.
Project	Includes all physical resources and activities associated with constructing, operating and maintaining the Scheme and all ancillary structures and activities.
Project Areas	The four areas shown in Figure 24, together defined as the Project Area.
Project Construction Site	All land required to be used for the construction of the Project.
Project Site	All land required to be used for the operation and maintenance of the Project.
Project Construction Work Component	Specified components or phases associated with constructing the Project (including all associated activities (excluding Enabling Works)). Project Construction Work Components include: > Construction Staging Area 3 and adjacent land-based gravel extraction / spoil disposal; > Waitaha River gravel extraction and storage; > Road formation and road upgrade works occurring in road reserve; > Construction of new transmission lines and upgrades to existing transmission lines and access road north of the true right bank of McGregor Creek;

Acronym/Term	Definition
	> Construction of new access road and transmission lines south (upstream) of the true left bank of McGregor Creek; > Stream Works and in-stream structures; > Power Station Site and/or Tunnels including Construction Staging Area 2; > Headworks including Construction Staging Area 1; > Waitaha Substation re-build; and > Rehabilitation works.
pTTPP	Proposed Te Tai Poutini Plan
RAQP	West Coast Regional Air Quality Plan
RLWP	West Coast Regional Land and Water Plan
RMA	Resource Management Act 1991
RPS	West Coast Regional Policy Statement
Scheme	The Waitaha Hydro Scheme
SMP	Stormwater Management Plan
SOMP	Site Operations and Maintenance Plan
Start of Construction	The time when any Project Construction Work Component (excluding Enabling Works) first starts.
Stream Works	All physical works and in-stream structures undertaken within, and involving the disturbance of, any stream or riverbed excluding riverbed gravel extraction.
Transmission Line	The physical structures comprising the electricity transmission infrastructure between the Power Station Site and the existing Waitaha Substation.

Acronym/Term	Definition
Tunnels	All physical structures associated with the water tunnel and the access tunnel included in the Scheme.
VMP	Vegetation Management Plan
WCRC	West Coast Regional Council
WDC	Westland District Council
WDP	Westland District Plan
Wildlife Approvals	Any Wildlife Approvals granted under the Fast-track Act that would otherwise be granted under the Wildlife Act.
WWNZ	Whitewater New Zealand

REPORT INFORMATION

Report Status	FINAL
Our Reference	MDL002607
Author	Mason Jackson
Review By	Phil Mitchell
Version Date	8 August 2025

PART A

The Substantive Fast-track Approvals Act Application

FAST-TRACK APPROVALS ACT - SUBSTANTIVE APPLICATION

To The Environmental Protection Authority

1. Westpower Limited ("**Westpower**" or "**the applicant**") applies for all necessary approvals required to construct, operate and maintain a Hydro-Electric Power Scheme ("**the Scheme**" or "**the Project**") on the Waitaha River including:

   > Resource consents (district and regional) that would otherwise be applied for under the Resource Management Act 1991 ("**RMA**") (s42(4)(a)) including any consents required by a National Environmental Standard;

   > Concession(s) that would otherwise be applied for under the Conservation Act 1987 (s42(4)(e));

   > Wildlife approvals that would otherwise be authorities applied for under the Wildlife Act 1953 (s42(4)(h)); and

   > Complex freshwater fisheries activity approvals that would otherwise be applied for under regulation 42 or 43 of the Fisheries Regulations (s42(4)(j)).

2. The application relates to hydro-electric power generation activities (the **proposed activity**).

3. More specifically, Westpower seeks the following types of approvals:

   <u>Under the RMA from the Westland District Council;</u>

   > A Section 9 land use consent for the construction, operation and maintenance of the Waitaha Hydro Scheme including vegetation clearance, investigative drilling, temporary use of helipads, flood protection works and signs.

   <u>Under the RMA from the West Coast Regional Council;</u>

   > Consents under the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 for:

      > Placement of a weir on the bed of the Waitaha River; and

      > Placement of box culvert structures in in the beds of Alpha Creek, Allen Creek and an unnamed tributary of the Waitaha River and a culverted ford (or similar) structure in the bed of Macgregor Creek.

   > A Section 9 land use consent for:

- Earthworks and vegetation disturbance within riparian margins, Erosion Prone Area One (including land-based gravel extraction activities) and Erosion Prone Area Two.

- Section 13 land use consents for:
  - Placement, use, maintenance and removal of structures in, on or over the beds of rivers and streams; and
  - Dry riverbed gravel extraction;
- Section 14 water permits for:
  - Temporary diversion of water for the purpose of erecting or placement, extension or alteration, maintenance, repair or reconstruction, or removal or demolition of Headworks structures and the Power Station tailrace;
  - Temporary take and use of up to 20 l/s of water from the Waitaha River for tunnel drilling, concrete batching plant operations, dust suppression and ancillary construction related activities;
  - Take, diversion and use of up to 23 m^3/s of water from the Waitaha River for hydro-electric power purposes;
  - Diversion of Waitaha River flows over the Headworks diversion weir including the kōaro passage structure, through the Headworks residual flow gate and channel and through the sluice gate and chamber; and
  - Take and diversion of groundwater from the pressurized water and access tunnels.
- Section 15 discharge permits for:
  - Discharge of contaminants to land from temporary investigative drilling activities;
  - Discharge of spoil material (produced from tunnel construction and cleared vegetation during construction) to land;
  - Discharge of concrete batching plant wash water to land during construction;
  - Discharges to air from a temporary concrete batching and gravel screening plant;
  - Incidental discharges of contaminants to water resulting from the maintenance of in-stream structures including any associated adjacent, upstream or downstream Stream Works; and
  - Discharges to air associated with intermittent operation of an emergency diesel fired generator at the Power Station Site.

Further details are set out in section 4.1 of Part B of this application and map coordinates for all key Scheme components and activities are listed in the Waitaha Hydro Project Coordinates Register provided in **Appendix 1**.

Under the Conservation Act 1987 from the Minister of Conservation:

- A one-off process (investigative drilling); and
- Short and long-term leases, licenses and easement concessions for short term construction and long-term Scheme operation activities.

Further details are set out in section 4.2 of Part B of this application and map coordinates for all key Scheme components and activities requiring concession are listed in the Waitaha Hydro Project Coordinates Register provided in **Appendix 1**.

Under the Wildlife Act 1953 from the Director-General of Conservation:

A wildlife approval authorising the following activities:

- To catch, handle, salvage and relocate native lizards listed in Schedule 4 from the Scheme footprint.
- To gently guide whio / blue duck away from blasting and helicopter use areas.
- In the unlikely event if it is required, to capture, handle, and relocate avifauna and long-tailed bats listed in Schedule 5 in accordance with the AMP and BMP.
- To incidentally harm or kill wildlife listed in Schedule 5 if the harm or death is not directly intended but is unavoidable and foreseeable and all reasonable effort has been made to meet the conditions in the approval.

Further details are set out in section 4.3 of Part B of this application.

Under the Freshwater Fisheries Regulations from the Director-General of Conservation:

- The following complex freshwater fisheries activities under Schedule 9 of the FTAA:
  - Approval for the Headworks diversion weir and Alpha Creek groyne structures and associated in-stream construction and ongoing maintenance activities; and
  - Approval for ongoing in-stream maintenance activities on the Macgregor Creek crossing structure, all culvert structures, the Granite Creek bridge and Power Station tailrace.

Further details are set out in section 4.4 of Part B of this application.

4. Westpower requests:

- A 15 year duration for any resource consents granted solely for construction activities;
- An unlimited duration for any other Section 9 land use consents granted;
- A 35-year duration for any other Section 13, 14 and 15 resource consents granted;
- A 49 year duration for any long-term DOC concessions, and 15 year duration granted for any short-term, construction related DOC concessions;
- A 15 year duration for any wildlife approval granted; and
- An unlimited duration for any FTAA Schedule 9 complex fishery activity license granted.

5. Westpower also requests a lapse period of 10 years for any resource consent granted.

6. The Scheme is located within and on the true right bank of the Waitaha River between the lower end of Kiwi Flat and Macgregor Creek and all within the Waitaha Valley.

7. Owners, administration entities and legal descriptions of land comprising the site[1] are summarised in the table below, alongside the status of the interests in land, and copies of Records of Title are provided in **Appendix 2**. A map identifying the interests on private, LINZ administered parcels and DOC administered parcels for the access road and transmission line follows the table.

Landowner / administered by	Title	Legal Description	Status of interest
Crown / DOC	318036	> Part Reserve 1672 shown on Survey Office Plan 11209 as areas 16, 35, and 76 (pages I34 and J34) New Zealand Gazette 8 May 1919 p 1287 > Part Reserve 1672 Shown on Survey Office Plan 11209 as areas 16, 35, and 76 (pages I34 and J34) New Zealand Gazette 3 May 1934 p 1386 (and record of title 318036) > Part Reserve 1672 described as Section 1 SO 12094 New	> Concession approval sought as part of this Application

[1] Westpower will rely on the land rights held for the existing line to complete the upgrade from SH6 to the Westpower Substation.

Landowner / administered by	Title	Legal Description	Status of interest
		Zealand Gazette Dated 1 July 2001 p 1560	
Crown Land (Land Information New Zealand) - Riverbed		> Crown land, being the bed of Allen Creek, shown on SO 11859, Westland Registration District	> Expression of Interest and Application to LINZ ongoing[2]
		> Crown land being the bed of the Waitaha River (also described as area A on Survey Office Plan 12697)	> Expression of Interest and Application to LINZ ongoing[3]
McLean Company Limited	WS5D/1294	> Rural Section 933 and Rural Section 4047	> Agreed with landowner
	306023	> Section 1-4 Survey Office Plan 11859 and Lot 2 Deposited Plan 376096	> Agreed with landowner
Westland District Council	N/A - Gazetted	> Local Road (Waitaha Road)[4]	> Permitted activity status associated to works following Waitaha Road
Crown Land (New Zealand Transport Agency) – State Highway 6	N/A - Gazetted	> State Highway 6 (Harihari Hwy)[5]	> Permitted activity status associated to works following SH6

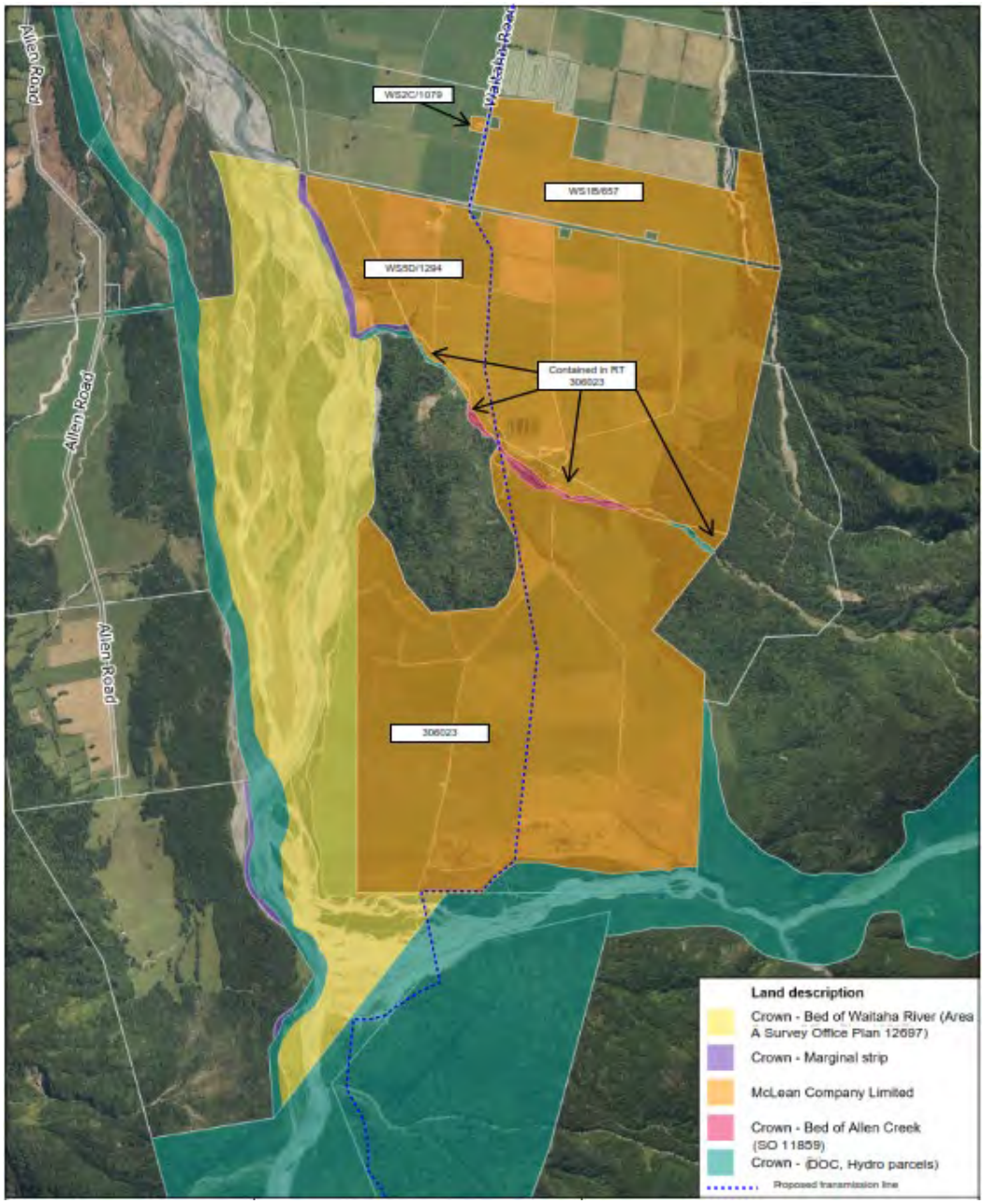
[2] For a right of way, right to convey electricity and telecommunication.

[3] For right of way, right to convey electricity and telecommunication, and licence for gravel extraction.

[4] We have extensively searched in the databases available to locate ownership records for the local road across the relevant land parcels, however, gazette notices were only able to be found for other parts of the local road. The Westland District Council has confirmed that its own records show that the above parcels are all road and are vested in Council.

[5] We have extensively searched in the databases available to locate ownership records for the State Highway across the relevant land parcels, however, gazette notices were only able to be found for other parts of this state highway. New Zealand Transport Agency (NZTA) has confirmed that these parcels are vested in the Crown for the purpose of State Highway and are administered by NZTA.

Landowner / administered by	Title	Legal Description	Status of interest
Westpower Limited	WS8B/158	> Lot 1 Deposited Plan 3059	> Owned by Applicant



Transmission line and access road[6] and on private, LINZ and DOC administered parcels

[6] Note: Access road alignment follows the transmission line alignment shown.

8. Attached is an assessment of the proposed activity's effects on the environment that —

(a) includes the information required under the FTAA; and

(b) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

With respect to (a), to serve as information navigation tools for each type of approval sought, additional tables are provided in separate schedules to Part A of this application as follows:

> **Schedule A**: Navigation Guidance Table for General Information Requirements Specified by the FTAA for Listed Projects;

> **Schedule B**: Navigation Guidance Table for Information Required for the Resource Consent Approvals sought;

> **Schedule C**: Navigation Guidance Table for Information Required for the Concessions Approvals sought;

> **Schedule D**: Navigation Guidance Table for Information Required for the Wildlife Act Approvals sought; and

> **Schedule E**: Navigation Guidance Table for Information Required for the Complex Freshwater Fishery Activities Approvals sought

The tables provided in Schedules A to E set out the individual information requirements specified in the FTAA and provides references to where this information can be located within the lodged documents.

Peter Armstrong
Chief Executive Officer
Westpower Limited

Date: 8 August 2025

Address for Service:

For the Applicant: Jon Bright
Westpower Limited
[redacted]

Copy to the Applicant's Agent: Mason Jackson
Mitchell Daysh Limited
[redacted]

Address for Billing: Westpower Limited
146 Tainui Street
PO Box 375
GREYMOUTH 7805

Attention: [redacted]
Phone: [redacted]
Email: [redacted]

SCHEDULE A: Navigation Guidance Table for General Information Requirements Specified by the FTAA for Listed Projects

FTAA Substantive Application Information Requirement	Source Document	Document Section(s)
Section 13(4) general information requirements Note - Although specific to referral applications, parts of Section 13(4) are also relevant to substantive applications via Section 43(2)		
Proposal and effects		
(a) a description of the project and the activities it involves:	**AEE**	**Section 3 (pages: 52-103).**
	Project Overview Report (Appendix 3)	**Appendix A (Project Description)**
(b) an explanation of how the project meets the criteria in section 22	**N/A**	**-**
(c) information to demonstrate that the project does not involve any ineligible activities	**AEE**	**Section 2.5.7 (page 34).**
	Application Form	**Part 2, Subpart 1**
(d) a description or map of the whole project area that identifies its boundaries in sufficient detail to enable consideration of the referral application:	**AEE**	**Appendix 1 - Waitaha Hydro Project Location and Coordinates Register** **AEE - Figures 1(page 9) and 24 (page 147)**
(e) the anticipated commencement and completion dates for construction activities (where relevant):	**AEE**	**Section 3.5.2 (Pages: 76-78)**
(f) a statement of whether the project is planned to proceed in stages and, if so,— (i) an outline of the nature and timing of the stages; and	**AEE**	**Section 3.5.2 (Pages: 76-78)**
(ii) a statement of whether a separate substantive application is to be lodged for each of the stages; and	**N/A**	**-**

FTAA Substantive Application Information Requirement	Source Document	Document Section(s)
(iii) an explanation of how each stage meets the criteria in section 22	**N/A**	**-**
(g) a statement of whether a part of the project is proposed as an alternative project in itself and, if so,— (i) a description of that part of the project; and	**N/A**	**-**
(ii) an explanation of how that part of the project meets the criteria in section 22:	**N/A**	**-**
(h) a description of the anticipated and known adverse effects of the project on the environment:	**AEE**	**Section 6 (Pages: 228 - 315)**
(i) a statement of any activities involved in the project that are prohibited activities under the Resource Management Act 1991:	**N/A**	**-**
Persons affected		
(j) a list of the persons the applicant considers are likely to be affected by the project, including— (i) relevant local authorities:	**AEE**	**(i) AEE Section 2.8.3.3 (West Coast Regional Council) (Page 44) and Section 2.8.3.4 (Westland District Council) (Pages: 44-45)** **(ii) AEE Section 2.8.3.1 (Poutini Ngai Tahu) (Pages: 41-42)** **(iii) AEE Section 2.8.3.1 (Te Runanga o Ngai Tahu) (Pages: 41-42)** **(iv) AEE Section 5.2.3 (Pages: 152-153)** **(v) - (viii) N/A**
(ii) iwi authorities and groups that represent hapū that are parties to relevant Mana Whakahono ā Rohe or joint management agreements:	**AEE**	
(iii) other relevant iwi authorities:	**AEE**	
(iv) relevant Treaty settlement entities:	**AEE**	
(v) customary rights groups	**N/A**	
(vi) Ngāti Porou	**N/A**	
(vii) Takutai groups	**N/A**	
(viii) persons with a registered interest in land that may need to be acquired under the Public Works Act 1981:...	**N/A**	

FTAA Substantive Application Information Requirement	Source Document	Document Section(s)
(k) a summary of— (i) the consultation undertaken for the purposes of section 11 (to be read as section 29 Pre-lodgement requirements for listed project) and any other consultation undertaken on the project with the persons and groups referred to in paragraph (j); and	**AEE**	**Sections 2.8.2 (Page 41) and 2.8.3 (Pages: 41-45)**
(ii) how the consultation has informed the project:	**AEE**	**Sections 2.8.1 (Pages: 38-41), 2.8.2 (Page 41), 2.8.3 (Pages: 41-45) and 2.8.4 (Pages: 46-49)**
(l) a list of any Treaty settlements that apply to the project area, and a summary of the relevant principles and provisions in those settlements:	**AEE**	**Section 5.2.3 (Pages: 152-156)**
(m) a description of any processes already undertaken under the Public Works Act 1981 in relation to the project	**N/A**	**-**
(n) a statement of any relevant principles or provisions in the Ngā Rohe Moana o Ngā Hapū o Ngāti Porou Act 2019:	**N/A**	**-**
(o) information identifying the parcels of Māori land within the project area, marae, and identified wāhi tapu within the project area:	**N/A**	**-**
Information relating to activity that may be subject of determination under section 23 or 24		
(p) a statement of whether the applicant is seeking a determination under section 23 and, if so, an assessment of the effects of the activity on the relevant land and on the rights and interests of Māori in that land:	**N/A – not a referral application**	**-**
(q) a statement of whether the applicant is seeking a determination under section 24(2) and, if so, a description of— (i) the scale and adverse effects of the existing electricity infrastructure; and (ii) how, if at all, that scale or those adverse effects are anticipated or known to change as a result of the maintenance, upgrading, or continued operation of the infrastructure:	**N/A – no Schedule 4 land is affected by the proposal**	**-**
(r) a statement of whether the applicant is seeking a determination under section 24(4) and, if so,—	**N/A – new electricity lines associated with**	**-**

FTAA Substantive Application Information Requirement	Source Document	Document Section(s)
	the project are permitted.	
What is needed to complete the project		
(s) a description of the applicant's legal interest (if any), or if the referral application is lodged by more than 1 person, the legal interest of any of those persons (if any), in the land on which the project will occur, including a statement of how that affects the applicant's ability to undertake the work:	**AEE**	**Section 2.8.4.2 (Page 46) Re: Westpower's McLean Farm access agreement** **Section 2.8.4.4 (Page 47) Re: Access from LINZ across the beds of the Macgregor Creek and Waitaha River** **Section 4.2 (Pages: 121) Re: Access approvals being sought from DOC (Concessions)** **Subject to securing DOC Concessions (sought as part of this FTAA application) there will be no anticipated land access constraint affecting the ability for Westpower to undertake all works associated with the proposal.**
(t) an outline of the types of consents, certificates, designations, concessions, and other legal authorisations (other than contractual authorisations or the proposed approvals) that the applicant considers are needed to authorise the project, including any that the applicant considers may be needed by someone other than the applicant:	**AEE**	**Part A (pages ii – iv)** **Part B (Section 4) (Pages:104-145)**
Other matters		
(u) whether any activities that are involved in the project, or are substantially the same as those involved in the project, have been the subject of an application or a decision under a specified Act and,—	**AEE**	**Section 2.4.2 (Pages:19-20) describes the 2014 DOC concession application and the**

FTAA Substantive Application Information Requirement	Source Document	Document Section(s)
(i) if an application has been made, details of the application: (ii) if a decision has been made, the outcome of the decision and the reasons for it:		**outcome of that process under the Conservation Act.** **Section 3.5.1 (Pages:75-76) describes separate applications made for pre-construction geotechnical and geophysical activities associated with this project.**
(v) a description of whether and how the project would be affected by climate change and natural hazards:	**AEE**	**Natural hazards effects, including climate change effects on future flooding, are discussed in Section 6.21 (Pages: 306-308).**
(w) if the referral application is lodged by more than 1 person, a statement of each proposed approval to be held by each of those persons:	**N/A**	**-**
(x) a summary of compliance or enforcement actions (if any), and the outcome of those actions, taken against the applicant (or if the referral application is lodged by more than 1 person, any of those persons) under a specified Act:	**AEE**	**Section 2.2 (Page 13)**
Matters relating to specific proposed approvals		
(y) if the proposed approvals include— (i) an approval described in section 42(4)(a) or (d) (resource consent or designation), the information specified in clause 1A of Schedule 4 (ii) ..... (iii) ..... (iv) an approval described in section 42(4)(e) (concession), the information specified in clause 2 of Schedule 6: (v)	**Covered specifically below – See Section 43(3) (Information Requirements – Substantive Application)**	**-**

FTAA Substantive Application Information Requirement	Source Document	Document Section(s)
(vi) an approval described in section 42(4)(a) or (d) where the project includes a standard freshwater fisheries activity, or an approval described in section 42(4)(j) (complex freshwater fisheries activity approval), the information specified in clause 2 of Schedule 9: (vii) ..... (viii)		
Section 29 Identification of existing resource consent for same activity – pre-lodgement requirement		
(1) Before lodging a substantive application for a listed project, the authorised person for the project must— (a) consult the persons and groups referred to in section 11	**AEE**	**Sections 2.5.2 (Page 32), 2.8.2 (Page 41) and 2.8.3 (Pages: 41-45)**
Section 30 Identification of existing resource consent for same activity – pre-lodgement requirement		
(1) This section applies if— b) a substantive application for a listed project or a referred project is to seek an approval described in section 42(4)(a) (resource consent); and c) the authorised person for the project does not hold an existing resource consent for the same activity using some or all of the same natural resource.	**AEE**	**Section 2.5.3 (Pages: 32-33)**
(2) Before lodging the substantive application, the authorised person must notify in writing each consent authority that has jurisdiction over an area where the approval would apply.	**AEE**	**Section 2.5.3 (Pages:32-33) and AEE Appendix 4 - Section 30 request letters to WCRC and WDC.** **AEE Appendix 5 – Section 30 notices from WCRC and WDC**
Section 43 Requirements for substantive application		

FTAA Substantive Application Information Requirement	Source Document	Document Section(s)
(1) A substantive application— (a) must be lodged in the **form** and manner approved by the EPA; and	**Approved EPA Application form and relevant checklists completed and loaded onto the portal**	**-**
(b) must— (i) explain how the project to which the application relates is consistent with the purpose of this Act; or	**AEE**	**Section 2.3 (Pages: 14-18)**
(c) must demonstrate that the project does not involve any ineligible activities; and	**AEE**	**Section 2.5.7 (Page 34) and refer to Subpart 1 of Part 1 of the FTAA Application form.**
(d) must, if the application is lodged by more than 1 authorised person, state the proposed approval to be held by each person; and	**N/A – application lodged by 1 authorised person**	**-**
(e) must comply with— any information requirements specified by the Minister under section 27(3)(b)(ii) [Minister specifies matters for accepted referral application]; and	**N/A - No information requirements have been specified under section 27(3)(b)(ii).**	**-**
(i) the requirements listed in subsection (3) that apply to the approvals sought; and	**See comment for section 43(3) below.**	**-**
(f) must, if the authorised person has applied under section 39 [Minister may make determination] for a determination under section 23 [linear infrastructure on Māori land is not ineligible activity] or 24 [electricity infrastructure on Schedule 4 land is not ineligible activity], include a copy of the notice under section 39(4); and	**N/A - Section 39 determination under section 23 or 24 is not required for the project.**	**-**
(g) must, if the application seeks an approval for an activity that is the subject of a determination under section 23, set out the steps taken to secure the agreement referred to in section 5(1)(a); and	**N/A - No determination is**	**-**

FTAA Substantive Application Information Requirement	Source Document	Document Section(s)
	required under section 23 or 24 for the project.	
(h) must state whether the application relates to a priority project and, if so, include confirmation that, to the best of the applicant's knowledge, there are no competing applications; and	**N/A - The application does not relate to a priority project.**	
(i) must be made by the deadline specified in the notice under section 28(3)(d) [Minister may set deadline for lodging the substantive application]; and	**N/A – The Waitaha Hydro Project is a project listed in Schedule 2, there is no deadline notice under section 28(3)(d).**	**-**
(j) must not lodge a substantive application unless any fee, charge, or levy payable under regulations in respect of the application is paid.	**Westpower paid the lodgement fee and levy on 29 July (Remittance Advice No. S111551-2)**	**-**
(2) If a substantive application is for a listed project, it must also contain the information required by section 13(4) (other than section 13(4)(b), (f)(ii) and (iii), and (g)), which applies— a) as if the reference in section 13(4)(k) to section 11 were a reference to section 29 [pre-lodgement requirements for listed project]; and b) as if the reference in clause 2 of Schedule 11 to section 12(2) were a reference to section 29; and c) with any other necessary modifications.	**See above - As per section 13(4)**	
(3) The requirements referred to in subclause (1)(e)(ii) are those set out in,— (a) for an approval described in section 42(4)(a)(resource consent), clauses 5 to 8 of Schedule 5:	**AEE**	**See Part A Schedule B for where these matters are addressed**

FTAA Substantive Application Information Requirement	Source Document	Document Section(s)
(e) for an approval described in section 42(4)(e)(concession), clause 3 of Schedule 6:	**AEE**	**See Part A Schedule C for where these matters are addressed**
(h) for an approval described in section 42(4)(h) (wildlife approval), clause 1A of Schedule 6:	**AEE**	**See Part A Schedule D for where these matters are addressed**
(j) for an approval described in section 42(4)(j) (complex freshwater fisheries activity approval), clause 3 of Schedule 9	**AEE**	**See Part A Schedule E for where these matters are addressed**
(4) The EPA must approve an application form for the purposes of this section and ensure that it is made available on an internet site administered by or on behalf of the EPA.	**N/A**	**-**
44 Information must be specified in sufficient detail		
Information required by section 43 must be specified in sufficient detail to satisfy the purpose for which it is required	**AEE and all supporting Appendices (1 - 52)**	**All** **Overall Westpower considers the information set out in the AEE and supporting technical reports and management plans is of sufficient scope and detail to enable all required post lodgement reports to be prepared and to enable the Panel to make a decision.**

SCHEDULE B: Navigation Guidance Table for Information Required for the Resource Consent Approvals sought

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
Clause 2 Information about resource consent or notice of requirement required in referral application		
(1) The information required to be provided under section 13(4)(y)(i) is — a) an assessment of the project against— i) any relevant national policy statement; and	**AEE**	**Section 7.1.7 (Pages: 320-329) provides assessment against all relevant NPSs**
ii) any relevant national environmental standards; and	**AEE**	**Sections 4.1.1 (Pages: 104-110) and 7.1.6 (Pages: 319-320) provides assessments against all relevant NPSs and related regulations**
iii) if relevant, the New Zealand Coastal Policy Statement; and	**N/A**	**-**
b) in relation to any proposed approval that is a resource consent, whether, to the best of the applicant's knowledge, there are any existing resource consents of the kind referred to in section 30(3)(a)	**AEE**	**Section 2.5.3 (Pages: 32-33) and related Section 30 letters from WCRC and WDC in Appendix 5**
(2) If the referral application is to be lodged by more than 1 person, the reference to the applicant in subclause (1)(b) must be read as a reference to the person who is to be identified in the application as the proposed holder of the resource consent.	**N/A**	**-**
Clause 5 Information required in consent application		
(1) For the purposes of section 43(3)(a), a consent application must include the following information: (a) description of the proposed activity	**AEE**	**Section 3 (Pages: 52-103)**
	Project Overview Report (AEE Appendix 3)	**Appendix A - Project Description**

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
(b) a description and map of the site at which the activity is to occur, including whether the site is within or adjacent to -	**AEE**	**Figures 1 (page 9) and 24 (page 147)**
i. a statutory area (as defined in the relevant Treaty settlement Act); or	**N/A**	**-**
ii. ngā rohe moana o ngā hapū o Ngāti Porou; or	**N/A**	**-**
iii. a protected customary rights area under the Marine and Coastal Area (Takutai Moana) Act 2011; and	**N/A**	**-**
(c) confirmation that the consent application complies with section 46(2)(a), (b), and (d);—	**AEE**	**Regarding s46(2)(a)** **The proposal is not an ineligible activity (Section 2.5.7), it is a listed project (Waitaha Hydro Project) and complies with s42 (i.e. person applying is eligible to do so).** **The proposal also complies with s43 in terms of information requirements (Refer Part A Schedule A) and complies with 44 in terms of information being sufficiently detailed (Refer Part A Schedule A).** **Regarding s46(2)(b) – the project relates to a listed project (Waitaha Hydro Project).** **Regarding s46(2)(c) – the proposal is not an ineligible activity (Section 2.5.7 (Page 34)).** **Regarding s46(2)(d) – Westpower paid the required application fee and levy on 29 July – Remittance Advice No. S111551-2.**

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
(d) the full name and address of i. each owner of the site and of land adjacent to the site; and	**AEE**	**The land required for the project and respective landowner information is set out in Section 7 of Part A of the AEE (pages: v-vii).** **Regarding the Project's transmission line, which follows the Waitaha Road Reserve, SH6, Beach Road and Bold Head Road before connecting to the Waitaha Substation, given that a utility in a road corridor is permitted, any owners and occupiers of land adjacent to the transmission line do not have a particular and explicit interest in the Project. Further, from SH6 to the Waitaha Substation, there is no new transmission line (it is solely an upgrade of the existing line).**
ii. each occupier of the site and of land adjacent to the site whom the applicant is unable to identify after reasonable inquiry; and	**AEE**	**The only occupants relevant to the site are associated with the McLean Farm. [redacted] who has provided written approval (Refer Section 2.8.4 of the AEE (Pages: 46-49) and Appendix 12.** **There are no occupiers of land adjacent to the site whom the applicant is unable to identify after reasonable inquiry**
	AEE	**Section 3 (Pages: 52-103)**

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
(e) a description of any other activities that are part of the proposal to which the consent application relates; and		**Part A and Section 4 confirm that all necessary consents are being sought for the Project**
	Project Overview Report (AEE Appendix 3)	**Appendix A - Project Description**
(f) a description of any other resource consents, notices of requirement for designations, or alterations to designations required for the project to which the consent application relates; and	**AEE**	**Part A and Section 4 confirm that all necessary consents are being sought for the Project**
(g) an assessment of the activity against sections 5, 6, and 7 of the Resource Management Act 1991; and; and	**AEE**	**Refer to Section 7.1.15 (Part 2 Matters) (Pages: 345-350).**
(h) an assessment of the activity against any relevant provisions in any of the documents listed in subclause (2)	**AEE**	**Sections 7.1.6 (Pages: 319-320) to 7.1.12 (Pages: 338-344) and relevant detailed assessments provided in Appendix 51**
(i) information about any Treaty settlements that apply in the area covered by the consent application, including— i. identification of the relevant provisions in those Treaty settlements; and ii. a summary of any redress provided by those settlements that affects natural and physical resources relevant to the project or project area; and	**AEE**	**Section 5.2.3 (Pages: 152-156)**
(j) a list of any relevant customary marine title groups, protected customary rights groups, ngā hapū o Ngāti Porou (where an application is within, adjacent to or directly affecting ngā rohe moana o ngā hapū o Ngāti Porou), or applicants under the Marine and Coastal Area (Takutai Moana) Act 2011; and	**N/A**	**-**
(k) the conditions that the applicant proposes for the resource consent; and	**AEE**	**Section 6.23 (Pages: 310-311) and Appendix 45**

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
(l) if a notice under section 30(3)(b) or (5) has been received,— i. a copy of that notice showing that it was received within the time frame specified in section 30(6)(b); and ii. if a notice has been received under section 30(5), any more up-to-date information that the applicant is aware of about the existing resource consent referred to in the notice.	**AEE**	**Section 2.5.3 (Pages: 32-33) and notices received from WCRC and WDC in Appendix 5**
(2) The documents referred to in subclause (1)(h) are the following: (a) a national environmental standard: (b) other regulations made under the Resource Management Act 1991: (c) a national policy statement: (d) a New Zealand coastal policy statement: (e) a regional policy statement or proposed regional policy statement: (f) a plan or proposed plan: (g) a planning document recognised by a relevant iwi authority and lodged with a local authority.	**AEE**	**Sections 7.1.6 to 7.1.12 (Pages: 319-344) and relevant detailed assessments provided in Appendix 51**
(3) An assessment under subclause (1)(h) must include an assessment of the activity against— (a) any relevant objectives, policies, or rules in a document listed in subclause (2); and (b) any requirement, condition, or permission in any rules in any of those documents; and (c) any other requirements in any of those documents.	**AEE**	**Sections 4.1.1 (Pages: 104-110) and Sections 7.1.6 to 7.1.12 (Pages: 319-344) and relevant detailed assessments provided in Appendix 51**
(4) A consent application must include an assessment of the activity's effects on the environment that -	**AEE**	**Section 6 (Pages: 228-315)**
(a) includes the information required by clause 6; and	**See clause 6 Information below**	**-**

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
(b) covers the matters specified in clause 7.	**See clause 7 matters below**	**-**
(5) A consent application must also include the following information: (a) if a permitted activity is part of the proposal to which the consent application relates, a description that demonstrates that the activity complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1) of the Resource Management Act 1991); and	**AEE**	**Section 4.1.8 (Pages: 117-121)**
(b) and (c)	**N/A**	**-**
(6) If the applicant is not able to supply the name and address of the owner and each occupier of the site and of land adjacent to the site because the land is Māori land in multiple ownership, the applicant must include a statement to that effect.	**N/A**	**-**
Clause 6 Information required to assess environmental effects		
(1) The assessment of an activity's effects on the environment under clause 5(4) must include the following information: (a) an assessment of the actual or potential effects on the environment:	**AEE**	**Section 6 (pages 228-315) including Table 34 (Page 313) and related technical effects assessment reports (Appendices 15 to 32) and management plans (Appendices 33 to 41) referenced within.**
(b) if the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use:	**AEE**	**Sections 3.6.8 (Page 99) and 6.5.2 (Pages: 246-248) regarding management of stormwater contamination risks and spill response**

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
(c) if the activity includes the discharge of any contaminant, a description of— i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and ii) any possible alternative methods of discharge, including discharge into any other receiving environment:	**AEE**	**Contaminants discharged to ground are described in:** > **Section 3.5.7 (Page 84) and 3.5.8 (Pages: 84-86) – Earthworks and Sediment Controls;** > **Section 3.5.10 (Pages: 88-89) – spoil disposal; and** > **Section 3.5.12 (Page 91) – concrete batching** **Contaminants discharged to water are described in:** > **Section 3.5.7 (Pages: 84) and 3.5.8 (Pages: 84-86) – Earthworks and Sediment Controls;** > **Section 3.5.11 (Pages: 89-91) – Streamworks; and** > **3.5.13 (Pages: 91-93) – tunnelling and related discharges** **Sensitivity of the receiving environment is set out in Sections 5.15 to 5.21 (Pages: 178-211) and related technical reports referenced within (Appendices 18 to 25).** **Section 7.1.16 (Page 350) addresses alternative methods of discharge.**

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
	DRAFT Construction and Environmental Management Plan (CEMP) (Appendix 33)	**Section 8.11 and Appendix E – Dust Management Plan**
(d) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect of the activity:	**AEE**	**Section 6 (Pages: 228-315)**
	Management Plans (Appendices 33 to 41)	**All**
	Proffered consent conditions (Appendix 45).	**All**
(e) identification of persons who may be affected by the activity and any response to the views of any persons consulted, including the views of iwi or hapū that have been consulted in relation to the proposal	**AEE**	**Section 2.8 (Pages: 38-49) - Consultation**
(f) if iwi or hapū elect not to respond when consulted on the proposal, any reasons that they have specified for that decision:	**N/A – iwi / hapu are partners in the development and have provided letter of support.**	**-**
(g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how the effects will be monitored and by whom, if the activity is approved:	**AEE**	**Section 6 (as part of effects management information)**
	Management Plans	**Appendices 35 to 39 all include sections on monitoring and reporting requirements**
	Proffered consent conditions (Appendix 45)	**Part B - Condition 39 (Monitoring Plan)**
(h) an assessment of any effects of the activity on the exercise of a protected customary right	**N/A**	**-**

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
Clause 7 Matters to be covered in assessment of environmental effects (basically any effect) ALL RELEVANT TO WAITAHA		
The assessment of an activity's effects on the environment under clause 5(4) must cover the following matters: (a) any effect on the people in the neighbourhood and, if relevant, the wider community, including any social, economic, or cultural effects:	**AEE**	**Section 6.2 – Positive effects (Pages: 230-234)** **Section 6.3 – Cultural effects (Pages: 234-237)** **Section 6.16 – Traffic effects (Pages: 273-276)** **Section 6.17 – Noise effects (Pages: 276-280)** **Section 6.18 – Landscape and Visual effects (Pages: 280-297)** **Section 6.19 – Recreation effects (Pages: 297-305)** **Section 6.22 – Public safety effects (Pages: 308-310)**
(b) any physical effect on the locality, including landscape and visual effects:	**AEE**	**Section 6.18 – Landscape and Visual effects (Pages: 280-297)**
	Landscape Report (Appendix 27)	**All**
(c) any effect on ecosystems, including effects on plants or animals and physical disturbance of habitats in the vicinity:	**AEE**	**Sections 6.8 to 6.15 (Pages: 254-274)**
	Vegetation Report (Appendix 20)	**Vegetation Report Section 3 (Pages: 15-21) and Appendix F**

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
	Terrestrial Fauna Report (birds and bats) (Appendix 21)	**Section 5 (Pages: 8-12) and Appendix G**
	Whio Report (Appendix 22)	**Section 3 (Pages: 15-23) and Appendix F**
	Lizard Report (Appendix 24)	**Section 5 (Page 13)**
	Terrestrial Invertebrates Report (Appendix 23)	**Section 3 (Pages 10-12)**
	Aquatic Ecology Report (Appendix 25)	**Sections 3 (pages: 9-21), 19 and 20 (pages: 74-108)**
(d) any effect on natural and physical resources that have aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations:	**AEE**	**See (c) above, and:** **Section 6.3 – Cultural effects (Pages: 234-237)** **Section 6.18 – Landscape, natural character and amenity effects (Pages: 280-297)** **Section 6.19 – Recreation effects (Pages: 297-305)**
	Landscape Report (Appendix 27)	**Section 4 (Pages: 33-63)**
	Recreation Report (Appendix 28)	**Section 3 (Pages: 14-21) and Appendix F**
(e) any discharge of contaminants into the environment and options for the treatment and disposal of contaminants:	**AEE**	**Sections 3.5.7 (Page 84), 3.5.6 (Pages: 82-84) and 3.5.11 (Pages:**

RESOURCE CONSENTS Schedule 5	Source Document	Document Section(s)
		89-91) – Earthworks and Streamworks and construction related discharges **3.5.12 – Concrete batching (Page 91)** **Section 3.5.13 – Tunnelling related discharges and treatment (Pages: 19-93)** **Section 6.5 – Water quality effects (Pages: 244-248)**
(f) any unreasonable emission of noise:	**AEE**	**Section 6.17 – Noise effects (Pages: 276-280)**
	Noise Report (Appendix 29)	**Section 3 (Pages: 5-9)**
(g) any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations.	**AEE**	**Sections 3.6.8 (Pages: 99) and 6.5.2 (Pages: 246-248) regarding management of stormwater contamination risks and spill response.** **Section 6.21 (Pages: 306-307) regarding natural hazard risks and natural hazard effects management**
Clause 9 Information required in application including standard freshwater fisheries activity		
For the purposes of section 43(3)(a), a consent application for a project that includes a standard freshwater fisheries activity must include the information set out in clause 3 of Schedule 9.	**AEE**	**Refer to Part A Schedule E**

SCHEDULE C: Navigation Guidance Table for Information Required for the Concessions Approvals sought

CONCESSIONS Schedule 6	Source Document	Document Section(s)
Clause 2 Information about concession required in referral application		
(1) The information in subclause (2) is required to be provided under section 13(4)(y)(iv) if a proposed concession includes a lease and— a. the lease would be for a term (including any renewals) that will, or is likely to, be more than 50 years; and b. the granting of the lease would trigger a right of first refusal or a right of offer or return. (2) The information is confirmation that the applicant has written agreement from the holder of the right of first refusal or right of offer or return to waive that right for the purposes of the proposed lease. (3) If the referral application is to be lodged by more than 1 person, the reference to the applicant in subclause (2) must be read as a reference to the person who is to be identified in the application as the proposed holder of the concession.	**N/A – Westpower is seeking no more than a 49-year concession term**	-
Clause 3 Information required for application for concession		
(1) For the purposes of section 43(3)(e), an application for a concession must include— (a) a description of the proposed activity	**AEE**	**Section 3 (Pages: 52-103)**
	Project Overview Report (Appendix 3)	**Sections 4-8 (Pages 19-42)** **Appendix A - Project Description (Pages 48-84)**
(b) a description, maps, and GPS co-ordinates identifying the places where the proposed activity will be carried out (including the classification of those places, the ownership and management arrangements, and, if applicable, the name, of the places):	**AEE**	**Section 3 - Description (Pages: 52-103)** **Figures 1(page 9) and 24 (page 147) and Table 13 (Page: 121)**

CONCESSIONS Schedule 6	Source Document	Document Section(s)
		Part A Section 7 - Land details (page v-vii)
	Appendix 1 (Waitaha Hydro Project Location and Coordinates Register)	**All**
	Recreation Report (Appendix 28)	**Figures 3 (Page 8) and 4 (Page 9) the scheme in relation to DOC land**
(c) information about whether the project could reasonably be undertaken in another location, or in another conservation area or another part of the conservation area, where the potential adverse effects would be significantly less:	**AEE**	**Appendix 3 -Section 3.2 - Site Selections Studies (Pages: 52-54)**
	Project Overview Report (Appendix 3)	**Paragraphs 3.27-3.42 (Pages 10-14)** **Appendix B: Small Hydro Electric Potential of West Coast (Pages 85-223)** **Appendix C: Westpower Generation Development Strategy – Hydro Generation Scoping Study (Pages 224-260)**
	AEE	**Section 7.2.1.7 - CMS and the CGP Assessment (Page: 369)**

CONCESSIONS Schedule 6	Source Document	Document Section(s)
(d) in the case of an application for an approval within paragraph (a) of the definition of concession or paragraph (a) of the definition of Reserves Act approval, information about the extent to which the project is consistent with— i) the relevant conservation management strategy and conservation management plan ii) any conservation management strategies or conservation management plans that have been co-authored, authored, or approved by a Treaty settlement entity:	**Appendix 52 (Statutory Assessment – Conservation Management Strategy and Conservation General Policy)**	**All**
(e) in the case of an application for an approval within paragraph (b) of the definition of Reserves Act approval, information about the extent to which the project is consistent with any management plan approved under section 41 of the Reserves Act 1977:	**N/A – all reserves are avoided**	**-**
(f) information about the extent to which the project is in keeping with the purposes for which the land is held, status, ownership and administration:	**AEE**	**Section 7.2.1.7 - CMS and the CGP Assessment (Page 369) and Appendix 52**
(g) a description of— i) the potential effects (positive and negative) of the proposed activity:	**AEE**	**Section 6 (Pages: 228-315) and related technical effects assessment reports (Appendices 15 to 32) and management plans (Appendices 33 to 41) referenced within.**
ii) any actions that the applicant proposes to take to avoid, remedy, mitigate, offset, or compensate for any adverse effects of the proposed activity:	**AEE**	**Section 6 (Pages: 228-315) and related technical effects assessment reports (Appendices 15 to 32) and management plans (Appendices 33 to41) referenced within.**

CONCESSIONS Schedule 6	Source Document	Document Section(s)
iii) details of the type of concession for which the applicant is applying:	**AEE**	**Part A (page iv), Section 4.2 (Pages: 121-127) and Table 13 (Page: 121)**
(h) a statement of— i) the proposed duration of the concession; and ii) the reasons for the proposed duration:	**AEE**	**Part A and Section 4.2.2 (Page 128)**
(i) relevant information relating to the applicant, including any information relevant to their ability to carry out the proposed activity (including whether the applicant or any company director, trustee, partner, or any- one else involved with the application has been convicted of any offence or has any current criminal charges pending before a court):	**AEE**	**Section 2.2 (Page 13)**
	Appendix 3 Project Overview Report	**Paragraph 3.8** **Westpower's experience from the Amethyst Scheme noted throughout the report**
(j) if the applicant applies for a lease, a licence granting an interest in land, or an easement,— i) reasons for the request; and	**AEE**	**Section 4.2 (Pages: Pages: 121-127), Table 13 (Page 121) and Section 7.2.1.2 - Relevant provisions in Part 3B of the Conservation Act (Pages: 354-367)**
ii) sufficient information to satisfy the panel that, in terms of clause 7, it is appropriate under section 81 to grant the lease, licence, or easement (as the case may be):	**AEE**	**Section 7.2.1 - Decision making criteria (Pages: 354-369)** **Also refer to Clause 7 below**
(k) full details of any consultation undertaken with relevant iwi and with reserve owners and managers:	**AEE**	**Section 2.8.1 and Section 2.8.2 (Pages: 38-41)**

CONCESSIONS Schedule 6	Source Document	Document Section(s)
	Partnership Report (Appendix 14)	**Section 4 (pages: 3-4)**
	Letter from Poutini Ngāi Tahu (Appendix 8)	**All**
(l) information about financial and legal liabilities and obligations associated with the land.	**AEE**	**Appendix 2 (Records of Title)**
(m) in the case of an application for an approval referred to in paragraph (b) of the definition of Reserves Act approval where the reserve is owned or managed by a local authority, confirmation that the local authority has provided written agreement for the activity to be undertaken on the reserve:	**N/A – Reserves are avoided**	**-**
(n) confirmation that the applicant has written agreement from the holder of a right of first refusal or right of offer or return to waive that right for the purposes of any lease proposed in the application if— i) the proposed lease would be for a term (including any renewals) that will or is likely to be more than 50 years; and ii) the granting of the lease would trigger the right of first refusal or right of offer or return.	**N/A – Westpower is seeking no more than a 49-year concession term**	**-**
(2) If the substantive application is to be lodged by more than 1 authorised person, the references to the applicant in subclause (1)(g)(ii), (i), and (n) must be read as references to the authorised person who is to be identified in the application as the proposed holder of the concession.	**N/A – Westpower is sole applicant**	**-**

SCHEDULE D: Navigation Guidance Table for Information Required for the Wildlife Act Approvals sought

WILDLIFE ACT APPROVALS Schedule 7	Source Document	Document Section(s)
Clause 2 Information required for application for wildlife approval		
(1) For the purposes of section 43(3)(h), an application for a wildlife approval must— (a) specify the purpose of the proposed activity	**AEE**	**Part A (Page iv) and Section 4.3.1 (Pages: 128-129)**
(b) identify the actions the applicant wishes to carry out involving protected wildlife and where they will be carried out (whether on or off public conservation land):	**AEE**	**Section 6.9 - Managing effects on bats (Pages: 256-259)** **Section 6.10 Managing effects on birds including whio (Pages: 259-265)** **Section 6.12 - Managing effects on lizards (Pages: 259-266)**
	Proposed conditions – Wildlife Approvals (Appendix 47)	**Schedule 6 (map of land covered by approvals)**
	Bat Management Plan (Appendix 37)	**Sections 2, 3 & 4 (Pages: 2-6)**
	Avifauna Management Plan (Appendix 36)	**Section 4 (Pages: 7-14)**
	Lizard Management Plan (Appendix 38)	**Sections 3 and 4 (Pages: 16-24)** **Section 2 – confirms where the actions will be carried out - specifically 2.3 (Pages 15-16) and a description of these areas is included in 2.1 (Pages 3-13)**

WILDLIFE ACT APPROVALS Schedule 7	Source Document	Document Section(s)
(c) include an assessment of the activity and its impacts against the purpose of the Wildlife Act	**AEE**	**Section 7.3.2 (Pages: 373-376) sets out the proposal in terms of the purpose of the Wildlife Act.**
(d) list protected wildlife species known or predicted to be in the area and, where possible, the numbers of wildlife present and numbers likely to be impacted:	**AEE**	**Section 4.3.2 (Pages: 129-134) and Table 15 (Page 130)**
(e) outline impacts on threatened, data deficient, and at-risk wildlife species (as defined in the New Zealand Threat Classification System):	**AEE**	**Section 6.9 - Effects on bats (Pages: 256-259)** **Section 6.10 - Effects on birds (including whio) (Pages: 259-265)** **Section 6.12 - Effects on lizards (Pages: 265-266)**
(f) state how the methods proposed to be used to conduct the actions specified under paragraph (b) will ensure that best practice standards are met	**The Bat Management Plan (Appendix 37)**	**Section 2 (Pages: 2-7) (Noting some minor variations or clarifications to the Bat Protocols are proposed to reflect the context and circumstances of the Project area (being: lower quality bat habitat than its surrounds; and the local weather conditions)).**
	Avifauna Management Plan (Appendix 36)	**Section 4 (Pages: 7-14)**
	Lizard Management Plan (Appendix 38)	**Sections 3 and 4 (Pages: 16-24)**
	Bat Management Plan (Appendix 37)	**Section 2.3 (Page: 5)**

WILDLIFE ACT APPROVALS Schedule 7	Source Document	Document Section(s)
(g) describe the methods to be used to safely, efficiently, and humanely catch, hold, or kill the animals and identify relevant animal ethics processes:	**Avifauna Management Plan (Appendix 36)**	**Section 4.3 (Pages: 12-13)**
	Lizard Management Plan (Appendix 38)	**Sections 3.4 (Page: 21) and 4 (Pages: 22-23)**
(h) state the location or locations in which the activity will be carried out, including a map (and GPS co-ordinates if available):	**Proposed conditions – Wildlife Approvals (Appendix 47)**	**Schedule 6 (map of land covered by approvals)**
	Waitaha Hydro Project Location and Coordinates Register (Appendix 1)	**Includes coordinates of scheme components**
	The Bat Management Plan (Appendix 37)	**Section 1 (Page: 1) – BMP applies to Schemes' construction footprint described in Vegetation Report (Appendix 20)**
	Avifauna Management Plan (Appendix 36)	**Sections 1 and 2 (Pages: 1-2) – AMP applies to Schemes' construction footprint described in Vegetation Report (Appendix 20)**
	The Lizard Management Plan (Appendix 38)	**Figures 2 to 7 (Pages: 6-11)**
(i) state whether authorisation is sought to temporarily hold or relocate wildlife:	**AEE**	**Part A (Page iv) and Section 4.3.1 (Pages: 128-129)**
(j) list all actual and potential wildlife effects (adverse or positive) of the proposed activity, including effects on the target species, other indigenous species, and the ecosystems at the site:	**AEE**	**Section 6.9 - Effects on bats (Pages: 256-259)** **Section 6.10 - Effects on birds (including whio) (Pages: 259-265)**

WILDLIFE ACT APPROVALS Schedule 7	Source Document	Document Section(s)
		Section 6.12 - Effects on lizards (Pages: 265-266)
	Terrestrial Fauna (Appendix 21)	**Section 5 (Pages 8-12)** **Appendix G (Pages 127-142) – further detail**
	Whio Report (Appendix 22)	**Section 3 (Pages 15-23)** **Appendix F (Pages 66-91) – further detail**
	Lizard Report (Appendix 24)	**Section 5 (Page 13)**
(k) where adverse effects are identified, state what methods will be used to avoid and minimise those effects, and any offsetting or compensation proposed to address unmitigated adverse effects (including steps taken before the project begins, such as surveying, salvaging, and relocating protected wildlife):	**AEE**	**Section 6.9 - Management of effects on bats (Pages: 256-259)** **Section 6.10 - Management of effects on birds (including whio) (Pages: 259-265)** **Section 6.12 - Management of effects on lizards (Pages: 265-266)**
	Bat Management Plan (Appendix 37)	**Whole document**
	Avifauna Management Plan (Appendix 36)	**Whole document**
	Lizard Management Plan (Appendix 38)	**Sections 3-5 (Pages 16-24)**
(l) state whether the applicant or any company director, trustee, partner, or anyone else involved with the application has been convicted of any offence under the Wildlife Act:	**AEE**	**Section 2.2 (Page 13)**

WILDLIFE ACT APPROVALS Schedule 7	Source Document	Document Section(s)
(m) state whether the applicant or any of the company director, trustee, partner, or anyone else involved with the application has any current criminal charges under the Wildlife Act pending before a court:	**AEE**	**Section 2.2 (Page 13)**
(n) provide proof and details of all consultation, including with hapū or iwi, on the application specific to wildlife impacts:	**AEE**	**Section 2.8 (Pages: 38-49)**
	Feedback from DOC (Appendix 9)	**Whole document**
	Partnership Report (Appendix 14)	**Whole report**
	Letter from Poutini Ngāi Tahu (Appendix 8)	**Whole document**
(o) provide any additional written expert views, advice, or opinions the applicant has obtained concerning their proposal.	**Terrestrial Fauna Report (Appendix 21) (including bats)**	**Whole report**
	Whio Report (Appendix 22)	**Whole report**
	Lizard Report (Appendix 24)	**Whole report**

SCHEDULE E: Navigation Guidance Table for Information Required for the Complex Freshwater Fishery Activities Approvals sought

COMPLEX FRESHWATER FISHERIES APPROVALS Schedule 9	Source Document	Document Section(s) / Page Number(s).
Clause 2 Information required in referral application including standard or complex freshwater fisheries activity		
The information required to be provided under section 13(4)(y)(vi) is the following: (a) whether an in-stream structure is proposed (including formal notification of any dam or diversion structure) and the extent to which this may impede fish passage; and	**AEE**	**Sections 2.1.1 - Project Description Summary and Layout (Pages: 9-11) and Section 3.3.1 – Headworks (Pages: 58-59) confirms the scheme's requirement for an in-stream diversion weir** **Section 3.3.8 (Pages: 68-70) describes other in-stream structures required including culverts and river training structures** **None of the in-stream structures will impede fish passage, with the exception of the weir where it is essential that fish passage is impeded for all species other than kōaro.**
(b) whether any fish salvage activities or other complex freshwater fisheries activities are proposed.	**AEE**	**Section 3.5.11.1 (Pages: 89-90)** **The Scheme may involve fish salvage activities at the tailrace (prior to station flows ceasing) and potentially during Streamworks when culverts are installed.** **Section 4.4.2 (Pages: 137-144) sets out the complex freshwater fishery activities required for the Project**
Clause 3 Information required in application for complex freshwater fisheries activity approval		

COMPLEX FRESHWATER FISHERIES APPROVALS Schedule 9	Source Document	Document Section(s) / Page Number(s).
For the purpose of section 43(3)(j), an application for a complex freshwater fisheries activity approval must include the following information: (a) in relation to the structure and any fish facility: (i) a description of the type of structure or fish facility: (ii) the dimensions of the structure or fish facility: (iii) the design of the structure or fish facility: (iv) the placement of the structure or fish facility: (v) the water flows: (vi) the operating regime	**Proposed conditions – Complex Freshwater Fishery Activities (Appendix 48)**	**Whole document**
(b) the freshwater species and values present (with particular focus on threatened, data-deficient, and at-risk species as defined in the New Zealand Threat Classification System):	**AEE**	**Section 5.21.3 (Pages: 208-210) and Table 26 (fish species present) (Page: 210)**
	Freshwater Ecology Report (Appendix 25)	**Section 2 (Pages 3-8)** **Sections 12-18 (Pages 50-73) - further information on existing environment, investigations, values and significance**
(c) the water quality and quantity in the surrounding habitat (at the proposed structure location, upstream and downstream):	**AEE**	**Section 5.18 - Water quality (Page 184)** **Section 5.16 – Hydrology (Pages: 179-183)** **Section 5.19 - Sediment transport (Pages: 185-187)**

COMPLEX FRESHWATER FISHERIES APPROVALS Schedule 9	Source Document	Document Section(s) / Page Number(s).
	Freshwater Ecology Report (Appendix 25)	**Appendix D (water quality)**
	Hydrology Report (Appendix 18)	**Appendix C (detail of the existing environment)**
	Sediment Report (Appendix 19)	**Appendix D1 (Natural river turbidity and sediment load)**
(d) how the passage of fish will be provided for or impeded.	**AEE**	**Section 6.15.1 - Effects on aquatic ecology during construction (Pages: 269-270)** **Section 6.15.2 - Effects on aquatic ecology during operation (Pages: 270-274)**
	Suggested Conditions (Appendix 48)	> **Condition 4 (Freshwater ecology management plan)** > **Conditions 5-7 (weir and intake structure)** > **Conditions 8 and 9 (fish passage)**
	Freshwater Ecology Report (Appendix 25)	**Section 3.6 (Page 10) and 4.6 (fish passage during in-channel works) (Page 23)**

COMPLEX FRESHWATER FISHERIES APPROVALS Schedule 9	Source Document	Document Section(s) / Page Number(s).
		Section 3.16 (Page 19) and 4.16 (fish passage at weir intake structure) (Page 25) Section 3.17 (Pages: 19-20) and 4.17 (fish passage at tributary waterway crossings) (Page 25)
	Freshwater Ecology Management Plan (Appendix 39)	Sections 4 and 5 (Pages 9-15)

B

PART B

Assessment of Environmental Effects

1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

Westpower Limited ("**Westpower**") proposes a run-of-river hydro-electric power scheme ("**the Scheme**" or "**the Project**") on the Waitaha River on the West Coast of the South Island. Having been confirmed as a listed project[7], Westpower is applying under the Fast-track Approvals Act 2024 ("**FTAA**" or "**the Act**") for all necessary authorisations for the Project's construction, operation and maintenance ("**the Approvals**"). In summary, the Approvals required include:

- Resource consents (district and regional) that would otherwise be applied for under the Resource Management Act 1991 ("**RMA"**) (s42(4)(a)) including any consents required by a National Environmental Standard;
- Concession(s) that would otherwise be applied for under the Conservation Act 1987 (s42(4)(e));
- Wildlife approvals that would otherwise be authorities applied for under the Wildlife Act 1953 (s42(4)(h)); and
- Complex freshwater fisheries activity approvals that would otherwise be applied for under regulation 42 or 43 of the Fisheries Regulations (s42(4)(j)).

1.2 THE PROPOSED SCHEME

The Project is a run-of-river Hydro Scheme with no in-stream or off-stream storage, a low-profile weir and intake structure at the top of Morgan Gorge that diverts up to 23 m^3/s of Waitaha River water into a pressurised water tunnel, to a 23MW Power Station located below Morgan Gorge.

The weir has been carefully designed to avoid upstream inundation of Kiwi Flat (an important habitat for whio (blue duck)) and to maintain existing fish passage for kōaro into Kiwi Flat, while ensuring salmonids (for example, trout) are excluded from this habitat (as is currently the case). The intake design will also provide for safe downstream portage for kayakers.

The Scheme will be operated so that no less than 3.5 m^3/s of flow is retained in the Waitaha River between the weir and the Power Station tailrace (the "**abstraction reach**"). The abstraction reach will be approximately 2.5 km long.

[7] Schedule 2 of the Fast Track Act (2024).

Construction and maintenance access to the top of the Scheme will be via an access tunnel running parallel to the pressurised diversion tunnel.

It is anticipated the Scheme will generate between 120 and 140 GWh per year – providing renewable electricity sufficient to power approximately 12,000 New Zealand homes.

The Project also includes ancillary access roads, new 66kV transmission lines and additional switching gear to connect the Power Station to the local network via the existing Waitaha Substation.

The Scheme's Headworks, tunnels, Power Station Site and parts of the Power Station access road and transmission corridor are located on Stewardship Land administered by the Department of Conservation ("**DOC**"). Other parts of the site access road and transmission lines traverse the McLean Farm while the remaining transmission line corridor follows the Waitaha Road, before heading west following State Highway 6 ("**SH6**"), then along Beach and Bold Head Road to connect with Waitaha Substation.

1.3 REGIONAL AND NATIONAL PROJECT BENEFITS

The Waitaha Hydro Project will provide significant benefits to the West Coast region and the nation. In very broad terms these benefits include:

- A construction cost of over $200 million, with an estimated spend of $80-100 million in Westland, and a spend of $110-138 million across the West Coast associated with the Project's 3.5 year construction phase;
- An average extra 71 full time equivalent construction jobs with wages and salaries paid of around $8.7 million for each year of construction;
- Once operational it will assist in meeting regional and national increases in forecasted electricity demand;
- A significant increase to the resilience of the Westpower electricity supply network, during times of interrupted National Grid supply to the region;
- Important climate change benefits in terms of reduced emissions, thereby contributing to New Zealand's emission reduction targets and climate change goals (including protecting biodiversity);
- Enablement and support for the decarbonisation of other parts of the regional and national economy (e.g. Westland Dairy);
- Additional income for Westpower and Poutini Ngāi Tahu (mana whenua) who are partners in the development;

- Reduced transmission line losses from an additional supply of electricity that is generated much closer to consumers and lower costs for electricity generation and supply; and
- Improved resource use efficiency by increasing the geographic diversity of supply of electricity from hydro-generating stations.

1.4 CULTURAL CONTEXT

The Scheme lies within the takiwā of iwi Ngāi Tahu and is not located in or adjacent to any statutory acknowledgement areas listed under the Ngāi Tahu Claims Settlement Act 1998.

At the local level, the Waitaha Hydro Scheme lies within the rohe of Ngāti Waewae and Ngāti Makaawhio. Both have strong connections to each other and have combined representation via Poutini Ngāi Tahu – the entity that exercises tino rangatiratanga within, and kaitiakitanga of, the natural and physical resources on the West Coast, including the Waitaha River.

Of significant importance is that Westpower and Poutini Ngāi Tahu are partners on the Waitaha Hydro Project partnership. Subject to necessary and workable Approvals being granted for the Project, an agreement has been reached between the two parties that provides for Poutini Ngāi Tahu to have a financial interest in it. In addition to this Project partnership agreement, Poutini Ngāi Tahu have provided written support for this application, and more particularly they:

- Have confirmed to Westpower that they do not require undertaking a Cultural Impact Assessment of the Project;
- Consider the Project will provide opportunities for them to reconnect with their whenua and benefit economically from the Project;
- Consider the Project represents a shared view between them and Westpower to protect and advance the interests of the West Coast, including its economy and its environment;
- Consider the Project aligns with the Ngāi Tahu Climate Change strategy “He Rautaki mō te Huringa o te Āhuarangi”, and in particular, its promotion of renewable energy as an important part of the climate change solution;
- Consider the Project is consistent with the relevant principles and provisions of their Treaty settlement (as reflected in the deed of settlement and Ngāi Tahu Claims Settlement Act 1998); and
- Consider the project is consistent with their Mana Whakahono a Rohe with West Coast Regional Council and other relevant documents.

1.5 PROJECT BACKGROUND

The Waitaha Scheme has been in a project development phase for approximately two decades, such that the final proposal represents the culmination of the following notable inputs:

- Westpower's successful experience with the operational Amethyst Hydro Scheme;
- Robust design and site location optioneering investigations;
- Feedback from comprehensive consultation that Westpower has had with mana whenua, DOC, District and Regional Councils, and the local community;
- Advice and guidance from a wide range of respected experts who have assisted with enhancing and fine-tuning the design of the project, identifying and assessing its environmental effects and recommending methods to avoid, remedy or mitigate these effects; and
- Related to the above, an iterative process of refining and amending the project design to respond to and reduce its effects on the environment.

Westpower has also, unsuccessfully, previously applied for DOC concessions for a slightly differently designed Scheme to what is proposed in this FTAA application. This previous process is summarised in sections 2.4.2 and 2.4.3 below.

1.6 ASSESSMENT OF EFFECTS

The assessment of effects associated with the Scheme are summarised in the following table.

Topic	Overall Post Mitigation Assessment of Effect	
	During Construction (temporary)	During Operation
Economic Benefits and Other Positive Effects	Positive	Positive – Significant
Cultural	Adverse – No more than minor.	Positive – Significant
Hydrology and Flow Regime	Nil	Adverse – No more than minor
Water Quality	Adverse – No more than minor	Adverse – No more than minor

Topic	Overall Post Mitigation Assessment of Effect	
	During Construction (temporary)	During Operation
Gravel extraction	Adverse – No more than minor	Adverse – No more than minor
Sediment transport and river morphology	Adverse – Less than minor	Adverse – No more than minor
Indigenous Vegetation	Adverse – No more than minor	Adverse – Less than minor
Bats	Adverse – No more than minor	Adverse – less than minor
Whio	Adverse – Less than minor	Potentially positive with implementation of proposed ecosystem programme.
Birds	Adverse – No more than minor	Potentially positive with implementation of proposed ecosystem programme.
Lizards	Adverse – Minor	Potentially positive with implementation of proposed ecosystem programme.
Terrestrial Invertebrates	Adverse – Less than minor	Adverse – Less than minor
Construction phase discharges	Adverse – Less than minor	Adverse – Less than minor
Aquatic Ecology	Adverse – Less than minor	Adverse – No more than minor
Traffic	Adverse – Less than minor	De-minimis
Noise	Adverse – No more than minor	Adverse - Less than minor
Landscape, Natural Character and Visual Effects	Adverse – More than minor (local scale and temporary)	Local Scale: Adverse – More than minor Broad Scale: Adverse - No more than minor

Topic	Overall Post Mitigation Assessment of Effect	
	During Construction (temporary)	During Operation
Recreation	Adverse – Significant but temporary	Recreation Opportunities: Nil Recreation Values: Adverse – Significant (local scale only)
Geotechnical	Adverse – Less than minor	Adverse – Less than minor
Natural Hazard Effects	Adverse – Less than minor	Adverse – Less than minor
Public River Safety	Adverse – Less than minor	Adverse – Less than minor

On different, but interconnected levels, the proposed Waitaha Hydro Scheme represents a strategically important development for the Westland District and West Coast Region, as well as the wider New Zealand community. It will deliver much needed energy resilience to the West Coast along with a range of economic benefits while also contributing to the nation's efforts to decarbonise and, in turn, deliver a range of other consequential environmental, social and cultural benefits.

Comprehensive assessments of the Scheme's environmental effects confirm that, with appropriate mitigation measures, the vast majority of environmental effects associated with its construction and ongoing operation and maintenance will be no more than minor.

Some adverse natural character, landscape and visual amenity are considered "more than minor" at the localised scale but none are considered "significant". For recreation effects, those related to the construction phase are considered significant, but temporary. During the Scheme's operation, recreation effects are also assessed as significant, however, because the Scheme does not impact on recreation opportunities, particularly with Westpower's agreement with Whitewater New Zealand ("**WWNZ**") now confirmed, these effects are largely perceptual changes to the "back country remote" experience (a metaphysical effect[8]) for which the area is managed. To address and minimise the potential perceptual change to recreationalists around the Power Station and headworks, two

[8] The assessment of natural character in the Landscape Report evaluates the components of 'naturalness' which Boffa Miskell describe as to be assessed on a continuum of 'modified' to 'pristine'. The metaphysical effect is about impacts on the inherent qualities and attributes of a thing or place that are considered to be derived from nature, rather than human influence or intervention.

additional proposals in the Proposed Conditions are: re-routing of a recreation track to minimise the views of construction and structures; and compensation for hut and track maintenance.

For some recreationists, the perception of a controlled river through human structures will be a significant adverse effect. For some visitors the structures will more positively reflect modern renewable generation, and the adverse effect (if any, or not positive) will be lower. Recreation effects at a wider scale, beyond Kiwi Flat and the abstraction reach, diminish quickly up the valley but some people will always retain a perceptual effect even if they cannot see the Scheme, or do not pass it, just by knowing that part of the river is controlled. The scale of the Project is miniscule in relation to the amount of back country remote experience land within the Hokitika Place, and is significantly lower still at a regional level.

This perceptual effect for recreationists is reflected also within the assessment of effects on local landscape. Natural character, local landscape and visual effects were all assessed at the headworks as being more than minor. For these matters, key design mitigations are the low weir profile and careful infrastructure placement (with significant works located underground) to reduce the scale of the Scheme footprint, and additional mitigations are proposed through the management plans.

As part of this proposal, to address residual adverse construction related effects on whio and forest birds, and to address strict Wildlife Act requirements regarding the population levels of bats, Westpower is also offering an ecosystem compensation package. This is focussed on supporting, in the medium term (i.e. in the first 10 years following construction commencing), regional whio and bat populations, and for the remaining duration of the site's resource consents, financially supporting an ecosystem programme to positively contribute towards the West Coast region or Waitaha Valley ecosystems. Accordingly, and due to some beneficial aspects of the Project for local fauna, the specialist ecologists conclude there are also some potential positive effects that may accrue for native fauna over time.[9]

As agreed with Whitewater New Zealand, Westpower also commits to a financial compensation package in respect of kayaking impacts. Further, as proposed in the

[9] See Whio Report, Lizard Report, Terrestrial Fauna Report. There are other positive effects recorded in the Terrestrial and Whio Reports. For example, for whio, there is the potential for the weir and abstraction reach to contribute positively to whio habitat by implementing the careful design features proposed. This relates to whether the kōaro passage can provide for whio duckling access to Kiwi Flat (but create a barrier for trout) and due to the prediction that the lower abstraction flow may increase whio feeding habitat (noting the less than minor risks from the change in flow at the abstraction reach), as described in Table 2 of the Whio Report.

Recreation Report, Westpower proffers a $25,000 payment to an organisation (such as DOC) for track and hut maintenance in the Upper Waitaha Valley.

In relation to the adverse recreation effects identified as significant, given these are local scale and perceptual in nature, it is considered these "amenity" type of effects are more appropriately addressed in the Landscape Report – which concludes local scale effects of this type to be more than minor, but not significant. Regardless, even if these effects are considered significant, they fall well short of being sufficiently significant to be out of proportion to the Project's regional or national benefits, especially when giving proper weight to the purpose of the FTAA and after taking into account Westpower's proposed Approvals conditions.

Overall, the adverse environmental effects associated with this proposal are acceptable and the various positive economic and tangible cultural benefits that would be realised if it proceeds are significant.

1.7 STATUTORY ASSESSMENTS

When considered "in the round", the Project is consistent with relevant planning provisions and statutory tests that the proposal would otherwise be assessed against via conventional RMA consenting, Conservation Act concession, wildlife approval and freshwater fishery activity application processes.

1.8 SUMMARY

The Waitaha Hydro Project application satisfies the relevant tests under the FTAA and demonstrably meets the purpose of the FTAA. The Panel can be satisfied that the Approvals can be granted on the conditions proposed.

2. INTRODUCTION

The Scheme is located on the Waitaha River located approximately 60 km southwest of Hokitika[10] on the West Coast of the South Island, New Zealand (**Figure 1**).

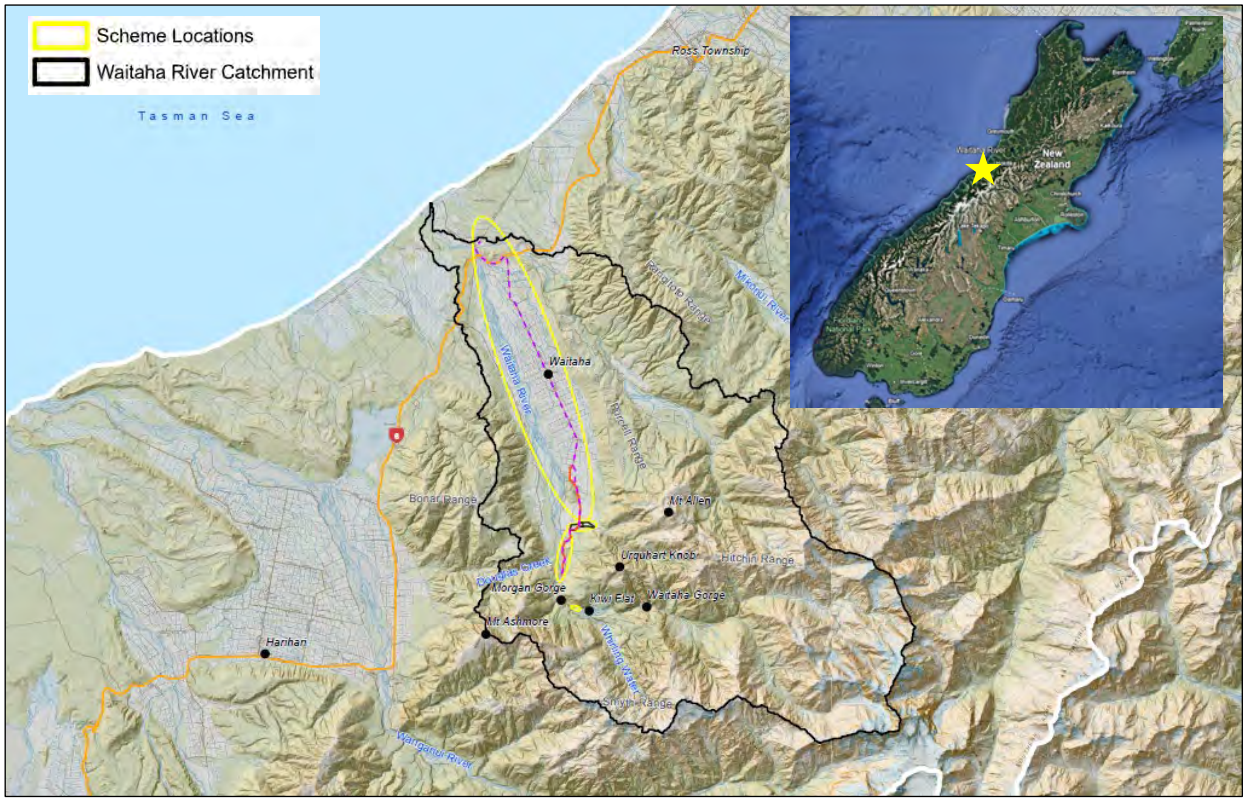


Figure 1: Site Location

2.1 PROPOSAL OVERVIEW

2.1.1 Project Description Summary and Layout

The proposed layout of the Hydro Scheme is shown in **Figure 2** while the Project Overview Report (provided in **Appendix 3**) and the Project Description (which forms part of the Project Overview Report), describe the Scheme in progressively increasing levels of detail. Section 3 of this AEE also provides a description of the Project. For introductory purposes, an overview of the Waitaha Hydro Project is presented below.

[10] Measured using local roads and tracks to the Power Station Site

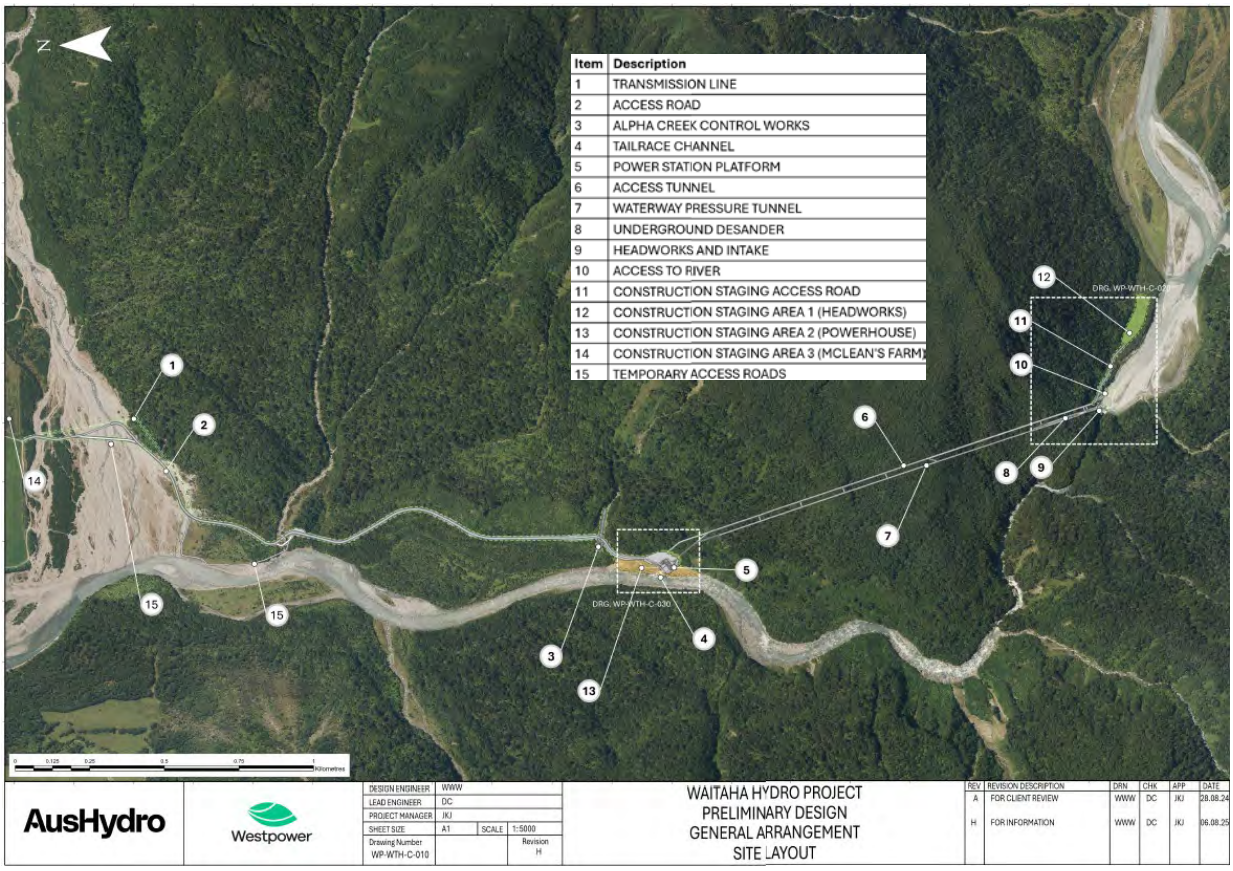


Figure 2: High-Level Plan Showing Hydro Scheme Layout and Key Components

In summary, the Project is a run-of-river Scheme with no in-stream or off-stream storage. The proposed Headworks include a low-profile weir and intake structure situated at the top of Morgan Gorge that will divert up to 23 m^3/s of water into a pressurised water tunnel designed to convey the water firstly into a desander where sediment material is removed, and then down to a Power Station located below Morgan Gorge.

The weir has been designed to avoid any notable upstream inundation of Kiwi Flat (an important habitat for whio (blue duck)). The weir design will also maintain existing fish passage for kōaro (and may create whio duckling access), ensure trout continue to be excluded from habitats located above Morgan Gorge, and also provide downstream portage for kayakers.

The Power Station will include two turbines and generation equipment with an installed peak output of 23MW. It is anticipated the Scheme will generate between 120 and 140 GWh per year – providing an equivalent amount of renewable electricity to power approximately 12,000 New Zealand homes. Once the diverted water has passed through the Power Station, it is returned to the Waitaha River via a tailrace near the confluence with Alpha Creek.

The Scheme will also be operated so that no less than 3.5 m^3/s of flow is retained in the Waitaha River between the Headworks and the Power Station tailrace (the "**abstraction reach**"). This proposed minimum residual flow has been determined using the in-stream Flow Incremental Methodology ("**IFIM**")[11]. IFIM is a widely used method to ensure sustainable river management while minimising conflicts between ecological preservation and economic development. The abstraction reach will be approximately 2.5 km long, including Morgan Gorge at its upstream end.

Construction and maintenance access to the Headworks will be via an access tunnel running parallel to the pressurised water tunnel. The Project also includes an access road between the Power Station and Anderson Road (near its intersection with the southern end of Waitaha Road) and a new 66kV transmission line between the Power Station and the existing Waitaha Substation (part of the Westpower network). Existing transmission and connection infrastructure, from near the northern end of Waitaha Road (at State Highway 6 ("**SH6**")) through to, and including, the Waitaha Substation, will be upgraded as part of the Project.

The Scheme's Headworks, tunnels, Power Station Site and parts of the Power Station access road and transmission corridor south of Macgregor Creek, are all located on Stewardship Land administered by the Department of Conservation ("**DOC**"). North of Macgregor Creek, the site access road traverses private land (the McLean Farm) to connect with Anderson Road. The section of transmission line north of Macgregor Creek also traverses the McLean Farm. Upgraded transmission lines follow the Waitaha Road, before heading west following SH6, then along Beach and Bold Head Road where they connect with the Waitaha Substation.

2.1.2 Key Construction Activities

Construction of the Scheme is expected to take between three and a half and four years to complete. The construction phase of the Project is also when disturbances to the local environment are highest, and consequently, is the period when adverse effects on physical environmental components are most noticeable. Accordingly, Westpower and their technical experts have put a lot of effort into identifying and assessing construction related activities and developing management methods to avoid or minimise associated impacts (discussed later in section 3).

[11] Cawthron Institute Report No. 2306 (September 2013)

In summary, the key construction activities associated with the Project include:

- Establishing sediment controls and Construction Staging Areas;
- Establishing a site access road between Anderson Road and the Power Station Site;
- Extracting local land-based and riverbed gravels for access road construction;
- Establishing an 11kV power supply to the Power Station Site for construction activities;
- Vegetation clearance;
- Earthworks;
- Tunnelling, including a dedicated surface water supply;
- Vegetation and tunnel spoil disposal to land;
- Concrete batching including a dedicated surface water supply;
- Stream Works associated with the construction of various in-stream structures including the diversion weir and other parts of the Scheme's Headworks, culverts, temporary access track to the site of the Granite Creek bridges (temporary and permanent), Alpha Creek flow control structures and the Power Station tailrace;
- Helicopter trips;
- Establishing the Power Station Site and associated 66kV transmission lines;
- Construction of new switching equipment at the Waitaha Substation; and
- Rehabilitation.

2.1.3 Key Operational Activities

Once constructed and commissioned, the Scheme's operational activities are generally limited to ongoing diversion of Waitaha River flows for hydro-electric generation, ongoing discharges of these flows back into the Waitaha River from the Power Station and related maintenance activities including intermittent Stream Works to clear bed material upstream of in-stream structures.

Normal operation will also involve intermittent discharges associated with flushing the Scheme's desander and, depending on the results of proposed trials, may also involve periodic flushing flows down Morgan Gorge for the purpose of clearing any settled fine sediment and / or any build-up of periphyton in this part of the Waitaha River.

In the rare event of a Power Station trip, and the consequential cessation of flows through the Scheme, a bypass valve located at the Power Station will also be opened to reduce the rates of associated river flow change downstream of the weir and Power Station tailrace.

2.2 THE APPLICANT

Westpower is a 100% West Coast community owned company with its head office in Greymouth. The West Coast Electric Power Trust was formed as a consequence of the passing of the Energy Companies Act 1992. The Trustees, elected by the community every two years, hold the shares of Westpower on behalf of the consumers (also referred to as shareholders) of Westpower.

In 1999, Westpower was required by the Electricity Industry Reform Act 1998 to sell its electricity generation assets. The assets at that time included the: Kumara – Dillmans – Duffers Scheme; Arnold; Kaniere Forks; Mackay Creek; Wahapo; Fox Glacier and the Turnbull power schemes. This effectively meant that the local community retained no ability to protect its electricity resilience and security of supply through local electricity generation and the management of those resources to meet current and future needs. After the reforms, the Westpower Board of Directors led the company through a period of consolidation, focusing primarily on operating and maintaining its distribution network.

The Westpower distribution network currently covers 18,017 square kilometres from Lyell in the north to Paringa in South Westland, consists of over 2,244 km of power lines, and supplies more than 14,400 consumers.

Westpower also owns electrical contracting and consultancy businesses that form the ElectroNet group of companies. ElectroNet Services Ltd provides transmission, distribution and electrical contracting services.

Since the mid-2000s, when the Government allowed distribution companies to re-enter the generation market, Westpower has moved back into generation with the construction and the commissioning of the 7.6 MW Amethyst Hydro Scheme in June 2013. Amethyst Hydro Ltd is a joint venture company (an 88% owned subsidiary of Westpower and 12% owned by Hari Hari Hydro Ltd) which owns and operates the Amethyst Hydro Scheme.

Westpower has not been convicted of any offence, including under the Resource Management Act, Conservation Act and Wildlife Act, and does not have any current criminal charges pending before a court under these Acts.

Westpower's current directors are Suzanne Merriman (Chair), Tim Bateman, Albert Brantley, Hamish Croft and Anthony Williams. None have been convicted of any offence, including under the Resource Management Act, Conservation Act and Wildlife Act, and they do not have any current criminal charges pending before a court under these Acts.

2.3 THE PURPOSE OF THE FAST-TRACK APPROVALS ACT AND THE PROJECT'S REGIONAL AND NATIONAL BENEFITS

The purpose of the FTAA is:

> *to facilitate the delivery of infrastructure and development projects with significant regional or national benefits*.

On different but interconnected levels the proposed Waitaha Scheme represents a strategically important development and demonstrably achieves the purpose of the FTAA by delivering significant benefits for the local district, region and the wider New Zealand community. It will deliver much needed energy resilience and economic benefits while also contributing to the nation's efforts to decarbonise and, in turn, deliver a range of other consequential environmental, social and cultural improvements.

The main regional and national benefits associated with the Scheme, being the key reasons the Project achieves the purpose of the FTAA, are discussed more specifically in the following sections.

2.3.1 Decarbonisation and Climate Change Benefits

In New Zealand's quest to decarbonise, the Waitaha Scheme will offer a clean, reliable, and flexible energy solution that not only provides direct support to the nation's emissions reduction and electrification goals, but also strengthens energy security, economic development, and overall climate change resilience.

In 2019, the Climate Change Response Act 2002 (**"CCRA"**) was amended by the Climate Change Response (Zero Carbon) Amendment Act. These amendments provide a framework by which New Zealand is developing and implementing climate change policies that:

- Contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5 degrees Celsius above pre-industrial levels; and
- Enable New Zealand to prepare for, and adapt to, the effects of climate change.

In addition, New Zealand's Emissions Reduction Plans ("**ERPs**")[12] contain strategies, policies and actions for achieving the nation's emissions budget, as required by the Climate Change Response Act 2002. In doing so, they have outlined how New Zealand intends to play its part in global efforts to limit warming to 1.5˚C above pre-industrial levels.

[12] *Our journey towards net zero, New Zealand's Second Emissions Reduction Plan 2026-30, Tā Aotearoa mahere whakahere tukunga tuarua*, published December 2024.

Recently, the Second Emissions Reduction Plan aligns to New Zealand's Climate Strategy that:

> Infrastructure is resilient and communities are well prepared.

> Credible markets support the climate transition.

> Clean energy is abundant and affordable.

Quoting the Boston Consulting Group 2022 report: The Future is Electric,[13] the Second ERP says:

> *"We need to enable new investments in electricity transmission and distribution infrastructure to improve the reliability of our grid. An estimated $100 billion of investment is needed by 2050 to build and maintain this infrastructure".*

Some relevant actions set out in the ERPs include:

> Increasing access to electric vehicles (EVs), beginning the process of decarbonising heavy transport and freight and helping more people to walk, cycle and take public transport;

> Supporting businesses to improve energy efficiency and move away from fossil fuels, such as coal, by continuing to roll out the Government Investment in Decarbonising Industry fund;

> Banning new low- and medium-temperature coal boilers and phasing out existing ones;

> Doubling renewable energy (including reducing consenting times).

> Enabling energy efficiency and a smarter electricity system.

Assuming the Scheme produces 129 GWhs (129,000 MWhs) of renewable electricity, this is equivalent to annually offsetting 129,000 tonnes of CO_2 from thermal electricity production or equivalent to removing approximately 69,000 internal combustion cars from NZ roads.

2.3.2 Security of Electricity Supply

Modern energy systems face many threats and hazards, and modern economies increasingly rely on reliable and resilient power systems. The scope of these threats and hazards includes physical events such as windstorms, bushfires, earthquakes, sea level rise, and flooding, and man-made events like human error, physical attacks and cyber-attacks.

[13] https://www.bcg.com/publications/2022/climate-change-in-new-zealand.

These events can, and do, have impacts a long distance from where they occur. This is certainly the case facing the West Coast, whose electricity consumers are reliant on almost 550 kilometres of transmission to provide supply from Benmore. Consequently, Westpower's electricity supply is currently at risk from a failure at any point along the 550 kilometres of upstream transmission, and Westpower's consumers' pay the costs attached to the substantial distance electricity travels to reach them and of interruptions in that supply.

Manifestation of any of these threats and hazards will have local impacts that vary depending on the local economy. As an example, on the 20th of June 2024 a transmission tower in Northland collapsed during routine maintenance of the tower's baseplates.[14] Approximately 88,000 customer lost their supply, and the regional economy incurred costs estimated to be at least $37 million, possibly as high as $80 million.[15]

The Waitaha Scheme directly addresses these resilience risks since it will be able to operate as an islanded generation node if the network is cut off from the transmission system. Under this scenario, it is also strategically located, being close to the largest single load on the network (Westland Milk Products) and the second largest centre of population (Hokitika).

In addition, together with Westpower's Amethyst Scheme, the Waitaha Scheme will provide further stability to the electricity supply that other smaller power stations on the West Coast can synchronise to. Under normal operating conditions station service power is provided by drawing power from the National Grid through the plant's transmission line, enabling them to start after a shut down. In the absence of power from the National Grid, the Waitaha and Amethyst Hydro Schemes will enable these smaller stations to restart, thereby minimising the disruption of supply to the community.

2.3.3 Future Electricity Demand

Westpower has had an extended period of declining load, both energy and peak as shown in **Figure 3**, due in the main to a decline in economic activity on the West Coast. However, a recovering economy together with regional decarbonisation and electrification plans are forecast to cause significant increases in demand in the near future.

[14] Report of Investigation into 20 June 2024 Tower 130 Henderson to Marsden A Line Incident Investigation Report.pdf (transpower.co.nz).

[15] https://www.beehive.govt.nz/release/northland-transmission-tower-collapse-report-released.

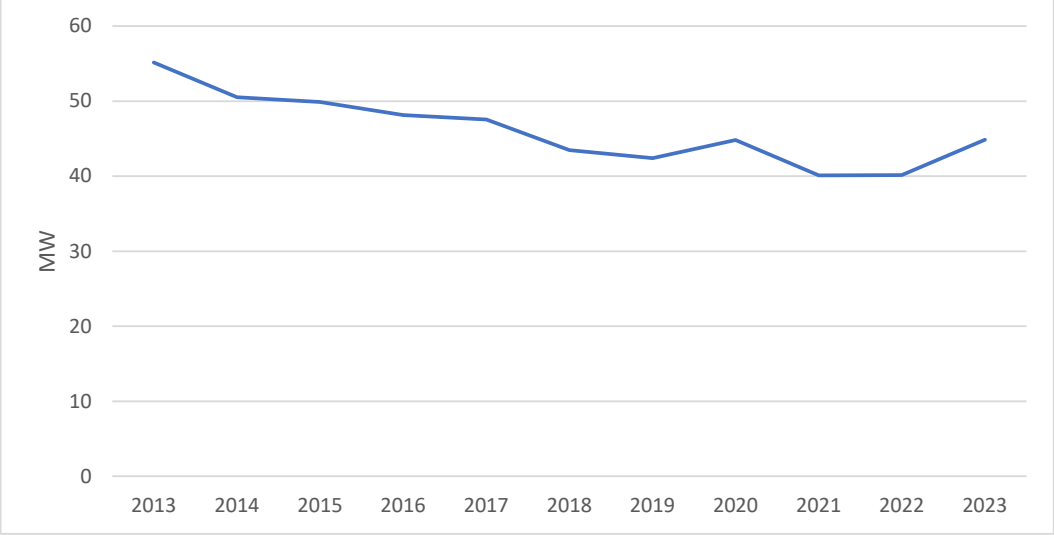


Figure 3: Westpower peak demand 2013 – 2023[16]

The effects of this are already starting to be observed at ANZCO's Kokiri Processing Plant, where they have installed a 1MW high temperature heat pump and a 2MW electric hot water boiler[17] to replace their existing coal boiler. An additional load of 1.6 MW has also resulted from a new lactoferrin plant recently installed at Westland Milk Products in Hokitika.

Westland Milk Products are also initiating projects required in anticipation of decarbonisation including their proposal to convert process heat to electrical load within the next 10 years.

Additional new demand comes from new load (6 MW) at the Federation Mining - Snowy River goldmine near Reefton. In 2026 additional load is forecast for electrification of process heat and a proposed new mineral sand mine, and further mineral sand development at Barrytown is slated for 2027. In 2033 there is also an anticipated jump in load arising from Westland Milk Products because of their planned boiler conversion from coal.

Given this general underlying growth and due to confirmed decarbonising and electrification projects, Westpower is forecasting a 55% increase in peak demand on their network over the next 10 years (**Figure 4**). With other large West Coast projects recently also being confirmed on the Fast-track list[18], this future demand could even be higher.

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16 Data supplied by Westpower.

17 Approved GIDI projects | EECA.

18 Arahura Papakāinga Housing Project, Buller Plateaux Continuation Project.

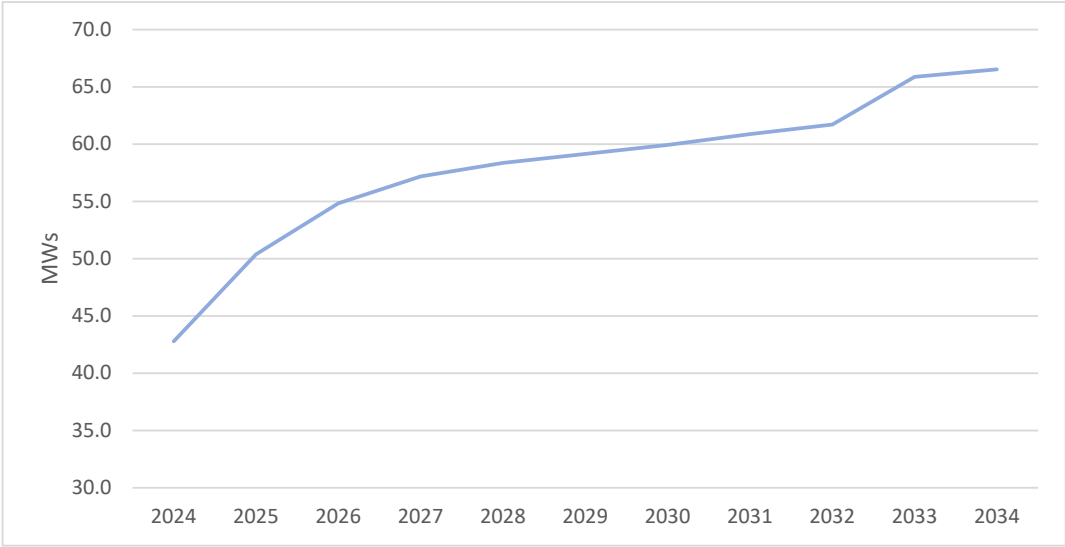

Figure 4: Westpower Forecast Peak Load 2024 - 2034[19]

The renewable electricity generated from the Waitaha Scheme represents a significant contribution towards meeting this future demand, and to this extent, would be a vital component of the regional and national energy system (especially given the rapid reduction in gas supply across the sector).

2.4 PROJECT BACKGROUND

2.4.1 Project Development

The proposed Waitaha Hydro Scheme has been in development for many years. The Project's development process is set out in detail later within section 3.1, but for background purposes, is summarised below:

> The Project commenced in 2005 and has taken some 20 years to fine-tune with the use of extensive technical resources;

> The Project was initiated with careful consideration and analysis of a range of design and site location alternatives;

> The Project's design has drawn on Westpower's successful experience in exercising the concession for the Amethyst Hydro Scheme on nearby public conservation land;

> The Project has involved a suite of highly experienced experts who contributed to the design and the assessment and mitigation of potential adverse effects; and

[19] Source – Westpower supplied

- The Project has involved a robust and iterative process of refining and amending the design, including additional mitigation to respond to identified effects on the environment and to address various matters raised by DOC and other stakeholders.

2.4.2 2014 DOC Concession Application

Of particular contextual importance to this proposal is the previous DOC concession application process, summarised below:

- Initial investigations into the Waitaha scheme commenced in 2005 and Westpower initially met with the Department of Conservation in 2012;
- In July 2014 Westpower applied under section 17R of the Conservation Act for a lease, licence and easement concession to construct and operate the scheme. The application included an application for concessions and assessment of effects and 23 appendices;[20]
- The Minister's delegate (the Deputy Director-General) notified an 'intention to grant' the concession on 19 August 2016;
- The application was then publicly notified on 16 September 2016;
- A hearing was held between 5 and 8 December 2016;
- The hearing commissioner provided Westpower with his draft hearing report on 2 June 2017 and Westpower provided comments on 6 July 2017;
- The hearing commissioner issued the final hearing report on 1 November 2017 which provided grant and decline options for the Minister for the Environment (acting under a transfer of decision-making power from the Minister of Conservation) to choose from;
- A final briefing to the Minister for the Environment was held on 12 June 2019; and
- The decision was made by the Minister for the Environment on 27 August 2019 to decline the application. Westpower has applied for a 'reconsideration' of that decision, and the Minister has not yet decided to undertake that reconsideration process.

The reasons for declining the application relied primarily on the Department's perception of the adverse impacts the Project would have on the experiences of recreational users of the area. Westpower maintained (and still does) that these impacts were overstated in the final briefing to the Minister for the Environment and did not reflect expert views, nor a 'real-world' perspective – particularly in light of the minute scale of the project's structures when viewed in the context of the broader Waitaha Valley, the extensive areas of public conservation land

[20] Application for Concessions and Assessment of Effects | Westpower

on the West Coast and the comparatively small scale of recreation visitation to the Waitaha Valley. This meant that the Minister for the Environment was not in a position where an informed, appropriate and lawful decision could be made on Westpower's concession application.

2.4.3 The Reconsideration Application

Following receipt of the concession decision on 31st May 2022, Westpower applied to DOC under section 17ZJ of the Conservation Act 1987, seeking that the 2019 decision be reconsidered.

In seeking reconsideration, Westpower's position was that the reasons for declining the application were not justifiable on the evidence (including expert evidence) and other information before the decision-maker. In addition, the nature and extent of the potential effects were overstated in the hearing report and final briefing to the decision-maker, and consequently in the decision itself.

Westpower also included additional project modifications in its reconsideration application. Most notably, these included changes that significantly reduced the visibility of the intake and access portals. Also, the size of the Power Station was reduced and relocated slightly and a previously proposed sediment discharge portal near the top of Morgan Gorge was also removed from the design – all to reduce visual impact.

Without limiting its scope, Westpower focused their reconsideration application on the following grounds:

- **Ground one**: the decision did not reflect the significant interests of Poutini Ngāi Tahu in relation to the project and the requirement under section 4 of the Conservation Act to give effect to the principles of the Treaty of Waitangi;
- **Ground two**: the effects of climate change on biodiversity and public conservation land and resources, and the essential role of renewable electricity generation in meeting our emissions reduction targets and addressing the impacts of climate change on biodiversity and public conservation land and resources (climate change being a highly significant threat to biodiversity);
- **Ground three**: the assessment of values including natural character, landscape and recreational values and the potential impacts of the project on those values; and
- **Ground four**: the approach to legal and planning matters.

The application for reconsideration was in-train when the omnibus consenting Fast-track Approvals Bill was announced in March 2024. Shortly following this announcement, and following an invitation from the Minister of Conservation, Westpower made the decision to

suspend the DOC concession reconsideration application process and instead refocus efforts into applying to be included on Schedule 2 of the Fast-track Project List (which were successful). Notwithstanding Westpower's suspension of the reconsideration application process, the four grounds on which it was based and argued upon remain relevant to this current application. Accordingly, appropriate emphasis is placed on these matters where relevant within the lodged documents.

2.4.4 Application for FTAA Listed Project

The FTAA was designed to provide a "one-stop-shop" approvals process for developers. This is primarily to minimise delays and costs often experienced by large complex projects requiring sequential approvals under different statutes.

Given the Waitaha Scheme requires several approvals under different statutes, it is ideally suited to the FTAA's one-stop-shop application process. Accordingly, Westpower applied to have the Project considered under the FTAA, and on 13 October 2024, the Government included it within Schedule 2 of the Act - confirming it as one of 149 "Listed Projects".

2.5 THE FAST-TRACK APPROVALS PROCESS

2.5.1 Decision making

When considering this application, the Panel must apply the relevant decision-making criteria set out in sections 81–85 and clauses 17–19 of Schedule 5, clauses 7–9 of Schedule 6, clauses 5–6 of Schedule 7 and clauses 5–6 of Schedule 9 of the FTAA.[21]

Requirements on the Panel

Within the applicable timeframe, the Panel must issue its decision granting the Approvals sought and setting any conditions or declining the application.[22] In making its decision the Panel must:

a. Consider:

   i. This substantive application;[23]

   ii. Any advice and reports the Panel convener has obtained;[24]

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[21] Clauses 20–22 of sch 5, referred to in ss 81(2)(b) and (3)(a), are not relevant as the application does not concern aquaculture; or a coastal permit.

[22] FTAA, ss 79 and 81(1).

[23] FTAA, s 81(2)(a).

[24] FTAA, ss 51 and 81(2)(a).

iii. The report on Treaty settlements and other obligations;[25]

iv. The comments it has received from invited persons or groups within the specified timeframe, and the applicant's response to those comments;[26]

v. Any information received by the Panel during a hearing, if a hearing is held;[27]

vi. Any responses to further information requests to the applicant or peer review advice;[28]

vii. Any responses to requests for, or commissioning of, advice in relation to the concession approvals sought;[29]

viii. Any response from the applicant on the draft decision and any responses from the applicant and persons and groups invited to comment on the draft conditions;[30]

ix. Any responses to further information requests to the relevant administering agency or local authority;[31] and

x. Any comments from the Minister for Māori Crown Relations: Te Arawhiti and the Minister for Māori Development on the draft decision, including any draft conditions.[32]

b. Apply the criteria, as relevant (discussed below) in:[33]

i. clause 17 of Schedule 5 for the resource consents; and

ii. clause 7 of Schedule 6 for concessions; and

iii. clause 5 of Schedule 7 for wildlife approvals; and

iv. clause 5 of Schedule 9 for complex freshwater fisheries activity approvals; and

c. Comply with section 82 (discussed below), if applicable.[34]

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25 FTAA, ss 18, 52 and 81(2)(a).

26 FTAA, ss 53, 55 and 81(2)(a) and (6).

27 FTAA, ss 58 and 81(2)(a).

28 FTAA, ss 67 and 81(2)(a).

29 FTAA, ss 68 and 81(2)(a).

30 FTAA, ss 69, 70 and 81(2)(a).

31 FTAA, ss 81(2)(a) and 90.

32 FTAA, ss 72 and 81(2)(a).

33 FTAA, ss 81(2)(b) and (3)(a), (f), (i) and (k). In taking the purpose of the FTAA into account under the clauses referred to above the panel must consider the extent of the project's regional and national benefits (see s 81(4)).

34 FTAA, s 81(2)(c).

The Panel has discretion to:

d. Consider any advice, report, comment, or other information received outside the specified timeframe in the FTAA;[35] and

e. Impose conditions (limited by provisions in the FTAA and, for the resource consents sought, by section 104A(b) of the RMA).[36]

2.5.1.1 Effect of Treaty settlement and other obligations on decision making

Section 82 of the FTAA applies if a Treaty settlement, the Marine and Coastal Area (Takutai Moana) Act 2011 or the Ngā Rohe Moana o Ngā Hapū o Ngāti Porou Act 2019 is relevant to an approval. If a Treaty settlement or those Acts provide for the consideration of a document (such as a statutory document amended as a result of a Treaty settlement), the Panel must give it the same or equivalent effect through its decision making as it would under the relevant specified Act.

The Panel must also consider section 7 of the FTAA in its decision making by acting in a manner that is consistent with the obligations in existing Treaty settlements and recognised customary rights. Section 82(3) requires the Panel to consider whether granting an approval would comply with section 7.[37]

The Marine and Coastal Area (Takutai Moana) Act 2011 and the Ngā Rohe Moana o Ngā Hapū o Ngāti Porou Act 2019 are not relevant to this application.

The Ngāi Tahu settlement including the Ngāi Tahu Claims Settlement Act 1998 is discussed in section 5.2 of this AEE. The proposed Waitaha Hydro Project is consistent with the Ngāi Tahu Treaty settlement.

2.5.1.2 Limited grounds to decline

The Panel must decide whether to decline the approval.[38] The FTAA prescribes very limited grounds for doing so.[39] Section 85 sets out when a panel *must* decline an approval, and where an approval *may* be declined (if the adverse impacts of that activity are considered to be out of proportion to the regional or national benefits of the proposal).

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35 FTAA, s 81(6).

36 FTAA, ss 81(1)(a) and (2)(e), 83 and 84, sch 5 cls 17–18, sch 6 cl 8, sch 7 cl 6 and sch 9 cl 6.

37 For completeness, s 81(7) provides that nothing in ss 81, 82 or 85 limits s 7.

38 FTAA, s 81(1)(b).

39 FTAA, ss 81(2)(f), 85.

For Westpower's application the Panel must decline an approval if one or more of the following matters apply:

1. The approval is for an ineligible activity;[40] and/or

2. The Panel considers that granting an approval would breach section 7 of the FTAA, which sets out obligations relating to Treaty settlements and recognised customary rights;[41] and/or

3. For the concession, if giving effect to the concession would result in the conferral of an interest in land that is incompatible with an existing interest in land.[42]

As set out in section 2.5.7, the Waitaha Hydro Project application is not for an ineligible activity. Section 5.2 of this AEE discusses the Project in the context of the Ngāi Tahu Treaty settlement. Sections 7.2.1.4 and 7.2.1.7 of this AEE state giving effect to the concession will not result in an interest in land that is incompatible with an existing interest in land, explained in section 5.10.4. Accordingly, none of the section 85 matters apply and there is no obligation that the Panel *must* decline an approval for the Project.

Therefore, in this case, the only ground on which the Panel has discretion to decline an approval is if, in making its decision,[43] it forms the view that:

a. There are one or more 'adverse impacts'[44] in relation to the approval sought;[45] and

b. Those adverse impacts are sufficiently significant to be out of proportion to the Project's regional or national benefits considered when giving weight to the FTAA,[46] even after taking into account of:[47]

    i. Any conditions that the Panel may set in relation to those adverse impacts; and

    ii. Any conditions or modifications that Westpower may agree to or propose to avoid, remedy, mitigate, offset, or compensate for those adverse impacts.

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40 FTAA, ss 5 and 85(1)(a).

41 FTAA, ss 7 and 85(1)(b).

42 FTAA, s 85(1)(e) and sch 6 cl 7(3)(b). Clauses 7(3)(a) and (c), (4) and (5) of sch 6 do not apply to the Scheme. The application is not for a lease, licence, permit, or easement in respect of a reserve other than a Crown-administered reserve; and the term sought is less than 50 years.

43 In accordance with s 81(2) of the FTAA.

44 FTAA, s 85(5). This term is broadly defined as meaning any matter *"considered by the panel in complying with section 81(2) that weighs against granting the approval"*.

45 FTAA, s 85(3)(a).

46 In accordance with s 81(4) of the FTAA.

47 FTAA, s 85(3)(b).

Significantly, the above threshold cannot be met solely on the basis that an adverse impact is inconsistent with or contrary to a provision of a specified Act, or any other document that a panel must take into account or otherwise consider in making its decision.[48]

Generally, the adverse effects of the Project will be no more than minor, at most. There are some natural character, landscape and visual effects that will be more than minor (see section 1.6) but not significant. As set out in section 1.6, the two key effects for consideration are:

> Construction effects (temporary) for recreation which were assessed as significant; and

> Operational effects for recreational values - backcountry remote experience - which were assessed for the abstraction reach (including Morgan Gorge) and Kiwi Flat as significant at a local scale.

In relation to the Panel's assessment, the effects on recreation for construction are temporary and vary during the 3-4 year construction period as works advance. For example, at times, such as during blasting, public access will need to be temporarily restricted from certain areas for health and safety reasons. In the same manner while in-stream Works for the weir are being constructed access down the river past the works will need to be controlled for health and safety. These works, and any controls on access, will be tightly managed through the conditions and the CEMP. In a similar manner, the access track will be relocated early in the Project to reduce effects of construction at the Power Station site for trampers (noting it will need to cross the new access road) and minimise views of the Power Station site. Around the Project area, during construction, the works will be obvious and at times intrusive.

The operational perceptual adverse recreational value effect on the backcountry remote experience (a metaphysical effect) at a local scale must be considered against:

> The level of the effect for the person recreating, if any, will vary from person to person. For some recreationists the mere fact that part of the river is controlled, even if they cannot see the Scheme, will be a significant effect. Others may view the Scheme in a less negative or even positive light given the national and regional benefits described in the Application, particularly, its contribution to increasing national renewable generation and its role in New Zealand's goals to address climate change and improving regional electricity resilience;

[48] FTAA, s 85(4). The decision must be made in accordance with s 81(2) of the FTA.

- Where the effect is significantly adverse for the person recreating, it is confined to the abstraction reach and Headworks (Kiwi Flat) which itself is a very confined area in a vastly larger backcountry remote experience setting;
- Key mitigations to this perceptual effect are the low weir profile, careful infrastructure placement (with key works located underground) to reduce the scale of the Scheme footprint, and the additional mitigations proposed through the management plans. The effect is also reflected in the assessment of landscape and natural character. Natural character, local landscape and visual effects are all assessed at the Headworks as being moderate-high adverse (more than minor), but not significant; and
- Westpower has proffered $25,000 of compensation towards an organisation to undertake track and hut maintenance in the Upper Waitaha Valley (for example, DOC).

A key reason for the significant level of effect in the recreational assessment is because of the 'backcountry-remote' conservation management status. As set out in the Recreation Report, 'Backcountry-remote' is defined in the West Coast Conservation Management Strategy (CMS):

> *The 'backcountry-remote' zone provides opportunities to access extensive natural settings where facilities are provided but a considerable degree of physical challenge, self-reliance and isolation is involved.*

Importantly:

- The two effects above are not, in the wider context with mitigation, considered significant; and
- Section 85(4) of the FTAA is clear that the Panel may not form the view that an adverse impact is out of proportion to the Scheme's regional and national benefits, because of an inconsistency with a provision of a specified Act, or any other document the Panel must take in account or otherwise consider.[49]

The decision-making criteria ensure the greatest weight is given to the FTAA purpose. In this case, that is whether two adverse, localised, recreational impacts (one being temporary) are disproportionate to the regional or national benefits of the Scheme. The benefits include that the Scheme will make a meaningful contribution to the resilience and security of electricity supply on the West Coast, and to national climate change mitigation (Sections 2.3.1, 2.3.2 and 6.2 of the AEE). This is not outweighed by inconsistency with a provision of the West Coast CMS (noting that CMS has *not* been co-authored, authored, or approved by a

[49] FTAA, s 85(4), noting other documents may relate to compliance with s 81(2) of the FTAA.

Treaty settlement entity[50]). The application is, overall, consistent with the West Coast CMS (see section 7.2 of the AEE), which also puts the inconsistency in perspective.

Conditions

Westpower's proposed conditions are set out in **Appendices 36 to 39** of the Application.[51]

When considering the application, the Panel must decide whether to grant any approvals and set any conditions to be imposed on those approvals.[52] If the Panel decides to impose conditions:

i. The conditions must be no more onerous than necessary to address the purpose for which they are set;[53] and

ii. For resource consents, the Panel must take into account the provisions of Parts 6, 9 and 10 of the RMA, but give greater weight to the purpose of the FTAA;[54] and

iii. For the concessions, the Panel must apply section 17X of the Conservation Act,[55] but give greater weight to the purpose of the FTAA;[56] and

iv. For the wildlife approvals, the Panel must give greater weight to the purpose of the FTAA and:[57]

> Consider whether the condition would avoid, minimise, or remedy any impacts on protected wildlife that is to be covered by the approval;[58] and
> Where more than minor residual impacts on protected wildlife cannot be avoided, minimised, or remedied, ensure that they are offset or compensated for where possible and appropriate;[59] and
> Take into account, as the case may be, the New Zealand Threat Classification System or any relevant international conservation agreement

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50 Schedule 6 clause 7(1)(a)(viii)(A) seeks to limit consideration of CMSs to those that are co-authored, authored, or approved by a Treaty settlement entity which does not include the West Coast CMS. However, pursuant to clause 7(1)(a)(ii) all CMSs, even those not co-authored, authored, or approved by a Treaty settlement entity, are to be taken into account in accordance with Part 3B of the Conservation Act 1987.

51 As required by sch 5 cl 5(1)(k) of the FTAA.

52 FTAA, s 81(1)(a).

53 FTAA, ss 81(2)(d) and 83.

54 FTAA, ss 81(2)(b) and (3)(a) and sch 5 cls 17(1) and 18.

55 FTAA, sch 6 cl 8(3) applies instead of section 17Y(1) of the Conservation Act 1987.

56 FTAA, ss 81(2)(b) and (3)(f) and sch 6 cls 7(1) and 8.

57 FTAA, ss 81(2)(b) and (3)(i) and sch 7 cls 5 and 6.

58 FTAA, sch 7 cl 6(2)(a).

59 FTAA, sch 7 cl 6(2)(b).

that may apply in respect of the protected wildlife that is to be covered by the approval;[60] and

v. For complex freshwater fisheries approvals, the Panel must take into account best practice standards and the New Zealand Fish Passage Guidelines; and [61]

vi. The Panel may set conditions on a consent in respect of a standard freshwater fisheries activity for which approval, dispensation, or authorisation is required, or for which a requirement may be imposed, under the Freshwater Fisheries Regulations 1983 or Conservation Act 1987. Any such conditions must, however, be "necessary" to manage the effects of the activity on freshwater fish species, taking into account best practice standards and the New Zealand Fish Passage Guidelines.

For Westpower's Waitaha Hydro Project application, the broad powers to impose conditions for resource consents under sections 108–108A of the RMA are relevant to the Panel's powers to set conditions under the FTAA. The following principles, with which the Panel will be familiar, are relevant. Valid conditions must:[62]

i. Be for a resource management purpose and not for any ulterior purpose;

ii. Fairly and reasonably relate to the proposal which is the subject of consent or designation (noting that section 108AA of the RMA requires a condition to be "directly connected" to an adverse effect of the activity on the environment and/or an applicable planning rule or environmental standard); and

iii. Not be so unreasonable that no reasonable decision maker could have imposed them.

As the activity status of the Waitaha Hydro Project application is a discretionary activity under West Coast Regional Council's jurisdiction and a non-complying activity[63] under Westland District Council's jurisdiction, and this application is under the FTAA, the broad condition setting powers under the RMA are not constrained.

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60 FTAA, sch 7 cl 6(2)(c).

61 FTAA, ss 81(2)(b) and (3)(k) and sch 9 cl 6.

62 *Newbury District Council v Secretary of State for the Environment* [1980] 1 All ER 731 (HL) at 739, endorsed in the context of the RMA in *Housing NZ Ltd v Waitakere City Council* [2001] NZRMA 202 (CA) at [18].

63 Noting that section 17(1)(b) disapplies s104D of the RMA in relation to non-complying activities.

Section 104(1)(ab) of the RMA explicitly applies to the Panel's decision making on resource consents.[64] Westpower's' proposal includes conditions requiring financially assisting, in the medium term (i.e. in the first 10 years following construction commencing), an ecosystem programme that supports regional whio and bat populations, and for the remaining duration of the site's resource consents, financially assisting an ecosystem programme to achieve positive contributions towards the wider West Coast region or Waitaha Valley ecology. Westpower also proposes conditions requiring financial compensation in respect of forest birds (for each year vegetation is removed during construction), kayaking and general recreation impacts.

As is the case under the RMA, the Panel cannot impose a requirement for offsetting or compensation without agreement from Westpower.[65] That is, the Panel cannot alter the proposed ecosystem programme, recreational kayaking or track and hut maintenance compensation conditions without Westpower's prior agreement. Conversely, these conditions may be altered (for example, by reducing funding) if other mitigation conditions more onerous than the compensation condition proposed are imposed.

For completeness, under the FTAA, the Panel has specific discretion to set conditions to recognise or protect a relevant Treaty settlement.[66] The Panel should not set any such conditions in this case because Poutini Ngāi Tahu have agreed to the application, and Te Rūnanga o Ngāi Tahu has, in turn, supported Poutini Ngāi Tahu in this respect. Furthermore, Poutini Ngāi Tahu is a partner to Westpower in respect of this Project, and to this extent, their approval of the proposed conditions is implicit.

2.5.1.3 Resource Consents

Criteria for assessing resource consent application

In considering the resource consent application, the Panel is required to take into account:[67]

a. The purpose of the FTAA (set out above);

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[64] FTAA, ss 81(2)(b) and (3)(a) and sch 5 cls 17(1) and 18. Imposing compensation or offsetting not proposed or agreed to, or altering conditions proposed by Westpower, would not help facilitate delivery of the project and would likely be more onerous than necessary.

[65] RMA, s104(1)(ab), which is a relevant consideration under schedule 5, clause 17 FTAA and is also reflected in s85(3)(b)(ii) FTAA.

[66] FTAA, ss 81(2)(e) and 84.

[67] FTAA, sch 5 cl 17(1). 'Take into account' requires the decision maker to consider the matter (can be synonymous with "have regard to", i.e. give the matter genuine attention and thought). The question of weight is left to the decision maker (qualified here by the explicit requirement to give greater weight to the purpose of the FTAA). See generally *Bleakley v Environmental Risk Management Authority* [2001] 3 NZLR 213 (HC) at [72]; and *New Zealand Transport Agency v Architectural Centre Inc* [2015] NZHC 1991, (2015) 19 ELRNZ 163 at [63].

b. The provisions of Parts 2,[68] 3, 6[69] and 8 to 10 of the RMA that direct decision making on an application for a resource consent; and

c. The relevant provisions of any other legislation that directs decision making under the RMA.

These matters are addressed in **Schedule B** of Part A of the application.

The purpose of the FTAA must be given the greatest weight, ahead of all other considerations.[70] When considering the purpose of the FTAA, the Panel must consider the extent of the Project's regional or national benefits.[71]

For the Waitaha Hydro Project application the relevant provisions of the RMA are sections 5–7, 87A, 104, 104A, 105, 107, 108–108A and 123. There is no other relevant legislation that directs decision making under the RMA.

2.5.1.4 Concessions

Criteria for assessing concession application

In considering the concession application, the Panel is required to take into account:[72]

- The purpose of the FTAA;
- A range of matters prescribed in cls 7(1)(a)(ii), (vii), (x), (xi) and (xii) of sch 6[73]; and
- Sections 17U(5) and (6) and 17W(1) and (3) of the Conservation Act 1987, noting that while such provisions may normally under the Conservation Act require a decision maker to decline an approval, the Panel must not treat the provisions as requiring the Panel to decline the application.[74] These sections are addressed in **Schedule C** of Part A of the AEE.

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[68] Excluding s 8, per sch 5 cl 17(2)(a) of the FTAA.

[69] Excluding s 104D.

[70] FTAA, sch 5 cl 17(1).

[71] FTAA, s 81(4).

[72] FTAA, ss 81(2)(b) and (3)(f) and sch 6 cls 7(1)(a). Note that under sch 6 cl 7(6), the provisions in cl 7(1) must be read with all necessary modifications, including that a reference to the Minister of Conservation in section 17U of the Conservation Act 1987 or section 49 of the National Parks Act 1980 must be read as a reference to a panel.

[73] The matters prescribed in sch 6 cls 7(1)(a)(iii), (iv), (v), (vi), (viii) and (ix) are not applicable to the Scheme. These are covered at a high level in section 7 of the AEE / the statutory assessment for concession.

[74] FTAA Sch 6 cl 7(2)(b) is not applicable to the Scheme.

The purpose of the FTAA must be given the greatest weight, ahead of all other considerations.[75] When considering the purpose of the FTAA, the Panel must consider the extent of the Scheme's regional or national benefits.[76] The Statutory Assessment in Section 7 addresses the relevant matters.

2.5.1.5 Wildlife approvals

Criteria for assessing wildlife approval application

In considering the wildlife approval application, the Panel is required to take into account:[77]

- The purpose of the FTAA; and
- The purpose of the Wildlife Act 1953 and the effects of the project on the protected wildlife that is to be covered by the approval which are addressed in **Schedule D** of Part A of the application; and
- Information and requirements relating to the protected wildlife that is to be covered by the approval (including, as the case may be, in the New Zealand Threat Classification System or any relevant international conservation agreement) which are also addressed in **Schedule D** of Part A of the application.

The purpose of the FTAA must be given the greatest weight, ahead of all other considerations.[78] When considering the purpose of the FTAA, the Panel must consider the extent of the Scheme's regional or national benefits.[79]

2.5.1.6 Complex freshwater fisheries approvals

Criteria for assessing complex freshwater fisheries application

In considering the complex freshwater fisheries application, the Panel is required to take into account:[80]

- The purpose of the FTAA; and
- The alignment of the proposed activity with best practice and the New Zealand Fish Passage Guidelines; and

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75 FTAA, sch 6 cl 7(1).

76 FTAA, s 81(4).

77 FTAA, ss 81(2)(b) and (3)(i) and sch 7 cls 5.

78 FTAA, sch 7 cl 5(a) .

79 FTAA, s 81(4).

80 FTAA, ss 81(2)(b) and (3)(k) and sch 9 cl 5.

- How the proposed activity will manage risks to freshwater values or habitat, including prevention of access to or spread of invasive species; and
- The availability and quality of the habitat upstream and downstream of the proposed activity; and
- The presence of threatened, data-deficient, or at-risk species under the New Zealand Threat Classification System in the vicinity of the proposed activity; and
- The advantages and disadvantages of providing fish passage upstream or downstream of the proposed activity.

The purpose of the FTAA must be given the greatest weight, ahead of all other considerations.[81] When considering the purpose of the FTAA, the Panel must consider the extent of the Scheme's regional or national benefits.[82]

The above matters are addressed in **Schedule E** of Part A of the application.

2.5.2 Pre-lodgement Requirements for Listed Projects

Section 29(1) of the FTAA states:

> *Before lodging a substantive application for a listed project, the authorised person for the project must—*
>
> *(a) consult the persons and groups referred to in section 11;*

The persons and groups referred to in section 11 of the FTAA and the consultation undertaken by Westpower (being the "authorised person" for the Waitaha Hydro Project) are set out in section 2.8 of this AEE.

2.5.3 Identification of Existing Resource Consents for Same Activity

Section 30 of the FTAA sets out the requirements relating to activities where the "*authorised person for the project does not hold an existing resource consent for the same activity using some or all of the same natural resource*" (s30(1)(b)).

In accordance with s30(2), Westpower wrote to WCRC and WDC seeking confirmation of any existing resource consents in accordance with section 30 of the FTAA. Copies of these letters are provided in **Appendix 4**.

WDC has provided written confirmation that there are no existing resource consents within the Project site to which section 124C(1)(c) of the Resource Management Act (RMA) would

[81] FTAA, sch 9 cl 5(a).

[82] FTAA, s 81(4).

apply if the approvals (resource consents) sought in the Application were to be applied for as a resource consent under the RMA and, additionally, there are no existing resource consents of that kind located within the Project Site. A copy of this correspondence is provided in **Appendix 5**.

West Coast Regional Council has also provided written confirmation that there are no existing resource consents within the Project site to which section 124C(1)(c) of the Resource Management Act (RMA) would apply. That is, there is no existing consent that would prevent any FTAA consents granted for the Waitaha Hydro Scheme from being fully exercised. A copy of this correspondence is also provided in **Appendix 5**. Westpower has obtained letters from the following consent holders who confirm they have no concerns with the scope of consents being sought by Westpower for the Scheme:

- Westland Schist – who hold consents for stone removal from Waitaha River and Macgregor Creek. They also exercise Premier Group Limited's (referred to below) consents in the area. Westland Schist and Westpower have agreed that Westland Schist will extract gravel for Westpower under the consent sought for construction of the Scheme, but it will not exercise its consents (or concessions in the area) simultaneously with Westpower's. This ensures that there is no barrier to either party fully exercising their consents and no issue of competing resource. A copy of the agreement with Westland Schist is provided in **Appendix 6**;
- Premier Group Limited – who hold a consent for stone removal from Waitaha River in an area of the riverbed that overlaps (in small part) an area where Westpower propose to remove gravel for the Scheme's construction. In this case the consented riverbed materials are different (stone versus gravel), therefore both activities can co-exist (and each consent fully exercised). A copy of the letter from Premier Group Limited is provided in **Appendix 6**; and
- Messrs. [redacted] – who hold unimplemented consents for a small-scale hydro scheme on Macgregor Creek, located upstream of Westpower's proposed access road crossing over Macgregor Creek. The consents rely on different catchments and can co-exist. The schemes can potentially share transmission infrastructure (and both be fully exercised at the same time). A copy of the letter from Messrs. [redacted] is provided in **Appendix 7.**

2.5.4 Project Priority

Westpower has not sought priority under section 38 of the FTAA.

2.5.5 Substantive Application for Approval

Section 42 of the FTAA sets out the requirements for lodging applications for approvals under the Act. Section 42(3)(a) requires that an applicant for an approval must be eligible to apply for any corresponding approval under a specified Act. For this application, Westpower is eligible to apply for a resource consent, concession, wildlife approval and complex freshwater fishery activity that would otherwise be applied for under the respective statutes.

Section 42(2)(a) requires that an application must comply with section 43 of the FTAA (discussed below in section 2.5.6 of this AEE).

2.5.6 Requirements for a Substantive Application

The requirements identified in section 43 of the FTAA for a substantive application and how those matters are addressed in this application are set out in **Schedule A** of Part A of this application.

2.5.7 Project Eligibility

Section 43(1)(c) "Requirements for substantive application" states that an application must demonstrate that the project does not involve any ineligible activities.

The resource consents sought for the Waitaha Hydro Project do not involve any of the activities described in a – n of section 5(1) of the FTAA. The application therefore does not involve any ineligible activity.

2.5.8 Schedule 5 Requirements

Section 43(3)(a) of the FTAA states that requirements for a substantive application under the Act for a resource consent are set out in clauses 5 to 8 of Schedule 5. These matters are set out in **Schedule A** of Part A of this application.

2.5.9 Comments on a Substantive Application

The FTAA limits the participation of other parties in the substantive application process. Under the FTAA the requirements for "persons affected"[83] to be included in the substantive application is those who the applicant considers are "likely to be affected" with a limited list of inclusive examples. In the same manner the Panel's ability to seek comments is also limited, subject to the Panel being able to include any other person it considers

[83] FTAA, ss 13(4)(j) and 43(2).

appropriate.[84] When considering appropriateness, the Panel must assess the matters below bearing in mind the purpose and intent of the FTAA.

The ability for persons and groups to participate in the process under the FTAA is purposefully more limited compared to the RMA or the COVID-19 Recovery (Fast-track Consenting) Act 2020 (**"COVID Fast-track Act"**). Unlike the RMA, limited or public notification is not permitted under the FTAA. Parliament also specifically excluded groups who were invited to comment under the COVID Fast-track Act.[85] The policy intent is for specific persons and groups that are directly affected (such that they have a particular and explicit interest in the project), to be invited to comment, not to seek comments from the broader public.[86]

In rejecting a proposal during Committee of the Whole House to require public notification, the Minister for Regional Development, the Hon Shane Jones, stated that a key tenet of the FTAA is that:[87]

> *... those who have an entitlement to be integrally involved in the consideration of the panel in granting approval of those that are most affected by the approval, it is not a wide, vague description of who may or may not feel that they are affected by what externalities might flow from the project. This is the whole key point of the bill. So, for those reasons, obviously, we are not going to accept that submission or that proposed amendment. This bill will allow the people to be consulted, providing they represent that circle of interests that are genuinely and most impacted by the decision.*

The Minister responsible for RMA Reform, the Hon Chris Bishop, made a similar point earlier in the debate:[88]

> *... It is true that there are fewer participation rights and less ability than in the past as per the Resource Management Act, for example, but that is precisely the point. That is one of the purposes of the bill. That is why the bill has been drafted the way it is. ...*

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84 FTAA, s 53(3).

85 (10 December 2024) 780 NZPD (Fast-track Approvals Bill — In Committee—Part 2 (continued), Rachel Brooking and Chris Bishop).

86 Environment Committee *Fast-track Approvals Bill* (18 October 2024) at 15. Ministry for the Environment *Departmental Report on the Fast-track Approvals Bill – Version 2* (21 October 2024) at [779] and [782].

87 (10 December 2024) 780 NZPD (Fast-track Approvals Bill — In Committee—Part 2 (continued), Lan Pham and Shane Jones).

88 (10 December 2024) 780 NZPD (Fast-track Approvals Bill — In Committee—Part 1 (continued), Steve Abel and Chris Bishop).

In the case of this application, Westpower identifies the following landowners or land adjacent to the Scheme as having a particular and explicit interest in the project in accordance with section 13(4)(j) of the FTAA[89];

- The following owners and occupiers of land to which the substantive application relates or the land adjacent to that land;[90]
  - DOC;
  - LINZ;[91]
  - Westland District Council; and
  - NZTA.

Westpower considers the Panel should invite comments from the above under section 53(2) and (3) of the FTAA. Westpower does not consider there are any other parties for which it would be "appropriate" for the Panel to invite comments from when the clear intent and purpose of the FTAA is considered.

Further, as set out in section 1.2 of this AEE, the Project also includes the transmission line which follows the Waitaha Road, SH6, Beach Road and Bold Head Road before connecting to the Waitaha Substation. Given that specific activity, a utility in a road corridor, is permitted, any owners and occupiers of land adjacent to the transmission line do not have a particular and explicit interest in the Project[92]. Further, from SH6 to the Waitaha Substation there is no new transmission line (it is solely an upgrade of the existing line).

For completeness, it is noted as set out in section 2.8 of this AEE that Westpower has entered into agreements with the following:

- Poutini Ngāi Tahu's and that this agreement is also supported by Te Rūnanga o Ngāi Tahu;
- McLean Company Limited;
- Whitewater New Zealand; and
- Westland Schist Limited.

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89 As above, relevant due to Fast-track Approvals Act 2024, s 43(2).

90 Fast-track Approvals Act 2024, ss 53(2)(h) and (i). See also the information requirements in schedule 5 cl 5(1)(d.

91 Consultation with LINZ is advanced and all necessary access and legal arrangements required for Crown land are being actively progressed.

92 Westpower considers that such owners and occupiers would not fall within ss 53(2)(h) and (i).

2.5.10 Assessment Criteria

Section 81 of the FTAA sets out matters relevant to a decision on Approvals sought in substantive application. Those matters are set out in **Schedule A** of Part A of this application.

2.6 APPROACH TO THE APPLICATION

Although the Project design is relatively advanced, it is not yet at a final design stage. Therefore, a certain amount of flexibility is sought within any approvals granted to provide for minor design changes that may be needed following more detailed site investigations and the completion of the Project's developed and final design stages. To this end, Westpower's proposal adopts a "maximum envelope" approach for certain aspects. It follows that, the various technical experts engaged to assess the impacts of the Project have done so on the basis of this maximum envelope.

Another key aspect of the approach to this Application is to provide, as part of the lodged documents, comprehensive and final Management Plans that cover methods and protocols that Westpower will implement to manage key ecological, landscape and amenity aspects of the Project. It is anticipated that, subject to the Approvals being granted by the Panel, these final Management Plans will be approved by the Panel. Obtaining final management plans from the Panel on key matters enables Westpower to efficiently implement the relevant approvals. In addition, other draft management plans are provided and are proposed to be certified by the relevant council with the requisite detailed construction information.

2.7 STRUCTURE OF THE LODGED DOCUMENTS

The documents lodged in support of Westpower's substantive FTAA application are presented in three main parts. More specifically:

- **Part A** confirms the FTAA approvals and respective durations and lapse periods being sought and sets out relevant applicant details and legal descriptions for all land associated with the Waitaha Hydro Scheme and its construction. Part A also includes reference tables that set out the FTAA information requirements for all the approvals being sought along with information navigation tables to help the Panel locate this information within the lodged documents.
- **Part B** provides the Assessment of Environmental Effects ("**AEE**") and is structured as follows:
  - **Section 1** provides an executive summary of the AEE;

- **Section 2** summarises the project, the applicant, and details how the Project meets the purpose of the FTAA. This section also addresses consultation undertaken by the applicant, including the outcomes of this consultation, and sets out other relevant background information including relevant aspects of the Fast-track Approvals process;
- **Section 3** describes the Project and proposed activities;
- **Section 4** identifies the various authorisations required under relevant statutes, and in terms of the RMA, sets out the activity status of the proposed activities;
- **Section 5** provides a description of the existing environment;
- **Section 6** provides an assessment of effects on the environment associated with the proposed activities;
- **Section 7** provides an analysis of the proposed activities in relation to the provisions of relevant statutory provisions including relevant related policy and planning documents; and
- **Section 8** sets out key conclusions of this AEE.

- **Part C** provides all the appendices to this application including copies of individual technical and environmental assessment reports, management plans and other relevant documents referenced in Parts A and B.

2.8 CONSULTATION

For the purpose of providing context, this section firstly summarises the consultation undertaken by Westpower in respect of their previous DOC Concession application before separately discussing more recent consultation, and associated outcomes, in respect of this FTAA application.

2.8.1 Previous Consultation Undertaken in Relation to the 2014 DOC Concession Application

From very early on in the Scheme's development and through the previous DOC Concession application process, from around March 2012, Westpower adopted and promoted an active and open engagement approach with mana whenua, DOC, other landowners, various interest groups and the local community and its leaders.

The following principles informed the applicant's consultation approach for the previous DOC Concession application:

With respect to mana whenua:

- Identify and engage with relevant mana whenua, their representatives very early on in the process;
- Through preferred face-to-face interactions, foster meaningful relationships based on good faith, mutual respect, understanding and trust;
- Promote the search for partnership-type opportunities where the applicant and mana whenua can work together on common cultural or environmental objectives;
- Investigate and facilitate opportunities for mana whenua to exercise kaitiakitanga;
- Seek advice on all cultural matters; and
- Maintain ongoing contact by providing updates and seeking feedback as the project developed.

In respect of other key community organisations:

- Identify and engage with individuals and organised / interested groups;
- Identify and engage with individuals and organised groups that have connections with the local community or connection networks within it;
- Introduce the scheme concept at an early stage, discuss the potential effects of the Scheme, and seek initial feedback; and
- Iteratively engage with these organisations as the design evolves.

Outlined below is a summary of the various consultation activities undertaken by the applicant in respect of the previous DOC Concession application for the scheme.

2.8.1.1 Early Presentations

In March - April 2012, Westpower provided introductory presentations to relevant statutory bodies including DOC, WCRC, WDC, Te Rūnanga o Makaawhio, Te Rūnanga o Ngāti Waewae and the Fish and Game Management - NZ West Coast Region.

2.8.1.2 Provision of Early Draft Ecology Reports

Copies of early draft ecology reports were provided to DOC to inform pre-application discussions and to seek initial feedback.

Te Rūnanga o Makaawhio, Te Rūnanga o Ngāti Waewae and Fish and Game were also provided an opportunity to review these early draft reports and to raise any areas of concern/questions.

2.8.1.3 Information Days

Two information days were held in June 2012 for local communities in Hokitika and Harihari. A wide range of groups (both local and national) were advised of the information days by either email, letter or phone. Key experts were on hand to answer questions at these information days.

2.8.1.4 Other Meetings and Presentations

Westpower also met with and/or provided presentations to representatives of Tai Poutini Conservation Board - West Coast, Te Rūnanga o Ngāti Waewae, Te Rūnanga o Makaawhio, West Coast Fish and Game Council, Whitewater New Zealand, Royal Forest and Bird Protection Society of New Zealand, Federated Mountain Clubs of New Zealand, New Zealand Alpine Club, West Coast Federated Farmers, Westland Milk Products, Greymouth High School, the Business Round Table, and the Ross Community Group.

2.8.1.5 Site Visits

Site visits were undertaken with representatives from DOC, Royal Forest and Bird Protection Society of New Zealand and Whitewater New Zealand.

2.8.1.6 Provision of Draft Technical Reports

- From February through to May 2014, drafts of various key technical reports were provided to the following groups for their review and feedback prior to finalising: Royal Forest and Bird Protection Society of New Zealand;
- Whitewater New Zealand;
- Federated Mountain Clubs of New Zealand;
- New Zealand Alpine Club;
- West Coast Alpine Club;
- West Coast Branch of the NZ Jet Boating Association; and
- Permolat members.

2.8.1.7 Summary of Feedback from Previous DOC Concession Application Consultation

During this early phase of consultation, a range of issues, concerns, questions and comments were raised covering the following general topics:

- Effects attributed to the Scheme's physical structures
- Electricity generation and its values

- Effects on recreational values and opportunities
- Effects on natural character, visual & landscape
- Ecological effects
- Health & safety
- Effects on flow regime and hydrology

This feedback was then considered by Westpower as part of their final DOC Concession application. While the consultation undertaken was comprehensive, transparent and done in good faith, not all concerns raised were able to be addressed in the application submitted in 2014.

2.8.2 FTAA Consultation Requirements

In accordance with sections 29 and 11 of the FTAA, Westpower is required to consult with the following persons and groups regarding the Project:

- Westland District and West Coast Regional Councils - being the relevant local authorities;
- Poutini Ngāi Tahu – being the relevant iwi authority that represents hapū that are parties to the relevant Mana Whakahono ā Rohe with the West Coast Regional Council; and
- The following relevant administering agencies:
  - The Ministry for the Environment ("**MfE**"); and
  - DOC.

2.8.3 Recent Consultation for this FTAA Application

Although most consulted parties had previous knowledge and a general understanding of the Waitaha Project, Westpower has recently reinitiated and maintained discussions with a number of these as part of their consultation regarding this FTAA proposal. Key principles that informed their previous DOC concession consultation process have, in general, been carried through to Westpower's more recent consultation effort. Details of this consultation, and confirmation of key consultation outcomes, are set out in the Project Overview Report and summarised below.

2.8.3.1 Poutini Ngāi Tahu

Since the conclusion of Westpower's unsuccessful 2014 DOC Concession application process, engagement between Westpower and Poutini Ngāi Tahu (Te Rūnanga o Ngāti Waewae and Te Rūnanga o Makaawhio) has continued to be very positive. A detailed

account of this engagement and the key outcomes from it are set out in the Partnership Report provided in **Appendix 14**. Notably, this has culminated in the formulation and execution of a Waitaha project partnership agreement between the two entities. Subject to necessary and workable Approvals being granted for the Project, this agreement provides for Poutini Ngāi Tahu to have a financial interest in it.

More recently, Poutini Ngāi Tahu have been provided with a summary of this application including special mention of various Project alterations made to the previous design to further minimise its overall impact.

In addition to the Project partnership agreement, consultation has also resulted in the following other outcomes:

- Poutini Ngāi Tahu have confirmed to Westpower that they do not require to undertake a Cultural Impact Assessment of the Project; and
- Poutini Ngāi Tahu has provided Westpower with a letter that confirms their strong support for the Waitaha Project while also highlighting that:
  - Poutini Ngāi Tahu considers the Project will provide opportunities for them to reconnect with their whenua and benefit economically from the Project;
  - Poutini Ngāi Tahu considers the Project represents a shared view between them and Westpower to protect and advance the interests of the West Coast, including its economy and its environment;
  - Poutini Ngāi Tahu considers the Project aligns with the Ngāi Tahu Climate Change strategy "He Rautaki mō te Huringa o te Āhuarangi", and in particular, its promotion of renewable energy as an important part of the climate change solution;
  - Poutini Ngāi Tahu considers the Project is consistent with the relevant principles and provisions of their Treaty settlement (as reflected in the deed of settlement and Ngāi Tahu Claims Settlement Act 1998); and
  - Poutini Ngāi Tahu considers the project is consistent with their Mana Whakahono a Rohe with West Coast Regional Council and other relevant documents.

Poutini Ngāi Tahu's letter of support also confirms that their position, as expressed in the letter, is also supported by Te Rūnanga o Ngāi Tahu.

A copy of Poutini Ngāi Tahu's letter of support is contained in **Appendix 8**.

2.8.3.2 Department of Conservation

Westpower has also continued to be proactive in their efforts to consult with DOC. Engagement with DOC was reinitiated in March 2025 where Westpower presented an

update on the Project to a mixture of DOC permissions staff and local and national management staff. At this meeting, it was also agreed that consultation should proceed via a schedule of regular meetings. Accordingly, fortnightly meetings were subsequently established to advance matters. These fortnightly meetings have been useful for both parties, particularly for Westpower in terms of understanding DOC's application information requirements.

This recent consultation with DOC has been positive and included the following:

> Recent Project design enhancements to minimise overall impact;

> DOC's process and information requirements with respect to the FTAA;

> Commercial arrangements for Concessions and the associated process to confirm these;

> Freshwater ecology matters, and in particular, fish passage effects. In this regard, DOC's fish passage specialist and Westpower's freshwater ecologist have reached agreement on the most practicable monitoring methodology for the passage of kōaro over the proposed diversion weir;

> Ecosystem protection methodologies and scope including outcomes from Westpower's separate discussions with Paparoa Wildlife Trust and Zero Invasive Predators (ZIP);

> Process and outcomes from Westpower's separate consultation with the West Coast Tai Poutini Conservation Board and Whitewater New Zealand; and

> Draft copies of key technical and environmental effects assessment reports and draft suggested Approvals conditions. In this regard, a number of draft reports and the draft proposed resource consent and concession conditions were provided to DOC for their review and feedback; and

> Discussions and engagement on various access, mitigation and compensation options.

It is considered that DOC has been sufficiently consulted with on the Project and its effects to that extent they should be well prepared to be actively involved in the post-lodgement process. Westpower is also committed to continuing consultation with DOC throughout the post-lodgement Fast-track application process. In this respect, Westpower has recently received some high-level feedback from DOC on key draft ecological effects reports, management plans and the proposed concession conditions. A copy of this feedback is presented in **Appendix 9**. Although there was insufficient time to action all of this feedback prior to lodging this application, Westpower has confirmed to DOC that they are committed to continue working with them on an updated set of proposed concession conditions and on any updated management plans.

Copies of any updated application documents will be circulated to the Panel as soon as possible.

2.8.3.3 West Coast Regional Council

Westpower has consulted with the West Coast Regional Council ("**WCRC**") about the Project since March 2025. Since this time, both parties have shown a strong commitment to work together to ensure the application process runs as smoothly as possible. Engagement has included the following activities:

- A site visit on 11 March 2025 with Councillors and Council staff;
- An introductory presentation of the Project provided by Westpower including summaries of the enhancements made to the Project design and the associated technical and effects assessment work being undertaken;
- Regular virtual meetings (that were also attended by Westland District Council staff) to share updates on all aspects of the Project and preparation of the FTAA application documents;
- Sharing of draft plan rule assessments to seek feedback from Council staff on scope, type and activity status of resource consents needed; and
- Sharing of draft effect assessment reports and draft proposed resource consent conditions.

Overall, it is considered that the consultation undertaken with WCRC will ensure they are well prepared to fulfil their roles in the post-lodgement process. Westpower is also committed to continuing consultation with WCRC throughout the post-lodgement Fast-track application process. Westpower has reiterated this commitment to WCRC following recent receipt of some high-level feedback from WCRC on the proposed consent conditions. In this respect, Westpower will continue to work with WCRC on an updated set of proposed consent conditions for the Panel.

2.8.3.4 Westland District Council

Westpower has consulted with the Westland District Council ("**WDC**") about the Project since March 2025. As with Westpower's consultation with WCRC, both parties have shown a strong commitment to work together to ensure the application process runs as smoothly as possible. Engagement with WDC has included the following activities:

- A site visit on 11 March 2025 with Mayor Helen Lash, other Councillors and Council staff;

- An introductory presentation of the Project provided by Westpower including summaries of the enhancements made to the Project design and the associated technical and effects assessment work being undertaken;
- Regular virtual meetings to share updates on all aspects of the Project and preparation of the FTAA application documents;
- Sharing of draft plan rule assessments to seek feedback from Council staff on scope of land use consent needed; and
- Sharing of draft effect assessment reports and draft proposed resource consent conditions.

As part of this engagement, WDC provided Westpower with some early feedback on the draft Traffic Report which was subsequently considered and actioned (as relevant).

Overall, it is considered that the consultation undertaken with WDC will ensure they are well prepared to fulfil their roles in the post-lodgement process. Westpower is also committed to continuing consultation with WDC throughout the application process.

2.8.3.5 Ministry for the Environment

In accordance with section 29 and section 11(1)(e) of the FTAA, Westpower has also consulted with the MfE as one of the relevant administering agencies. A copy of a letter provided by MfE, confirming this consultation obligation has been fulfilled, is contained in **Appendix 10.**

In their response, the MfE confirmed that, an assessment of the project against "*any relevant national policy statement, national environmental standards and if relevant the New Zealand Coastal Policy Statement*" would need to be provided as part of the substantive application and provided a summary of the national direction made under the RMA, for consideration. The response to the national policy direction provided in the Ministry advice is presented in section 7.1.7 (relevant National Policy Statements) and sections 4.1.1 and 7.1.6 of this AEE (Relevant National Environmental Standards).

While not referred to in the Ministry for the Environment advice, an assessment of the implications of the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 is provided in section 7.1.6.22 of this assessment.

The Ministry consultation has confirmed the nature of the national directions relating to the Waitaha Hydro Project.

2.8.4 Broader engagement for this FTAA Application

Section 2.8.3 sets out the consultation required under the FTAA. This section sets out additional engagement that Westpower has undertaken with other organisations in advance of lodging this application.

2.8.4.1 New Zealand Transport Authority

Westpower has recently been in discussions with New Zealand Transport Agency ("**NZTA**") staff about construction traffic effects on SH6. As part of this consultation, Westpower has provided NZTA with summary information about the Project and has shared a draft copy of the Transportation Report.

NZTA have confirmed they are relatively comfortable with the Project. They have, however, requested that Westpower ensures the following mitigation measures are undertaken during the construction phase:

- Appropriate signage is placed on SH6 to warn road users of trucks crossing at the SH6 / Waitaha Road intersection;
- Upgrades are made to the inside road edge of the left turn approach to the SH6 / Waitaha Road intersection; and
- Vegetation adjacent to the SH6 / Waitaha Road intersection is trimmed to achieve appropriate sight distances for trucks approaching SH6 from Waitaha Road.

Westpower is agreeable to the requested mitigation measures and has included these in the proposed resource consent conditions.

2.8.4.2 McLean Family

Westpower has developed a very strong relationship with the McLean Family over many years. This engagement has culminated in Westpower and the McLean Family reaching an agreement that, critically, secures land access through the McLean Family farmland for Westpower to enable the Project.

2.8.4.3 Whitewater New Zealand

Westpower has been in consultation with WWNZ for many years about the Project. During this engagement process, both parties have focussed their efforts on reaching an agreement that provides for the Project while also enabling continued recreational use of the Waitaha River for kayaking.

More recently, discussions between the two parties have been highly productive, and progressed to the point where an agreement has been reached that provides for the Project

while also enabling continued recreational use of the Waitaha River for kayaking. In summary, the agreement obligates Westpower to provide no less than four "no-take" days per annum to WWNZ, and to provide an annual financial payment to WWNZ.

Westpower confirms these obligations and, to this effect, has suggested special conditions to be included in any Approvals granted that reflect the agreement reached. A letter from WWNZ is contained in **Appendix 11** and states:

> *WWNZ has a neutral position in relation to Westpower's application for a range of approvals under the Fast-track Approvals Act 2024 for the Scheme. WWNZ's concerns in relation to the adverse effects of the proposed Scheme on kayakers on the Waitaha River have been satisfactorily resolved and WWNZ is content that the adverse effects of the Scheme on paddle sports / whitewater recreation have been appropriately mitigated.*

2.8.4.4 Land Information New Zealand

Westpower has initiated a process to secure necessary easements from Land Information New Zealand to traverse the bed of Macgregor Creek and Allen Creek, at the location of the existing farm track crossing (access road and transmission lines) and to use parts of the bed of the Waitaha River (below its confluence with Macgregor Creek) for gravel extraction. Although these processes are ongoing, there is no known reason why these instruments won't be secured by Westpower as sought. These processes are common for linear infrastructure and Westpower are experienced in similar applications.

2.8.4.5 McLean Farm Manager

Westpower has consulted with [redacted] (McLean Farm Manager) [redacted] has provided written approval for the Project. A copy of this written approval is provided in **Appendix 12**.

2.8.4.6 Local Community

To ensure the local community were informed about the Project and its associated benefits and effects, Westpower recently arranged two public open day sessions where community members were invited to attend. These meetings were held in Waitaha Valley, Harihari and Hokitika on the evenings of 19, 20 and 21 May 2025 respectively.

These events were reasonably well attended and provided an opportunity to local residents to understand the Project, and in particular, what would be involved during its construction. Feedback provided by attendees was very positive and supportive of the Project. Traffic safety was an area of some general concern. Westpower will continue to engage with the community as the Project progresses.

2.8.4.7 Federated Mountain Clubs

Westpower has recently engaged with Federated Mountain Clubs (FMC) about the Application. This included a meeting on 13 May 2025 to explain the Project and its latest developments. Powerpoint slides from that session were shared along with a Final Draft Recreation Report.

At the meeting, and in emails and conversations since, a key matter discussed is public access into the Upper Waitaha Valley. Westpower has no issue as to public access to the Upper Waitaha Valley. The key issues for Westpower are:

> It has limited rights across the McLean land. FMC would need to engage directly with the McLeans and or other landowners if it wishes to secure public (or limited) access across private land. Westpower has no issue with those discussions occurring if FMC wishes. FMC has raised two potential legal accessways that (indirectly) traverse the McLean's farm. If people wish to use those routes to access the Upper Waitaha Valley that is their decision.

> Ensuring health and safety, and compliance with Approval conditions and appropriate requirements related to the construction period and to a much reduced extent the operational period.

In relation to vehicle and pedestrian access across and upstream of Macgregor Creek using the constructed ford and the access road to the Power Station:

> During construction Westpower does not intend, primarily due to health and safety concerns, to provide such access along the new road. The public access track will remain open, subject to limited controls at certain times (such as in the vicinity of any blasting).

> Post construction, Westpower is happy, should vehicle access be granted across the McLean land, or any other route, to discuss access along the access road across and upstream of Macgregor Creek with FMC from time to time (subject to health and safety, compliance with Approval conditions, etc). Westpower is also happy should people wish to walk up the access road rather than the walking track post construction, subject to limited times when Scheme maintenance may occur.

Overall, notwithstanding the ongoing commitment to work constructively in respect of the Project, FMC oppose it.

2.8.4.8 Other Consultation Undertaken

Westpower has also engaged with the following other parties in respect of this FTAA application:

- West Coast Tai Poutini Conservation Board;
- Fish and Game NZ;
- New Zealand Game Animal Council; and
- Herenga ā Nuku Aotearoa - the Outdoor Access Commission; and
- Development West Coast – who have provided a letter of strong support for the Project (**Appendix 13**).

In general, the feedback received from these other parties has been supportive and positive towards the Project.

In response to a recent suggestion from DOC, Westpower has also provided the New Zealand Conservation Authority ("**NZCA**") with a summary of the Project. At the time of preparing this application, Westpower had not received any feedback from NZCA.

2.9 TECHNICAL STUDIES UNDERTAKEN

A wide range of comprehensive technical reports have been prepared as part of the Project's design and effects assessment. These are provided in the appendices to this application document and are listed in **Table 1**.

Table 1: Technical Reports

Report	Appendix Number
The Project Overview Report – providing context on, and rationale for, the Scheme. Project Description, providing a technical description of the proposed Scheme's physical components and their construction and operational methodologies. The Project Overview Report and the Project Description have been prepared by the applicant.	Appendix 3
Partnership Report – providing information about Westpower and their relationship with prepared by the applicant Poutini Ngāi Tahu	Appendix 14
Economic Benefits Reports – Prepared by Brown, Copeland and Co Ltd	Appendix 15
Electricity Resilience Report Prepared by Erik Westergaard	Appendix 16
The Geology and Geotechnical Report – Prepared by Geotech Consulting Limited	Appendix 17

Report	Appendix Number
The Hydrology Report – Prepared by Martin Doyle, Consulting Hydrologist	Appendix 18
The Sediment Report – Prepared by Murray Hicks	Appendix 19
The Vegetation Report – Prepared by TACCRA	Appendix 20
The Terrestrial Fauna Report – Prepared by Rhys Buckingham (Trading as Wildlife Surveys)	Appendix 21
The Whio Report – Prepared by Sustainability Solutions Ltd	Appendix 22
The Terrestrial Invertebrates Report – Prepared by Entecol Ltd	Appendix 23
The Lizard Report – Prepared by RMA Ecology	Appendix 24
The Freshwater Ecology Report – Prepared by EOS Ecology	Appendix 25
The IFIM Report – Prepared by Cawthron Institute	Appendix 26
The Landscape Report – Prepared by Boffa Miskell	Appendix 27
The Recreation Report – Prepared by Rob Greenaway	Appendix 28
The Noise Report – Prepared by Marshall Day Acoustics Ltd	Appendix 29
The Traffic Report – Prepared by Melvin Sutherland	Appendix 30
The Downstream Flow Modelling Report – Prepared by AUS Hydro	Appendix 31
The Public River Safety Report - Prepared by Martin Doyle, Consulting Hydrologist	Appendix 32

2.10 MANAGEMENT PLANS

This application is also supported by the following management plans. These are provided to demonstrate how key environmental effects associated with the construction and operation of the Project will be avoided, minimised or mitigated. 3.The Management Plans have been prepared in consultation with the relevant report experts, except that the ESCP was prepared in consultation with Southern Skies.

Table 2: Management Plans

Management Plan	Appendix Number
DRAFT Construction and Environmental Management Plan (“**CEMP**”)	Appendix 33
DRAFT Erosion and Sediment Control Plan (“**ESCP**”)	Appendix 34
The Vegetation Management Plan (“**VMP**”)	Appendix 35
The Avifauna Management Plan (“**AMP**”)	Appendix 36
The Bat Management Plan (“**BMP**”)	Appendix 37
The Lizard Management Plan (“**LizMP**”)	Appendix 38
The Freshwater Ecology Management Plan (“**FEMP**”)	Appendix 39
The Landscape Management Plan (“**LMP**”)	Appendix 40
DRAFT Construction Noise Management Plan (“**CNMP**”)	Appendix 41

3. PROJECT DESCRIPTION

To provide context on how the proposed Scheme was developed to this point, this section firstly sets out some of the key activities and processes used during its design and overall development. Further details in these respects are presented in the Project Overview Report. The remainder of this section sets out summary descriptions of the individual Project components with additional description details presented in the Project Description (which is included as an Appendix of the Project Overview Report) and the Conceptual Design Drawings provided in **Appendix 42**.

3.1 PROJECT DEVELOPMENT APPROACH

Westpower has been investigating renewable electricity generation expansion options on the West Coast for approximately 20 years. These investigations have focussed on hydro-electric power in preference to other forms of renewable energy generation types given the region's plentiful rainfall and surface water flows. Additionally, hydro-electric generation is the most logical, efficient, effective and economic form of renewable energy for the West Coast given the other two potential energy sources, wind and solar, are less attractive commercially being an area with low wind power densities and low winter sunshine hours.

Westpower has also focussed their investigative efforts on a run-of-river scheme as opposed to a storage dam because of the former's smaller environmental and construction footprint. Additionally for many rivers with a high sediment load, like the Waitaha River, any water impoundment behind a dam would soon fill up with sediment, quickly negating any water storage advantage.

3.2 PREVIOUS SITE SELECTION STUDIES

Between 2004 and 2005 Westpower undertook a survey of rivers with potential for hydro-electric power schemes within their electricity distribution area. This review identified the following short list of six rivers worthy of further site investigation and multi-criteria assessment;

- Waitaha River;
- Amethyst River;
- Kakapotahi River;
- Rough River;
- Toaroha River; and
- Big River.

Following this assessment, the Waitaha and Kakapotahi Rivers were advanced to a pre-feasibility investigation phase. This phase allowed for a better comparison with the Amethyst Hydro Scheme, which had already progressed beyond the pre-feasibility stage.

Following subsequent civil and engineering pre-feasibility studies of these two sites, three conceptual scheme options were identified for the Kakapotahi River option and a total of six initial conceptual scheme design options were prepared for the Waitaha River option - including different combinations of two potential intake locations and three Power Station sites.

Ultimately, the Waitaha River scheme options were favoured over those developed for the Kakapotahi River due to the latter's additional overall environmental impact and likely additional cultural concerns arising from the need to divert water from one catchment to another. The Kakapotahi Gorge is also a well-known and popular kayaking site, noting that, at this time, there were no records of kayakers using the Waitaha River's Morgan Gorge.

Following further civil engineering investigations, the Waitaha Scheme was refined to two design options. Both included a stream bed intake and settling basin at the bottom of the Waitaha Gorge, with an open race and storage pond occupying Kiwi Flat leading to a 1.8 km long tunnel. At the time, these options were preferred on the basis they had the greatest electricity yields given their operating hydraulic heads were higher than other options considered. Westpower then commissioned further feasibility and environmental effects studies on these two preferred options, and in 2006, flow recording equipment was installed in the Waitaha River at Kiwi Flat.

Due to environmental concerns associated with hydro scheme infrastructure occupying Kiwi Flat, a decision was made to move the Scheme's intake point downstream of this area to the top of Morgan Gorge. This meant the Scheme would operate under a lower hydraulic head, however, the consequential loss of generation would be compensated by the ability to incorporate flows from the Whirling Water tributary (which contributes approximately 20% of the Waitaha River's flow). At this stage, the design also included an access road between Macgregor Creek and the relocated intake site, however, this was subsequently replaced with an underground access portal to minimise the area of removal, and permanent loss, of indigenous vegetation.

In terms of the Power Station Site, again, Westpower considered a number of location options with the final proposed site being chosen largely on the basis that it has a lower geotechnical risk profile than others considered. It is also in an area with lower value vegetation and avoids nearby tributaries including Douglas Creek and the Stable Tributary.

Through the project development phase, Westpower has also devoted considerable additional resource to the design, and iteratively refined the headworks structures. The key

design objectives for this part of the Scheme were to provide operational functionality while also minimising visual impact, enabling the ongoing passage of kōaro in and out of Kiwi Flat, preventing trout accessing this section of the river, enabling whio duckling access as well as providing for downstream passage by kayakers into the Morgan Gorge.

3.3 WAITAHA HYDRO SCHEME OVERVIEW AND LAYOUT

Following the comprehensive design process summarised above, the proposed Waitaha Hydro Scheme will be a "run-of-river" design such that river flows immediately upstream of the Scheme's intake match the river flows immediately below the Scheme's tailrace. By adopting this run-of river design, there is no large scale dam structures or upstream storage lakes. Consequently, changes to the Waitaha River's natural flow regime will be limited to an approximately 2.5 km long section of the river located between the Scheme's intake and tailrace (the "abstraction reach").

In summary, the Scheme will divert and use up to a maximum of 23 m^3/s of the Waitaha River's flow to generate up to 23 MW of power, producing an annual output of approximately 120-140 GWh of renewable electricity - equivalent to powering enough to supply approximately 12,000 standard New Zealand households.

To minimise impacts within the abstraction reach, the Scheme will also maintain a residual flow through this part of the river of no less than 3.5 m^3/s.

The Waitaha Hydro Scheme's main components are listed below in order of descending ground elevation within the Scheme. These components are also shown in the preliminary layout drawing at **Figure 5,** with additional information on select components presented further below.

Top of Scheme

> Headworks;

> Access road from access tunnel portal to Waitaha River edge;

Middle / Subsurface Parts of the Scheme

> Separate and parallel underground pressurised water and access tunnels; and

> Underground desander;

Bottom of Scheme

> Power Station Site;

> Access road to Power Station Site from Anderson Road and associated stream crossings; and

- Transmission lines (refer item 1 in **Figure 5** and for lines north of Macgregor Creek, on the McLean Farm refer to **Figure 6**).

Other key components relevant to construction activities include:

- Three Construction Staging Areas at the Headworks and Power Station Site (refer items 12 and 13 in **Figure 5** respectively) and at McLean Farm (refer yellow area **Figure 6**). These are referred to as Construction Staging Areas 1, 2 and 3 respectively;
- A construction access road between the Headworks and Construction Staging Areas 1 (refer item 2 in **Figure 5**); and
- Gravel extraction / spoil disposal areas adjacent to and north of Macgregor Creek (refer green shaded areas in **Figure 6**); and
- Gravel extraction from the dry riverbed of the Waitaha River and storage on the McLean Farm.

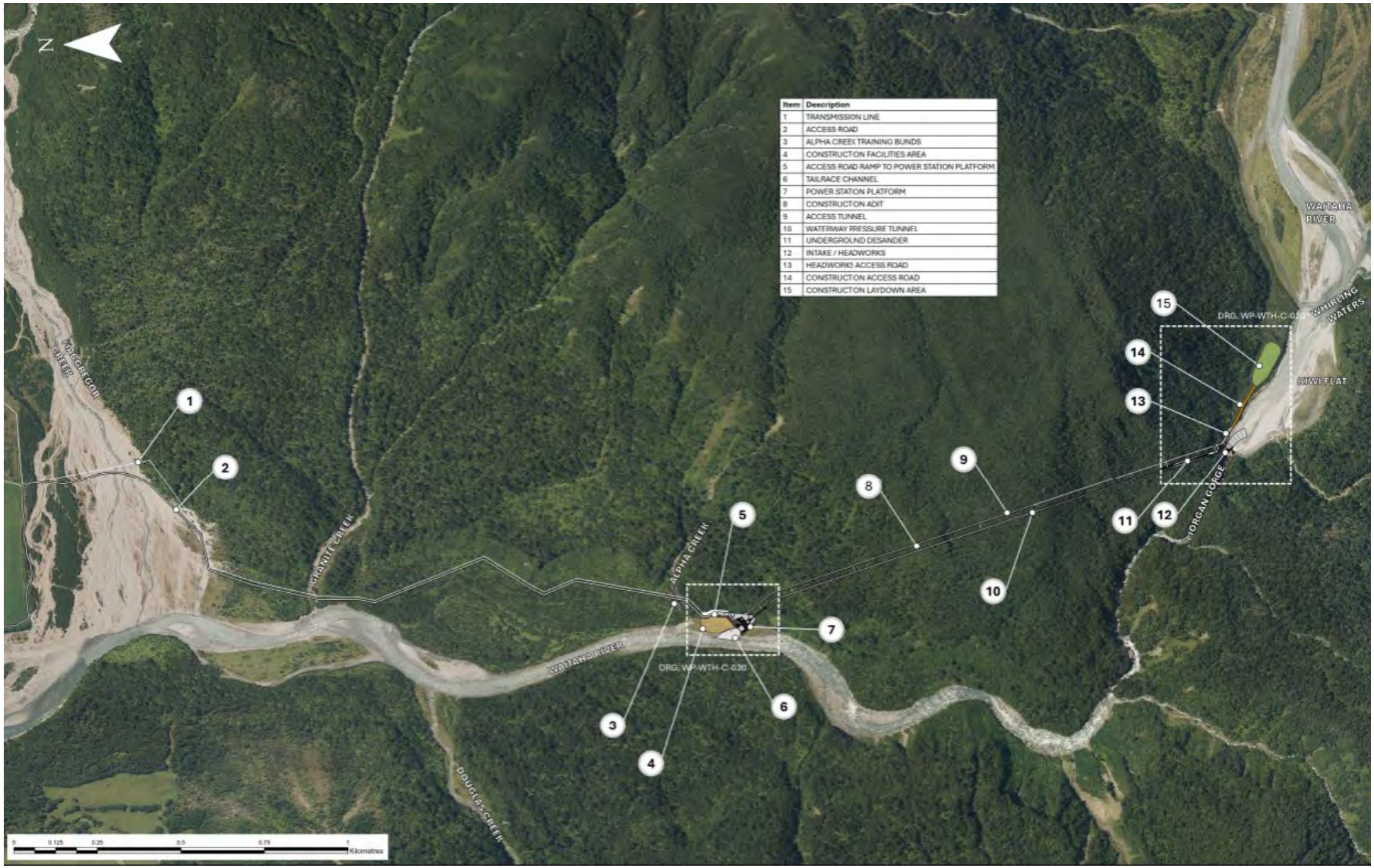

Figure 5: Waitaha Hydro Scheme - Proposed Preliminary Layout

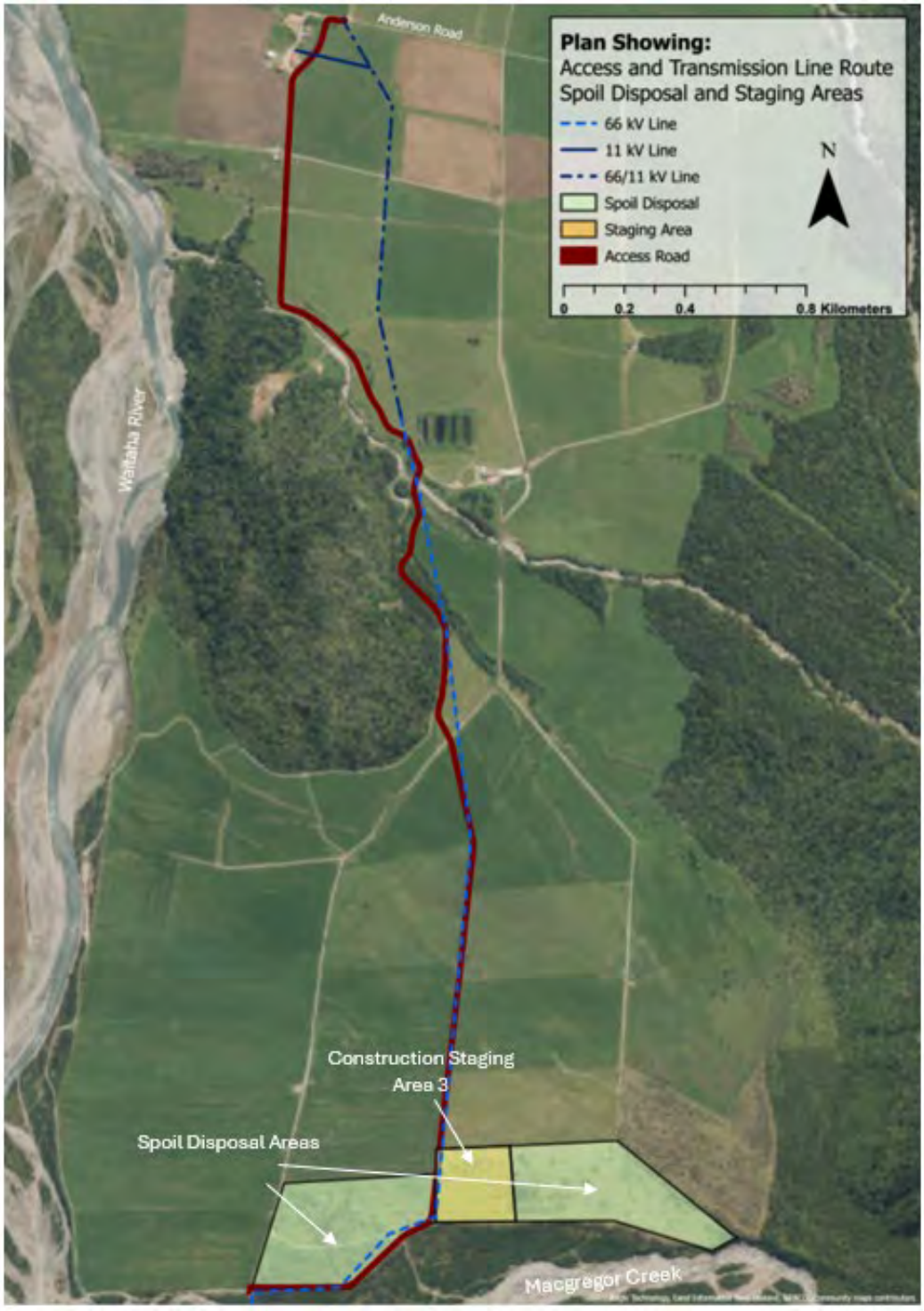

Figure 6: **Plan showing access roading, proposed transmission (66 kV) and distribution (11 kV) lines, Construction Staging Area 3 and Spoil Disposal Areas on McLean Farm.**

3.3.1 Headworks

The Headworks, located near the top of Morgan Gorge, comprise a low-profile weir and water intake structure together with an access tunnel portal. The main purpose of these components is to maintain water levels at the top of the Scheme so that water can be constantly diverted into the water intake tunnel for hydro-electric generation purposes while also allowing for flood flows and sediment to safely pass the Headworks downstream into Morgan Gorge. Other design features include:

Regarding the weir;

- A flow gate designed to provide required residual flows into the abstraction reach;
- A wetted surface downstream on the true left to provide for kōaro passage;
- A downstream weir face designed to prevent upstream trout passage; and
- A sluice gate and channel at the structure's base to allow downstream passage of sediment; and

Regarding the intake:

- Vertical gate and stop logs designed to allow for water tunnel isolation;
- Intake screens to prevent coarse bedload and floating objects entering the water tunnel; and
- A design that creates sweeping velocities in front of the intake to minimise fish entrainment.

A preliminary design plan of the Headworks infrastructure is shown in **Figure 7**.

Public safety signage will also be erected at the Headworks and the design will provide a safe portage route around the structure for kayakers.

The proposal also includes an approximately 60m long accessway between the access tunnel portal and the riverbed margin at the top of the Scheme (refer **Figure 7**).

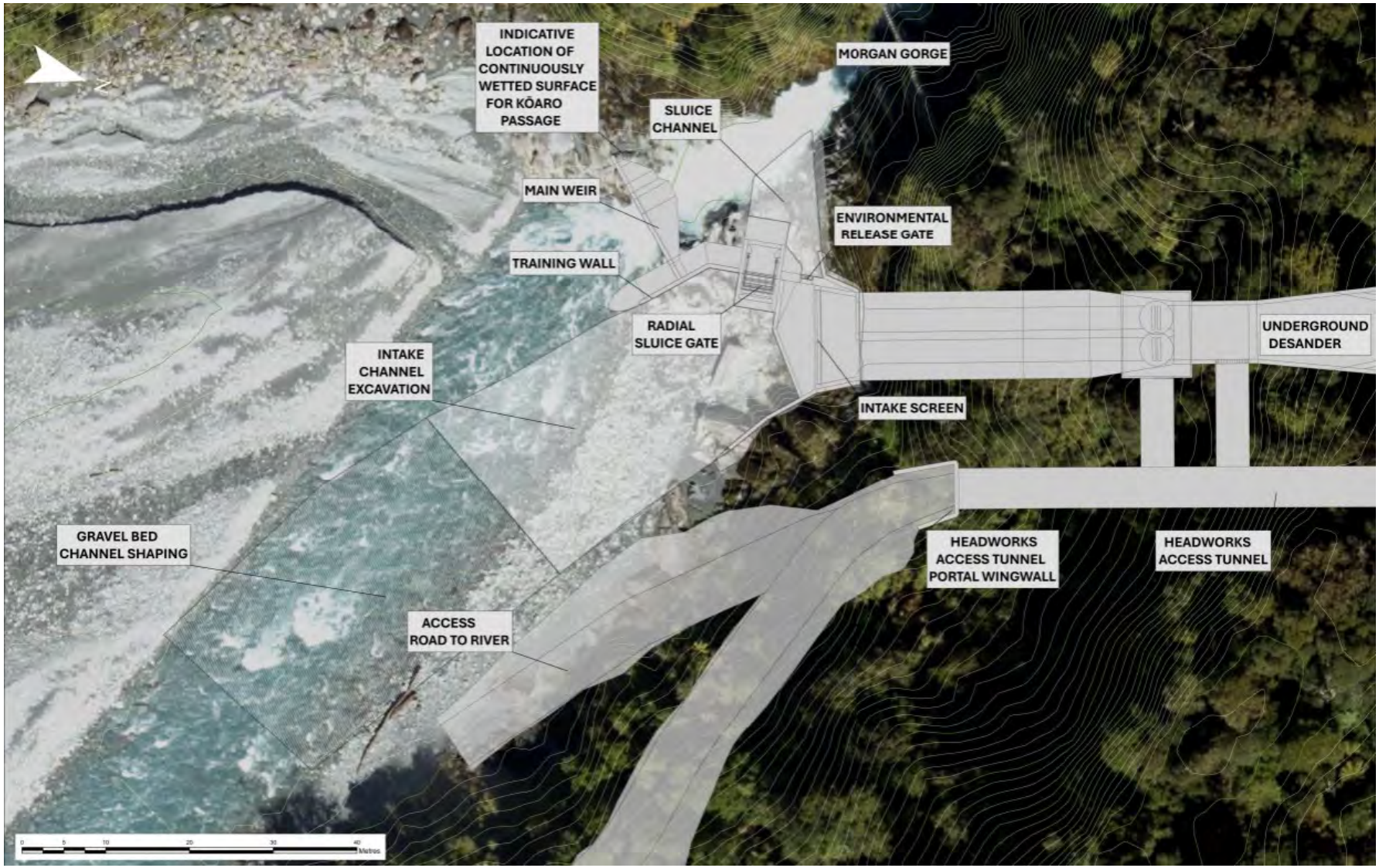

Figure 7: Headworks Preliminary Design Layout

3.3.2 Water Intake and Access Tunnels

The water intake and access tunnels run from the Headworks down to the Power Station Site. The purpose of the water intake tunnel is to convey diverted water at controlled velocities and reduced turbulence to the Power Station. The water intake tunnel includes the following other design features:

> An initial transition section leading to a pressurised desander (refer **Figure 7**) designed to gradually slow the diverted flow, promote sediment settlement and, in turn, protect the power station turbines from erosion;

> A pressure tunnel to transport pressurised water from the desander to the Power Station turbines (refer to item 10 in **Figure 5**);

> A separate pipe to transport sediment from the desander to the power station tailrace where it enters the Waitaha River at the bottom of the Scheme; and

> A penstock to transport water from the bottom of the pressure tunnel portal to the power station.

The purpose of the access tunnel to provide permanent access between the Power Station and the Headworks and to allow inspection and maintenance of the penstock and gates.

Preliminary design cross sections of these tunnels are shown in **Figure 8**.

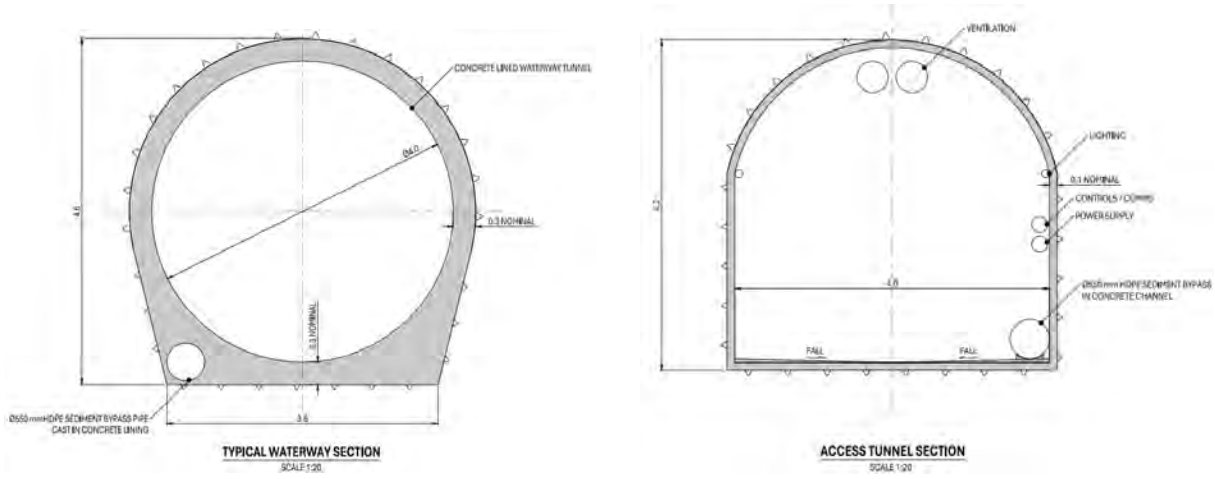

Figure 8: Cross sections of the Pressure Tunnel (left) and Access Tunnel (right).

3.3.3 Power Station Site

The Power Station Site includes a Power Station housed in a powerhouse building containing two horizontal shaft Francis turbines and generators.

The Power Station Site also includes:

> A fenced 66 kV switchyard and substation;

> A tailrace;

> A bypass valve capable of diverting up to 10 m^3/s of flow around the turbines;

> An emergency diesel fired generator (approximately 80 kW);

> A parking area; and

> Public and health and safety signage.

The Power Station building will be approximately 6m high with a footprint of around 525m^2. The switchyard will have a footprint of around 300m^2 and contain typical electrical plant and equipment including a tower around 15 m in height. Overall, walled buildings located within the Power Station Site will have a gross floor area of approximately 550 m^2.

Additional layout detail of the Power Station Site is shown in **Figure 9**.

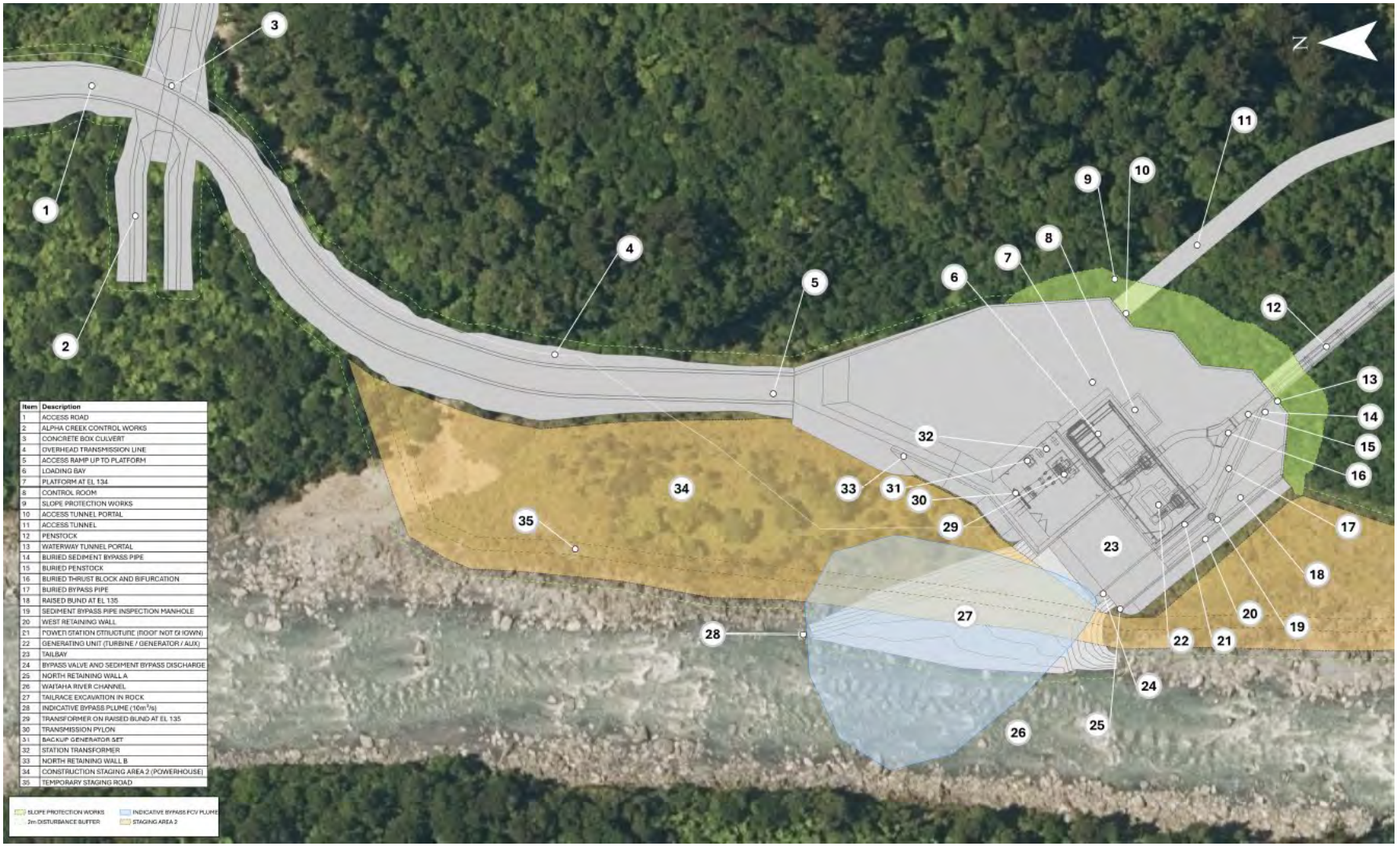

Figure 9: **Waitaha Power Station - Proposed Preliminary Layout**

3.3.4 Bypass Valve

The Power Station will incorporate a bypass valve to mitigate potential adverse public safety and ecological effects associated with sudden flow changes occurring immediately following an unplanned Power Station trip event. Such trip events, while rare, result in an immediate shut down of flow through the station turbines and create a sudden reduction in flow downstream of the tailrace. Simultaneously, this also causes a sudden increase in flow over the Headworks diversion weir into Morgan Gorge. The bypass valve will be designed and operated to smooth out these flow changes until such time as the Waitaha River flows, both above and below the Power Station return to equilibrium.

3.3.5 Warning Sirens and Signage

To alert members of the public of likely rapid river flow changes caused by an unplanned Power Station trip event, audible sirens located at the Headworks and the Power Station will be activated.

These sirens will operate for approximately 30 seconds immediately following any Power Station trip event. The sound power ratings of the two sirens will be designed to avoid the damage or loss of hearing within any wildlife species that may be near the sirens at the time they're activated, while also achieving practicable noise emanation distances so that the sirens will be heard by people who may be nearby.

Warning signs will also be installed as required below and at the Power Station site, along the abstraction reach, and at the headworks to address potential health and safety issues.

3.3.6 River Flow and Weather Monitoring Stations

As part of the Scheme's monitoring plan, remote rainfall and river level[93] monitoring equipment will be installed at the following locations also shown in **Figure 10**;

- Moonbeam Hut;
- Scamper Torrent; and
- Waitaha Gorge.

The monitoring equipment will be installed prior to construction activities commencing. This allows the development of an early warning system so that workers and equipment can be moved out of any hazard area and onto higher ground in the event of rapidly increasing upstream river flows being recorded.

[93] Measured river level data will be converted to river flows using flow curves developed for each monitoring site.

Figure 10: Locations of proposed rainfall and river level monitoring equipment

The monitoring equipment will consist of a short pole approximately 4m high with a small control box, solar panel and outreach arm with water level detector and rainfall gauge similar to the equipment shown in **Figure 11**.

Figure 11: Example of rainfall and river level monitoring equipment

At the Waitaha Gorge monitoring site, the water level recorder will be slightly different and will consist of a galvanised pipe attached to the adjacent bedrock.

3.3.7 Permanent Site Access Roads

To improve safety along Waitaha Road for the Scheme's construction phase, a number of passing bays will be installed along this roadway at regular intervals. Subject to Westland District Council, these may remain as permanent features of this road.

Beyond the southern extent of the public road network, permanent access to the Scheme will be provided by a metalled road connecting Anderson Road to the Power Station Site. This road comprises two main sections. The first, being the section between Anderson Road and Macgregor Creek (**Figure 6**) including a new vehicle crossing off Anderson Road into the McLean Farm (**Figure 12**), and the second, being the section from Macgregor Creek to the Power Station Site (**Figure 13**).

Preliminary design drawings for these road sections are provided in **Appendix 43** and a summary of key road design parameters is presented further below.

In addition, a short (approximately 60m long) accessway will be constructed between the Headworks access tunnel portal down to the Waitaha River's edge (Refer **Figure 7** above).

Figure 12: Proposed New Vehicle Crossing Off Anderson Road

Figure 13: **Indicative Alignment of Access Road and Transmission Lines Between McGregor Creek and the Power Station Site**

3.3.7.1 Permanent Access Road Design Parameters

Access Road Between Anderson Road and Macgregor Creek

This section will utilise an existing farm access track, widened and upgraded to provide a metalled surface with a carriageway width of between 6 and 7 metres.

Access Road Between Macgregor Creek and Power Station Site

This section of the access road will also be of metal construction but with limited seal strips either side of the road at waterway crossings to improve road surface integrity. The maximum average width of this section will be approximately 10 m, however, with adjacent transmission line infrastructure, the total corridor will be approximately 15 m.

Access Road Between Headworks Access Tunnel Portal and Riverbed

This access road section will be unsealed and constructed to a width of approximately 10 m.

3.3.7.2 Temporary Access Roads and Tracks

In addition, a temporary track is proposed along the true right side of the Waitaha River to provide access to Granite Creek and allow the construction of a temporary access bridge over this waterway. In turn, this enables early vehicle access to the Power Station construction site. The alignment of this temporary access track is shown in **Figure 14**.

A temporary road is also proposed at the Headworks area to provide access between the Headworks and the associated Construction Staging Area during the construction phase (see item 14 in **Figure 5**).

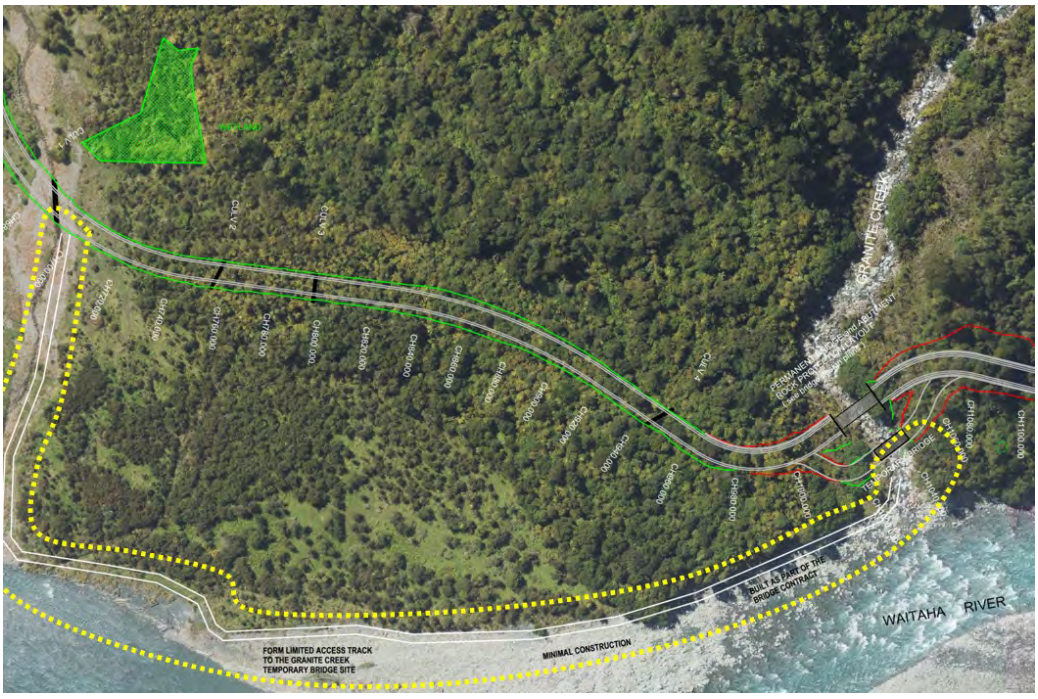

Figure 14: Location of Temporary Access Track to Granite Creek

3.3.8 Stream Crossing Structures

The site's access road requires a number of stream crossing structures. The main crossing structures are summarised below (ordered downstream to upstream) with additional design details provided in the Project Description Report and preliminary design drawings provided in **Appendix 44.**

In addition, there are also 37 conventional cylindrical culverts structures required for all access roads – some of which will not be located in a stream (i.e. located in stormwater pathways). Further details on all culvert structures are set out **Appendix 46**.

McLean Farm Box Culvert Crossings

Two existing ford crossings located on McLean Farm, including one within Allen Creek, will be replaced with 4m wide, 10.5m long concrete box culvert structures.

Macgregor Creek Crossing

Crossing over Macgregor Creek is proposed to be undertaken in two stages. The first stage involves creating a temporary crossing by reforming Macgregor Creek bed gravels into a drivable surface. This will be used while the permanent crossing is established.

The permanent Macgregor Creek crossing will either be a "Drift-Deck" or similar low-level structure comprising of multiple concrete sections that provide for flows to pass underneath during low to normal flows and overtop during high flows (**Figure 15**). The low-level Drift-Deck structure provides additional benefits in terms of lower levels of in-stream maintenance compared to a gravel-based ford.

Figure 16 provides an indicative design plan for the temporary and permanent Macgregor Creek crossings.

Figure 15: Example of a low-level (Drift-Deck) option for the Macgregor Creek crossing

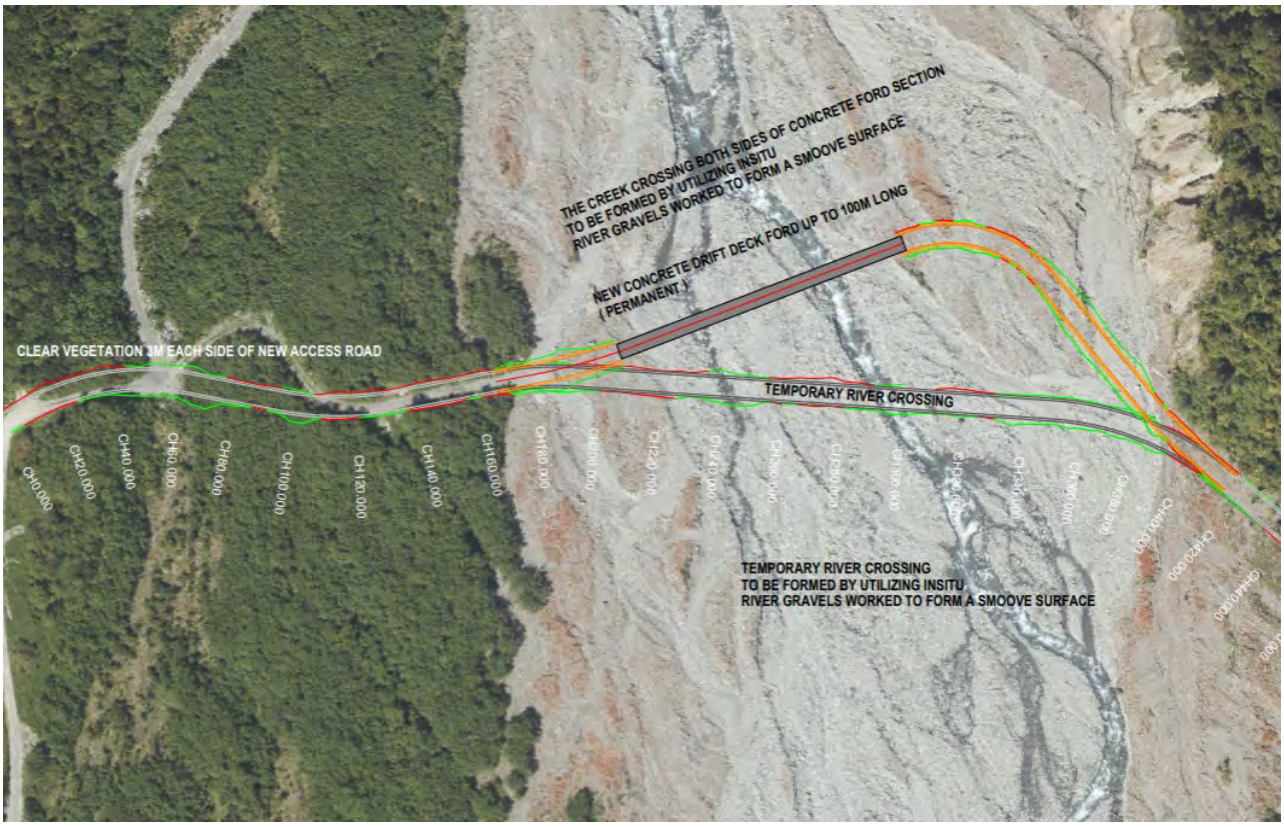

Figure 16: Indicate Design Plan for Macgregor Creek Crossings

Granite Creek Crossing

Crossing the Granite Creek is also proposed to be undertaken in two stages. The first stage involves the construction of a temporary Baily Bridge (or similar) consisting of a metal support structure with wooden planks. This temporary crossing will enable the construction of the permanent crossing structure (in stage 2) and enables the construction of upstream sections of this access road through to the Power Station Site.

The permanent Granite Creek crossing will be a bridge structure approximately 18m in length with a 5-6 m wide concrete deck and including creek bank abutments. The indicative design for this permanent bridge includes one support pile located within a normally dry part of the creek.

Once the construction of the permanent bridge is complete, the temporary bridge will be removed.

Alpha Creek Crossing

The structure proposed to provide access over Alpha Creek is a concrete box culvert approximately 12m long, 4m wide and 2m high. The preliminary design for this culvert also includes the following flow control structures;

> Placement of local rock within the creek bed to form longitudinal bunds that provide an approximately 4m wide flow training channel upstream and downstream of the culvert;

- Placement of rocks to form groynes aligned perpendicular to the training flow channel to stabilise the creek bed upstream of the culvert; and
- Placement of rock rip rap to form aprons adjacent to the upstream and downstream ends of the box culvert.

3.3.9 Transmission Lines

Power poles and transmission lines will be installed between the Power Station Site's substation and Westpower's existing Waitaha substation on Bold Head Road. More specifically this involves the following:

- From the Power Station Site's substation to Macgregor Creek, there will be approximately 2.5 km of single circuit, 66 kV overhead transmission lines using 18.5 m concrete poles with approximately 16 m out of the ground. The pole spacings will be up to approximately 150 m apart from a single 250 m span across Macgregor Creek, and the conductor spacing will be between 1.7 and 2.5 m;
- From Macgregor Creek to the southern end of Waitaha Road, there will be 3.6 km of similar overhead transmission lines. For the last (northern) 1 km of line in this section, the construction will change to a conjoint 66 kV over 11 kV design to allow the existing 11 kV distribution line to the milking shed and farm manager's house to be shifted on to the new poles, after which the redundant 11 kV poles will be removed;
- The 66 kV line will continue northward along of Waitaha Road to SH6, with optimal spans up to approximately 180 m. To minimise power outages during construction, this new 66 kV line will be built, mostly, on the opposite side of the road from the existing 11 kV line that feeds the local area. However, a conjoint 66 kV over 11 kV design will be employed under the following circumstances;
  - where there are protected heritage trees that will need to be avoided;
  - where clearances from existing structures such as dwellings cannot otherwise be achieved under the current safety regulations (Electrical Code of Practice 34);
  - where there is an existing corridor through vegetation, thus avoiding the need for additional clearance of vegetation; and
  - for other practical line design reasons such as placement of poles or guy wires with respect to entranceways.
- From SH6 through to Westpower's connection point at its Waitaha substation, the line construction will be a conjoint 66 kV over 11 kV design that will utilise the existing line corridor, thereby minimising additional vegetation clearance.

No transmission poles will be placed in any surface water body.

3.3.10 Waitaha Substation Switching Station

The new 66kV transmission lines will connect to a new switching station within Westpower's existing Waitaha substation on Bold Head Road. This will comprise high voltage switching equipment, including circuit breakers and disconnectors along with foundations, buswork and support posts and a 3m x 3m control room. An indicative example of this equipment is shown in **Figure 17**.

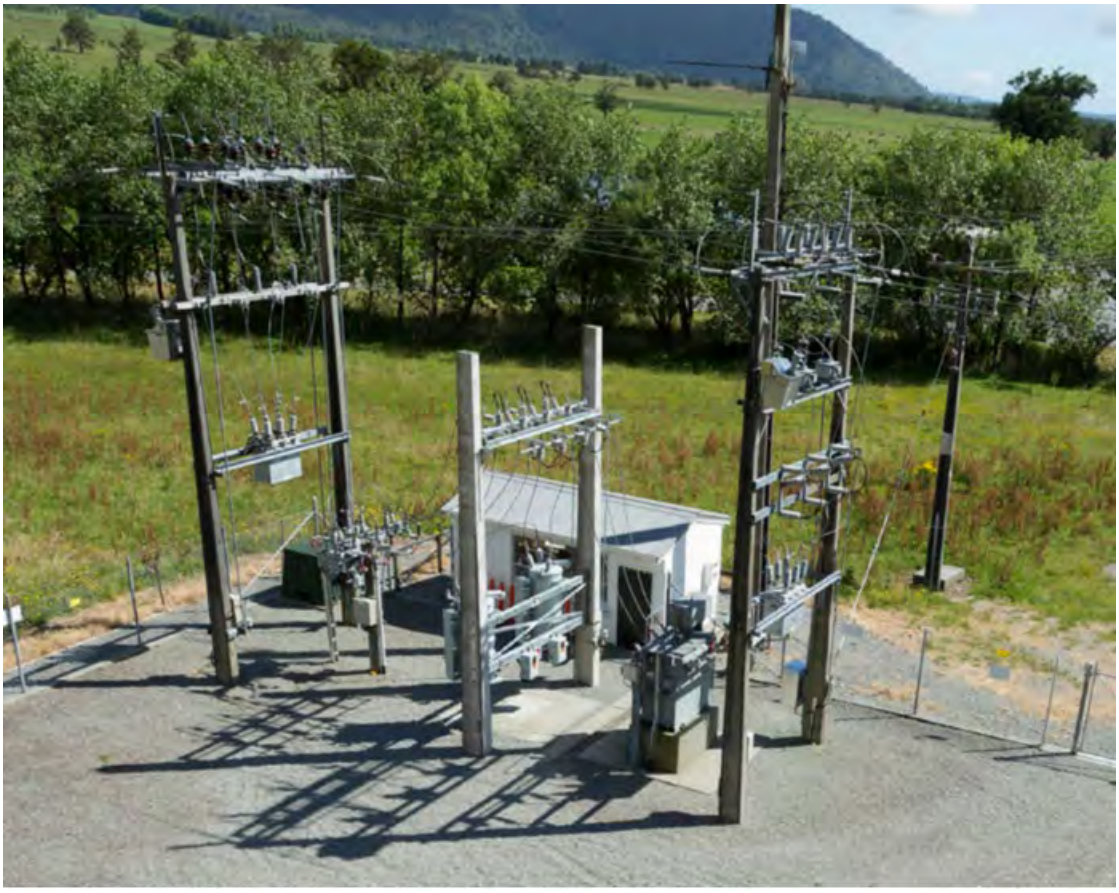

Figure 17: Example of Switching Station Equipment to be Included Within Westpower's Existing Waitaha Substation Site

3.3.11 Signage

Signage will be likely be limited to the following:

- A Westpower Waitaha Power Station Site sign with accompanying health and safety and access restriction information located at or about the southern end of Waitaha Road;
- Public safety signage located at or about the Power Station tailrace, the Headworks, the swing bridge and the geothermal hot pools; and
- Other health and safety and hazardous substances related signage located at appropriate locations within and below the Scheme in accordance with relevant statues (e.g. Hazardous Substances and New Organisms Act and Health and Safety at Work Act).

Other safety signage may also be required following final scheme design and associated hazard assessments.

3.4 SUMMARY OF KEY SCHEME DESIGN AND OPERATIONAL CHANGES SINCE THE 2014 DOC CONCESSION APPLICATION

In preparing the DOC concession reconsideration application, and more recently, in preparing this Fast-track Approvals application, Westpower has continued to refine and develop the Scheme's design, construction methodology and operation practices. This has occurred in line with updated expert assessment reports and associated recommendations as well as other general engineering improvements – all to further reduce the overall environmental impact of the project and / or achieve incremental gains in generation efficiency, public safety and overall project scope certainty for regulators and stakeholders.

Key changes made to the project design since the 2014 DOC concession application include:

To further minimise landscape, natural character and amenity impacts:

- Redesigning the water intake and access portals by (also refer to **Figure 18** showing the headworks design progression 2014 to 2025):
  - lowering the water intake portal so it wholly sits below water level and is no longer visible;
  - lowering the invert on the access tunnel portal so it is closer to water level, thereby reducing visibility and minimising the length of the adjoining access ramp to the riverbed;
  - aligning the access tunnel portal entrance with the striations of surrounding rock;
  - using rough-hewn concrete on the access tunnel portal entrance to enable plants and mosses to take hold and grow;
  - leaving the access tunnel portal entrance as uncovered rock to blend in with the natural lines of the surrounding schist, rather than including artificial strengthening materials on the outer facing edges of the entrance, giving the portal a more natural cave-like appearance. Notwithstanding, concrete wingwalls will need to be added to each side of the portal for safety reasons, but the natural look will be preserved as far as reasonably practical;
  - removing a previously proposed ancillary canopy portal rockfall cover now not required; and
  - carefully placing rocks and boulders to improve integration of the access tunnel portal entrance and access road structures into the local landscape;
- Reducing the size and height of the Power Station to reduce its overall bulk and footprint and relocating it slightly upstream and closer to the lower water tunnel portal to reduce overall visibility; and

> Removing from the overall design the previously proposed sediment discharge portal near the swing bridge at the top of Morgan Gorge. Sediment settled within the desander will now be sluiced down to the Power Station Site to be discharged via the tailrace.

To further minimise recreation impacts (additional to the landscape and natural character refinements above):

> Relocating the lower end of the access track so that the visibility of Power Station will be obscured for the public when walking to Kiwi Flat from the lower end of the valley (noting it will cross the access road);

> Offering four "no take days" per annum during which time kayakers can have unimpeded access to Morgan Gorge and providing annual compensation payments to WWNZ;

> Making further refinements to the weir design to provide additional safety and usability benefits for kayakers;

> Committing to provide Westpower's local weather and river flow monitoring data available to the public via its company website; and

> Proffering compensation towards an organisation to undertake track and hut maintenance in the Upper Waitaha Valley (for example DOC).

To further minimise ecological impacts;

> The additional ecological compensation package that supports regional whio and bat populations for the first 10 years following Commencement of Construction, and for the remaining duration of the site's resource consents, financially assisting an ecosystem programme to achieve positive contributions towards wider West Coast region or Waitaha Valley ecology;

> Through recent detailed hydrological river ramp rate analyses, incorporating a bypass valve into the Power Station design. This additional design feature will ensure that changes in flow downstream of the Power Station are minimised in the event of an emergency trip causing a short-term reduction in Waitaha River flows downstream of the Power Station. The bypass valve will also minimise adverse effects on downstream aquatic ecology during these unplanned station trip events; and

> Through additional site surveys, the refinement of the access road alignment between Macgregor Creek and the Power Station Site to avoid identified natural inland wetlands, large podocarps and maintaining appropriate setbacks from stable tributaries that possess higher ecological value.

To narrow the overall spatial envelope of the project and improve project scope certainty;

> Replacement of the original proposal to consent a number of potential (alternative) transmission routes in favour of a single dedicated route that utilises Waitaha Road (local road) corridor instead of private landholdings north of the McLean Farm.

To minimise public safety risks;

> In addition to the ecological benefits associated with the inclusion of the new bypass valve to the design, this refinement also results in a reduction in the rate of flow increase past the Headworks during an emergency station trip event, thereby, reducing safety risks for any members of the public (e.g. kayakers) located in the Waitaha River between the Headworks and the Power Station tailrace at the time of the trip.

Figure 18: Headworks Design Progression (Top = 2014, Bottom = 2025)

3.5 CONSTRUCTION ACTIVITIES

This section provides a general outline of the stages, programme, management methods and activities specific to the construction phase of the project. As discussed earlier, and in line with the process used for the development and construction of the Amethyst Scheme, Westpower seeks some flexibility in the construction approach to the Waitaha project to ensure these activities are able to account for findings of more detailed site-specific investigations required (e.g. detailed geotechnical studies) and any potential consequential refinements made to the Scheme's as part of Westpower's final design process.

3.5.1 Pre-Construction Activities

Although the design of the Scheme has progressed to a stage appropriate for seeking necessary regulatory approvals, there are still some tasks Westpower needs to undertake to confirm and inform the final design of the Scheme. These remaining pre-construction activities include:

- Geotechnical investigative drilling for tunnel construction which will generally involve:
  - Drilling multiple geotechnical investigation bores from up to seven drilling sites located throughout the Scheme as shown in **Figure 19**;
  - Clearing a total of approximately 100 m^2 of vegetation across each drilling site to locate associated rig infrastructure, buildings and machinery including diesel fired generator (75kW);
  - Delivery of drilling equipment to site via helicopter;
  - Establishment of two temporary camps for three workers (one at the Power Station Site and one at the Headworks) with each camp comprising camp accommodation and closed-loop ablution systems, helipad, emergency hut (for worker protection in extreme weather) and a 15kV generator; and
  - Establishment of 1m wide walking tracks to each drilling site requiring very minor levels of low level vegetation removal;
  - Undertaking in situ and laboratory geotechnical testing; and
- Non-invasive geophysical surveying.

It should be noted that Westpower has already submitted applications with DOC and with the Councils to undertake the above geotechnical drilling activities, however, these same activities are also included within the scope of this FTAA application in the event the latter process provides a faster outcome. In this event, Westpower will formally withdraw their existing applications. In the event authorisations for these pre-construction activities are granted prior to the conclusion of this FTAA application process, conversely, Westpower will formally withdraw specific FTAA approval applications relating to these activities.

Figure 19: Proposed Geotechnical Investigation Drilling Locations

It is also noted that pre-construction ground surveying will be carried out for final access road alignments and culvert locations including surveying of vegetation to avoid, where possible, any trees of significant size or bat roosting potential.

3.5.2 Construction Sequencing and Duration

It is anticipated that construction activities will commence sometime within the 2026-2027 summer construction season while geotechnical drilling and geophysical testing will occur prior to this. Overall, construction of the Scheme is expected to take between three and a half to four years and will follow the general stage sequence and timeframes as summarised in **Table 3** noting some stages overlap. It follows that construction is anticipated to be completed by mid-2029 at the earliest.

Table 3: Project Construction Stages and Approximate Timeframes

Stage Number	Stage Description	Anticipated Minimum Timeframe
1	Establish Construction Staging Area 3 (McLean Farm) including related erosion and sediment controls offices, workshops, ablution blocks and a concrete batching plant.	**Months 1-6**

Stage Number	Stage Description	Anticipated Minimum Timeframe
	Construct the site access road from Anderson Rd to the Power Station Site including an enabling temporary and then permanent bridge crossing over Granite Creek. Build the 66 kV transmission line from the end of Waitaha Rd to the Power Station Site that will initially run 11 kV to provide temporary electricity to the contractor.	
2	Develop Construction Staging Area 2 (Power Station Site) and necessary site infrastructure, including related erosion and sediment controls. Begin construction of the tunnels (from the bottom up).	**Months 7-10**
3	Simultaneous excavation of both tunnels with spoil trucked out to the spoil disposal area on McLean Farm. Begin work on the Headworks using helicopter access only.	**Months 7-24**
4	Punch through of the upper access portal at the Headworks creating a vehicle accessway from the Power Station Site up to the Headworks. This will be used to transport machinery, equipment and concrete through to the Headworks to complete its construction. Complete pressurised water tunnel construction including desander cavern. Establish water intake portal at the Headworks.	**Months 25-27**
5	Construct Power Station and switchyard. Complete transmission line from the end of Waitaha Road to the Westpower network.	**Months 28-33**
6	Final installation and testing of all mechanical, electrical, control and communications equipment. Completion of all civil works including lining of the water intake tunnel and sealing of the tunnel cross drives. Final commissioning. Finalise rehabilitation works.	**Months 33-37**

It should be noted that there may be some variances in the anticipated construction timeframes set out in **Table 3** as well as potential overlap between certain stages. Final construction project timing and durations will be dependent on a range of factors including:

> The availability of contractors;

> The supply and delivery of specialist machinery required;

> Inclement weather;

> Delays due to environmental mitigations - for example nesting birds;

> Timing and duration of favourable low river flow and low flood occurrences (particularly regarding the construction of in-stream structural components);

> Final design size and profiles for the tunnels; and

> Rock conditions encountered during tunnelling.

3.5.3 Construction Workforce

Approximately 150 workers will be directly involved at different stages of the project - peaking during the tunnelling and commissioning stages of the project. There will also be up to 40 additional "back-office" workers located off-site. In addition, the Scheme will require local contractors including those supplying raw materials such as cement and aggregate, cartage contractors, surveyors, designers etc who will also be on site intermittently.

3.5.4 Construction Project Management

3.5.4.1 General Approach

Final and detailed construction methods will, in conjunction with Westpower, be determined by the contractors engaged to deliver certain project components of the project. In this regard, Westpower will work with contractors to develop work methodologies that comply with relevant requirements prescribed in any approvals granted by the Panel.

3.5.4.2 DOC Project Liaison Officer

Like the Amethyst Scheme's construction phase, Westpower proposes to appoint and retain a Project Liaison Officer for the duration of the Waitaha project's construction to managing the relationship between Westpower (and their agents) and DOC during the construction phase of the Project.

3.5.4.3 Construction and Environmental Management Plan

Following engagement of construction contractors, the final work methodologies will be documented in a Construction and Environmental Management Plan ("**CEMP**").

The purpose of the CEMP is to set out how construction activities will, as far as practicable, avoid, remedy or mitigate any associated adverse environmental effects and how these activities will comply with relevant regulatory requirements for the project. The scope of the CEMP will include, but not necessarily be limited to, the following information:

> Roles and responsibilities of staff and contractors including contact details;

> Overview information about the Project Site and the Project,

> Descriptions of the scope of construction activities, including methodology statements for all Project Construction Work Components;

> The Construction Works programme, staging approach, and hours of work;

> The final site layouts (including Construction Staging Areas), locations of refuelling activities and any construction lighting;

> Methods for providing for the health and safety of the general public;

> Final vegetation clearance plans;

> Erosion and Sediment Control Plans ("**ESCP**");

> Cut and fill plans;

> Accidental discovery protocols;

> Procedures for incident management;

> Procedures for the refuelling and maintenance of construction plant and equipment to avoid discharges of fuels or lubricants to watercourses;

> Contingency and emergency spill response procedures;

> Procedures for responding to public complaints;

> Methods for amending and updating the CEMP as required; and

> Other specific management plans (to be appended) in accordance with conditions of relevant approvals.

A DRAFT CEMP is provided in **Appendix 33** of this application.

3.5.4.4 Other Construction Management Plans

The CEMP will provide an overarching Management Plan for the construction phase, however, it will also include (normally as appendices) various other management plans designed to address specific aspects of Construction Works associated with individual scopes of construction work activities. In this respect, the following other management plans will be implemented either for the entire construction project or during specific construction phases;

- Erosion and Sediment Control Plans ("**ESCP**");
- Dust Management Plan ("**DMP**");
- Construction Traffic Management Plan ("**CTMP**");
- Flight Management Plan ("**FMP**");
- Construction Noise Management Plan ("**CNMP**");
- Vegetation Management Plan ("**VMP**");
- Freshwater Ecology Management Plan ("**FEMP**");
- Bat Management Plan ("**BMP**");
- Avifauna Management Plan ("**AMP**");
- Lizard Management Plan ("**LizMP**"); and
- Landscape Management Plan ("**LMP**").

3.5.5 Construction Disturbance Footprint

To construct the Project, approximately 35 hectares[94] of land will be physically disturbed by earthworks and vegetation clearance activities.

Once operational, and all rehabilitation works have been completed, the footprint of the Hydro Scheme will be approximately 4.9 hectares. A breakdown of these areas is set out in **Table 4**.

Table 4: Approximate Areas of Disturbance

Project Area / Component	Construction (ha)	Operation (ha)
Area 1		
Weir	<0.1	<0.1
Intake Channel (including Sluice Channel)	0.2	0.2
Intake Structure and Intake Portal	<0.1	<0.1
Tunnel Portal, Intake Accessway and River Protection	<0.1	<0.1
Road to Construction Staging Area 1	<0.1	0
Construction Staging Area 1	0.7	0
Test Drilling Site (x 4)	<0.1	0

[94] Excluding sections of transmission line corridor between Anderson Road and the Waitaha Substation, Stream Works and the Waitaha Riverbed gravel extraction area

Project Area / Component	Construction (ha)	Operation (ha)
SUB TOTAL	**1.2**	**3**
Area 2		
Power Station, Control Room, Switchyard	<0.1	<0.1
Hard fill area between power station, access road and tunnel portal	0.3	0.3
Tailrace & tailbay	0.2	0.2
Retaining wall, river protection, access ramp	0.1	0.1
Slope protection works	<0.1	<0.1
Construction Staging Area 2 (including temporary staging road and riverside flood protection)	0.8	0
Test Drilling Site (x3)	<0.1	0
Transmission Line (where separate from the road)	0.6	0.6
Access Road (where separate from transmission line)	0.6	0.6
Access Road and Transmission Line (running in parallel)	3.2	2.7
Waterway Training and Flood Protection at Alpha Creek	0.2	0.1
SUB TOTAL	**2**	**7**
Areas 3 and 4 (to farm boundary at Anderson Road)		
Construction Staging Area 3	3	0
Land-based gravel Winning and Spoil Disposal Areas	17.3	0
Farm boundary at Macgregor Creek to farm boundary at Anderson Road – access road	2.15	2.15
Farm boundary at Macgregor Creek to farm boundary at Anderson Road – transmission line	2.15	2.15
Farm boundary at Macgregor Creek to farm boundary at Anderson Road – transmission line and access road adjacent	2.6	2.2
Gravel Screening area	0.8	0
SUB TOTAL	**28**	**6.5**

Project Area / Component	Construction (ha)	Operation (ha)
TOTAL	**35.4**	**11.9**

3.5.6 Vegetation Clearance

Clearance of indigenous vegetation will be undertaken in accordance with all relevant protocols and requirements set out in the Avifauna, Bat, Lizard and Vegetation Management Plans provided with this application and in accordance with the certified version of the DRAFT CEMP.

Within the construction disturbance footprint summarised above, approximately 6.8 hectares of indigenous vegetation clearance will be required. Approximately 4.46 hectares of this will become permanently occupied by new structures with the remainder being rehabilitated. A breakdown of these areas is set out in **Table 5**.

Table 5: Approximate Areas of Indigenous Vegetation Clearance[95]

Project Area / Component	Construction (ha)	Permanent loss (ha)
Area 1		
Combined Weir and Training Wall.	0.0055	0.0013
Intake Channel and Sluice Channel.	0.0585	0.0485
Intake Structure and Intake Tunnel Portal (and a Horizontal Geophysical Test Drilling Site Subsumed Within This Area).	0.0135	0.0095
Headworks Access Tunnel Portal Entrance and Wingwall(s).	0.0099	0.0025
Access Tunnel Portal and Intake Structures Access Road.	0.0792	0.0600
Temporary Road to Construction Staging Area 1.	0.1287	0.0
Temporary Construction Staging Area 1.	0.6710	0.0
Separate Geophysical Test Drilling Sites.	0.0400	0.0
Area 1 Sub-totals (Rounded Up)	***1.01***	***0.13***
Area 2		
Access Road (Separate Section (part, c. 175 metres)) – true right margin of Macgregor Creek.	0.1750	0.1750

[95] Data from the Vegetation Report

Project Area / Component	Construction (ha)	Permanent loss (ha)
Transmission Line (Separate Section (part, c. 175 metres)), true right margin of Macgregor Creek.	0.1750	0.1750
Transmission Line (Separate Section (part, c. 208 metres)), crossing main active bed of Macgregor Creek.	Unvegetated	Unvegetated
Access Road (Separate Section (part, c. 208 metres)), crossing main active bed of Macgregor Creek.	Unvegetated	Unvegetated
Transmission Line (Separate Section (part, c. 250 metres)), - true left of Macgregor Creek.	0.2500	0.2500
Access Road (Separate Section (part, c. 180 metres)) – true left of Macgregor Creek.	Unvegetated	Unvegetated
Access Road and Transmission Line Parallel, Macgregor Creek to Powerhouse (c. 240 metres west on true left of Macgregor Creek, thence 1604 metres from Macgregor Creek to Power Station Site).	3.3112	2.7480
Power Station Area Including Tunnel Portal Access and Turning Area, Batter Slopes, Tunnel Portal Exits, Portal Headwalling, Power Station, Switchyard, Tailbay, and Slope Protection Works, including a Geophysical Test Drilling Site Subsumed Within Portal Exit Area.	0.6010	0.5736
Power Station Tailrace.	0.0970	0.0970
Temporary Construction Staging Area 2.	0.7450	0.0
Waterway Training and Flood Protection at Alpha Creek.	0.2142	0.1071
Separate Geophysical Test Drilling Site.	0.0100	0.0
Area 2 Sub-totals Rounded Up	***5.58***	***4.13***
Area 3		
Spoil Disposal Areas.	Non-indigenous	Non-indigenous
Temporary Construction Staging Area 3.	Non-indigenous	Non-indigenous

Project Area / Component	Construction (ha)	Permanent loss (ha)
Access Road and Transmission Line Parallel.	Non-indigenous	Non-indigenous
Area 3 Sub-totals Rounded Up	***0.00***	***0.00***
Area 4		
Access Road from Area 3 to Waitaha Road.	0.1200	0.1200
Transmission Line (Separate Section (part)), from Area 3 to Waitaha Road end.	0.0850	0.0850
Transmission Line upgrade in Rural Development/Farmland Area, between Waitaha Road and Waitaha Substation via Waitaha Road, S.H. 6, Beach Road and Bold Head Road.	Non-indigenous or Net Zero Effect on indigenous	Non-indigenous or Net Zero Effect on indigenous
Area 4 Sub-totals Rounded Up	***0.21***	***0.21***
Project Total		
Scheme Totals	**6.80**	**4.46**

3.5.7 Construction Earthworks

Construction earthworks will comprise the following approximate volumes of disturbance:

> Access road construction = 17,300 m^3;

> Underground tunnel works = 102,500 m^3;

> Headworks, Power Station Site and Construction Staging Areas 1, 2 and 3 = 22,800 m^3;

> Land-based gravel extraction from spoil disposal areas on McLean Farm for use in access road construction = 100,000m^3; and

> Waitaha River gravel extraction for use in access road construction = 23,000m^3.

3.5.8 Erosion and Sediment Controls

Prior to any bulk earthworks commencing, appropriate erosion and sediment controls will be implemented at work sites to minimise sediment losses, and in particular, minimise sediment discharges to surface water. In this respect, Westpower has prepared a DRAFT Erosion and Sediment Control Plan ("**ESCP**") that covers proposed stormwater and sediment control processes and procedures, including relevant site plans and drawings, for the following construction areas and activities:

> Pre-construction geotechnical investigations;

> Construction and upgrade works required for the access track through the McLean Farm, including associated stream crossings;

- Establishment of Construction Staging Area 3 (McLean Farm);
- Land-based gravel extraction and spoil disposal activities also on the McLean Farm;
- Construction of the access road from McLean Farm to the Power Station Site, including associated stream crossings;
- Earthworks at the Power Station Site, including establishment of Construction Staging Area 2 (Power Station Site);
- Management of water discharges associated with tunnel construction, and if required, sediment and pH treatment methods;
- Establishment of the intake structure and associated Stream Works; and
- Establishment of Construction Staging Area 1 (Headworks) and associated temporary access road and stream crossings.

A copy of the DRAFT ESCP is provided in **Appendix 34** of this application. The principles and sediment control device design criteria adopted in the DRAFT ESCP are in general accordance with Environment Canterbury's Earthworks and sediment control toolbox.

If required, the DRAFT ESCP includes provisions to establish chemical treatment on Sediment Retention Pond devices such that any discharge beyond the construction site can achieve a minimum clarity standard of 100mm.

As an example, **Figure 20** provides the ESCP for the Construction Staging Area 1 and spoil disposal areas.

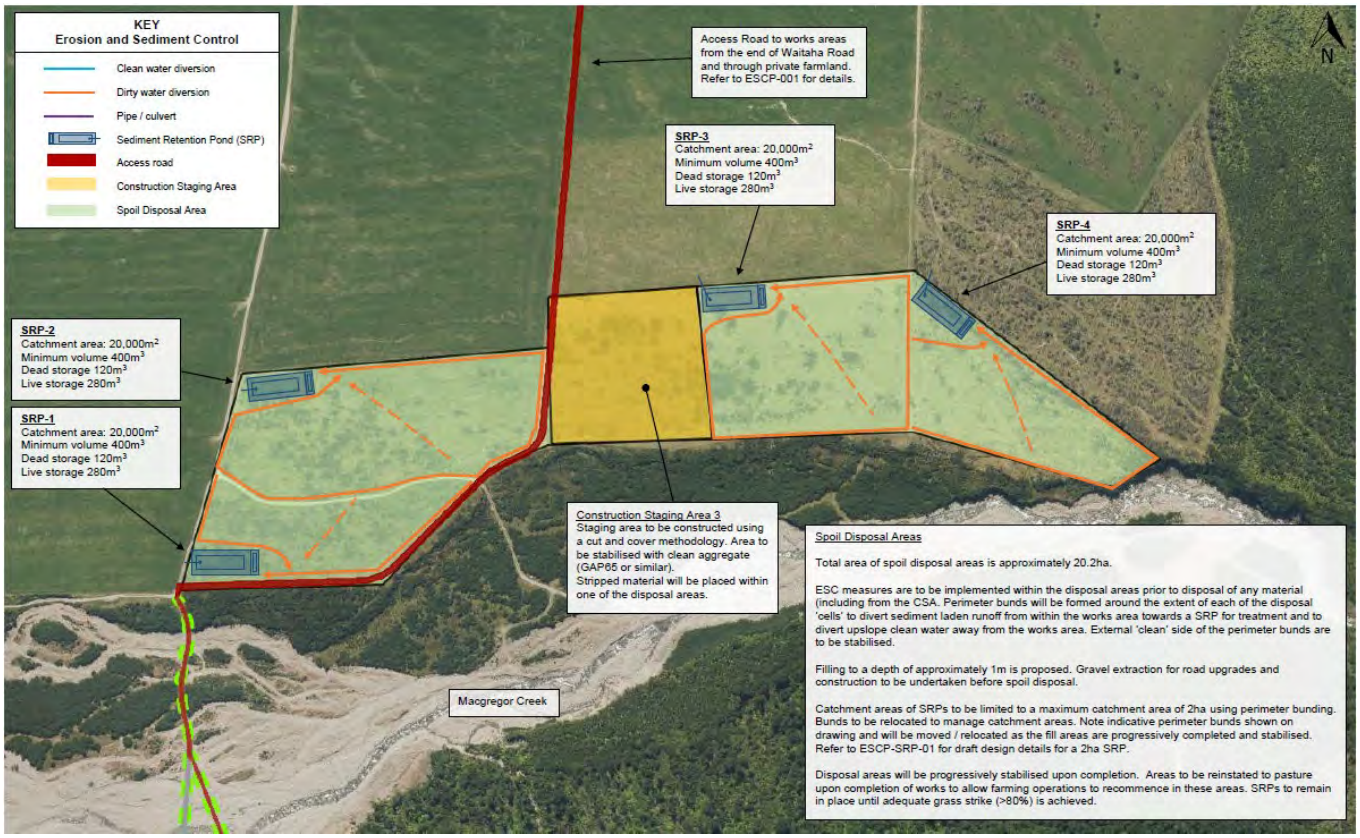

Figure 20: DRAFT ESCP for Construction Staging Area 1 and spoil disposal areas

Westpower proposes that, following the engagement of project construction contractors, the DRAFT ESCP will be finalised, submitted to West Coast Regional Council for certification and, subject to certification being given, implemented across the various construction project areas.

3.5.9 Gravel Extraction

Locally sourced gravel materials will be used to construct the project's access roads. Importantly, this avoids the need to haul gravel to the site from an external quarry and minimises construction traffic and overall cost. The required gravel is proposed to be taken from land-based alluvial deposits located on the McLean Farm and from the Waitaha Riverbed as discussed further below.

3.5.9.1 Land-Based Gravel Extraction

Land based gravel extraction activities are proposed to be undertaken within the spoil disposal areas shown above in **Figure 6**. No more than 100,000 m^3 of gravel will be extracted from these areas, which cover a combined area of approximately 17 hectares.

Gravel extraction will be undertaken with a digger to create shallow depressions or pits. The extracted gravels will be screened on site to achieve the desired size with all surplus material being returned to the extraction pits. No gravel washing or processing (i.e. crushing) will be needed.

3.5.9.2 Waitaha Riverbed Gravel Extraction

In addition to land-based gravel extraction, to further supplement the supply of gravel required for constructing the new access roads, up to 23,000 m^3 of Waitaha Riverbed gravel will also be extracted from the area shown in **Figure 21** (the Riverbed Gravel Extraction Consent Area). This area is within an existing area consented for stone extraction activities[96]. Notably, the existing Westland Schist consent specifically excludes the removal of bed material less than 0.3 m in diameter, therefore, no gravel extraction can currently occur in this area. To this extent, Westpower's proposed river gravel extraction is compatible with the existing consented activity within this area and does not compete for the same resource. Further, Westland Schist also has consent for stone extraction from Macgregor Creek.

The proposed river gravel extraction activity will follow standard West Coast Regional Council requirements including:

- No removal of indigenous vegetation;
- Limited to dry riverbed only;
- Nesting bird searches;
- Adherence to appropriate setbacks from flowing water and any identified nesting birds; and
- Maximum extraction depths not to exceed level of adjacent river water levels.

Extracted river gravels will be screened in a small area located on an old airstrip within the McLean Farm (see **Figure 21**). All surplus material will be returned to the riverbed and used for extraction area rehabilitation works. As with the land-based extraction activities, no gravel washing or processing (i.e. crushing) will be needed.

[96] Resource Consent number 2019-0037 held by Westland Schist

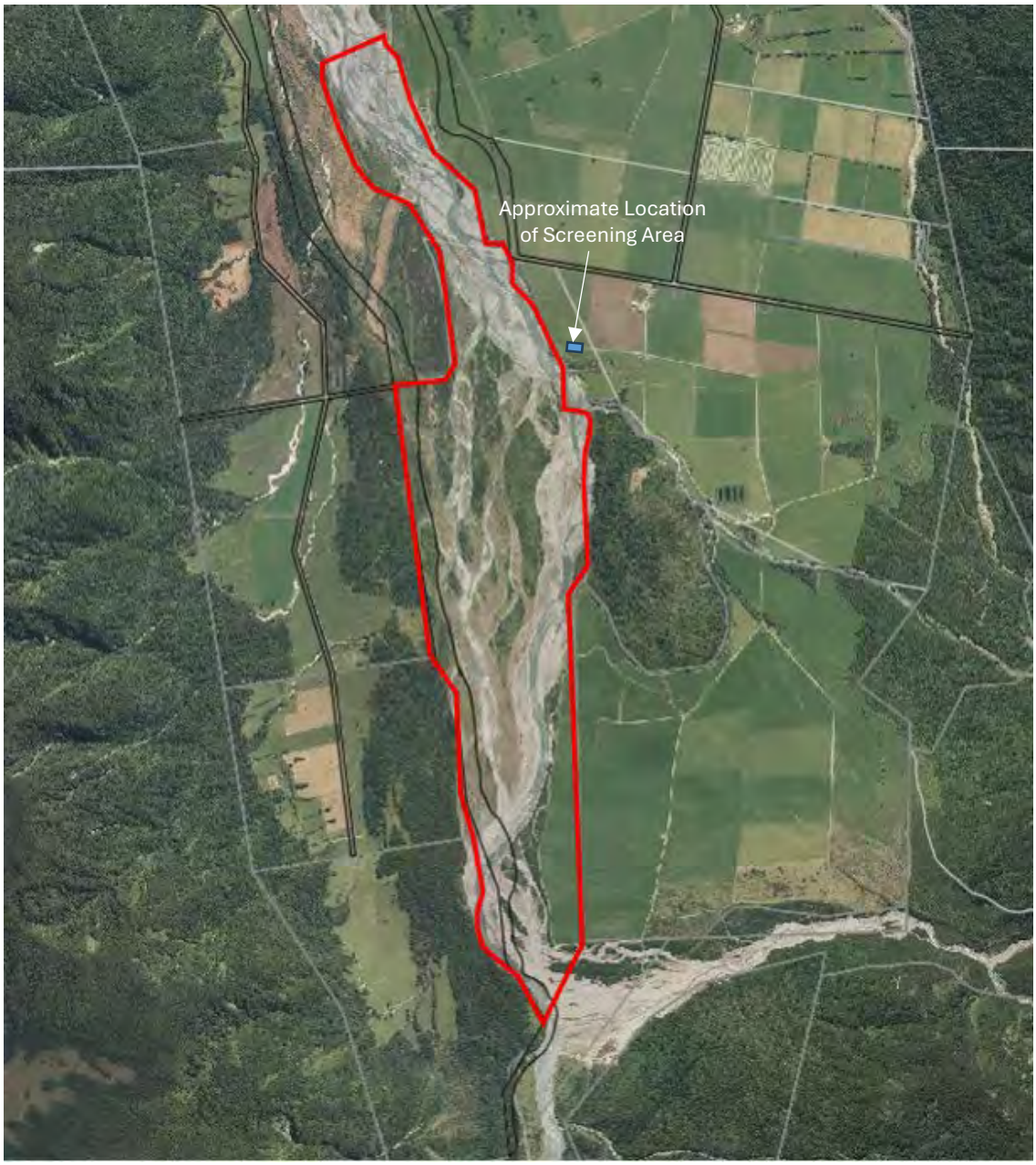

Figure 21: Waitaha River Gravel Extraction Area

3.5.10 Spoil Disposal

As noted earlier, the spoil disposal sites are shown above in **Figure 6** and comprise a total area of approximately 17 hectares.

Spoil material from the tunnel excavations will be spread across these areas and eventually rehabilitated as pasture for the dairy farm. Some vegetation removed during the construction of the access road will also be disposed in these areas and some may be stockpiled for post construction transplanting during site rehabilitation works. Any usable topsoil will be scraped off and stockpiled for later spreading back over the spoil material before being re-grassed.

The maximum height of spoil material spread in these areas will be no more than 1 m above existing ground level. However, the actual final ground level will be determined by:

> The amount of gravel extracted from these areas for access road construction purposes;

> The final tunnel design and associated spoil material generated; and

> The amount of tunnel spoil used for constructing the Power Station foundations.

A low rock bund will also be installed along the eastern and southern perimeters of the eastern spoil disposal area to protect it, and Construction Staging Area 3, from any potential inundation during extreme flood events.

3.5.11 Stream Works

Temporary Stream Works will be required to construct various components of the Project located in or on beds of rivers and streams.

As noted earlier, the DRAFT ESCP includes management methods for all Stream Works. These methods have been designed to provide for safe, and as far as practicable, dry work areas while also minimising bed disturbance, streamflow disruption and risk of spills and sediment entrainment. For key Streamwork areas, these methods, are summarised in turn below.

3.5.11.1 Access Road Culvert and Ford Crossing Structures

The general methodology for constructing all culverts and fords will involve:

> Where practicable, constructing all culverts during times of low or no flow to avoid or minimise bed sediment entrainment in downstream flows.

> If streams are flowing at the time of installation, an appropriately qualified and experienced ecologist will advise of any requirement to undertake pre-construction fish surveys to indicate the presence of fish. If fish are identified, they will be salvaged and relocated prior to any stream bed disturbance occurring. This activity will be undertaken in accordance with the Freshwater Ecology Management Plan requirements.

> If streams are flowing at the time of installation, upstream coffer dams will be constructed and flow diversions around the work sites will be established.

> Using machinery, necessary stream bed preparations will be undertaken for pre-cast culvert structure placement.

> Following culvert placement, fill material will be placed above the culvert to road invert levels and appropriate erosion controls / armouring materials placed adjacent to culverts entrances and exits.

> For the Macgregor Creek “Drift Deck” structure, a concrete foundation strip will initially be established on the riverbed either poured in-situ or pre-cast, then pre-cast structure sections

are placed on the concrete foundation, normally using a Hiab truck. The edges of the sections will then be aligned, dowel bars will be inserted into pre-drilled holes and then grouted.

3.5.11.2 Granite Creek Bridge Piles

Machinery and construction workers will enter the Granite Creek bed to prepare foundations for the abutments at either end of the bridge. It is likely that the abutment work can be undertaken on dry riverbed during low flow conditions. The Granite Creek bridge does not have a mid-span pier.

3.5.11.3 Alpha Creek Training Structures

To minimise potential erosion damage to the proposed Alpha Creek box culvert and the access track, upstream structures are proposed to train creek flows towards the box culvert opening. These training structures will be formed by placing rip rap and in-situ river rock and gravel materials using appropriate earthmoving machinery.

3.5.11.4 Power Station Site Tailrace

Stream Works associated with constructing the tailrace will simply involve machinery moving and smoothing out bed material located in and adjacent to the true right side of the Waitaha River to achieve the desired shape and level for the tail race structure.

3.5.11.5 Diversion Weir and Headworks

The proposed sequencing, and accompanying drawings, for constructing the diversion weir and other in-stream Headworks structures is discussed in the DRAFT ESCP. In summary this will involve:

- Constructing a temporary coffer dam on the true right side of the Waitaha River at the diversion weir site (**Figure 22**);
- Constructing the true right components of the Headworks including right-hand section of the diversion weir and water intake channel structure; and
- Relocating the temporary coffer dam to the true left side of the Waitaha River to enable construction of the left abutment works, including the left-hand section of the weir.

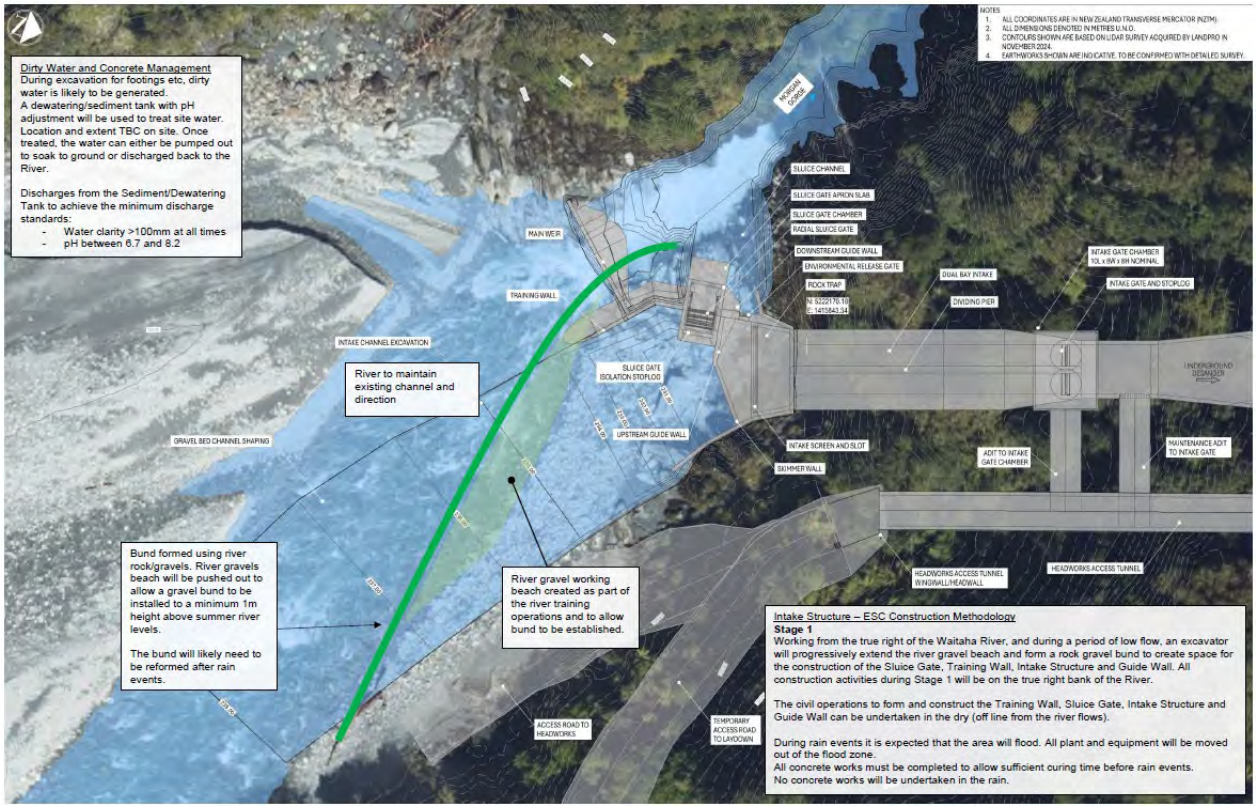

Figure 22: DRAFT Stream Works Plan – Construction of true-right Headworks structures

3.5.12 Concrete Batching

Concrete required for the Scheme's construction will be sourced from a batching plant located within Construction Staging Area 3. Establishing a concrete batching plant on site avoids the need for concrete trucks to use the local roading network to deliver concrete and minimises the flight lengths for any concrete required to be delivered via helicopter.

The concrete batching plant will use water from on-site balance / storage tanks which will be fed by a 10 l/s supply of water from the Waitaha River. The plant will also have its own stormwater and spill controls and a truck wash. All contaminated water from the plant, and from any truck washing, will be contained within the batching plant site perimeter and directed to a dedicated soakage facility designed to avoid any overland flow beyond the plant's site boundary.

Specific details regarding the size and bulk of the batching plant and its components are not yet known, however, plants typically used for these types of construction projects have a site footprint of around 1200m^2 and include cement silos that range in height between 10 and 20 metres.

The concrete batching process will also adopt practicable measures to minimise dust emissions.

3.5.13 Tunnelling and Related Discharges

Given the likely nature of subsurface materials within the site, it is likely that the primary methodology for constructing the Scheme's pressurised water tunnel and access tunnel will involve a drill and blast technique to create the excavation, followed by transportation of blast material to

the spoil disposal areas using trucks. Alternatively, if areas of weak rock are encountered, the tunnelling work could be undertaken using a milling head on an excavator. It is anticipated that this work will be undertaken on a 24/7 basis once the tunnelling has established the lower portals and is underground.

Tunnelling also requires stringent health and safety design considerations and construction process including establishing adequate ventilation, adequate rock-bolting and ensuring the sufficiently spaced adits (horizontal passages) are provided between the two tunnels to act as escape routes in the event of an emergency.

It is anticipated that at least 50% of each of tunnel's length will require rock bolting and shotcreting to ensure adequate structural integrity of the structures. Shotcrete has a relatively high pH and will also likely incorporate additives, such as steel or polypropylene fibres, to improve its strength and durability.

The tunnelling equipment will also require a dedicated water supply of up to 10 l/s. It is proposed to establish a temporary surface water take from the Waitaha River for this, although there may be opportunities to minimise this take by supplementing the water supply with groundwater encountered within the tunnels.

Tunnel construction activities will also encounter groundwater that will require special management. It is anticipated that all intercepted groundwater will be directed to a dedicated cleanwater drain (or pipe) running within, and down, the tunnels before being discharged to the Waitaha River.

To reduce the risk of the Waitaha River becoming contaminated from high pH shotcrete discharges and/or other drilling wastewater containing suspended sediment or shotcrete residues / additives, the DRAFT ESCP (discussed above) also presents the following monitoring and management method:

> All dirty tunnel water will be collected in a sump at the bottom outlet of the tunnel where it will be monitored for pH before being pumped into a purpose designed settlement tank;

> If the water clarity within the initial settlement tank is greater than 100mm, and the pH is within +/- 0.5 pH units of the existing upstream river pH baseline, and within the range of 6.7 and 8.2[97] to conservatively ensure no adverse pH related in-stream impacts, then the water will be discharged to the Waitaha River, or for additional safeguarding, pumped to the Sediment Retention Pond at Construction Area 2;

> If the water clarity within the initial settlement tank is less than 100mm then chemical treatment will be initiated to achieve the minimum water clarity standard of 100mm;

[97] The Freshwater Ecology Report confirms that the pH of Waitaha River mainstem and tribs below Morgan Gorge ranges from 7.1 to 7.8

- If the pH within the initial settlement tanks is outside +/-0.5 pH units of the existing upstream river pH baseline, and outside of the range of 6.7 and 8.2 then the water will be pumped to a second treatment tank;
- The second treatment tank will be set up to inject carbon dioxide gas ($C0_2$) or Citric Acid into the water to lower the pH levels. Once the pH levels are within 0.5 pH units of the existing upstream river pH baseline, and within the range of 6.7 and 8.2, then the water will be discharged to the Waitaha River, or for additional safeguarding, pumped to the Sediment Retention Pond at Construction Area 2; and
- As a contingency, if the pH cannot be lowered to within range, then the water will either be collected by a (sucker) truck and removed off site to an authorised disposal area or taken to the onsite concrete batch plant to be recycled into the concrete batching process.

This methodology will ensure that any tunnel water discharged to the Waitaha River will meet the following water quality standards:

- Water clarity of greater than 100mm; and
- pH between 6.7 and 8.2.

To further reduce contamination risk and pre-treatment effort, Westpower will also implement robust water separation systems within the tunnels during their construction to minimise clean groundwater becoming mixed with any dirty water associated with tunnel drilling, blasting and shotcreting.

3.5.14 Domestic Wastewater

All domestic wastewater (greywater and sewage) generated during the construction phases will be managed within closed loop containerised systems resulting in no discharges to land or water.

Wastewater holding tanks will be incorporated within the design of all Construction Staging Areas. These will be regularly monitored and routinely emptied by a waste removal contractor with all waste taken off site for disposal at an authorised wastewater treatment facility.

Prior to the access tunnel being completed, removal of any domestic wastewater generated at Construction Staging Area 1 will be initially transferred, via helicopter, from the Headworks area to Construction Staging Area 3 before being taken off site.

During pre-construction investigative drilling, greywater will be discharged to ground and sewage will be contained and disposed of off-site.

3.5.15 Refuse

It is proposed that, as part of the CEMP, all construction areas will be maintained in a tidy state and all solid refuse generated during the construction phase will be initially disposed in dedicated and secure collector bins (or similar) before being collected by a waste removal contractor and removed from site to be disposed at a licensed landfill or legally authorised recycling site.

Prior to the access tunnel being completed, removal of any solid waste materials generated at Construction Staging Area 1 will be initially transferred, via helicopter, from the Headworks area to Construction Staging Area 3 before being taken off site.

3.5.16 Construction Traffic

As an average, it is expected that, during some phases of construction, there will be up to 32 light vehicle movements per day, up to 6 heavy vehicle movements per day and between 1 and 2 oversize vehicle movements per month. A more detailed breakdown of anticipated construction traffic movements across the Project's various phases of construction is set out in the Traffic Report.

The impact of construction traffic will be minimised through the use of Construction Staging Areas enabling trucks and heavy equipment to be stored on site rather than arriving and leaving the site on a daily basis. Construction traffic is further minimised by utilising in-situ gravels for access road construction and by establishing an on-site concrete batching plant. This enables gravel material to be delivered to construction areas without using the local roading network, and limits the materials that need to be transported in for concrete to dry cement and certified gravel.

Large plant items and heavy equipment such as cranes will be transported to site via the upgraded access road across McLean Farm to Macgregor Creek then onto the main access road through to the Power Station Site.

3.5.17 Construction Helicopter Flights

Anticipated daily helicopter flights in and out of the Project Site are summarised in **Table 6** below.

Table 6: Anticipated Helicopter Flights During Construction

Project Phase	Helicopter flights (One return trip = 2 flights)
Pre-Construction (Investigative drilling and geophysical surveying)	2 per day (average)
General Hydro Scheme Construction Work (to and from the Headworks and Power Station Site Construction Staging Areas)	8 per day (maximum)
During high demand construction tasks at the Headworks prior to the access tunnel being completed	30 per day (maximum)
Transmission Line Construction	2 to 4 per day (average)

Westpower proposes to prepare and implement a specific Flight Management Plan ("**FMP**") for construction. The FMP will:

> Confirm helipad locations, flight paths and helipad use protocols for all pilots during construction and operations;

> Inform pilots flying to and from the Project Site of the relevant requirements of the Consents; and

> Raise the awareness of pilots flying to and from the Project Site of the proximity of high value ecological areas supporting wildlife that can be adversely affected by helicopter noise.

3.5.18 Public Safety

Public safety during the construction phase will be carefully managed so that people can continue to enjoy recreational activities within the Waitaha Valley while remaining safe. This will be achieved through the following key initiatives by Westpower:

> Appropriately located site signage warning people of construction activities occurring, their locations and associated hazards;

> Subject to the agreement of the Department of Conservation, alternative walking track access will be established on the true right of the Waitaha River so that recreational visitors can avoid the Power Station Site construction area (but will need to cross the access road);

> Where appropriate, erecting barriers (or similar) and restricting public access to specific demarcated construction activity areas where associated hazards could result in harm to members of the public; and

> Enforcing temporary short-term closures of parts of the walking track during high-risk construction activities such as during above-ground blasting.

Westpower will also establish relevant lines of communication with local residents to ensure they are aware of construction activities, and in particular, any periods of expected high construction traffic.

3.6 SCHEME OPERATIONS

3.6.1 Normal Operating Regime

Normally, the Scheme will operate 24 hours a day and seven days a week. The Scheme's normal hydrological operation regime is summarised in **Table 7**.

Table 7: Waitaha Hydro Scheme Normal Operating Regime

Operating Scenario	Waitaha River flow at Headworks	Water intake flow (diverted to Power Station)	Water released to Morgan Gorge
Normal operation scenario	< 35 m^3/s	0 – 23 m^3/s	3.5 m^3/s - 12 m^3/s
High flow scenario	35 – 250 m^3/s	23 m^3/s	12 – 227 m^3/s

3.6.2 Abnormal Operating Regime

Abnormal Scheme operations include the following main scenarios:

> Station shutdown and startup (e.g. before and after routine maintenance);

> The extreme flood scenario where Waitaha River flows exceed 250 cumecs;

> Days where agreed flows are provided for kayakers; and

> Instances where the Power Station trips resulting in an instantaneous halt in flow through the turbines and a consequential opening of the Power Station bypass valve designed to minimise changes in flow rate increase through Morgan Gorge and flow rate decrease below the tailrace during these events.

The Scheme's operating regime during these abnormal scenarios is summarised in **Table 8**.

Table 8: Waitaha Hydro Scheme Abnormal Operating Regime

Operating Scenario	Waitaha River flow at Headworks	Water intake flow (diverted to Power Station)	Water released to Morgan Gorge
Controlled Shutdown	Ambient flow at time of shutdown (Controlled maintenance shuts typically timed for low flows)	Max ramp-down rate of 0.5 m^3/s/minute (for river flows less than 40 m^3/s) From max production of 23 m^3/s to 0 m^3/s takes approximately 45 minutes.	Results in a controlled flow increase from pre-shutdown flow (min 3.5 m^3/s) up to full ambient river flow within the duration of the shutdown process.
Controlled Startup	Ambient flow at time of startup	Max ramp-up rate of 0.5 m^3/s/minute (for river flows less than 40 m^3/s) From 0 m^3/s to max production of 23 m^3/s	Results in a controlled flow decrease from full ambient river flow down to production residual flow (min 3.5 m^3/s) within the

Operating Scenario	Waitaha River flow at Headworks	Water intake flow (diverted to Power Station)	Water released to Morgan Gorge
		takes approximately 45 minutes.	duration of the startup process.
Extreme flood event scenario *No operation*	> 250 m^3/s	0 m^3/s	> 250 m^3/s
Kayak usage scenario *Flow range for kayakers*	15 – 25 m^3/s	0 m^3/s	15 – 25 m^3/s
Station trip scenarios Unplanned station shutdown (with bypass valve).	Various ambient flows. Trips can occur anytime		

There is also the potential, subject to health and safety and operating parameters, to utilise the bypass valve to reduce in river flow during no-take days by up to 10m^3/s. This allows some higher flows to be reduced into a preferred flow range for kayaking.

3.6.3 Workforce

Like Westpower's Amethyst Hydro Scheme, there will be no permanent staff based on-site during normal operation. Instead, the site will be remotely controlled and monitored from Westpower's Control Room in Greymouth.

Notwithstanding, the additional site will require an additional fulltime equivalent staff member to undertake regular operations and maintenance duties. There will also be additional demand for other local goods and site support services.

3.6.4 Flow Monitoring

The proposed flow monitoring regime for the Scheme will be designed to record the following:

> Flow rate into the pressurised water tunnel – measured by an ultrasonic flow transducer installed around the outlet of the de-sander;

> Flow rate of any water entering Morgan Gorge past the weir (measured using a radar level transducer device immediately downstream of the weir and then applying a rating curve);

- Flow rate through the power station – measured by the opening of the wicket gates on the turbines or the actuator on the bypass valve such that flow going through the turbines or bypass valve can be calculated for any given hydraulic head and any given wicket gate or bypass valve actuator position.

Importantly, under this proposed monitoring regime, all calculated flows can be added together to determine total Waitaha River flow at the Scheme's Headworks.

Monitoring of river levels will also be undertaken upstream of the Scheme using equipment installed at Moonbeam Hut, Scamper Torrent, at the bottom of Waitaha Gorge and just downstream from the weir (**Figure 10**).

3.6.5 Meteorological Monitoring

The monitoring stations installed at Moonbeam Hut, Scamper Torrent and at the bottom of Waitaha Gorge will also record rainfall data. This information, together with the information from flow monitoring, will be used to provide downstream maintenance workers early warning of rapidly rising river levels (i.e. similar to during the construction phase).

3.6.6 Operational Traffic Generation

During the first year of operation, it is anticipated there will be one to two visits per week to the site by Westpower staff or contractors to check on structures and to undertake maintenance. After approximately 1 year of operation, visits to the site are expected to drop to an average of no more than one per week.

Helicopter trips up to Kiwi Flat may be required on very rare occasions if access through the main access tunnel is not available for any reason or if something needs to be attended to extremely urgently.

3.6.7 Site Operational Services

Any raw water requirements at the site will be sourced from the penstock within the power station. This is expected to be very minor and generally limited to on-site hoses, sinks, toilets and used in closed-loop systems for generator cooling. This water may also be utilised as a fire-fighting supply and will be filtered to provide potable water. There will be a small potable water storage tank located in the Power Station compound.

Stormwater generated within the Power Station Site will be directed into the tailrace where it will discharge into the Waitaha River along with any flows exiting the Power Station. Stormwater management within the Power Station Site will include appropriate oil detection, and oil plate separation devices prior to any stormwater from high-risk parts of the site (e.g. transformer bund) being discharged. These systems will be confirmed following detailed design and included as part of a Stormwater Management Plan for Council certification.

Sewage and grey water from the Power Station Site toilet will be directed into a holding tank on site. The wastewater will be removed from the holding tank as required by a waste removal contractor and taken to a licensed waste treatment facility.

All solid waste generated within the site will also be removed by a waste removal contractor and taken to a licensed waste disposal or recycling facility.

The site will also be equipped with remote monitoring technologies (e.g. CCTV and fire detection systems) and a standby diesel generator (up to 100 kVA) to provide back-up electricity supply for essential site services during a power outage and for black-starting[98] the Power Station.

3.6.8 Hazardous Substances

The Power Station Site will include the use and storage of hazardous substances. The main hazardous substance will be transformer insulating oil, which generally contains a mixture of paraffinic and napthenic mineral oil fractions. It is expected that the site's transformer will contain approximately 30,000 litres of oil. The site will also include a double skinned diesel tank to supply the emergency diesel generator and various other hydraulic oils, detergents and chemical s as listed in the Project Overview Report.

To avoid any transformer oil spoils from reaching the Waitaha River, Westpower proposes to locate the transformer within a fully bunded area capable of containing more than the full amount of oil in use. The bunded area will also be equipped with alarms and automatic oil detecting equipment that prevent release of oil contaminated water. The final design for the transformer bund and oil detection system will be confirmed during detailed design and will be documented in the Stormwater Management Plan.

All hazardous substances stored and handled on the site will also be undertaken in accordance with HSNO requirements and monitored and enforced by Worksafe NZ.

Westpower will also incorporate the Waitaha Hydro site into their well-established company-wide hazardous substances management systems[99] .

3.6.9 Desander Discharges

As part of the Scheme's operation, it will be necessary to periodically flush the desander of accumulated sediment. This will be undertaken by transporting settled sediment, via a dedicated underground flushing line, to the Power Station Site where it will be discharged to the Waitaha River via the Power Station tailrace.

These desander flushing events will be timed to coincide with natural runoff events when the Waitaha River flows are 75 m^3/s or greater. This is also when the receiving river environment

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[98] Black starts are undertaken when there is no power supply from the local grid.

[99] EWPP-HSE-GEN-023 – Hazardous Substances Management

possesses naturally high suspended bedload and low clarity. During these times, the river will also be in a state of high energy, thereby, preventing desander sediment accumulating at the tailrace.

Westpower also considers that desander flushing events may also be environmentally acceptable during lower river flows, however, acknowledges that robust trials, monitoring and separate Council certification will be required before this can occur.

3.6.10 Public Safety

Similar to minimising public safety risks during construction, Westpower will operate the Scheme such that any disruption to public visitors to the area is minimised and that members of the public are made aware of site related dangers and hazards so they can protect their own health.

Westpower has a very mature public safety management system accredited by Telarc under NZS 7901:2014. This standard requires that public safety hazards are identified, mitigation is proposed and risks assessed. It also requires that any public safety incidents are recorded and fully investigated and corrective actions implemented. Westpower proposes to incorporate the Waitaha Hydro Scheme within their certified management system for public safety.

In addition, the following other initiatives will be undertaken to keep people safe during the Scheme's operational phase;

- Installing and maintaining appropriately located site signage warning people of the Scheme's operational hazards;
- Subject to the agreement of DOC, retaining an alternative walking track access on the true right of the Waitaha River so that recreational visitors avoid the Power Station Site;
- Where appropriate, erecting barriers (or similar) around hazardous Scheme components. For example, a safety barrier will be constructed above the Scheme's intake, and climb-proof fencing will be installed around the Power Station tail-bay to mitigate the risk of falling from height;
- Adoption of a relatively low startup and shutdown ramping rate (no more than 0.5 $m^3/s/min$ during river flows less than 40 m^3/s), thereby reducing the rate of flow and water level change downstream of the weir and the tailrace which, in turn reduces downstream public safety risk;
- Installing a bypass valve to mitigate potential adverse public safety effects associated with sudden river flow changes occurring immediately following an unplanned Power Station trip event;
- Installing sirens to warn the public of potential sudden river flow changes within the abstraction reach and at the Power Station, associated with a Power Station trip event;
- Following the Scheme's final design, undertaking a full safety risk assessment and preparing a Public Safety Risk Report for submission to the Councils; and

> Making available through their website, live Waitaha River flows and any other relevant information on any specific risks and safety requirements associated with the Scheme.

3.6.11 Operational Management Plans

The following management plans will be prepared and implemented during Scheme operations.

> A Site Operations and Maintenance Plan ("**SOMP**") to ensure relevant operational requirements within any Fast-track Approvals granted are complied with and adverse effects on people and the environment resulting from operational and maintenance activities are appropriately avoided, remedied, mitigated or minimised;

> A Stormwater Management Plan ("**SMP**") to ensure stormwater generated at the Power Station Site is appropriately managed to avoid any loss of hazardous substances to the Waitaha River to minimise stormwater contamination more generally; and

> A Morgan Gorge Flushing Management Plan ("**FlushMP**") to minimise adverse impacts on the quality of habitat for biota in the abstraction reach associated with accumulated fine sediment that may occur following extended low-flow periods.

In addition, the following ecological management plans implemented during the construction phase of the Project will endure into the Operational Phase (at least initially):

> The Freshwater Ecology Management Plan ("**FEMP**");

> The Avifauna Management Plan ("**AMP**");

> Vegetation Management Plan ("**VMP**"); and

> Landscape Management Plan ("**LMP**").

3.7 SCHEME MAINTENANCE ACTIVITIES

3.7.1 Key Maintenance Tasks

Key maintenance activities associated with the Waitaha Hydro scheme will include the following;

> Annual plant inspection and maintenance work;

> Periodic redistribution of accumulated sediment upstream of the Headworks and of the Macgregor Creek ford following large floods;

> Other unplanned maintenance in the event of operational issues or plant and equipment failure.

The ElectroNet Group, of which Westpower is a part, will carry out the bulk of the maintenance work on the Scheme. ElectroNet has a robust health and safety management system for all its maintenance activities which is certified under ISO 45001:2015.

Additionally, Westpower has a proven reputation of maintaining high voltage distribution and generation assets and applies an ISO 55000 approach to the ongoing management of their assets.

This includes the development and maintenance of formal asset management systems and ensures they continue to perform to expected standards to achieve minimal risk of failure, consequently minimising any associated risks on the environment.

3.7.2 In-stream Maintenance Works

Remedial work involving excavators will be required following large floods if gravel has filled the intake area restricting flow into the water intake tunnel. This will involve the use of a hydraulic digger (between 12 to 20 tonnes in size) with the riverbed to recreate the channel and help flush accumulated sediment through the sluice channel. These works may also involve the creation of river training bunds above the weir to encourage the river to flow toward the true right of the gorge where the water intake structure is situated.

Other in-stream maintenance works include intermittent maintenance of access road stream crossing structures, in particular, the crossing structure over Macgregor Creek. In general, this will involve the use of machinery to clear any accumulated sediment and debris following large flood events.

3.7.3 Maintenance Traffic Generation

Traffic during annual maintenance periods, generally lasting 3 to 4 days, where up to 10 vehicle trips (20 vehicle movements) per day can be expected for contractor's vehicles coming to site.

Appropriate speed limits will be enforced.

4. APPROVALS NEEDED AND SOUGHT

Westpower is seeking the following approvals for the Waitaha Hydro Scheme under Section 42 of the Fast-track Approvals Act:

> Resource consents (district and regional) that would otherwise be applied for under the RMA (s42(4)(a)) including any consents required by a National Environmental Standard;

> Concession(s) that would otherwise be applied for under the Conservation Act (s42(4)(e));

> Wildlife approvals that would otherwise be authorities applied for under the Wildlife Act (s42(4)(h)); and

> Approvals / dispensations that would otherwise be applied for under regulation 42 or 43 of the Fisheries Regulations (s42(4)(j)).

Further details of the specific approvals required are outlined below.

4.1 RESOURCE MANAGEMENT ACT (1991)

This section identifies the RMA status of the proposed activities previously described and discusses the extent to which those activities would otherwise be the subject of resource consent applications under the RMA.

The Project sits within the jurisdiction of the WCRC and the WDC. The relevant planning instrument for WCRC is the RLWP. The relevant planning instruments for WDC are the Westland District Plan and the proposed Te Tai o Poutini Plan[100] (**"pTTPP"**).

In this instance, it is also appropriate to consider relevant NESs that might require additional consents.

The status of the proposed activities with respect to these instruments is presented below.

4.1.1 National Environmental Standards

There are several NES's currently in effect as regulations. The following are relevant in this instance:

> NES for Assessing and Managing Contaminants in Soil to Protect Human Health ("**NES-CS**"); and

> Resource Management (National Environmental Standards for Freshwater) Regulations 2020 ("**NES-F**").

[100] The Te Tai o Poutini Plan is a proposed combined district plan for the West Coast.

4.1.1.1 National Environmental Standard for Managing and Assessing Contaminants in Soil to Protect Human Health 2011

The NES-CS came into effect on 1 January 2012 and provides for territorial authority functions under s31 of the RMA with respect to contaminated land management. The NES-CS aims to ensure that land affected by contaminants in soil is appropriately identified and assessed before it is developed, and if necessary, the land is remediated, or the contaminants contained to make the land safe for human use.

The existing Waitaha Substation, where new switching equipment is required to be installed as part of this Project, is a "piece of land" under the NES-CS since "substations" are listed in part B of the Hazardous Activities and Industries List ("**HAIL**").

Under the NES-for contaminated soils (NES-CS), a consent is required if:

> The volume of soil disturbance exceeds more than 25 m^3 per 500 m^2; and/or

> The volume of soil removed from the site is greater than 5 m^3 per 500 m^2.

Figure 23 shows the location and extent of the existing Waitaha Substation site. It has an area of approximately 534 m^2, therefore, the maximum permitted volume of disturbance is around 25 m^3 and the max volume of soil removal is approximately 5 m^3.

Although final design is not yet confirmed for the new switching equipment, Westpower consider that the installation work will comply with the above maximum soil disturbance and removal thresholds. Accordingly, the proposed earthworks associated with installing the new switching equipment does not require a separate consent under the NES-CS, and to this extent, the associated regulations are not relevant.

Figure 23: Waitaha Substation Site Location and Extent

4.1.1.2 National Environmental Standards for Freshwater

The NES-F came into effect from 3 September 2020 to regulate activities that pose risks to the health of freshwater and freshwater ecosystems and to uphold Te Mana o Te Wai.

To achieve its purpose, the NES-F prescribes national environmental standards for activities that pose risks to freshwater and freshwater ecosystems. If the NES-F specifies an activity status, this overrides any activity status separately identified in a Regional Plan for the respective activities.

The NES-F applies to the following aspects of this project:

- Regarding natural inland wetlands (Part 3, Subpart 1);
  - Proposed earthworks occurring outside the 10m setback but within the 100m setback from a natural wetland, requiring consideration under Subpart 1 (Natural inland wetlands), regulation 45 (*Construction of specified infrastructure)*; and
- Regarding passage of fish affected by structures (Part 3, Subpart 3);

- Various new proposed culverts in the beds of Allen Creek, Alpha Creek, and various other unnamed Waitaha River tributary streams;
- A new proposed weir structure on the bed of the Waitaha River; and
- A new culverted ford structure in the bed of Macgregor Creek.

These aspects are discussed in turn below.

4.1.1.3 Earthworks Near Wetlands

The construction of the access road and transmission line between the Power Station and Macgregor Creek will involve earthworks located within 100m of some identified natural inland wetlands.

Since the project is infrastructure that will deliver a service operated by a lifeline utility, as defined in the Civil Defence Emergency Management Act 2002[101], the earthworks are associated with construction of specified infrastructure. Therefore, regulation 45(3) is relevant in this regard, which states:

> ***45 Discretionary activities***
>
> *(3) Earthworks or land disturbance outside a 10 m, but within a 100 m setback from a natural inland wetland is a discretionary activity if it—*
>
> *(a) is for the purpose of constructing specified infrastructure; and*
>
> *(b) results, or is likely to result, in the complete or partial drainage of all or part of the natural inland wetland.*

The proposed earthworks, including earthworks associated with the proposed access road, are sufficiently set back from natural wetlands located within 100 metres of the works, to ensure the disturbance will not result in any change to wetland hydraulic function and will not likely result in their complete or partial drainage. Accordingly, the proposed earthworks do not trigger a need for consent under the NES-F.

4.1.1.4 Fish Passage

With regards to fish passage, the NES-F regulates structures in a river or connected area[102] that may impact fish passage, such as a culvert, weir, flap gate, dam or ford. The project does not involve flap gates or dams in a river, stream or connected area, however, several road access-related culverts (including the culverted ford crossing structure in MacGregor Creek) and a weir structure are proposed. These structures have the potential to impede fish passage. Accordingly, the NES-F regulations in Subpart 3 (Passage of fish affected by structures) are relevant in this instance.

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[101] Being an entity that generates electricity for distribution through a network or distributes electricity through a network.

[102] River or connected area means— (a) a river; or (b) any part of the coastal marine area that is upstream from the mouth of a river.

In the case of culverts, weirs and fords, the NES-F provides for the placement, use, alteration, extension, or reconstruction of these structures as permitted activities provided specific conditions are met. If the permitted activity conditions cannot be met, then a discretionary consent is required.

Activity Status Assessment – Proposed Culverts

The proposal requires a number of culverts (both cylindrical and box culverts). With respect to the "Drift Deck" crossing over the Macgregor Creek, given the design comprises a series of flow openings between a concrete bed foundation and the concrete deck surface, this structure is also assessed as a culvert (akin to a culverted ford).

Assessment of the proposed culverts' compliance with the relevant NES-F permitted activity conditions is set out in **Table 9**.

Table 9: Proposed Culverts – Assessment Against NES-F Permitted Activity Conditions

Regulation 70(2) and (3) Permitted Culvert Conditions	Proposed Culvert Compliance
(a) the culvert must provide for the same passage of fish upstream and downstream as would exist without the culvert, except as required to carry out the works to place, alter, extend, or reconstruct the culvert.	Will comply
(b) the culvert must be laid parallel to the slope of the bed of the river or connected area	Will comply
(c) the mean cross-sectional water velocity in the culvert must be no greater than that in all immediately adjoining river reaches	Unlikely to comply
(d) the culvert's width where it intersects with the bed of the river or connected area (**s**) and the width of the bed at that location (**w**), both measured in metres, must compare as follows: (i) where $w \leq 3$, $s \geq 1.3 \times w$: (ii) where $w > 3$, $s \geq (1.2 \times w) + 0.6$	All cylindrical culverts are likely to comply. The new box culverts proposed and the "Drift Deck" crossing proposed for the Macgregor Creek are unlikely to comply.
(e) the culvert must be open-bottomed or its invert must be placed so that at least 25% of the culvert's diameter is below the level of the bed	All cylindrical culverts are likely to comply. The new box culverts proposed and the "Drift Deck" crossing proposed for the Macgregor Creek are unlikely to comply.

Regulation 70(2) and (3) Permitted Culvert Conditions	Proposed Culvert Compliance
(f) the bed substrate must be present over the full length of the culvert and stable at the flow rate at or below which the water flows for 80% of the time	Will likely comply
(g) the culvert provides for continuity of geomorphic processes (such as the movement of sediment and debris)	Will comply
(3) *See also* regulations 62 and 63 for information requirements that apply to the permitted activity (unless the activity is use)	Will comply The applicant can provide this information.

Assessment:

Overall, all cylindrical culverts will, or will likely, comply with permitted activity conditions, therefore, these structures are a **Permitted Activity** in accordance with Regulation 70 of the NES-F.

The proposed box culverts in Allen Creek, Alpha Creek and an unnamed tributary of the Waitaha Rover located within the McLean Farm and the "Drift Deck" crossing structure in Macgregor Creek are unlikely to comply with clauses (d) and (e) of Regulation 70(2), therefore a **Discretionary Activity** NES-F consent is required under Regulation 71 for these structures.

Regulation 70(3) requires that the information, monitoring, and maintenance requirements set out in Regulations 62 and 63 must also apply to any permitted culvert. The Applicant will comply with these requirements (where relevant and practicable) as part of any culvert consent granted in relation to this project.

Activity Status Assessment – Proposed Weir

Assessment of the proposed weir structure compliance with the relevant NES-F permitted activity conditions is set out in **Table 10**.

Table 10: Proposed Weir Structure – Assessment Against NES-F Permitted Activity Conditions

Regulation 72(2) and (3) Permitted Weir Conditions	Proposed Weir Compliance
(a) the weir must provide for the same passage of fish upstream and downstream as would exist without the weir, except as required to carry out the works to place, alter, extend, or reconstruct the weir	It is noted that the weir will be specifically designed so that kōaro will continue to be able to pass and the passage of other fish including trout, salmon will likely continue to be restricted. Will likely comply.

Regulation 72(2) and (3) Permitted Weir Conditions	Proposed Weir Compliance
(b) the fall height of the weir must be no more than 0.5 m	The weir will be approximately 4m high on the main upstream face and approximately 7m high in the sluice/diversion channel. Does not comply.
(c) the slope of the weir must be no steeper than 1:30	For the weir to provide passage for kōaro, which are specially adapted to navigate obstacles, while restricting passage of other fish, the slope of the weir will need to be steeper than 1:30. Does not comply.
(d) the face of the weir must have roughness elements that are mixed grade rocks of 150 to 200 mm diameter and irregularly spaced no more than 90 mm apart to create a hydraulically diverse flow structure across the weir (including any wetted margins)	Will likely comply.
(e) the weir's lateral profile must be V-shaped, sloping up at the banks, and with a low-flow channel in the centre, with the lateral cross-section slope between 5° to 10°.	The weir will likely have a more horizontal profile. Unlikely to comply.
(3) *See also* regulations 62 and 64 for information requirements that apply to the permitted activity (unless the activity is use)	Will comply. The applicant can provide this information.

The design of the proposed weir structure does not comply with the conditions in regulation 72(2), therefore, **Discretionary Activity** consent is required under regulation 73(1) of the NES-F.

The applicant accepts that any consent granted will include the conditions set out in regulations 62, 64 and 69 and will comply with such conditions.

4.1.2 Regional Land and Water Plan

The West Coast Regional Council's Regional Land and Water Plan ("**RLWP**") provides a framework for the integrated and sustainable management of the West Coast's natural and physical resources including the region's lakes, rivers, groundwater, coastal environment, wetlands, geothermal water, and land including river and lake beds.

The tables included in **Appendix 50** present detailed assessments of compliance, or otherwise, that the Project achieves with respect to relevant rules (including associated performance standards or conditions) contained in the RLWP, along with the activity statuses of any resource consents required. More specifically, rules contained in the following RLWP sections are assessed;

> Rules for activities on land;

> Rules for lake and riverbed activities;

> Rules for takes, uses and diversions of water;

> Discharge to water rules; and

> Discharge to land rules.

From the assessments set out in **Appendix 50**, **Table 11** below provides a list of the consents needed under the RLWP.

4.1.3 Regional Air Quality Plan

The West Coast Regional Air Quality Plan ("**RAQP**") sets out how air pollution is managed on the West Coast and the adverse effects of discharges of contaminants to air. The RAQP covers particulate matter, odour, dust, products of combustion, ozone, and the emission of greenhouse gases.

A detailed assessment of the Project's compliance against relevant regional rules for discharges to air is provided in **Appendix 50** and **Table 11** below provides a list of the consents needed under the RAQP.

4.1.4 Operative Westland District Plan

The Westland District Plan ("**WDP**") became operative in June 2002. In September 2018, the Local Government Commission announced its decision to require Westland, Grey and Buller District Councils to combine their District Plans into one document. The combined plan is the Proposed Te Tai o Poutini Plan (discussed later). All rules within the WDP continue to have legal effect until the process for implementing the Proposed Te Tai o Poutini Plan has been completed.

The proposed scheme is located entirely within the Rural Zone, Rural Policy Unit 5.6, of the WDP.

An assessment of the Project's compliance against other relevant land use rules and performance standards set out in the WDP is provided in **Appendix 50** and **Table 11** below provides a list of the consents needed under this plan.

4.1.5 Proposed Te Tai o Poutini Plan

Te Tai o Poutini Plan ("**pTTPP**") is proposed as the combined District Plan for the Buller, Grey and Westland District Councils. It will replace the current individual district plans including the WDP.

The pTTPP sets out the objectives, policies, rules and methods to manage land use activities and subdivision across the districts.

The pTTPP was publicly notified on 14 July 2022, thereby giving some rules within it immediate legal effect[103]. A total of 534 submissions were received with over 15,000 submission points. Hearings began on 30 October 2023 and were completed in March 2025.

The pTTPP has a range of rules which are potentially relevant to the proposed Waitaha Hydro Scheme, however, the plan is at a relatively early stage in the process with decisions on hearings and submissions yet to be made. Nevertheless, it is appropriate to consider the Project in light of rules currently in effect (as at the time of notification of the plan). This assessment is set out below. Rules that are still subject to submissions and do not have effect have not been considered in this assessment.

An assessment of the Project's compliance against relevant pTTPP land use rules in effect, and associated performance standards, is provided in **Appendix 50** and discussion on relevant rules currently subject to submissions**. Table 11** below provides a list of the consents needed.

4.1.6 Summary of Activities Requiring Resource Consent Under the RMA

Activities associated with the Project requiring resource consent under the RMA are summarised in **Table 11**.

Table 11: Summary of Activities Requiring RMA Consent

Activity	Regulation / Rule	Activity Status	Commentary
NES-F			
Placement of a box culvert structures in the beds of Alpha Creek, Allen Creek and an unnamed tributary of the Waitaha River and a culverted ford (or similar) structure in the bed of Macgregor Creek.	Regulation 71	Discretionary	
Placement of a weir on the bed of the Waitaha River	Regulation 73	Discretionary	

[103] In accordance with Section 86B of the RMA

Activity	Regulation / Rule	Activity Status	Commentary
Regional Land and Water Plan			
RMA Section 9 land use consents required under the West Coast RLWP			
Construction Earthworks	Rule 16	Discretionary	Consent to authorise all earthworks associated with Project construction.
Vegetation Disturbance within riparian margins, Erosion Prone Area One and Erosion Prone Area Two.	Rule 16	Discretionary	Consent to authorise all vegetation removal activities except for where this occurs in non-erosion Prone Areas (where this is a permitted activity under Rule 10).
RMA Section 13 land use consents required under the West Coast RLWP			
Placement and use of the following structures on the beds of rivers and streams; > All Headworks structures located on the bed of the Waitaha River including the diversion weir and intake structure; > Box culvert structures in the beds of Alpha Creek, Allen Creek and an unnamed tributary of the Waitaha River; > The Drift Deck structure for the Macgregor Creek crossing; > The Granite Creek Bridge; > The Alpha Creek and Macgregor Creek flow training structures / bunds; > Parts of the Power Station tailrace and flood protection structures located on the bed of the Waitaha River;	Rule 35	Discretionary	Other proposed culvert crossing structures, the temporary Granite Creek bridge, flow monitoring equipment are considered permitted activities under Rules 22 and 25.

Activity	Regulation / Rule	Activity Status	Commentary
> Parts of the permanent accessway between the Headworks access tunnel portal and the Waitaha River edge partly located on the bed of the Waitaha River;			
Gravel extraction	Rule 33	Restricted Discretionary	
RMA Section 14 water permits required under the West Coast RLWP			
The temporary diversion of water for the purpose of erecting or placement, extension or alteration, maintenance, repair or reconstruction, or removal or demolition of Headworks structures and the Power Station tailrace.	Rule 58	Discretionary	
The short-term take of up to 10 l/s of water from the Waitaha River for concrete batching plant operations, dust suppression and other ancillary construction activities; The short-term take of up to 10 l/s of water from the Waitaha River for tunnel drilling operations; The take of up to 23 m^3/s of water from the Waitaha River for hydro-electric power generation purposes and associated ancillary activities; and The take of groundwater from the pressurized water and access tunnels.	Rules 57 and 60	Discretionary	
The temporary diversion of Waitaha River flows prior to and during the construction of the Headworks and the Power Station tailrace; and For hydro-electric power generation purposes; > Diversion of up to 23 m^3/s of water from the Waitaha River to the Power Station;	Rule 58 and 60	Discretionary	

Activity	Regulation / Rule	Activity Status	Commentary
> Diversion of Waitaha River flows over the Headworks diversion weir; > Diversion of water through the Headworks residual flow gate and channel; > Intermittent diversion of water through the sluice gate and chamber; and > Diversion of groundwater into the pressurized water and access tunnels.			
RMA Section 15 discharge consents required under the West Coast RLWP			
The incidental discharges of contaminants to water resulting from temporary activities associated with maintenance of structures including adjacent Stream Works.	Rule 71	Discretionary	Larger maintenance events (e.g. intermittent clearing of sediment upstream of the Headworks in Kiwi Flat) may result in suspended sediment being visible beyond the mixing zone. All other requirements of permitted activity Rule 66 will be met.
Discharge of contaminants to land from temporary investigative drilling.	Rule 91	Discretionary	
Discharge of spoil material produced from tunnel construction to land.	Rule 91	Discretionary	
Temporary discharge of concrete batching plant wash water to land.	Rule 91	Discretionary	
Discharge of cleared vegetation to land.	Rule 91	Discretionary	
RMA Section 15 discharge consents required under the West Coast RAQP			

Activity	Regulation / Rule	Activity Status	Commentary
Discharges to air from a temporary concrete batching and gravel screening plant.	Rule 16	Discretionary	
Discharges to air associated with intermittent operation of an emergency diesel fired generator at the Power Station Site.	Rule 16	Discretionary	Burning of diesel for this purpose not specifically provided for in permitted or controlled activity rules (although a range of other dirtier fuels are provided for). Consent is sought but effects are well within the permitted baseline.
Westland District Plan			
Construction, use, operation, maintenance and repair of the Scheme and vegetation clearance within riparian margins.	Rule 5.6.2.1	Non-complying	
Vegetation clearance outside riparian margins.	Rule 5.6.2.2 (C)	Discretionary	
Investigative geotechnical drilling.	Rule 5.6.2.2 (C)	Non-complying	
Temporary helipads at Construction Staging Areas 1, 2 and 3.	Rule 6.5 (d)	Discretionary	
Te Tai o Poutini Plan			
Indigenous vegetation clearance south of Macgregor Creek for the construction of the Waitaha Hydro Scheme.	Rule ECO-R7	Discretionary	
Indigenous vegetation clearance and earthworks in riparian margins.	Rule NC-R3	Discretionary	
Power Station Site flood protection structures.	Rule NC-R5.	Discretionary	It is noted that the proposed Power Station

Activity	Regulation / Rule	Activity Status	Commentary
			Site flood protection structures are permitted under Rule NC-R2, however, taking the most restrictive activity status applicable, the structures require **Discretionary Activity** consent under Rule NC-R5.
Signs	Proposed Rule SIGN-R19	Restricted Discretionary	Proposed Rule SIGN-R19 is effectively operative since decisions on submissions in support will not change the rule.

4.1.7 RMA Activity Status of the Project

4.1.7.1 West Coast Regional Council Jurisdiction

Under the NES-F, RLWP and the RAQP, this listed project would otherwise require a number of RMA resource consents for Discretionary Activities from WCRC. It follows that, overall, RMA consent for the Project would otherwise be a **Discretionary Activity** under WCRC's jurisdiction.

4.1.7.2 Westland District Council Jurisdiction

Resource consents for this listed project would also be required from WDC under a number of WDP and pTTPP rules. Under the WDP, Discretionary and Non-Complying Activity consents would be required, and under the proposed TTPP, Discretionary and Restricted Discretionary Activity consents would be required by rules that have effect.

Overall, taking a "bundling" approach for RMA consenting purposes, the Project would otherwise be a **Non-Complying Activity** under Westland District Council's jurisdiction.

4.1.8 Permitted Activities

Activities associated with the Project that would otherwise be permitted under the RMA are summarised in **Table 12**. Further reasons for these activities being permitted are set out in the relevant tables provided in **Appendix 50**.

Table 12: Permitted Activities

Activity	Regulation / Rule	Commentary
Permitted activities under the NES-CS		
Earthworks associated with new switching equipment installation at the Waitaha Substation.	Regulations 8(3)	Proposed earthworks, and soil removal volume comply with maximum permitted thresholds.
Permitted activities under the NES-F		
Earthworks located within 100m of natural inland wetlands.	Regulations 52(1) and 54 (b)	Proposed earthworks, including earthworks associated with the proposed access road, are sufficiently set back from natural wetlands within 100m of the works to ensure the disturbance will not result in any change to wetland hydraulic function and will not likely result in their complete or partial drainage (Regulations 52(1) not applicable). In addition, no earthworks are proposed within 10m of a natural wetland (Regulation 54 also not applicable).
Cylindrical culverts	Regulation 70	All cylindrical culverts will, or will likely, comply with permitted activity conditions.
Permitted activities under Regional Land and Water Plan		
Scheme maintenance or repair earthworks.	Rule 6	Rule 6 will permit all earthworks associated with maintenance of the Project.
Scheme maintenance vegetation removal (e.g. tree trimming).	Rules 8, 9 and 10	Rules 8, 9 or 10 will permit all vegetation removal associated with the ongoing maintenance of the Project.
During construction, vegetation removal on relatively flat parts of the Project Site (i.e. less than 12^0 slope) located outside riparian margins (i.e. beyond 10m of the bed of the Waitaha River and other perennial streams), including parts of the Site's access roads, the transmission line, the Power Station Site and all Construction Staging Areas.	Rule 10	It should be noted that vegetation removal within riparian margins and in steeper sloped areas (i.e. Erosion Prone Areas One and Two) of the Site require resource consent for the construction phase.

Activity	Regulation / Rule	Commentary
Transmission lines that cross the bed of a river or stream.	Rule 21	
The placement, use and maintenance of all proposed culverts, apart from the Alpha Creek box culvert, all proposed fords and the temporary Granite Creek bridge.	Rule 23	
The placement, use and maintenance of river and stream flow monitoring equipment.	Rule 25	
In-stream construction and ongoing maintenance works on Scheme and river and stream crossing structures, including clearance of debris and gravel.	Rule 26	
In-stream maintenance works on Scheme and river and stream crossing structures, including clearance of debris and bedload sediment (excluding gravels).	Rule 27	
The protection, partial reinstatement, or reinstatement of any bank of a lake or river which has been eroded by a flood event.	Rule 28	
Short term take of up to 0.9 l/s of water from the Waitaha River for pre-construction geotechnical investigative drilling activities.	Rule 40	
The temporary diversion of water for the purpose of the erection or placement, extension or alteration, maintenance, repair or reconstruction, or removal or demolition of culvert, ford and bridge structures.	Rule 47	
The permanent diversion of water through culverts, over fords and	Rule 48	Other permanent water diversions require resource consent.

Activity	Regulation / Rule	Commentary
through, over or around river flow monitoring structures.		
Diversion of natural runoff – contaminated and uncontaminated.	Rule 51	
All discharges of water to water.	Rule 67	
All discharges of reticulated stormwater generated at the Power Station Site to the Waitaha River via the tailrace.	Rule 64	
Discharges of collected stormwater runoff into or onto land.	Rule 81	
Stockpiling of gravel, sand, rock, and soil.	Rule 83	
Stockpiling of material for road construction and maintenance	Rule 84	
Permitted activities under the West Coast RAQP		
Discharges of dust into air arising from the stockpiling and handling of gravel, sand, soil and rock.	Rule 5	
The discharge of any contaminants into air from abrasive blasting	Rule 6	
Westland District Plan		
Flood protection works at the Power Staton Site and culverts.	Part 6.2 (i)	
New 66 kV transmission line and upgrade works to the existing 11kV line.	Rule 6.2 (j).	
Substation transformers (above-ground network utility structures).	Rule 6.2 (p)	
Te Tai o Poutini Plan		

Activity	Regulation / Rule	Commentary
Indigenous vegetation clearance for Hydro Scheme maintenance and operations purposes.	Rule ECO-R1(3(ii)).	
Indigenous vegetation clearance for construction of new and upgraded transmission lines north of Macgregor Creek.	Rule ECO-R1(3(ix)).	
Buildings and structures located in riparian margins.	Rule NC-R2.	

4.2 CONSERVATION ACT 1987

The project is located on conservation land administered and managed by the Department of Conservation. The land is classified as Stewardship Land.

4.2.1 Concession Activities and Types

DOC concessions in the form of leases, licenses and easements are required for the Scheme's structures and for all activities associated with its construction and ongoing operation and maintenance activities. **Table 13** provides a high-level summary of the concessions being sought to construct, operate and maintain the Waitaha Project – comprising all structures and activities described in more detail within this AEE and in the Project Overview Report.

Table 13: Summary of Activities and Types of Concession Required

Scheme Component or Activity	Component Detail / Sub-Activities	AEE Section / Figure	Indicative Concession Type[104]	General Location Map Reference
Geotechnical Investigations and Monitoring				
Investigative drilling and testing activities	Construction and temporary use of drilling pads, access tracks, drilling camp and construction of geotechnical investigation bore holes.	Section 3.5.1 Figure 19	One-off process	E 1415721 N 5222563
	Non-invasive geophysical testing of ground conditions			

[104] To be discussed further with the Department of Conservation and refined.

Scheme Component or Activity	Component Detail / Sub-Activities	AEE Section / Figure	Indicative Concession Type[104]	General Location Map Reference
	Helicopter hovering at drilling locations		One-off process	
Permanent structures	Bore holes		Lease/licence	
	Access to and use of geotechnical investigation bore holes for long-term testing and investigations		Easement	
Headworks				
Permanent structures	Diversion weir (with kōaro passage), intake structure, upper access tunnel portal and accessway between upper tunnel portal and intake structure and associated protection works.	Section 3.3.1 Figures 5 and 7	Lease/licence	E 1415821 N 5222165
	Take and diversion of Waitaha River Flows		Licence /easement	
	Foot and vehicle access between upper tunnel portal and Headworks structures. Ongoing operational and maintenance activities including in-sStream Works to undertake headworks maintenance.			
Temporary construction structures	Construction Staging Area 1 and sediment and erosion control structures. Accessway between upper tunnel portal to Construction Staging Area 1 and associated culverts.	Section 3.3.1 Figures 5 and 7 Sections 3.5.5 to 3.5.8 and Section 3.5.11.5	Short-term lease/licence	E 1416142 N 5222039
Temporary construction activities	All activities associated with; > The formation of Construction Staging Area 1 and its associated accessway and sediment and erosion control devices; and > The construction of all Headworks components and associated in-sStream Works	Figures 5 and 22 DRAFT ESCP	Short-term lease/licence/easement	
	Foot and vehicle access between upper tunnel portal and Headworks construction area and Construction Staging Area 1			E 1415821 N 5222165

Scheme Component or Activity	Component Detail / Sub-Activities	AEE Section / Figure	Indicative Concession Type[104]	General Location Map Reference
	Surface water take intake structure and water line to supply construction equipment			E1415852 N5222158
	Incidental construction related discharges to land, water and air			E 1415821 N 5222165
	Helicopter use, hovering and landing at Construction Staging Area 1		Short-term licence (helicopter operators will have existing concessions)	E 1416142 N 5222039
Drone use	Use of drones (if required) during construction / final design		Short-term licence	E 1415821 N 5222165
Tunnels and Other Underground Scheme Components				
Permanent structures	Access and pressurised water tunnels, desander, penstock and associated plant, equipment pipes, r and drainage infrastructure.	Section 3.3.2 Figures 5 and 8	Lease/licence	Top: E 1415855 N 5222174
	Convey Waitaha River water and incidental groundwater seepages		Easement /licence	Bottom: E 1415363 N 5223612
	Foot and vehicle access and communication cabling between Power Station Site and Headworks via the access tunnel.			
	Ongoing operational and maintenance activities.			
Temporary construction structures	Structural supports, pipes and drains required during tunnel construction Surface water take intake structure and water line to supply drilling equipment	Section 3.5.13 Figures 5 and 8	Short-term licence	
Temporary construction activities	All activities associated with tunnel drilling and construction of underground Scheme components		Short-term licence /easement	

Scheme Component or Activity	Component Detail / Sub-Activities	AEE Section / Figure	Indicative Concession Type[104]	General Location Map Reference
	Foot and vehicle access within tunnels during construction			
	Incidental construction related discharges to land and water			
Power Station Site				
Permanent Structures	All physical components comprising the Power Station Site including, but not necessarily limited to, tunnel portals, slope protection works, penstock, Power Station, switchyard, tail bay, tailrace, stop-bank and flood protection works. Power Station Site maintenance works.	Section 3.3.3 Figures 5 and 9	Lease/licence	E 1415334 N 5223633
	Discharge water from the Power Station		Licence /easement	
	Foot and vehicle access within and around the Power Station Site.		Easement	
	All ongoing Power Station operations and maintenance activities.		Lease/licence	
Temporary construction structures	Construction Staging Area 2 including all structures and equipment required to construct the Power Station Site, service the tunnel drilling operation and treat tunnel discharges and all sediment and erosion control structures.	Sections 3.5.5 to 3.5.8 Figures 5 and 9 DRAFT ESCP	Short-term lease/licence	
Temporary construction activities	All activities associated with; > The formation of Construction Staging Area 2 and its associated sediment and erosion control devices; and > The construction of the Power Station Site and all its associated physical components.		Short-term lease/licence /easement	
	Foot and vehicle access within and around Power Station Site and Construction Staging Area 2 during construction.			

Scheme Component or Activity	Component Detail / Sub-Activities	AEE Section / Figure	Indicative Concession Type[104]	General Location Map Reference
	Incidental construction related discharges to land, water and air			
	Helicopter use, hovering and landing at Construction Staging Area 2.		Short-term licence (helicopter operators will have existing concessions)	
Drone use	Use of drones (if required) during construction / final design		Short-term licence	
Access road and transmission line				
Permanent structures	Access road between the Power Station Site and Macgregor Creek including the Alpha Creek box culvert and associated river training structures, the Granite Creek bridge, stormwater management devices and structure protection works. Above-ground transmission lines and poles and communication cables.	Section 3.3.7 to 3.3.9 Figures 5, 12, 13, 15 and 16 Appendix 46	Lease/ license /easement	Southern end: E 1415345 N5223694 Northern end: E 1415743 N 5225780
	Foot and vehicle access between the Power Station Site and Macgregor Creek. Above-ground electricity and electronic communications conveyance.		Easement	
	All ongoing access road, stream crossing, river training structure maintenance activities including associated in-sStream Works.	Section 3.7		
	All ongoing transmission line and tower operations and maintenance activities.			
Temporary construction structures	Access road erosion and sediment control devices. Temporary vehicle accessway along Waitaha Riverbed to construct temporary Granite Creek bridge. Temporary Granite Creek bridge.	Sections 3.5.5 to 3.5.8 and Section 3.5.11 Figures 5, 12, 13, 15 and 16 DRAFT ESCP	Short-term lease/licence	

Scheme Component or Activity	Component Detail / Sub-Activities	AEE Section / Figure	Indicative Concession Type[104]	General Location Map Reference
Temporary construction activities	All activities associated with; > The formation of the temporary vehicle accessway along Waitaha River bed and the construction of the temporary Granite Creek bridge; > Formation of the permanent access road and its associated stream crossing structures and related sediment and erosion control devices; and > The construction of the transmission lines and all their associated physical components.		Short-term licence/easement	
	Foot and vehicle access within the access road / transmission line corridor during construction.			
	Incidental construction related discharges to land, water and air.			
Drone use	Use of drones (if required) during construction / final design		Short-term licence	
Other Ancillary Structures, Equipment and Activities				
Permanent structures	River flow and weather monitoring stations including flow recording radar immediately downstream of the diversion weir.	Section 3.3.6 Figures 10 and 11	Licence	Refer Project Mapping Coordinates Register (**Appendix 1**)
	Safety/awareness devices including sirens and other operational signage. Other ancillary structures and ancillary components of structures comprising the Scheme as set out in in the application documents.		Licence	Various locations across the Scheme
	Foot access from Headworks to river flow and weather monitoring stations.		Easement	

Scheme Component or Activity	Component Detail / Sub-Activities	AEE Section / Figure	Indicative Concession Type[104]	General Location Map Reference
Scheme operation activities	Ancillary activities associated with operating and maintaining the scheme as set out in the application documents.	Figure 5	Licence /Easement	
Temporary structures and activities	Temporary construction activities associated with the relocation of a section of walking track to avoid the Power Station Site	Figure 25		Southern end: E 1415183 N 5224416 Northern end: E 1415406 N 5223856
	Other structures required to be temporarily installed or constructed in accordance with the Approvals conditions, including for the implementation of any certified management or monitoring plan, during the construction, operation and maintenance of the Scheme.	Figure 5	Licence /easement	Various locations across the Scheme
	Other temporary activities required to be undertaken in accordance with the Approvals conditions, including during the implementation of any certified management or monitoring plan, during the construction, operation and maintenance of the Scheme.		Licence /easement	
	All structures, works and activities ancillary to the matters set out above as set out in the application documentation		Lease/licence /easement as appropriate	

4.2.2 Term and Expiry Date

This applicant seeks a concession term of **49 years** for all long-term land occupation and use activities associated with the Scheme based on the significant level of capital investment required to construct the project, and the need to provide adequate security of the asset for the community over the long term.

All short-term leases and licenses required for the construction period are sought for a period of no less than **15 years** to provide for the anticipated construction period plus some contingency to account for any unforeseen project commencement and/or construction delays that may occur.

4.3 WILDLIFE ACT 1953

4.3.1 Actions involving protected wildlife and where they will be carried out

Most birds, bats and herpetofauna (lizards and frogs), and some terrestrial and freshwater invertebrates, are 'absolutely protected' under the Wildlife Act 1953 (**"Wildlife Act"**).[105] Authorisations are required for certain activities that interact with wildlife and it is an offence to 'hunt or kill' (which includes capture and disturbance) protected or partially protected wildlife without lawful authority.

In this instance, protected bats and birds have been identified at and around the site, and lizards, potentially at the site in small numbers. For completeness, it is noted that invertebrates identified at the site do not include any species declared to be animals in accordance with Schedule 7 of the Wildlife Act.

Construction of the Scheme will affect habitat which supports, or potentially supports, a number of animals protected under the Wildlife Act. Actions which may involve protected wildlife and where they will be carried out are summarised in **Table 14** below. While the Applicant proposes to undertake best practice approaches to avoid disturbance of bats and avifauna (e.g. by avoiding removal of large diameter trees where practicable and adopting DOC bat protocols), application for a wildlife approval is sought to authorise the following activities:

- To catch, handle, salvage, and relocate native lizards listed in Schedule 4 from the Scheme footprint;
- To gently guide whio / blue duck away from blasting and helicopter use areas;
- In the unlikely event if it is required, to capture, handle and relocate avifauna and long-tailed bats listed in Schedule 5 in accordance with the AMP and BMP; and
- To incidentally harm or kill wildlife listed in Schedule 5 if the harm or death is not directly intended but is unavoidable and foreseeable and all reasonable effort has been made to meet the conditions in the approval.

[105] Wildlife Act 1953, ss 2(1) definitions of 'animal' and 'wildlife' and 3.

Table 14: Activities Involving Protected Wildlife

Action	Location
Vegetation clearance	Summarised in section 3.5.6 of this AEE and detailed in the Vegetation Report
Noise and disturbance (and in some instances vibration) from construction activities, such as blasting, helicopter use and possibly piling.	Headworks site including the weir and intake structures (excluding Morgan Gorge), the Power Station Site and Granite Creek

These activities, without lawful authority, would be an offense under sections 63, and 70P. Accordingly, the project requires wildlife approval in accordance with section 24C(3)(c) of the FTAA.

4.3.2 Protected wildlife species known or predicted to be in the area and, where possible, the numbers of wildlife present and numbers likely to be impacted

Protected wildlife species known or predicted to be within the Scheme area are listed in **Table 15** below. This list includes long-tailed bats, lizards that are potentially present, and the avifauna identified in Appendix J of the Terrestrial Fauna Report, with the exception of:

- Great spotted kiwi (Threatened – Nationally Vulnerable) which were *not* recorded on any survey and are presumed to be locally extinct.
- South Island kōkako (Data Deficient) which were *not* recorded on any survey.
- Yellowhead (At Risk – Declining) which were *not* recorded on any survey and is absent in the Waitaha and most West Coast valleys.
- Mallard ducks (Introduced and Naturalised) which were *not* recorded on any survey since 2006.[106]
- Species which are listed in Schedule 5 of the Wildlife Act as wildlife not protected.[107]

Silvereye and little owl are included in Schedule 2 of the Wildlife Act as partially protected wildlife.

Paradise shelduck, pūkeko and grey duck are declared to be game in Schedule 1 of Wildlife Act.

Grey duck, swamp harrier and black shag are included in Part 1 of Schedule 3 of the Wildlife Act (wildlife that may be hunted or killed subject to conditions).

[106] Declared to be game (in sch 1 of Wildlife Act) and included in pt 1 of sch 3 of the Wildlife Act (wildlife that may be hunted or killed subject to conditions).

[107] Southern black-backed gull, Spur-winged plover, Canada goose, Australian magpie, Eurasian blackbird, Song thrush, Chaffinch, European greenfinch, European goldfinch and Yellowhammer.

Table 15: Protected wildlife species known or predicted to be in the area of the Scheme

Common name	Scientific name	NZ threat classification	Numbers present (where possible)
Long-tailed bat	*Chalinolobus tuberculatus*	Threatened – Nationally Critical	Regionally significant population in the lower/mid Waitaha Valley, with apparently a core activity range at Kiwi Flat
Northern grass skink	*Oligosoma polychroma*	Not Threatened	None identified during surveys[108]
Forest gecko	*Mokopirirakau granulatus*	At Risk – Declining	None identified during surveys[109]
Newman's speckled skink	*Oligosoma newmani*	At Risk – Declining	None identified during surveys[110]
West Coast green gecko	*Naultinus tuberculatus*	Threatened – Nationally Vulnerable	None identified during surveys
Kea	*Nestor notabilis*	Threatened – Nationally Endangered	5% occurrence during August 2024 survey with distribution throughout. Of the threatened species, is relatively frequent and widespread (widely but thinly distributed throughout the footprint)
Blue duck / Whio	*Hymenolaimus malacorhynchos*	Threatened – Nationally Vulnerable	Approximately 12 – 15 in the Scheme area

[108] A predicted maximum of 50 for a salvage operation.

[109] A predicted maximum of 20 for a salvage operation.

[110] N/A (smaller chance of being present).

Common name	Scientific name	NZ threat classification	Numbers present (where possible)
South Island kākā	*Nestor m. meridionalis*	Threatened – Nationally Vulnerable	0.4% occurrence during August 2024 survey with distribution in Morgan Gorge
Long-tailed cuckoo	*Eudynamys taitensis*	Threatened – Nationally Vulnerable	Of the threatened species, is relatively frequent and widespread (widely but thinly distributed throughout the footprint)
Bush falcon / Karearea	*Falco novaeseelandiae*	Threatened – Nationally Increasing	Occasional occurrence (widely but thinly distributed throughout the footprint)
Grey duck	*Anas superciliosa*	Threatened – Nationally Vulnerable. *Possible they are hybrid mallard-grey which are Not Threatened.*	Negligible – recorded once in 2006 at Kiwi Flat
Yellow-crowned parakeet / Kākāriki	*Cyanoramphus auriceps*	At Risk – Declining	0.8% occurrence during August 2024 survey with distribution in Morgan Gorge
South Island pied oystercatcher	*Haematopus finschi*	At Risk – Declining	Negligible – frequently encountered in the lower valley in 2012, but not recorded in 2006 and 2024 (likely to be a seasonal visitor)
South Island robin	*Petroica a. australis*	At Risk – Declining	1.7% occurrence during August 2024 survey with distribution in Morgan Gorge

Common name	Scientific name	NZ threat classification	Numbers present (where possible)
South Island fernbird	*Bowdleria p. punctata*	At Risk – Declining	Negligible – recorded only in scrub on the north side of Kiwi Flat in September 2006 (outside the area affected by the Scheme). If present, they are in very low numbers.
New Zealand pipit	*Anthus n. novaeseelandiae*	At Risk – Declining	Negligible
Black shag	*Phalacrocorax carbo novaehollandiae*	At Risk – Relict	Negligible
Little shag	*Phalacrocorax melanoleucos brevirostris*	At Risk – Relict	Not recorded on any survey, but possibly (or seasonally) present.
Western weka	*Gallirallus a. australis*	Not Threatened	Low – widely but thinly distributed throughout the footprint
Welcome swallow	*Hirundo n. neoxena*	Not Threatened	Low – observed in low numbers in surveys (seasonal)
South Island tomtit	*Petroica m. macrocephala*	Not Threatened	78.3% occurrence during August 2024 survey with distribution throughout
South Island fantail	*Rhipidura f. fuliginosa*	Not Threatened	50.8% occurrence during August 2024 survey with distribution throughout
Brown creeper	*Mohoua novaeseelandiae*	Not Threatened	1.3% occurrence during August 2024 survey with distribution in Morgan Gorge

Common name	Scientific name	NZ threat classification	Numbers present (where possible)
Tui	*Prosthemadera n. novaeseelandiae*	Not Threatened	3.3% occurrence during August 2024 survey with patchy distribution
Bellbird	*Anthornis m. melanura*	Not Threatened	63.8% occurrence during August 2024 survey with distribution throughout
Grey warbler	*Gerygone igata*	Not Threatened	50.8% occurrence during August 2024 survey with distribution throughout
South Island rifleman	*Acanthisitta chloris chloris*	Not Threatened	Low – low density and patchy distribution
New Zealand kingfisher	*Todiramphus sanctus vagans*	Not Threatened	Not recorded on any survey, but possibly (or seasonally) present.
Morepork	*Ninox n. novaeseelandiae*	Not Threatened	Low – low density and patchy distribution
Shining cuckoo	*Chrysococcyx l. lucidus*	Not Threatened	Negligible – minimal recordings and seasonal presence
New Zealand pigeon / Kererū	*Hemiphaga novaeseelandiae*	Not Threatened	1.7% occurrence during August 2024 survey with distribution in Morgan Gorge
White-faced heron	*Egretta n. novaehollandiae*	Not Threatened	Low – infrequently recorded
Pied stilt	*Himantopus himantopus leucocephalus*	Not Threatened	Not recorded on any survey, but possibly (or seasonally) present.

Common name	Scientific name	NZ threat classification	Numbers present (where possible)
Silvereye	*Zosterops l. lateralis*	Not Threatened	70% occurrence during August 2024 survey with distribution throughout
Little owl	*Athene noctua*	Introduced and naturalised	Negligible – only recorded in 2012
Pūkeko	*Porphyrio m. melanotus*	Not Threatened	Unknown
Swamp harrier	*Circus approximans*	Not Threatened	Unknown
Paradise shelduck	*Tadorna variegata*	Not Threatened	Unknown
Common redpoll	*Carduelis flammea*	Introduced and naturalised	Unknown

4.3.3 The methods proposed to be used to conduct the actions involving protected wildlife will ensure that best practice standards are met

The methods proposed to avoid, remedy or mitigate effects, including minimising and avoiding disturbing, capturing or harming or killing any wildlife as far as possible can be found in:

- Section 4 of the AMP;
- Sections 2 – 4 of the BMP, including compliance with the DOC's "protocols for minimising the risk of felling occupied bat roosts" (with some minor variations noted in the BMP); and
- Section 3 of the LizMP.

4.3.4 Describe the methods to be used to safely, efficiently, and humanely catch, hold, or kill the animals and identify relevant animal ethics processes

Section 4.3 of the AMP outlines steps to be taken in the event of discovery, injury or mortality of a bird. Section 2.3 of the BMP outlines steps to be taken in the event of discovery, injury or mortality of a bat. Sections 3 – 5 of the LizMP outline steps to be taken to capture, salvage and transfer lizards.

4.4 FRESHWATER FISHERIES REGULATIONS 1983

Under the FTAA, there are two processes for acquiring any necessary fisheries related approvals as follows:

- Standard freshwater fisheries activities: These activities are processed through the consenting process under Schedule 5 of the FTAA so do not require separate FTAA approvals.
- Complex freshwater fisheries activities: These activities must acquire separate approvals under Schedule 9 of the FTAA. Complex activities are those that are considered to have minor or greater effects.
- To be clear none of the in-stream structures will impede fish passage except for the weir which, as explained above, is designed to exclude all fish species except for kōaro.

4.4.1 Definitions

The definitions of Standard and Complex freshwater fisheries activities are set out below:

Standard freshwater fisheries activity

- means an activity that includes construction of any of the following:

(a) a culvert or ford that could impede but not permanently block fish passage:

(b) weirs that comply with the conditions of regulation 72 of the Resource Management (National Environmental Standards for Freshwater) Regulations 2020:

(c) works—

(i) that require active disturbance to a water body, including diversions, in-stream operations, and removal of gravel, that does not persist for more than 3 months; or

(ii) that are within 500 m of the coast and do not occur during the whitebaiting season; or

(iii) that are in an area known to be used for trout, salmon, or native fish spawning and do not occur during the spawning season; or

(iv) that require repeated disturbance to a water body and are temporary works for which there is a period of more than 6 months between each period of work

Complex freshwater fisheries activity

- means an activity that includes construction of any of the following:

(a) a culvert or ford that permanently blocks fish passage:

(b) a permanent dam or diversion structure:

(c) works—

(i) that require disturbance to a water body, including diversions, in-stream operations, and removal of gravel, that persists for more than 3 months; or

(ii) that are within 500 m of the coast and occur during the whitebaiting season; or

(iii) that are in an area known to be used for trout, salmon, or native fish spawning and occur during the spawning season; or

(iv) that require repeated disturbance to a water body and are temporary works for which there is a period of 6 months or less between each period of work.

Other related definitions to note:

> The definition of 'Dam' includes a weir; and

> The definition of a Diversion structure includes bridges.

4.4.2 Approvals Required

Table 16: presents the Scheme's various in-stream Works and structures and associated commentary and assessment regarding their respective definitions as either standard or complex freshwater fisheries activities.

Table 16: Assessment of in-stream Structures and Works Against Schedules 5 and 9 of the FTAA (Standard and Complex Freshwater Fisheries Activities)

Standard / Complex Definition Elements	Diversion Weir Structure	Macgregor Creek Crossing Structure	Culvert Structures	Granite Creek Bridge Structures	Other In-stream Works
Part (a) Standard: Culvert or ford that could impede but not permanently block fish passage Complex: Culvert or ford that permanently blocks fish passage	N/A	Ford structure will be designed, constructed and maintained so they provide for ongoing fish passage. **Conclusion** = Standard	Culvert structures will be designed, constructed and maintained so they provide for ongoing fish passage. **Conclusion** = Standard	N/A	N/A
Part (b) Standard: Weirs that comply with the conditions of Regulation 72 of NES-F Complex: A permanent dam or diversion structure	The weir and Alpha Creek groyne structures are considered non-permanent diversion structures (i.e. they can be physically removed as part of future scheme decommissioning). However, their designs do not comply with Regulation 72 of the NES-F because the weir exceeds the maximum specified height and both have non-complaint lateral profiles. **Conclusion** = Complex	N/A	N/A	N/A	N/A

Standard / Complex Definition Elements	Diversion Weir Structure	Macgregor Creek Crossing Structure	Culvert Structures	Granite Creek Bridge Structures	Other In-stream Works
Part (c)(i) Standard: works requiring active disturbance to a water body, including diversions, in-stream operations, and removal of gravel, that does not persist for more than 3 months Complex: works requiring disturbance to a water body, including diversions, in-stream operations, and removal of gravel, that persists for more than 3 months	In-stream construction period for the in-stream weir is likely to exceed 3 months. After construction, no weir maintenance activities will require in-stream Works that will exceed 3 months. **Conclusion:** Construction phase = Complex Operational phase = Standard In-stream construction and maintenance periods for the Alpha Creek groynes are not expected to exceed 3 months. **Conclusion:** Construction phase = Standard Operational phase = Standard	In-stream construction and maintenance periods for ford structures are not expected to exceed 3 months. **Conclusion:** Construction phase = Standard Operational phase = Standard	In-stream construction and maintenance periods for culvert structures will not exceed 3 months. **Conclusion:** Construction phase = Standard Operational phase = Standard	Adopting a conservative approach, it is considered the construction periods for the Granite Creek bridge structure may exceed 3 months. After construction, no maintenance activities will require in-stream Works that will exceed 3 months. **Conclusion:** Construction phase = Complex Operational phase = Standard	It is considered the proposed gravel extraction will exceed 3 months. It is considered that excavations to construct the tailrace will not exceed 3 months. It is also considered that, post construction, no Scheme maintenance activities will require in-stream Works exceeding 3 months. **Conclusion:** Construction phase = Complex Operational phase = Standard

Standard / Complex Definition Elements	Diversion Weir Structure	Macgregor Creek Crossing Structure	Culvert Structures	Granite Creek Bridge Structures	Other In-stream Works
Part (c)(ii) Standard: works within 500 m of the coast and do not occur during the whitebaiting season Complex: works within 500 m of the coast and occur during the whitebaiting season	Neither the weir nor the Alpha Creek groynes are within 500 m of the coast. **Conclusion** = Standard	No fords are within 500 m of the coast. **Conclusion** = Standard	No culverts are within 500 m of the coast. **Conclusion** = Standard	No bridges are within 500 m of the coast. **Conclusion** = Standard	No other in-sStream Works are within 500 m of the coast. **Conclusion** = Standard
Part (c)(iii) Standard: works in an area known to be used for trout, salmon, or native fish spawning and do not occur during the spawning season Complex: works in an area known to be used for trout, salmon, or	The weir and Alpha Creek groynes are not located in areas identified as being used for trout, salmon, or native fish spawning as crossing structure is where the waterway has intermittent/ephemeral flow **Conclusion** = Standard	Ford structures are not located in areas identified as being used for trout, salmon, or native fish spawning as the crossing structure is where the waterway has intermittent/ephemeral flow **Conclusion** = Standard	Culvert structures are not located in areas identified as being used for trout, salmon, or native fish spawning. **Conclusion** = Standard	Bridge structures are not located in areas identified as being used for trout, salmon. Native fish populations are expected to be similar to that found in Douglas Creek which supports kōaro and torrentfish. Kōaro spawn in spring (September to November) whilst the spawning sites or	The proposed gravel extraction locations are not located in areas identified as being used for trout, salmon, or native fish spawning as it is out of the wetted channel. The proposed tail race construction will intercept with the margins of the Waitaha River – this is not in an

Standard / Complex Definition Elements	Diversion Weir Structure	Macgregor Creek Crossing Structure	Culvert Structures	Granite Creek Bridge Structures	Other In-stream Works
native fish spawning and occur during the spawning season				spawning behaviour of torrentfish is currently unknown to science. Irrespective, the wetted part of the channel will not be disturbed. **Conclusion** = Standard	area identified as being used for trout or salmon spawning, but low densities of kōaro and torrentfish have been recorded in this part of the river. Kōaro are not expected to spawn in the Waitaha mainstem and the spawning sites or spawning behaviour of torrentfish is currently unknown to science. **Conclusion** = Standard (gravel extraction) Conclusion = possibly standard for tail race construction.
Part (c)(iv) Standard: works requiring repeated disturbance to a water	Weir maintenance may require repeated in-stream Works with less than 6 months between periods of work.	Ford maintenance may require repeated in-stream Works with less than 6 months between periods of work.	Culvert maintenance may require repeated in-stream Works with less than 6 months	Bridge maintenance unlikely to require repeated in-stream Works with less than 6	Construction related in-stream activities not relevant.

Standard / Complex Definition Elements	Diversion Weir Structure	Macgregor Creek Crossing Structure	Culvert Structures	Granite Creek Bridge Structures	Other In-stream Works
body and are temporary works for which there is a period of more than 6 months between each period of work Complex: works requiring repeated disturbance to a water body and are temporary works for which there is a period of 6 months or less between each period of work	**Conclusion** = Complex The Alpha Creek groyne maintenance may require repeated in-Stream Works with less than 6 months between periods of work. **Conclusion** = Complex	**Conclusion** = Complex	between periods of work. **Conclusion** = Complex	months between periods of work. **Conclusion** = Standard	Operational phase maintenance activities upstream of the Headworks in Kiwi Flat may require repeated in-stream Works with less than 6 months between periods of work. **Conclusion** = Complex (Headworks in-stream maintenance)
Overall Assessment: Standard or Complex	Complex Requires separate approval under Schedule 9 of the FTA for the weir and Alpha Creek groyne structures and associated in-stream construction and ongoing maintenance activities.	Complex Requires separate approval under Schedule 9 of the FTA for ongoing in-stream maintenance activities.	Complex Requires separate approval under Schedule 9 of the FTA for ongoing in-stream culvert maintenance activities.	Complex Requires separate approval under Schedule 9 of the FTA for bridge construction activities.	Complex Requires separate approval under Schedule 9 of the FTA for in-stream Works lasting more than 3 months during the construction phase and

Standard / Complex Definition Elements	Diversion Weir Structure	Macgregor Creek Crossing Structure	Culvert Structures	Granite Creek Bridge Structures	Other In-stream Works
					for ongoing in-stream Headworks maintenance activities.

In summary, the following complex freshwater fisheries activities are sought under Schedule 9 of the FTAA:

> Approval for the Headworks diversion weir and Alpha Creek groyne structures and associated in-stream construction and ongoing maintenance activities; and

> Approval for ongoing in-stream maintenance activities on the Macgregor Creek crossing structure, all culvert structures, the Granite Creek bridge and Power Station tailrace.

Approvals in respect of standard freshwater fisheries activities are included in the consideration of the relevant approvals relating to RMA approvals for structures in the beds of lakes / rivers (RMA s13) and damming and diversion of water (RMA s14).

4.4.3 Information Requirements

Information required to be provided for standard and complex fisheries includes:

(a) in relation to the structure and any fish facility:

(i) a description of the type of structure or fish facility:

(ii) the dimensions of the structure or fish facility:

(iii) the design of the structure or fish facility:

(iv) the placement of the structure or fish facility:

(v) the water flows:

(vi) the operating regime:

(b) the freshwater species and values present (with particular focus on threatened, data-deficient, and at-risk species as defined in the New Zealand Threat Classification System):

(c) the water quality and quantity in the surrounding habitat (at the proposed structure location, upstream and downstream):

(d) how the passage of fish will be provided for or impeded.

The information required to be provided for the fish facility associated with the Scheme's diversion weir (part (a)) is presented in **Appendix 49**. Information on freshwater species and values (part (b)) and on how fish passage will be provided for (part (d)) is provided in the Aquatic Ecology Report (**Appendix 25**). General information on water quality (part (c)) is presented in section 5.18 of this application.

The FTAA also requires information about whether any fish salvage activities are proposed. The Scheme may involve fish salvage activities during Stream Works associated with culvert structure installations if these works are undertaken during times when the stream is flowing. Fish salvage protocols to be implemented in these circumstances are set out in the Freshwater Ecology Management Plan.

Fish species such as kōaro, torrentfish, brown trout, and longfin eel are also likely to be attracted to the Power Station tailrace discharging into the Waitaha River. As the tailrace offers a stable flow and clearer water, it will be attractive to fish in the mainstem. Specifically, juvenile kōaro migrating upstream along the river's edges may be drawn into the tailrace, potentially reducing their numbers moving further upstream. The tailrace design will need to incorporate features or measures that provide for fish being in the tailrace at times and to ensure fish are able to re-enter the Waitaha River's main stem and continue upstream.

5. EXISTING ENVIRONMENT

5.1 GENERAL SETTING

5.1.1 Project Areas

For the purposes of describing this Project, the site is separated into the following four areas illustrated in **Figure 24**.

- Area 1 - comprising the Scheme's weir and intake structures (Headworks) at the southern extent of the Project;
- Area 2 - including the Power Station Site and sections of the site access track and transmission line located south of McLean farm;
- Area 3 - comprising the area proposed for land-based gravel extraction and construction spoil material disposal and will include the main Construction Staging Area; and
- Area 4 - including sections of the site access track and transmission lines located on McLean Farm and transmission lines located further north within local and SH6 land and also including the Waitaha Substation at the northern extent of the Project.

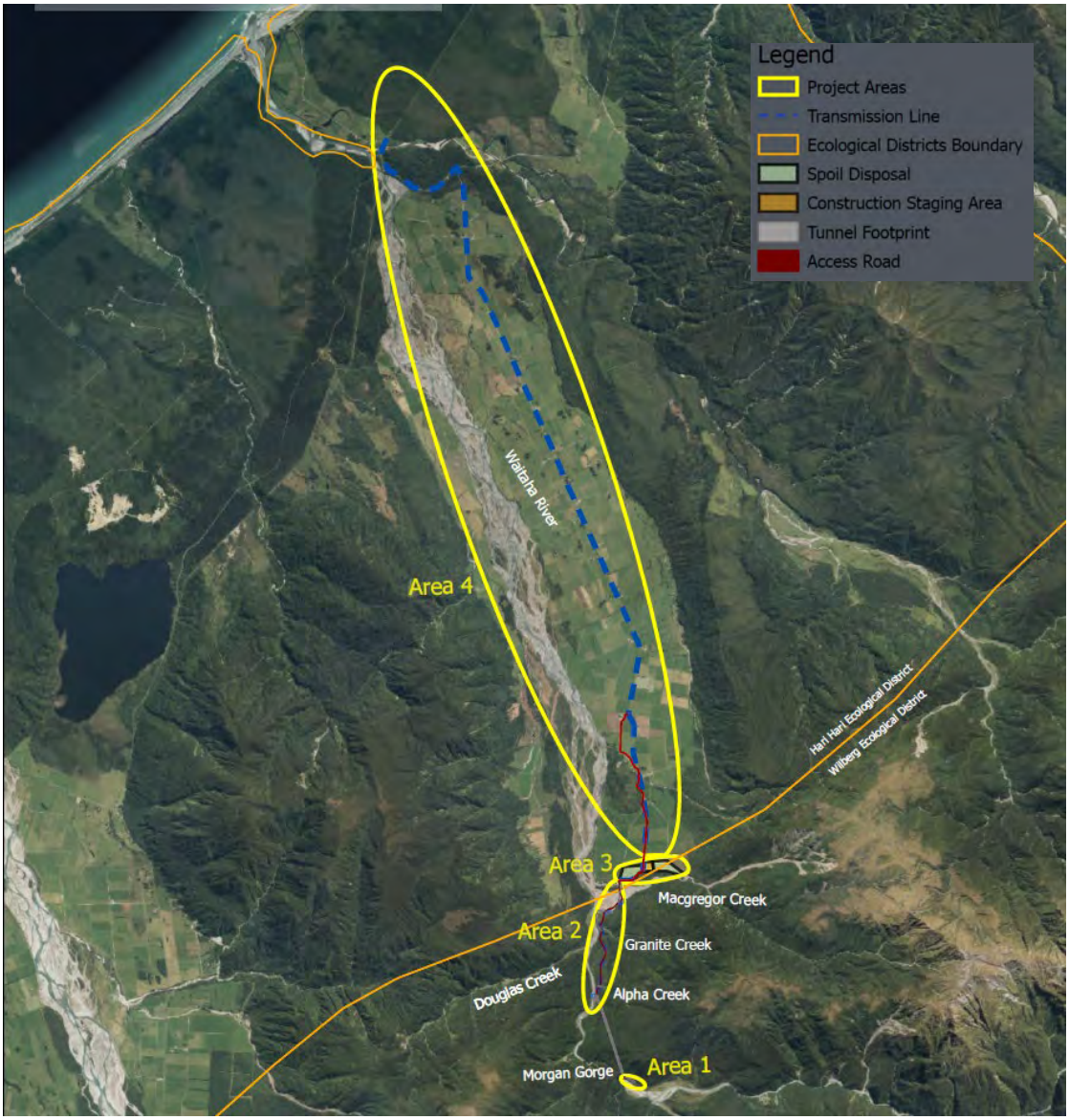

Figure 24: Plan Showing Project Areas

5.1.2 Features of the Proposed Hydro Scheme Site and Surrounds

Key features within and around the Scheme (Areas 1 and 2) are illustrated in **Figure 25** and discussed further below.

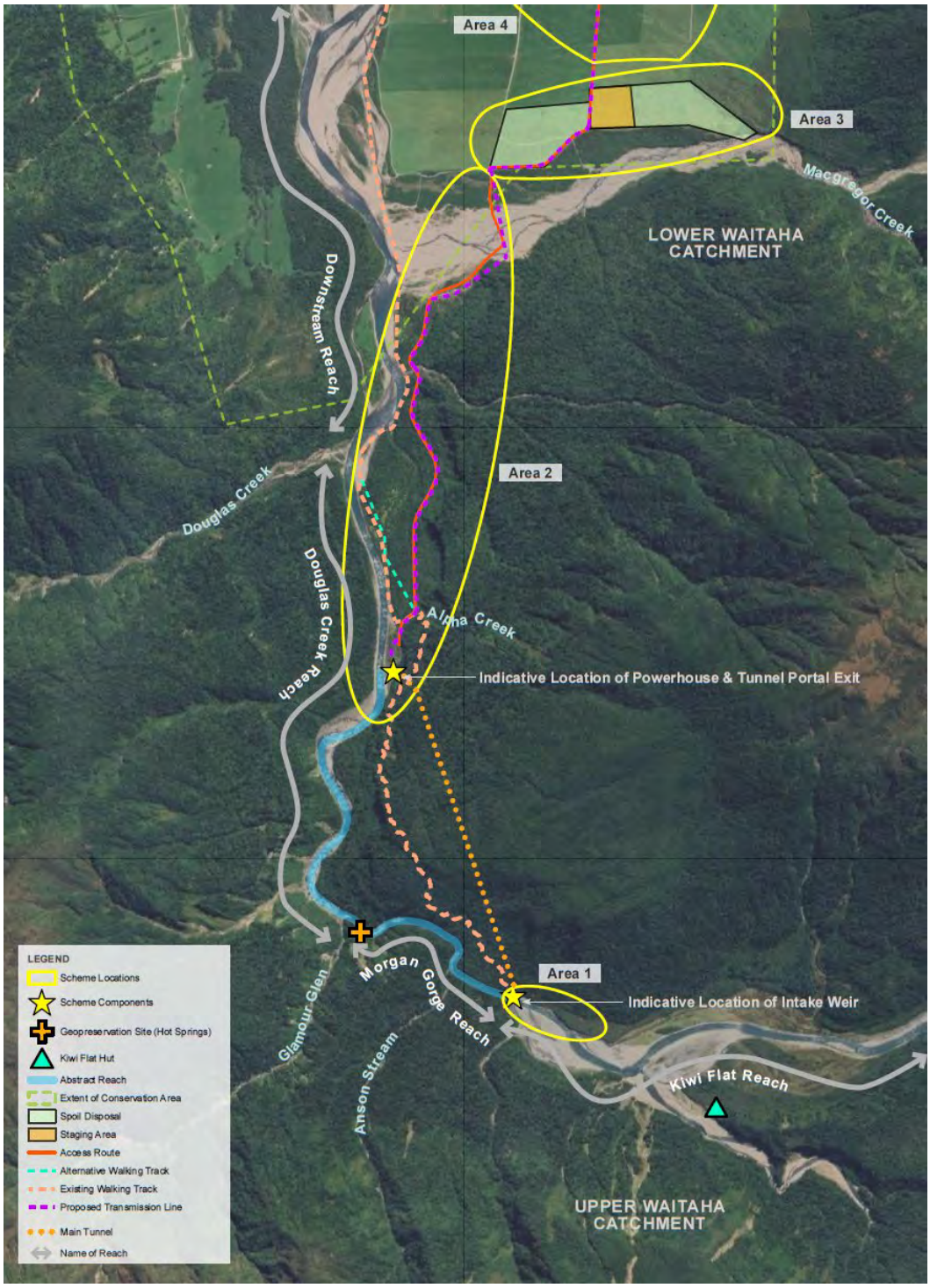

Figure 25: Key Features Within and Surrounding the Site

The Waitaha River is located 60 km southwest of Hokitika and extends from the Main Divide of the Southern Alps to the Tasman Sea on the West Coast. The West Coast Region *(Te Kaunihera Whakakotahi o Te Tai Poutini)* extends over a distance of 600 km from Kahurangi

Point in the north to Awarua Point in the south[111] and has a land area of 23,000 km^2, or 8.5% of New Zealand's land area[112].

The West Coast region is characterised by dynamic tectonic activity, high rainfall and associated high energy fluvial processes, which has resulted in a diverse landscape of large mountains, numerous lakes, large rivers and coastal plains. The Alpine Fault runs through the catchment near the confluence of the Waitaha River and Macgregor Creek.

The dominant geology of the area is a mixture of poor to well-foliated fissile schist and glacial outwash gravels in the valley floors and terraces. Signs of recent erosion and aggradation in the catchment are common and landslips are a characteristic feature of the area.

The Waitaha River catchment is relatively small in comparison to other river catchments on the West Coast, being 316 km^2. For example, the Wanganui and Hokitika catchments are 521 km^2 and 1,066 km^2 respectively. However, the drop in elevation from 2,640 m in the Upper Waitaha Catchment to sea-level is significantly steeper along the Waitaha River's 40 km length.

The extent of the Waitaha catchment, shown earlier in **Figure 1**, is defined by the Smyth Range to the south, the Bloomfield Range to the west and the Lange Range to the north-west and it includes numerous peaks above 2,100 m - many covered in permanent snow and ice. Notably, the upper Waitaha catchment receives some of the world's highest annual rainfall, ranging from about 5,500 mm at Kiwi Flat to around 12,000–14,000 m at the divide, with a maximum of 18,442 mm[113].

A detailed description of the Waitaha River and its sub-catchments is provided later in Section 5.15, however, to summarise, the mainstem of the Waitaha River is dominated by a plane-bed/cascade morphology, with a mixture of sand-gravel–cobble substrate in slower flowing areas of the river, and massive boulders and shifting gravel in faster flowing areas. The river is predominantly a single-thread channel above Kiwi Flat, but as the valley flattens and widens at Kiwi Flat the river takes on a slightly braided nature, with low terraces representing the previous location of the river channel. At the downstream end of Kiwi Flat the river flows through Morgan Gorge as a confined channel, with a substrate dominated by bedrock, massive boulders, and shifting gravels. Below the Mogan Gorge, the Waitaha River flows in less steeply graded channel sections (the Douglas Creek and then the Downstream Reaches). A number of tributary streams also flow into the Waitaha River across the length of the Site. These include the Anson and Glamour streams (both entering from the true left

[111] West Coast Policy Statement, Introductory statement to Chapter 2: The West Coast

[112] Ibid

[113] Doyle (2013)

within the Morgan Gorge), and the Alpha, Douglas and Macgregor Creeks entering further downstream.

Vegetation within the immediate Scheme area and surrounding the Waitaha Catchment is Indigenous native forest occupying the majority of the lower and mid slopes of both the Lower and Upper Waitaha Catchments. Species typically comprise primary podocarp forests on the more stable lower elevations with the presence of rata/ kamahi forests on the upper steeper slopes, especially within the Upper Waitaha Catchment. At higher elevations, vegetation tends to comprise more scrub and alpine vegetation, including indigenous broadleaved hardwood species, tussocks and sub-alpine shrubs. On the lower, managed alluvial plains, high producing exotic pasture is evident. The vegetation associated with the Waitaha Valley is typical of other river catchments up and down the West Coast.

The lower part of the Waitaha Catchment (generally located beyond the northern boundary of the Conservation Area – see dashed green line in **Figure 25**) is a mix of uses and land types including large areas of well-developed farmland, particularly on the true right bank of the Waitaha River downstream of Macgregor Creek.

The site of the Scheme sits in the transition zone between rural land used for production-based activities to the north, and the more natural and untouched areas to the south, dominated by conservation land used for recreational activities.

Other notable features of the general area include:

- A public walking track running along the true right side of the Waitaha River (see orange dashed line in **Figure 25**);
- A publicly accessible swing-bridge located near the downstream extent of Kiwi Flat and the top of Morgan Gorge;
- A site where geothermally heated water discharges to the surface (donated by the orange coloured cross in **Figure 25**); and
- The Kiwi Flat Hut (denoted by the green triangle in in **Figure 25**).

5.2 CULTURAL CONTEXT AND VALUES

5.2.1 Takiwā and Cultural Governance

The Waitaha Hydro Scheme lies within the takiwā of iwi Ngāi Tahu. Although the Waitaha Hydro Scheme Project area is not located in any specific statutory acknowledgement areas, it is noted under the Ngāi Tahu Claims Settlement Act 1998, that the Crown recognises Ngāi

Tahu as holding rangatiratanga within their takiwā and that it undertakes 'to enter a new age of co-operation with Ngāi Tahu".[114]

On a more local level, the Waitaha Hydro Scheme lies within the rohe of the hapu Ngāti Waewae and Ngāti Makaawhio. Both hapū have strong connections to each other. Accordingly, they have widely shared interests, particularly in the area situated between the north bank of the Pouerua River and the south bank of the Hokitika River which includes the Waitaha Valley.

Together, Ngāti Waewae and Ngāti Makaawhio are Poutini Ngāi Tahu[115] – the entity that exercises tino rangatiratanga within, and kaitiakitanga of the natural and physical resources within the West Coast including the Waitaha River.

The rohe of Ngāti Waewae and Te Rūnanga o Makaawhio respectively. The rohe of Te Rūnanga o Ngāti Waewae, which is centred on Arahura and Hokitika, stretches from Kahurangi Point to the north bank of the Hokitika River and inland to the Main Divide.[116] The rohe of Makaawhio, centred in Makaawhio, extends from the South bank of the Poerua River to Piopiotahi (Milford Sound) and inland to the Main Divide.

5.2.2 Values

Westpower understands, based on advice from Poutini Ngāi Tahu, that there is a distinctive cultural context to the way that Poutini Ngāi Tahu think about and respond to resource management issues in their takiwā.[117] As described in the pTTPP,[118] this cultural context reflects:

- The connection between the natural world and Poutini Ngāi Tahu through whakapapa, where people are descended from Papatūānuku, the ancestral earth mother and Ranginui the ancestral sky father;
- A body of knowledge about the land, water and resources that has been developed over generations of collective Poutini Ngāi Tahu experience in Te Waipounamu;

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[114] Ngāi Tahu Deed of Settlement, Section 2.1: Apology by Crown.

[115] Te Tai o Poutini Plan, Part 1, Tangata Whenua chapter: https://westcoast.isoplan.co.nz/eplan/rules/0/174/0/0/0/78.

[116] Te Tai o Poutini Plan, Part 1, Tangata Whenua chapter.

[117] Te Tai o Poutini Plan, Part 1, Tangata Whenua chapter, Poutini Ngāi Tahu and the Management of Natural Resources.

[118] Te Tai o Poutini Plan, Part 1, Tangata Whenua chapter, Poutini Ngāi Tahu and the Management of Natural Resources.

- The relationship between tangata whenua and the environment, and a worldview that sees people as part of the world around them and not masters of it;
- An understanding that the care of natural resources is an act of whanaungatanga (caring for the family) which recognises that people are dependent on resources and have reciprocal obligations to care for, conserve and protect them; and
- The desire to protect key cultural values such as mauri and mahinga kai that are critical to identity, sense of place and cultural well-being.

Within the above context, Poutini Ngāi Tahu are guided by the following key cultural values:[119]

- Kaitiakitanga;
- Tino Rangatiratanga;
- Mauri;
- Mahinga kai;
- Ki Uta Ki Tai;
- Wāhi tapu; and
- Taonga.

5.2.3 Treaty Settlement

Ngāi Tahu and the Crown signed a Deed of Settlement on 21 November 1997. The Ngāi Tahu Claims Settlement Act 1998 gives effect to the Deed of Settlement.

The Ngāi Tahu settlement includes:[120]

- An apology from the Crown, including recognition of Ngāi Tahu as "the tāngata whenua of, and as holding rangatiratanga within, the Takiwā of Ngāi Tahu Whānui.";[121]
- Cultural redress;[122]
- Commercial/economic redress;[123] and

[119] Te Tai o Poutini Plan, Part 1, Tangata Whenua chapter, Poutini Ngāi Tahu Values, Principles and Practices.

[120] The redress is summarised in section 2.3.1 of the Deed of Settlement.

[121] Ngāi Tahu Claims Settlement Act 1998, pt 1; Deed of Settlement, section 2.1.

[122] Ngāi Tahu Claims Settlement Act 1998, pts 11–13 and schs 9–110.; Deed of Settlement, sections 11–13.

[123] Ngāi Tahu Claims Settlement Act 1998, pts 4–10 and schs 3–8; Deed of Settlement, sections 2.4–2.6 and 4–10.

> Non-tribal redress.[124]

Poutini Ngāi Tahu have confirmed that the Scheme is consistent with the relevant principles and provisions of its Treaty settlement.

To satisfy the information requirement in clause 5(1)(i) of schedule 5 of the FTAA, the most relevant principles and provisions in the settlement in respect of the Scheme are briefly outlined below. These provisions fall under cultural redress and concern conservation management strategies, taonga species, recognition of mana, management input and nohoanga entitlements.

5.2.3.1 Conservation management strategies

The Treaty settlement provides redress to Ngāi Tahu relevant to conservation management strategies and plans. This redress is not directly relevant to the Scheme:

> Te Rūnanga o Ngāi Tahu is a statutory adviser to the Minister of Conservation in respect of specific sites.[125] As a statutory adviser, Te Rūnanga o Ngāi Tahu may provide advice directly to the Minister of Conservation when they are considering any draft conservation management plan or conservation management strategy under the Conservation Act 1987 in respect of a specific site.[126] The Minister of Conservation must have particular regard to the advice given by Te Rūnanga o Ngāi Tahu.[127] The Scheme does not involve any sites for which Te Rūnanga o Ngāi Tahu has a role as a statutory advisor.

> The Director-General of Conservation must consult with, and have particular regard to the views of, Te Rūnanga o Ngāi Tahu in respect of the preparation of every conservation management strategy or conservation management plan that affects any of the leaseback conservation areas or the gift areas.[128] The Scheme does not involve any of the leaseback conservation areas or the gift areas.

The West Coast *Te Tai o Poutini* Conservation Management Strategy ("**CMS**") was approved by the New Zealand Conservation Authority on 15 April 2010. Te Rūnanga o Ngāi Tahu did

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[124] Ngāi Tahu Claims Settlement Act 1998, pts 14–15 and schs 111–117; Deed of Settlement, sections 14–15. This redress relates to claims by individuals that were also heard by the Waitangi tribunal and are separate from the collective Ngāi Tahu claim.

[125] Ngāi Tahu Claims Settlement Act 1998, s 230 and sch 79; Deed of Settlement, section 12.4.2.

[126] Ngāi Tahu Claims Settlement Act 1998, s 232; Deed of Settlement, section 12.4.3. Or any national park management plan under the National Parks Act 1980 or formulating written recommendations to the New Zealand Conservation Authority.

[127] Ngāi Tahu Claims Settlement Act 1998, s 233; Deed of Settlement, section 12.4.4.

[128] Ngāi Tahu Claims Settlement Act 1998, s 109; Deed of Settlement, section 10.14.8. These are High Country stations.

not co-author the CMS and cannot be said to have co-approved the CMS. The New Zealand Conservation Authority includes one appointment on the nomination of Te Rūnanga o Ngāi Tahu.[129]

5.2.3.2 Taonga species

In the Treaty settlement the Crown acknowledges the cultural, spiritual, historic and/or traditional association of Ngāi Tahu with each of the taonga species,[130] and taonga fish species.[131] Many of the species identified within the expert terrestrial and aquatic assessments are taonga species or taonga fish species under the settlement.[132] The effects on taonga species and taonga fish species have been appropriately addressed to the satisfaction of Poutini Ngāi Tahu.

The views of Poutini Ngāi Tahu on the management of taonga species and taonga fish species are relevant to the FTAA process:

- The Minister of Conservation is required to consult with, and have particular regard to, the views of Te Rūnanga when making policy decisions concerning the protection, management or conservation of that taonga species;[133]
- Te Rūnanga o Ngāi Tahu is appointed as an advisory committee to provide advice to the Minister of Conservation on all matters concerning the management and conservation by the Department of Conservation of freshwater fisheries within the Ngāi Tahu Claim Area;[134] and
- In all matters concerning the management and conservation by the Department of Conservation of taonga fish species within the Ngāi Tahu Claim Area, the Minister of Conservation must consult with and have particular regard to the advice of that advisory committee.[135]

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129 Ngāi Tahu Claims Settlement Act 1998, s 272; Deed of Settlement, section 12.9.1.

130 Ngāi Tahu Claims Settlement Act 1998, s 288; Deed of Settlement, section 12.13.2.

131 Ngāi Tahu Claims Settlement Act 1998, s 298; Deed of Settlement, section 12.14.2.

132 Ngāi Tahu Claims Settlement Act 1998, schs 97–98; Kea; Kōwhiowhio / Blue duck; Kākā / South Island kākā; Kārearea / Bush falcon; Pārera / Grey duck; Kākāriki / Yellow-crowned parakeet; Kakaruai / South Island robin; Mātā / South Island fernbird; Pīhoihoi / New Zealand pipit; Kōau / Black shag; Kōau / Little shag; Weka / Western weka; Miromiro / South Island tomtit; Pīwakawaka / South Island fantail; Tūī / Tui; Korimako / Bellbird; Riroriro / Grey warbler; Tititipounamu / South Island rifleman; Kōtare / New Zealand kingfisher; Ruru koukou / Morepork; Pīpīwharauroa / Shining cuckoo; Kererū / New Zealand pigeon; Poaka / Pied stilt; Pūkeko; Kāhu / Swamp harrier; Pūtakitaki / Paradise shelduck; Piripiripōhatu / Torrentfish; and Taiwharu / Giant kokopu.

133 Ngāi Tahu Claims Settlement Act 1998, s 293; Deed of Settlement, section 12.13.7.

134 Deed of Settlement, section 12.14.9.

135 Ngāi Tahu Claims Settlement Act 1998, s 304; Deed of Settlement, sections 5.2 and 12.14.10.

5.2.3.3 Recognition of mana

Ngāi Tahu's mana is recognised in the Treaty settlement through statutory acknowledgements, deeds of recognition, Tōpuni and place names. The Scheme will not undermine the mana of Poutini Ngāi Tahu.

A statutory acknowledgement is an acknowledgement by the Crown of Te Rūnanga o Ngāi Tahu's particular cultural, spiritual, historical, and traditional association with a site or area.[136] Statutory acknowledgements recognise the mana of Ngāi Tahu over a range of sites and areas in the takiwā and have implications for processes under the RMA and the Heritage New Zealand Pouhere Taonga Act.[137] Poutini Ngāi Tahu have confirmed that there are no statutory acknowledgements that cover the Project area.

The Crown agency responsible for the management of a site or area subject to a statutory acknowledgment was required to enter into a deed of recognition, providing for agreed input by Te Rūnanga o Ngāi Tahu into management processes.[138] Poutini Ngāi Tahu have confirmed that there are no deeds of recognition that cover the project area.

Tōpuni provide an overlay of the cultural, spiritual, historic, and traditional association of Te Rūnanga o Ngāi Tahu, on certain areas of land managed by the Department of Conservation. The Ngāi Tahu values of the Tōpuni are a mandatory consideration in approving management policies, plans and strategies under the Conservation Act. Te Rūnanga o Ngāi Tahu must also be consulted in the preparation of those documents.[139] Poutini Ngāi Tahu have confirmed that there are no other specific redress mechanisms, which would include Tōpuni, that cover the project area.

The settlement also amended the place name of various locations in the takiwā.[140] No names within the Project area were amended.

5.2.3.4 Management input

Te Rūnanga o Ngāi Tahu has the right to nominate persons to dedicated seats on the following statutory bodies:

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[136] Ngāi Tahu Claims Settlement Act 1998, s 206.

[137] Ngāi Tahu Claims Settlement Act 1998, ss 207–211, 215 and 220; Deed of Settlement, section 12.2.

[138] Ngāi Tahu Claims Settlement Act 1998, ss 212–214 and 216; Deed of Settlement, section 12.3.

[139] Poutini Ngāi Tahu have confirmed that there are Ngāi Tahu Claims Settlement Act 1998, ss 237–250; Deed of Settlement, section 12.5.

[140] Ngāi Tahu Claims Settlement Act 1998, ss 269–271 and sch 96; Deed of Settlement, section 12.8 and attachment 12.146.

- One seat on the New Zealand Conservation Authority.[141]
- Two seats on each Conservation Board wholly within the Ngāi Tahu Takiwā.[142]

The New Zealand Conservation Authority and relevant Conservation Boards must be invited to provide written comments.[143]

There are a range of protocols that have been developed with the Department of Conservation, setting out:[144]

- The ways in which the Department of Conservation will exercise its functions, powers and duties in relation to specified matters within the Ngāi Tahu Claim Area; and
- How the Department of Conservation will, on a continuing basis, interact with Te Rūnanga o Ngāi Tahu and provide for Te Rūnanga o Ngāi Tahu's input into its decision-making process, including in respect of freshwater fisheries and RMA involvement.

The protocols are required to be noted in conservation management strategies, conservation management plans and national park management plans affecting the Ngāi Tahu Claim Area.[145] The CMS refers to the Department of Conservation protocols at section 3.1.3.7 and in Appendix 2.

5.2.3.5 Nohoanga

The Treaty settlement provides nohoanga entitlements for the purpose of permitting members of Ngāi Tahu Whanui to temporarily occupy land close to the waterways on a non-commercial basis, so as to have access to the waterways for lawful fishing and gathering of other natural resources.[146] Poutini Ngāi Tahu have confirmed that there are no other specific redress mechanisms, which would include nohoanga entitlements, that cover the Project area.

5.2.4 Mana Whenua Position on the Waitaha Scheme

As mentioned earlier, Westpower has been engaging with Poutini Ngāi Tahu since 2012 in respect of the Waitaha Hydro Scheme proposal. This engagement has culminated in Westpower and Poutini Ngāi Tahu agreeing to be project partners in the Waitaha Hydro

[141] Ngāi Tahu Claims Settlement Act 1998, s 272; Deed of Settlement, section 12.9.1.

[142] Ngāi Tahu Claims Settlement Act 1998, s 273; Deed of Settlement, section 12.9.2.

[143] Fast-track Approvals Act 2024, s 53(2)(m)(ii) and sch 6, cl 5.

[144] Ngāi Tahu Claims Settlement Act 1998, ss 281–286; Deed of Settlement, section 12.12 and attachment 12.147.

[145] Ngāi Tahu Claims Settlement Act 1998, s 284; Deed of Settlement, section 12.12.6.

[146] Ngāi Tahu Claims Settlement Act 1998, ss 255–268 and sch 95; Deed of Settlement, section 12.7.

Scheme and is confirmation that Westpower's proposal aligns with Poutini Ngāi Tahu's cultural values.

Among other things, this partnership arrangement provides Poutini Ngāi Tahu with a direct financial interest in the Scheme. This partnership will assist with their cultural, environmental, economic and social aspirations. In turn, this provides a tangible mechanism for Poutini Ngāi Tahu to exercise kaitiakitanga and tino rangatiratanga.

5.3 SOCIAL AND ECONOMIC SETTING

The wider West Coast Region's economy has historically been focussed on its natural resources, notably mining for coal and gold as well as for timber and dairying. Tourism is now an important and growing industry, with a strong emphasis on large areas of Conservation Estate and their associated natural character and landscapes.

Statistics New Zealand data[147] indicate that the resident population in the Westland District increased from 8,830 in 2018 to 9,430 in 2024 (equivalent to a 6.8% increase over the six-year period from 2018 to 2024.

The key employment sectors for the Westland District in 2023 are tourism with 25.3% (1,168 jobs) of the workforce, manufacturing with 17.5% (808 jobs) of the workforce and agricultural, forestry and fishing with 14.2% (654 jobs) of the workforce. Mining is not a significant component of the Westland District economy with only 90 persons (2.0% of the total workforce) employed in 2023.

5.4 LAND DETAILS

The land required for the Project is set out in Part A of this application.

5.5 EXISTING LAND USE

5.5.1 General Uses of Project Land

The Waitaha Scheme's main components (Areas 1 and 2) will occupy stewardship land administered by DOC that is currently used for the purpose of protecting conservation values and providing recreation opportunities for the public.

[147] Statistics New Zealand website, Sub-national population estimates.

The Mclean farmland to the north of the Scheme's main components, including Area 3 land to be used for temporary construction staging, spoil disposal, and Area 4 land to be used for vehicle access and electricity transmission, is pastoral farmland used for rural production purposes including dairy farming and rural lifestyle living.

Local and SH6 land within Area 4 proposed for new transmission lines, already includes existing transmission line infrastructure and the land proposed to connect the Waitaha Hydro Power Station into the local line network is an existing operational substation (Waitaha Substation).

5.5.2 Recreational Use and Visitation to the Area

Recreational uses of the DOC Stewardship land at and around the Scheme's proposed location include tramping, hunting, kayaking and canyoning. Recreational uses (considerably) downstream of the proposed Scheme are limited to jet boating and angling.

5.5.3 Existing Helicopter Use in the Area

The Waitaha River is identified as one of fourteen grade-5 whitewater rivers on the West Coast which require helicopter access, and helicopters are the main form of transportation for kayakers.

The Waitaha Valley, being almost equidistant from the closest helicopter providers now located at Franz Josef and Hokitika, is one of the more expensive heli-destinations on the West Coast[148]. Due to this cost, patrons are likely opting for closer recreational destinations that offer similar opportunities and experiences. In terms of helicopter use for kayaking the Waitaha Valley, the Recreation Report considers this has caused a substantial decline since 2011, with fewer than 10 kayaking helicopter deliveries reported over the last decade.

Hunters and trampers also use helicopters to fly in and out of Kiwi Flat and the surrounding area although the frequency of this activity is not accurately known.

5.6 ADJACENT NEIGHBOURS

The nearest dwellings to the proposed Scheme are located at 944 Allen Road (**Figure 26**). These are approximately two and three kilometres away from the proposed Power Station Site location. Beyond this, a number of other dwellings are situated on MacLean Farm and further north along Waitaha Road.

[148] Recreation Report.

Figure 26: Nearest Residents

5.7 PUBLIC ACCESS

Public access to the Waitaha Valley, requires traversing the McLean Farm from the southern end of Waitaha Road (requiring permission to be provided by the McLeans), and then via a DOC walking track from Macgregor Creek to Kiwi Flat (see orange dashed line in **Figure 25**). Historically a public access was possible from the car park via the bed and banks of the Waitaha River, but this has since washed out, so access is now only available via a private land.

A swing bridge, that crosses the river at the entrance to Morgan Gorge, can be accessed from the DOC walking track (**Figure 27**). From Kiwi Flat there are several tracks leading further up the valley which are part of a greater network of back country tracks where several huts are located.

There is no formed track leading to the geothermal hot spring on the true left bank of the Morgan Gorge.

Figure 27: Photo of the swing bridge near the head of the Morgan Gorge

Foot access onto conservation land is also possible from the end of Allen Road, which runs parallel to the true left bank of the lower Waitaha River. Access via this route also requires crossing private land and permission from the landowner.

Access can also be gained via helicopter which is intermittently used to transport kayakers to the Upper Waitaha/Kiwi Flat and ferry hunters and trampers in and/or out of the area.

5.8 DISTRICT PLAN ZONING AND OVERLAYS

The Project Site is located within the jurisdictional area of the Westland District Council including both the operative Westland District Plan 2002 ("**WDP**") and the Proposed Te Tai Poutini Plan ("**pTTPP**") – a combined district plan that covers the whole of West Coast region.

Outlined below are descriptions of relevant zoning and overlays within both plans.

5.8.1 Westland District Plan 2002

5.8.1.1 Zoning

Figure 28 shows the WDP zoning within and surrounding the Scheme.

The Scheme and the McLean property is fully located on and surrounded by Rural zoned land, as is the land that will be occupied by the proposed upgraded transmission lines north of the Scheme (not shown).

5.8.1.2 Overlays and Other Features

Figure 28 also shows the following overlays and features relevant to the site:

- The Alpine Fault (denoted by the red dashed line in **Figure 28**), which crosses the Project Site downstream of the proposed Power Station;
- An area of designated land is towards the east of the project site, on Mt. Bonar (see red star in **Figure 28**). The land is designated by Telecom NZ Ltd for telecommunication and radio communication and ancillary purposes; and
- A conservation covenant area comprising a bush clad hill known as the "sugarloaf" or the "Doughboy" (denoted by the green outline in **Figure 28**).

The land proposed for the Scheme and adjacent surrounds including the McLean Farm are absent of any HAIL sites, however, the existing Waitaha Substation is a HAIL site.

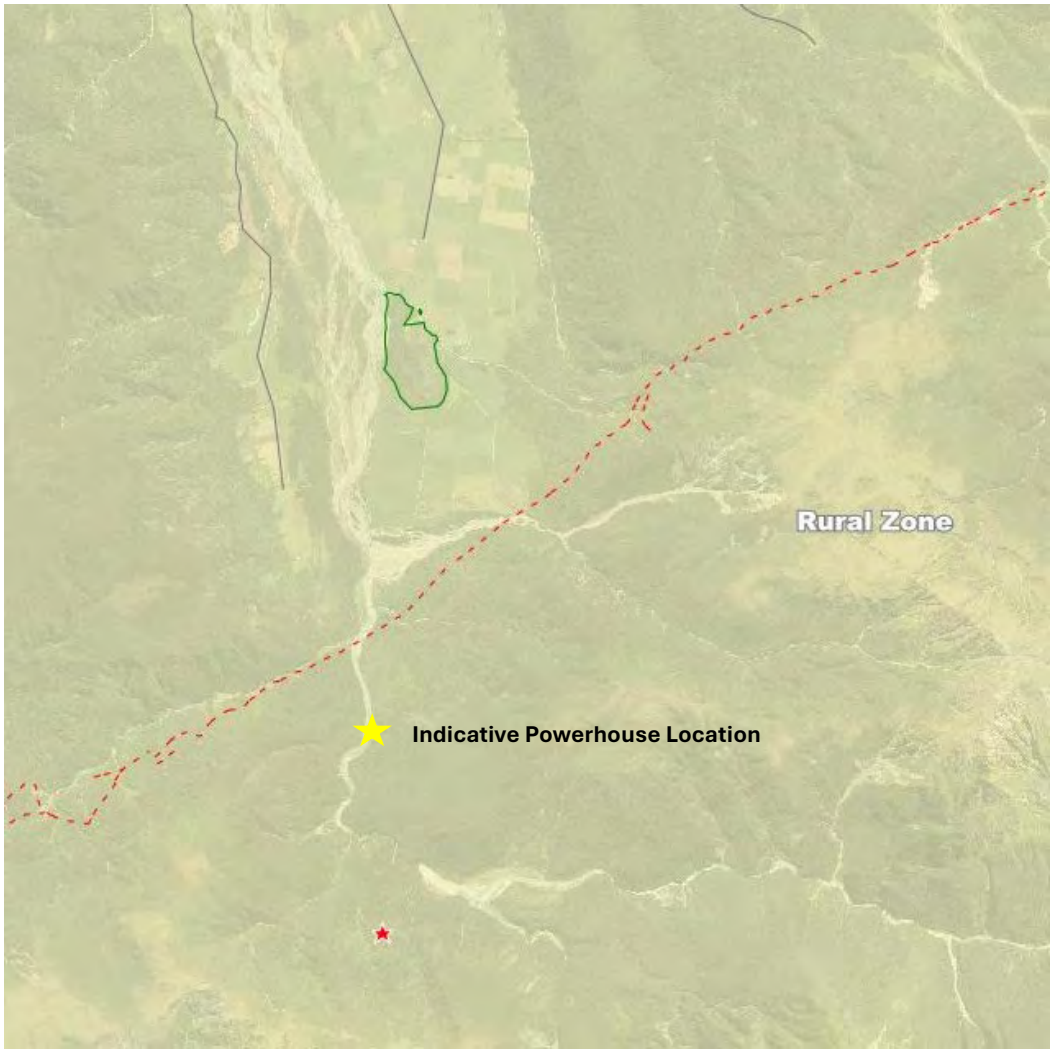

Figure 28: Westland District Plan Zoning and Overlays

5.8.2 Proposed Te Tai Poutini Plan

The Te Tai o Poutini Plan is the combined Proposed District Plan for the Buller, Grey and Westland District Councils and will replace the current individual district plans (when operative).

5.8.2.1 Zoning

Figure 29, from the relevant pTTPP Westland Zoning Map (Map 86) shows that the Scheme is located in the Open Space Zone, while ancillary aspects, including the proposed spoil disposal area and northern parts of the access road and transmission line, are within the General Rural Zone.

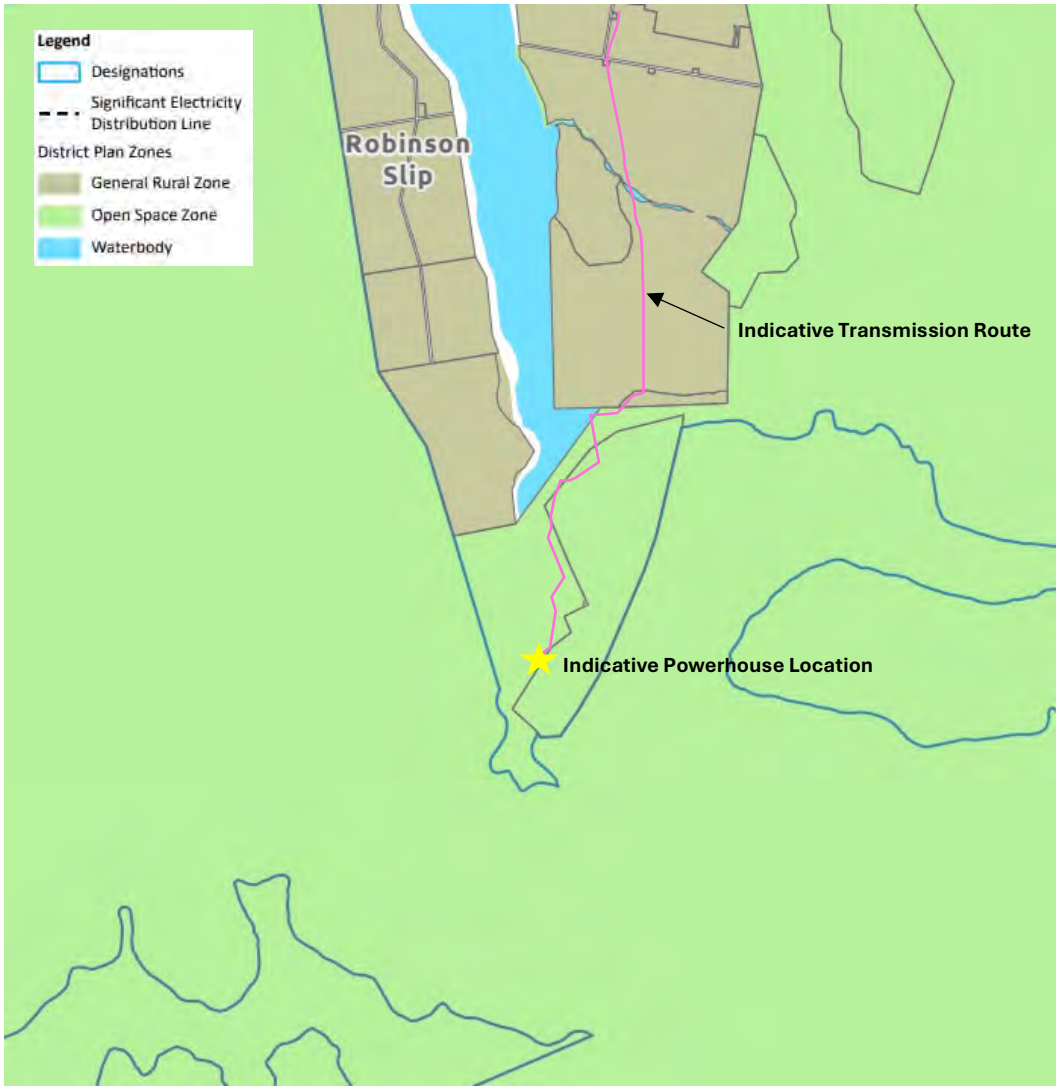

Figure 29: pTTPP Westland Zoning Map

The Open Space Zone is proposed to provide for range of passive and active leisure and recreational activities including associated facilities and structures. The Open Space Zone provides for a range of activities for local purpose use such as municipal buildings, water supply, gravel reserves, quarries, campgrounds and cemeteries.

5.8.2.2 Overlays and Other Features

The pTTPP overlays and other features relevant to the Scheme are shown in **Figure 30** and **Figure 31.** The following observations are noted:

- The entire Scheme and its surrounds are located in an Outstanding Natural Landscape ("**ONL**") and within the Pounamu Management Area;
- There is an absence of any recorded Sites and Areas of Significance to Māori at or near the Scheme;

- The Alpine Fault, classified as an Earthquake Hazard Overlay in the pTTPP, extends to 200 m either side of the active fault trace, as with the WDP, crossing the Project Site downstream of the proposed Power Station; and
- The Lower Waitaha Valley is identified in the pTTPP as a Floodplain. The Flood Plain area includes the proposed Power Station site and most of the proposed access road and transmission line routes.

In terms of the Scheme being located within an ONL, it is worth noting that, following a review of the mapped extent of the ONL proposed in the pTTPP, the author of the Landscape Report provided in **Appendix 27** agrees with the extent of its delineation. However, while the landscape values listed within the pTTPP correctly relate to the broader mapped landscapes that they are associated with, it is important to acknowledge that there are also other landscape values that are more specific to the landscape in which the proposed Scheme is located (i.e. the Upper and Lower Waitaha catchment landscapes). These other landscapes are discussed in more detail later.

In terms of parts of the Scheme being located in the Floodplain, it is noted that the relevant provisions within the proposed pTTPP are limited to subdivision activities. Also, from the nature of submissions and discussion on the proposed Floodplain layer during the proposed plan hearings, it is also anticipated that this layer will be significantly altered or deleted altogether.

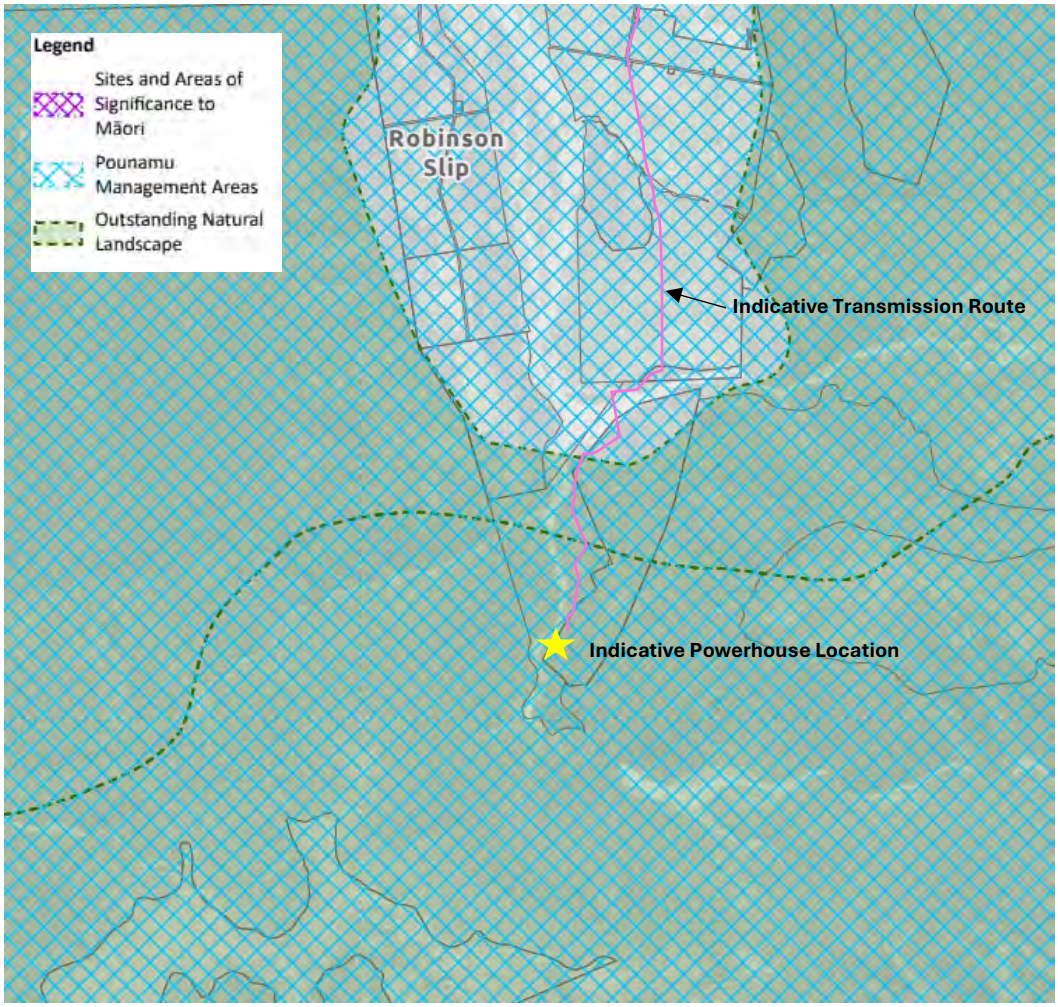

Figure 30: pTTPP Westland Environmental and Cultural Values Map

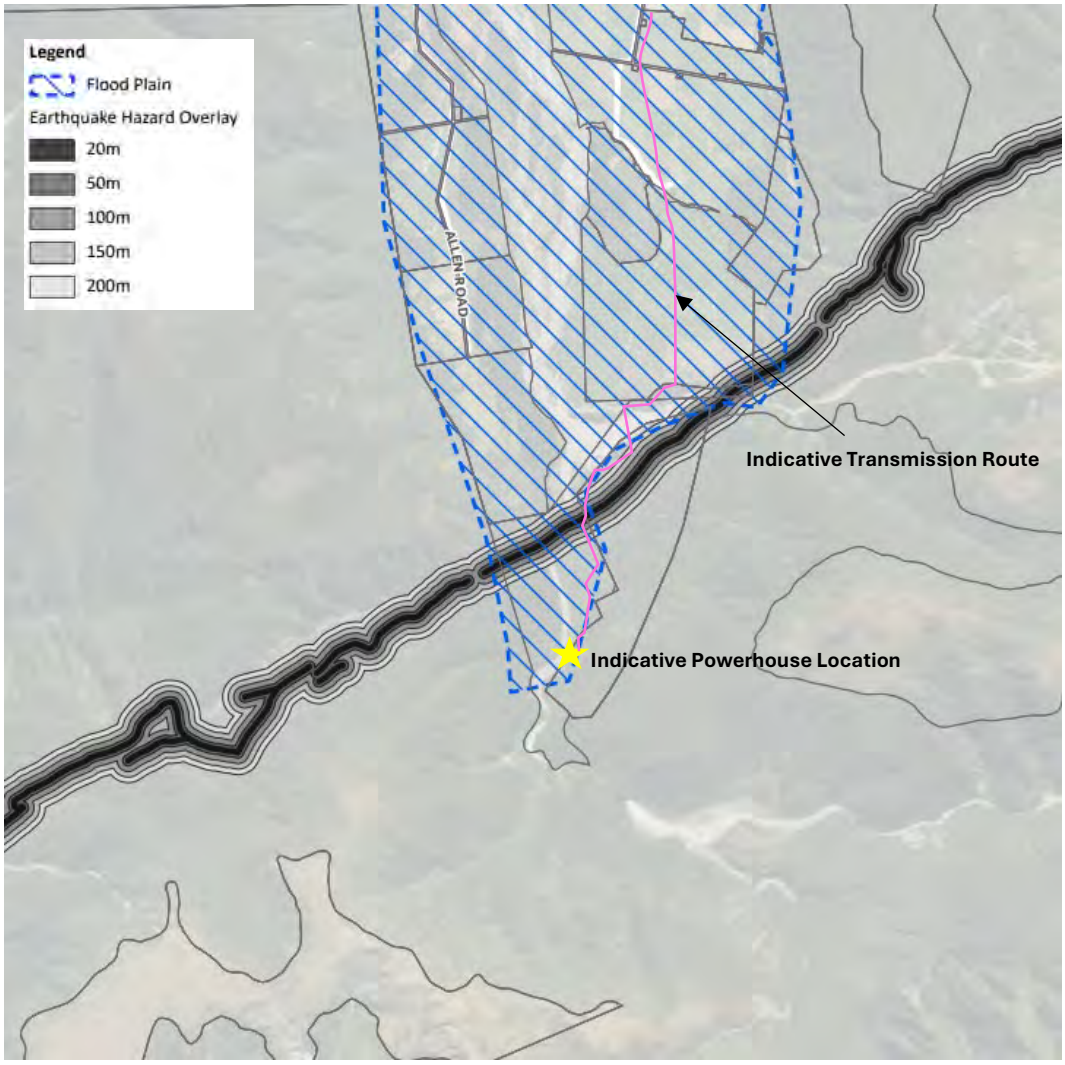

Figure 31: pTTPP Westland Natural Hazards Map

5.9 CONSERVATION MANAGEMENT

The Upper Waitaha River (i.e. upstream of Douglas Creek and extending approximately 17 km to the headwaters) forms the natural and forested 'backcountry-remote' conservation management zone, as defined in DOC's operative West Coast Conservation Management Strategy 2010-2020 ("**CMS**"). **Figure 32** shows the location of the Scheme in relation to this zone set within the 'Hokitika Place' – a land management unit defined separately in the CMS.

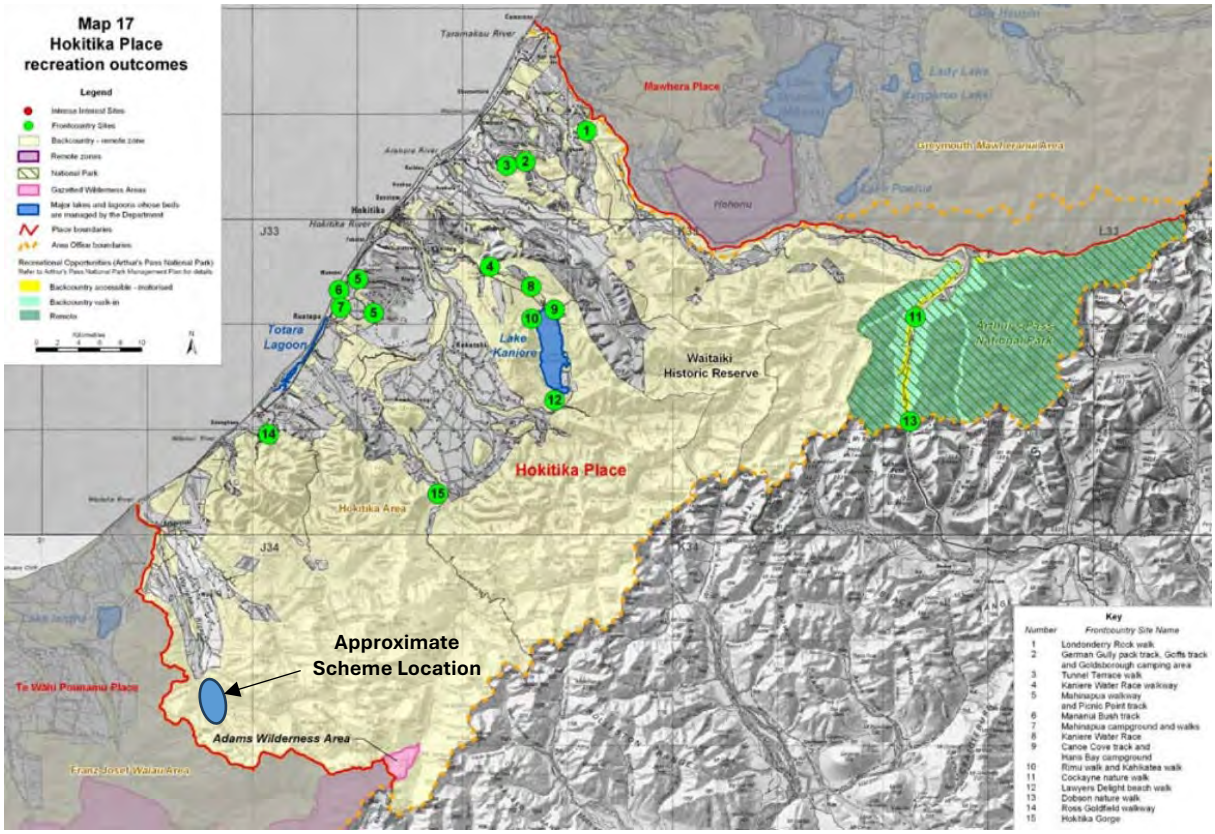

Figure 32: Location of the Scheme within the Hokitika Place Backcountry Remote Zone (Source: DOC CMS).

5.10 EXISTING AUTHORISATIONS

5.10.1 West Coast Regional Council Resource Consents

There are a number of active West Coast Regional Council ("**WCRC**") resource consents authorising various activities at locations downstream of the proposed Scheme and one located upstream of the Scheme. These consents and their activity types are illustrated in **Figure 33**. Details relating to notable resource consents, located near to the proposed Scheme are provided in **Table 17**. It is noted that the light green shaded areas shown in **Figure 33** denote the land use consent areas for a suite of consents that authorise works in or on the beds of rivers and lakes associated with schist stone removal.

In addition, a resource consent application has been received by WCRC to expand an old quarry located within a mining permit area within the Doughboy approximately 3 km downstream of the Macgregor Creek confluence with the Waitaha River. **Figure 34** shows the location and extent of this quarry proposal. At the time of preparing this report, the quarry application was "on-hold".

Figure 33: Current West Coast Regional Council Resource Consents

Table 17: Summary of Notable Nearby Activities Consented by West Coast Regional Council

Reference (See Figure 33)	Consent Number	Activity	Comments
1	AUTH-CC10001-1	Water Permit – Geothermal Water Take	Consented activities not pursued by Consent Holder. The proposal will not interfere with this consent in any event.

Reference (See Figure 33)	Consent Number	Activity	Comments
2	AUTH-RC-2020-0052-01 AUTH-RC-2014-0033-01 RC-2014-0033-01 AUTH-RC-2019-0037-01	Land Use Consent - Rock Quarry & Gravel Take Land Use Consent - Works in or on Beds of Rivers and Lakes Land Use Consent - Stone removal, Macgregor Creek and the Waitaha River.	Applies to southern light green land use consent area and various other locations on the West Coast The proposal will not interfere with these consents.
3	AUTH-CC10001-1	Water Permit – Geothermal Water Take	Consented activities not pursued by Consent Holder. The proposal will not interfere with this consent in any event.
4	AUTH-RC05216-1 AUTH-RC05216-2 AUTH-RC05216-3	Water Permit - To take surface water from MacGregor Creek for hydroelectricity generation. Water Permit - To divert water from MacGregor Creek for hydroelectricity generation. Discharge Permit - To discharge water to the Waitaha River from a hydroelectric power station.	Consented activities not pursued by Consent Holder until Waitaha Scheme is operational
5	RC-2019-0037, RC-2015-0044, and RC-2018-0043	To remove selected rock and stone (no less than 250mm in diameter) from the Waitaha River	Overlaps with proposed gravel extraction area for construction phase but gravel extraction not authorised under this existing consent.

Reference (See Figure 33)	Consent Number	Activity	Comments
6	AUTH-RCN94178-1	To undertake ongoing maintenance of existing river protection works on the Waitaha River.	The river protection works are all complete and can be maintained as a permitted activity. The proposal will not interfere with these consents.
7	AUTH-RCN95197-2	To divert floodwaters as result of stopbank construction	The flood protection works are all complete and can be maintained as a permitted activity. The proposal will not interfere with these consents.
8	AUTH-RC-2014-0020-01	To disturb the bed of the Waitaha River to construct river protection works (stopbank) and gravel relocation.	The river protection works are all complete and can be maintained as a permitted activity. The proposal will not interfere with these consents.
9	AUTH-RCL92158-1	To construct and maintain a stopbank and associated rock works.	The flood protection works are all complete and can be maintained as a permitted activity. The proposal will not interfere with these consents.

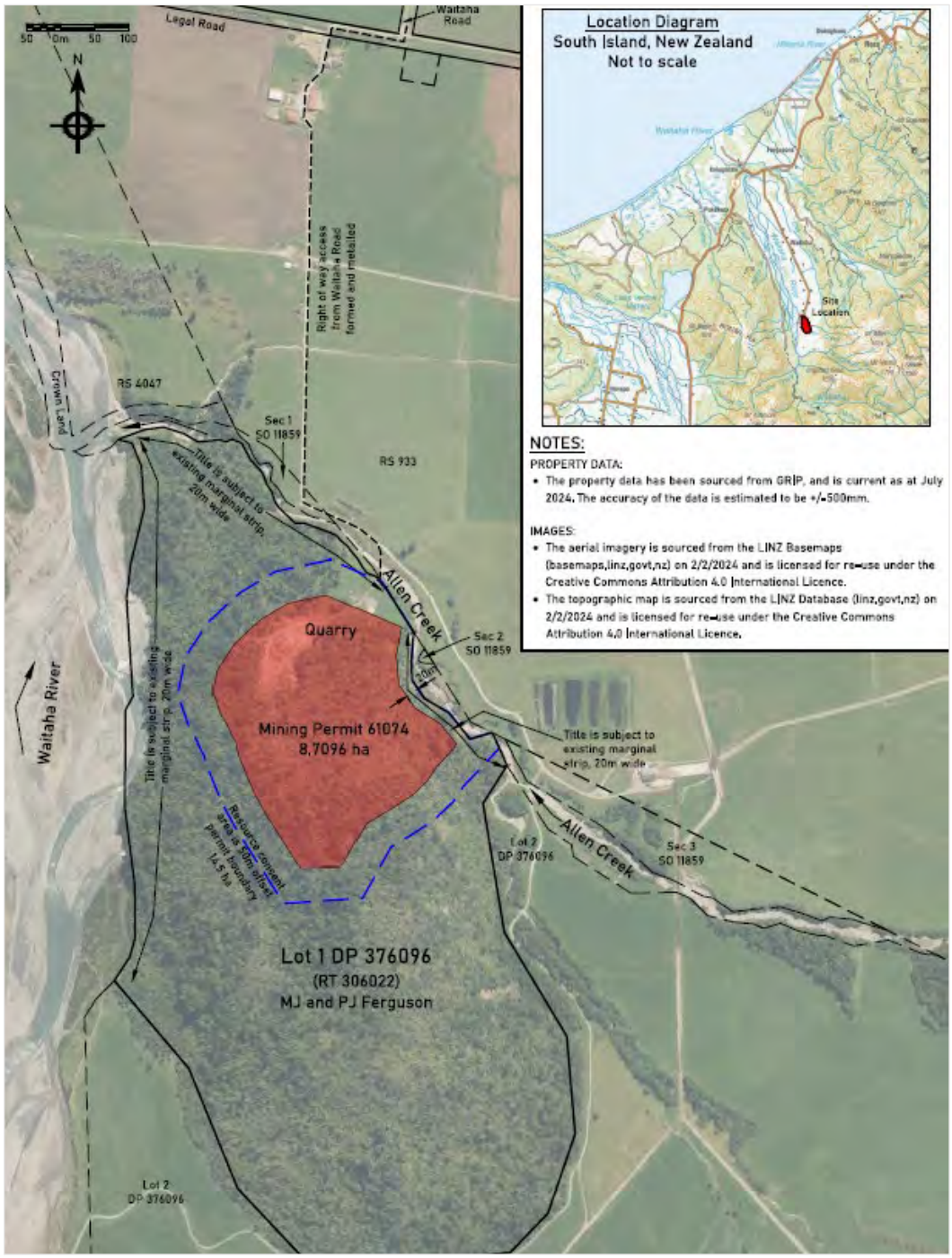

Figure 34: Plan for Recent Quarry Consent Application

5.10.2 Westland District Council Resource Consents

WDC's IntraMaps database shows there are no existing land use consents within or near the proposed site for the Scheme.

5.10.3 Mining Permits

There is one active mining permit for aggregate, granite and schist near the junction of the Allen Creek and Waitaha River (at the Doughboy refer red shaded area in **Figure 34** above).

Further afield, at the mouth of the Waitaha River, is an active permit for gold mining. In addition, the lower Waitaha River, between the bottom of Morgan Gorge through to Ellis Creek, is subject to a prospecting permit application for various metals including but not limited to aluminium, gold and iron.

The application with New Zealand Petroleum and Minerals was lodged in November 2024. At the time of preparing this application, it is understood that the decision on this permit is pending.

5.10.4 DOC Concessions

DOC confirmed there are two concessions of relevance in the areas Westpower will construct and operate the Scheme:

- Westland Schist – who:
  - hold concessions for stone removal from Waitaha River and Macgregor Creek; and
  - have agreed that it will extract gravel for Westpower under the consent sought for the Scheme, but it will not exercise its concessions in the area (or resource consents) simultaneously with Westpower's.

This relieves any opportunity for an incompatibility between the existing concession activities (both Westland Schist and Premier Group - as further detailed below), and the concessions sought for the Scheme. A copy of the agreement with Westland Schist is provided in **Appendix 6**;

- Premier Group Limited – who hold two concessions for stone removal from Macgregor Creek, with one concession having a small overlap with where Westpower will construct an access road and transmission lines as shown in **Figure 35**. Premier Group's activity in Macgregor Creek will not be constrained by and is compatible with Westpower's activities. A copy of the letter from Premier Group Limited is provided in **Appendix 6**.

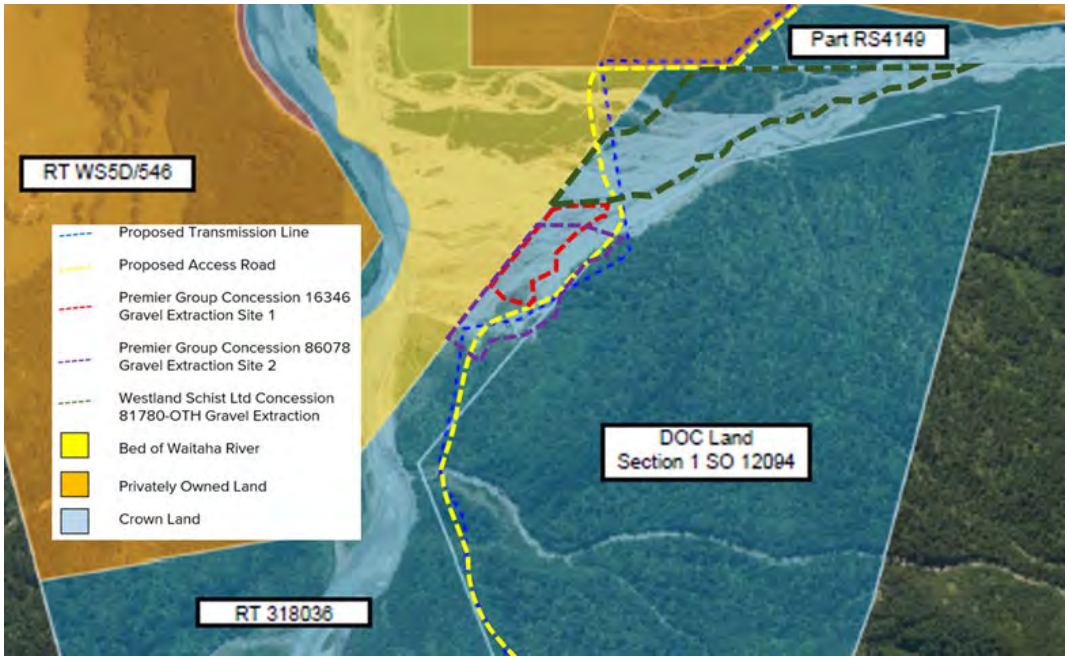

Figure 35: Map showing existing indicative DOC Concession areas and proposed indicative transmission line and access road alignments

5.11 GEOLOGY AND GEOLOGIC FEATURES

5.11.1 Geology

Regional geology, the Alpine Fault and other mapped faults within and around the Waitaha Valley and the proposed Hydro Scheme are shown in **Figure 36**. Of particular note is that all proposed Scheme components south of the Alpine Fault are all located in areas where the bedrock is pelitic schist[149] while the northern parts of the transmission line and site access road are located on Holocene river deposits.

[149] This geological unit is now assigned to the Aspiring lithologic association of the Torlesse composite terrane [Cox and Barrell, 2007] but was formerly assigned to the Haast Schist Group [Warren, 1967].

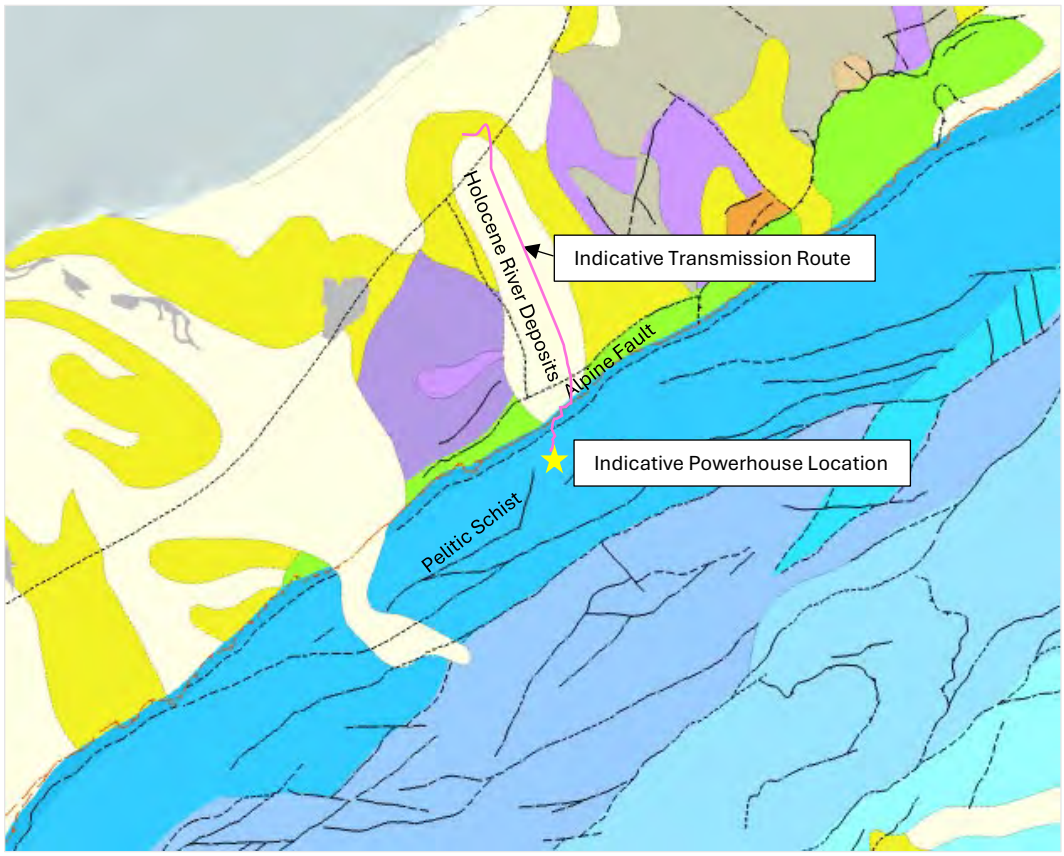

Figure 36: Geological Map (From GNS Interactive geological map of New Zealand)

5.11.2 The Alpine Fault

The Alpine Fault is an active structure that transfers an estimated 70 percent of the plate tectonic deformation currently occurring in the central South Island and has a horizontal average movement of 25-30mm/year and a vertical component of uplift of about 10mm/year. This movement is occurring uniformly over time and only occurs during large earthquake events. However, there has not been a distinct Alpine Fault "earthquake" since European settlement in New Zealand. Research suggests the most recent event occurred in 1717AD[150] and appears to have affected a fault length in the order of 350km.

Based on rupture lengths, and recorded single event fault offsets, it is estimated that any future Alpine Fault earthquake will likely have magnitudes between 7.5 and 8.5.

5.12 TOPOGRAPHY

Regional topography is illustrated in **Figure 37**. Southern parts of the Waitaha valley (south of) the Alpine Fault are very steep and mountainous with the Waitaha River confined for

[150] Yetton et al. 1998; Wells et al. 1998

most of its length in deep gorges. These areas include the Broomfield and Smythe Ranges, the eastern slopes of Mount Ashmore along with numerous other peaks above 1200 m.

The topography within the northern parts of the catchment, below (north of) the Alpine Fault, are less mountainous with the Waitaha River flattening and widening out into a more expansive braided channel.

Figure 37: Topographical Map (From GNS Interactive geological map of New Zealand)

5.13 GROUND CONDITIONS

Descriptions of the ground conditions at the locations of the proposed Scheme's main components are detailed in the Geology and Geotechnical Report provided in **Appendix 17**. This report also assesses geotechnical characteristics and associated risks. A broad summary is provided below;

> As noted already, the Scheme's main components are located south of the Alpine Fault and sit entirely within schist rock, while the northern parts of the transmission line and site access road sit on schist derived sediments;

> The schist rock is a well foliated quartzo-feldspathic biotite schist of the garnet and oligoclase zones that in outcrop is typically a strong to very strong rock (**Figure 38**).

The schist that outcrops at the surface tend to be the hardest and most resistant material. As faulting is widespread in the area, there will be many weaker areas of schist that are not exposed and remain hidden under thick vegetation cover or alluvial cover sediments;

> The Scheme's location avoids weaker mylonite material located immediately adjacent to the Alpine Fault;

> The proposed intake Headworks at the upstream end of Morgan Gorge has very high quality bedrock where the schist is strong and contains relatively few obvious foliations (parallel partings);

> The Scheme's proposed tunnels will be mainly situated in strong to very strong foliated high grade schist rock broadly similar to previously tunnelled for the Amethyst Hydro-electric Scheme located approximately 10 km southwest of the Scheme;

> Although the Power Station site has underlying schist bedrock, its proposed location, adjacent to the Waitaha River, is in an area of relatively low and young alluvial gravel surface materials with no significant, well established vegetation (**Figure 39**).

Figure 38: Example of strong regularly foliated schist bedrock located in the Waitaha Riverbed approximately 200m upstream of the proposed Power Station location.

Figure 39: View of the proposed Power Station Site – looking upstream.

5.14 SOIL PRODUCTIVITY

Figure 40 confirms that the site, including all areas proposed to be disturbed as part of the Scheme's construction are of low rural production value and there is no Highly Productive Land[151] at or near the site. More specifically:

- The area proposed to be disturbed for a construction staging area on the McLean Farm property is predominantly LUC Class 7, defined as non-arable with moderate to severe limitation for pastoral use[152]. A smaller area of LUC Class 4 is also affected, which has soils defined as arable, but with significant limitations;
- The Power Station Site is located in an area of LUC Class 6 soils, defined as non-arable with slight to moderate limitations to pastural use;
- Soils disturbed for the construction of the Headworks (including the associated construction staging area) are LUC Class 7; and
- The new access road proposed between Macgregor Creek and the Power Station Site traverses LUC Class 6 and 7 soils.

[151] As defined in the National Policy Statement for Highly Productive Land 2024

[152] Manaaki Whenua Landcare Research Soil Capability Mapping Tool webpage.

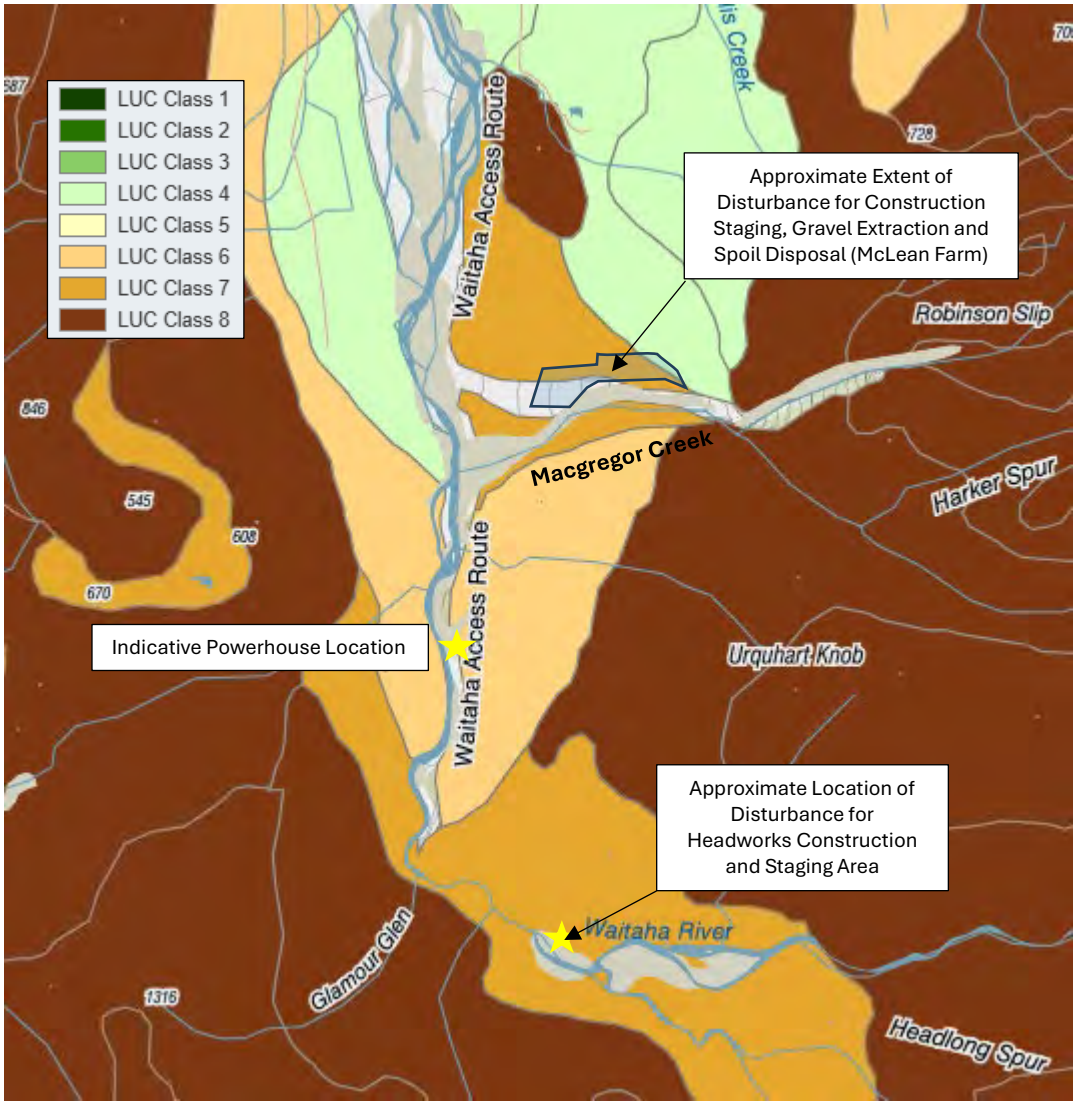

Figure 40: **Soil land use capability map of the site and surrounds (Source: Manaaki Whenua / Landcare Research website)**

5.15 SURFACE WATER

The Waitaha River is the main surface water course within the Project area, however, it has numerous tributaries of varying sizes and flows, most of which are unnamed. **Figure 41** provides a map showing the locations of all named surface water bodies within or in the vicinity of the Project Site.

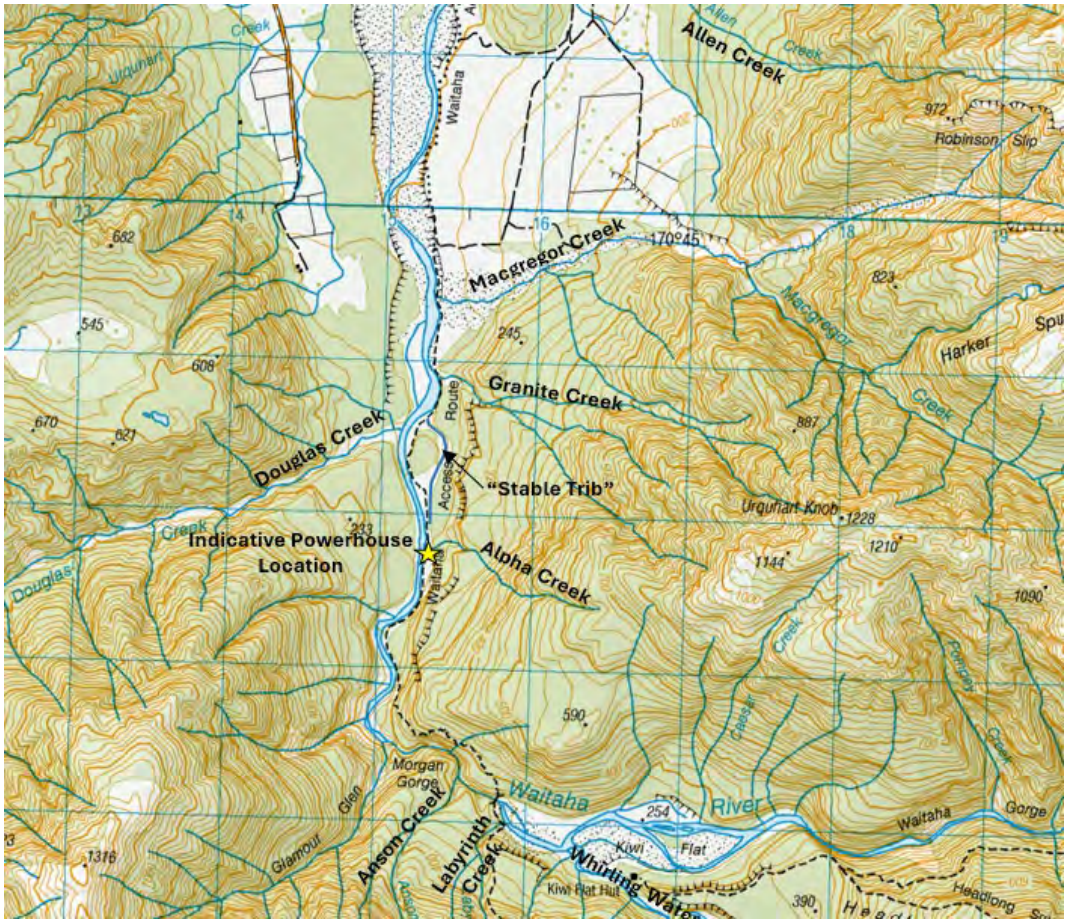

Figure 41: Map of named surface water bodies within and in the vicinity of the Project Site

5.16 HYDROLOGY

The hydrology of the Waitaha and other neighbouring and tributary waterways is presented in the Hydrology Report at **Appendix 18** of this application. Key aspects are summarised below.

5.16.1 Catchment

Broadly, the Waitaha River catchment can be divided into three main sub-catchments based on the tributaries of the Waitaha River. These are the Upper Waitaha Catchment, the Lower Waitaha Catchment and the Kakapotahi Catchment (**Figure 42**). In total, the Waitaha River has a total catchment area of 223 km^2.

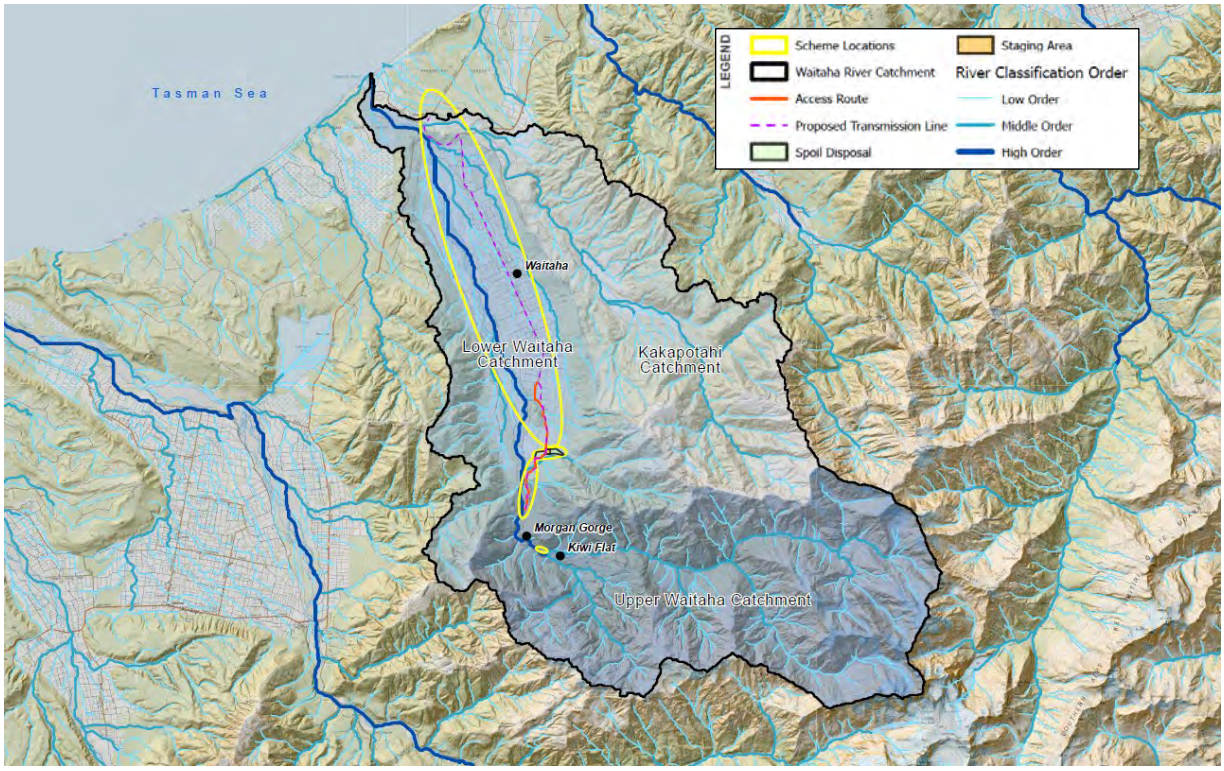

Figure 42: Waitaha Sub-Catchments with Scheme overlaid

The Upper Waitaha Catchment will generate all surface water utilised by the proposed Scheme. This catchment receives considerable rainfall, ranging from about 5.5 m annually at the intake area immediately downstream of Kiwi Flat, to around 12 - 14 m annually at the catchment's upper divide. Hydrological monitoring data collected within this catchment confirms a number of New Zealand rainfall records for the area. These include records for the greatest 12-month rainfall (18,442 mm), the greatest 30-day rainfall (3,800 mm), the greatest 24-hour rainfall (758 mm), and one of the most intense hourly rainfalls (134 mm). The average annual total is among the highest yearly rainfalls in the world.

One small lake exists within the Upper Waitaha Catchment at Kiwi Flat. however, it has little effect on river flows in this area. There are also 19 small glaciers in the catchment's upper reaches which can contribute more than 5 m^3/s to river baseflow on hot days, while during the winter this is reduced to around 1 - 2 m^3/s.

5.16.2 Hydrological Characteristics

The Waitaha River exhibits numerous hydrological characteristics from the narrow, steep channels in its alpine upper reaches to the whirling rapids travelling through the three gorges of Windhover, Waitaha and Morgan, to broad open braids within its lower valley.

The heavy rainfall and the effect of snow and ice together exert considerable influence on the nature of flow conditions in the Waitaha River.

In spring and early summer, river flows are high and are discoloured with snowmelt. The Waitaha River, and other rivers in this locality, are unusual for New Zealand in that winter provides the lowest flow. As the temperature cools over autumn into winter, river flows drop to very low levels (**Figure 43**).

Figure 43: Waitaha River low winter flow (top of Kiwi Flat in July 2009)

Floods occur regularly throughout the year at an average frequency of about once every 8.6 days with typical durations of around 2 days depending on the nature of the rainfall event (**Figure 44**). Climate change predictions indicate there will be an increase in the frequency and size of these flood flows in the future.

Figure 44: Waitaha River moderate flood of approximately 300 m^3/s (photo taken below Morgan Gorge - June 2013)

Table 18, Table 19 and **Table 20** respectively summarise the general, low-flow and flood flow hydrological statistics of the Waitaha River at the proposed Scheme's intake at the top of Morgan Gorge. These have been derived from flow measured at the top of Kiwi Flat and the Whirling Waters tributary.

Table 18: General flow statistics for the Waitaha River – Top of Morgan Gorge

Statistic	Flow (m^3/s)
90 percentile	9.05
Median flow	19.7
Average flow	34.6
FRE3[153]	26.2
10 percentiles	62.5

[153] This is used in ecological studies to indicate bed disturbance. It is the average number of times per year that a flood flow of at least 3 times the median flow occurs.

Table 19: Low flow statistics for the Waitaha River – Top of Morgan Gorge

Return Period	Flow (m^3/s)
Mean Annual Low Flow (1 Day)	7.085
Mean Annual Low Flow (7 Day)	7.572
50-year low flow (1 Day)	5.039
50-year low flow (7 Day)	5.249

Table 20: Natural flood flow statistics for the Waitaha River – Top of Morgan Gorge

Average Recurrence Interval	Flow (m^3/s)
Yearly (Mean Annual Flood)	812
20 years	1,177
50 years	1,299
100 years	1,380
200 years	1,518
500 years	1,665

5.17 WETLANDS

The Vegetation Report confirms there are eight small wetlands located in the vicinity of the Scheme and ancillary components within Area 1. **Figure 45** shows the locations of these mapped wetlands (see green dots and outlines), all of which are well north of the proposed Power Station location and set back from the proposed site access track and transmission line through this area. Also shown are identified minor surface waterways (see light blue dots).

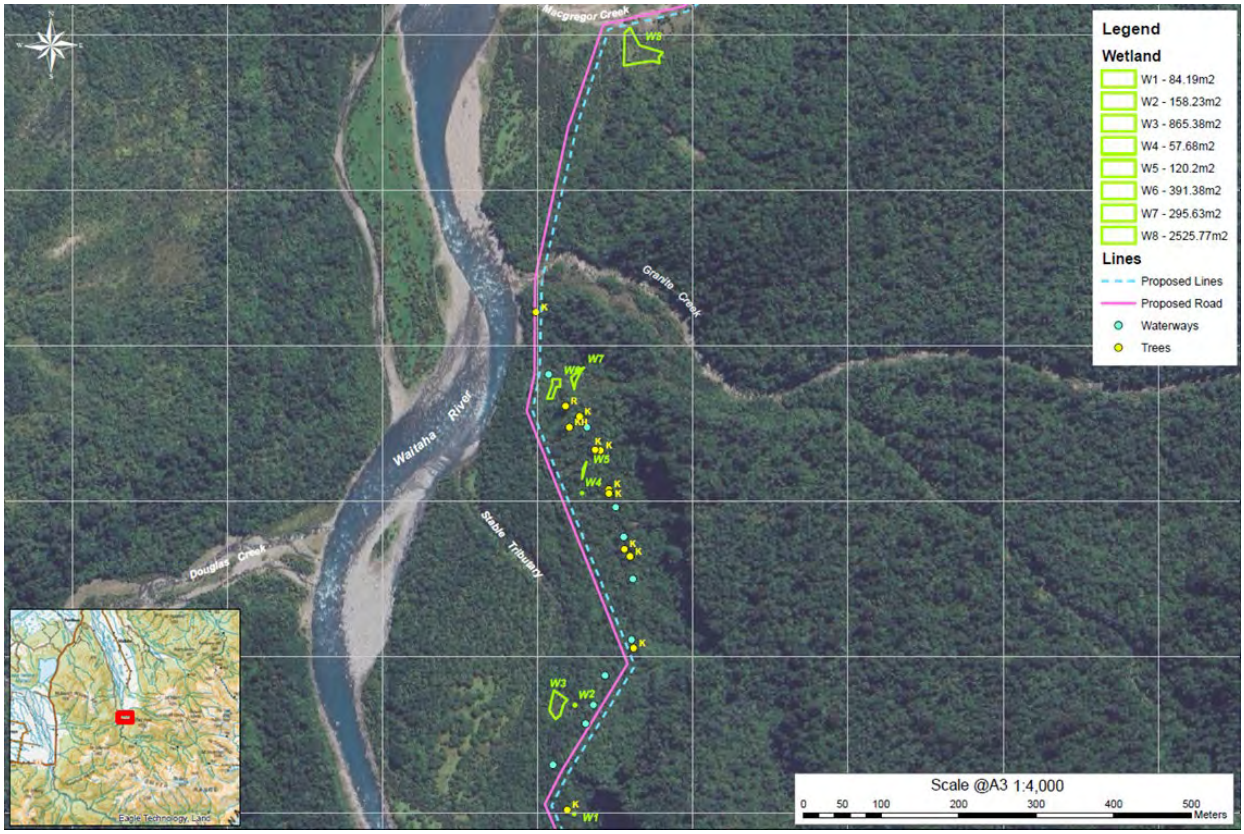

Figure 45: Wetlands and minor waterway locations (Area 2)

5.18 WATER QUALITY

The Waitaha River is heavily influenced by the surrounding glacial mountain topography, strong seasonal flow patterns (low winter flows and high summer flows) and high frequency of flood events. Due to a combination of frequent flood flows and the presence of fine glacial sediment supplies, the Waitaha river often displays high turbidity (low clarity).

Conversely, nitrate and phosphorus levels in the catchment are low, with Ammoniacal-N, Total Nitrogen ("**TN**"), Total Kjeldahl Nitrogen ("**TKN**"), and dissolved reactive phosphorus ("**DRP**") below laboratory detection limits at all monitoring sites. Where total organic nitrogen ("**TON**") and total phosphorus ("**TP**") were detected, it was still at relatively low levels. The low-nutrient water of the Waitaha catchment is typical of many other West Coast rivers where catchment modification is minimal.

With respect to pH and conductivity, the water chemistry of the Waitaha catchment is comparable with river water quality data collected from across New Zealand[154] while its nutrient levels are well below the New Zealand average.

[154] Data available in National River Water Quality Network ("NRWQN")

5.19 RIVER SEDIMENT AND SEDIMENT TRANSPORT

Details relating to sediment transport processes occurring within the Waitaha River are detailed in the Sediment Report provided in **Appendix 19** while this section of the provides a high-level summary of key observations.

The Waitaha River is an energetic, flashy mountain torrent draining a steep, highly erodible, schist catchment that, as noted above, receives rainfall volumes and intensities that rank among the highest in the world. In terms of sediment transport, the Waitaha River is equally impressive, delivering on average, 3 million tonnes of suspended sediment per year to Morgan Gorge (equating to 26,600 t/km^2/yr). This represents approximately 1.5% of New Zealand's total annual river suspended sediment load existing our coastline and would fill Wellington's "Cake Tin" Sky Stadium approximately 3.5 times every year. At least 73% of this sediment load is transported by flows exceeding 250 m^3/s, in events that reoccur 15 times per year on average.

The main sources of this sediment load, active during rainstorms, are the very high, steep, bare headwater slopes formed in fissile schist, which has a texture and durability akin to "Weet-Bix". The streams within the catchment are fed sediment by slips, slides, gullies, and debris flows.

The size of bed-material around the Kiwi Flat area is highly variable ranging from silt through to sand, gravel, cobbles and boulders. Silt and sand typically deposit from suspension on channel margins and pools on flood recessions. The transport of sediment along and out of the Kiwi Flat area during flood events is complicated by the narrow slot entrance to the Morgan Gorge immediately downstream. This causes the gorge entry flows to "choke" and form a temporary pond upstream, causing slower flow velocities through this pond, in turn, causing mobile gravel and coarser sand grades to deposit on delta lobes at its upstream end (**Figure 46**). As the flows subsequently wane, the choking clears causing the flow velocity towards the gorge to increase, causing scouring of the Kiwi Flat upper sand lobes and bank deposits.

Figure 46: Kiwi Flat sediment showing sand lobe formed during "choked" high flows through Morgan Gorge

Moving downstream into the steeper Morgan Gorge, flows are highly turbulent and the riverbed sediment is dominated by large boulders. There are occasional areas of sand and silt build-up evident although sparsely located. The Waitaha River's capacity to transport its largely gravelly-cobbly bedload along this reach is generally greater than the supply of this material from upstream, and the boulders on the bed are lag deposits of low mobility and help to stabilise the channel.

Figure 47: Waitaha River Channel – Reach between Morgan Gorge and Proposed Power Station site

Further downstream around the Macgregor Creek area, the Waitaha River beings to form into a braided river with accumulation of sandy silt sediment.

5.20 TERRESTRIAL ECOLOGY

This section of the application document describes the existing terrestrial ecology located at, and surrounding, the site of the proposed Scheme. More particularly, terrestrial vegetation, fauna and invertebrates are described – all of which lie within the Wilberg Ecological District ("**Wilberg ED**") and the Harihari Ecological District ("**Harihari ED**") of the Whataroa Ecological Region. The boundaries of these two ecological districts is shown in **Figure 24**.

5.20.1 Terrestrial Vegetation

Full descriptions of existing terrestrial vegetation within each of the four areas of the Project Site are presented in the Vegetation Report along with assessments of vegetation significance and overall value. To this extent, Area 1 focusses on vegetation at and surrounding areas associated with constructing and operating the Scheme's headworks and top portal tunnel. Area 2 focusses on vegetation located at the proposed Power Station site and along the proposed access road and transmission routes between the Power Station and Macgregor Creek. Area 3 is focussed on vegetation within the area of land north of Macgregor Creek proposed for land-based gravel extraction and spoil disposal and within Construction Staging Area 3, while Area 4 focusses on vegetation associated with sections

of the proposed access road and transmission line located north of McLean Farm boundary at Macgregor Creek and includes the new Waitaha Substation area.

Outlined below is a summary of the report's key findings in these respects.

5.20.1.1 General Description

The vegetation present within Areas 1 and 2 and their surrounding environs is predominantly indigenous within the occurrence of exotic species being extremely rare and confined to areas of alluvial flats and locations of recent disturbance where forest or shrub cover is not predominant. Vegetation types, species composition and stature across Areas 1 and 2 is strongly related to landform (type and age) and any natural disturbance history. Although there is no evidence of major modification to vegetation by human activity in Areas 1 or 2 (e.g. clearance or logging), in general, the maturity of vegetation increases with distance from the Waitaha River and in some areas display clear demarcation lines between mature and less mature vegetation.

Contiguous with the greater Waitaha catchment, Areas 1 and 2 are representative of the Wilberg and Harihari EDs and identified as "significant indigenous vegetation".

In Area 3 is predominantly covered in exotic vegetation (farmland), with indigenous species being of such low incidence that they are not deemed to constitute a viable indigenous community.

Area 4, which is quite large, includes a variety of vegetated land cover, but more notably, with respect to the Project, includes:

- Farmland and road reserve land, where the new access road and transmission lines are proposed, that has undergone a high degree of development to the extent that exotic vegetation predominates; and
- An area of indigenous vegetation where a section of the existing transmission line is proposed to be upgraded.

Additional vegetation description detail regarding Areas 1 to 4 is set out, in turn, below.

5.20.1.2 Area 1 Vegetation Description

Figure 48 provides a map showing delineated sub-areas of the different types of vegetation located at Area 1 (refer inset legend). Indicative locations and extents of investigative drilling sites, the top tunnel portal, headworks, construction contractor facility area and associated access road are also shown.

Figure 48: Area 1: Vegetation type delineations

In Area 1 the vegetation type assemblages present are common and widely represented in both the Wilberg Ecological District and the Waitaha catchment. The principal forest types present can be broadly grouped as kamahi forest and seral forest[155] and as lowland forest and seral low forest[156] (**Figure 49**). These indigenous forest assemblages also occur extensively in catchments of similar valleys throughout central Westland.

[155] Using the classification described by James *et al.*, (1973)

[156] Using the classifications described by Wardle, (1977, 1979 and 1991)

Figure 49: Area 1 vegetation examples (Type 1/1 in the foreground and Type 1/3 occurring at the foot of the slope beyond the riverbank)

5.20.1.3 Area 2 Vegetation Description

Figure 50 provides a map showing delineated sub-areas of the different types of vegetation located at Area 2 (refer inset legend). Indicative locations and extents of investigative drilling sites, Power Station, bottom tunnel portal and site access road are also shown.

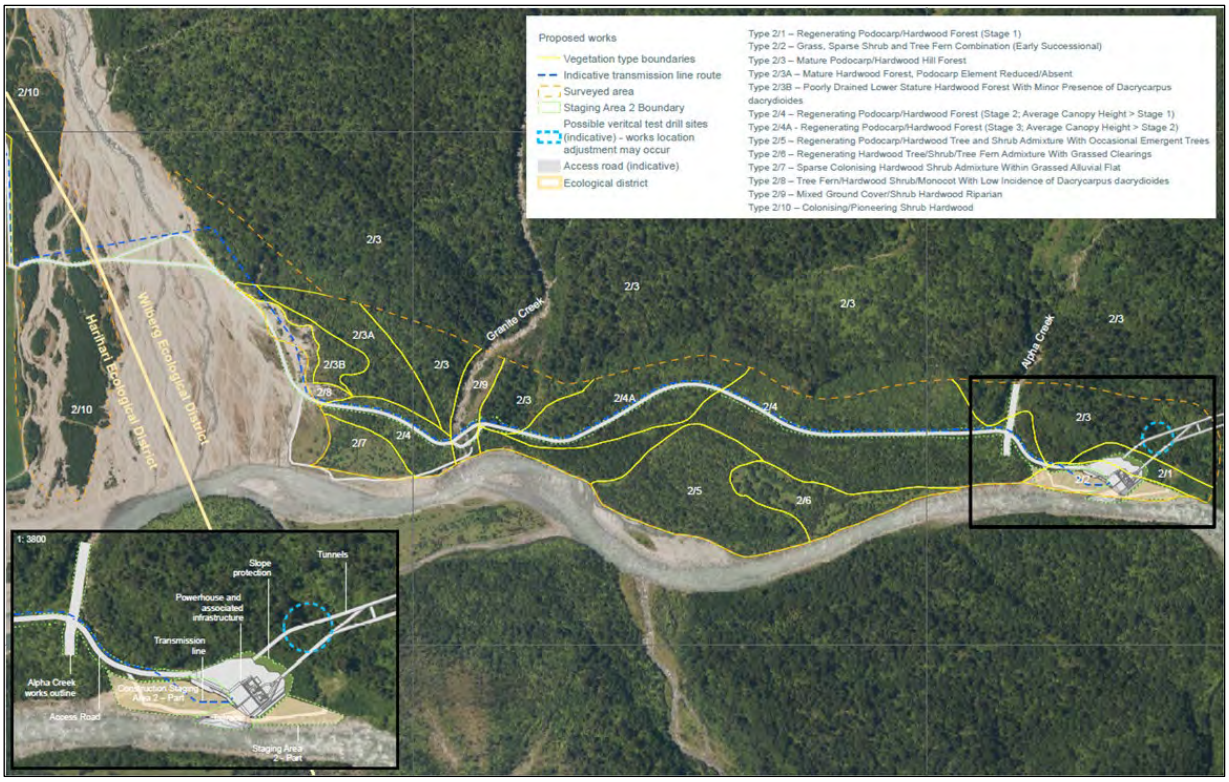

Figure 50: Area 2: Vegetation type delineations.

Area 2 is much larger than Area 1 and encompasses a greater range of landforms and accompanying vegetations. The current active Waitaha riverbed within Area 2 has no closed forest species cover while higher terraces and hill foot-slopes carry mature podocarp / hardwood hill forest vegetation. Similar to Area 1, the principal forest type can be broadly classified as kamahi forest and seral forest or as lowland forest and seral low forest. Even within the principal forest type, twelve different sub-types are identified. An example of Area 2 vegetation is provided in **Figure 51** which shows the typical vegetation located near the Waitaha River.

Notably, the underlying aerial photo also shows that Area 2 access road and transmission line sections and the Power Sation site all generally avoid the more mature indigenous vegetation (i.e. Type 2/3) and are instead mostly within areas of regenerating indigenous vegetation (i.e. Types 2/4 and 2/4A).

Figure 51: Area 2 typical vegetation mix near the Waitaha River.

5.20.1.4 Area 3 Vegetation Description

Figure 52 provides a map showing delineated sub-areas of the different types of vegetation located at Area 3 (refer inset legend). Locations and extents of the spoil disposal areas (which will also serve as gravel winning areas for road construction), Construction Staging Area 3, site access road and transmission line are also shown.

Figure 53 shows the existing non-indigenous vegetation within Area 3. This vegetation type comprises a ground cover of broadleaved herbaceous species (predominantly weeds and introduced grasses) and a higher-stature woody weed species (*Ulex europaeus*) which shows signs of previous spray damage. While indigenous species are also present in Area 3, these constitute a minute proportion of site cover to the extent it is not considered a viable indigenous vegetation community.

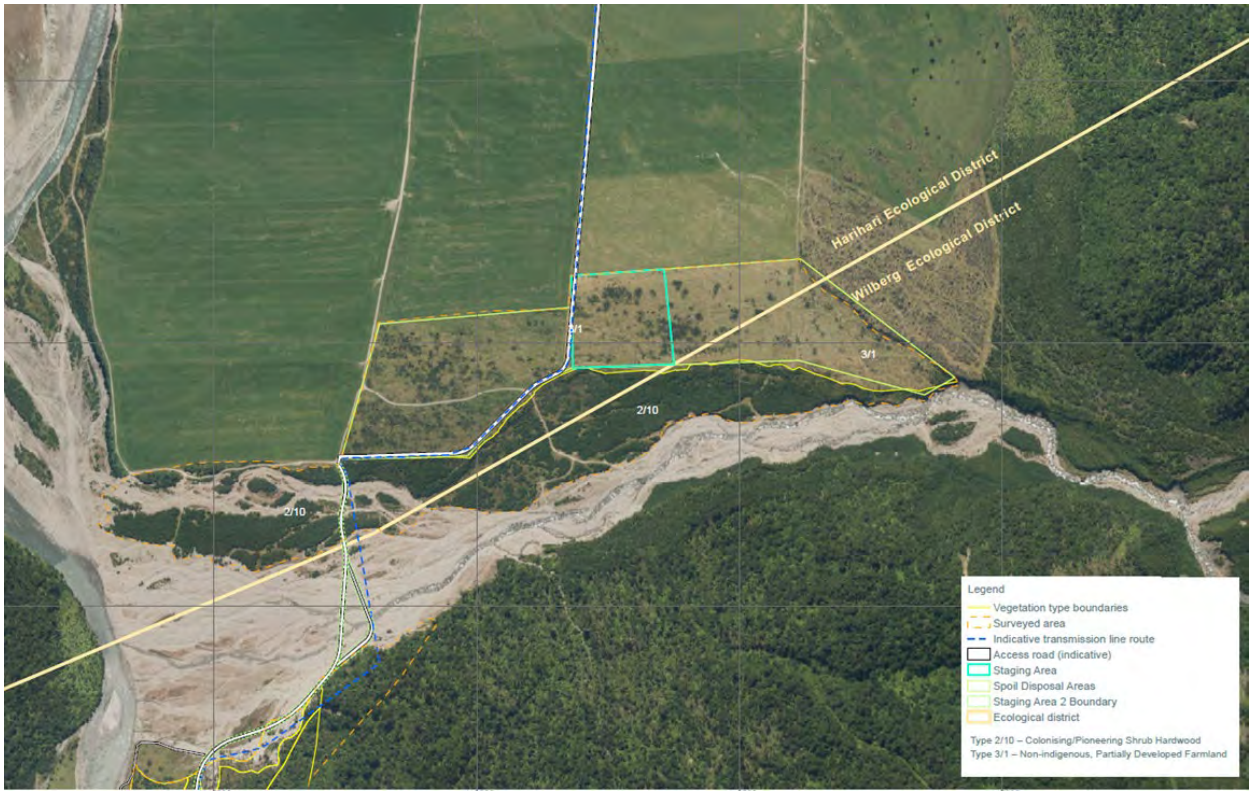

Figure 52: Area 3: Vegetation type delineations

Figure 53: Example of Vegetation Type 3/1 typical of Area 3

5.20.1.5 Area 4 Vegetation Description

Much of Area 4 is, or has been, farmed, either as drystock/sheep operations or dairying. Accordingly, the dominant vegetation is rural pasture. While stands of indigenous vegetation are present in places, and in places, occasional large podocarp trees occur, these are remnants of what would have been the former, more extensive, vegetative cover existing prior to farm clearance activities several decades ago.

Notably, all Scheme infrastructure avoids these areas except for a zone of indigenous broadleaved hardwood vegetation (Vegetation Type 4/1) located on the McLean Farm (see semi-transparent yellow-green shaded area in **Figure 54**). **Figure 55** is a photo showing the typical Type 4/1 vegetation in this area. Some of this vegetation located adjacent to a section of farm access track (between the two pink arrows in **Figure 54**) will be affected by Westpower's proposal to widen this track. In addition, the new transmission line will affect indigenous vegetation within a 10m wide corridor through this area (between the two blue stars in **Figure 54**).

There is no indigenous vegetation affected at the northern end of Area 4 (i.e. along transmission lines and near the Waitaha Substation site).

Figure 54: Plan showing area of broadleaved hardwood vegetation (lime green shaded area) affected by farm access track widening (between pink arrows) and new transmission line corridor (between blue stars)

Figure 55: Typical species composition, stature, and cover of Vegetation Type 4/1.

5.20.1.6 Vegetation Significance and Value

Table 21 presents a summary of the significance of the terrestrial vegetation values within Areas 1, 2 and the Type 4/1 vegetation in Area 4 as assessed under the relevant planning provisions contained in the Regional Policy Statement ("**RPS**"), pTTPP, WDP and the West Coast Conservation Management Strategy 2010 ("**CMS**"). Vegetation in Area 3 is excluded on the basis it contains no indigenous vegetation community.

In summary, vegetation in Area 1 and Area 2 (being contiguous with a greater area within the Waitaha catchment) is "significant indigenous vegetation" under the WDP on the basis of five WDP criteria[157] including representativeness, intactness and size of area, threat, scientific or other cultural value and protected status (and synonymous criteria from the RPS, pTTPP and CMS).

Area 4 Type 4/1 vegetation is also "significant indigenous vegetation" under the WDP (and synonymous criteria from the RPS, pTTPP and CMS), but only on the basis of the threat / threatened species and habitat criteria.

[157] Policy 4.9D

Table 21: Summary of Significance of Area 1, Area 2 and Area 4 (Type 4/1) Indigenous Vegetation and Natural Heritage Values

Criteria	Existing values of significance
Representativeness / diversity (RPS, pTTPP, WDP, CPS)	Significant indigenous vegetation (Area 1 and 2 only)
Rarity / distinctiveness / diversity (RPS, pTTPP, WDP and CMS)	Not identified as significant indigenous vegetation
Intactness and size / viability (WDP and CMS)	Significant indigenous vegetation (Area 1 and 2 only) (Based on area and lack of modification - Areas exhibit high natural heritage value due to intactness and viability retention potential)
Threat / threatened species and habitat (RPS, pTTPP, WDP and CMS)	Significant indigenous vegetation (Area 2 Types 2/2 and 2/6)
Diversity and pattern / scientific or other cultural value / natural landscape character, taonga species and habitat (RPS, pTTPP, WDP and CMS)	Significant indigenous vegetation (Area 1, 2 and Area 4 Type 4/1)
Protected status (WDP)	Significant indigenous vegetation (Area 1 and 2 only)
Ecological context / connectivity / migratory species / diversity / viability / taonga species and habitat (RPS, pTTPP, WDP and CMS)	Not identified as significant indigenous vegetation

5.20.2 Terrestrial Fauna

Existing bat, bird, lizard and other fauna populations at or near the site of the proposed Scheme and its ancillary components are described in the Terrestrial Fauna, Whio and Lizard Reports. Summaries are set out below.

5.20.2.1 Bats

There is no evidence of short-tailed bats in the Waitaha Valley.

Long-tailed bats have been recorded within the site. This species is of particular importance as they are of the highest Department of Conservation threat status (Nationally Critical) and regarded as regionally significant in the Waitaha Valley.

Historically the activity of long-tailed bats has been identified in the lower/mid Waitaha Valley, particularly at Kiwi Flat and towards the upper Kiwi Flat area. Some moderate bat activity was also recorded on the river terraces below Morgan Gorge, especially near the river terrace (farmland) below the Macgregor Creek confluence. The recorded movement of bats in this area indicates the location as an important foraging, roosting and breeding area for bats within the vicinity of Morgan Gorge and at Kiwi Flat. It is assumed bats roost and breed in the taller forest areas within the valley and feed mainly on the river flats, or close to the river.

Table 22 presents a summary of bat recording results from undertaken in October 2006 and January 2007.

Table 22: Bat detections at different locations in the Waitaha valley

	40 kHz (Long-tailed bat)			28 kHz (Short-tailed bat)		
Area	**B/D nights**	**Hours**	**# passes**	**B/D nights**	**Hours**	**# passes**
Above Morgan Gorge	23	219.5	59	8	76	0
Below Morgan Gorge	9	90	0	3	26.5	0
All survey areas	32	305.5	59	11	102.5	0
Above Morgan Gorge (<5˚C)	3	30	0	-	-	-
Above Morgan Gorge (≥5 ˚C)	20	189.5	59	-	-	-
Above Morgan Gorge (Oct 2006)	16	152.5	29	-	-	-
Above Morgan Gorge (Jan 2007)	7	67	30	-	-	-

5.20.2.2 Birds

An accumulated total of over 40 species of birds have been recorded over the last 18 years within the Waitaha Valley between the end of the Waitaha Road in the north and Kiwi Flat in the south. This includes the identification of several threated and at-risk species being present at some point in time. These species are summarised in **Table 23**.

Table 23: Recorded threated and at-risk bird species in the Waitaha Valley

Species	Threat Classification
Whio (blue duck)	Threatened / Nationally Vulnerable
Grey duck	Threatened
Kea	Threatened
South Island kaka	Threatened
Long-tailed cuckoo	Threatened
Black shag	At risk
Bush falcon	At risk
South Island pied oystercatcher	At risk
Yellow crowned kakariki	At risk
South Island robin	At risk
South Island fernbird	At risk
NZ pitpit	At risk
Western weka	Not threatened (previously at risk)

Of importance is the population of whio present on waterways within and adjoining the area of the proposed Scheme. Whio are one of only four mountain torrent waterfowl species worldwide and have cultural, spiritual, historic and traditional significance to Māori and are listed as a Taonga species under the Ngāi Tahu Claims Settlement Act 1998. A population of around 8–10 adults and fully grown juvenile whio have been recorded at Kiwi Flat during seven separate monitoring surveys between 2006 and 2012. During a more recent 2024 survey, there were three pairs and two single whio recorded here.

The population of western weka found in the Waitaha Valley is of a conversation interest even though it is not threated. This population is identified as a potentially isolated population which is genetically distinct from other populations further north, although they have only been detected in low numbers in the area. Most of the species of avifauna identified appear to be localised and uncommon in this area.

The proportion of indigenous species increases in the less-modified forested habitats further up-river where the vegetation cover is more intact with an abundance of podocarps and taller trees. Some 'Threatened' and 'At-Risk' birds (e.g. kaka and kakariki) primarily present higher up in the Waitaha Valley, in the vicinity of Morgan Gorge and Kiwi Flat, while some species are distributed throughout the footprint.

There is no evidence of kiwi in the Waitaha Valley, it is presumed that kiwi no longer reside within this area.

5.20.2.3 Lizards

Lizards on the West Coast are discussed in the Lizard Report.

The Lizard Report confirms that seventeen lizard species (7 geckos, 10 skinks) are currently recognised from the West Coast region (as defined by boundaries of the DOC West Coast/Tai Poutini Conservancy) and there are unverified records of two others, both geckos. Eight species of lizards have been recorded within 20 km of the Project Site, of which three (possibly four) species could be present within the Scheme's footprint. These include forest gecko (*Mokopirirakau granulatus;* At Risk – Declining), West Coast green gecko *(Naultinus tuberculatus;* Threatened - Nationally Vulnerable), northern grass skink *(Oligosoma polychroma*; Not Threatened) and possibly Newman's speckled skink (*O. newmani;* At Risk – Declining).

Although these lizard species have been previously recorded within 20km of the site, none of the three lizard surveys undertaken within the site's footprint found any signs of lizards. Despite this, the Lizard Report concludes that there is a moderate likelihood that some native lizards are present within the site given the large, geographically spread-out distribution of the footprint across multiple habitat types (pasture, gravel, shrubland, riparian edge, forest) and landforms (alluvial fan, terrace, slips, young and old landforms).

If lizards are present within shrubland and forest areas of the Scheme footprint (considered a possibility), the species most likely to be present will be the grass skink, forest gecko and West Coast green gecko. As the West Coast green gecko is nationally threatened, vegetation within the site that could support this gecko, or which may support forest gecko, is considered to have significant value.

5.20.2.4 Other Fauna

Despite intermittent ground and aerial control of possums carried out by OSPRI, predation by introduced mammalian predators appears to be a threat to the indigenous bird population in the area. The relatively paucity of birds in the Waitaha Valley, particularly threatened species, is due to the abundant presence of small mammal predators (i.e. mice, ship rats, stoats and possums).

The visible signs of existing predator effects on the indigenous species include lower than expected numbers of some threated or vulnerable species (e.g. kākā, kākāriki, robin and rifleman) and the observed male-biased population of weka and robin.

5.20.2.5 Terrestrial Fauna Significance and Values

Table 24 presents a summary of the significance of the terrestrial fauna values within the Waitaha Valley as assessed under the relevant planning provisions contained in the RPS, pTTPP, WDP and the CMS. In summary:

- Long-tailed bats are of particular significance as they are of highest threat status (Nationally Critical) and are regarded as regionally significant in the Waitaha Valley (comparatively high pass rates, especially at Kiwi Flat around the proposed top tunnel portal).
- Threatened and at-risk birds (refer **Table 23** above) are significant because they are nationally declining. However, populations of all threatened bird species in the Waitaha Valley are better represented elsewhere.
- The local whio population and whio habitat are rated as significant in terms of representativeness, rarity/distinctiveness, diversity and pattern, and ecological context under the RPS and pTTPP, and in addition, in terms of viability, presence of threatened and/or taonga species, and intactness under the CMS and in terms of threat and connectivity under the WDP.
- The nationally non-threatened western weka is of potential significance as it might be a genetically discrete population.
- Other birds of conservation importance include kererū, rifleman and brown creeper as they are uncommon in the Waitaha Valley, but are unlikely to be affected by the Scheme at a population level.
- Non-threatened indigenous birds are of lower significance as they are well represented in adjoining forests and elsewhere in the South Island.
- Introduced birds have no value of significance as they are widespread, and some such as blackbird and song thrush might be competing with indigenous birds.

Table 24: Summary of Significance of Bird and Bat Values

Criteria	Existing bat and bird values of significance
Representativeness (RPS, WDP and CMS)	High value: stronghold long-tailed bat population; higher than expected long-tailed cuckoo population; isolated western weka population. Whio have significant value under these criteria (including under the pTTPP).
Rarity/Distinctiveness (RPS, WDP and CMS)	High Value for (b) Threat and (d) Distinctive and restricted populations. Whio have significant value under these criteria (including under the pTTPP).
Diversity and Pattern (RPS and CMS)	Moderate significance as high diversity of bird species. Whio have significant value under these criteria (including under the pTTPP).
Ecological Context (RPS)	High value for threatened species and potentially high value for isolated population of western weka. Whio have significant value under this criteria (including under the pTTPP).
Intactness (WDP and CMS)	High value in mid to upper reaches of catchment (low value below Macgregor Creek). Whio have significant value under this criteria.
Connectivity (RPS and WDP)	Low to no impediment to connectivity with the proposed Scheme other than whio which has significant value under the WDP's connectivity criteria.
Migratory Species (WDP)	Potentially high value for one threatened species: long-tailed cuckoo and moderate value for species such as kererū but no envisaged loss of these values by proposed Scheme.
Scientific or other cultural value (WDP)	Assessed of low value other than Whio, a taonga species, so has significant cultural value.

In terms of lizards, the 'Rarity' criteria for assessing ecological significance across RPS and WDP provisions states that, if a species that is 'Threatened' within the ecological district or nationally (WDP), or if a site contains indigenous vegetation that supports a species that is 'Threatened', 'At Risk' or 'Uncommon' nationally or within the ecological district (RPS), then the vegetation is significant under the RMA. While onsite studies have not found any lizards, on the basis that West Coast green gecko is nationally threatened and may be present within parts of the Project Site, the inference is that vegetation within the site that could support this gecko, or which may support forest gecko, should be considered significant (although the quality of that vegetation as habitat for these species is considered within the Lizard Report to be of moderate ecological quality).

5.20.3 Powelliphanta Land Snails

No evidence of *Powelliphanta* land snails has been found within the Project area various surveys. It is concluded in the Terrestrial Fauna Report that they are unlikely to be present given the extent of fauna surveys carried out and the relative conspicuousness of *Powelliphanta* shells lying on the ground surface. For example, the nocturnal search conducted on the night of 18 and 19 January was ideal for *Powelliphanta* activity, and so probably would have detected the animals had they been present.

Although two shells have been found in the kiwi Flat area, the locations of both these shells indicated they were washed downstream in floods. Failure to find *Powelliphanta* snails or shells in nearby habitats after a reasonable search effort further suggests that these shells were not from local *Powelliphanta* populations.

5.20.4 Terrestrial Invertebrates

Existing terrestrial invertebrates and their overall values are presented and discussed in the Terrestrial Invertebrates Report. Outlined below is a summary of the report's findings in these respects.

Given the Upper Waitaha catchment is largely undisturbed, it contains terrestrial invertebrate communities that are of a high natural integrity. The lower reaches of the Waitaha River, from the confluence of the Macgregor Creek onwards, has seen considerably more human disturbance and is adjacent to rural production land, and as such includes more adventive invertebrate's species associated with less diverse vegetation and livestock.

Invertebrate communities are also strongly associated with vegetation types. Since the indigenous vegetation types in the Scheme footprint are contiguous with large areas of the Waitaha Catchment and widely represented within both the Wilberg and Harihari Ecological Districts, the terrestrial invertebrate communities within vegetation at the site are also well represented in the Westland District and West Coast Region more generally.

Riparian margins of rivers can be very dynamic systems with specific habitat types and range of terrestrial invertebrates species that are especially adapted to live in these highly dynamic habitats. Along the riparian margins of the Waitaha River, including Kiwi Flat and the open margins downstream from the Morgan Gorge, contain a range of species suited to such open and dynamic habitats. The species include;

- Three undescribed species of Therevidae in the genus *Anabarhynchus*;
- Three species of tiger beetles (Coleoptera: Carabidae);
- Large water spider (*Dolomedes aquaticus*);

- Three species of tiger beetle (Neocicindela garnerae, Zecicindela helmsi halli and Actenonyx bembidioides);
- A total of 88 lepidopteran taxa including:
- Fern-feeding metrid moth *Paradetis pophyriasw*;
- North Island leafroller *Epalxiphora axenana*;
- Lepidoptera, including a range of species specifically associated with toe toe (*Austroderia spp.)* and native broom (*Carmichaelia odorata*);
- Two psyllid bug species, Psylla carmichaeliae and Trioza subvexa;
- Butterflies, including the glade copper (*Lycaena feredayi* complex) and boulder copper (*L. boldenarum*), both of which breed on *Muehlenbeckia* species;
- Bush giant dragonflies (*Uropetela carovei*);
- Huhu beetles (Prionoplus reticularis); and
- Sheetweb spider (*Cambridgea sp.*).

The Waitaha Velly is also within the known range of the Wellington tree weta (H. crassidens). Furthermore, eDNA surveying detected the presence of a cave weta species, *Talitropsis sedilloti*, which is a common forest species found throughout much of New Zealand.

5.20.4.1 Terrestrial Invertebrates Significance and Values

Table 25 presents a summary of the significance of the terrestrial invertebrate values within the Waitaha Valley as assessed under the relevant planning provisions contained in the RPS, pTTPP, WDP and the CMS. In summary, the terrestrial invertebrate values of the existing environment are considered significant on the basis of habitat, representativeness, distinctive communities, diversity, connectivity, and context. This values assessment is mostly due to riparian river habitats and the specialist invertebrate communities they contain being intrinsically uncommon, as they exist only as narrow ribbons in the landscape.

Table 25: Summary of Significance of Terrestrial Invertebrate Values

Criteria	Existing values of significance
Habitat	Significant
Representativeness	Significant
Threatened Species	Possible Significance

Criteria	Existing values of significance
Distinctive Species	Low significance
Distinctive Communities	Significant
Diversity	Significant
Connectivity	Significant
Context	Significant

5.21 FRESHWATER ECOLOGY

A full description of existing aquatic ecology at the site of the proposed Scheme, including an assessment of aquatic ecological values, is presented in the Freshwater Ecology Report. More specifically the Freshwater Ecology Report canvasses existing periphyton (including didymo) and macrophyte/bryophyte communities, benthic invertebrates and fish within the following Waitaha River reach catchments (also shown in **Figure 56**):

> The Downstream Reach – downstream of Douglas Creek (i.e. downstream of the Scheme);

> The Douglas Creek Reach – from Douglas Creek to the top of Morgan Gorge, including the proposed abstraction reach;

> The Kiwi Flat Reach – from the top of Morgan Gorge to the bottom of Waitaha Gorge, including the site of the proposed Scheme intake structure and weir; and

> The Upstream Reach – upstream of Kiwi Flat (i.e. upstream of the Scheme).

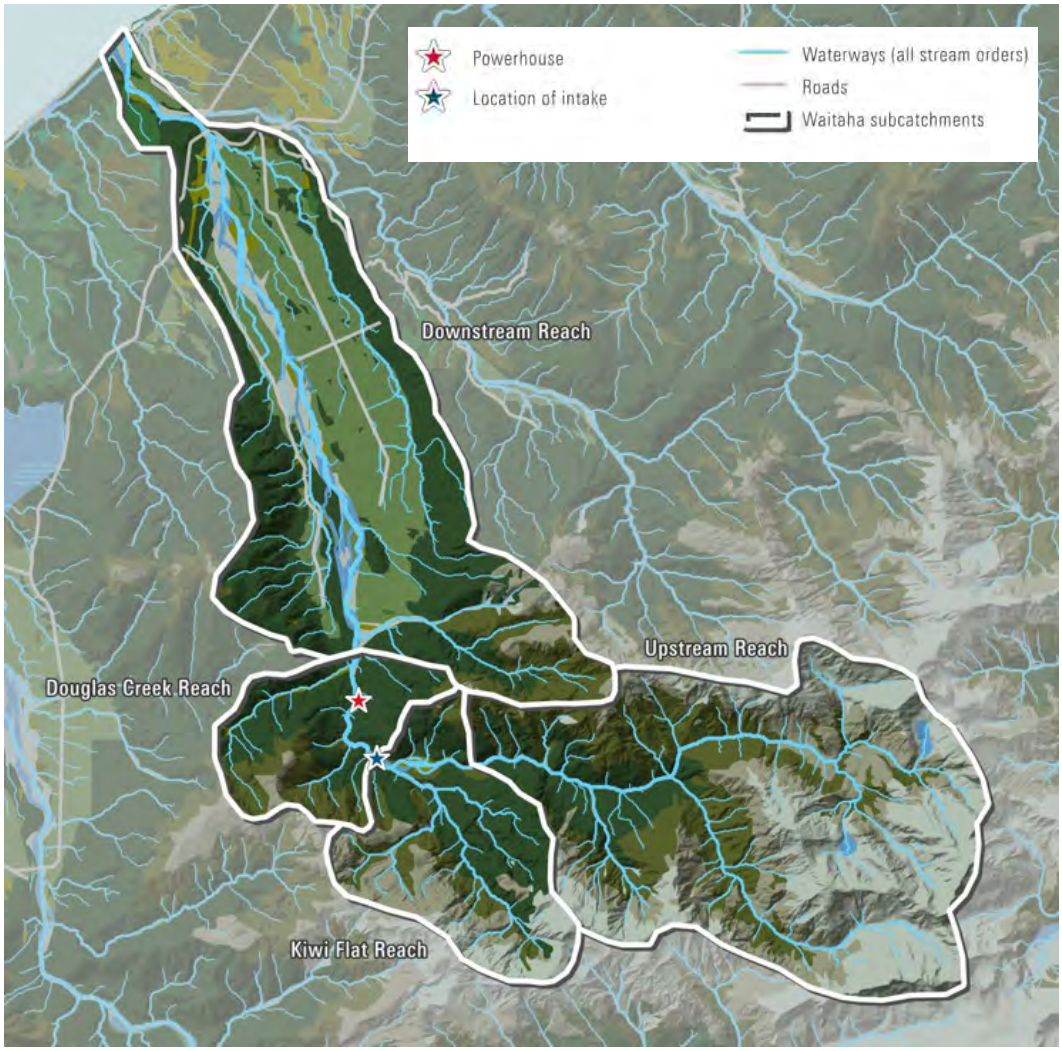

Figure 56: Waitaha catchment showing four freshwater ecology areas

The Freshwater Ecology Report also categorises waterway types within the Waitaha Catchment as the mainstem of the Waitaha River, stable tributaries and other tributaries. The "stable" and "other" tributary categories are based on differences in channel type and flow stability, both of which influence their in-stream ecology.

A summary of the existing aquatic ecology is provided below.

5.21.1 Periphyton and Macrophyte / Bryophytes

By way of background, periphyton is a complex community of microorganisms, primarily algae, along with bacteria, fungi, protozoa, and detritus, that attach to submerged surfaces in aquatic environments. These surfaces can include rocks, plants, and other substrates. Macrophytes are large, visible aquatic plants found in freshwater (and marine ecosystems). They include both vascular and non-vascular plants, but most are vascular.

Bryophytes are non-vascular[158] plants that include mosses, liverworts, and hornworts. They are considered one of the most primitive groups of land plants.

The mainstem of the Waitaha River represents a low nutrient, high disturbance system that is not conducive to the growth of periphyton or bryophytes. Not unexpectantly, therefore, there is low periphyton biomass and a lack of bryophytes in the mainstem of the Waitaha River.

Periphyton communities that were recorded were similar throughout the mainstem and most tributary waterways, although two stable tributary sites in the Waitaha catchment supported distinct communities. All taxa recorded are common and widespread in South Island rivers and the communities are typical for the catchment type in terms of their diversity and species composition. Periphyton biomass is also low in the mainstem of the Waitaha River and stable tributaries but was slightly higher in other tributaries. The low biomass in the mainstem is again due to the low-nutrient waters and flood-prone nature of the Waitaha River. There is slightly higher biomass at the downstream end of the Downstream Reach due to diffuse nutrient inputs from developed agricultural land in this area. The low biomass in the stable tributaries is due to the higher abundance of bryophytes. All sites were dominated by diatom assemblages rather than filamentous algae, also reflecting the low nutrient and flood-prone nature of most of the waterways.

Both the diversity and coverage of freshwater bryophytes (mosses, liverworts and hornworts) was higher in the stable tributaries than in the mainstem or other tributaries. This was reflected in the dramatically higher bryophyte coverage (>60%) recorded in the stable spring-fed tributary in the Douglas Creek Reach on the true-right of the river opposite Douglas Creek (which is downstream of the abstraction reach but close to the Scheme's proposed access road), and the detection of 15 bryophyte species in the stable tributaries during the eDNA sampling in 2024 (compared to 10 species detected in the 'other' tributaries and only four species detected in the mainstem sites).

The introduced didymo (*Didymosphenia geminata*) is an invasive, freshwater algae that has spread throughout South Island rivers since its discovery in 2004. It is now known to be present in the Waitaha River catchment, with eDNA sampling detecting it in the mainstem and tributary streams in the Douglas Creek and Kiwi Flat reaches. The DNA signature for didymo at these sites were all generally low indicating that, although present, this species is

[158] Unlike vascular plants, non-vascular plants lack specialized vascular tissues (xylem and phloem) for conducting water, nutrients, and food (photosynthates) throughout the plant. Instead, they rely on diffusion and osmosis for these functions.

not a dominant feature of the environment. Didymo growths were not obvious during 2007, 2008 or 2024 sampling.

5.21.2 Benthic Invertebrates

100 freshwater invertebrate species were recorded in the Waitaha catchment, with a distinct difference in the invertebrate communities found in the stable tributaries compared to the mainstem and other 'tributaries'. Stable tributaries supported more than double the diversity of invertebrate taxa than the mainstem or other tributary sites. The mainstem and other tributaries also have low densities, low species diversity, and low species evenness.

The limited invertebrate community in the mainstem and high-disturbance tributaries compared to the stable tributaries reflects the flood-prone nature of the Waitaha River. In such flood-prone systems, the invertebrate community is limited to those taxa that can rapidly colonise or persist in disturbed environments, such as some chironomids and mayflies. The freshwater invertebrate fauna of the Waitaha catchment is comparable to those of other neutral pH, fast-flowing West Coast rivers flowing through unmodified catchments in high rainfall areas, where water quality is high and nutrient levels and algal biomass are low.

Invertebrate sampling and identification reveals it is dominated by insect groups such as mayflies, chironomid midges, caddisflies, and stoneflies. There were only four invertebrate taxa found in the Waitaha river that have a conservation status. These are:

- The stonefly *Megaleptoperla grandis* ('At Risk - Naturally Uncommon') – found in the mainstem and 'other' tributaries in the Kiwi Flat Reach;
- The mayfly *Deleatidium magnum* ('At Risk - Naturally Uncommon') – found in all waterway types (mainstem, stable tributary, 'other' tributary) and sub-catchment areas (Douglas Creek Reach, Kiwi Flat Reach, Upstream Reach);
- The caddisfly *Costachorema brachypterum* ('At Risk - Naturally Uncommon') – found in the mainstem in the Douglas Creek Reach and Upstream Reach; and
- The caddisfly *Philorheithrus latentis* ('At Risk - Naturally Uncommon') – found in the 'Stable Trib' (on the true-right opposite Douglas Creek) in the Douglas Creek Reach.

5.21.3 Fish

Nine fish species have been recorded in the Waitaha catchment. These are presented in **Table 26**.

Table 26: Fish species recorded in the Waitaha catchment using conventional fishing methods and eDNA sampling

Reach & number of sites sampled (conventional/eDNA)		**Downstream Reach** 3 sites		**Douglas Creek Reach** 23 sites			**Kiwi Flat Reach** 29 sites			**Upstream Reach** 13 sites		**Total**
Waterway type		Mainstem	Trib-stable	Mainstem	Trib-other	Trib-stable	Mainstem	Trib-other	Trib-stable	Mainstem	Trib-other	
Fish Species	Conservation Status											
Kōaro *Galaxias brevipinnis*	At Risk – Declining	**1**		**5**	**6**	**6**	**5**	**10**	**7**		**1**	**41**
Longfin eel *Anguilla dieffenbachii*	At Risk – Declining		**1**	**1**	**4**	**7**						**13**
Brown trout *Salmo trutta*	Introduced & naturalised	**2**		**6**	**3**	**5**						**16**
Torrentfish *Cheimarrichthys fosteri*	At Risk – Declining			**5**	**2**	**2**						**9**
Lamprey (ammocete) *Geotria australis*	Threatened – Nationally Vulnerable					**3**						**3**
Redfin bully *Gobiomorphus huttoni*	Not Threatened					**2**						**2**
Common bully *Gobiomorphus cotidianus*	Not Threatened		**2**									**2**
Shortfin eel *Anguilla australis*	Not Threatened		**1**									**1**
Giant kōkopu *Galaxias argenteus*	At Risk – Declining					**1**						**1**

This fish community summarised in **Table 26** is typical of West Coast rivers.

Key observations include the following:

> According to the latest conservation status of fish (Dunn *et al.,* 2018), one of the species recorded has a conservation status of 'Threatened – Nationally Vulnerable' (lamprey) and four have a conservation status of 'At Risk – Declining' (kōaro, longfin eel, torrentfish, giant kōkopu). Three species are 'Not Threatened' (redfin bully, common bully, shortfin eel) and one is 'Introduced & Naturalised' (brown trout);

- Kōaro was the only fish species found upstream of Morgan Gorge, confirming that the Morgan Gorge represents a fish passage barrier to all other fish species;
- The distribution of kōaro continues to diminish up the catchment indicating the natural attrition caused by multiple natural barriers in this mountainous catchment;
- The Kiwi Flat Reach is considered to be important to the kōaro fishery, as salmonids are unable to access this area;
- Within the Douglas Creek reach, only four fish species (kōaro, brown trout, torrentfish, longfin eel) were found in the mainstem, compared to seven species in the tributary. Many tributaries were inaccessible due to natural barriers at the confluence or lack of permanent flow;
- The spring-fed stable tributary on the true right opposite Douglas Creek is a 'hot-spot' for fish. It is also a significant lamprey rearing habitat and could also be a trout rearing habitat;
- In terms of the value to the salmonid fishery, the river mainstem in the Douglas Creek reach is considered to be of little value to the brown trout fishery, with most recreationally fished sections downstream of SH6 or in downstream tributaries such as Ellis Creek; and
- No fish survey records could be found for salmon in the catchment, but Douglas Creek is regarded as a salmon spawning waterway by Fish and Game.

5.21.4 Freshwater Ecological Significance and Values

Table 27 presents a summary of the significance of freshwater ecological values within the Waitaha Catchment as assessed under the relevant planning provisions contained in the RPS, pTTPP, WDP and the CMS.

Table 27: Summary of Significance of Freshwater Ecology Values

Criteria	Significance value
Representativeness	High
Rarity/Distinctiveness	Medium overall / High for the 'Stable Trib' in Douglas Creek Reach
Diversity and Pattern	High
Ecological Context	High

Criteria	Significance value
Intactness	Very High
Protected Status	Low
Connectivity	High
Threat	Medium overall / High for 'Stable Trib' in Douglas Creek Reach
Migratory Species	Medium
Viability	High

5.22 NATURAL CHARACTER AND LANDSCAPE VALUES

An assessment of landscape values is included in the Landscape Report. Following the presentation of relevant contextual information, a summary of the existing natural character and landscape values is provided below.

5.22.1 Regional Context

The West Coast region *(Te Kaunihera Whakakotahi o Te Tai Poutini)* is characterised by dynamic tectonic activity, high rainfall and associated high energy fluvial processes, which has resulted in a diverse landscape of large mountains, numerous lakes, large rivers and coastal plains. Nearly two-thirds of the Region is mountainous and over three quarters consists of indigenous forest cover.

The West Coast Region is synonymous with dramatic and rugged landscapes with much of this contained within Conservation Estate. Iconic landmarks including *Aoraki*/ Mount Cook, the Pancake Rocks at Punakaiki and the southern glaciers are world renowned and dominate tourist literature of the Region. All of these 'icons' are managed within Conservation Areas.

5.22.2 Westland District Context

The Waitaha Valley occupies a broad catchment extending inland to the Southern Alps. The Waitaha River is one of many West Coast rivers that drains the landscape to the west. The land east of the Alpine Fault is characterised by dynamic tectonic activity and associated high energy fluvial processes.

Steep and forest-clad mountains are located to the south and east of the proposed Scheme and settled alluvial flats and often turbulent coastal waters and beaches lie to the northwest.

The rugged and relatively inaccessible geography of the West Coast typifies the imprint of past and present alluvial and glacial activity. The headwaters of the major rivers in this area, including the Waitaha, Wanganui, Poerua and Whataroa catchments originating in the steep and precipitous Southern Alps and containing numerous physical characteristics that are in some way unique to each area, however, collectively share common elements, such as indigenous vegetation cover, hot springs, gorges, waterfalls and wild rivers.

Large coastal floodplains extend out from the numerous foothills and gorges and are the principal locations for transportation, fertile grazing, lowland forest, saltwater lagoons and small settlements. State Highway 6 ("**SH6**") is the principal access road through this land.

These floodplains, including the Waitaha, have filled in the glacial troughs created through the last glacial period. In some areas glacial melt water trapped behind walls of moraine has created a series of lakes, including Lake Ianthe/ Matahi.

5.22.3 Waitaha Catchment

For the purposes of the assessment, the Landscape Report divides the Waitaha Catchment into three main sub-catchments or landscapes, based on the tributaries of the Waitaha River. These are the Upper Waitaha Catchment, the Lower Waitaha Catchment and the Kakapotahi Catchment. The locations and extents of these areas were shown earlier in **Figure 42** and are briefly described, in turn, below.

5.22.3.1 Upper Waitaha Catchment

The Upper Waitaha Catchment is defined and contained by steep and precipitous mountain peaks and ridges, extending to just beyond Morgan Gorge, where the topography becomes less steep and the river valley becomes more open. It maintains a visually coherent remote character, where natural elements, patterns and processes have sculpted the area to retain several identifiable features, such as glaciers, cirques, tarns and gorges that are not uncommon in West Coast upper river catchments.

There are three gorges within the upper Waitaha Catchment: the Morgan, Waitaha and Windhover Gorges (**Figure 57**). These are characterised by steep precipitous sides and rocky riverbeds (**Figure 58**).

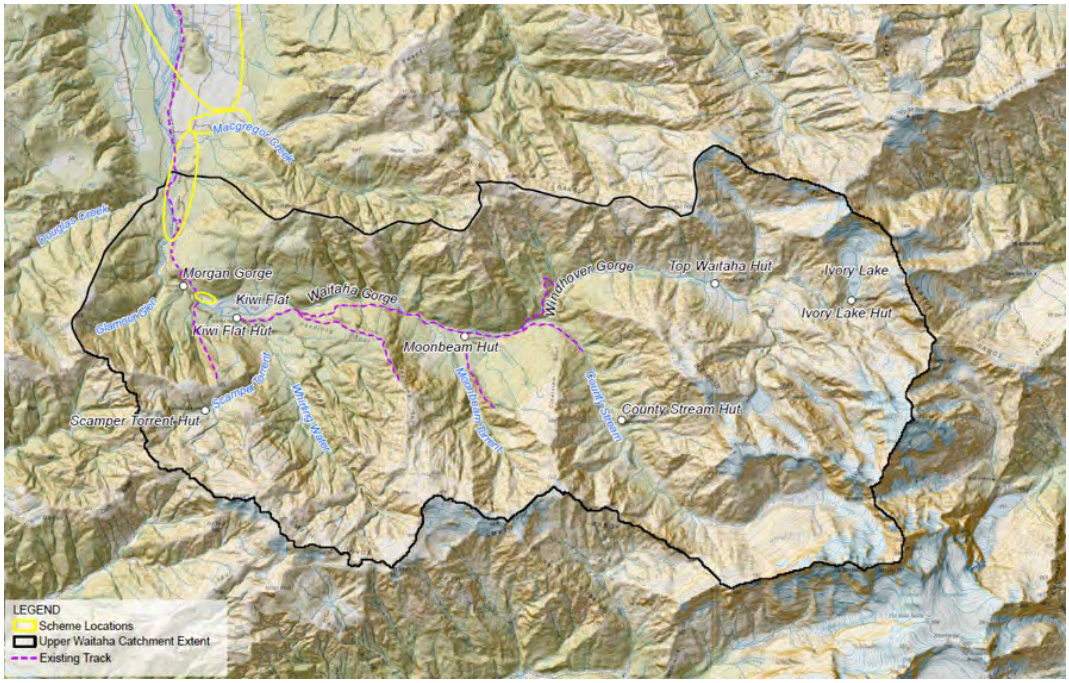

Figure 57: **The Upper Waitaha Catchment showing gorge, Waitaha tributary, walking track and hut locations.**

Figure 58: **The Waitaha Gorge**

Kiwi Flat (**Figure 59**), within the Upper Waitaha Catchment, is an alluvial basin immediately upstream of the flow constriction caused by Morgan Gorge.

Kiwi Flat has been the collection point for the aggradation of alluvial and glacial sediment and has formed a small open area of approximately 2 km long and 500 m wide at its widest point.

Figure 59: Kiwi Flat

The Morgan Gorge is steeply sided and cut into basement rocks. Its upper slopes above the rocky gorge are clad with dense indigenous vegetation, while the rock is exposed in the frequently submerged lower parts. Large rocky boulders and almost vertical, river sculpted walls are a result of the turbulent, energy rich waters. **Figure 60** shows the view of Morgan Gorge from the existing swing bridge built near its southern-most point. The Gorge is particularly narrow, which means the swing bridge vantage point is one of the only locations it is possible to view this part of the Gorge.

Figure 60: A view looking directly from the swing bridge into Morgan Gorge

Overall, the Upper Waitaha Catchment retains a sense of remoteness due to the lack of human modifications. It displays high levels of abiotic, biotic and experiential natural character. Based on this, it is considered that the Upper Waitaha River and its margins hold very high, near pristine levels of natural character, notwithstanding the small amounts of modification already present (such as DOC huts, swing bridge and walking tracks). It is considered that this level of natural character would be the same or similar for other upper catchments within the broader West Coast Region. The Upper Waitaha Catchment is considered to meet the criteria for an Outstanding Natural Landscape and is mapped as such in the proposed pTTPP.

Downstream of Morgan Gorge, the Upper Waitaha Catchment begins to slowly open, where the enclosing mountain spurs appear lower and less steep, and the river widens into the Lower Waitaha Catchment beyond the confluence of the Waitaha River and Macgregor Creek.

5.22.3.2 Lower Waitaha Catchment

The Lower Waitaha Catchment is a settled pastoral valley where enclosing vegetated hills frame views towards the mountains or the open coast (**Figure 61**). The small settlement of Waitaha is located mid-way in the Lower Valley and accessed via Waitaha Road. The river takes on a braided character below Douglas Creek and flows north-west towards its mouth.

Figure 61: View from Waitaha Road in the Lower Waitaha Catchment looking towards the forested mountains of the Upper Waitaha Catchment

The visual amenity values of the modified plains are very typical of other West Coast settled valleys. As a consequence, the Lower Waitaha Catchment does not hold as high perceptual/ experiential values, due to its modified form.

5.22.3.3 Kakapotahi Catchment

This catchment is almost separate from the main Waitaha River and lower catchment, as the Kakapotahi River enters the Waitaha River approximately 3 km upstream of its mouth. It possesses similar upper catchment characteristics to the Upper Waitaha Catchment.

At the Kakapotahi River's confluence with the Waitaha River, immediately north of the SH6 bridge, the Waitaha becomes slightly constricted as it flows through slightly harder rock before entering the sea. Lowland coastal forest dominates this coastal environment, where numerous lagoons and wetlands have formed.

5.22.4 Existing Natural Character

Figure 62 below illustrates, in diagrammatic form, the natural character continuum relative to the 7-point assessment scale used in the Landscape Report to assess the levels of natural character / modification. The threshold between what can be considered to be a predominantly "natural environment" and a predominantly "urban environment" is also shown.

The natural character assessment set pout in the Landscape Report adopts a methodology that utilises this 7-point scale with input provided by other relevant technical reports (e.g. the Terrestrial Vegetation, Terrestrial Fauna and Freshwater Ecology Reports) to ascertain the existing level of naturalness.

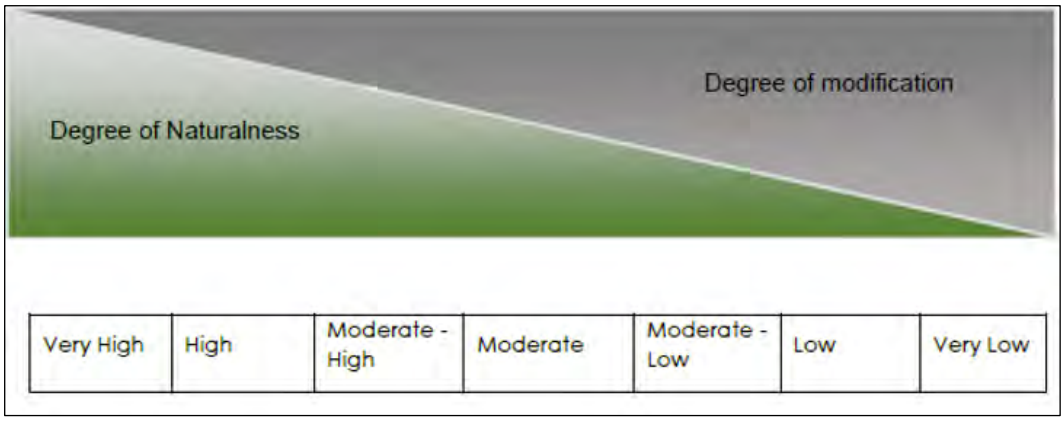

Figure 62: Natural character continuum

On this basis, the Landscape Report concludes the following:

> The Upper Waitaha River and its margins hold **Very High**, near pristine levels of natural character. This is despite the small amounts of modification present (e.g. tracks, swing bridge, tramping huts). It is considered that this level of natural character would be the same or similar for other upper catchments within the broader West Coast Region; and

> The Lower Waitaha River and its margins retains a **Moderate to Low** level of natural character, due to various modifications including a number of structures, in particular the SH bridge with its associated flood control works and active gravel extraction.

5.22.5 Existing Landscape Values

In terms of the existing environment, landscape values of the Upper and Lower Waitaha Catchments are considered most relevant. The Landscape Report assesses these in terms of their respective physical, perceptual and associative landscape values as summarised, in turn, below.

5.22.5.1 Physical Landscape Values

The following aspects contribute to the overall physical landscape values of the Upper and Lower Waitaha Catchment:

> A range of landforms which are clearly expressive of their formative processes and geology;

- The Upper Waitaha Catchment's location within a part of the Southern Alps – a clearly identifiable mountain range that expresses a range of the highest outstanding biophysical values in the country that contain 'iconic' landscape features such as *Aoraki* /Mt. Cook, and the large glaciers of Fox and Franz Josef;
- The glacial and fluvial carved valleys of the Upper Waitaha Catchment and the area's overall dynamism, further reinforced by numerous active faults, including the Alpine Fault;
- The network of tributaries that drain the Upper Waitaha Catchment including dramatic high flows that dislodge boulders, create slips, cascades and waterfalls all converging with the Waitaha River and Whirling Water;
- The alluvial depositions at the more open feature of Kiwi Flat;
- Morgan Gorge – a dramatic chasm of sculpted rock, tortuous rapids and whirling waters, even at low flows;
- The Waitaha River Hot Springs created by ejecting, near-boiling, sulphurous water on schist ledges above the river and recognised as a site of regional importance by the NZ Geopreservation Inventory[159];
- The very high levels of indigenous naturalness expressed in the Upper Waitaha Catchment's vegetation patterns illustrating sequences of species adapted to grow in harsh conditions from tussock grasses and alpine vegetation at higher altitudes to a mosaic of dense indigenous hardwood and podocarp/ hardwood forest at mid and lower elevations;
- The presence of a range of terrestrial fauna and fish;
- The alluvial outwash plains that open up into the Lower Waitaha Catchment that displays much higher levels of introduced and managed vegetation, which reduces its biophysical naturalness.

5.22.5.2 Perceptual Landscape Values

The following aspects contribute to the overall perceptual landscape values of the Upper and Lower Waitaha Catchment:

- The Upper Catchment's sense of remoteness due to the lack of human modifications emphasised by the expressive nature and raw form of the inland mountain ranges;

[159] C= Regional importance & 2= Vulnerable to significant modification by humans. Whilst these springs are listed as a site of regional significance, there is no specific recognition or protection provided within the WDC or the TTPP to this site, or any other listed site, and as such, retain limited status.

- The Upper Catchment's very high, almost pristine, level of naturalness, with strong aesthetic values albeit comparable to many other upper reach catchments on the West Coast;
- The Upper Catchment's very memorable landscapes emphasised by land access difficulties;
- The difficulties in accessing views of Morgan Gorge although audible during the walking journey into Kiwi Flat;
- The long views available from around Kiwi Flat towards the forested steep slopes of Whirling Water and Scamper Torrent and into the precipitous canyon of Morgan Gorge from the swing bridge and from short departures from parts of the true left track;
- The pleasant settled pastoral valley within the Lower Waitaha Catchment where enclosing vegetated hills frame views towards the mountains or the open coast and viewing opportunities of the river are limited to glimpses.

The visual amenity values of the modified plains of the Lower Waitaha Catchment are very typical of other West Coast settled valleys. As a consequence, the perceptual/ experiential values of this area are not as high due to its modified form.

5.22.5.3 Associative Landscape Values

The principal associative values relate to low levels of recreational activities, namely tramping, whitewater kayaking, canyoning and hunting, predominantly in the Upper Waitaha Catchment.

Ngāi Tahu and iwi values have been considered by Te Rūnanga o Ngāi Tahu (iwi) and Te Rūnanga o Ngāti Waewae and Te Rūnanga o Makaawhio (rūnanga) and discussed earlier in this report.

5.23 HERITAGE AND ARCHAEOLOGICAL VALUES

The Scheme is not within a national park, wilderness area or World Heritage Area, such as Fiordland and South Westland and there are no known heritage, archaeological or sites of significance to Māori located within or near the site of the proposed Scheme and its associated construction work areas.

5.24 RECREATION AND TOURISM VALUES

A description of recreational and tourism activities undertaken in the Upper and Lower Waitaha Catchments is presented in the Recreation Report attached to this application document at **Appendix 28**. The Recreation Report also provides an assessment of the existing recreation values of the Waitaha River and its various catchment areas. A summary is presented below.

The Upper Waitaha, upstream of the Macgregor Creek through to the natural and forested 'backcountry' section of the Waitaha River valley, receives a low level of recreation use, including (in order of deceasing participation); tramping, hunting, canyoning, mountaineering and whitewater kayaking.

The low level of recreation activity reflects the Department of Conservation's current management strategy for the Upper Waitaha Valley (as for much of Hokitika Place, and the region) as a 'backcountry-remote' recreation destination. This means an intentional low level of management and maintenance of tracks and huts, and an expectation that visitors to the Valley will be seeking, and enjoy, few interactions with other visitors. Difficulties accessing the valley, largely due to the requirement to traverse a private land holding (or to enter down from the 'tops'), also likely contributes to the low level of recreation activity.

The Lower Waitaha, below the Morgan Gorge, is used rarely by jet boaters, and almost all angling is confined to this part of the river, including at the SH6 crossing point. A few kayakers use the Lower Waitaha as a relatively easy paddle, and there is some use by more experienced kayakers below the Morgan Gorge. However, due to adjacent private land and associated accessibility difficulties, there is generally little recreational use of the Lower Waitaha River.

Overall, the total annual visitation of the Waitaha Valley for recreation purposes is conservatively estimated at approximately 400 individuals (**Table 28**).

Table 28: Estimated annual recreational visitors to the Waitaha Valley based on historic peaks

Recreational activity	Annual visitors (approximate)	Expertise required
Trampers	300	Low grade track – true backcountry / mountaineering skills
Hunters	50	Low grade track – true backcountry / mountaineering skills
White water kayaking	50	Very experienced users depended on helicopter access
Canyoning	No data (expected low)	Very experienced users
Angling	No data (lower catchment only)	Moderate
Jet boating	No data (lower catchment only)	Moderate

5.24.1 Tramping, Hunting and Mountaineering

The location of public land and huts in the Waitaha Valley for trampers and hunters are shown above in **Figure 57**. Kiwi Flat Hut is the most used hut, predominantly for overnight tramps from Waitaha Valley, recently canyoners recreating within the Whirling Water catchment, and those accessing further up the valley. Huts beyond the Kiwi Flat hut predominantly support multi-day backcountry tramps between the neighbouring West Coast valleys and are suitable for very experienced trampers, hunter and mountaineers.

Most[160] track and hut maintenance work undertaken within the Waitaha Valley is carried out by volunteers coordinated by 'Permolat'.

Where visitation records are available for these huts, they are provided in **Table 29**.

Table 29: Summary of annual visitors to the DOC Huts in the Waitaha Valley

Department of Conservation Huts	Annual Visitors
Kiwi Flat Hut	During 2022 = 194 During 2023 = 156 During 2024 = 131
Ivory Lake Hut	20 (Data from 2022)
Top Waitaha Hut	15 (Annual average)
Scamper Torrent hut	29 (Annual average)

The geothermal hot springs are small, very difficult to access and, as a consequence, are infrequently visited. Enjoyment of these springs is also often impacted by low flows in the Morgan Gorge causing the springs to be too hot to bathe in. Sediment and debris from the river can also settle in the area of the hot spring.

5.24.2 Canyoning

Canyoning is the activity of traversing difficult to access and steeply sided gorges or canyons by climbing, abseiling / rappelling jumping, sliding and swimming.

[160] FMC has stated during engagement with Westpower that huts in the Valley are predominantly maintained by the whitewater kayaking community. DOC's website, and the Remote Huts website, comment on Permolat being involved in various track maintenance works in the Upper Waitaha Valley. [https://www.remotehuts.co.nz/ivory-lake-hut.html]

Canyoning in the Upper Waitaha Valley, focusing on the Whirling Water catchment, is a more recent activity, with the first full decent of Whirling Water recorded in 2024.

The Whirling Water catchment is defined by the New Zealand Canyoning Association ("**CANZ**") as having nationally significant values for the activity, albeit only for the very experienced canyoners.

It is considered the recent popularity of this recreational activity has resulted in increased visitors to the Kiwi Flat Hut and has the potential to continue to grow into the future.

5.24.3 Kayaking

The Waitaha River is identified as one of 14 class V[161] white water river on the West Coast which requires helicopters access and is one of 24 class V rivers in the region.

Kayaker numbers in the Waitaha Valley peaked prior to 2011 at 50 per year with a subsequent reduction in interest due to competing international destinations and the high cost of accessing the valley via helicopter. As noted earlier, fewer than 10 kayaking helicopter deliveries have been reported over the last decade. That aligns with comments from WWNZ that "the affected section sees little regular paddling activity." [162]

5.24.4 Recreational Values

The Recreation Report sets out the following recreational values and respective levels of significance for the Waitaha Valley:

- Internationally and nationally significant values for extreme kayaking (Morgan Gorge, upper Waitaha Gorge) and high-grade values for kayaking (Waitaha Gorge) as part of the West Coast kayaking complex;
- Regionally significant values at Kiwi Flat for tramping but nationally significant values in the upper valley, particularly at Ivory Lake (at the top of the catchment) noting there is low use throughout;
- Regionally significant values for hunting;

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[161] Class IV: Difficult rapids requiring a series of controlled moves, cross-current and spinning in confused water. Scouting often necessary and a reliable roll is mandatory.

Class V: Very difficult, long and violent rapids. Nearly always must be scouted. Definite risks in the event of a mishap. Requires a series of controlled, precise, 'must make' moves to navigate successfully.

Class VI: Extreme, very dangerous and only for experts. Close inspection is mandatory and all possible safety precautions should be taken.

[162] Fast Track Waitaha Dam Update - Whitewater NZ |

- Regionally significant values for the hot springs in the Morgan Gorge. In this respect, it is noted that this is mostly an element of the tramping and kayaking experience rather than a destination in itself. It is also noted that the springs have challenging access and limited space for bathing.
- Nationally significant values for canyoning in the Whirling Water (adopting the CANZ assessment);
- Regionally significant values for angling (lower Waitaha River only); and
- Locally significant values for jet boating (lower Waitaha River only).

In summary, although visitation is low, the Waitaha River catchment is an important recreational area due to its accessible but 'remote' natural setting and the characteristics of its whitewater resource.

5.25 ROADING AND TRAFFIC ENVIRONMENT

A detailed description of the existing roading and traffic environment is provided in the Traffic Report. A summary of the key aspects are set out below.

5.25.1 Existing Road Network

Existing roads to be used to access the Scheme include:

- SH6, also known as the Harihari Highway, managed by NZTA;
- Waitaha Road, a local road managed by WDC; and
- A small section of Anderson Road, also a local road managed by WDC.

In addition, access to the Waitaha Substation on Bold Head Road will be via SH6 and Beach Road. Beach and Bold Head Road are also local roads managed by WDC.

All existing roads used for the construction, maintenance and operation of the Scheme and associated transmission lines and substation are shown in **Figure 63**. A private access road over the McLean property is also needed for the project. This will utilise an existing farm track that traverses the property which will be widened and upgraded.

Figure 63: Existing Roading Network

5.25.2 State Highway 6

At Waitaha, SH6 is classified as an arterial route and has an average annual daily traffic volume of around 1000 vehicles per day ("**vpd**"). More specifically, the most recent traffic data indicates that, at the intersection with Waitaha Road, the average annual daily traffic volume is 1033 vpd of which 11.1% are heavy vehicles.

Traffic lane widths are 3.0 metres with an overall sealed road width of 6.6 metres. There are also several one-lane bridges on the SH6 network.

In terms of recorded crashes at or near the SH6 / Waitaha Road intersection, this is limited to one minor injury and two non-injury incidents recorded many years ago (between 2001 and 2002). The two non-injury crashes involved a single vehicle while the minor injury crash involved two vehicles where speed and road construction activities were contributing factors.

5.25.3 Waitaha Road

Access onto the northern end of Waitaha Road is via an intersection located in the middle of a large sweeping curve on SH6.

Waitaha Road serves a number of rural properties within the Waitaha Valley including several dairy farms, a community hall, a church and a mechanical servicing business. There is also a disused quarry located in the southern part of the valley that would utilise Waitaha Road if operational. In addition, a local business extracting schist from the Waitaha River and Macgregor Creek beds also utilises this road. It also serves as an access for recreation, hunting, and fisher activities within the valley.

A summary of Waitaha Road's current seal widths and pavement parameters is provided in **Table 30**.

Table 30: Summary of Existing Waitaha Road Seal Widths and Pavement Parameters

Chainage		Formed Width (m)	Surface Type	Length (m)	Construction Date	Age (years)
Start (m)	End (m)					
23	810	6.5	Seal	787	16/12/2015	8
830	1330	5.4	Seal	500	08/03/2018	6
1310	1930	6	Seal	620	26/02/2019	5
1930	3608	4	Seal	1678	01/2003	21
3608	7034	4	Seal	3426	29/03/2023	1
7034	10976	3.6	Seal	3942	19/02/2021	3

The road reserve width along Waitaha Road is variable. For most of its length, it ranges between 20 and 30m. The exception to this includes three sections (two of which are 246

metres long and another is 59 metres long) where localised widening of the road reserve extends out to 48 metres. The reason for these localised widened areas is unknown.

Traffic generation data collected in July 2023 for Waitaha Road are presented in **Table 31.** It is noted that the proportion of heavy traffic on this road, at 12.5%, is relatively high. This is because Waitaha Road has an overall low volume of traffic volumes and serves rural properties requiring a proportionally high percentage of milk tankers and other heavy vehicles associated with farming. Medium commercial vehicles (3.5 to 12 tonnes) and heavy commercial vehicles (over 12 tonnes) account for 33% of total traffic on Waitaha Road.

Table 31: Existing Waitaha Road Traffic Generation

Chainage		Length (m)	Average Daily Traffic (vpd)	% Heavy Vehicles
Start (m)	End (m)			
23	810	787	**87**	32.8
830	1330	500	**87**	32.8
1310	1930	620	**87**	32.8
3608	7034	3426	**87/22**	32.8
7034	10976	3942	**22**	42.8

There has only been one non-injury crash recorded on Waitaha Road.

5.25.4 Anderson Road (West)

Anderson Road West currently serves the Mclean Farm property and also leads to a public carpark area for recreational users of the Waitaha River and Waitaha Valley at its western-most end. The road itself has a short, sealed section immediately west of its intersection with Waitaha Road, but for most of its length, through to the carpark area, it resembles a pasture covered single carriageway farm track (**Figure 64**).

Figure 64: Anderson Road West

Traffic data indicates that the average annual daily traffic volume on Anderson Road is no more than 10 vpd with heavy vehicles comprising 3% of the traffic.

5.26 EXISTING NOISE

To determine the ambient noise environment at the site, noise measurements were undertaken at various locations along the Waitaha River. These measurements were undertaken on a fine, calm day when the Waitaha River had relatively low flow conditions (approximately 6.5 to 7 cumecs). To this extent, the ambient noise measured will be representative of the typical "quietest day" at the site. These measurements confirmed the following:

> Existing ambient noise levels around the Waitaha River vary significantly.

> Close to the river (i.e. within 10 metres), noise levels were measured around 65-75 dB L_{Aeq}. A few hundred metres back from the river without direct line of sight to the river, we measured noise levels around 35-40 dB L_{Aeq}.

> During wet or windy conditions, or when river flow rates are greater, ambient noise levels will be significantly higher.

Ambient noise along the site access road and at adjacent farm properties will be typical of rural areas.

6. ASSESSMENT OF ENVIRONMENTAL EFFECTS

6.1 INTRODUCTION

In this section the following environmental effects associated with the Scheme are presented and addressed in turn:

- Regional and national benefits and other positive effects
- Cultural effects
- Hydrology and flow regime effects
- Water quality effects
- Effects from gravel extraction activities
- Effects on river sediment transport and river morphology
- Effects on vegetation
- Effects on bats
- Effects on avifauna
- Effects on powelliphanta land snails
- Effects on whio
- Effects on lizards
- Effects on terrestrial invertebrates
- Effects from construction phase surface water takes
- Effects on aquatic ecology
- Traffic effects
- Noise effects
- Landscape, natural character and amenity effects
- Recreation effects
- Geotechnical hazards
- Natural hazard effects; and
- Public safety effects.

In the interests of brevity, the information is presented in a summarised fashion with references to appended technical reports, management plans and suggested Approvals conditions where relevant.

To this extent, technical reports, management plans and suggested Approvals conditions provided in support of this application should be referred to for any additional detailed effects assessment methodologies, assessment results and recommended and proposed effects management techniques.

It should also be noted that most of the supporting effects assessment reports identify environmental effects anticipated during the initial construction phase separately from effects during the Scheme's operational phase. This is logical since the construction and operations related effects are inherently different for this Project – mainly in terms of timeframe and scale.

For this reason, and for each relevant environmental topic, respective effects during the construction and operational phases are discussed separately here. These respective discussions are generally structured in the following way:

- Firstly, the various environmental effects are identified (either positive or adverse);
- Secondly, the methods recommended by technical experts and proposed by Westpower to manage these identified effects, including any suggested Approvals conditions, are confirmed; and
- Thirdly, an assessment of the overall quantum of residual adverse effect (post mitigation) is provided.

All of the above effects assessments undertaken in support of this application identify, consider and quantify effects associated with constructing and operating the currently designed scheme within the site's overall environment as it exists today. Although the effects assessments consider the Scheme's design as currently proposed, it is important to recognise that, as a result of many years of refinement, the design of the proposed Scheme already incorporates a number of features that minimise, and in some cases avoid, certain construction and operational impacts. For this reason, it is equally important to recognise these "baked in" mitigations at the outset which are summarised below:

- The adoption of a "run-of-river" Scheme design which avoids any notable water impoundment above the diversion and confines changes in flow regime to the abstraction reach;
- Westpower's focus on minimising the size of the Scheme's overall footprint, particularly within DOC land, through a number of other design initiatives including:
    - The use of underground tunnels to convey water to the Power Station and to provide access to the top of the Scheme. This design choice avoids large areas of high value habitat from being permanently lost if open canals and above ground access tracks were constructed between the Headworks and Power Station;

- Locating the diversion weir at the top of Morgan Gorge as opposed to higher up the Waitaha Catchment (the latter would have provided more hydraulic head, but would have markedly increased the Scheme's overall footprint);
- Designing the intake to manage the approach and sweeping velocities to reduce the risk of fish and debris out of the tunnel;
- Reducing the gross floor area of the Power Station building;
- Progressive refinements to the access road and transmission routes within DOC land to avoid mapped wetlands, large trees and the "stable trib" – a low gradient, spring-fed stream with comparatively high in-stream ecological values;
- Minimising area of construction and mature forest removal at the tunnel portal sites (entrances and exits);
- Shifting the location of the Power Station Site to an area containing habitat of comparatively low value; and
- Aligning the transmission line alongside the access road for most of the route between the Power Station and Macgregor Creek to avoid having separate routes for each.

6.2 POSITIVE EFFECTS

In addition to the Project's overall positive cultural effects (see below), other positive effects, including positive direct and indirect district, regional and national benefits are identified in the Project Overview, Corporate, Economic Benefits and the Electricity Resilience Reports. Other assessment reports also identify various positive effects resulting from the proposal. These are all summarised below.

6.2.1 Electricity Resilience Benefits during Operation

Customers on Westpower's network are primarily supplied with electricity by a transmission network running from Benmore and Roxborough, through Christchurch, up to Kikiwa south of Nelson and then back down to Dobson outside Greymouth. That electricity is generated more than 550 kilometres from Greymouth.

Consequently, the region's electricity supply is at risk from a failure at any point on the 550 kilometres of the transmission corridor. Failure may be caused by human error, landslip, flood, earthquake, or other natural disasters, creating the potential for severe disruption to the region's electricity supply. Many of these risk factors are worsening due to climate change.

In June 2024 a transmission tower in Northland collapsed during routine maintenance of the tower's baseplates. Approximately 88,000 customers lost their electricity supply, and the regional economy incurred costs estimated to be between $37 million and $80 million.[163]

In 2023, flooding of the Redclyffe transmission substation, due to Cyclone Gabrielle, cut power to tens of thousands of customers in the Hawkes Bay and East Coast region for an extended period and in September 2024 a helicopter crashed into transmission lines and cut supply to approximately 3500 customers in the Tekapo region.

Since 2015, Westpower has had 30 instances where transmission supply to the Hokitika grid exit point ("**GXP**") was interrupted and that number rises to 197 if you look back to 1999. The Hokitika GXP not only supplies electricity to all communities south of Hokitika, but also supplies Westpower's largest customer (Westland Milk Products), who can be expected to place the highest value on unserved energy (due to its impact on production and subsequent business costs).

Development of the Waitaha Scheme is a proactive step in making the local community safer and more resilient in a changing climate. The Scheme will improve resiliency of the power system following an event that impacts the supply of power to the region. Of particular value, the Scheme would support disaster response by providing renewable electricity to hospitals and medical centres, police and fire service stations, and emergency management centres.

In addition to supporting resilience and security of supply, the Scheme will also help reduce electricity prices on the West Coast. The West Coast currently has some of the highest electricity prices in New Zealand, a function of the locational pricing scheme used in the wholesale market where costs increase with distance between the locations of generation and load. Lower electricity prices support electrification, thereby further contributing to achieving New Zealand's emissions reduction targets and climate change goals.

New Zealand's electricity system is reliant on hydro generation, but New Zealand is at risk of water shortages in dry years due to a limited ability to store water when compared with other countries with predominantly hydro based power systems. This can create significant volatility in spot electricity prices.

Research for similar hydro projects on the West Coast has highlighted that rainfall on the West Coast tends to be close to average or above average in years when there are low inflows into the Waitaki river catchment, New Zealand's major hydro storage area.

[163] https://www.beehive.govt.nz/release/northland-transmission-tower-collapse-report-released

Because of this, in dry years the Waitaha Scheme will enhance security of supply in the West Coast Region and contribute to mitigation of dry year energy supply risks across New Zealand.

While other hydro projects are proposed for the wider region, these are not mutually exclusive.[164] On the contrary, the benefits from multiple electricity generation projects on the West Coast are additional, up to the level that the transmission system can export electricity from the region.

Given constraints that exist in delivering infrastructure projects in New Zealand and globally, there remains a real risk that the forecast shortfalls in generation cannot be addressed by 2030 when demand may exceed supply.[165] This means that either security of supply is put at risk (i.e. the cause of rolling black outs in other countries), or all the existing thermal plants will need to remain operating beyond 2030 to the detriment of mitigating climate change.

6.2.2 Economic Benefits During Construction

The construction phase of the Project will result in the following positive economic benefits:

- Of the total estimated construction cost of between $160-200 million[166], about 50% or $80-100 million could be spent in Westland and 69% or $110-138 million could be spent on the West Coast;
- Increased employment directly created by the Project is estimated to average 71 full time equivalent jobs over a three-year construction period with wages and salaries paid estimated at $8.7 million per annum; and
- Indirect impacts on suppliers of goods and services to the firms directly contracted by the Project's construction and additional jobs and incomes for employees of local and regional supermarkets, restaurants and bars due to the additional expenditure by employees directly involved at the site.

6.2.3 Economic Benefits During Scheme Operations

The key benefits associated with the Scheme once it is in operation, being those that provide clear confirmation that the Scheme meets the purpose of the FTAA, are discussed in detail above in section 2.3 of this AEE. These, and other positive economic effects identified, are summarised below:

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[164] There are no other West Coast hydro schemes in Schedule 2 of the FTAA.

[165] Based on forecasts prepared by Ministry of Business Innovation and Employment and Transpower.

[166] Numbers were current at the time of writing the Economic Benefits report. Westpower will continue to optimise the project the cost as the design progresses.

- The Scheme provides significant assistance in meeting national increases in forecasted electricity demand, which Transpower estimates will see an additional 926 MWs of new generation needed across New Zealand by 2030.
- The Scheme will also help meet local and regional increases in demand, which Westpower estimates will increase the peak demand on their network by 55% over the next 10 years. These forecasted demand increases are mainly due to decarbonisation and electrification efforts;
- It will significantly increase resilience for the Westpower Electricity Supply Network by providing some protection against situations when no or restricted external transmission capacity into the region is available. In turn, this reduces exposure of risk and cost to businesses and households in the region during these times;
- It will provide important climate change benefits in terms of contributing to New Zealand meeting its emission reduction targets and climate change goals. Overall, in New Zealand's quest to decarbonise, the Waitaha Scheme will offer a clean, reliable, and flexible energy solution that not only provides direct support to the nation's emissions reduction and electrification goals, but also strengthens energy security, economic development, and overall climate change resilience (acknowledging that climate change presents a significant risk to biodiversity);
- It will displace existing thermal electricity generation – equivalent to a reduction in CO_2 emissions of 129,000 tonnes annually or the same as taking 69,000 internal combustion engine cars of the road;
- It will increase the supply and resilience of electricity generation to enable and encourage decarbonising other sectors of the regional and national economy (e.g. Westland Dairy);
- It will provide additional income for Westpower and for their development partners Te Rūnanga o Ngāti Waewae and Te Rūnanga o Makaawhio;
- It provides an additional fulltime equivalent staff member during Scheme operation;
- It results in additional expenditure within the Westland District and West Coast regional economies on goods and services purchased locally to construct, operate and maintain the Project;
- It reduces transmission line losses (and subsequently those costs to consumers) by being an additional supply of electricity that is generated much closer to points of use;
- It will lower the cost to regional consumers of electricity generation and supply as the costs of generation from the Scheme are lower than the alternative generation capacity it displaces;

- It will increase economies of scale and competition and reduce the under deployment of resources;
- It will also improve national resource use efficiency by increasing the geographic diversity of supply of electricity from hydro generating stations; and
- It will result in a general positive contribution to economic wellbeing for the region and the country.

Overall, this Project will result in a wide range of benefits that will contribute significantly to the region and to New Zealand more broadly.

6.2.4 Other Positive Effects During Scheme Operations

The Waitaha Hydro Scheme will also result in the following other actual or potential positive effects:

- Results in positive ecological benefits to whio, bats, and lizards associated with the proposed contributions to ecosystem programmes;
- Marginally improves water clarity downstream of site due to fine sediment settling in abstraction reach; and
- The proposed by-pass valve will provide a mechanism to better manage “no-take” days for whitewater kayakers.

6.3 CULTURAL EFFECTS

Through various hui held between Poutini Ngāi Tahu and Westpower and information shared, various cultural effects have been identified during the Scheme’s construction and operation. These are identified and discussed in turn below.

6.3.1 Cultural Effects During Construction

- Some adverse mauri impacts on the whenua associated with earthworks, tunnelling and spoil disposal;
- Some adverse mauri impacts on the awa associated with:
  - Temporary awa diversions necessary to construct the weir and some culverts;
  - Potential temporary and incidental cementitious releases during in-stream construction of the weir;
  - Potential temporary sediment release during earthworks to establish construction staging areas and the access road;

- Potential temporary sediment release during in-sStream Works necessary to install temporary coffer dams and culvert structures;
- Risk of high pH water caused by shotcrete residue being discharged from the tunnels into the Waitaha River; and
- Temporary river gravel extraction;
- Some adverse mauri impacts on the ngahere and associated taonga species associated with clearance of indigenous vegetation necessary to establish Construction Staging Areas, and to construct the access road south of Macgregor Creek, the Headworks, the Power Station Site and the transmission line;
- Some adverse effects on native birds (including whio) and bats associated with construction related activities (e.g. noise and lighting); and

- Some less than minor ongoing operational adverse (disturbance) effect on whio relating to channel maintenance.

In terms of mitigating the adverse cultural effects identified during construction, Westpower proposes the following key initiatives:

- Adhering to maximum earth and indigenous vegetation disturbance footprints;
- Rehabilitating all cleared areas not required for post construction operations;
- Implementing appropriate accidental discovery protocols during all earthworks and Stream Works to ensure any unknown sites, artefacts or pounamu that may be uncovered during site works are appropriately protected;
- Implementing a Construction and Environmental Management Plan ("**CEMP**") inclusive of detailed construction methodology statements for all key construction activities focused on minimising impacts – particularly on freshwater;
- Implementing Erosion and Sediment Control Plans ("**ESCPs**") that detail the methods and design specifics for all in-sStream Works, earthwork sediment controls and related devices and the management and treatment of potential high pH water discharged from the tunnels during shotcrete application;
- Implementing the Vegetation Management Plan including appropriate vegetation removal and rehabilitation protocols;
- Implementing the Avifauna Management Plan that sets out pre-clearance requirements, and methods to avoid, remedy and minimise effects and risks to birds including whio from noise and disturbance;

- Implementing the Bat Management Plan, including adherence to DOC's Bat Management Protocol, to avoid, remedy and minimise effects and risks on native bats;
- Implementing the Lizard Management Plan that requires specific protocols during and following vegetation clearance – including relocating any observed lizards and utilising plant species favoured by lizards in rehabilitation works;
- Implementing the Aquatic Ecology Management Plan that sets out protocols to avoid and minimise impacts on aquatic ecological values during and following in-sStream Works;
- Contributing funding towards ecosystem programmes in the region to provide a positive outcome for the regional whio and bat populations in the medium term (first 10 years) and for the remainder of the duration of the consents, to provide positive outcomes for the region's biodiversity more generally.

6.3.2 Cultural Effects During Operation

In addition to construction related cultural impacts, some ongoing adverse mauri impacts on the awa will also occur due to permanent alterations to the Waitaha River's hydrological regime. These are mostly associated with the ongoing diversion of Waitaha River flow out of its natural riverbed between the Headworks intake and the Power Station tailrace to generate electricity.

Mitigation initiatives to address adverse cultural effects during the Scheme's operation include:

- Continued implementation of management plans for indigenous vegetation and freshwater ecology where these require ongoing management during the Scheme's operation.
- Maintaining a minimum residual flow of 3.5 cumecs to minimise the impacts on the awa within the abstraction reach;
- Continued funding, for the life of the consent, towards an ecosystem programme that provides positive outcomes for the region's biodiversity; and
- Implementing a bypass valve to minimise impacts on the awa during rare station trips to reduce the magnitude of flow changes through Morgan Gorge and below the tailrace immediately following these events.

6.3.3 Cultural Effects Summary

Westpower, acknowledge the adverse cultural effects identified above will, to some extent, be inevitable and unavoidable. Despite this, Westpower's partnership with Poutini Ngai Tahu has helped to ensure that appropriate resource management methods have been adopted during construction, and appropriate rehabilitation efforts are made afterwards. Appropriate post-construction resource management methods will be implemented during the Scheme's operational phase to ensure cultural effects are minimised. Poutini Ngāi Tahu have confirmed that cultural effects and the effects on the environment, wildlife, taonga species and taonga fish species have been appropriately addressed to the satisfaction of Poutini Ngāi Tahu.

Furthermore, all the various mitigation initiatives proposed by Westpower are prescribed in the suite of conditions submitted with the application.

Overall, the net change in cultural effect, as a result of the Project, is positive.

6.4 HYDROLOGY AND FLOW REGIME EFFECTS

The Scheme's effects on the Waitaha River's hydrological regime are discussed in detail within the Hydrology Report and summarised below.

6.4.1 Hydrological Changes Above the Scheme's Intake

Above the Scheme's intake, no change will be evident to normal river flow patterns.

6.4.2 Hydrological Changes Within the Abstraction Reach During Normal Operation

The key change to the hydrological regime resulting from the Scheme is the removal of up to 23 m^3/s of Waitaha River flow from the abstraction reach – while maintaining no less than 3.5 m^3/s of flow through this part of the river. When the river is naturally above 26.5 m^3/s (being the sum of the maximum flow diverted into the Scheme and the minimum residual flow of 3.5 m^3/s), the flow through the abstraction reach will be at or greater than 3.5 m^3/s, and during higher natural flows it will increase to a point where it closely resembles the natural flow regime. During large natural flows (i.e. 250 m^3/s and above), generation will stop and natural flow conditions will exist within the abstraction reach.

Currently, the natural 50-year low flow at the top of the abstraction reach is approximately 5 m^3/s. Excluding station maintenance shut-down periods, the natural flow regime in this reach will be reduced to 3.5 m^3/s for approximately 66% of the time or approximately 241 days per year.

From a hydrological regime perspective, these changes within the abstraction reach, statistically, are considered more than minor, however, it is important to highlight the following mitigating factors;

> The 241 days per annum of residual flow will not occur as consecutive days, but normally as small intervals of time before a fresh or flood occurs. There are on average 42 floods or freshes per annum greater than 30 m^3/s. The average interval between these peaks is 8.6 days, and the average flood duration is 55 hrs; and

> Anson Creek and Glamour Glen, which flow into the abstraction reach, boost the residual flow below the Scheme intake considerably after rain, and for 50% of the time, they add at least 0.7 m^3/s. Consequently, the residual flow below Glamour Glen will be at least 4.2 m^3/s for 50% of the time.

6.4.3 Hydrological Changes Downstream of the Power Station During Normal Operation

When the Power Station is operating in steady-state mode, because the Scheme will be a "run of river" operation, there will be no impacts on the flow regime downstream of the Power Station.

6.4.4 Hydrological Changes During Controlled Power Station Startup and Shutdown

Short-term changes to the flow regime will occur during Power Station startup and shutdown, for example, before and after routine maintenance work is conducted.

During a controlled Power Station startup, water flow entering the Headworks intake "ramps up" over time, resulting in an equal reduction in flow to the abstraction reach. During this startup process, discharges from the Power Station also ramp up. To minimise the quantum of these flow changes, when river flows are less than 40 m^3/sec[167], Westpower have proposed a ramp-up rate of no more than 0.5 m^3/sec per minute for Power Station startup. This means the Station will reach full operational flows in around 45 minutes.

During a controlled Power Station shut-down, water entering the Headworks intake "ramps down" over time resulting in an equal increase in flow to the abstraction reach. During this shutdown process, discharges from the Power Station also ramp down. As with the startup process, Westpower proposes a 0.5 m^3/sec per minute maximum ramp-down rate when river flows are less than 40 m^3/sec. This means, from full production, the Station will reach an operational stop in around 45 minutes.

[167] When river flows are greater than 40 m^3/s, ramping rates can be slightly higher (i.ee. 1.3% of the Waitaha flow).

The other factors influencing flow changes are, in the case of a startup, the lag between the time when a flow decrease is initiated at the top of Morgan Gorge and the time that flow decrease takes to propagate down to the Power Station. And similarly, in the case of a shutdown, the lag between the time when a flow increase is initiated at the top of Morgan Gorge and the time that flow increase arrives at the Power Station. Hydrological modelling results indicate these lag periods are between 30 and 40 minutes.

Hydrological simulations of river flow changes downstream of the Power Station during these controlled Power Station startup and shutdown events are presented in the Downstream Flow Modelling Report (**Appendix 31**). Relevant simulation results of flow changes downstream of the Power Station during these events are summarised below.

6.4.4.1 During Station Startup

Worst-case, simulated changes in river flow 100m downstream of the Power Station during startup are shown in **Figure 65**. The worst-case scenario occurs when the Power Station starts up from zero to full production when natural Waitaha River flows are 26.5 m^3/s since this scenario causes the maximum flow change as a percentage of ambient flow.

For a 30-minute Power Station startup (shown by the orange plot), the flow climbs until the corresponding flow reduction to Morgan Gorge propagates down to the Power Station. It should be noted that Westpower's proposed 45-minute start-up duration process will result in a lesser rate of flow increase and produce a lower profile hydrograph plot than that shown. The modelling also shows that these changes smooth out slightly with distance downstream (**Figure 66**).

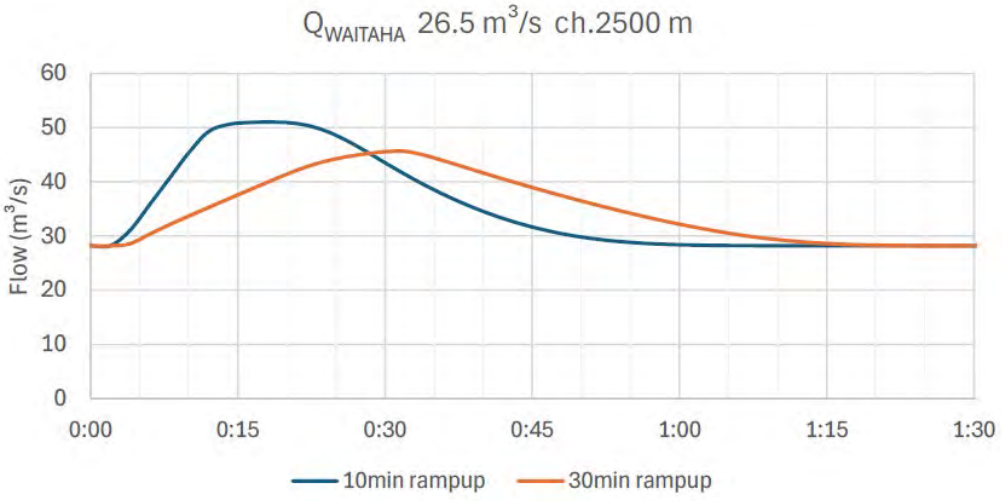

Figure 65: Modelled Waitaha River flow at 100 m downstream of Power Station during station startup when ambient Waitaha River flows = 26.5 m^3/s

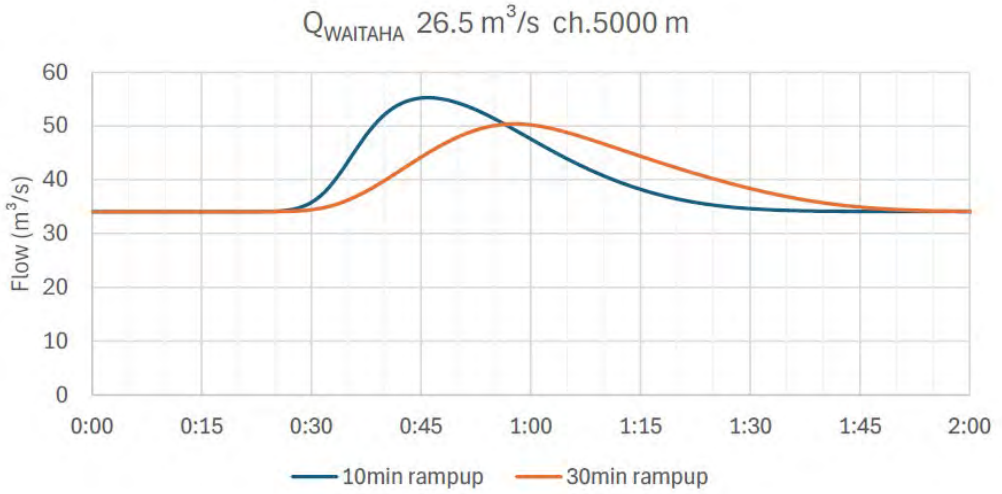

Figure 66: Modelled Waitaha River flow at 2,600 m downstream of Power Station during station startup when ambient Waitaha River flows = 26.5 m^3/s

6.4.4.2 Station Shutdown

Simulated, worst-case changes in river flow 100 m downstream of the Power Station during shutdown are shown in **Figure 67**. The worst-case scenario occurs when the Power Station shuts down from full to zero production when natural Waitaha River flows are 26.5 m^3/s since this scenario, again, causes the maximum flow change as a percentage of ambient flow.

For the proposed 45-minute Power Station ramp down (shown by the orange plot) there is a steady drop in river flow followed by flow rate recovery commencing after around 40 minutes, once the increased river flows via Morgan Gorge arrive at the Power Station. As with the station startup, these changes smooth out with distance downstream (**Figure 68**).

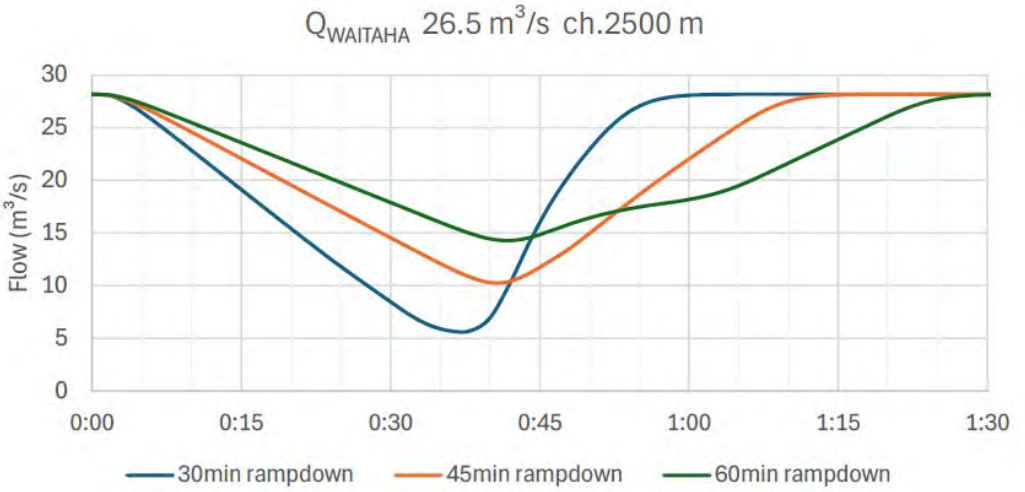

Figure 67: **Modelled Waitaha River flow at 100 m downstream of Power Station during station shutdown when ambient Waitaha River flows = 26.5 m³/s**

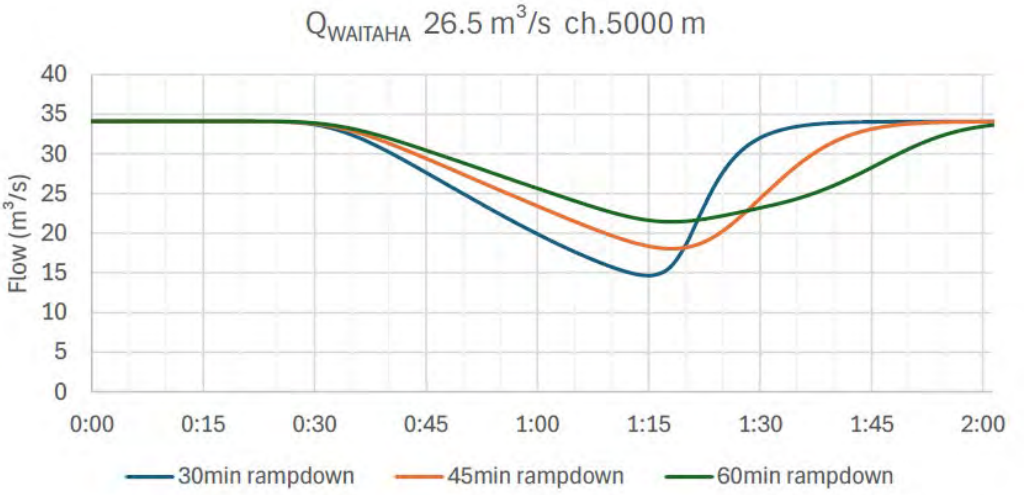

Figure 68: **Modelled Waitaha River flow at 2,600 m downstream of Power Station during station shutdown when ambient Waitaha River flows = 26.5 m³/s**

6.4.5 Hydrological Changes Resulting from Power Station Emergency Trip Events

Using operational data collected from Westpower's nearby Amethyst Hydro Scheme, it is anticipated that the Waitaha Power Station will experience approximately four unplanned operational trip events per year that require emergency shutdowns.

In an emergency shutdown scenario, a relatively sudden reduction in generation flow (staged over a 2-minute period) is achieved to protect the turbines. This results in discharges to the Waitaha River, via the tailrace, to cease over this 2-minute period.

In turn this results in consequential river flow reductions below the Power Station. Concurrently, an equal increase in flow will be observed into Morgan Gorge at the top end of the Scheme.

To help smooth out these flow changes, both through Morgan Gorge and below the Power Station, a bypass valve, located at the Power Station, will release water into the Waitaha River in the form of a coned spray upon a station trip. The bypass valve will be sized to flow up to 10 m^3/s.

As with the controlled Power Station shutdown scenario, the worst-case (i.e. maximum flow change) scenario occurs when the Power Station undergoes an emergency shutdown from full to zero production when natural Waitaha River flows are 26.5 m^3/s. Simulated flow changes immediately downstream of the Power Station and 2,600 m below the Power Station under this scenario are illustrated in **Figure 69** and **Figure 70** respectively. These simulations show that the proposed 10m^3/s bypass valve (denoted by the orange coloured plots) markedly reduces the quantum of flow reductions below the Power Station. The plots also show that the arrival of increased flows released to Morgan Gorge at the Power Sation achieves steady-state river flow after around 40 minutes.

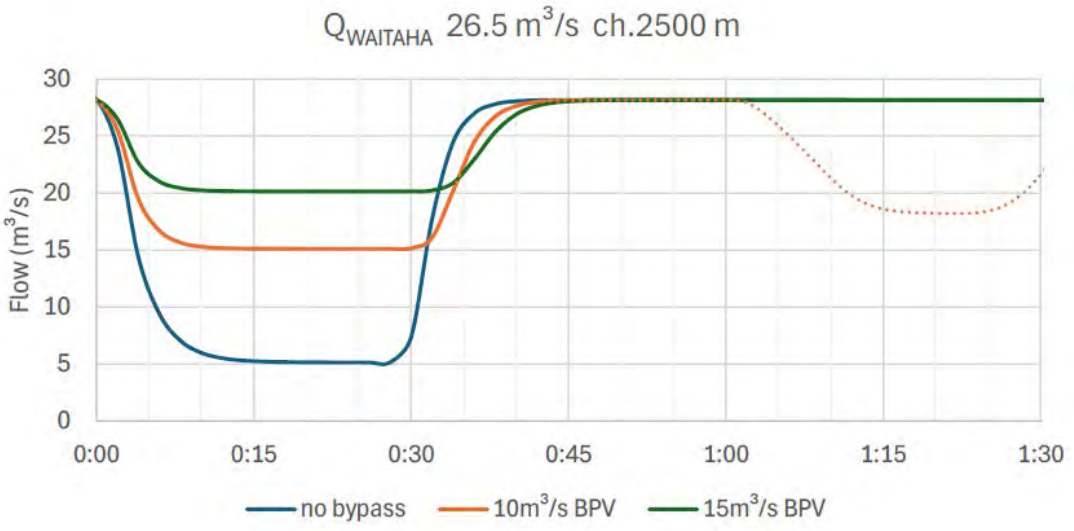

Figure 69: Modelled flow in Waitaha River at 100 m downstream of Power Station during emergency shutdown when ambient Waitaha River flows = 26.5 m^3/s

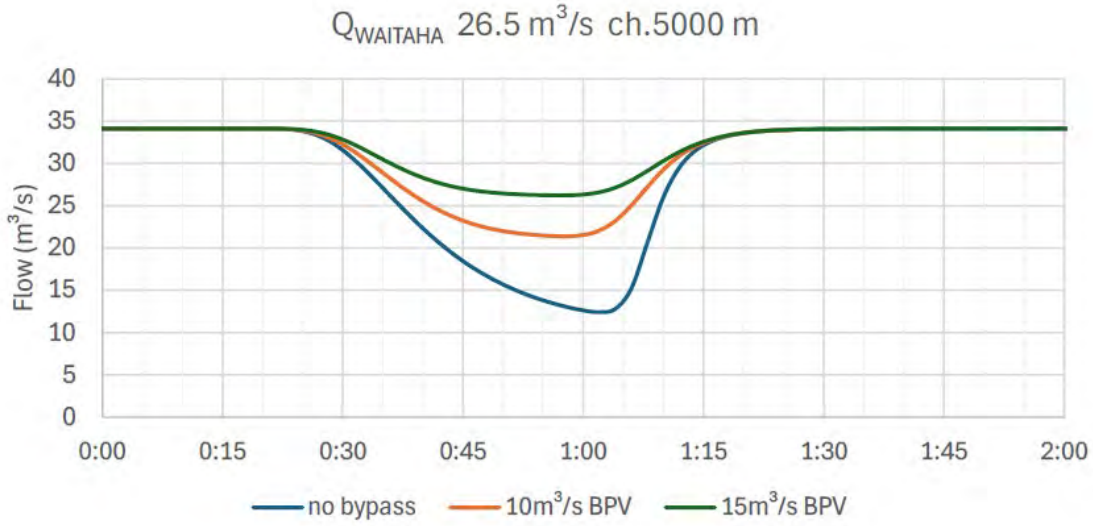

Figure 70: Modelled flow in Waitaha River at 2,600 m downstream of Power Station during emergency shutdown when ambient Waitaha River flows = 26.5 m^3/s

6.4.6 Scheme's Effects on Flood Flows

For large floods above 250 m^3/s, the Scheme has no effect on the catchment's flow regime because the diversion at the intake will shut and Station generation will stop. For small floods and freshes, there is a slight reduction in flow through the residual reach, becoming less significant as natural flow increases. For small freshes, the FRE3 value, which is a useful statistical indicator used in ecological studies (being the occurrence of annual average floods equivalent to a magnitude of three times the median flow), shows only a slight pre and post development reduction from 26.2 to 23.6 times per year. This demonstrates that the Scheme will have little effect on the frequency of even smaller floods flowing through the residual flow reach.

6.4.7 Overall Hydrological Effects

Although the Scheme results in changes to the Waitaha River's hydrological regime, these changes predominantly only affect the 2.5 km long abstraction reach, which is a very small part of the catchment's total river network. Notwithstanding, these changes will have, to some degree, consequential effects on cultural, ecological, landscape and amenity and recreational values of the Waitaha River and on public safety. Consequential cultural effects are discussed above in section 6.3 of this report with the remainder being considered and discussed in the environmental effects assessments presented further below.

From a purely hydrological regime perspective, when the changes identified above are considered in the context of the wider Waitaha River catchment and its wider flow regime,

overall, any adverse hydrological effects on the Waitaha River and its tributaries are considered to be no more than minor for the following key reasons:

- The proposed "run-of river" operation;
- The inherent mitigation provided by the catchment's very high natural rainfall and consequential high frequency of natural floods;
- The mitigation resulting from Westpower's proposed ramping rates; and
- The very low occurrences, and very short durations, of Power Station start-ups, shut-downs, trips and bypass valve operation.

6.5 WATER QUALITY EFFECTS

Actual and potential adverse effects on water quality are identified in a number of technical reports, namely, the Freshwater Ecology Report, the Sediment Report and the DRAFT CEMP and ESCP.

6.5.1 Water Quality Effects During Construction

Adverse water quality effects during the construction phase include:

- Potential sediment discharges to water from areas of earthworks, Stream Works (including riverbed gravel extraction areas discussed separately later) and general construction areas;
- Potential release of cementitious contaminants and related additives during in-situ concrete pouring required for the construction of in-stream and off-stream structures including the use of shotcrete during construction of underground tunnels;
- Release of high pH water generated from shotcrete used during tunnel construction;
- Potential increase in stream shading due to permanent loss of riparian vegetation;
- Potential spills of fuel, oil or other contaminants; and
- Potential establishment of didymo.

Westpower proposes to manage these potential construction-related water quality effects and risks in the following ways:

- The preparation, certification and implementation of an ESCP for all earthworks, Stream Works and other construction areas that provide the following:
  - Methods for minimising sediment generation potential;
  - Methods for minimising, controlling and treating sediment laden stormwater generated from earthwork sites including design details for all sediment control

devices and provisions for use of flocculants and associated flocculation management;

- Special methodologies developed for construction of in-stream structures including creation of temporary flow diversions and other measures to, as far as practicable, provide safe and dry work sites that minimise any release of sediment and cementitious contaminants; and
- Special methods to minimise, monitor, divert and separately treat any high pH water generated from shotcrete activities or other water that contains residual shotcrete additives and/or sediment, prior to discharge.

- The implementation of a CEMP that includes various construction and environmental management requirements for Westpower and their construction contractors including;
  - All methods and protocols as set out in the certified ESCP (see above);
  - Special methods for unloading, storing and using fuel storage tanks including specified minimum setbacks from surface water;
  - Methods for washing concrete tools, machinery and formwork including specified minimum setbacks from surface water;
  - Accepted protocols for the control of the spread of didymo;
  - Machinery maintenance and inspection requirements;
  - Specified locations of spill kits; and
  - Emergency and spill response plans.

Westpower has already prepared a DRAFT CEMP and a DRAFT ESCP for the construction phase of the Project. These are provided in **Appendix 33** and **Appendix 34** respectively. In the event approvals are granted, and once Westpower has appointed their key construction contractors, these documents will be updated with final methodology statements, drawings and plans and submitted to the relevant consenting authorities for certification.

Other more generic factors that provide further mitigation of adverse water quality effects include:

- The fact that the existing river and stream network has a naturally very high rate of sediment flux. Therefore, any construction-related sediment inputs will be inherently mitigated by natural processes; and
- The fact that these effects are associated with construction activities which are temporary in nature.

Potential water quality effects associated with the proposed riverbed gravel extraction activities will be avoided by ensuring this activity only occurs in areas of dry riverbed that are no less than 4m from the water's edge and by ensuring excavation depths are no lower than the adjacent river water level. These requirements are included in the suggested Approvals conditions.

Potential water quality effects associated with reduced stream shading due to permanent loss of riparian vegetation are an inconsequential impact for the following key reasons:

> The loss of shading will be limited to very small pond and seepage areas along the access road; and

> As set out in the Vegetation Management Plan, any bare areas outside the road carriageway, including culvert abutment areas, will rapidly regenerate naturally.

Additionally, Westpower's proffered conditions:

> Require the implementation of a certified ESCP and a certified CEMP for all construction phase activities and specify clear objectives for each;

> Prescribe all of the water quality effects management initiatives mentioned above as minimum information requirements;

> Include special conditions to avoid the placement of wet concrete into any flowing waterway;

> Ensure that all construction related discharges to surface water (e.g. from any sediment retention device) do not exceed a water clarity standard of 100mm, and maintain a pH range of 6.7 and 8.2; and

> Include all various water quality protection requirements typical of large construction project consents.

Provided the certified ESCP and CEMP are fully implemented, and the proffered conditions are complied with, it is considered that the risks associated with potential adverse water quality effects during construction will be appropriately managed and be less than minor.

6.5.2 Water Quality Effects During Operation

Water quality effects during the Scheme's operation include:

> Sediment discharges to water during in-stream maintenance activities;

> Sediment discharges to water during desander flushing events;

> Remobilisation of accumulated sediment in Morgan Gorge during Morgan Gorge flushing events as recommended to minimise impacts on aquatic habitat in the abstraction reach;

- Sediment remobilisation in the abstraction reach due to sudden changes in flow to Morgan Gorge following station trip events;
- Discharge of stormwater from Power Station site;
- Potential spills of fuel, oil or other contaminants at Power Station Site and Headworks.

Westpower proposes to manage these operational water quality effects in the following ways:

- Implementation of a Site Operations and Maintenance Plan ("SOMP") that address the following:
  - Methods for minimising sediment generation potential during in-stream maintenance activities upstream of the Headworks;
  - Methods and pre-condition parameters for any low-flow desander flushing events;
  - Methods and pre-condition parameters for Morgan Gorge flushing events;
  - Methods for reducing the risk of the spread of didymo;
  - Methods for unloading, storing and using fuel storage tanks including waterbody setbacks; and
  - Machinery maintenance and inspection requirements;
  - Undertake Morgan Gorge flushing trials and prepare a Morgan Gorge Flushing Management Plan ("**FlushMP**") to minimise adverse impacts on the quality of habitat for biota, such as whio, fish, invertebrates, and periphyton in the abstraction reach associated with accumulated fine sediment over long periods of low-flow[168];
  - Implementation of a Stormwater Management Plan ("**SMP**") that specifies:
    - Transformer bunding and oil spill detection and containment measures;
    - Power Station Site stormwater reticulation details;
    - Access road maintenance methods designed to minimise sediment runoff to waterways;
    - Locations of spill kits; and
    - Emergency and spill response plans.

[168] Discussed in more detail later in respect of Sediment Transport and River Morphology Effects

Regarding the identified water quality effects associated with operational and maintenance activities that cause sediment to become entrained in, or to be discharged into river and creek flows, again, further mitigation is provided by the existing river and stream network's very high natural sediment load. That is, given the receiving environment already experiences frequent and high loads of sediment input, it would easily assimilate additional infrequent inputs from the Scheme's operations. Notwithstanding, Westpower's proposed operations will minimise these additional sediment inputs wherever practicable.

Also, it is important to note that the sediment associated with these inputs is sediment that already forms part of the existing river system. The Scheme's operation merely results in an alteration of how and when this sediment moves through river system.

In addition, on the basis there are no production land use changes proposed as part of the Scheme, there is not expected to be any change to surface water nutrients.

Overall, on the basis that robust trials will be undertaken to optimise and minimise water quality effects associated with Morgan Gorge and desander flushes, and management plans (SOMP and SMP) will be prepared, certified and implemented to ensure operational and maintenance activities undertaken appropriately to avoid or minimise contaminants from entering or becoming entrained in river and stream flows, and given Westpower has proffered special conditions that require all these initiatives to be undertaken, adverse water quality effects during the Scheme's operation will be no more than minor.

6.6 EFFECTS FROM GRAVEL EXTRACTION ACTIVITIES

As described in section 3.5.9 of this report, up to 23,000 m^3 of in-situ gravels within the bed Waitaha River, and up to 100,000 m^3 of in-situ gravels on the McLean Farm within areas also proposed for spoil disposal, are proposed to be extracted for the purpose of constructing the access road to the Power Station Site. This makes use of a plentiful and naturally replenishing local resource while avoiding the need to haul gravel to the site from off-site sources.

6.6.1 Riverbed Gravel Extraction

The Sediment Report identifies that, given the very high sediment transport loads within the Waitaha River, the proposed volumes of gravel extraction would be replenished within no more than a year or two. The report also notes that the extracted volume would induce a temporary lowering of the average downstream riverbed of no more than 4 mm. This is considered an imperceptible change, and any riverbed level reduction would return to pre-extraction levels in short order given the Waitaha River's extremely high sediment flux.

Riverbed gravel extraction activities are relatively common on the West Coast. Accordingly, the West Coast Regional Council have, over time, developed advanced conditions that they impose as standard requirements for any river gravel extractions activities. These requirements are also generally prescribed in Rule 29 of the West Coast Regional Land and Water Plan. Westpower will comply with these conditions to ensure appropriate protections are afforded to river water quality and ecology during these activities occurring. To this end, Westpower proffers, as conditions to be included in any river gravel extraction consent, the following restrictions during all riverbed gravel extraction activities:

- That gravel extraction areas are restricted to dry areas of the riverbed. Consequently, no indigenous vegetation in that area will be removed;
- That gravel extraction activities remain at or above the water level in the adjacent flowing river channel and at least 6 metres from any riverbank. Consequently, risks associated with sediment entrainment in the river water column are avoided; and
- That excavation is undertaken in strips that are parallel to the flow of the river and not by excavating holes.

In addition, implementing recommendations from Westpower's ecologists, the riverbed will be checked for nesting birds prior to any gravel extraction works being undertaken and all gravel extraction activities will be at least 75m from any occupied nest or under the supervision of the Project Ecologist.

Potential adverse effects on river sediment transport associated with riverbed gravel extraction activities are addressed in the Sediment Report provided in **Appendix 19**. In this regard, given the very high sediment transport loads within the Waitaha River, the proposed volumes of gravel extraction would be replenished within no more than a year or two. The report also notes that the extracted volume would induce a temporary lowering of the average downstream riverbed of no more than 4 mm. This is considered an imperceptible change and, as the Waitaha River has such a high sediment flux, any riverbed level reduction would quickly return to the pre-extraction level.

The proposal also does not include any gravel washing or crushing activities, therefore minimising noise and avoiding the need for additional water take and use. Furthermore, the activity is short-term and will only occur for the initial part of the Scheme's construction stage.

Overall, the Project as proposed by Westpower, appropriately manages adverse effects associated with riverbed gravel extraction to the extent these effects will be less than minor.

6.6.2 Land-Based Gravel Extraction

With respect to the proposed gravel extraction activities located on the McLean Farm, this activity is equivalent, from an effects perspective, to cut and fill earthworks. Accordingly, any associated effects will be addressed through the FINAL ESCP. In summary, the DRAFT ESCP identifies that gravel extraction activities on the McLean Farm will result in depressions or pits in the ground surface that will provide inherent sediment controls and act in a similar way to the sediment retention ponds already proposed for this area. To this extent, the gravel excavation provides an increased capacity to control sediment. The environmental risks associated with this activity are less than minor.

Not unlike the riverbed gravel extraction activities, any adverse effects associated with land-based gravel extraction activities are further mitigated by;

> The exclusion of any gravel washing or crushing activities;

> The proposal to backfill any gravel excavations areas on the McLean Farm with tunnel spoil and to fully rehabilitate these areas back to pasture; and

> The short-term nature of the activity.

Any adverse effects associated with land-based gravel extraction activities will be less than minor.

6.7 EFFECTS ON RIVER SEDIMENT TRANSPORT AND RIVER MORPHOLOGY

Effects on river sediment transport and river morphology are identified and assessed in the Sediment Report.

6.7.1 Operational Scheme Effects on River Sediment Transport and Morphology

Sediment transfer through the river network is a key geomorphological function of the existing environment in the Waitaha Catchment. The Scheme's operation has the potential to alter this transfer and induce transient and/or localised effects on sediment deposition, water clarity, and channel morphology.

The Sediment Report considers and assesses the following operational aspects:

> How the Scheme will change the existing load, transfer, and deposition of sediment within and adjacent to the abstraction reach;

> Effects of intake maintenance operations, desander flushing, emergency power-station shutdowns, and possible flushing flow releases into the abstraction reach on water clarity;

> Effects of the Scheme on the natural Waitaha channel morphology at Kiwi Flat and at the Power Station; and

> How (if necessary) these effects should be managed.

A summary of specific effects identified are discussed in turn below.

6.7.1.1 Overall effects on sediment transport and channel morphology processes

The Sediment Report concludes that, in general, the Scheme will have no more than minor effects on sediment transport processes and channel characteristics along the Waitaha channel, largely because of the following key mitigating factors:

> The intake structure will be shut during flows of 250 m^3/s or more so the Scheme's potential to affect natural river sediment transport processes and channel characteristics is largely limited to intervals between flood events;

> The Scheme will not alter the suite of natural processes and fluvial features, nor their frequencies of physical characteristics of the Waitaha channel at Kiwi Flat;

> Bed material transport and channel morphology will also continue to be dominated by the frequent flood regime along the abstraction reach; and

> The Waitaha River downstream of the Power Station will always have its natural flow regime and supply of bedload and suspended load, so no downstream effects relating to interruptions of sediment transport continuity (such as typically occur downstream of a large dam that stores both water and sediment) are anticipated.

The Waitaha River will continue to be dominated by the action of frequent natural floods and very high and variable sediment loads delivered from upstream. In particular, the bulk of the Waitaha River's sediment load will continue to be carried by un-diverted flood flows.

6.7.1.2 Transient sediment deposition in abstraction reach

The Sediment Report assesses the impact of the Scheme during normal operation on the incidence and extent of fine-suspended and coarse-bedload deposition in the abstraction reach, particularly during extended baseflow periods when, due to the Scheme's operation, would result in a 'flatlining' of abstraction reach flows at 3.5 m^3/s.

By undertaking simulations on the hydrological record between 1973 and 2012, an average of 33 of these minimum abstraction reach "flatline" flow events would have occurred per year over this simulation period and 11 of these events would have lasted more than one week. During events of more than a week in duration, the estimated suspended sediment load entering the abstraction reach would have resulted in sediment deposition drapes of between 4 and 37 mm thick. Half the events (or 5.5 events per year) would have deposited drapes over 13 mm thick but less than 3 events/year would deposit drapes over 17 mm thick.

It should be noted that the thicknesses of these estimated fine sediment drapes are likely to be upper-bound estimates because of the conservative assumptions made in the simulation process. Also, any fine sediment drapes formed during prolonged minimum abstraction reach flow events are transient. That is, natural flows eventually "reset" this aspect of the river.

Overall, from a sediment transport and river morphology perspective, this effect is considered less than minor. Nevertheless, in an acknowledgement that this effect also has potential consequential adverse ecological effects that, currently, are difficult to predict, the Sediment Report recommends a precautionary management approach that combines operational monitoring and sediment data collection during extended periods when the residual flow is steady at 3.5 m^3/s with engineered flushing flow releases if warranted.

Westpower will adopt this approach and has proposed associated conditions. More specifically, implementing recommendations set out in the Sediment Report, these conditions require, first, to undertake flushing trials and, second, to use the results of these trials to develop a Flushing Management Plan ("**FlushMP**")[169] for the abstraction reach. The purpose of the FlushMP is to minimise adverse impacts on the quality of habitat for biota, such as whio, fish, invertebrates, and periphyton in the abstraction reach associated with accumulated fine sediment following extended low-flow periods.

The proposed development and implementation of the FlushMP will provide a suitable mechanism to resolve any uncertainty regarding the degree of sediment build-up in the abstraction reach, while also ensuring any associated residual adverse effects on water quality and freshwater aquatic ecology are appropriately minimised.

Overall, with the FlushMP in place, effects associated with potential sediment build-up in the abstraction reach will be less than minor.

6.7.1.3 Kiwi Flat aggradation

Hydraulic modelling of a large flood event (1000 m^3/s) without a weir shows a choked backwater water surface profile extending some 700 m upstream (almost as far upstream as Whirling Waters). When the model was re-run with the weir in place, there was no difference to the large flood profile because the throat of the Morgan Gorge is the control point for flows. Accordingly, the Scheme will cause a less than minor effect on river processes along Kiwi Flat during large floods.

[169] Also discussed above in respect of Water Quality and Freshwater Aquatic Ecology Effects

At lower flows (10 m^3/s), modelling indicates that the weir would set the hydraulic control at the gorge entrance and create a small backwater intersecting with the natural riverbed profile about 300 m upstream from the weir. This would be the likely upstream extent of the weir's influence on channel morphology at flows when the gorge does not choke.

Overall, the effects of the weir on channel form and behaviour at Kiwi Flat will be minor because:

> Any impact would be spatially limited to within a few hundred metres upstream of the weir; and

> Any impact would be small compared with the natural morphological variability associated with large, gorge-choking floods and erratic sediment supplies.

Notwithstanding this minor effects assessment, Westpower proposes to undertake 10-yearly Lidar monitoring surveys of Kiwi Flat to confirm any aggradation changes over the long-term as recommended in the Sediment Report.

6.7.1.4 Effects Associated with Desander and Desander Flushing

Minor interruptions to sediment transfer continuity, by way of coarse sand collection in the desander will be recovered by regular desander flushing events. Subsequently, there will only be transient impacts on natural sediment transport processes for the wider river system.

Westpower estimates that around 375 tonnes of sediment would be flushed each time the desander is cleared and that desander flushes would be, on average, required approximately 8 times per year. In comparison, a natural high-flow event of the same frequency (i.e. approximately 8 time per year) would carry a sediment load of at least 4,120 tonnes. It follows that, a desander flushing event will produce around 9% of the sediment produced by a natural flood event of the same frequency. Significant transient accumulations of sediment are unlikely to be deposited immediately downstream of the Power Station because there are frequent natural runoff events of an adequate size for desander flushes to occur concurrently with.[170]

If Westpower wishes to operate with more flexibility and flush the desander at lower flows, the Sediment Report recommends that trials are undertaken to confirm any associated effects across a range of flows. Westpower has therefore proposed, through special Approvals conditions, to undertake desander sediment trials.

[170] The Sediment Report author recommends at least 75 m^3/s.

The results of these trials will be presented in a Desander Flushing Trial Report inclusive of confirmed desander flushing event parameters which, in turn, can be incorporated into the SOMP.

In summary, any adverse sediment transport and river morphology effects associated with desander flushing activities will be less than minor.

6.7.1.5 Potential Bank Erosion Opposite the Power Station

The Sediment Report identifies that erosion of the Waitaha Riverbank, opposite to the Power Station, could potentially occur because of either or both of the following two mechanisms:

- Due to concentration of Waitaha River flows caused by the flood protection wall[171] proposed as part of the Power Station Site; and
- Due to the discharge plume from the bypass valve following a Power Station trip event.

Regarding potential erosion due to river flow concentrations, hydraulic modelling of the Waitaha River's mean annual flood discharge shows that all the flow would be contained by the existing river channel and would not be concentrated by the flood protection wall. Hydraulic effects of the flood protection wall would only occur with floods with recurrence intervals exceeding approximately 2.3 years. However, even during the largest of those events, bank retreat extents would be short and naturally mitigated by self-armouring. Larger floods will naturally cause bank erosion, and the Sediment Report concludes that, in these very large and less frequent events, any exacerbation of erosion caused by the flood protection wall will be slight.

Regarding potential bank erosion caused by the discharge plume from the bypass valve, provided the plume is directed downstream (i.e. not perpendicular to the river channel) it is expected that there will be no bank erosion caused. In this respect, Westpower has proposed a special Approvals condition.

Overall, bank erosion effects will be less than minor.

6.8 EFFECTS ON VEGETATION

Effects on vegetation are assessed by TACCRA Ltd and set out in the Vegetation Report.

[171] Refer to structure labelled "West Retaining Wall" in Figure **9.**

6.8.1 Effects on Vegetation During Construction

Almost all adverse effects on vegetation will occur during the construction phase of the project. These include:

> The permanent loss of approximately 4.46 ha of indigenous vegetation associated with clearance for the Scheme's permanent footprint and associated edge effects;

> The temporary loss of approximately 2.23 ha of indigenous vegetation for Scheme construction activities which will be rehabilitated in accordance with the Vegetation Management and the Landscape Management Plans provided with this application; and

> Potential weed incursion during the construction phase.

While recognising the initiatives already built into the Project's design, and in particular, its optimised layout and footprint, including locating Area 2 infrastructure in areas containing the less mature, regenerating vegetation, the effects on indigenous vegetation during construction will also be mitigated through the following other measures:

> Avoiding or minimising damage to large (60+ cm dbh) hardwood trees and podocarp trees (30+ cm dbh) during all vegetation clearance (particularly the clearance required to construct the access road between the Power Station Site and Macgregor Creek);

> Checking large trees to see if branch trimming is practicable, while ensuring enough clearance for transmission lines and aerial equipment delivery;

> Conducting or facilitating natural regeneration rehabilitation techniques across disturbed areas outside the Scheme's permanent footprint;

> Ensuring earthmoving machinery is thoroughly washed down before entering the Scheme;

> Undertaking weed monitoring and control; and

> Implementing the Vegetation Management Plan provided in **Appendix 35** that addresses vegetation removal protocols, revegetation and rehabilitation procedures and plans, and associated planting, weed monitoring and reporting for the construction phase.

The net loss of indigenous vegetation associated with construction activities is also inherently mitigated by the fact that the site is surrounded by a vast area of high value vegetation that will remain intact and unaffected. The area of vegetation permanently lost is miniscule when considered against the existing environment.

Westpower's proffered Approvals conditions also include maximum vegetation clearance and permanent Scheme footprint area limits that are consistent with the proposed Scheme design.

This ensures there is no effects "creep" during construction. A special condition is also proffered requiring the implementation of the Vegetation Management Plan which includes comprehensive rehabilitation and weed monitoring and control plans.

Overall, the Vegetation Report concludes that, implementing the mitigation initiatives proposed, and because of the small total clearance footprint compared to the large contiguous area of vegetation surrounding the site, any adverse effects on indigenous vegetation within Areas 1, 2, and 4, will be no more than minor, and effects will be inconsequential in Area 3. Accordingly, no further mitigation or offsetting is required.

6.8.2 Effects on Vegetation During Operation

Following the construction of the Scheme, potential adverse effects on terrestrial vegetation are limited to:

> The possibility of weed incursion; and

> Maintenance trimming to maintain safe clearances from transmission lines, buildings and accessways.

Westpower proposes to manage these operational effects in the following ways:

> Avoiding or minimising damage to large (60+ cm dbh) hardwood trees and podocarp trees (30+ cm dbh) during all vegetation clearance;

> Implementation of robust weed monitoring and management activities that form part of the Vegetation Management Plan; and

> The implementation of tree trimming protocols and procedures as part of a Site Operations and Maintenance Plan.

Westpower has suggested appropriate conditions of consent that ensure the above measures will be undertaken.

Once the Scheme is operational, it is considered that any adverse effects on indigenous vegetation will be less than minor.

6.9 EFFECTS ON BATS

Effects on bats are assessed by Rhys Buckingham (T/A Wildlife Surveys) and set out in the Terrestrial Fauna Report.

6.9.1 Effects on Bats During Construction

Identified adverse effects on bats during the Project's construction include:

> Potential harm or death during vegetation clearance or from construction traffic road strike;

> Loss of roosting and breeding habitat;

> Potential adverse effects associated with construction noise that could impact breeding, roosting, commuting or foraging activities;

> Potential adverse construction lighting effects on roosting, commuting or foraging activities;

> Potential disruptions of natural commuting routes; and

> Incursion of pests and predators.

While recognising the initiatives already built into the Project's design, and in particular, its optimised layout and footprint, effects on bats during construction will also be mitigated through the following other measures:

> Where practicable, avoiding or minimising damage to large (60+ cm dbh) hardwood trees and podocarp trees (30+ cm dbh) and other trees ≥15 cm dbh that show bat roost characteristics;

> Conducting or facilitating a mixture of remedial planting and natural regeneration across disturbed areas outside the Scheme's permanent footprint;

> Implementing construction activity protocols in the CEMP requiring maximum construction traffic speed limit of 50km/h, and where practicable, minimising traffic movements, helicopter usage, open-air blasting and Headworks construction activities (including the use of night-time lighting) between sunset and sunrise – especially between from October to April when bats are most active;

> Minimising access road and transmission line sizes to reduce vegetation removal, with further measures to limit vegetation clearance during breeding season between December and January;

> Where night-time lighting is needed, ensuring this is non-UV lighting and is set-up to minimise lateral light spill;

> At Construction Staging Areas 1 and 3, using blinds or curtains on any building windows at night;

> Ensuring all food and rubbish is collected and removed from the site promptly to minimise the risk of pest incursions; and

- Implementing the BMP provided in **Appendix 37**, which materially adopts DOC's *Protocols for minimising the risk of felling occupied bat roosts* (DOC's Bat Protocols) and covers all relevant bat management methods (including those listed above) and reporting.

In summary, the Terrestrial Fauna Report concludes that, provided practicable mitigation measures are implemented during the Project's construction, adverse effects on bats will be less than minor and that the implementation of the BMP, including DOC's Bat Protocols, will ensure this is achieved. The Approvals conditions proffered by Westpower align with this management outcome and, any adverse effects on bats during the construction phase will be less than minor. Furthermore, it is considered that, by following these effects management methods the Scheme's construction will not cause any bat mortality and any adverse effects at a population level are extremely unlikely.

Under normal circumstances, less than minor construction effects would not require any additional offsetting or compensation, however, to acknowledge the potential for small residual effects, and in addition to the design and construction measures proposed by Westpower to avoid effects on bats, following the Commencement of Construction, they also propose to make ten annual compensation payments of $15,000 as a contribution to an ecosystem programme designed to support the West Coast region's conservation/biodiversity. The ecosystem programme receiving this funding will be confirmed following consultation with DOC. A specific Approvals condition is suggested to this effect.

6.9.2 Effects on Bats During Operation

Adverse effects on bats during the Scheme's operation include:

- Potential harm or death from roadkill;
- Operational noise affecting breeding, roosting, commuting or foraging activities;
- Lighting effects on roosting, commuting or foraging activities; and
- Incursion of pests and predators.

Overall, the Terrestrial Fauna Report recommends the following operational requirements to manage operational effects on bats;

- No use of ultra-violet lighting and outdoor lights to be reflected downwards (or designed to reduce scatter) and only used when required;
- Impose speed limits on the access road of no more than 50km/hr; and
- Where practicable, minimise vehicle use between sunset and sunrise, particularly above Morgan Gorge and other riparian areas.

These operational measures will be set out in the proposed Site Operations and Maintenance Plan, as proposed within the suggested Approvals conditions.

Overall, the Terrestrial Fauna Report confirms that, provided these operational requirements are followed, any adverse operational effect on bats will be no more than negligible.

The Terrestrial Fauna Report also identifies positive effects for bats from additional forest corridors and new foraging opportunities and commuting routes created by the new access road and transmission lines to the Power Station.

Additionally, following the ten annual payments of $15,000 towards an ecosystem programme for bats (alongside ten annual payments of $35,000 payment to support whio in the region), Westpower propose to continue funding an ecosystem programme(s) in the West Coast region or locally in the Waitaha Valley (by annual payment of $35,000) for the remainder of the duration of the consents. This will likely result in positive effects on biodiversity more generally and may in turn support bats. This ongoing contribution also responds to a small ongoing disturbance to whio during operation of the Scheme. The ecosystem programme(s) receiving this longer-term funding will be confirmed following consultation with DOC. Again, a specific Approvals condition is suggested to this effect.

6.10 EFFECTS ON AVIFAUNA

Effects on indigenous avifauna are also assessed by Rhys Buckingham (T/A Wildlife Surveys) in the Terrestrial Fauna Report, while Fred Overmars separately assesses effects on Whio (Blue Duck) in the Whio Report.

6.10.1 Effects on Avifauna During Construction

The adverse effects identified on indigenous birds during the Project's construction include:

- In relation to 'Threatened' and 'At Risk' birds and weka:
  - Harm or death during vegetation clearance or from road strike;
  - Loss of roosting and breeding habitat;
  - Loss or modification of habitat affecting food resource;
  - Noise, lighting, or other disturbance affecting breeding, roosting or foraging activities;
  - Incursion of pests and predators;
  - Strikes to windows and other hard obstacles; and
- In relation to whio:

- Potential for one breeding pair at Kiwi Flat to relocate out of the Waitaha Valley due to noise from blasting, helicopter use, human presence and use of machinery during Headworks construction activities;
- Potential loss of whio roost sites at Kiwi Flat due to bed disturbances during construction;
- Impacts on whio in the vicinity of the Power Station Site due to noise from blasting, helicopter use, human presence and use of machinery during construction activities;
- Potential relocation of whio pair from the McLean Farm pond due to construction traffic;
- General disturbance of whio and minor loss of habitat because of construction activities in the vicinity of the Stable Trib and stream crossing structures;
- Disturbance of whio from helicopters during transmission line construction;
- Disturbance of whio associated with interactions with construction team staff.

The Terrestrial Fauna Report confirms that the greatest potential effects on avifauna will be along the access road/transmission line route between Macgregor Creek and the Power Station (Area 2). This is where the most forest clearance will occur, and as such, removes bird habitat and has the potential for incidental loss of individuals. The forest area affected is largely regenerating forest found to have lower indigenous species diversity compared to Area 1 above Morgan Gorge. The Scheme has a very small footprint within Area 1 which abuts habitats considered the most important for indigenous birds.

While recognising the initiatives already built into the Project's design, and in particular, its optimised layout and footprint to avoid increased effects on terrestrial fauna by minimising the size of the access road and transmission line corridor and associated vegetation clearance, the identified effects on avifauna during construction will be mitigated through the following additional measures as recommended in the Terrestrial Fauna and Whio Reports:

- In relation to 'Threatened' and 'At Risk' birds and weka:
  - Where practicable, avoiding or minimising damage to large hardwood trees (60+ cm dbh) and podocarp trees (30+ cm dbh) important for kea, kākā, kākāriki, and falcon;
  - Where practicable, minimising vegetation clearance during the main breeding season (November to December) and in any event, undertaking bird nest surveys/checks in Construction Staging Area 1 (at the Headworks) in trees ≥30 cm dbh and implementing appropriate protocols prior to, during and following vegetation clearance;

- To compensate for potential residual less than minor effects from vegetation clearance on birds of conservation importance, contributing $10,000 to an ecosystem programme to support regional biodiversity per year of active vegetation clearance;
- Managing gravel extraction during peak nesting season between July and February, or inspection for nesting behaviour immediately prior to works and maintaining a setback of no less than 75m from any occupied nests;
- Conducting or facilitating a mixture of remedial planting and natural regeneration across disturbed areas outside the Scheme's permanent footprint;
- Implementing construction activity protocols in the CEMP requiring maximum construction traffic speed limit of 50km/h, reducing speeds along the road upstream of Macgregor Creek, ensuring passing vehicles are appropriately distanced and where practicable, minimising traffic movements between sunset and sunrise;
- Using non-UV construction lighting; and
- Ensuring all food and rubbish is collected and removed from the site promptly to minimise the risk of pest incursions.

- In relation to whio:
  - Implementation of special construction protocols to ensure the following:
    - Where practicable, ensure whio are 400m away (but at least 100m) from above-ground blasting areas at the Headworks prior to blasting, and at least 50m away from the Granite Creek bridge prior to any piling activities;
    - Where practicable, avoid geophysical surveying during the breeding season (between September and December);
    - Where practicable, whio are at least 50m away from the surrounding site before undertaking helicopter access;
    - Locate the helipad at Construction Staging Area 1 as far down-valley as practicable;
    - Helicopters avoid flying up-valley of Construction Staging Area 1,
    - Where practicable, on helicopter flight paths following the Waitaha River, follow a flight path on the true right side of the river and no closer than necessary towards river habitats (particularly Anson Stream if in the breeding season);
    - If practicable, combine the helicopter access for the drilling and geophysical surveying work;

- That, as far as practicable, the timing of any Headworks construction activities avoids the whio breeding season (between September and December);
- Setting the perimeter of Construction Staging Area 1 is at least 5 m from the Waitaha River true right bank to retain key characteristics of whio habitat; and
- Construction staff do not feed whio and, other than gently moving whio away from construction activities, do not disturb whio.

> Notwithstanding the methods recommended above to mitigate effects on whio, during construction, there will be some practical construction constraints on meeting all recommendations. The residual less than minor level of effect is assessed on that basis. However, subsequently, the Whio Report concludes that, the combined effects of construction phase activities occurring at the Headworks, could cause one breeding pair at Kiwi Flat to relocate elsewhere. Westpower proposes to compensate this potential construction effect on whio, by making ten annual compensation payments of $35,000, following the commencement of construction. This will be a contribution to an ecosystem programme designed to support the West Coast region's whio population. The ecosystem programme receiving this funding will be confirmed following consultation with DOC.

> In relation to all indigenous birds:

> Ensuring all food and rubbish is collected and removed from the site promptly to minimise pest incursions;

> Implementing the Avifauna Management Plan (AMP), which covers all relevant management methods set out above and includes all related information on the methodology, scale, locations and timeframes of these management initiatives, including those relating to the proposed contributions to ecosystem programmes to compensate for potential residual impacts on avifauna including whio; and

> Implementing the Construction Noise Management Plan and the Flight Management Plan to minimise noise levels and associated noise impacts on wildlife.

The Terrestrial Fauna Report concludes that, if care is exercised during construction, and more particularly, if the various mitigation measures recommended in the Terrestrial Fauna and Whio Reports, listed above, are adopted, then any adverse effects on birds are considered less than minor for all Areas. Following these effects management methods, any adverse effects, at a population level, are extremely unlikely.

Overall, with proffered relevant Approvals conditions that reflect Westpower's proposed effects management, any residual adverse impacts are less than minor.

6.10.2 Effects on Avifauna During Operation

The adverse effects identified on indigenous birds during the Scheme's operation are set out below:

In relation to 'Threatened' and 'At Risk' birds and weka:

- Harm or death from road strike;
- Noise, lighting, or other disturbance affecting breeding, roosting or foraging activities;
- Effects on downstream riverine bird species due to changes in downstream sedimentation and flow regime;
- Electrocution along transmission line route;
- Incursion of pests and predators;
- Strikes to windows and other hard obstacles.

In relation to whio:

- Potential trout access to Kiwi Flat resulting in competition of food with whio;
- Potential positive effects associated with lower flow velocities enabling whio ducklings located downstream of Morgan Gorge to swim upstream to Kiwi Flat;
- Risk of whio entrainment in intake;
- Potential whio hearing damage, due to noise emissions at the Headworks associated with audible siren following station trips and from helicopter use during Headworks maintenance activities;
- Disturbance of whio through human presence and use of machinery during Headworks maintenance activities; and
- Disturbance of whio from sudden increase in flow to Morgan Gorge following station trip.

Westpower proposes to manage these operational effects on birds in the following ways:

- Managing disturbance of water flows and quality when extracting bed material from the Waitaha River as part of Scheme maintenance activities;
- Using non-UV lighting;
- Not having any artificial lighting along access roads;
- Ensuring all food and rubbish is collected and removed from the site promptly to minimise pest incursions and discourage kea and weka from areas containing predator bait stations;

- Adoption of a sluice gate and desander flush facilities to minimise changes to existing sediment transport regime and adoption of run-of-river operations, including a bypass valve, to minimise impacts on riverine bird species downstream of the Scheme;
- Adopt transmission pole design and horizontal conductor spacing to reduce risk of bird electrocution; and
- Marking power lines and windows to reduce obstacle strikes.

In relation to whio:

- Implementing special operation and maintenance protocols to ensure the following:
  - Where practicable, timing Headworks and upstream channel maintenance activities and any associated helicopter use for maintenance purposes outside the breeding season (September–December);
  - Whio are gently moved at least 50m away from any physical maintenance works undertaken at the Headworks or in Kiwi Flat involving noisy machinery or helicopters;
  - Locate the siren so that sound levels at the river do not exceed 74-80 dB;
  - Site staff do not feed whio and do not disturb whio (other than gently shepherding whio away from areas of noisy maintenance activities at the Headworks) and report any dead whio;
  - Requesting permission to install signage and requesting that DOC update its website to inform the public to report any dead whio from powerline events and display Waitaha as a not permitted area for dog access;
  - Weir design to provide for whio duckling and kōaro passage (if practicable to provide both, and with kōaro being the priority) while excluding salmonids passage; and
  - Ensuring the design of the intake is such that it is always fully submerged below the water surface.

For all indigenous birds:

- Ensuring the design, operation and sound power levels of all public warning sirens avoid permanent hearing loss as advised by an appropriately qualified and experienced ecologist.

The Terrestrial Fauna and Whio Reports also confirm that, provided their respective sets of recommendations are adopted, any adverse operational phase effects will be less than minor. There are some potentially positive effects for whio that may result if the weir design can provide for both kōaro and whio duckling passage, and increased whio feeding habitat is

predicted at the abstraction reach due to lower abstraction flows.[172] With proffered relevant Approvals conditions that reflect Westpower's proposed effects management, adverse effects on birds during the Scheme's operation will also be less than minor.

Notwithstanding this low level of residual effect, following the 10 annual payments towards an ecosystem programme for whio, Westpower also propose to make annual compensation payments of $35,000 for the remainder of the consents, as an ongoing contribution to an ecosystem programme. The programme will be designed to support the biodiversity/conservation of the West Coast region and/or the Waitaha Valley. The ecosystem programme(s) receiving this longer-term funding will be confirmed following consultation with DOC. This will likely result in positive effects on whio and other indigenous bird species and biodiversity more generally (including lizards as discussed below). Again, a specific Approvals condition is suggested to this effect.

6.11 EFFECTS ON POWELLIPHANTA LAND SNAILS

Although powelliphanta land snails have not been recorded in the Waitaha Valley, for completeness, the potential for adverse effects on powelliphanta has been addressed by Rhys Buckingham (T/A Wildlife Surveys) and briefly discussed in the Terrestrial Fauna Report. In summary, any risks to this species is nil because there have been no records of powelliphanta land snails, nor any individuals or signs of individuals found within the site during a number of focussed surveys.

6.12 EFFECTS ON LIZARDS

Effects on lizards have been assessed by RMA Ecology and set out in the Lizard Report.

As noted above in section 5.20 of this document, lizards are expected to exist within the site despite there being no signs of them found during three separate field surveys.

The area of potential lizard habitat loss is relatively small (i.e. 4.46 ha of permanent loss), especially when compared to the vast area of similar habitat available locally. Accordingly, this is a 'very low' level of lizard habitat loss. Given this, when considered alongside its moderate / significant value and the high values of lizard species that may be present within it, overall, any adverse effects on lizard species associated with the proposal are less than minor.

Notwithstanding this assessment, a precautionary approach to lizard effects management will be adopted by Westpower to minimise the risk of injury or death to native lizards during

[172] Whio Report, Table 2.

the construction phase. Westpower proposes to undertake the following effects management initiatives;

> Pre-clearance salvage within Power Station Site, Headworks, access road and transmission line corridor through to Macgregor Creek, and works around the Doughboy to include manual day-time search,

> Keep cut vegetation on site as far as possible – move into adjoining areas or store for post-works rehabilitation;

> Rehabilitating temporary clearance areas to ensure that trees, shrubs, rocklands and grasslands are re-established, with indigenous planting proposed for the Power Station site; and

> Where practicable leave felled shrubland and large logs as rough-cut sections to one side of the clearance area for the duration of the construction works, so that any lizards within can escape to adjoining vegetation outside of the footprint.

These effects management initiatives are set out in the Lizard Management Plan ("**LizMP**") provided in **Appendix 38** and the Vegetation Management Plan provided in **Appendix 35**. Westpower proposes to implement both these management plans at the site and has proffered relevant and appropriate approvals conditions to this effect.

Overall, adverse construction and operational related effects on lizards are less then minor and the implementation of the LizMP during construction will ensure any residual risk of lizard harm or death will be extremely low. The Lizard Report also recognises that lizards will benefit from the contributions to ecosystem programme(s) otherwise proposed by Westpower to compensate for residual less than minor effects on bats and threatened/at risk birds, and whio creating a positive effect for lizards.

6.13 EFFECTS ON TERRESTRIAL INVERTEBRATES

Effects on Terrestrial Invertebrates are assessed and presented in the Terrestrial Invertebrates Report.

6.13.1 Effects on Terrestrial Invertebrates During Construction

The Terrestrial Invertebrates Report identifies the following adverse effects during construction:

> Death of insects during vegetation clearance;

> Loss of habitat and related edge effects and habitat fragmentation associated with vegetation clearance; and

- Night-time construction lighting causing behavioural changes and potentially preventing reproduction of species with short-lived adult flight periods, and death.

Mitigation initiatives recommended in the Terrestrial Invertebrates Report, and proposed by Westpower, to address construction related effects Terrestrial Invertebrates include:

- Conducting or facilitating a mixture of remedial planting and natural regeneration across disturbed areas outside the Scheme's permanent footprint;
- Undertaking weed control and monitoring during the construction phase;
- Implementing the Vegetation Management Plan that confirms site rehabilitation, monitoring and reporting requirements;
- Avoiding, as far as practicable, the use of light sources that emit blue/uv wavelengths and minimising light sources during any night-time construction; and
- Ensuring all food and rubbish is collected and removed from the site promptly to minimise pest incursions (e.g. wasps and rodents).

The Terrestrial Invertebrates Report concludes that without any additional mitigation, effects will be no more than minor and with proposed mitigation, these impacts reduce to less than minor.

With Westpower's adoption of the Terrestrial Invertebrates Report's mitigation initiatives, including the restoration activities set out in the Vegetation Management Plan, and inclusion in the suggested Approvals conditions, any adverse effects on terrestrial invertebrates during construction will be less than minor.

6.13.2 Effects on Terrestrial Invertebrates During Operation

The Terrestrial Invertebrates Report also identifies the following adverse effects during the Scheme's operation:

- Loss of habitat and related edge effects and habitat fragmentation associated with vegetation clearance;
- Night-time lighting causing behavioural changes, preventing reproduction of species with short-lived adult flight periods, and death;
- Invasive weed species;
- Change to sedimentation regime in riparian river habitats.

Mitigation initiatives recommended in the Terrestrial Invertebrates Report, and proposed by Westpower, to address effects on Terrestrial Invertebrates during Scheme operations include:

- Undertake ongoing weed control and monitoring;
- Ensuring all food and rubbish is collected and removed from the site promptly to minimise pest incursions;
- As far as practicable, avoiding use of light sources that emit blue/uv wavelengths and minimising light sources during any night-time activities;
- Adoption of a sluice gate and desander flush facilities to minimise changes to existing sediment transport regime and adoption of run-of-river operations including a bypass valve to minimises impacts on downstream riverine habitats.

With the recommendations proposed by Westpower and inclusion in the Approvals conditions, any operational impacts on terrestrial invertebrates will be less than minor.

6.14 EFFECTS FROM CONSTRUCTION PHASE SURFACE WATER TAKES

As highlighted in Section 3 of this report, to construct the Scheme, a reliable source of up to 20 litres per second of fresh water is required for a combination of activities including; tunnel drilling, concrete batching, dust suppression and other ancillary activities associated with all Construction Staging Areas. Accordingly, Westpower proposes to abstract water from the Waitaha River and from tunnel seepage for these uses.

The potential water management related effects associated with surface water abstraction activities in this case are limited to:

- Potential over-allocation of the freshwater resource and consequential ecological effects; and
- Potential effects on downstream users;

As noted in Table 10 of the Hydrology Report, the 7-day Mean Annual Low Flow ("**MALF 7 day**") of the Waitaha River, as derived from data collected at the State Highway 6 Bridge monitoring station, is 9.7 cubic metres per second. The proposed combined rate of take of 20 litres per second, albeit located upstream of the State Highway 6 Bridge monitoring station, represents approximately 0.2% of MALF 7 day. This is considered an inconsequential proportion of the MALF 7 day and accordingly any adverse effects of the proposed take on available water allocation is also considered inconsequential. On this basis, it is also considered that the proposed take will not cause any consequential adverse impact on in-stream ecological values or downstream water users.

To ensure these potential effects are appropriately managed, Westpower proposes to monitor each take and ensure the combined maximum rate of take will not exceed 20 litres per second. Specific conditions of consent are also proposed by Westpower to this effect.

Overall, any adverse water management related effects from the proposed surface water takes during construction are less than minor.

6.15 EFFECTS ON AQUATIC ECOLOGY

Effects on freshwater aquatic ecology are assessed and presented in the Freshwater Ecology Report prepared by EOS Ecology. The assessment canvasses actual and potential effects on habitat, freshwater plants (including periphyton/algae, bryophytes and macrophytes), macroinvertebrates and fish.

It is important to highlight at the outset the following aspects incorporated into the Scheme's design that result in the avoidance of adverse effects on aquatic ecology:

> The avoidance of all mapped natural inland wetlands, particularly in respect of the design of the Power Station Site access road; and

> The avoidance of any works occurring within the Stable Trib - a high value waterway from an aquatic ecology perspective.

6.15.1 Effects on Aquatic Ecology During Construction

By avoiding areas of high aquatic ecology value, adverse effects on aquatic ecology during the construction phase of the Project are limited to the following:

> Consequential impacts associated with adverse effects on water quality (addressed separately above in section 6.5);

> Potential temporary difficulties experienced by fish attempting to pass Streamwork sites (up and downstream);

> Mortality of biota at Streamwork sites directly affecting river or stream bed areas and at river gravel extraction areas; and

> Potential entrainment of fish associated with construction-phase surface water takes.

These effects will be inherently mitigated by the temporary nature of Stream Works, river gravel extraction and water take activities and by the relatively limited spatial extent of sites where these activities will occur. Impacts will be mitigated further through the implementation of the CEMP, ESCPs and the Freshwater Ecology Management Plan which collectively include several construction methodologies and protocols to minimise impacts on aquatic ecology, including:

> All the mitigation initiatives listed above in section 6.5 designed to protect water quality during the construction phase;

- Specific design aspects and methodologies set out in the DRAFT ESCP to ensure construction of the Headworks and diversion weir can occur safely while simultaneously maintaining Waitaha River and existing fish passage conditions at this location – where only kōaro can access Kiwi Flat. Although the final details of this methodology will require confirmation with the Project construction contractor, the proposed approach involves the creation of an in-channel diversion structure that splits the flow immediately upstream of Morgan Gorge. This enables Stream Works to be undertaken on either the true right or the true left side of the river while flow is maintained past the work site (albeit through a narrower water channel);
- Ensuring the design for all culverts or culverted ford structures is informed by the New Zealand Fish Passage Guidelines;
- Implement plans for the weir, box culverts and the "Drift Deck" for the Macgregor Creek crossing in accordance with the NES-F and, for all culverts, ensure their design is in accordance with relevant NES-F permitted fish-passage activity requirements;
- Ensuring methods for fish capture and relocation occurs within flowing stream or riverbeds (e.g. culvert sites) prior to associated Steamworks; and
- Ensuring all riverbed gravel extraction activities adhere to specific setbacks and maximum excavation depths, thereby avoiding disturbance and/or entrainment of sediment in the river water column; and
- In respect of potential fish entrainment into surface water intake structures used for construction requirements, Westpower proposes to install appropriately designed intake screens on all water intake structures to minimise this risk and to ensure that, as far as practicable, eels, fish and fry are prevented from passing through the intake or being trapped against the screen.

All these mitigation initiatives are captured within Westpower's suggested Approvals conditions. Consequently, and consistent with the conclusions set out in the Freshwater Ecology Report, any adverse effects on aquatic ecology during the construction phase will be less than minor.

6.15.2 Effects on Aquatic Ecology During Operation

Adverse effects on aquatic ecology resulting from the Scheme's operation include:

- Reduction in habitat and potential periphyton growth within the abstraction reach due to lower flows through Morgan Gorge;
- Altered in-stream habitat due to changes in sediment dynamics within the abstraction reach and downstream of the tailrace;

- Fish stranding during planned and unplanned (i.e. emergency shut-down) flow changes;
- Potential for weir intake structure to change existing fish passage conditions in this location – where only kōaro can access Kiwi Flat;
- Kōaro entrainment and mortality and kōaro larvae entrainment through the intake and Power Station turbines;
- Fish attraction to the tailrace;
- Effects on aquatic ecology and habitat from in-stream maintenance works upstream of the Headworks;
- Night-time lighting causing behavioural changes to night-flying freshwater insects.

As recommended in the Freshwater Ecology Report, the following measures are proposed by Westpower to mitigate these operational aquatic ecology effects;

- To appropriately mitigate adverse in-stream ecological effects within the abstraction reach, Westpower will maintain no less than 3.5 cumecs of flow through this river section at all times, as per the IFIM calculated by Allen & Hay, 2013 (refer **Appendix 26**). The IFIM modelling undertaken for a 3.5 cumecs residual flow predicts the following:
  - In relation to periphyton, a large increase (174%) in short filamentous algae, an increase in long filamentous algae (127%) and a decrease (28% useable habitat) in diatoms within the abstraction. However, these predicted changes are unlikely to occur in this case due to the very low nutrient status and high disturbance regime of the Waitaha River. For this reason, any adverse effects are considered no more than minor. Notwithstanding, as recommended in the Freshwater Ecology Report, any build-up of filamentous algae within the abstraction reach (e.g. during prolonged periods of no natural flushes) will be monitored by Westpower concurrently with their sediment build-up monitoring (as per the Morgan Gorge Flushing Management Plan[173]) and if algae build-up is excessive, additional flushes will be induced to remove it. This process is documented in more detail within the Freshwater Ecology Management Plan. It is considered this management approach will reduce any residual adverse effect to less than minor;
  - In relation to macroinvertebrates, variable effects will be observed ranging from decreases to increases in habitat availability depending on the particular Habitat Suitability Curve used. However, again, any predicted changes will most likely be

[173] Referenced above in respect of Water Quality Effects and discussed in more detail later in respect of Sediment Transport and River Morphology Effects

overridden by the Waitaha River's very low nutrient and high disturbance regime which will not change under the Scheme's operation;

- Regarding fish, habitat availability for adult brown trout would be greatly reduced during dry and typical flow months and habitat for native fish found in the abstraction reach would generally increase, apart from longfin eel, which is predicted to decrease slightly. However, noting that the abstraction reach is already sub-optimal for trout, longfin eels, and kōaro, and due to the low food supply and high disturbance regime of the river, it is unlikely that these predicted changes would eventuate under the Scheme's operation.

- Final weir and intake design to incorporate advice from a suitably qualified and experienced freshwater ecologist and provide for kōaro passage through a wetted surface (or similar) while preventing passage of other fish (see indicative kōaro passage design in **Figure 71**);

- Use ramping procedures for controlled start-ups and shut-downs to minimise risk of fish displacement or stranding. More specifically, Westpower proposes a range of ramp-up and ramp-down rates for discharges to the tailrace depending on ambient river flows, however, for the majority of river conditions, this will be no more than 0.5 m^3 per minute. These rates are also linked to specific adaptive management and review mechanisms within the suggested Approvals conditions, subject to field monitoring of fish during real operational conditions. These measures will ensure potential fish displacement or stranding effects associated with operational station start-ups and shut-downs will be no more than minor;

- Include a Power Station bypass valve to minimise the rate of flow reduction downstream of the tailrace following station trip events and minimise risk of downstream fish stranding. It is also noted that additional mitigation of these effects is provided by the likely rarity of emergency shut-down events given these are predicted to occur no more than four times per year (based on operational data collected from the nearby Amethyst Scheme). Also, because trip events are normally associated with stormy conditions, potential stranding effects will be suppressed by the likely high natural river flows occurring at the time of the trip (i.e. the flow change, as a proportion of ambient flow, will be low);

- To address potential adverse aquatic ecology effects associated with potential sediment build-up in the abstraction reach, Westpower will undertake Morgan Gorge flushing trials and prepare and implement the Morgan Gorge Flushing Management Plan (refer water quality management methods and periphyton flushing previously discussed above);

- For the weir and all culverts and fords, these will be operated and maintained in accordance with relevant NES-F requirements.
- Maintain and implement the Freshwater Ecology Management Plan that includes:
  - Monitoring plans, triggers and adaptive management methods to address the potential periphyton growth build-up in the abstraction reach;
  - Monitoring plans for kōaro recruitment into Kiwi Flat, following a Before-After-Control-Impact (BACI) design, and provide for adaptations to the design of the weir's kōaro passage if needed;
  - Processes to ensure all stream culverts and culverted fords are inspected after significant floods to identify potential scouring that may impede fish access and to remove any obstructions; and
  - Design guidance for the weir, intake and tailrace to minimise adverse effects on fish; and
  - As far as practicable, avoiding use of light sources that emit blue/uv wavelengths and minimising light sources during any night-time activities.

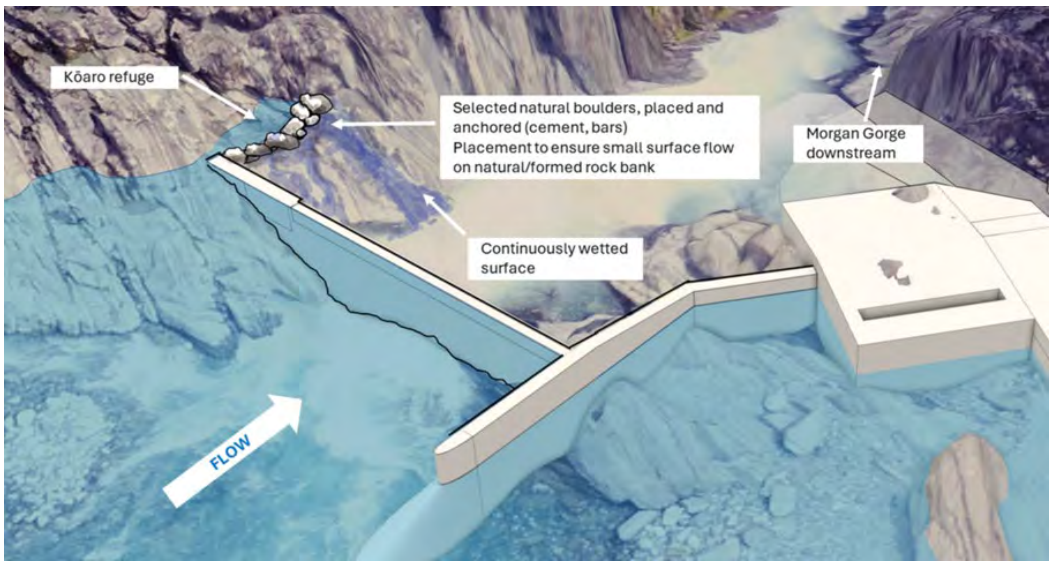

Figure 71: Indicative weir design showing possible kōaro pass location and design concept

All of the above mitigation measures are captured within Westpower's suggested Approvals conditions.

While considering the range of effects management measures recommended in the Freshwater Ecology Report, proposed by Westpower and confirmed within their suggested

Approvals conditions, any adverse effects on freshwater ecology will be no more than minor once the Scheme is operational.

6.16 TRAFFIC EFFECTS

Traffic impacts associated with the Project's construction and operation are addressed in the Transportation Report prepared by Melvin Sutherland.

6.16.1 Construction Traffic

During the construction phase, increased road traffic will be particularly noticeable for local residents along Waitaha Road. This increase in traffic generation, including increases in heavy truck movements, has the potential to result in undesirable adverse effects on road user safety and roadway and pavement integrity and to cause general community nuisance.

Notably, the Traffic Report estimates total vehicle movements along the northern and southern halves of Waitaha Road will be increased by Scheme construction activities by up to 108% and 427% respectively. In addition, it estimates total movements of heavy vehicles along the northern and southern halves of Waitaha Road will increase up to 276% and 1091% respectively.

With respect to these predicted percentage increases in Waitaha Road traffic, it should be noted that, because the properties serviced by this road are rural properties, with correspondingly low numbers of dwellings, and because it is also a no-exit road, the existing Waitaha Road traffic is currently quite low, particularly at its southern end. This means that any increased traffic generation translates to much larger percentage numbers that would otherwise be the case for other through roads, or other roads located in more built-up areas. Notwithstanding, construction of the Waitaha Hydro Scheme will result in a significant increase to the existing level of traffic along Waitaha Road.

Overall, and largely because of the increased traffic generation, the Traffic Report identifies the following key construction traffic related effects:

- Increased intensity of use of the SH6 / Waitaha Rd intersection and associated traffic safety matters at this location;
- Construction traffic congestion on Waitaha Road and related safety concerns associated with a current lack of 2-way passing opportunities on this road;
- General nuisance and road safety impacts on Waitaha Road residents associated with increased vehicle movements; and
- Wear and tear of the pavement surface on Waitaha Road associated with its increased use.

As noted earlier in Section 3 of this report, the carriageway width of Waitaha Road is relatively narrow, meaning there are very few two-way passing opportunities for heavy vehicles. To address road safety concerns that arise from increased construction traffic and this existing narrow roadway width, the Traffic Report recommends the implementation of sealed passing bays on one side of Waitaha Road to be spaced out approximately every 1.5 kilometres along its total length. The Traffic Report also notes that, potentially, some of these passing bays could be incorporated into existing accessways used by milk tankers and other freight vehicles to minimise the scope of this work. The Traffic Report also recommends these passing pays be designed to NZTA's Diagram D "Special Use Access" standard.

Other measures recommended in the Traffic Report to mitigate identified adverse construction traffic impacts include the following:

- Pre and post construction road surveys to record the visual and roughness condition of the pavement on Waitaha Road and Anderson Road West;
- Ensuring vegetation is kept low, where practicable, to maintain view lines for vehicles entering on to the SH 6 from Waitaha Road and at stock crossings;
- Engaging with WDC to widen the 5.4m section and create passing places along Waitaha Road and Anderson Road West;
- Establishing a two-way communications system for trucks to communicate on the single-lane Waitaha Road;
- Negotiating an agreement for Westpower to contribute to increased maintenance of the road during construction and/or a post construction restoration treatment of the road;
- Providing a concept design plan for an improved road layout for Anderson Road;
- The installation of appropriate roadside signage warning other road users of construction traffic, livestock and truck crossings, particularly at the Waitaha Road / SH6 intersection, and warning construction traffic of potential stock on Waitaha Road; and
- The implementation of a Construction Traffic Management Plan that incorporates the mitigation measures mentioned above and includes the following other measures to minimise road safety risks and address any local community concerns:
    - Heavy and oversize load management including timing of movements to avoid, where practicable, school bus times, milk tanker runs, other peck farming activities and any other times where Waitaha Road traffic is currently highest; and

Westpower supports all the recommendations set out in the Traffic Report and has crafted appropriate conditions to include in any Approvals granted to ensure these initiatives are all carried out.

In addition, because of the consultation undertaken with NZTA, Westpower also proposes to upgrade the roadside seal edge along the left turn entry to Waitaha Road from SH6 and to maintain vegetation adjacent to this intersection to maintain appropriate sight distances for construction traffic entering SH6 from Waitaha Road. Relevant Approvals conditions are suggested to ensure these measures occur.

Overall, with these traffic management methods implemented throughout the Project's construction phase, all transportation related effects over this phase will be managed to the extent they are acceptable.

6.16.2 Operational Traffic

As noted earlier, the first year of operation will likely generate one to two vehicle visits to the site per week then dropping to an average of no more than one per week. Activities associated with major maintenance activities will generate higher traffic volumes, however, these are intermittent and temporary events.

Overall, the anticipated level of additional traffic associated with the operation and maintenance of the Scheme is considered to result in less than minor increases to road safety risks, road user nuisance and road pavement degradation.

It is also noted that the passing bays installed along Waitaha Road for the Scheme's construction will remain in place after the Completion of Construction, becoming local road assets. Accordingly, the safety benefits provided by these passing bays will endure during the Scheme's operation.

6.17 NOISE EFFECTS

6.17.1 Construction Noise

Noise will be generated from several activities during the construction phase of the Scheme. The most notable construction noise sources will be associated with the following activities:

> Site access track construction including gravel extraction and sorting;

> Construction road traffic movements along Waitaha Road and within the Construction Project Site;

> Helicopter movements associated with Scheme construction including the associated transmission lines;

- Blasting; and
- Concrete batching plant operations.

These noise sources have the potential to cause adverse effects on local residents, public visitors to the Waitaha Valley, livestock and wildlife. All but potential wildlife effects are assessed in the Noise Report prepared by Marshall Day. Construction noise effects on local wildlife are assessed separately in the Terrestrial Fauna and Whio Reports and all are summarised below.

Although the proposed construction activities will generate noise, it is important to highlight the following mitigating factors inherent at this construction site and in construction activities more generally:

- The only dwellings exposed to noise from the construction of the access track are those located on the McLean Farm property with whom Westpower has a separate access agreement with;
- The location of the Scheme is such that noise sources during the construction of the Power Station Site will be over two kilometres away from the nearest neighbouring dwelling and noise sources during the construction of the Headworks will be over four kilometres away;
- From an acoustic perspective, the whitewater characteristics of the area result in a relatively high level of ambient noise that will mask construction noise, and consequently, mitigate noise effects on people when in the vicinity of the Waitaha River or its larger flowing tributaries;
- Any audible construction noise for walkers and trampers will be transitory as they move through the area; and
- Noise associated with construction activities is temporary in nature.

6.17.1.1 Construction Noise Mitigation on Local Residents, Public Visitors to the Waitaha Valley and Livestock

The Noise Report recommends the following additional measures be adopted during the construction phase of the Project to mitigate noise effects on local residents, and recreational visitors:

- As far as practicable, heavy vehicles only use Waitaha Road during daytime hours (7am to 10pm Monday to Friday and 8am to 8pm on weekends and public holidays);
- Access road construction activities are limited to between 7:30am and 6pm, where practicable;

- Helicopters should be flown in accordance with noise abatement techniques such as The Helicopter Association International's 'I Fly Neighborly' programme;
- Residents within five kilometres of any blasting work are informed prior to blasting to minimise any potential adverse public reactions to abnormal sounds;
- The walking track be temporarily closed during blasting, such that a 500 metre buffer is maintained between the users of the track and the blasting activity;
- When the Kiwi Flat hut is occupied, construction activities are managed in accordance with NZS 6803:1999 (Construction Noise) such that construction activities occurring at the Headworks and Construction Staging Area 1 comply with the recommended noise limits contained in that Standard;
- Appropriate construction activity buffer distances are maintained to ensure livestock are not exposed to construction noise above acceptable limits; and
- A Construction Noise Management Plan ("**CNMP**") incorporating all the above mitigation measures and other related information on training of operators, contingency plans and noise complaint and reporting procedures, be implemented on site for the duration of the construction phase.

The Noise Report outlines how livestock become habituated to noise, especially when the noise is steady and associated with clearly non-threatening activities. For this reason, it is considered that any livestock in the vicinity of construction activities are unlikely to demonstrate any adverse response to construction noise. Notwithstanding, buffer distances for livestock have been included in the DRAFT CNMP to ensure animals are not exposed to construction noise above acceptable limits.

The key Noise Report findings are that, in light of the inherent mitigating factors associated with the site and the temporary nature of construction, and provided the recommended mitigation measures listed above are implemented, helicopter related noise effects have been assessed as moderate (albeit temporary) for all recreational users of the walking track within the site, while all other construction noise effects are considered to be reasonable.

In addition, the Noise Report confirms that the following construction noise outcomes will also be achieved:

- General construction activities will comply with NZS 6803:1999 (Construction Noise) and District Plan limits for noise emissions in the Rural Zone;
- The use of helicopters will comply with the limits set out in New Zealand Standard NZS 6807:1994 "*Noise Management and Land Use Planning for Helicopter Landing Areas";* and

- Any air overpressure from blasting will comply with the relevant limits set out in Australian Standard AS 2187-2006 *"Explosives – Storage and Use: Use of Explosives"* when measured at any dwelling.

Further to this, relevant and appropriate Approvals conditions suggested by Westpower capture all the above construction noise management recommendations and mitigating measures including relevant maximum noise limits. To this extent, provided Westpower complies with these conditions, it is considered that any construction noise effects on local residents, public visitors to the Waitaha Valley and livestock will be no more than minor and overall acceptable.

6.17.1.2 Construction Noise Effects on Local Wildlife

The Terrestrial Fauna and Whio Reports also identify other potential adverse effects associated with noise emissions from construction activities on breeding, roosting, commuting or foraging activities undertaken by indigenous bats and birds, and in particular, whio.

These effects will be addressed through the various management methods (including the implementation of the CEMP, AMP, BMP and the Helicopter Flight Management Plan) and associated suggested approvals conditions already discussed. Overall, it is considered that these management measures will ensure any adverse construction noise effects on indigenous wildlife will be no more than minor.

6.17.2 Operational Noise

6.17.2.1 Potential Operational Noise on Local Residents

Given the large separation distances the nearest dwellings are from the Scheme, any operational noise will easily comply with both the Operative and Proposed District Plan noise limits.

The only noticeable operational noise associated with the Scheme will be from staff and contractor vehicle movements on the local road network, infrequent helicopter movements associated with Scheme maintenance and occasional short-term operation of emergency sirens.

The Scheme is expected to generate very low levels of operational traffic that is not expected to result in any adverse noise effects. The emergency sirens required by the Scheme will be sufficiently set back from dwellings such that they are unlikely to be audible to local residents. Any use of helicopters for maintenance activities are also expected to be rare and will comply with relevant noise standards.

Based on the above, the operation of the Scheme will result in negligible noise effects at nearby dwellings.

6.17.2.2 Potential Operational Noise on Recreation Users

Once operational, the Scheme will be largely inaudible over river noise. The only noticeable noise to recreational users is on occasions when emergency sirens operate to warn them of unexpected changes in water flow in the event of a Power Station trip.

In the event of a Power Station trip, sirens warning people who may be in the vicinity of the Headworks and the Power Station at the time will, by design, be audible. On the basis that sirens will only be operated during an unplanned Power Station trip event, and therefore, very infrequently (based on operational data obtained at Westpower's Amethyst Scheme) and for a relatively short duration (i.e. for 20 minutes or so), and because the sirens are for a specific public safety purpose, it is expected that recreational visitors within audible range will be accepting of any associated noise.

Overall, provided the noise power level of any siren device is no louder than necessary to alert staff and recreationists in the vicinity of the Headworks and Power Station of sudden changes to water flow when the bypass valve will be operating, and noting the rarity of siren events, any potential noise effects will be minimal for all recreational users visiting the area - including those using the walking tracks.

6.17.2.3 Potential Operational Noise on Wildlife and Stock

Since normal operational noise associated with the Scheme will be largely inaudible over river noise, any adverse effects on wildlife are expected to be inconsequential.

When emergency sirens operate in the event of a Power Station trip, wildlife in the vicinity of the siren may be startled and move away from the noise. Any potential effects are, however, adequately mitigated by the rarity of such events and by ensuring the maximum sound power level from any sirens does not exceed a conservative threshold that is considered potentially permanently harmful to avifauna and, at areas of most risk to whio, avoids any temporary harm.

6.18 LANDSCAPE, NATURAL CHARACTER AND VISUAL EFFECTS

Effects on landscape, natural character and visual amenity are assessed and presented in the Landscape Report prepared by Boffa Miskell.

6.18.1 Assessment Approach

The Landscape Report's assessment adopts the position that a landscape effect is a consequence of a change, or changes, to a landscape's physical attributes on a particular

landscape's values. It is important to note that change is not an effect, but that the implications of change on a landscape's values is what's relevant. Accordingly, the Landscape Report assesses the effects of the Scheme against the existing and potential landscape values summarised earlier in section 5.22. The assessment also separately considers effects associated with key project areas and, where relevant, distinguishes between broad and local scale effects.

Effects have also been determined and presented within the Landscape Report using the seven-point scale from "very low" to "very high", consistent with Te Tangi a te Manu Guidelines. However, to achieve consistency, discussion of effects presented in this report adopts the RMA's equivalent "less than minor" to "significant" effects scale. For clarity, **Figure 72** illustrates how these two effects scale systems relate to each other.

Figure 72: Landscape Report and RMA Effects Assessment Scales

6.18.2 Effects Identified and Assessed

With respect to the Project's construction phase, temporary landscape, natural character and visual effects associated with construction of the following Project components are identified and assessed within the Landscape Report:

- Headworks (Area 1);
- Power Station Site and access road / transmission line south of McLean Farm boundary at Macgregor Creek (Area 2);
- Spoil disposal areas and Construction Staging Area 3 (Area 3);
- Access road / transmission line north of Macgregor Creek (Area 4); and
- Riverbed gravel extraction.

In addition, the following effects associated with the longer-term operation of the Scheme are also identified and assessed;

- Abiotic, biotic and perceived visual effects on natural character associated with reduced flow in the abstraction reach;
- Broad and local scale natural character, landscape and visual effects associated with the Headworks and Power Station Site;

- Local scale natural character, landscape and visual effects associated with the Headworks;
- Local scale natural character, landscape and visual effects associated with the Power Station and access road / transmission line south of Macgregor Creek; and
- Local scale natural character, landscape and visual effects associated with the Spoil Disposal Areas;
- Local scale natural character, landscape and visual effects associated with the access road / transmission line north of Macgregor Creek.
- Local scale natural character, landscape and visual effects associated with gravel extraction from the Waitaha River bed.

The Landscape Report also sets out various management methods recommended to reduce the impacts of individual adverse effects identified.

6.18.3 Summary of Landscape Effect Assessments

In the interest of brevity, the Landscape Report's effects assessment results are summarised in **Table 32** below. This table also helpfully quantifies each effect both before and after the recommended effect management measures are implemented, all of which, Westpower will undertake as confirmed in the set of conditions proposed for any Approvals granted. **Table 32** also includes references to relevant visual simulations, provided in figures further below, to help conceptualise key Scheme components and their visual impacts. To manage the potential landscape and natural character effects associated with the structures required to operate the Scheme, Westpower has incorporated various operational design features that materially reduce the residual level of effect. Those design features are incorporated in the Table below.

Additional technical detail and discussion on the effects assessment is provided in the Landscape Report.

Table 32: Summary of Landscape Effects Assessment

Scheme Phase	Environmental Effects (positive and adverse)	Assessment of effects (unmitigated)	Proposed Effects Management Methods	Residual Effects Post Mitigation
Construction effects	Natural Character (Headworks Site and Power Station and access road to Macgregor Creek) Adverse	Significant but temporary and localised	In accordance with the Project Description, ensure that: > A contained footprint and careful placement of above ground infrastructure. > Careful sedimentation control during all Stream Works. > As much existing vegetation as possible is retained, especially around construction areas. > Transportation movements are limited as much as practicable. > Artificial lighting is limited. > Stockpiling of debris is limited.	More than Minor
	Landscape (Headworks Site and Power Station and access road to Macgregor Creek) Adverse	Significant, but temporary and localised		Intake: More than Minor Power Station: More than Minor
	Visual amenity (Headworks Site and Power Station and access road to Macgregor Creek) Adverse	Significant, but temporary and localised		Minor
	Local Effects – Spoil Disposal Area (for landscape, natural character and visual amenity)	More than Minor	In accordance with the Project Description, ensure that activity is limited to designated areas away from the main viewing road.	Minor
	Local Effects – Access and transmission line north of Macgregor	Low (Minor)	In accordance with the Project Description, ensure that:	Neutral

Scheme Phase	Environmental Effects (positive and adverse)	Assessment of effects (unmitigated)	Proposed Effects Management Methods	Residual Effects Post Mitigation
	Creek (for landscape, natural character and visual amenity)		Vegetation removal is limited; and Design of access road visually appears like an existing farm track.	
	Transmission Corridor upgrade through Waitaha Valley (on landscape and visual amenity)	Minor	> In accordance with the Project Description, ensure that vegetation removal is limited.	Neutral
Operational effects	Abiotic and Biotic Adverse Effects Associated with Reduced River flow (natural character through abstraction reach)	Minor	In accordance with the Project Description, ensure that: > A contained footprint is achieved and careful placement of above ground infrastructure.	Minor
	Perceptual Adverse Effects Associated with Reduced River flow (natural character through abstraction reach)	More than Minor	> Low level weir design is adopted. > Controlled low flows. > Controls to allow native fauna to still utilise river. > Landscape Management Plan is implemented including: Careful placement of river boulders/ rocks at head works and power station to assist integrate structures into natural landscape.	More than Minor

Scheme Phase	Environmental Effects (positive and adverse)	Assessment of effects (unmitigated)	Proposed Effects Management Methods	Residual Effects Post Mitigation
	Broadscale Natural Character (Headworks & Power Station)	Minor	In accordance with the Project Description, ensure that: > A contained footprint is achieved and careful placement of above ground infrastructure occurs; > Controlled low flows; > Low level weir design is adopted including access for native fauna and safe portage for kayakers; > As much existing vegetation as possible is retained; > Limit stockpiling of debris; > Dark colours for buildings are used; > Controlled low flows; > No outdoor lighting is used during operation except for unplanned shutdown requiring night-time staff call out / repairs. > Other mitigations are implemented in the Landscape Management Plan including; > Additional planting around the Power Station site;	Minor

Scheme Phase	Environmental Effects (positive and adverse)	Assessment of effects (unmitigated)	Proposed Effects Management Methods	Residual Effects Post Mitigation
			> Additional landscape treatment to Slope Protection Works at Power Station; and > Careful placement of river boulders/ rocks at headworks and power station to assist integrate structures into natural landscape	
	Broadscale Landscape (Headworks & Power Station)	Minor	In accordance with the Project Description, ensure that: > A contained footprint is achieved and careful placement of above ground infrastructure occurs; > Controlled low flows; > Low level weir design is adopted including access for kayakers and native fauna; > As much existing vegetation as possible is retained; > Limit stockpiling of debris; > Dark colours for buildings are used; > Controlled low flows;	Minor
	Broadscale Visual (Headworks & Power Station)	Minor		Minor

Scheme Phase	Environmental Effects (positive and adverse)	Assessment of effects (unmitigated)	Proposed Effects Management Methods	Residual Effects Post Mitigation
			> No outdoor lighting is used during operation except for unplanned shutdown requiring night-time staff call out / repairs. > Landscape Management Plan is implemented including; > Additional planting around the Power Station site; > Additional landscape treatment to Slope Protection Works at Power Station; > Careful placement of river boulders/ rocks at headworks and power station to assist integrate structures into natural landscape; and > Other landscape mitigation techniques outlined within the Landscape Management Plan.	
	Local Natural Character (Headworks)	More than Minor	In accordance with the Project Description, ensure that:	More than Minor
	Local Landscape (Headworks)	More than Minor)		More than Minor

Scheme Phase	Environmental Effects (positive and adverse)	Assessment of effects (unmitigated)	Proposed Effects Management Methods	Residual Effects Post Mitigation

	Local Visual (Headworks)	More than Minor (near)
		Neutral (distant)
			> A contained footprint is achieved and careful placement of infrastructure above ground;
			> Controlled low flows;
			> Retain as much existing vegetation as possible.
			> Where practicable, encourage a green wall/ use of existing rocks for rock stabilisation.
			> Limit stockpiling of debris.
			> Use dark colours for buildings.
			> Low level weir design is adopted including access for native fauna and safe portage for kayakers;
			> Landscape Management Plan is implemented including:
			  > Additional planting around the Power Station site.
			  > Additional landscape treatment to Slope Protection Works at Power Station.
				More than Minor (near)
				Neutral (distant)
				Refer to **Figure 74** and **Figure 75** for visualisations

	Local Natural Character (Power Station and transmission line/ access road from Power Station to north of Macgregor Creek)	More than Minor		More than Minor

Scheme Phase	Environmental Effects (positive and adverse)	Assessment of effects (unmitigated)	Proposed Effects Management Methods	Residual Effects Post Mitigation
			> Careful placement of river boulders/ rocks at head works and power station to assist integrate structures into natural landscape. > Other landscape mitigation techniques outlined within the Landscape Management Plan.	
	Local Landscape (Power Station and transmission line/ access road from Power Station to north of Macgregor Creek)	More than Minor	In accordance with the Project Description, ensure that: > A contained footprint and careful placement of infrastructure above ground. > Retain as much existing vegetation as possible. > Where practicable, encourage a green wall/ use of existing rocks for rock stabilisation. > Limit stockpiling of debris. > Use dark colours for buildings. > Landscape Management Plan is implemented including:	More than Minor
	Local Visual (Power Station and transmission line/ access road from Power Station to north of Macgregor Creek)	More than Minor (near) Minor (distant)		More than Minor (near) Minor (distant) Refer to **Figure 76, Figure 77** and **Figure 78** for visualisations of Power Station Site
	Local Effects – Spoil Disposal Area (for landscape, natural character and visual amenity)	Minor		Minor

Scheme Phase	Environmental Effects (positive and adverse)	Assessment of effects (unmitigated)	Proposed Effects Management Methods	Residual Effects Post Mitigation
			> Additional planting around the Power Station site. > Additional landscape treatment to Slope Protection Works at Power Station. > Careful placement of river boulders/ rocks to assist integrate structures into natural landscape. > Further landscape mitigation techniques are outlined within the Landscape Management Plan. In accordance with the Project Description, ensure that: > The spoil would be profiled, graded and compacted and grassed for grazing purposes. Any watercourses would be avoided. > Areas of gravel extraction are defined and the riverbed is carefully regraded to natural forms when extraction complete.	

Scheme Phase	Environmental Effects (positive and adverse)	Assessment of effects (unmitigated)	Proposed Effects Management Methods	Residual Effects Post Mitigation
	Local Effects – Access road and transmission line between Macgregor Creek and Waitaha Road (for landscape, natural character and visual amenity)	Neutral	In accordance with the Project Description, ensure that: > The transmission corridor and access track are aligned together as much as possible. > Vegetation removal is limited.	Neutral
	Transmission Corridor upgrade between Mclean Farm and Waitaha Substation (on landscape and visual amenity)	Neutral	In accordance with the Project Description, ensure that: > Replacement poles remain within the road reserve corridor. > Very limited to no vegetation removal."	Neutral

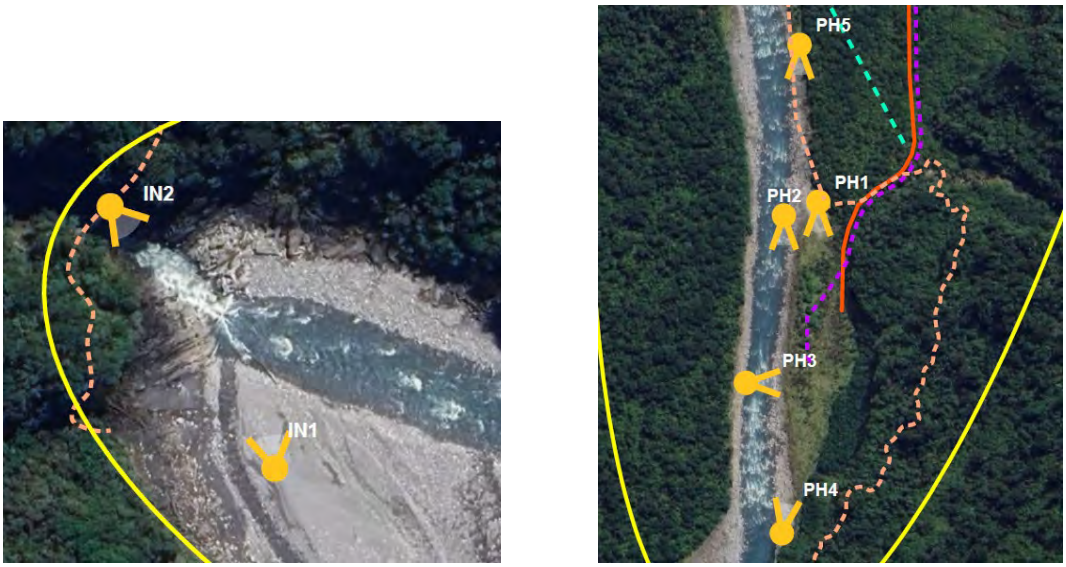

Figure 73: Plans showing locations and view directions for visual simulations - Headworks (left) and Power Station Site (right)

Figure 74: Headworks - existing (top) and visual simulation IN1 (bottom) showing proposed change.

Figure 75: **Headworks view from swing bridge - existing (top) and visual simulation IN2 (bottom).**

Figure 76: **Power Station Site - existing (top) and visual simulation PH1 (bottom) showing proposed change.**

Figure 77: **Power Station Site - existing (top) and visual simulation PH2 (bottom) showing proposed change.**

Figure 78: **Power Station Site - existing (top) and visual simulation PH4 (bottom) showing proposed change.**

6.18.4 Landscape, Natural Character and Visual Effects Summary

The Scheme will result in varied adverse effects to the landscape values, the visual appearance and natural character condition of the surrounding environment.

The natural character of the Waitaha River is assessed as very high, and the landscape in which the Scheme is located within is an ONL. Due to the range of adverse effects, overall, the adverse effects are assessed as *'more than minor'* at the local scale and, in respect of some values (notably remote), at the broad scale.

Despite the Scheme adversely affecting some localised landscape values, it is considered that this will not cause the loss of any identified values, rather it is a reduction to some values. Importantly, this will not affect the ONL status of this landscape.

The Landscape Report confirms that, because of the iterative design process to create a small and defined footprint of the Scheme, and the various mitigation measures proposed, the Scheme will sit well within its landscape and respond appropriately to its remote setting. The assessment acknowledges that, while the remoteness values of the Scheme area will be affected, existing modification forms part of the existing environment (for example, an existing swing bridge, tracks, and a hut, as well as some water take and gravel extraction permits). To minimise localised effects further, the design of the Scheme incorporates dark colours, includes revegetation and requires careful placement of boulders/large rocks. The mitigations incorporated in the design and proposed for construction and operation ensure that the Scheme does not undermine the outstanding landscape, natural character and visual amenity values of the Upper Waitaha Catchment.

Subsequently, the Landscape Report considers that:

> At more local levels, the natural character, landscape and visual amenity effects are assessed as being more than minor;

> At a broader scale, the effects are, at worst, minor; and

> The Scheme is appropriate with respect to natural character, landscape and visual amenity.

Importantly, with the recommended mitigation implemented as proposed, including the implementation of the Landscape Management Plan, there will be no significant adverse effects and the landscape and natural character effects of the Scheme are acceptable.

6.19 RECREATION EFFECTS

Recreation effects, comprising changes to recreation opportunities and recreation values, both at the local (i.e. Waitaha Valley) and regional scale, are assessed and presented in the Recreation Report and summarised below.

6.19.1 Recreation Effects During Construction

The Recreation Report acknowledges that the area used to assess effects, the Waitaha Study Area, receives relatively low use from kayakers, trampers, hunters and canyoners. This 'low use' is labelled a "preferred quality of the backcountry remote management of the setting and not a reflection of low value".[174]

During construction, the Scheme creates:

> An adverse effect of reduced recreational opportunity to kayak Morgan Gorge.

> Adverse effects on recreational values within the Upper Waitaha Valley, in particular the tramping track near the proposed new access road and transmission line south of Macgregor Creek and near the Power Station Site.

> More broadly, adverse impacts on recreation values in areas where there will be construction noise, traffic and helicopter movements and a general increase in the concentration of people and activities.

To mitigate these effects, the Recreation Report recommends the following measures;

> As far as practicable, limit the scale of the construction footprint and minimise the duration of construction activities;

> Provide an alternative alignment for the recreation access track in the Lower Waitaha Valley to avoid, as much as possible, visitor views of the new access road, transmission line corridor and Power Station Site construction areas and activities; and

> Ensure members of the public are provided ongoing access to the Waitaha Valley and are provided ways to obtain safety information about construction activities and that suitable signage is provided to warn visitors of any construction activities and any related public safety risks.

In response to these recommendations, Westpower proposes the following measures;

> Westpower will build an alternative tramping track around the lower Scheme infrastructure. The indicative alternative route for this track is illustrated by the dashed aqua-coloured line in **Figure 79.** Westpower will use best endeavours to implement this alternative route prior to construction commencing, however, timing will ultimately be subject to DOC requirements; and

> During the construction period, Westpower will also provide, and make available on its website, relevant information about construction activities that may affect recreational users within the area surrounding the Construction Site.

[174] Recreation Report, [5.1].

Special conditions, to be included in any Approvals granted, are proposed by Westpower to ensure these measures are undertaken.

Minimising the scale and footprint of the Scheme, has been a constant focus for Westpower and successful achieved through the iterative design process. The current proposal is considered representative of the smallest practicable footprint for the Project. Regarding minimising construction duration as much as practicable, this will be an inherent incentive for Westpower due to the adverse commercial impacts associated with construction delays, particularly in a remote location.

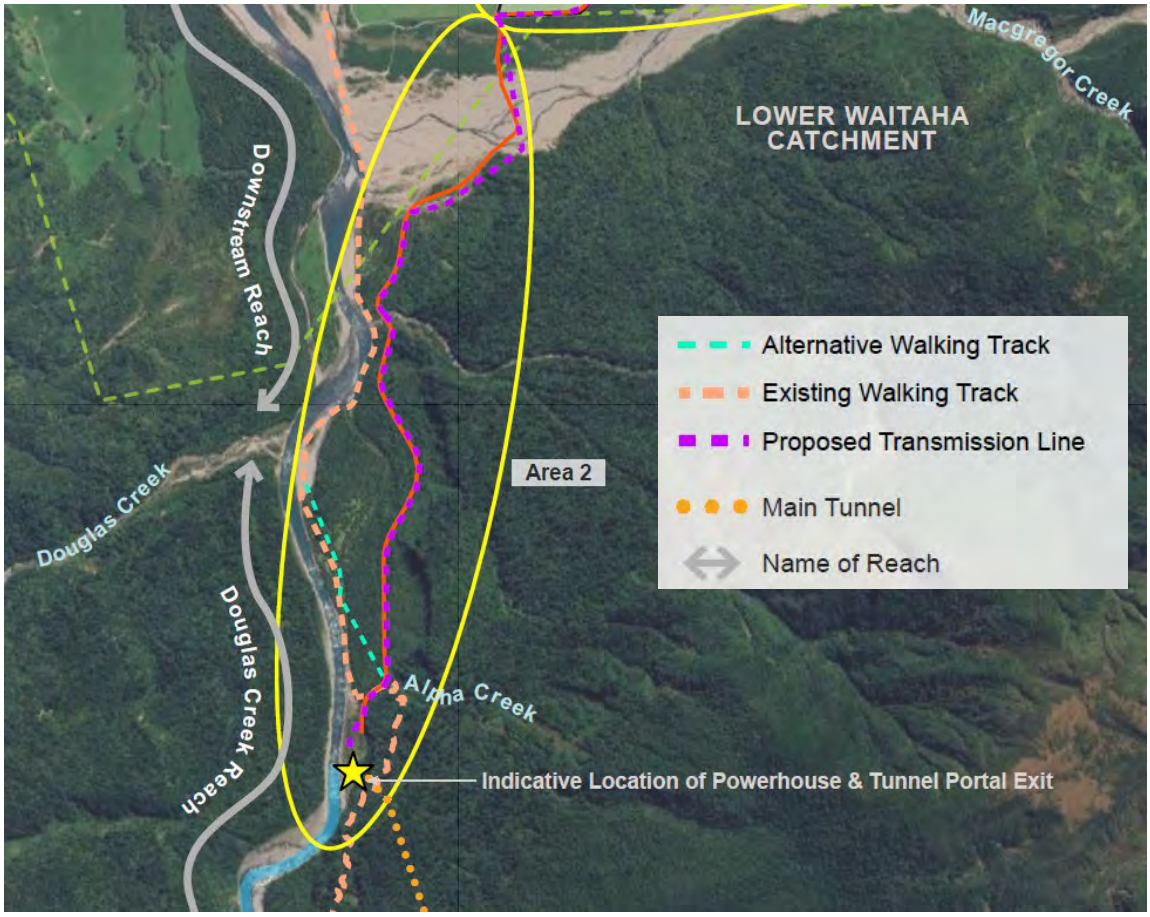

Figure 79: Existing Walking Track (refer orange dashed line) and Indicative Proposed Alterative Walking Track Route (refer dashed aqua line)

Overall, even when Westpower's mitigation measures are considered, and while also recognising that construction related effects will be temporary, the Recreation Report nevertheless concludes that these adverse effects will be significant (i.e. very high[175]).

[175] Note: The Recreation Report adopts the same effects assessment scale used in the Landscape Report (Refer **Figure 71**)

6.19.2 Recreation Effects During Scheme Operation

6.19.2.1 Recreation Opportunities

The only recreation opportunity affected by the Scheme once it is in operation is whitewater kayaking in Morgan Gorge.

The Recreation Report notes that, for those who kayak the Morgan Gorge, the Scheme has the potential for significant adverse effects by:

> Constraining, via a reduction in days of suitable residual flow, kayaking opportunity in abstraction reach, and for those who would otherwise kayak Morgan Gorge, an additional 1530 m portage from the top of Morgan Gorge to 'Alpha Creek';

> Modifying the entry into Morgan Gorge by introducing a weir at its upstream entrance; and

> Imposing a new requirement to communicate with the Scheme's operator to check and/or arrange suitable flow conditions for kayaking the abstraction reach including Morgan Gorge.

The Recreation Report considers that appropriate mitigation of these effects will rely on providing kayakable flows at agreed times and maintaining safe kayak access into the Gorge past the weir structure. Westpower have designed the Scheme to provide a bypass valve, flow control system, warning siren, and signs to avoid safety effects; and have agreed ceases or limits to abstractions.

As noted earlier in respect of Westpower's consultation outcomes, they have reached an agreement with Whitewater New Zealand that resolves these matters. Westpower has proposed special conditions to be included in any Approvals granted that reflect the following key obligations they have within this agreement:

> To undertake further consultation with WWNZ during the final design of the weir so that the design provides for safe downstream portage of recreational kayakers;

> To offer WWNZ four no-take days, to be scheduled within the upcoming 12-month period, to benefit the kayaking experience within the abstraction reach (including the use of the bypass valve to achieve this), with one no-take day occurring during each month between November and February (inclusive) unless agreed otherwise;

> To pay WWNZ $5,000 (excluding GST) for every no-take day that is cancelled at the request of either party;

> To pay WWNZ $15,000 (excluding GST) per annum for the purpose of enhancing kayaking experiences and access in other rivers of the region; and

To make publicly available, through its website, telemetered river flow data collected from upstream of the Scheme's intake, information regarding access and kayaking opportunities on the Waitaha River including information on risks and safety requirements due to the Scheme.

Based on the agreement reached between Westpower and WWNZ, all adverse effects on recreation opportunity during the operational phase of the Scheme are fully addressed.

The Recreation Report also identifies the potential for public safety risks associated with rapid changes in river flow resulting from Power Station start-ups, shutdowns or emergency stops. This included risks to members of the public undertaking kayaking, canyoning and visiting the geothermal springs downstream of the Scheme's intake. In these respects, and in reference to the flow and depth change modelling outputs presented in the Down Stream Flow Modelling Report, the Recreation Report concluded that risks to recreational visitors associated with controlled Power Station start-up and controlled and unplanned Power Station shutdowns were adequately low, and regarding the latter, adequately addressed by Westpower's proposed bypass valve.

6.19.2.2 Recreation Values – Local Effects

Regarding the Scheme's operational effects on recreation values of the Waitaha Valley, the Recreation Report highlights the following key observations which inform the localised adverse effect;

- All recreational activities currently undertaken in the Waitaha Catchment, beyond kayaking (discussed above), including tramping, hunting, canyoning and geothermal hot spring use will remain fully accessible while the Scheme is in operation.
- Jet boating and angling in the Lower River will be unaffected.
- The Scheme will, however, locally change perception of the backcountry-remote setting for visitors, in the limited areas nearer Morgan Gorge and Kiwi Flat. Periodic and temporary maintenance activities at the intake (e.g. gravel and boulder clearing, maintenance inspections etc) add to this effect within Kiwi Flat.
- The entrance to Morgan Gorge is assessed as a key element to the backcountry-remote setting, including the swing bridge (that passes directly over the Morgan Gorge entrance) and the access track to Kiwi Flat Hut (passing via the broad riverbed immediately adjacent to it). The introduction of the weir structure to this location, and resulting reduced river flows beneath the swing-bridge, will create a notable change to the visual and aural experience at and near this location, including when viewed from the swing bridge.
- Most visitors to Kiwi Flat confine their visit to the wider Kiwi Flat area and hunters and canyoners rely on the Kiwi Flat Hut as a base. The introduction of the Scheme's Headworks structures, and the consequential changes to the Waitaha River from an uncontrolled natural state waterbody to one featuring hydro infrastructure and modified flows, will adversely affect the experience of the backcountry-remote setting at Kiwi Flat (despite the Scheme not being visible from the hut). Additionally, for some, this will also affect their experience of the entire Upper Waitaha Valley through the perception of loss of an undeveloped environment.

- While individual reactions to the Scheme will vary, the recreation setting is managed for its backcountry-remote values, and these will be compromised to some extent.
- For people moving up and into the Upper Waitaha Valley, the effect of the Scheme's presence will also delay the point in which they "enter" the backcountry-remote setting. For kayakers exiting the river, and for walkers returning from Kiwi Flat, they will "exit" their backcountry-remote setting experience earlier than is currently the case.
- For visitors who do not pass through the Kiwi Flat area, but rely on only the huts higher in the Upper Waitaha Valley, they will have no experience of the infrastructure and will be unaffected.

Measures recommended in the Recreation Report to mitigate the Scheme's adverse effects on recreation values include:

- Designing and constructing the Scheme infrastructure in accordance with the recommendations set out in the Landscape Report which consider perceptual effects to natural character.
- Realigning the lower access walking track near the Power Station; and
- Potentially, subject to consultation with relevant stakeholders and users:
  - Improving the track standard for kayak portaging of Morgan Gorge;
  - Relocating the Morgan Gorge swing bridge to limit visibility of weir infrastructure when using it; and
  - Committing financially towards a walking track and recreation asset development fund to allow appropriate access development and maintenance by user groups.

As already confirmed, Westpower has optimised design to minimise the Scheme footprint, and will construct the Scheme infrastructure in accordance with the recommendations set out in the Landscape Report. Also, as already confirmed, subject to securing necessary agreements with DOC, Westpower will build an alternative tramping track around the lower Scheme infrastructure to minimise views of construction at the Power Station site. Westpower has also given serious consideration to the other mitigation recommendations made in the Recreation Report but has decided, at this stage, not to include these as part of the overall hydro scheme proposal for the following main reasons:

- The recommended track improvements for kayak portaging of Morgan Gorge was not a matter that has been raised during Westpower's consultation with WWNZ and does not feature in the agreement the two parties have reached. Westpower is not interested in contributing towards development or upgrading tracks to make it easier to carry kayaks as it conflicts with the backcountry-remote setting experience;
- The recommendation to relocate the swing bridge is cost-prohibitive, including realignment to the adjoining walking track sections, this would undermine the commercial viability of the Project; and

- Westpower is also not supportive of making financial contributions to a walking track and recreation asset development fund for the same reasons it does not support upgrades to the lower track for kayak portaging, that is, further access development conflicts with the backcountry-remote setting experience that the area promotes. However, Westpower will provide a one-off payment $25,000 to an appropriate entity (e.g. DOC) to assist with track and hut maintenance.

6.19.2.3 Recreation Values – Regional Effects

Regarding recreation effects at a wider West Coast regional level, the Recreation Report highlights the following:

- Adverse regional effects on recreation and tourism will be no more than minor due to the small scale of the Scheme, the high number of alternatives available for all activities affected by the Scheme and the relatively low level of use of the Kiwi Flat area;
- The net effect on the West Coast kayaking scene is also likely to be no more than minor, again largely due to the number of kayaking alternatives. In this respect, kayaking runs of the same classification to the Waitaha (Class IV and V) are identified as the most common kayaking opportunities on the West Coast. In total, there are 24 Class IV and 14 Class V runs identified on the West Coast respectively;
- Effects on the West Coast kayaking scene are further addressed by the agreement by Westpower to retain kayaking opportunities in the Morgan Gorge by offering "no-take" days, the relative low level of use of the Waitaha River, and the much lower level of use of Morgan Gorge;
- Despite the above mitigations, the change from an uncontrolled river for kayaking may diminish a key quality which makes the Morgan Gorge and the Waitaha River internationally significant – albeit for a relatively small number of highly skilled kayakers; and
- In terms of tramping and hunting at the regional level, the scale of effect is likely to be no more than minor given the large scale of the backcountry-remote recreation setting on the West Coast as compared to the size of the proposed hydro scheme.

6.19.3 Recreation Effects Summary

Considering the scope of mitigation being proposed by Westpower, the Recreation Report makes the following assessments of each recreation effect identified:

- Adverse construction phase effects will be significant but temporary in nature;
- Noting that potential adverse effects on recreational kayaking are fully addressed by the agreement reached between Westpower and WWNZ, there are no residual adverse effects on recreation opportunities within the Waitaha Valley;
- Adverse effects on recreational values of the abstraction reach, Morgan Gorge and Kiwi Flat, are considered significant (i.e. somewhere between "very high" and "high" noting Westpower

only partially accepts the suite of mitigation measures being recommended in the Recreation Report);

- Adverse effects on recreational values of the remainder of the Upper Waitaha Valley are considered to range between minor to more than minor (but not significant);
- There are no adverse effects on recreational values of the Lower Waitaha Valley; and
- Any impacts on recreation and tourism across the wider West Coast region will be no more than minor.

As noted above, Westpower has not agreed to offer the full set of measures recommended in the Recreation Report to mitigate adverse effects on the recreational values of the abstraction reach, Morgan Gorge and Kiwi Flat. In relation to Westpower's specific decision not to relocate the swing bridge, the following relevant factors are highlighted:

- Contrary to the Recreation Report, the Landscape Report concludes that landscape, visual and natural character effects will be acceptable with the Morgan Gorge swing bridge remaining in its current location;
- On the basis that the types of recreation effects identified in respect of the swing bridge are "experiential", these are more appropriately considered as part of the effects assessed within the Landscape Report. In this respect, the landscape effects assessment carry more weight and is favoured; and
- In accordance with the Recreation Report's assessment, even if Westpower committed to the full suite of recommended mitigation measures, including relocating the swing bridge, the Recreation Report would still assess the adverse effects as being significant.

In relation to Westpower's decision not to contribute financially to improve tracks to make it easier to carry kayaks, or to a track development fund, because this access development activity conflicts with the promotion of a backcountry-remote setting experience. Notwithstanding, Westpower will contribute $25,000 to track and hut maintenance as recommended in the Recreation Report.

On the basis that the types of significant residual adverse recreation effects identified in the Landscape report are "experiential" or "perceptual" in nature, these are more appropriately addressed as part of the effects assessed within the Landscape Report. In this respect, the landscape effects assessment provides a more holistic and integrated assessment of the effects. The Landscape Report considers there are no significant adverse effects associated with the Project.

For the purpose of balancing the Recreation Report's overall conclusion, the Scheme will result in:

- Significant localised adverse recreation effects on the backcountry remote experience (for the abstraction reach, including Morgan Gorge and Kiwi Flat). The key context is:
  - Around 400 people visit the Waitaha Valley per year;

- The level of the “experiential” or "perceptual" effect for the person recreating will vary from person to person. For some recreationists, the mere fact of knowing that the river is controlled will be a High effect. Others may view the scheme less negatively (or potentially even in positive light) given the effects of climate change and the benefits of renewable generation.
- The significant effect on the person recreating is confined to the abstraction reach and headworks, which itself is a very confined area in the considerably larger backcountry remote experience setting in the Upper Waitaha Catchment, with vastly more "backcountry remote" setting within the Hokitika Place and a vastly greater area again in the region.
- As above, the Landscape Report, taking a more holistic and integrated assessment of the “experiential” or "perceptual" effects does not conclude they are significant after mitigation;
- The many design avoidances, and mitigations, proposed for the Project and the offer of $25,000 towards track and hut maintenance in the Upper Waitaha Valley;
- The "backcountry remote" setting (which is the foundation for the significant effect assessment) is from the West Coast CMS. A Panel under the FTAA may not form the view that an adverse impact meets the threshold solely on the basis that the adverse impact is inconsistent with or contrary to a provision of a specified Act or any other document that the Panel must take into account, including the West Coast CMS.

- Significant, temporary, construction effects. While these are unavoidable within the vicinity of the Project they are temporary. It is proposed to realign the access track around the Power Station site (although a crossing of the proposed access road is unavoidable). There are nighttime controls on works that will minimise recreational effects at those times; and
- The Project will have national and regional benefits, including providing more resilient electricity to approximately 12,000 households and businesses, and deliver electricity to consumers more efficiently (which is expected to translate to both a cheaper price to the consumer for lines services (with no additional charge for using the national grid) and reducing regional consumers exposure to the volatile wholesale market when larger generation is in short-supply.

Subsequently, the Panel must not decline the application because of the two significant adverse recreation effects identified. These two effects are not sufficiently significant to be out of proportion to the Project's significant regional or national benefits. Further, a decline is not supported by the purpose of the FTAA, especially after taking into account Westpower’s proposed Approvals conditions[176].

[176] FTAA, s 85(3)(b).

6.20 GEOTECHNICAL HAZARDS

Some components of the proposed Scheme are in steep terrain. These areas can possess inherent land instability risks. Westpower is attuned to these geotechnical risks and for this reason, is proposing a comprehensive geophysical and geotechnical investigation drilling and testing programme. This work will include further analysis and quantification of underlying rock properties which will inform and confirm the Scheme's design. To this end, all final design and construction plans for the Scheme's Headworks structures, tunnels, desander and Power Station foundations will be designed to comply with all appropriate engineering standards to ensure long-term structural integrity is achieved.

From a geotechnical and engineering design perspective, Westpower will also incorporate learnings gained during the design and construction of their Amethyst Scheme situated in very similar terrain and geological conditions.

Overall, any adverse geotechnical risks during construction and operation are less than minor.

6.21 NATURAL HAZARD EFFECTS

6.21.1 Seismic Events

The Scheme will be constructed in relatively close proximity to the main Alpine Fault (i.e. approximately one kilometre away). Accordingly, this has required special attention when designing the Scheme. It is noted, however, that this scenario is not dissimilar to Westpower's existing Amethyst Scheme which is located 0.5 km from this fault.

In terms of addressing seismic risks, firstly, Westpower have ensured that all the Scheme's main civil components, including the Headworks, tunnels and Power Station, are located on the eastern side of the main fault. This is important since it reduces the likelihood of a major shear through the Scheme which could result in uncontrolled release of water from the Scheme's tunnel. The only Scheme structures on or traversing the Alpine Fault are the access road and transmission line – both of which are components that are relatively straightforward to repair if damaged is incurred from a quake.

Secondly, all civil structures will be designed to withstand high seismic loading and will continue to operate, even after a major earthquake. More specifically, the Scheme's structures will achieve a performance standard of Importance Level 4 (IL4) meaning the Ultimate Limit State ("**ULS**") will not be exceeded a 1 in 2500-year event.

Thirdly, to further reduce the risk of damage from a waterway rupture, the following features have also been included in the design:

> Seismic sensors will be installed to detect ground acceleration due to seismic events and immediately shut the head gates; and

- Excess velocity devices using ultrasonic flow sensors will detect any abnormal increase in the tunnel flow and will also automatically shut the head gates to isolating supply.

Westpower will also incorporate the Waitaha Hydro Station site within its company-wide emergency preparedness and response procedures.

Overall, it is considered that the Scheme will be designed to appropriately minimise and manage the seismic risks associated with the area and the site.

6.21.2 Flooding

6.21.2.1 During Construction

During construction, the main flooding related risk is associated with workers and/or construction equipment being harmed, damaged or swept away in the event of rapidly rising river levels. To mitigate this risk, remote rainfall and river level monitoring sites are proposed upstream of the site to provide an early warning of increasing river flows.

6.21.2.2 During Operation

Since the Waitaha River is subject to extreme floods, and because the narrow entrance to Morgan Gorge acts as a choke, constricting floodwaters from moving through the Kiwi Flat area, the water level in this part of the river could result in the Headworks and the Access tunnel portal being submerged under water. Accordingly, the design of this part of the Scheme will ensure it can continue functioning even when submerged. More specifically:

- The Headworks will be constructed with reinforced concrete structures able to endure loadings from anticipated flood flows and water levels, and withstand being struck by flood-borne debris and the possibility of rockfall;
- The weir structure will be covered with steel to protect it from large rocks;
- All Headworks mechanical and electrical equipment will be designed to continue operating under water;
- The desander will also be able to operate when full with water; and
- The access tunnel design avoids flood waters from flowing through its entire length (which would create a significant health and safety issue), and instead it slopes upward from its Headwork portal to an underground high point located well above the 1 in 1,000-year Annual Exceedance Probability (AEP) flood level.

It is noted that, although the choking effect of the Morgan Gorge creates flooding risks at the Headworks, conversely, by limiting the flood flows int Morgan Gorge, this provides some natural protection to the infrastructure located at the Power Station Site. This means that, during very large floods, water level rises at the Power Station are supressed, resulting in little additional required flood protection measures.

In this respect, the Power Station Site's flood protection works comprise a slightly raised pad and a limited amount of rock armouring, which will achieve flood protection from a 1 in 10,000-year AEP flood event.

Flooding may also cause sediment and debris build-up around in-stream structures and stream crossing structures, however designs for these structures will provide for overtopping and/or flood water spill pathways to minimise this. These structures will form part of the Scheme's wider monitoring inspection and maintenance plan and any sediment or debris build-up will be removed or distributed in accordance with routine Streamwork maintenance procedures.

Overall, the Scheme will be designed and operated to appropriately address risks associated with any anticipated flood event.

6.22 PUBLIC SAFETY EFFECTS

Public safety risk mitigation initiatives proposed by Westpower to address effects on river safety during construction and operations are discussed above in section 3.5.18 and section 3.6.10 respectively. In summary, these comprise:

- During Construction:
  - Appropriately located site signage warning people of construction activities occurring, their locations and associated hazards;
  - Subject to the agreement of the Department of Conservation, alternative walking track access will be established on the true right of the Waitaha River so that recreational visitors can avoid the Power Station Site construction area;
  - Where appropriate, erecting barriers (or similar) and restricting the public to specific demarcated construction activity areas where associated hazards could result in harm to members of the public; and
  - Enforcing temporary short-term closures of parts of the walking track during high-risk construction activities such as during above-ground blasting; and
- During Operation
  - Installing and maintaining appropriately located site signage warning people of the Scheme's operational hazards and the possibility of planned shutdowns and startups;
  - Retaining the alternative walking track access on the true right of the Waitaha River so that recreational visitors avoid the Power Station Site; Where appropriate, erecting barriers (or similar) around hazardous Scheme components;
  - Installing a bypass valve to mitigate potential adverse public safety effects associated with sudden river flow changes occurring immediately following an unplanned Power Station trip event;

- Installing sirens to warn the public of potential sudden river flow changes associated with a Power Station trip event;
- Following the Scheme's final design, undertaking a full safety risk assessment and preparing a Public Safety Risk Report for submission to the Councils; and
- Making available through their website, live Waitaha River flows and any other relevant information on any specific risks and safety requirements associated with the Scheme.

To reduce public safety risks downstream of the weir and the Power Station, Westpower is also proposing relatively low station ramping rates (0.5 m^3/s/min) for most ambient river flow conditions and the inclusion of a bypass valve. These initiatives act to lower the rate of flow and water level change during controlled Power Station startups and during controlled and emergency shutdowns. In turn, these initiatives reduce the risk to members of the public using the river at locations downstream of the Scheme's weir and tailrace.

Using the modelling plots provided in the Downstream Flow Modelling Report, these specific "in-river" public safety effects during the Scheme's operation are examined in detail within the Public Safety Report. In summary, this report makes the following key conclusions:

With respect to emergency Power Station shutdown events:

- The joint probability of an emergency shutdown occurring concurrently with a person being in the Waitaha river downstream of the weir is exceedingly small. Nevertheless, appropriate public warning signage is recommended along with the use of sirens to enable river users to react to a sudden change in flow;
- The hot pools in Morgan Gorge also have an extremely low joint probability for harm to occur, and the river downstream towards the coast becomes increasing less affected, to the point where flow changes are reduced to virtually nothing at the river mouth;

With respect to planned Power Station shutdown and startup events:

- Routine shutdowns and startups can be managed by use of a bypass valve and ramping the flow change to reduce the effect on river safety, however, it will be important to ensure visitors and specific river user groups are made aware of potential flow and river level changes.
- To reduce effects on the river during routine operation, a base level ramping rate which does not exceed 0.5 m^3/s/min is suggested, however, once the Scheme is operational, ramping rate trials involving monitoring of downstream river levels should be undertaken to check that a ramping rate of 0.5 m^3/s/min is appropriate from a public safety perspective.
- Adaptive management of ramping rates and safety plans is also strongly recommended following these trials.

Westpower is proposing a range of ramping rates as suggested in the Public Safety Report.

Westpower will also undertake ramping rate trials to check its appropriateness from a public safety perspective. These trials will be conducted in conjunction with the separate ramping rate trails to check potential downstream fish stranding impacts. Outcomes of these trials will then be documented in a Ramping Rate Adaptive Management Report. Details of the trials and minimum content of the Ramping Rate Adaptive Management Report are set out in the proposed Approvals conditions. These conditions also provide for the ramping rate to be altered depending on the outcomes of the trials.

The Public Safety Report prescribes other potential initiatives to reduce public safety impacts. Westpower considers that, once the final design of the Scheme has been confirmed, it is appropriate that such initiatives become part of the overall consideration during preparation of the Public Safety Risk Report proposed for submission to the Councils.

Overall, any adverse effects on public Safety during construction and operation will be negligible and these effects can be reduced even further through the proposed Public Safety Risk Report process once the Scheme's design has been finalised, and through the proposed ramping-rate trials following the Scheme's operation.

6.23 PROFFERED APPROVALS CONDITIONS

A comprehensive draft suite of Approvals conditions proffered by Westpower is presented in support of this application. These conditions are separated into four separate suites of conditions, one each for the Resource Consents (**Appendix 45**), DOC Concessions (**Appendix 46**), Wildlife Approvals (**Appendix 47**) and Complex Freshwater Fishery Activities (**Appendix 48**) required by the Project.

The objective of the proffered Approvals conditions is to achieve the following key resource management outcomes:

- To confirm Westpower's commitments to relevant recommendations being made by various technical experts in respect of avoiding, remedying, mitigating, offsetting or compensating the Project's environmental effects while retaining overall commercial viability of the Project to maximise associated regional and national benefits; and
- To ensure the Scheme is constructed and operated in general accordance with the information set out in the lodged documents that form this application, while providing for small changes that may come about following final design of the Scheme and, in some cases, small adaptations following its operation (that are achievable while meeting the parameters required by the Approval conditions).

In general, these conditions have been formulated on the following basis:

- They assume the suite of ecological management plans and the Landscape Management Plan provided in the lodged documents will be "approved" by the FTAA Panel as part of their

substantive decision, thereby, removing any need to subsequently seek separate certifications for these plans;

- In some areas, they provide for some flexibility in terms of allowing minor changes that are likely to occur through the final design phase for the Scheme. The conditions also provide for some modification of management plan scopes depending on the final construction program noting it may be staged to some extent, while also providing for some prescribed, minor "enabling works" to occur separate and prior to "Commencement of Construction";
- The conditions have also been designed to incorporate most recommendations set out in the various technical expert assessment reports, either as part of relevant management plans or as standalone conditions. The main exceptions to this include the following:
  - Contrary to the recommendation made in the Recreation Report, there is no proposed relocation of the swing bridge to minimise visibility of hydro scheme infrastructure. The Landscape Report has concluded that landscape, visual and natural character effects (of which recreation effects are a subset) will be acceptable, even with the Morgan Gorge swing bridge remaining in its current location, relocating it is considered excessive and this is conclusion is favoured; and
  - Again, contrary to the recommendation made in the Recreation Report to provide financial contributions to a walking track development fund for the Waitaha Valley, access development initiatives conflict with the backcountry-remote setting experience that the area promotes and this is not proposed; and
  - Where relevant, the conditions also incorporate standard conditions used by DOC and Regional and District Council staff; and
  - Where relevant and appropriate, the conditions incorporate feedback Westpower has received from DOC, Regional and District Council staff and NZTA.

6.24 SUMMARY OF PROPOSED COMPENSATION MEASURES

As noted throughout this effects assessment, where adverse ecological effects are unable to be adequately avoided, remedied or mitigated and to further address adverse residual recreation effects, financial compensation is proposed by Westpower. **Table 33** provides a summary of these compensation measures, all of which are also prescribed in the proffered Approvals conditions.

Table 33: Summary of Westpower's Compensation Measures

Residual Adverse Effect	Proposed Compensation	Total Financial Commitment
Construction related effects on bats	Ten annual payments of $15,000 to an ecosystem programme in the region that	$150,000

Residual Adverse Effect	Proposed Compensation	Total Financial Commitment
	supports the West Coast region's bat population	
Construction related effects on whio	Ten annual payments of $35,000 to an ecosystem programme in the region that supports the West Coast region's bat population	$350,000
Construction related effects on forest birds	$10,000 for each year during the construction of the Scheme where indigenous vegetation clearance is undertaken south of McGregor Creek	$20,000 (assuming two years of clearance activities required)
Operational effects on local biodiversity	Up to 25 annual payments of $35,000 to an ecosystem programme in the region that supports the West Coast region's wider ecosystem and/or locally in the Waitaha Valley	$875,000 (assuming consents are granted for 35 years)
Effects on recreational kayakers	$15,000 per annum	$ 525,000 (assuming consents are granted for 35 years)
Effects on recreational visitors	One-off payment of $25,000 towards the maintenance and upkeep of existing Waitaha Valley walking tracks and huts	$25,000
TOTAL		**$1,945,000**

6.25 OVERALL SUMMARY

The Project's environmental effects are summarised in **Table 34Table 34.**

Table 34: Summary of Environmental Effects

Topic	Overall Post Mitigation Assessment of Effect	
	During Construction (temporary)	During Operation
Economic Benefits and Other Positive Effects	Positive	Positive – Significant

Topic	Overall Post Mitigation Assessment of Effect	
	During Construction (temporary)	During Operation
Cultural	Adverse – No more than minor.	Positive – Significant
Hydrology and Flow Regime	Nil	Adverse – No more than minor
Water Quality	Adverse – No more than minor	Adverse – No more than minor
Gravel extraction	Adverse – No more than minor	Adverse – No more than minor
Sediment transport and river morphology	Adverse – Less than minor	Adverse – No more than minor
Indigenous Vegetation	Adverse – No more than minor	Adverse – Less than minor
Bats	Adverse – No more than minor	Adverse – less than minor
Whio	Adverse – Less than minor	Potentially positive with implementation of proposed ecosystem programme.
Birds	Adverse – No more than minor	Potentially positive with implementation of proposed ecosystem programme.
Lizards	Adverse – Minor	Potentially positive with implementation of proposed ecosystem programme.
Terrestrial Invertebrates	Adverse – Less than minor	Adverse – Less than minor
Construction phase discharges	Adverse – Less than minor	Adverse – Less than minor
Aquatic Ecology	Adverse – Less than minor	Adverse – No more than minor
Traffic	Adverse – Less than minor	De-minimis
Noise	Adverse – No more than minor	Adverse - Less than minor
Landscape, Natural Character and Visual Effects	Adverse – More than minor (local scale and temporary)	Local Scale: Adverse – More than minor Broad Scale: Adverse No more than minor

Topic	Overall Post Mitigation Assessment of Effect	
	During Construction (temporary)	During Operation
Recreation	Adverse – Significant but temporary	Recreation Opportunities: Nil Recreation Values: Adverse – Significant (local scale only)
Geotechnical	Adverse – Less than minor	Adverse – Less than minor
Natural Hazard Effects	Adverse – Less than minor	Adverse – Less than minor
Public Safety	Adverse – Less than minor	Adverse – Less than minor

6.26 EFFECTS ASSESSMENT CONCLUSIONS

Overall, the following key conclusions can be drawn from the effects assessment presented above;

- On a number of different, but interconnected levels, the proposed Waitaha Hydro Scheme represents a strategically important development for the Westland District, West Coast region as well as the wider New Zealand community. It will deliver much needed energy resilience to the West Coast along with a range of economic benefits. The Scheme will contribute to the nation's efforts to decarbonise and, in turn, deliver a range of other consequential environmental, social and cultural benefits;
- Comprehensive assessments of the Scheme's environmental effects confirm that, with appropriate mitigation measures, most environmental effects associated with its construction and ongoing operation and maintenance will be no more than minor;
- Notably, however, some adverse natural character, landscape and visual amenity are considered "more than minor" at the local scale and some impacts on recreation values are also considered "significant" at the local scale. In these respects, it is important to highlight the following observations:
    - When the residual more than minor adverse natural character, landscape and visual amenity effects are assessed against the broader existing environment, including the Project site's locational context, the proposal and its design adequately recognises and provides for natural character and outstanding natural landscapes to the extent that the residual "more than minor" effects do not render the proposal inappropriate use or development; and
    - Similarly, when the significant residual adverse recreation effects are assessed against the broader existing recreation environment at Waitaha – an environment where

recreational usage, including white water kayaking, is relatively low compared to other West Coast valleys – and since other West Coast valley systems offer similar whitewater kayaking and remote backcountry experiences, these effects are considered acceptable. The adverse effects are not disproportionate to the meaningful national and regional benefits of the Project which are supported by the purpose of the FTAA[177], after taking into account Westpower's proposed Approvals conditions[178].

Overall, the adverse environmental effects associated with this proposal are considered acceptable and the various positive economic and tangible cultural benefits that would be realised if it proceeds are considered significant.

[177] In accordance with s 81(4) of the FTAA.

[178] FTAA, s 85(3)(b).

7. STATUTORY ASSESSMENTS

7.1 RESOURCE MANAGEMENT ACT 1991

As set out in section 1.1, this application is made under the FTAA. While the greatest weight must be applied to the purpose of the FTAA, and the specific FTAA requirements (both additional and restrictive) must be applied, the FTAA largely refers out to the RMA. Therefore, this RMA assessment is required, and relevant FTAA provisions are referenced as required.

7.1.1 RMA Requirements for a Consent Application

Section 88 of the RMA requires that an application for a resource consent be made in the prescribed form and manner, and include, in accordance with Schedule 4, the information relating to the activity, including an assessment of the activity's effects on the environment, as required by Schedule 4. These requirements are superseded by the relevant sections in the FTAA.

The resource consent applications are described in the prescribed form for FTAA applications, as included with this application.

By way of summary, the AEE meets the FTAA requirements. For completeness, the following is an assessment of the RMA provisions relevant to the resource consents sought.

7.1.2 RMA Section 104 Assessment

7.1.3 Introduction

Section 104(1) of the RMA lists the matters that the Panel must have regard to when considering an application for resource consent. As set out in sections 2.5 that is subservient to the purpose of the FTAA.

Section 104(1) states:

> ***104 Consideration of applications***
>
> *(1) When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to–*
>
> *(a) any actual and potential effects on the environment of allowing the activity; and*
>
> *(ab) any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity; and*
>
> *(b) any relevant provisions of*
>
> *(i) a national environmental standard:*
>
> *(ii) other regulations:*
>
> *(iii) a national policy statement:*
>
> *(iv) a New Zealand coastal policy statement:*

(v) a regional policy statement or proposed regional policy statement:

(vi) a plan or proposed plan; and

(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

Section 104 of the RMA does not give any of the matters to which the Panel is required to have regard primacy over any other matters. All the relevant matters are to be given such weight as the Panel sees fit in the circumstances and as directed by the relevant statutory planning documents. Furthermore, all the provisions are subject to sections 5, 6 and 7 of the RMA[179],

By way of summary, this application under the FTAA is consistent with the matters for consideration under section 104 of the RMA. These matters are assessed in the sub-sections below.

7.1.3.1 Actual and Potential Effects

With respect to section 104(1)(a) of the RMA, the actual and potential effects on the environment associated with the Waitaha Hydro Project are set out in section 6 of this AEE and the relevant technical assessments appended.

Overall, and based on the technical assessments that have been prepared, it is considered that the construction, operation and maintenance of the Waitaha Hydro Project will appropriately avoid, remedy, mitigate or offset potential adverse effects on the environment.

The assessments also demonstrate positive cultural effects and significant regional and national benefits will be derived from the Project.

Although the Recreation Report identifies significant residual adverse recreation effects, when assessed against the broader existing recreation environment at Waitaha, where recreational usage, including whitewater kayaking, is relatively low compared to other West Coast valleys, and since other West Coast valley systems offer similar whitewater kayaking and remote backcountry experiences, these effects are considered acceptable against this context. Furthermore, on the basis that the types of significant adverse recreation effects identified are “experiential”, these are more appropriately considered as part of the effects assessed within the Landscape Report. In this respect, the landscape effects assessment is considered to carry more weight, and for this reason, it is favoured. It is highlighted that the Landscape Report considers there are no significant adverse effects associated with the Project.

Notwithstanding, if the Panel prefers the wider conclusion of the Recreation Report that the Scheme will result in significant adverse recreation effects, it still must not decline the application, because any identified residual significant adverse recreation effect falls well short of being sufficiently significant to be out of proportion to the Project's regional or national benefits,

[179] RMA section 8 is disapplied by the FTAA.

especially when giving proper weight to the purpose of the FTAA[180] and after taking into account of Westpower's proposed Approvals conditions.

7.1.4 Offset or Compensatory Measures Proposed

As detailed throughout this AEE, Westpower is proposing funding towards ecosystem programmes to support whio, bats and the wider ecological health of the West Coast Region (meaning it will aid biodiversity/conservation outcomes). Section 104(1)(ab) requires regard to be had to any measure proposed or agreed to by Westpower for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity. As set out in section 2.5.1 above, any offset and compensation must be proposed by Westpower and cannot be imposed by the Panel.

The funding of the ecosystem programmes will adequately compensate adverse effects on whio and likely provide tangible positive effects on other areas of the regional ecosystem, notably birds of conservation importance, lizards and bats.

As detailed throughout this AEE, Westpower has proposed numerous other mitigation, offsetting and compensation measures including in relation to ecology enhancement and whitewater kayaking.

7.1.5 Relevant Statutory Planning Documents

For the purpose of section 104(1)(b) of the RMA, the relevant statutory planning documents are considered to be:

- Resource Management (National Environmental Standards for Freshwater) Regulations 2020;
- Resource Management (Measurement and Reporting of Water Takes) Regulations 2010;
- National Policy Statement for Renewable Electricity Generation 2011;
- National Policy Statement for Freshwater Management 2020;
- West Coast Regional Policy Statement;
- West Coast Regional Land and Water Plan;
- Westland District Plan; and
- Te Tai o Poutini Plan.

Each of these policy statements and plans are considered further below.

[180] In accordance with s 81(4) of the FTAA.

7.1.6 Resource Management Regulations

7.1.6.1 Resource Management (National Environmental Standards for Freshwater) Regulations 2020

The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (the "**NES-F**") came into effect on 3 September 2020.

The various regulations in the NES-F apply to resource consent applications that involve farming activities, the modification of natural inland wetlands, reclamation of rivers and the passage of fish affected by structures. The NES-F is intended to increase regulatory consistency and certainty across New Zealand and ensure that any environmental effects of freshwater activities are appropriately managed.

Requirements under the NES-F are addressed above in section 5.1.1 and summarised as follows:

> The proposed box culverts in Allen Creek, Alpha Creek and an unnamed tributary of the Waitaha Rover located within the McLean Farm and the the "Drift Deck" crossing structure in Macgregor Creek are unlikely to comply with clauses (d) and (e) of Regulation 70(2), therefore a **Discretionary Activity** NES-F consent is required under Regulation 71 for this structure; and

> The proposed weir structure does not comply with the conditions in regulation 72(2), therefore, **Discretionary Activity** consent is required under regulation 73(1) of the NES-F.

7.1.6.2 Resource Management (Measurement and Reporting of Water Takes) Regulations 2010

The Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 (as amended in 2020[181]) regulations apply only to a water permit that allows water to be taken at a rate of 5 litres/second or more. However, the regulations do not apply to a water permit if the taking of water under the permit is non-consumptive in that (a) the same amount of water is returned to the same water body at or near the location from which it was taken; and (b) there is no significant delay between the taking and returning of the water.

The proposed use of water for hydro-electricity generation through the Waitaha Power Station is a non-consumptive use (see for example *Lower Waitaki River Management Society Inc v Canterbury Regional Council* EnvC Christchurch C80/2009, 24 September 2009). Various guidance documents reach the same conclusion in relation to hydro-electricity generation.

Irrespective, Westpower will record appropriate flow rates diverted and used through the Scheme in accordance with a Monitoring Plan and provide this data to the Councils as part of an Annual Report. These requirements are included in Westpower's suggested Approvals conditions.

Westpower's proposed 20 l/s water take from the Waitaha River for construction activities is considered a consumptive take and, therefore, falls within the scope of these Measurement and

[181] The Resource Management Measurement and Reporting of Water Takes Amendment Regulations 2020.

Reporting of Water Take regulations. Westpower's suggested consent conditions comply with Regulation 5 (determining rate in litres / second) and will comply with any additional standard conditions West Coast Regional Council impose in accordance with Regulation 6 (permit holder must keep records of water taken), Regulation 7 (Verification of device or system), Regulation 7A (Permit holder measuring 15-minute periods must provide daily records to regional council), Regulation 8 (Permit holder must provide annual records to regional council) and Regulation 8A (Permit holder must provide evidence to regional council) despite the standard surface water take conditions provided to Westpower by the West Coast Regional Council being absent conditions covering these matters.

7.1.7 National Policy Statements

7.1.7.1 National Policy Statement for Renewable Electricity Generation 2011

The National Policy Statement for Renewable Electricity Generation (the "**NPS-REG**") came into effect on 13 May 2011. It addresses two major energy challenges as New Zealand seeks to meet its growing energy demand, including:

1. Responding to the risks of climate change by reducing GHG emissions caused by the production and use of energy; and

2. The delivery of a clean, secure and affordable energy while treating the environment responsibly.

Whilst the West Coast Regional Policy Statement ("**RPS**") was promulgated after the NPS-REG came into effect, it is appropriate to consider the overarching directives of the NPS-REG that are relevant to this application – before considering how these directives are manifested in the objectives, policies and rules that apply within the West Coast region.

The overarching objective of the NPS-REG is:

> *To recognise the national significance of renewable electricity generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities, such that the proportion of New Zealand's electricity generated from renewable energy sources increases to a level that meets or exceeds the New Zealand Government's national target for renewable electricity generation.*

The proposed Waitaha Hydro Scheme will be nationally significant, and that its development, operation, maintenance and upgrading are required to be provided for.

Policies within the NPS-REG that are relevant, include:

> ***POLICY A***
>
> *Decision-makers shall recognise and provide for the national significance of renewable electricity generation activities, including the national, regional and local benefits relevant to renewable electricity generation activities. These benefits include, but are not limited to:*
>
> *a) maintaining or increasing electricity generation capacity while avoiding, reducing or*

displacing greenhouse gas emissions;

b) *maintaining or increasing security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation;*

c) *using renewable natural resources rather than finite resources;*

d) *the reversibility of the adverse effects on the environment of some renewable electricity generation technologies;*

e) *avoiding reliance on imported fuels for the purposes of generating electricity.*

POLICY B

Decision-makers shall have particular regard to the following matters:

a) *maintenance of the generation output of existing renewable electricity generation activities can require protection of the assets, operational capacity and continued availability of the renewable energy resource; and*

b) *even minor reductions in the generation output of existing renewable electricity generation activities can cumulatively have significant adverse effects on national, regional and local renewable electricity generation output; and*

c) *meeting or exceeding the New Zealand Government's national target for the generation of electricity from renewable resources will require the significant development of renewable electricity generation activities.*

POLICY C1

Decision-makers shall have particular regard to the following matters:

a) *the need to locate the renewable electricity generation activity where the renewable energy resource is available;*

b) *logistical or technical practicalities associated with developing, upgrading, operating or maintaining the renewable electricity generation activity;*

c) *the location of existing structures and infrastructure including, but not limited to, roads, navigation and telecommunication structures and facilities, the distribution network and the national grid in relation to the renewable electricity generation activity, and the need to connect renewable electricity generation activity to the national grid;*

d) *designing measures which allow operational requirements to complement and provide for mitigation opportunities; and*

e) *adaptive management measures.*

POLICY C2

When considering any residual environmental effects of renewable electricity generation activities that cannot be avoided, remedied or mitigated, decision-makers shall have regard to offsetting measures or environmental compensation including measures or compensation which benefit the local environment and community affected.

POLICY D

Decision-makers shall, to the extent reasonably possible, manage activities to avoid reverse sensitivity effects on consented and on existing renewable electricity generation activities.

POLICY E2

Regional policy statements and regional and district plans shall include objectives, policies, and methods (including rules within plans) to provide for the development, operation, maintenance, and upgrading of new and existing hydro-electricity generation activities to the extent applicable to the region or district.

This application is fundamentally consistent with the requirements of the NPS-REG, for the following reasons:

> The Scheme is well aligned with Policy C1 because it will make a significant contribution to achieving New Zealand's climate change aspirations. More specifically, it will contribute to New Zealand's target to reduce net GHG emissions to 50 per cent below gross 2005 levels by 2030 (as its Nationally Determined Contribution to international efforts to tackle climate change), and the 90% renewable electricity target by 2025 set out in the present New Zealand Energy Efficiency and Conservation Strategy;

> This AEE has set out the significance of the Waitaha Hydro Scheme in terms of renewable electricity generation. Decision makers under the RMA are to recognise and provide for the benefits of the proposed operation of the Scheme;

> The Scheme is proposed in a location that receives a very high amount of natural rainfall and to this extent, will be located where the renewable energy resource is plentifully available and the scheme's design and proposed operation allows and provides for mitigation and adaptive opportunities in line with Policy C1;

> As discussed in section 6, various management methods are proposed to appropriately address the Scheme's adverse effect thereby achieving Policy C2;

> It is noted that Westpower's proposed contribution towards ecosystem programme(s) is consistent with Policy C2 regarding environmental offsetting and compensatory measures which benefit the local and wider environments. Other mitigation, offsetting and compensatory measures proposed also fit within Policy C2.

Overall, the development and operation of the Waitaha Hydro Scheme is demonstrably consistent with the matters of national significance the NPS-REG provides for and the objective of the NPS-REG.

7.1.7.2 National Policy Statement for Freshwater Management 2020

The NPS-FM came into force on 3 September 2020 and provides direction to local authorities and resource users regarding activities that affect the health of freshwater and sets out a national objective and various supporting policies for freshwater management under the RMA. The NPS-FM has been amended several times, most recently in October 2024.

The NPSFM provides for the management of freshwater through the fundamental concept of Te Mana o te Wai. Te Mana o te Wai pervades the NPS-FM and is relevant to all freshwater management, not just those aspects referred to in the NPS-FM.

Freshwater must be managed in a way that gives effect to Te Mana o te Wai (Policy 1) and each regional council must give effect to Te Mana o te Wai (clause 3.2). Te Mana o te Wai refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai (water) and is about restoring and preserving the balance between the water, the wider environment, and the community.

The Resource Management (Freshwater and Other Matters) Amendment Act 2024 (the Amendment Act) amended sections 92, 104, and Schedule 4 of the RMA to exclude consideration of the hierarchy of obligations contained in clauses 1.3(5) and 2.1 of the NPS-FM from resource consent applications, and from resource consent decisions.

Notwithstanding that exclusion, it is noted that in Poutini Ngāi Tahu's view, the adverse cultural effects experienced as a result of the Project (taken to include all six Te Mana o te Wai principles set put in clause 1.3(4)), will be outweighed by the positive cultural impacts realised through their direct financial interest in the Scheme.

The policies in the NPS-FM are, to varying degrees, applicable to this application. These are considered below:

> ***Policy 1:*** *Freshwater is managed in a way that gives effect to Te Mana o te Wai.*

Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. Based on several comprehensive technical assessments commissioned by Westpower to assess the potential environmental effects associated with the proposed Scheme, its construction, operation and maintenance will appropriately avoid, remedy or mitigate potential adverse effects on the environment. The assessment, and more particularly, Poutini Ngāi Tahu's support for the Scheme, also demonstrate its overall positive cultural effect outcome. Other potential positive effects associated with Westpower's proposed offsetting and compensatory measures also help to achieve Policy 1. In addition, the proposed operation methods, management and adaptive management plans and proposed conditions covering all these matters will protect the health of freshwater in the area and will appropriately protect the health and well-being of the wider environment.

> ***Policy 2:*** *Tāngata whenua are actively involved in freshwater management (including decision making processes), and Māori freshwater values are identified and provided for.*

Policy 2 is primarily for regional councils to implement. However, as set put in section 2.8 Westpower has sought to engage with representatives from Poutini Ngāi Tahu both prior to and throughout the preparation of this application. Poutini Ngāi Tahu's participation as a partner to

Westpower in the Scheme, provides the ultimate mechanism to remain involved and impart Māori freshwater values to all phases of the Scheme's development. This is the ultimate outcome in terms of what Policy 2 is designed to achieve.

> ***Policy 3:*** *Freshwater is managed in an integrated way that considers the effects of the use and development of land on a whole-of-catchment basis, including the effects on receiving environments.*

Westpower has adopted an integrated approach to the assessment of potential effects of the Scheme and has worked, as appropriate, with various experts to ensure it can be managed safely and independently from other river uses while minimising environmental effects. In this respect, the various effect assessments not only consider the changes to the river's flow regime, but they also identify and address related consequential environmental impacts these changes may induce (e.g. potential sediment and filamentous algae buildup in the abstraction reach and potential downstream safety effects). Furthermore, certain technical assessments also focus on how the operation of the Scheme could affect the full extent of the Waitaha River – not just its residual reach. The agreement reached with Whitewater NZ demonstrates this integrated approach taken to mitigating the effects of the Scheme.

> ***Policy 4:*** *Freshwater is managed as part of New Zealand's integrated response to climate change*

The ability to develop renewable resources such as hydro in New Zealand is fundamental to meeting the government's renewable electricity targets and our climate change commitments. Any increase to renewable generation to meet ever-growing electricity demand avoids this demand being met by thermal generation. In New Zealand's quest to decarbonise, the Waitaha Scheme offers a clean, reliable, and flexible energy solution that provides direct support to the nation's emissions reduction, electrification goals, and overall climate change resilience.

> ***Policy 5:*** *Freshwater is managed through a National Objectives Framework to ensure that the health and well-being of degraded water bodies and freshwater ecosystems is improved, and the health and well-being of all other water bodies and freshwater ecosystems is maintained and (if communities choose) improved.*

While it is for the WCRC to establish a National Objectives Framework for waterbodies in the West Coast Region, Westpower has sought to ensure that the condition framework for the management of the effects of the Waitaha Scheme addresses the potential for adverse effects in the Waitaha River, including its full reach downstream of the Scheme and all its tributaries.

> ***Policy 6:*** *There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted.*

Westpower has designed the Waitaha Hydro Scheme, and its ancillary access road and transmission line corridors to avoid wetlands. It follows that this proposal will not result in a loss of extent of natural inland wetlands. Additionally, with the setbacks proposed, it is anticipated that the values of existing wetlands, will be unaffected.

Policy 7: *The loss of river extent and values is avoided to the extent practicable*

As outlined in section 4.1, a number of other designs were considered for the Waitaha Scheme by Westpower, most of which affected a much greater length of Waitaha River bed than the design being proposed in this application (i.e. some design options extended up to the top of Kiwi Flat). To this extent, and although there will be changes to the abstraction reach, the length of this reach has been minimised to approximately 2.5 km and is considered to be optimal and reduced to 'the extent practicable'.

As discussed in section 6.15, Westpower will appropriately mitigate adverse in-stream ecological effects within the abstraction reach, by maintaining no less than 3.5 cumecs of flow through this river section at all times. This is in line with the calculated IFIM and will, therefore, ensure sustainable river management while minimising conflicts between ecological preservation and economic development.

Westpower has also proposed practicable methods to monitor and manage potential build-up of fine sediment and filamentous algae within the abstraction reach and proposed special conditions to this effect.

Overall, the reduction of effects is to 'the extent practicable'.

Policy 8: *The significant values of outstanding water bodies are protected.*

The Waitaha Hydro Scheme will not affect any identified outstanding waterbodies.

Policy 9: *The habitats of indigenous freshwater species are protected.*

As noted above, the proposed residual flow of 3.5 cumecs is in line with the calculated IFIM and ensures an appropriate degree of aquatic habitat preservation for indigenous freshwater species.

Notably, Westpower's proposal includes a strict requirement to ensure the weir design retains the status quo in respect of enabling kōaro to migrate upstream to Kiwi Flat while prohibiting other fish species from doing the same. Special design conditions are also suggested by Westpower and other specific freshwater ecology management requirements are set out int the FEMP to ensure this key protection requirement is achieved.

Where and when appropriate, the proposal also includes salvaging and relocating any indigenous fish prior to undertaking construction Stream Works.

Westpower will also undertake ramping rate trials downstream of the Power Station and to confirm the operation doesn't strand any downstream fish and will undertake monitoring of the tailrace to ensure and attracted fish to this part of the Scheme are salvaged and returned to the main stem of the river.

Overall, the protection measures proposed will achieve Policy 9.

> ***Policy 10:*** *The habitat of trout and salmon is protected, insofar as this is consistent with Policy 9.*

Again, since the proposed residual flow of 3.5 cumecs is in line with the calculated IFIM, this provides an appropriate degree of aquatic habitat preservation for trout and salmon.

Notably, the weir design will ensure Policy 9 is prioritised over Policy 10 and that trout or salmon remain excluded from Kiwi Flat.

> ***Policy 11:*** *Freshwater is allocated and used efficiently, all existing over-allocation is phased out, and future over-allocation is avoided*

The proposed diversion, take and use of water for the Waitaha Power Station is considered an efficient use of water. In this regard, subject to the capacity of the Scheme's infrastructure, Westpower will maximise the use of allocated water for the generation of electricity.

> ***Policy 13:*** *The condition of water bodies and freshwater ecosystems is systematically monitored over time, and action is taken where freshwater is degraded, and to reverse deteriorating trends.*
>
> ***Policy 14:*** *Information (including monitoring data) about the state of water bodies and freshwater ecosystems, and the challenges to their health and well-being, is regularly reported on and published.*

Monitoring related to the health and well-being of water bodies will be limited to:

- Settled sediment in the abstraction reach (related to a Flushing Management Plan);
- Filamentous algae levels in the abstraction reach (as set out in the FEMP); and
- Kōaro recruitment upstream of Morgan Gorge (also as set out in the FEMP).

This information will be provided to the Councils as part of an Annual Report.

> ***Policy 15:*** *Communities are enabled to provide for their social, economic, and cultural well-being in a way that is consistent with this National Policy Statement.*

The construction and operation of the Waitaha Power Station will provide for the following:

- The social, economic and cultural well-being of mana whenua;
- The social and economic well-being of Westpower;
- The social and economic well-being of the balance of the community in terms of strengthening the region's security of electricity supply and general electricity resilience and helping it to meet future local and regional growth in electricity demand; and
- The social and economic well-being of New Zealand by providing a significant contribution to our country's renewable electricity generation portfolio.

The NPS-FM is not intended to prevent applications, such as that made by Westpower, being granted; indeed, with respect to the first priority in the NPS-FM objective, the generation of electricity from a renewable resource that avoids contributing to GHG emissions and helps avoid climate change effects prioritises the health and well-being of water bodies and freshwater ecosystems that would otherwise be adversely affected by GHG emissions.

The second priority in the NPS-FM objective following the health and well-being of water bodies and freshwater ecosystems, is the health needs of people. Renewable electricity is fundamental to the health needs of people in many ways, such as providing electricity to run hospitals or to run water treatment plants and pumping systems to provide drinking water. The operation of the Waitaha Power Station will protect the health of freshwater in the area and will protect the health and well-being of the wider environment.

The third priority is the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future. Renewable electricity is also fundamental to community well-being and enabling Aotearoa New Zealand to decarbonise its economy. Assuming the scheme produces 129 GWhs (129,000 MWhs) of renewable electricity, this is equivalent to annually offsetting 129,000 tonnes of CO_2 from thermal electricity production or equivalent to removing approximately 69,000 internal combustion cars from NZ roads. In New Zealand's quest to decarbonise, the Waitaha Scheme will offer a clean, reliable, and flexible energy solution that, not only provides direct support to the nation's emissions reduction and electrification goals, but also strengthens energy security, economic development, and overall climate change resilience.

The unique benefit associated with the Waitaha Scheme is it will provide power to consumers in the West Coast region when that area is periodically cut-off from the rest of the grid. Without it, existing electricity sources will continue to struggle to provide this back-up power, and as regional demand grows, this will result in more people and businesses experiencing power outages and the associated negative economic impact.

While it may be considered that the Waitaha proposal may not be entirely consistent with each and every provision of the NPS-FM, particularly in respect of the changes that will occur within the abstraction reach, the NPS-FM recognises this, and where there are impacts of hydro schemes on freshwater bodies, a balancing exercise is required to reconcile the need for renewable electricity and to maintain the values of waterbodies (through the inclusion of clause 3.31 in the NPS-FM). In this case, it is considered that this proposal achieves an appropriate balance between these two imperatives.

Overall, and with Westpower's proposed conditions, the construction, operation and maintenance of the Waitaha Hydro Scheme is consistent with the objective and policies of the NPS-FM. It provides an example of how the NPS-FM can be implemented in practice to provide for a particularly important water use activity for the West Coast region while ensuring that the health and well-being of the region's freshwater ecosystems are prioritised and protected, the health

needs of people are provided for and people and communities are able to provide for their social, economic, and cultural well-being.

7.1.7.3 National Policy Statement for Indigenous Biodiversity 2023

The National Policy Statement for Indigenous Biodiversity 2023 ("**NPS-IB**") was approved by the Governor General on 31 May 2023 and came into force on 4 August 2023. The Waitaha Hydro Scheme will be a renewable electricity generation asset and activity, and as such, the NPS-IB does not apply[182]. For that reason, the NPS-IB has not been considered in detail in this AEE.

The objective of the NPS-IB is:

> *(a) To maintain indigenous biodiversity across Aotearoa New Zealand so that there is at least no overall loss in indigenous biodiversity after the commencement date; and*
>
> *(b) To achieve this:*
>
> *(i) Through recognising the mana of tangata whenua as kaitiaki of indigenous biodiversity; and*
>
> *(ii) By recognising people and communities, including landowners, as stewards of indigenous biodiversity; and*
>
> *(iii) By protecting and restoring indigenous biodiversity as necessary to achieve the overall maintenance of indigenous biodiversity; and*
>
> *(iv) While providing for the social, economic, and cultural well-being of people and communities now and in the future.*

Notwithstanding the efforts to minimise Waitaha Hydro Scheme's footprint, its construction and operation has the potential to cause adverse effects on indigenous biodiversity. However, in most cases these effects can be avoided remedied or mitigated to the extent any residual effect is no more than minor. For other potentially higher order residual adverse effects on whio, Westpower proposes to offset these through contributions to an appropriate ecosystem programme in the region. Westpower has also adopted a highly conservative approach to potential effects on indigenous bats, whereby they are offering funding for a regional ecosystem programme to achieve a net positive outcome for indigenous bat populations – in addition to being committed to adopt the DOC Bat Protocol – considered the best practice vegetation removal protocol to avoid effects on bats.

This indigenous biodiversity enhancement initiative will give effect to the objective of the NPS-IB, notwithstanding that the NPS specifically excludes renewable generation due to its benefits for biodiversity in mitigating the impacts of climate change.

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[182] Section 1.3(3) Nothing in this National Policy Statement applies to the development, operation, maintenance or upgrade of renewable electricity generation assets and activities and electricity transmission network assets and activities. For the avoidance of doubt, renewable electricity generation assets and activities, and electricity transmission network assets and activities, are not "specified infrastructure" for the purposes of this National Policy Statement.

7.1.7.4 National Policy Statement on Urban Development 2020

The NPS-UD recognises the national significance of:

- Having well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural well-being, and for their health and safety, now and into the future;
- Providing sufficient development capacity to meet the different needs of people and communities;
- Ensure urban environments support reductions in greenhouse gas emissions and are resilient to the current and future effects of climate change.

As discussed in section 6.3, the proposal plays a key role in supporting and enhancing the resilience and security of power supply to industry and urban environments located on the West Coast. The proposal also responds to projected increases in demand, particularly those associated with the electrification of industrial process heat. This electrification process is essential to support reductions in greenhouse gas emissions.

To the extent that this proposal provides electricity to support the ongoing construction, maintenance and upgrade of urban environment infrastructure, that enables people and communities to provide for their social, economic, and cultural well-being, and to improve their health, safety and overall well-being, it is considered that Westpower's proposal aligns very closely with the objectives and policies of the NPS-UD[183]. It follows, the act of granting the proposal would be considered consistent with the duties of the WDC and WCRC to be discharged under this NPS.

7.1.8 West Coast Regional Policy Statement

7.1.8.1 RPS Introduction

The West Coast Regional Policy Statement ("**RPS**") sets out the overarching resource management framework for the West Coast region, providing high-level direction to guide regional and district plans, resource consent decisions, and other RMA-related processes.

The key focus areas of the RPS are set out below:

- Sustainable Management of Resources: The RPS promotes the use and development of natural and physical resources in a way that meets current needs without compromising future generations;
- Protection of Natural Values: The RPS seeks to protect significant indigenous vegetation, habitats, landscapes, and natural character, especially in coastal and freshwater environments;

[183] Objective 1, Objective 6(c), Objective 8, Policy 1(e) and (f), Policy 6.

- Mineral and Energy Resources: The RPS recognises the regional importance of mining and energy production, aiming to enable development while managing environmental effects;
- Natural Hazards: The RPS identifies and manages risks from hazards like flooding, coastal erosion, and earthquakes;
- Tangata Whenua: The RPS acknowledges the relationship of Poutini Ngāi Tahu with natural resources and incorporates their values and interests in regional planning; and
- Infrastructure and Development: The RPS supports the development of infrastructure to enable community well-being, while balancing environmental sustainability.

The current operative RPS became fully operative on 24 January 2020, following a comprehensive review process.

At the outset, it is worth highlighting that the RPS is both the highest ranking and most recently prepared operative planning document for the West Coast Region and Westland District. Accordingly, its policies and objectives carry proportionally greater weight as compared to equivalent provisions within other relevant planning documents lower down in the hierarchy and/or currently in preparation.

7.1.8.2 RPS Assessment Overview

Appendix 51 sets out the relevant RPS objectives and policies in respect of the proposed Waitaha Hydro Project and provides detailed commentary regarding the Scheme's level of alignment with these respective provisions. In the interests of brevity, an overview of the key RPS planning assessment observations is presented below.

- The Waitaha Hydro Scheme is classified as regionally significant infrastructure ("RSI") under the RPS and, thereby is afforded appropriate recognition and priority throughout relevant planning provisions;
- The proposed Scheme is considered highly consistent with relevant RPS objectives and policies that address resource management issues of significance to Poutini Ngāi Tahu because:
  - Poutini Ngāi Tahu have been involved as a key stakeholder to the proposal for many years and are now a partner with Westpower in it; and
  - The Project provides for their cultural well-being and their involvement as a partner inherently aligns with the principles of the Treaty of Waitangi while offering tangible ways for them to exercise their kaitiaki duties and achieve tino rangatiratanga.
- RPS objectives and policies designed to achieve resilient and sustainable communities are fully achieved by the proposal for the following key reasons:
  - The Scheme will deliver much needed energy resilience to the West Coast along with a range of economic benefits while also contributing to the nation's efforts to decarbonise

and, in turn, deliver a range of other consequential environmental, social and cultural benefits;

- As detailed in Section 6.2, the Scheme will result in a wide range of economic benefits combining to deliver significant positive effects;
- The Scheme will deliver a clean, reliable, and flexible energy solution that, not only provides direct support to the nation's emissions reduction and electrification goals, but also strengthens energy security, economic development, and overall climate change resilience. Accordingly, it is well aligned with the Climate Change Response Act 2002 and New Zealand's Emissions Reduction Plan;
- The development and operation of the Waitaha Hydro Scheme is demonstrably consistent with the matters of national significance the NPS-REG provides for and the objective of the NPS-REG; and
- This proposal provides electricity to support the ongoing construction, maintenance and upgrade of urban environment infrastructure, that enables people and communities to provide for their social, economic, and cultural wellbeing, and to improve their health, safety and overall well-being, it is considered that Westpower's proposal aligns very closely with the objectives and policies of the NPS-UD.

- The proposal also achieves a number of objectives and policies associated with use and development of resources and regionally significant infrastructure, mainly due to the following factors:
  - The Scheme responds directly to much needed security of supply and the region's susceptibility to power outages that adversely impact the needs of people and communities;
  - The water diverted will be used efficiently by the Waitaha Hydro Scheme, and will result in a substantial renewable electricity generation supply for the West Coast Region;
  - Electricity is a vital resource for New Zealand. There can be no sustainable management of natural and physical resources without energy, of which electricity is a major component;
  - Ngai Poutini's direct involvement in the project provides for their cultural well-being;
  - The Scheme will be constructed and operated with minimal conflict with other users/ visitors and, as concluded in the Landscape Report, there are no significant landscape, natural character or amenity effects;
  - Westpower's comprehensive compensation package offering, which includes financial payments towards ecosystem improvement programmes for the life of the consent and compensation payments to WWNZ to address residual adverse effects on this community; and
  - The Project's design to achieve a high level of integration with existing infrastructure.

- Regarding provisions to manage ecosystems and indigenous biological diversity:
  - Although the Scheme cannot fully protect or avoid adverse effects on significant indigenous vegetation and significant habitats of indigenous fauna, substantial effort has been made to investigate alternatives and to minimise the Scheme's construction and operational footprints such that these effects, when combined with Westpower's compensation package, are no more than minor.
  - Overall, an appropriate balance is achieved between protective policy provisions and other conflicting RSI policies that recognise that these types of developments will not always be able to provide total protection for these natural resources. To this extent, the proposal is considered to achieve these provisions.
- In terms of managing natural character, natural features and landscapes, the proposal is considered consistent with the policy guidance provided by the RPS due to the following key reasons:
  - The proposal is for a new renewable electricity generation site, classified as RSI, that will generate significant economic benefits, increases security of supply and community resilience and helps meet local and regional forecasted increases in electricity demand all while assisting the country to achieve its renewable energy targets and meet its climate change obligations and is not considered "inappropriate development";
  - There is a functional need for the Scheme to be located on and alongside the Waitaha River and in an area with high landscape and natural character values;
  - The Landscape Report considers that the Scheme is appropriate with respect to natural character, landscape and visual amenity, despite the fact that, at more local levels, effects on some of these values are assessed as being more than minor. At a broader scale, these effects are, at worst, minor;
  - Importantly, with the recommended mitigation implemented as proposed, including the implementation of the Landscape Management Plan, there will be no significant adverse effects;
  - Even with the Scheme in place, the area does not lose its outstanding natural landscape status and the Morgan Gorge remains an outstanding natural feature; and
  - Overall, an appropriate balance is achieved between some of the RPS's protective policies and other conflicting RSI policies that recognise these types of developments will not always be able to avoid adverse effects[184].

[184] See Policy 3 RSI

- As discussed in section 6 of this AEE, the proposal will ensure the life-supporting capacity of freshwater is maintained while at the same time utilising Waitaha River flows to enhance enable the economic, social and cultural wellbeing of West Coast communities.
- Regarding natural hazards, the Scheme's design adopts highly conservative risk factors to ensure the integrity, operation and commercial viability of the Scheme is maintained in the event of any future seismic or extreme flood event - even when the effects of climate change are considered.

7.1.8.3 RPS Conclusion

Overall, while noting that the core activity associated with this proposal is renewable energy generation and given the Scheme is classified as RSI, the RPS provides the Project, in a policy sense, strong support and recognition, even in light of the fact that the development results adverse environmental impacts. Accordingly, it is considered that this proposal is highly consistent with the RPS.

In making this overall assessment, it is also worth reiterating that since the RPS is both the highest ranking and most recently prepared operative planning document for the West Coast Region and Westland District, its policies and objectives should carry proportionally greater weight when making resource management decisions as compared to other planning documents. This is particularly true in respect of any examples where policies and/or objectives contained in lower hierarchy or proposed plans conflict with equivalent policy directives set out in the RPS.

7.1.9 West Coast Regional Plan

7.1.9.1 WCRP Introduction

The West Coast Regional Plan ("**WCRP**") includes several separate plans, however, the plans most relevant to this proposal are limited to:

- The Land and Water Plan: Which became operative in 2014, with key updates in 2020 and 2021. This plan manages water quality, water quantity, and land use activities (e.g. earthworks) to protect freshwater resources; and
- The Air Quality Plan: Which became operative on 31 July 2002. It outlines how the region manages air discharges including particulate matter, odour, combustion products, ozone, and greenhouse gases.

It is noted that the objectives and policies set out in each of these plans are required to give effect to the RPS, however, because the RPS is a much newer plan, there are a number of inconsistencies which will need to be addressed as part of future plan review processes. In the meantime, for any conflicts, the RPS provisions should carry greater weight.

7.1.9.2 WCRP Assessment Overview

Appendix 51 sets out the relevant WCRP objectives and policies in respect of the proposed Waitaha Hydro Project and provides detailed assessment commentary regarding the Scheme's level of alignment with these respective provisions. In the interests of brevity, a high-level overview of this assessment is presented below.

In terms of relevant WCRP objectives and policies, the following key observations are noted;

- Relevant provisions regarding natural and human use values are achieved through the proposal's non-consumptive use of a highly plentiful natural water resource to respond directly to NPS-REG directives regarding the need to increase renewable electricity generation while ensuring the Scheme's design maintains the life-supporting capacity of water, protects koaro, is equipped to withstand natural hazards, results in acceptable residual adverse environmental effects and residual levels of public risk and through Poutini Ngāi Tahu's support for the Project.
- Objectives and policies regarding land management will be adequately achieved through a combination of Scheme design initiatives, management plans and compensation.
- Consistency with relevant provisions designed to manage lake and riverbeds and wetlands is achieved because the Scheme avoids mapped wetlands and effects on riverbeds are limited to temporary construction phase activities and intermittent and short duration maintenance Streamwork activities during operation.
- Regarding the management water quantity, the proposal is consistent with the WCRP because the Scheme will be run-of-river, and its operation is a non-consumptive use of water where appropriate residual flows will be maintained through the abstraction reach – proportionally, a very small part of the Waitaha River – such that aquatic ecology effects are no more than minor and the river's life-supporting capacity is maintained.
- The Scheme is consistent with provisions for the management of water quality due to the temporary, intermittent and short-term nature of any Stream Works and through the proposed suite of construction and operational management plans to ensure loss of contaminants to water are avoided or minimised to the extent that aquatic ecology effects are no more than minor.
- Since air discharges associated with the Scheme's construction and operation are minor in nature and temporary and/or intermittent, relevant air quality provisions are achieved. More notably, as a renewable electricity generation development, it will result in additional market pressure on existing thermal generation plants, and ultimately achieves displacement of high greenhouse emitting generators.

7.1.9.3 WCRP Conclusion

Overall, it is considered that this proposal is consistent with the WCRP.

7.1.10 Westland District Plan

7.1.10.1 WDP Introduction

The Westland District Plan ("**WDP**") became operative on 1 July 2002 and is the primary planning document that manages land use in the Westland District. The focus of its objectives and policies is to guide decisions on subdivision and land use.

Again, when considering the objectives and policies of the WDP, it should be noted that, because the RPS is a more recent operative document, and contains objectives and policies for the region that have not been given effect to in the WDP, a higher weighting should be given to the RPS when considering provisions for the same matters.

7.1.10.2 WDP Assessment Overview

Appendix 51 sets out the relevant WDP objectives and policies in respect of the proposed Waitaha Hydro Project and provides detailed assessment commentary regarding the Scheme's level of alignment with these. In the interests of brevity, a high-level overview of this assessment is presented below.

In terms of relevant WDP objectives and policies, the following key observations are noted;

- As a result of the economic and environmental outcomes described already, the Project responds directly to the WDP's objective to enable people and communities to provide for their social, economic and cultural well-being, while meeting the principles of sustainable management of natural and physical resources[185];
- On the basis that this proposal is for renewable "green" energy generation, the Project also achieves the WDP's desire to recognise and promote Westland's image as a clean, green District[186];
- With respect to infrastructure and services, it is important to note that the WDP recognises that *"The level of isolation experienced in many parts of the District emphasises the need for Westland to become less energy dependent on the rest of New Zealand and more energy efficient. In this regard, hydro-electric power generation could represent a viable option in the future provision of the District's energy needs"*. This proposal directly responds to this over-riding commentary;
- Other relevant infrastructure and services provisions are achieved due to the following factors:

[185] Part 3.2 Sustainable Communities – Objective 3.2.1

[186] Part 3.3 Image of the District – Policy 3.3.1

- The design and location of the proposed Scheme has been the subject to an iterative process over a considerable number of years to ensure potential adverse effects have been appropriately recognised and managed;
- The proposed Scheme seeks to enable increased local generation of renewable electricity lessening, to a degree, reliance on transmission from other regions; and
- The Scheme's increased local electricity generation and enhanced use of the existing electricity network is an efficient use of infrastructure and services within the District.

- The Scheme is considered consistent with provisions relating to natural environments, natural ecosystems, natural habitats, water quality and natural hazard for reasons already set out above regarding RPS and WCRP provisions for equivalent resource management matters;
- Consistency is achieved with relevant landscape and amenity provisions as a result of the following factors:
  - Although the landscape is assessed as being outstanding, and Morgan Gorge is assessed as an outstanding natural feature, the Scheme design and layout has been through an iterative process to reduce potential visual effects to the greatest degree possible and ensure that the development appropriately sits with the environment within which it is located;
  - Despite more than minor local scale effects on the landscape, the proposal is not considered inappropriate, there are no significant adverse effects, broad-scale adverse effects are, at most, minor and the landscape remains an outstanding landscape, and Morgan Gorge an outstanding natural feature with the Scheme in place; and
  - The implementation of a Landscape Management, rehabilitation and weed monitoring and control plans.

7.1.10.3 WDP Conclusion

Overall, it is considered that this proposal is consistent with the WDP.

7.1.11 Proposed Te Tai o Poutini Plan

7.1.11.1 pTTPP Introduction

The Proposed Te Tai o Poutini Plan ("**pTTPP**") is a single, unified district planning framework covering the Buller, Grey, and Westland Districts on the West Coast. It is currently in its preparation phase and will eventually replace the Westland District Plan (discussed above).

In terms of its preparation, the pTTPP has completed the hearing stage with many provisions being the subject of submissions (i.e. support, opposition or amendment). In some instances, new provisions are also sought through submissions which could impact the interpretation of the current proposed provisions.

There have not yet been any recommendations issued by the hearing panel and no decisions on the wide range of submissions have been made at this stage. It follows that, the pTTPP is some way off being made operative, therefore, significantly more weight should be given to RPS provisions than any pTTPP provisions regarding the same resource management matters.

7.1.11.2 pTTPP Assessment Overview

Appendix 51 sets out the relevant pTTPP objectives and policies in respect of the proposed Waitaha Hydro Project and provides appropriate assessment commentary. Given some pTTPP rules were in effect from the date this plan was notified, the assessment presented in **Appendix 51** focusses on the resource management issues matters associated with these rules, which include;

- Sites and Areas of Significance to Māori;
- Ecosystems and Indigenous Biodiversity;
- Natural Character and Margins of Waterways; and
- Activities on the Surface of Water.

Less planning assessment focus has been afforded to other matters on the basis they are likely to change through the remainder of the plan preparation process and they don't link to any rules that are in effect.

In the interests of brevity, a high-level overview of this assessment is presented below.

- In terms of the pTTPP's ecosystems and indigenous biodiversity provisions, the proposal is considered generally consistent with these for the same reasons they are consistent with these matters under the RPS, and to a similar extent, under the WCRP and WDP. However, some pTTPP provisions include avoid and/or protect directives[187], which the proposal cannot practicably achieve. In these instances, similar provisions set out in the RPS should be given more weight;
- Regarding the pTTPP's planning provisions on natural character and margins of waterways, it is considered that the Scheme achieve most of these, again, for similar reasons discussed in respect of equivalent RPS provisions, however, some wording that seeks the "preservation" of the natural character of lakes, rivers and requires that the Scheme's "form and scale will not adversely affect the natural character of the riparian area". Again, these directive provisions cannot be fully achieved by the Scheme given it has a functional and operational need to be located on a river. As above, in these instances, similar provisions set out in the RPS should be given more weight;
- Similar conclusions are also made in terms of objectives and policies dealing with activities on the surface of water, where, the Scheme generally achieves these provisions, but cannot fully

[187] Example - ECO-01

achieve some aspects due to the use of highly directive wording in places. Again, similar provisions set out in the RPS should be given more weight;

- For the balance of pTTPP planning provisions, despite them being subject to numerous submissions, and as a result, subject to change and potential further challenge, the Scheme is generally consistent with these.

7.1.11.3 pTTPP Conclusion

The pTTPP has a number of planning provisions that cannot be fully achieved by the Scheme. However, because most of these provisions create conflict with operative provisions within the RPS, and to this extent, don't give effect to the RPS as they should, it is anticipated that these conflicts will get resolved through upcoming pTTPP decisions and any further plan preparation processes. Despite this, as the pTTPP currently stands, it is considered that, in the round, the Scheme is consistent with it.

7.1.12 Other Relevant Matters

Section 104(1)(c) of the RMA directs that the Panel must also have regard to any other matter they consider relevant and reasonably necessary to determine a resource consent application. The consideration of such matters remains subject to Part 2 of the RMA.

The relevant other matters to the consideration of these resource consent applications are:

- He Rautaki mō te Huringa o te Āhuarangi: Te Tāhū o te Whāriki (Te Rūnanga o Ngāi Tahu Climate Change Strategy);
- Hapu and Iwi Planning Documents;
- Ngāi Tahu Statutory Acknowledgement Areas;
- Final Climate Change Commission Report;
- Emissions Reduction Plan;
- National Adaptation Plan; and
- West Coast Renewable Energy Strategy 2022.

7.1.12.1 He Rautaki mō te Huringa o te Āhuarangi: Te Tāhū o te Whāriki

He Rautaki mō te Huringa o te Āhuarangi (the Strategy) provides direction regarding climate change matters across the spectrum of Ngāi Tahu interests, assets and activities and creates Ngāi Tahu responses to the risks and opportunities presented by climate change, referencing the entire tribal structure, so that iwi, hapū and whānau aspirations can be met. It establishes a Vision and Strategic Direction, followed by Priorities for Short / Medium Term Actions (to be achieved by 2025) and Longer Term Actions (to be achieved by 2050).

By virtue of Poutini Ngāi Tahu's support for the Waitaha Hydro Scheme (and confirmation of Te Rūnanga o Ngāi Tahu endorsement of this support) climate change matters relevant to Ngai Tahu are considered to be fully addressed.

7.1.12.2 Ngāti Mahaki o Makaawhio and Ngāti Waewae Pounamu Management Plans

Westpower has proposed special accidental pounamu discovery conditions to address the matters set out in these Pounamu Management Plans.

7.1.12.3 Ngāi Tahu Statutory Acknowledgement Areas

Part 12 of the Ngāi Tahu Claims Settlement Act 1998 identifies several Statutory Acknowledgements and Statutory Areas (the area to which an Acknowledgement relates) within the Ngāi Tahu rōhe. These are areas where the Crown acknowledges particular Te Rūnanga o Ngāi Tahu cultural, spiritual, historic, and traditional associations. The purpose of the statutory acknowledgements are:[188]

(a) To require that consent authorities forward summaries of resource consent applications to Te Rūnanga o Ngāi Tahu, as required by regulations made pursuant to section 207; and

(b) To require that consent authorities, Heritage New Zealand Pouhere Taonga, or the Environment Court, as the case may be, have regard to the statutory acknowledgements in relation to the statutory areas, as provided in sections 208 to 210; and

(c) To empower the Minister of the Crown responsible for management of the statutory areas, or the Commissioner of Crown Lands, as the case may be, to enter into deeds of recognition, as provided in section 212; and

(d) To enable Te Rūnanga o Ngāi Tahu and any member of Ngāi Tahu Whānui to cite statutory acknowledgements as evidence of the association of Ngāi Tahu to the statutory areas, as provided in section 211.

In summary, there are no statutory acknowledgements or nohoanga entitlements relevant the land and natural resources associated with, or in the vicinity of, the proposed Waitaha Scheme.

7.1.12.4 Climate Change Reports

In May 2021, the Climate Change Commission released its final report, titled *Ināia tonu nei: a low emissions future for Aotearoa*, detailing its advice in respect to the commitment made by the Government to reach net zero emissions of long-lived gases by 2050. The report provides useful context, and reiterates the importance of renewable electricity generation in meeting New Zealand's climate change aspirations. The report sets out key elements of policy direction, including:

[188] Section 21 "Purposes of statutory acknowledgements", Ngāi Tahu Claims Settlement Act 1998.

- Work in partnership with Iwi/Māori, and with local government, to ensure the transition to a low-emissions economy is firmly rooted in the principles of Te Tiriti o Waitangi/The Treaty of Waitangi;
- Send clear and consistent signals about how Aotearoa will transition to low emissions and work together across political parties, government agencies and local government;
- Improve the New Zealand Emissions Trading Scheme so that it provides stronger market incentives to drive low-emission choices;
- Make sure all government policy and investment decisions support the transition to low emissions; and
- Develop a national energy strategy to decarbonise the energy system and introduce measures to make sure the electricity sector is ready to meet future needs.

The report identifies a number of key transitions along the demonstration path[189]; including in respect of electricity:

1. Budget 1: Phase out fossil base load generation;
2. Budget 2: Transmission and distribution grid upgrades and expand renewable generation; and
3. Budget 3: Achieve 95% renewable generation.

In addition, the report sets out that:

- The use of low emissions electricity allows other sectors to reduce emissions. Electrifying transport and process heat will require significant expansion in electricity generation capacity. Demand for electricity will also increase as buildings and process heat switch away from fossil fuels;
- The long-term scenarios showed that renewable generation needs to rapidly expand in the 2030s and beyond to meet increased electricity demand as electric vehicles are widely adopted;
- In the short term, there is a concern that electricity generation companies may not commit to the necessary expansion while there is uncertainty around the future of the New Zealand aluminium smelter at Tiwai Point; and
- Wind, solar and geothermal offer low cost and low emissions ways of generating electricity. "The demonstration path" would see 3.8 TWh of currently committed (consented) generation projects built between 2020 and 2024. The building of further renewables pauses due to the New Zealand aluminium smelter closing and resumes in the late 2020s. Beyond 2030, the

[189] Table 7.1.

modelling shows increases in wind, solar and geothermal generation greater than 1 TWh per year is required.

The Climate Change Commission recommends[190] that the government develop a comprehensive energy strategy to ensure actions to decarbonise are considered across the whole energy system. This includes setting a system-wide renewable energy target and increased investment in energy efficiency. A strategy would help Aotearoa leverage its extensive existing renewable electricity resources to decarbonise areas like transport and industry and reduce fossil fuel use in building. Additionally, the Climate Change Commission recommends a target of 50% of all energy consumed to come from renewable sources (currently this figure is approximately 30%) by 2035. This target is across the energy system, which includes electricity, process and building heat, and transport.

The Commission also considers that Aotearoa needs to maximise the use of electricity as a low emissions fuel, stating that Aotearoa is unique in that its hydro lakes contribute around 60% of total electricity supply. However, these lakes only hold enough water for a few weeks of winter energy demand if inflows (rain and snow melt) are very low. When inflows are low for long periods of time, hydro generation reduces, and the system relies on other forms of generation – such as fossil gas and coal. These periods of time are often referred to as 'dry years', and often result in very expensive wholesale electricity prices. New renewable generation will need to be built rapidly to meet the projected increase in electricity demand, and the report identifies that many forms of renewable generation, including hydro, wind and geothermal, have the potential to "come into conflict the resource management system" due to effects on freshwater and biodiversity:

> *"To ensure the fast-paced and sustained build of low-emissions electricity, resource consent approval processes, other national and local government instruments, and settings for transmission and distribution investment decisions need to uphold Te Tiriti o Waitangi/The Treaty of Waitangi and be aligned with the required pace for build".*

The report also notes that building new hydroelectric generation sites or expanding existing assets could be part of the response to meet emissions budgets and targets, however this would result in substantial environmental effects from new dams or raising the height of existing dams.

The findings and recommendations of the Climate Change Commission reiterate the importance of New Zealand's existing hydro-electricity generation fleet and reinforce the need to protect the output from existing assets, thus reducing reliance on yet to be identified and implemented alternatives. The grant of consents for the Waitaha Hydro Scheme is consistent with (and significantly supports) the findings of the Climate Change Commission.

[190]Ināia tonu nei: a low emissions future for Aotearoa, Recommendation 20.

7.1.12.5 Emissions Reduction Plan

The emissions reduction plan published by the Minister of Climate Change under section 5ZI of the Climate Change Response Act 2002[191] responds to the recommendations of the Climate Change Commission report, "*Ināia tonu nei: a low emissions future for Aotearoa*" and again highlights the reliance New Zealand has on its already high level of electricity generation from renewable energy resources. Action 11.2.1 in the report is to "*Accelerate development of new renewable electricity generation across the economy*" identifies the need "*to generate more electricity from existing low-emissions technologies*" and "*to increase our use of new technologies*". Those actions are based on the already high level of electricity generation[192] from renewable energy resources in New Zealand. For example, on page 204, the plan notes that:

> *Aotearoa New Zealand's energy system is highly renewable by international standards. Just over 40 per cent of our total primary energy supply[193] and nearly 28 per cent of our total final energy consumption[194] comes from renewable energy sources.*

New Zealand's second emissions reduction plan for the period 2026-30 (*Ta Aotearoa mahere whakaheke tukunga tuarua*) was published by the Minister of Climate Change under section 5ZI of the Climate Change Response Act 2002 in December 2024. This plan continues the reliance on use of renewable energy to meet New Zealand's emission reduction targets. The plan states that the Government has committed to doubling renewable energy by 2050 and that a key policy of the second emissions reduction plan is "Electrify NZ" which is the work programme to support private investment in electricity generation and networks that will enable achievement of the goal. Electrify NZ includes initiatives such as progressing the Fast-track Approvals legislation to create a one-stop-shop allowing for faster, more efficient consents for nationally or regionally significant renewable energy and transmission projects, amending the RMA, advancing amendments to the National Policy Statements for Renewable Electricity Generation and Electricity Transmission, developing a regime for offshore renewable energy, and further RMA national direction to enable a range of energy and infrastructure projects. The second emissions reduction plan is clear that renewable energy is critical to meeting emission reduction targets.

In December 2024, two reports were released by the Climate Change Commission on Aotearoa New Zealand's medium- and long-term climate goals. The reports note that since 2019 it has also become increasingly clear that current global action is not sufficient to limit warming to 1.5°C above pre-industrial levels and that average global temperatures are already close to that threshold. It is highly likely that average warming will exceed 1.5°C within the next 10 years, bringing increased risk of severe and widespread climate impacts, implying that even greater reductions in

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[191] Te hau mārohi ki anamata: Towards a productive, sustainable and inclusive economy, published by the Ministry for the Environment, May 2022.

[192] For example, see pages 202, 204, 211.

[193] Total primary energy supply is the amount of energy available for use in Aotearoa, accounting for imports and exports.

[194] Total final energy consumption is the total energy consumed by end users, such as households and industry. It excludes energy that the energy sector uses itself, energy transformation and distribution losses.

global emissions are needed in the near and longer terms to limit as much as possible the amount by which the world exceeds 1.5°C. The reports also state that the impacts of global warming are greater in both severity and scale than was understood in 2019, with greater impacts being felt at lower temperature levels than previously expected and are becoming more severe and more widespread as the planet warms.

The first report is a review of the 2050 target and recommends that New Zealand's target be amended from net zero emissions of all greenhouse gases (other than biogenic methane and excluding aviation and international shipping) to require net emissions of all greenhouse gases other than biogenic methane to reach at least net negative 20 MtCO2e by 2050, with emissions from international shipping and aviation to be included in the target.

The second report is advice on emissions budgets, showing that Aotearoa New Zealand has options to get on track to the current 2050 emissions reduction target. The recommended level for the fourth emissions budget is 160 MtCO2e, meaning that the net average annual emissions in the budget period (2036–2040) would be 56% lower than they were in 2022. Also recommended is a limit of zero for offshore mitigation to meet the fourth emissions budget.

The development of the Waitaha Hydro Scheme is consistent with meeting the recommendations of the Climate Change Commission and the Emissions Reduction Plan in that it will contribute towards achieving the target of net emissions of all greenhouse gases (other than biogenic methane) reaching at least net negative 20 MtCO2e by 2050. Not granting the consents on the basis sought would also represent a missed opportunity for New Zealand's ability to deliver on the Emissions Reduction Plan outcomes.

The combination of the present emissions reduction plan and the recommendations above regarding future plans and targets is that there is now even more need to develop renewable electricity generation activities.

7.1.12.6 National Adaptation Plan

Aotearoa New Zealand experiences a wide range of natural hazards, from earthquakes and volcanoes to erosion, landslides and extreme weather events. Climate change will increase the severity and frequency of some of those hazards, including flooding, heatwaves, drought and wildfire. These effects will impact New Zealanders in different ways, with a risk that some groups may be disproportionately affected.

Aotearoa New Zealand's first National Adaptation Plan set out our long term strategy and plan towards adapting to the effects of climate change[195]. Emitting less greenhouse gases and limiting global warming by changing the way we do things is an important step towards adapting to the

[195] *Urutau, ka taurikura: Kia tū pakari a Aotearoa i ngā huringa āhuarangi Adapt and thrive: Building a climate-resilient New Zealand*, Aotearoa New Zealand's first national adaptation plan. Wellington. Ministry for the Environment, August 2022.

effects of climate change. The first emissions reduction plan sets a track towards a low-emissions, resilient economy.

The plan records that in the past 100 years, New Zealand's climate has warmed by 1.1°C, and in 2021 Aotearoa experienced its warmest year on record, with sea-level rise accelerating and extreme weather events (such as storms, heatwaves and heavy rainfall) becoming more frequent and intense. The plan identifies how New Zealand will adapt to both slow-onset changes, such as rising sea levels, and increased frequency and magnitude of extreme events.

This adaptation is underpinned by an increasing reliance on renewable electricity generation to meet future energy needs, for example by adapting to use of electric powered vehicles and moving away from fossil fuel powered heating and drying. Increasing our renewable electricity generation capacity through the development of projects such as the Waitaha Hydro Scheme is therefore one of the foundations for New Zealand's adaptation to climate change effects.

7.1.12.7 West Coast Renewable Energy Strategy 2022

The West Coast Renewable Energy Strategy ("**WCRES**") describes options to lower regional emissions by leveraging the West Coast's energy expertise, facilities, industries and resources and it sets out transitional pathways to achieve this in the future.

The WCRES highlights the heavy reliance the West Coast Region has on electricity transmission into the region over the Southern Alps and from the north, and it recognises that, when coupled with the region's relatively high risk of interruption due to its rugged terrain, climate, and weather events, and the forecasted increases in electricity demand, a highly strategic focus is required to enable the renewable generation infrastructure required to underpin regional resilience and economic growth.

The WCRES specifically refers to the Waitaha Hydro scheme as a key component of the strategy[196], and in respect of hydro generation more generally, section 2.11 of the strategy (Opportunities) notes that:

> *"With abundant natural capital assets, including water, Hydroelectricity represents the single biggest opportunity for the most significant renewable generation in the medium term. Whilst usually characterised by high capital costs, this is offset over the asset's life by relatively low operating costs and demand flexibility, including storage. The economic benefits to the region would be significant, including high-paying job creation, energy resilience and associated infrastructure spending:"*

This application is highly consistent with the WCRES, and it demonstrably supports the strategy's overall vision and objectives.

[196] Section 2.8.

7.1.13 Section 104B of the RMA – Determination of Discretionary or Non-Complying Activities

Section 104B of the RMA sets how resource consents for discretionary activities (such as those proposed under the West Coast Regional Council's jurisdiction) and non-complying activities (such as those proposed under the Westland District Council's jurisdiction) are to be determined:

> ***104B Determination of applications for discretionary or non-complying activities***
>
> ***After considering an application for a resource consent for a discretionary activity or non-complying activity, a consent authority—***
>
> *(a) may grant or refuse the application; and*
>
> *(b) if it grants the application, may impose conditions under section 108.*

Notwithstanding section 104B, the Panel's determination of this application must follow the requirements of the FTAA as set out in section 2.5.1 of this AEE.

7.1.14 Section 104D of the RMA – Particular Restrictions for Non-Complying Activities

Section 104D of the RMA sets out particular restrictions regarding granting of non-complying activities, however, the Panel's determination of any non-complying activities (such as those proposed under the Westland District Council's jurisdiction) must follow the requirements of the FTAA as set out in section 2.5.1 of this AEE. Of particular note is that gateway tests prescribed in section 104D do not apply to decisions made under the FTAA.

7.1.15 Part 2 Matters

Assessment of resource consent applications under section 104, and the role of Part 2, have continued to evolve. Most recently, the Supreme Court in Royal Forest and Bird Protection Society of New Zealand Inc v New Zealand Transport Agency[197] (East-West Link) affirmed the approach set out by the Court of Appeal in the decision of *RJ Davidson Family Trust v Marlborough District Council*[198] (*Davidson*). In summary:

(a) The starting point for section 104 is to assess the application with "*a fair appraisal of the objectives and policies read as a whole*."[199] This does not mean that all the objectives and policies can be blended together, "*rather, attention must be paid to relevant objectives and policies both on their own terms and as they relate to one another in the overall policy statement or plan*."[200]

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[197] *Royal Forest and Bird Protection Society of New Zealand Inc v New Zealand Transport Agency* [2024] NZSC 26, [2024] 1 NZLR 241.

[198] *RJ Davidson Family Trust v Marlborough District Council* [2018] NZCA 316, [2018] 3 NZLR 283.

[199] *Davidson* at [73]. *East-West Link* at [79] confirms that the s104D approach will be the same under s104.

[200] *East-West Link* at [80].

(b) Then, notwithstanding *King Salmon*,[201] RMA decision-makers can have regard to Part 2 if it is appropriate to do so[202] (that is the implication of the words "*subject to Part 2*" in section 104);[203]

(c) When this is "appropriate" will depend on the planning document:

(i) Where the relevant plan provisions have clearly given effect to Part 2, there may be no need to refer back as it "*would not add anything to the evaluative exercise*".[204] It would be inconsistent with the scheme of the RMA to override those plan provisions through recourse to Part 2. In other words, "*genuine consideration and application of relevant plan considerations may leave little room for pt 2 to influence the outcome*";[205] and

(ii) On the flip side, it is appropriate to have regard to Part 2 if, having reviewed the objectives and policies of the plan as a whole:[206]

(1) (i) above is not the case (i.e., the plans have not provided a coherent set of policies that reflect clear environmental outcomes); or

(2) If the decision-maker considers that the plan has not been competently prepared (i.e., has not been prepared in a manner that appropriately reflects the provisions of Part 2).

The Environment Court in *Ohau Protection Society Inc v Waitaki District Council* summarised the position as follows:[207]

> *the obligation to refer to pt 2 remains unless the consent authority is assured that it would not add to its evaluative exercise under s104 RMA to do so.*
>
> ...
>
> *The exercise for the decision-maker, as RJ Davidson reflect, is one of evaluative judgment on the evidence and in the particular context.*

For these applications, it is considered that the relevant plan provisions do not clearly give effect to Part 2 because:

> The Westland District Plan became fully operative in March 2002 – much earlier than the West Coast RPS, which became fully operative in July 2020);

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[201] See *Environmental Defence Society Inc v New Zealand King Salmon Company Ltd* [2014] NZSC 38, [2014] 1 NZLR 593.

[202] At [47].

[203] At [75].

[204] At [75], noting that "*absent such an assurance, or if in doubt, it will be appropriate and necessary to [consider Part 2]*".

[205] At [82].

[206] At [74]–[75].

[207] *Ohau Protection Society Inc v Waitaki District Council* [2018] NZEnvC 243 at [16] and [17]. While this decision pre-dates East-West Link, it still holds.

- The Proposed Te Tai o Poutini Plan, which will replace the Westland District Plan, is still in the process of being prepared (Hearings have been held but no decisions have yet been made); and
- The West Coast Regional Land and Water Plan became fully operative in May 2014 – again much earlier than West Coast RPS and much earlier than NPS-FM 2020 and its subsequent 2024 amendments.

Accordingly, Part 2 of the RMA has been given consideration as follows.

The purpose of the RMA is set out in Section 5 of the Act:

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

With respect to sustaining the potential of natural and physical resources and safeguarding the life-supporting capacity of water and ecosystems, the relevant technical assessments demonstrate that the potential effects of the can be appropriately avoided, remedied and / or mitigated and where residual effects are more than minor (e.g. whio), these effects will be offset. Furthermore, Westpower is also proposing special funding to achieve a net positive outcome for the region's indigenous bat population despite a commitment to implement the DOC Bat Protocol during construction.

Section 6 of this AEE, along with the proposed consent conditions provide details on the measures proposed by Westpower to avoid, remedy or mitigate the actual and potential effects on the environment in accordance with section 5 of the RMA. In the context of section 5 of the RMA, the following matters are of particular relevance when considering the Waitaha Hydro Scheme:

- The operation of the Waitaha Hydro Scheme enables people and communities (locally, regionally and nationally) to provide for their social, economic and cultural well-being and for their health and safety;
- The water diverted will be used efficiently by the Waitaha Hydro Scheme, and will generate renewable electricity;
- The Waitaha Hydro Scheme represents a substantial renewable electricity generation supply for the West Coast region and will be capable of maintaining electricity to a substantial proportion of users in the event of a National Grid supply interruption;
- Electricity is a vital resource for New Zealand. There can be no sustainable management of natural and physical resources without energy, of which electricity is a major component;

- The Climate Change Commission has highlighted the national significance and importance of renewable electricity generation for meeting New Zealand's climate change targets and its international obligations. The Waitaha Hydro Scheme will contribute to limiting the extent of New Zealand's present climate change gas discharges and New Zealand's international climate change obligations;
- The Emissions Reduction Plan relies on a transition to renewable electricity generation to reduce greenhouse gas emissions and the Waitaha Hydro Scheme will unlock and accelerate this transition in the West Coast Region; and
- Westpower has proposed a suite of consent conditions that robustly addresses the effects on the environment.

With respect to the key matters in sections 6 and 7 of the RMA,[208] the following points are pertinent:

- Natural wetlands will be avoided:
- Despite the Scheme adversely affecting some localised landscape values, it is considered that this will not cause the loss of any identified values, rather it is a reduction to some values. Importantly, the Scheme will not affect the ONL status of this landscape;
- The Scheme is not considered inappropriate use and development from an outstanding natural features and landscapes perspective;
- When the proposed mitigation and offsetting measures are considered, the Scheme's effects on significant indigenous vegetation and significant habitats of indigenous fauna as discussed in the Vegetation, Lizards, Terrestrial Fauna, Whio and Aquatic Ecology Reports are acceptable. In addition, Westpower's proposed funding to supplement regional ecosystem programme(s) will achieve a net positive outcome for biodiversity;
- The construction and operation of the Waitaha Hydro Scheme will not change the nature of public access to water resources (section 6(d)) and, through the agreement reached with Whitewater NZ, is likely to provide additional opportunities for kayaking (Recreation Report);
- Sections 6(e) and 7(a) of the RMA refer to the relationship of Māori with their ancestral waters and other taonga and the need to have particular regard to kaitiakitanga. As set out in section 2.8, Poutini Ngāi Tahu has provided Westpower with a letter that confirms their strong support for the Waitaha Project while also highlighting that they:
  - consider the Project will provide opportunities for them to reconnect with their whenua and benefit economically from the Project;
  - consider the Project represents a shared view between them and Westpower to protect and advance the interests of the West Coast, including its economy and its environment;

[208] Section 8 is disapplied by the FTA.

- consider the Project aligns with the Ngāi Tahu Climate Change strategy "He Rautaki mō te Huringa o te Āhuarangi", and in particular, its promotion of renewable energy as an important part of the climate change solution;
- consider the Project is consistent with the relevant principles and provisions of their Treaty settlement (as reflected in the deed of settlement and Ngāi Tahu Claims Settlement Act 1998); and
- consider the project is consistent with their Mana Whakahono a Rohe with West Coast Regional Council and other relevant documents.

- The Scheme is not located in an area that is subject to any current protected heritage (section 6(f)) or customary rights by any entity (section 6(g));
- Natural seismic and flooding hazards have been addressed through smart and conservative engineering design parameters;
- Section 7(b) of the RMA is concerned with the efficient use and development of natural and physical resources. The water proposed to be diverted by the Waitaha Hydro Scheme will be used efficiently to generate renewable electricity within a modern power station;
- With respect to amenity values (section 7(c)) of the environment the Landscape Report confirms that the Scheme is designed to sit well within its landscape and respond to its setting. Additionally, the design of the Scheme also acknowledges the visual amenity values that the Upper Waitaha Catchment holds by avoiding potentially significant effects to these. It also considers that the Scheme is appropriate with respect to visual amenity, despite the fact that, at more local levels, the natural character, landscape and visual amenity effects are assessed as being more than minor. Importantly, at a broader scale, the effects are, at worst, minor.
- Sections 7(d), (f) and (g) of the RMA relate to the intrinsic values of ecosystems, the quality of the environment, and the finite characteristics of natural and physical resources. All of these matters have been given consideration in the technical assessments commissioned by Westpower, and a comprehensive range of consent conditions is proposed to ensure that potential effects on the wider environment are appropriately avoided, remedied or mitigated;
- This proposal responds directly to and supports the government's climate change aspirations and renewable electricity generation targets and, as noted above in section 6.20 and 6.21, the Scheme will be designed with conservative factors of safety from a geotechnical and natural hazards resilience perspective. These design parameters will also ensure any climate derived increases to future flood sizes or frequencies will be adequately accommodated for to the extent that the effects of climate change do not represent any concern to the integrity, operation and commercial viability of the Scheme (section 7(i)); and
- The proposal will enable mana whenua to derive benefits, while the entire community also benefits from Westpower's use of freshwater for renewable electricity generation (section 7(j)).

Based on the technical assessments that have been commissioned by Westpower, it is considered that the proposal, in accordance with appropriate management controls, will promote the sustainable management of natural and physical resources and, therefore meets the purpose of the RMA set out in Section 5.

7.1.16 Section 105 of the RMA – Matters Relevant To Discharge Applications

In addition to the matters which the Panel must have regard to under section 104, section 105 of the RMA sets out additional matters which must be considered when considering discharge applications. Section 105 states:

> *(1) If an application is for a discharge permit or coastal permit to do something that would contravene section 15 or section 15B, the consent authority must, in addition to the matters in section 104(1), have regard to—*
>
> *(a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
>
> *(b) the applicant's reasons for the proposed choice; and*
>
> *(c) any possible alternative methods of discharge, including discharge into any other receiving environment.*

Discharges requiring resource consent include:

- Temporary discharges of contaminants to land from investigative drilling;
- Temporary discharges to land and air from the concrete batching plant;
- Incidental discharges of contaminants to water resulting from the maintenance of in-stream structures including any associated adjacent, upstream or downstream Stream Works; and
- Intermittent discharges to air from an emergency.

The nature of these discharges are either temporary (related to construction activities) or intermittent in nature. Where possible, discharges are directed to land to minimise impacts on surface water. The technical assessments commissioned by Westpower have not identified any concerns with the proposed discharge methods and receiving environments for these contaminants.

Overall, the discharges requiring resource consent will not result in unacceptable adverse effects, are of a temporary or intermittent nature and no other practicable alternatives are available.

7.1.17 Section 107 of the RMA – Restriction to Grant Certain Discharge Permits

Section 107 of the RMA[209] specifies certain circumstances in which the Panel must not grant a discharge permit if after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

i. The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials.

ii. Any conspicuous change in the colour or visual clarity.

iii. Any emission of objectionable odour.

iv. The rendering of fresh water unsuitable for consumption by farm animals.

v. Any significant adverse effects on aquatic life.

It is considered that, provided the proposed conditions of consent are complied with, the discharges associated with the construction and operation of the Waitaha Hydro Scheme will not give rise to any of the listed effects in the receiving waters after reasonable mixing. As such, section 107 of the RMA does not pose any restriction to the granting of the resource consent applications.

7.1.18 Section 123 of the RMA - Duration of Consent

In accordance with section 123 of the RMA, Westpower requests:

> A 15 year duration for any resource consents granted solely for construction activities;

> An unlimited duration for any other section 9 land use consents granted; and

> A 35-year duration for any other section 13, 14 and 15 resource consents granted.

A 15-year duration on all construction related resource consents appropriately recognises the time it can take to finalise the design and satisfy all financial investment criteria for major electricity generation projects such as the Waitaha Scheme. This duration also recognises the complexity of the Scheme's construction (e.g. tunnelling) and the potential for encountering issues that could result in construction delays.

In terms of the 35-year durations for other section 13, 14 and 15 resource consents granted, the following aspects, both distilled from case law and from the specific circumstances in this instance, support this request:

> The adverse effects are not likely to increase or vary during the term of the consent;

[209] Section 107 of the RMA was amended mended by section 24(1) of the Resource Management (Freshwater and Other Matters) Amendment Act 2024 (2024 No 43) by inserting "or (2A)" after "subsection (2)" in section 107(1) and inserting a new subsection 2A after section 107(2). The amendments do not alter the section 107 assessment.

- It is unlikely that new information regarding mitigation would become available during the term of the consent;
- Review conditions are able to control adverse effects not anticipated at the time of granting;
- The life expectancy of the assets for which consent is sought is significantly greater than the requested duration;
- The proposal represents significant capital investment and offers a range of positive benefits at a local and regional level;
- There has been a high level of environmental compliance and positive environmental initiative across the applicant's other operations within the region (including at their Amethyst Hydro Scheme), demonstrating a high level of environmental integrity and community awareness; and
- It is apparent from the technical assessments that, overall, the environmental effects of the proposal are well understood and where uncertainty remains, appropriate adaptive management methods and/or review provisions are proposed within the suggested conditions.

Overall, and on balance, a 35-year duration will best meet the RMA's purpose of sustainable management in this case.

7.1.19 Section 125 of the RMA - Lapsing of Consents

In accordance with section 125 of the RMA, Westpower requests a lapse period of 10 years for any resource consent granted.

Similar to the requested 15-year duration for all construction related resource consents a 10 year lapse is considered appropriate considering the time it can take to finalise the design and satisfy all financial investment criteria for major electricity generation projects such as the Waitaha Scheme.

Parliament specifically removed any reference in the FTAA to a minimum or default lapse date. Further, while not a relevant consideration for the panel until the Resource Management (Consenting and Other System Changes) Amendment Bill is enacted, Parliament is in the process of amending the RMA to increase the default lapse period for renewable energy consents to 10 years. That Bill is which is likely to be enacted before the panel makes its decision.

7.2 CONSERVATION ACT 1987

The consideration and granting of an application for concession by the Panel is undertaken pursuant to the FTAA (including Schedule 6).

An assessment of the applicable decision-making criteria is provided in respect of:

- The purpose of the FTAA;[210]

[210] Schedule 6 clause 7(1)(a)(i).

- Relevant provisions in Part 3B of the Conservation Act 1987 including, section 17W in relation to conservation management strategies;[211]
- Any other relevant provisions of Part 4A of the Conservation Act 1987 that directs decision making in relation to Part 3B of that Act;[212]
- The purpose for which the land is held;[213]
- Status, ownership, and administration of the land;[214]
- Existing arrangements that create obligations in relation to the land;[215]
- Legal and financial liabilities associated with leases, licences to occupy land, and easements;[216]
- Any policy statement or management plan of the Crown;[217] and
- Mandatory reasons to decline the approval.[218]

A high-level assessment is also provided of the decision-making criteria which are not applicable to the Scheme:

- Irrelevant provisions in Part 3B of the Conservation Act;[219]
- Other provisions of Parts 3, 4, 5, 5B, and 5C of the Conservation Act 1987 that direct decision making in relation to Part 3B of that Act;[220]
- Conservation management strategies or conservation management plans that have been co-authored, authored, or approved by a Treaty settlement entity;[221]
- Mandatory reasons to decline the approval that are irrelevant;[222]
- Requirements in respect of concessions in national parks;[223]

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211 Schedule 6 clauses 7(1)(a)(ii), (2)(a) and (6), and 8(1). Noting that sections 17SB and 17U(3) are disapplied.

212 Schedule 6 clauses 7(1)(a)(iii) and (6).

213 Schedule 6 clause 7(1)(a)(vi)

214 Schedule 6 clause 7(1)(a)(x).

215 Schedule 6 clause 7(1)(a)(xi).

216 Schedule 6 clause 7(1)(a)(xii).

217 Schedule 6 clause 7(1)(b)(i).

218 Schedule 6 clause 7(3)(b).

219 Schedule 6 clause 7(1)(a)(ii).

220 Schedule 6 clauses 7(1)(a)(iii) and (6).

221 Schedule 6 clause 7(1)(a)(vii)

222 Schedule 6 clauses 7(3)(c).

223 Schedule 6 clauses 7(1)(a)(v), (viii) and (2)(b).

- Requirements in respect of concessions in wildlife sanctuaries, wildlife refuges, and wildlife management reserves;[224] and
- Requirements in respect of reserves;[225]

7.2.1 Applicable decision-making criteria

7.2.1.1 Purpose of the FTAA

Clause 7(1)(a)(i) of Schedule 6 of the FTAA requires the Panel to take into account[226] the purpose of the FTAA and give that consideration the greatest weight when assessing this application. Section 2.3 of the application provides an assessment of the Scheme against the purpose of the FTAA.

7.2.1.2 Relevant provisions in Part 3B of the Conservation Act 1987[227]

Clause 7(1)(a)(i) of Schedule 6 of the FTAA requires the Panel to take into account Part 3B of the Conservation Act 1987 (except sections 17SB and 17U(3) of that Act) as if the application were an application for a concession under Part 3B.

There are several provisions in Part 3B of the Conservation Act that require or allow the decision-maker to decline the application.

The relevant matters in Part 3B of the Conservation Act are address below.

Section 17S – Contents of the application

Section 17S of the Conservation Act specifies the contents of an application for a concession. Clause 3(1) of Schedule 6 of the FTAA includes those requirements (as well as additional information). **Schedule C** of Part A of the application provides an overview of where the required information is provided.

Section 17U – Matters the Panel must have regard to

Section 17U(1) of the Conservation Act requires that the Panel have regard to a number of matters in considering an application for a concession. The matters in section 17U(1)(a)–(e) have been addressed throughout the sections of this application as noted in **Table 35** below.

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[224] Schedule 6 clause 7(1)(a)(iv).

[225] Schedule 6 clauses 7(1)(a) (ix) and (b)(ii), (3)(a), (4), (5).

[226] The requirement to 'take into account' means that the Panel must consider the matter (can be synonymous with "have regard to"). The question of weight is left to the decision-maker (except where the FTAA provides that more weighting must be given to the purpose of the FTAA). See generally *Bleakley v Environmental Risk Management Authority* [2001] 3 NZLR 213 (HC) at [72]; and *New Zealand Transport Agency v Architectural Centre Inc* [2015] NZHC 1991, (2015) 19 ELRNZ 163 at [63].

[227] Schedule 6 clause 7(1)(a)(ii). Note that sections 17SB and 17U(3) of the Conservation Act do not apply.

Table 35: Matters the Panel has regard to in considering an application for a concession

Section	Matter	Reference in application
17U(1)(a)	The nature of the activity and type of structures/facilities	Section 3.3
17U(1)(b)	The effects of the activity, structure or facility	Section 6
17U(1)(c)	Any measures that can reasonably and practicably be undertaken to avoid, remedy or mitigate any adverse effects	Section 6
17U(1)(d)	Information contained in an application	Schedule C of Part A
17U(1)(e)	A relevant environmental impact assessment, including any audit or review.	Section 6

The matters included within section 17U(1)(f) and (g) are not relevant under the FTAA.

Section 17U(2) – Discretion for the Panel to decline an application

Section 17U(2) of the Conservation Act provides that the Panel may decline an application if it considers that:

> There is insufficient or inadequate information to enable it to assess the effects (including the effects of any proposed methods to avoid, remedy, or mitigate the adverse effects) of any activity, structure, or facility; or

> There are no adequate methods or no reasonable methods for remedying, avoiding, or mitigating the adverse effects of the activity, structure, or facility.

The information contained in the application is adequate and sufficient for the purpose of assessing environmental effects of the Scheme.

A comprehensive assessment of potential effects has been undertaken as part of planning for the location and design of the Scheme. Where possible, features of the Scheme have been designed to avoid or mitigate potential effects, for example:

> Ensuring the Scheme has a very small operational footprint of 5 hectares[228] achieved by:

  > Adopting a 'run-of-river' design to avoid damming the river (and hence introducing a significant structure, forming a lake and creating large cuts for access roads for equipment);

[228] Excluding the access road and transmission line across McLean Farm, and from Anderson Road to Waitaha Substation.

- Utilising underground tunnels which:
  - conceal much of its infrastructure avoiding effects and reducing effects to the areas at the intake, abstraction reach and Power Station; and
  - avoiding areas of most significant habitat in the vicinity of the Morgan Gorge; and
- Excluding vehicular access into Kiwi Flat avoiding effects on visual, landscape and natural character and also ecology;

- Adopting a low weir design minimising area of backwater effect above the weir and allowing sediment and river material to pass over and continue down the gorge;
- Minimising the visual presence at the intake by:
  - minimising the number and size of the portals;
  - locating the entrance of the pressurised water tunnel under the water;
  - aligning the headworks access portal and intake structure with the striations of the surrounding rock;
  - utilising methods to accelerate the weathering of the intake and access portal to integrate the structures into the landscape;
  - undertaking additional engineering to minimise the visual impact of any structures at the portals such as the rock fall protection; and
  - careful placement following construction of rocks and boulders to assist in integrating the intake structure and portal into the natural landscape to respect the natural characteristics of the area;
- Including a bypass valve to avoid or minimise any flow changes in the river in the event of an emergency Scheme trip;
- Designing structures and systems that minimise effects of sedimentation and river flow changes that could have and consequential habitat effects on fauna and their habitats;
- Minimising the footprint of the Power Station and tailrace. This has been achieved by partly burying the powerhouse and utilising space efficient infrastructure and locating the Power Station in habitat of relatively low importance for birds and bats;
- Ensuring that the built forms at the Power Station use dark recessive colours and material, to assist with blending them into the natural landscape;
- Providing a comprehensive planting plan for the Power Station Site;
- Aligning the power transmission line along the access road for most of the route from the Power Station to Macgregor Creek to reduce vegetation clearance; and

- Avoiding significant cuts and battered slopes for access roads including avoiding their proximity to riverbank features; and keeping works in the bed of the river to the minimum required to construct and maintain the road.
- Minimising the removal of indigenous vegetation and to retain as much of the more mature areas of vegetation;
- Avoiding works in sensitive areas such as near the Stable Tributary, wetlands, areas of large trees, cliff faces, or unstable ground to reduce potential effects on bat and bird habitat;
- Having no lights along the access road to the Power Station and ensuring lights elsewhere are designed to have minimal adverse effects on wildlife;
- Eliminating or reducing the risk of birds getting electrocuted by transmission wires; and
- Ensuring that active and passive rehabilitation measures are effective, notably for the construction sites.

The application also proposes a suite of conditions which reflect expert advice in a range of areas to ensure that potential effects are avoided, remedied or mitigated. A major component of these conditions is the development of management plans for a range of issues including:

- Construction Environmental Management Plan;
- Construction Traffic Management Plan;
- Erosion and Sediment Control Plan;
- Landscape Management Plan;
- Vegetation Management Plan;
- Avifauna Management Plan;
- Bat Management Plan;
- Freshwater Ecology Management Plan;
- Lizard Management Plan; and
- Site Operations and Maintenance Plan.

Westpower, through successfully developing the Amethyst Hydro Scheme on conservation land, has experience with the development and implementation of such plans.

Through the experts' assessments of effects, it is apparent that while most effects, including those on ecology are at most no more than minor, there are a few residual effects relating to landscape and recreation matters, which while mitigated as far as practicable, cannot be avoided. However, the Scheme remains appropriate at this location because these residual landscape and recreation effects are balanced by the significant national and regional benefits. The Scheme will make a meaningful contribution to increasing national renewable electricity generation and the regional

electricity resilience of the West Coast. The specific national and regional benefits of the Scheme are addressed in section 6.2, including that increasing renewable energy generation is a core tool to address climate change (which is a highly significant risk to biodiversity).

For example, although recognising that there will be moderate to high natural character, landscape and visual amenity effects at the local level arising from the Scheme, the conclusion of the Landscape Report is that the Scheme is still appropriate in this setting. At a broader scale the effects are, at worst, moderate to low. Likewise the Recreation Report concludes that at the intake, within the abstraction reach and at Kiwi Flat, the change to the backcountry-remote characteristics of the setting (the recreation values) due to the placement of structures will be high after mitigation (as it imposes a fundamental change). There will also be a high impact on kayaking opportunity at the intake and abstraction reach. Having said that, the Morgan Gorge (and the remainder of the river) will retain its ability to challenge highly-skilled kayakers, albeit with additional restrictions on its use due to the need to confer with Westpower if a cease to abstraction is required to provide a natural or preferred flow. As discussed in section 6.19 context is important, with few recreational users (very few in the case of kayaking) being impacted. Importantly, Westpower has reached an agreement with WWNZ such that this national representative entity is:

- Neutral on the approvals required for the Scheme; and
- Content that the adverse effects of the Scheme on paddle sports / whitewater recreations have been appropriately mitigated.

Importantly, to the extent that the Panel considers there are residual adverse effects, these are not sufficient to justify declining the proposal given the clear directions in the purpose of the FTAA, and sections 85(3)-(5) of the FTAA. Further, the delivery of significant regional benefits in accordance with the purpose of the FTAA, can and must outweigh any such adverse effects in the decision-making for the Scheme.

Section 17U(3) – consistency with legislation and purpose for which the land is held

Clause 7(1)(a)(ii) of Schedule 6 of the FTAA states that the Panel is not to consider section 17U(3) of the Conservation Act.

Section 17U(4) – Alternative locations

Section 17U(4) of the Conservation Act provides that the Panel must not grant an application for a concession to build a structure or facility, or to extend or add to an existing structure or facility, where they are satisfied that the activity:

- Could reasonably be undertaken in another location that:
  - Is outside the conservation area to which the application relates; or
  - 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

> Could reasonably use an existing structure or facility or the existing structure or facility without the addition.

Section 3.2 of this AEE sets out an analysis of alternative locations and options undertaken by Westpower prior to making its original application for a concession. Given the topography of the West Coast, and the overlying land tenure and extent of land owned and managed by the Department, all the feasible options considered were located within or partly within the conservation estate. It is not reasonable to locate the Scheme outside conservation land or waters. The consideration of alternatives included other rivers within the conservation estate and other locations on the Waitaha River. The assessment of options in terms of both the choice of, and location on, the Waitaha River included consideration of an option which created the least potential adverse effects given the nature of a hydro generation scheme.

It is clear from Conservation General Policy ("**CGP**") Policy 11.3(a) that utilities, including structures and infrastructure for energy generation and transmission, can be provided for on public conservation lands and waters where they cannot be reasonably located outside public lands and waters. Details of the alternatives assessment are provided in section 3.2. In summary:

> Although 83% of the West Coast is conservation land and therefore very challenging to locate hydro-electricity schemes outside of this land, some rivers outside the conservation estate were considered but due to various technical (geology, access, dam locations, bedload, requirement for a tunnel, transmission capacity and riverbed degradation) and non-technical issues (fishing, creation or value, cultural issues, environmental impact, isolation or river conservation orders), these potential locations were identified as being worthy of further investigations but were then discounted because of their suitability to only very large scale hydro schemes with large ecological footprints which are not economically viable or environmentally palatable for Westpower; and

> Other rivers within the conservation estate (Toaroha and Kakapotahi) were considered but discounted because of various technical difficulties that presented significant challenges for construction as well as the potential significant environmental effects;

> After careful consideration the Waitaha River was chosen as the preferred option because a hydro-electricity generation scheme on this river was technically feasible, would have a lower impact on environmental values compared with other options assessed and would also have the highest economic performance;

> Other locations on the Waitaha River (such as the Waitaha Gorge) were assessed but discounted following pre-feasibility studies because of the risk of significant environmental impacts;

> The Scheme was selected as the optimum location for the intake as it would provide sufficient generation while avoiding the environmental impacts that would occur elsewhere; and

- In light of the above, the Scheme could not reasonably be located outside conservation land or waters nor in another conservation area or in another part of the Waitaha Forest Conservation Area (within which the Scheme is primarily located), where the potential adverse effects would be significantly less.

There are no existing structures or facilities which could reasonably be used in terms of section 17U(4)(b) of the Conservation Act.

For these reasons, the Panel is not precluded from granting these concessions on the basis of section 17U(4)(b).

Sections 17U(5), (6) and (7) – limitations on granting a lease or licence

Sections 17U(5), (6) and (7) of the Conservation Act provide limitations on granting a lease or licence. The provisions require the Panel to consider if the lease or licence is necessary for safety or security or integral to the activity, and whether the exclusive possession for a lease is necessary for safety, security or competent operation of the activity. However, the Panel is not required to decline the approval if it finds those matters are not met.[229]

Westpower does not currently have a legal interest in the stewardship land managed by the Department. The majority of the Scheme is located on that land. Therefore, Westpower is requesting a concession for a variety of interests in that land (through leases, easements and licences) to occupy to have access to the site from the Department (see section 4.2.1).

In respect of a lease or a licence (other than a profit à prendre) granting an interest in land, the Panel must consider:

- If the lease or licence relates to one or more fixed structures and facilities (which facilities do not include any track or road except where the track or road is an integral part of a larger facility); and
- If the application includes an area or areas around the structure or facility, whether:
  - It is necessary for the purposes of safety or security of the site, structure, or facility to include any area or areas (including any security fence) around the structure or facility; or:
  - It is necessary to include any clearly defined area or areas that are an integral part of the activity on the land; and
  - The grant of a lease or licence granting an interest in land is essential to enable the activity to be carried on.

In respect of a lease, the Panel must consider whether exclusive possession is necessary for:

- The protection of public safety; or

[229] Schedule 6 clause 7(2)(a).

> The protection of the physical security of the activity concerned; or

> The competent operation of the activity concerned (which includes the necessity for the activity to achieve adequate investment and maintenance).

The types of concession, lease, licence and easement, applied for are set out in section 4.2.1, Table 13, of this application.[230] It is appropriate to grant the leases, licences or easements sought for the following reasons:[231]

> Exclusive possession is necessary to ensure public safety, security of infrastructure and operation and maintenance of the Scheme. As discussed in Project Overview report there would be risks to safety if members of the public entered, or in some instances, came in close proximity to the Scheme's various infrastructure components. For example, security fencing and other safety measures are required for switchyard, Power Station and tailrace/tailbay and Headworks area to prevent members of the public from exposing themselves to hazards such as the operation of the bypass valve, falling from heights and in some instances entering the water;

> Further, the Scheme's infrastructure is a significant investment so measures excluding members of the public from accessing the infrastructure are essential for ensuring protecting the physical security of the Scheme's infrastructure as well as the continued competent operation and maintenance and longevity of the infrastructure;

> Exclusive possession of areas around the Scheme's structures and facilities is necessary because these areas are an integral part of the Scheme and therefore essential to enable the Scheme to operate and be maintained;

> Exclusive possession is consistent with concessions granted for the Amethyst Hydro Scheme which has also been developed by Westpower on conservation land and many other concessions of this nature on conservation land. Through exclusive possession and the ability to undertake measures to ensure public safety, no public safety issues have arisen during the Amethyst's operation; and

> Given the reasons why exclusive possession is required, and giving most weight to the purposes of the FTAA, there is no reasonable or lawful basis to decline and it is appropriate to grant the leases, licences and easements sought.

Appropriateness of grant in the circumstance

Under section 17U(8) of the Conservation Act, as modified by the FTAA, the Panel is not required to grant a concession if they consider the grant is inappropriate in the circumstances of the particular

[230] An information requirement under clause 3(1)(g)(iii) of Schedule 6.

[231] An information requirement under clause 3(1)(j) of Schedule 6.

application. For the reasons set out above, it is appropriate to grant these concessions. In summary:

> There is sufficient and adequate information to enable the Panel to assess the effects;

> There are adequate methods to mitigate the effects;

> It is not reasonable to locate the Scheme outside conservation land or waters;

> It is appropriate to grant the leases, licences and easements sought (including because of the reasons why exclusive possession is required for the leases); and

> In its decision-making the Panel is required to give the most weight to the purpose of the FTAA which is supportive of granting the concession.

Section 17V – Limitations on concessions and leases over marginal strips

The Scheme may affect marginal strips on:

> The true right bank of Macgregor Creek (title 318036); and

> The true right bank of the Waitaha River below the confluence with Macgregor Creek (title WS7B/24).

Section 17V of the Conservation Act places additional restrictions on leases over marginal strips. Any concession required is likely to be a licence or easement, for construction access and/or vegetation clearance on a marginal strip, not a lease. It is not more appropriate to enter into any agreement or arrangement under section 24H of the Conservation Act.

Section 17W – Relationship between concessions and conservation management strategies and plans

Section 17W of the Conservation Act, as modified by the FTAA, requires the Panel to consider the consistency of the Scheme with the relevant CMS or a conservation management plan, but does not require the Panel to decline the approval if it finds any inconsistency.[232]

There are no conservation management plans relevant to the Scheme. The West Coast CMS ("**CMS**") is however relevant under section 17W.

The Scheme's consistency with the CMS is assessed in **Appendix 52**. In assessing the Scheme's consistency with the CMS the following legal principles must be adhered to. In summary:

> Consistency must be assessed on a holistic basis, such that inconsistency with one policy does not equate to inconsistency with the policies and objectives as a whole;

> Applying a holistic assessment, the Scheme is, as a whole, consistent with the CMS; and

[232] Schedule 6 clause 7(2)(a).

> Even if the Panel were to disagree with Westpower's assessment of consistency, the purpose of the FTAA must be given greater weight, and a finding of inconsistency does not require the Panel to decline the approval.

Approach to assessing consistency

There is no specific judicial guidance under the Conservation Act on how to assess the consistency of a concession application with the relevant conservation documents (including a CMS). The proper approach is for the Panel to adopt a holistic approach in terms of that assessment in terms of consistency with the relevant CMS policies as a whole. This requires the Panel to undertake a balancing exercise and apply a broad judgment in determining whether overall the Scheme is consistent with the CMS.

Support for a holistic assessment is provided by the RMA where decision makers must assess whether an application is 'contrary' to the objectives and policies in the relevant planning documents.[233] The meaning of 'contrary' and 'inconsistent' has been used interchangeably in the RMA context. It is well established under RMA case law that the assessment of whether an application is contrary to the objectives and policies should be a holistic one. A similar approach should be taken in the Conservation Act context, such that even if the Scheme is found to be inconsistent with one policy (a position Westpower does not accept) this does not equate to the Scheme being inconsistent with the policies and objectives of the CMS as a whole.[234]

Scheme's consistency with the CMS

> The Scheme is consistent with the relevant CMS objectives and policies:

> The design of the scheme, and application, has involved thorough assessment and consideration of the values of the environment within which it is to be located;

> A range of location options have been considered for the scheme, both on other waterways and on the Waitaha River and the current proposal is considered the best option, including from an effects point of view;

> The technical assessments were used in decisions on the location and design of the project and the construction and operational activities required;

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[233] RMA, s 104D(1)(b). *Arrigato Investments Ltd v Auckland Regional Council* [2002] 1 NZLR 323 (CA) at [24], and see more generally, *Yaldhurst Rural Residents Assoc Inc v Christchurch City Council* [2012] NZEnvC 39 at [72]–[73].

[234] *Dye v Auckland Regional Council* [2002] 1 NZLR 337 (CA) at [25] and see for example, *Director-General of Conservation (Nelson-Marlborough Conservancy) v Marlborough District Council* [2010] NZEnvC 403 at [738], [745]–[746] and *Panuku Development Auckland Ltd v Auckland Council* [2018] NZEnvC 179 at [642] and [663].

- Various measures have been provided in the conditions and managements plans to minimise potential adverse effects, including on the indigenous natural character of ecosystems, ecosystem services, freshwater fisheries, threatened species, and landscape;
- The ecosystem programme(s) Westpower is contributing to will assist with pest management in the region;
- The cultural effects and the effects on the environment, wildlife, taonga species and taonga fish species have been appropriately addressed to the satisfaction of Poutini Ngāi Tahu;
- While a hydro-development, as such, is not compatible with the backcountry remote zone management category, the Recreation Report nonetheless concluded that "the outcomes set out in the CMS for the Hokitika place will still be achieved with the Scheme in place";
- WWNZ is content that the adverse effects of the Scheme on paddle sports / whitewater recreations have been appropriately mitigated;
- Wildlife is protected through the design, layout and management measures proposed, and the wildlife approval sought does not adversely affect conservation value, recreational opportunity or introduce threats; and
- The Scheme will not compromise the desired 'Outcomes' for the 'Hokitika Place'.

Even if the Panel were to disagree with Westpower's assessment and conclude that there is some inconsistency with the CMS, the FTAA makes is clear that the Panel is not required to decline the application,[235] and in any case the purpose of the FTAA is to be given the greatest weight.[236]

Section 17X – Conditions

Section 17X of the Conservation Act, as modified by the FTAA, provides that the Panel may impose such conditions as they consider appropriate, provided they are no more onerous than necessary.[237] Section 17X provides a non-exhaustive list of conditions that may be imposed including:

- The payment of specified rent, fees and royalties (not compulsory under the regime as modified by the FTAA, compared to section 17Y of the Conservation Act);
- The payment of compensation for adverse effects on the Crown's or public interest in the land;
- The payment of a bond;
- The waiver or reduction of any rent, compensation or bond;

[235] Schedule 6 clause 7(2)(a).

[236] Schedule 6, clause 7(1)(a)(i).

[237] Sections 81(2)(d) and 83, Schedule 6 clause 8. Clause 8(3) applies instead of section 17Y(1) of the Conservation Act 1987.

- A requirement to remove structures at the end of the term; and
- Periodic reviews of terms and conditions including rent.

Westpower continues to discuss an appropriate concession fee with DOC that reflects the proposed use of the conservation land and the circumstances of this Scheme having regard to the purpose of the FTAA and (in accordance with section 17Y(2)):[238]

- The circumstances relating to the nature of the Scheme whereby it has been designed to ensure that it is as least intrusive as possible placing much of the infrastructure below the surface as well as by the meaningful contribution the Scheme will make to renewable energy generation and addressing the impacts of climate change, and energy resilience and security of supply; and
- The effects of the Scheme on the purposes of the stewardship area affected whereby most effects including ecological effects are minor or less and only some landscape and recreation effects being more than minor; and
- That there are no contractual conditions, covenants, or other encumbrances placed upon intrinsic resources, natural resources, or historic resources by the concession.

In addition to the valuation and the factors that must be considered under section 17Y(2) set out above, there are several other matters that the Panel should consider appropriate for the Scheme in the context of the FTAA:

The Panel must give greatest weight to the purpose of the FTAA when imposing conditions, including any concession fee. Conditions must also be no more onerous than necessary. To facilitate the delivery of this infrastructure with significant benefits for the local district, region and wider New Zealand Community, the fee must be at a level that allows for the project to be built. If the fee is set too high, the project will be unable to proceed, and the significant benefits will not be realised.

The Panel can set conditions providing for the payment of compensation for any adverse effects of the activity on the Crown's or public interest in the land concerned (in accordance with section 17X(d)). Westpower is contributing to ecosystem programme(s), whitewater sports, and recreation access (via a track and hut maintenance contribution) which will assist in compensating for effects on recreation and (if any) on long-tailed bats and whio. The Panel may find that those contributions by Westpower (summarised in Table 33 above) support a reduction in the concession fee.

The Panel can also waive or reduce any rent or compensation where there is a non-commercial public benefit from the activity (in accordance with section 17X(f)(ii)). As set out in sections 1.3 and 2.3, the Scheme will:

[238] See section 17X(c) of the Conservation Act 1987 and schedule 6, clause 8(1) of the FTAA

> Assist in New Zealand's decarbonisation and combatting climate change: with flow-on effects for biodiversity and recreation (i.e. continued access, with climate change increasing the likelihood of slips etc) as both are affected negatively by climate change; and

> Provide increased electricity security to the West Coast region and lower electricity costs.

The Panel is also required to impose any conditions that the Minister/Director-General of Conservation indicates are relevant to manage risks to, and potential liabilities of, the Crown arising from the granting of the concession.[239]

A suite of conditions has been suggested in **Appendix 46** of the application to ensure potential effects are avoided, remedied or mitigated to the greatest extent possible.

Section 17Z – Term of concession

Section 17Z of the Conservation Act, as modified by the FTAA, provides that a lease or licence may be granted for a term not exceeding 30 years, or for a term between 30 and 60 years if the Panel is satisfied there are exceptional circumstances.[240] The exceptional circumstances for why the term sought of 49 years should be granted by the Panel are set out in below. In summary, granting a term of 49 years will further the purpose of the FTAA. A 49-year duration is required to provide a level of security for the community in terms of the significant investment required for this scale of infrastructure.

The term 'exceptional circumstances' is not defined in the Conservation Act. However, it is used in other legislation. The Supreme Court has considered the term in other contexts and found it describes a circumstance which is out of the ordinary course, or unusual, or special or uncommon – an exception rather than the rule.[241]

Westpower considers that there are exceptional circumstances to justify the granting of a 49-year term:

> Westpower has a responsibility to look for investments that will provide sustainable returns for Westpower consumers (the shareholders and also the community). The size of the overall capital investment ($160-200 million) and life of the Scheme requires a concession of long-term duration to provide for adequate security of the asset for the community. It is appropriate to provide a 49-year duration to provide a level of security for the community in terms of investment in the infrastructure and planning for the long term needs of the community.

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239 Section 78 and Schedule 6 clauses 4(2) and 9.

240 Schedule 6 clause 13.

241 *Wong v R* [2008] NZSC 29, [2008] 3 NZLR 1 at [8]; referring to *R v Kelly* [1999] 2 All ER 13 (CA) at 20. See also *Creedy v Commissioner of Police* [2008] NZSC 31, [2008] 3 NZLR 7 at [31] – [32]; *Ye v Minister of Immigration* [2009] NZSC 76, [2010] 1 NZLR 104 at [34].

> This is a very high level of investment in infrastructure on conservation land and would be exceptional in terms of the levels of investment that is usually involved in concession applications. A 49-year term is required to make this scale of investment viable, which is directly relevant to the purpose of the FTAA.

7.2.1.3 Any other relevant provisions of Part 4A of the Conservation Act 1987 that directs decision making in relation to Part 3B of that Act

Clause 7(1)(a)(iii) of Schedule 6 of the FTAA requires that the Panel takes into account any other relevant provisions of Part 4A of the Conservation Act that direct decision making in relation to Part 3B of that Act. Part 4A concerns marginal strips. As set out in section 7.2.1.2 on section 17V of the Conservation Act, the Scheme may affect marginal strips on the true right bank of Macgregor Creek and the true right bank of the Waitaha River below the confluence with Macgregor Creek. The provisions in Part 4A generally relate to changes to marginal strips (i.e. size or ownership) and are unlikely to be relevant for the Panel's decision making.

7.2.1.4 The purpose for which the land is held, status, ownership, and administration

Clause 7(1)(a)(vi) of Schedule 6 of the FTAA requires that the Panel takes into account the purpose for which the land is held. Clause 7(1)(a)(x) of Schedule 6 of the FTAA requires the Panel to take into account the status, ownership, and administration of the land that would be subject to a concession.

Under the standard concession process, section 17U(3) of the Conservation Act requires the Minister to decline an application if the proposed activity is contrary to the purposes for which the land is held. Clause 7(1)(a)(ii) of Schedule 6 of the FTAA specifically disapplies section 17U(3) from the Panel's assessment of the application and instead clause 7(1)(a)(vi) of Schedule 6 of the FTAA requires that the Panel takes into account the purpose for which the land is held. An assessment of how the Scheme is in keeping with the purposes for which the land is held is provided below. In summary, granting the concession, with appropriate conditions, would not be inherently inconsistent with the purpose of the stewardship area and would be consistent with the guidance in the CGP.

The proposed Scheme is located predominantly within the Waitaha Forest Conservation Area, which has a status of 'stewardship' land under the Conservation Act. DOC is the landowner and administrator of the stewardship land.

The Conservation Act requires Stewardship Areas to be managed to protect their natural and historic resources.[242] In this regard, protection means to maintain, as far as is practicable, the resource in its current state but includes its augmentation, enhancement or expansion.[243]

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[242] Conservation Act 1987, s 25.

[243] Conservation Act 1987, s 2.

The Scheme is in keeping with the purposes for which the land is held:

- So far as is practicable, Westpower is maintaining the environment in its current state. Adverse effects will be avoided, remedied and mitigated, and granting the concession, with appropriate conditions, would not be inherently inconsistent with the purpose of this stewardship area;
- The Conservation Act provides for a General Policy which guides the administration and management of all conservation areas and natural and historic resources, including areas such as Stewardship Areas.[244] The CGP provides specific guidance on the provision of utilities[245] and confirms that they can be permitted on public conservation lands and waters provided certain conditions are met;[246]
- Part 3B envisages that there can be uses of and effects on conservation land and resources including stewardship land. For example, section 17U(1)(c) refers to: "Any measures that can reasonably and practicably be undertaken to avoid, remedy or mitigate any adverse effects of the activity" (emphasis added); and
- Part 3B is a specific statutory regime allowing these types of activities on the land and the Scheme cannot be said to be inherently inconsistent with the stewardship land purpose, and in any case the purpose of the FTAA must be given the greatest weight in this assessment.

7.2.1.5 Existing arrangements that create obligations in relation to the land

Clause 7(1)(a)(xi) of Schedule 6 of the FTAA requires the Panel to take into account existing arrangements that create obligations in relation to the land. Those arrangements in so far as they relate to resource consents are assessed in section 5.10 of the application. Premier Group NZ Ltd has a concession (90089-OTH), expiring on 30 November 2030, for the extraction of gravel / shingle at various locations, including two locations at the mouth of Macgregor Creek (locations 16346 and 86078).

7.2.1.6 Legal and financial liabilities associated with decisions on leases, licences to occupy land, and easements

Clause 7(1)(a)(xii) of Schedule 6 of the FTAA requires that the Panel takes into account the legal and financial liabilities associated with decisions on leases, licences to occupy land, and easements. The draft concession execution documents in **Appendix 46** set out the legal and financial liabilities of Westpower and the Department of Conservation. The potential legal and financial liabilities of

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[244] Conservation Act 1987, sections 17A-17C.

[245] See glossary of the CGP: *Includes but not limited to structures and infrastructure for telecommunications; energy generation and transmission; sewerage; water supply and flood control; oil and gas; roads and airstrips; hydrological and weather stations*. (emphasis added).

[246] CPG at Policy 11.3.

Westpower are limited to the following and conditions have been proposed in the concession execution documents to address these – Westpower:

> Accepts that the use of the land under the leases, licences and easements that it is seeking is at its own risk;

> Will take out insurance as set out in the draft concession documents address; and

> Will comply with all legislation including the Health and Safety at Work Act 2015 and its regulations.

7.2.1.7 Any policy statement or management plan of the Crown

Clause 7(1)(b)(i) of Schedule 6 of the FTAA provides the Panel with discretion to consider any policy statement or management plan of the Crown (other than a conservation management strategy or conservation management plan that has been co-authored, authored, or approved by a Treaty settlement entity). The Scheme is consistent with the CMS and the CGP as set out in **Appendix 52**.

The CGP specifically provides for utilities (including infrastructure for energy generation) to be established on conservation land and waters, where those utilities cannot reasonably be located elsewhere and requires an analysis of effects and design of utilities with particular regard to landscape matters (11.3(b)). As addressed in relation to section 17U(4) of the Conservation Act above, the Scheme could not reasonably be located outside conservation land or waters nor in another conservation area or in another part of the Waitaha Forest Conservation Area (within which the Scheme is primarily located), where the potential adverse effects would be significantly less. While there are some residual effects on landscape, given the meaningful contribution the Scheme will make to energy resilience and security of supply, therefore meeting the FTAA's purpose (assessment criteria to be afforded the greatest weight) it is considered that those effects have been adequately and reasonably mitigated such that the Scheme is appropriate in this location. When the CGP is considered holistically, the Scheme is consistent with the CGP.

7.2.1.8 Mandatory reasons to decline the approval

Conferral of an interest in land that is incompatible with an existing interest in land

Clause 7(3)(b) of Schedule 6 of the FTAA requires the Panel to decline the approval if giving effect to it would result in the conferral of an interest in land that is incompatible with an existing interest in land. There is no incompatible interest in land as described above at 5.10.4.

7.2.2 Decision-making criteria that are not applicable to the scheme

7.2.2.1 Irrelevant provisions in Part 3B of the Conservation Act[247]

Sections 17O–17R, 17SA, 17SC–17SD, 17T, 17V and 17ZAA–17ZJ of the Conservation Act are irrelevant to the Panel's decision-making.

When concessions and resources consents are, or may be required, and the types of concessions[248]

Section 4 of the application sets out the concessions and resource consents being sought.

Procedure under the standard process[249]

The requirements in the standard concession process regarding completeness, when the decision-maker must consider the application, public notification, further information requests and commissioned reports or advice are superseded by the specific provisions on those matters in the FTAA.[250]

Miscellaneous

The following miscellaneous requirements are irrelevant to the Scheme:

- Tendering of right to apply for concessions:[251] the Minister has not tendered the right to make an application for a project within the project area.
- Extensions and variations to existing concessions:[252] there is no existing concession for the Scheme.
- Failure to execute or exercise concession document;[253] Schedule 6 clause 11 of the FTAA provides that DOC as the manager of the land for which the concession is being granted must give effect to a decision of the Panel including, without limitation, by executing a concession document. This specific procedural requirement prevails over the similar process provided for in the Conservation Act. As discussed above, Westpower has provide a draft execution document as part of its application.

247 Schedule 6 clause 7(1)(a)(ii).

248 Sections 17O, 17P and 17Q of the Conservation Act.

249 Sections 17S, 17SA, 17SC, 17SD, 17SE and 17T of the Conservation Act.

250 See sections 46, 53, 67 and 68 of the FTAA.

251 Sections 17R and 17ZG of the Conservation Act.

252 Sections 17ZAA–17ZC of the Conservation Act.

253 Section 17ZD of the Conservation Act and Schedule 6 clause 11 of the FTAA.

- Transfers, subleases, and mortgages;[254] and reconsideration of decisions:[255] these requirements post-date the Panel's decision.
- Obligations on the Director-General of Conservation to keep records;[256] and community services, benefits, or facilities provided by the Minister or the Director-General for the benefit of concessionaires:[257] not relevant to Westpower and/or the Scheme.
- Restrictions on aircraft:[258] a concession has been obtained for helicopter use.

7.2.2.2 Any other relevant provisions of Parts 3, 4, 5, 5B, and 5C of the Conservation Act 1987 that direct decision making in relation to Part 3B of that Act[259]

Part 3 concerns acquiring, disposing and closing conservation areas and exchange of stewardship areas. This part is not relevant to decision-making under Part 3B for the Scheme.

Part 4 concerns the Governor-General or the Minister conferring additional protection on certain areas of land and how to manage these different areas. This part is not relevant to decision-making under Part 3B for the Scheme.

Part 5 concerns the management and disposal of stewardship areas. With the exception of section 25 which establishes the purpose for which stewardship areas will be managed (the protection of its natural and historic resources) this part is not relevant to decision-making under Part 3B for the Scheme as it is not being disposed of. Section 25 has been considered in assessing whether the Scheme is consistent with the purposes for which the land has been held in accordance with Schedule 6 clause 7(1)(a)(vi) of the FTAA as set out above.

Part 5B concerns freshwater fisheries. This part is not relevant to decision-making under Part 3B for the Scheme as there is no proposal to take fish.

Part 5C concerns the control of dogs. This part is not relevant to decision-making under Part 3B for the Scheme because no part of the Scheme's project area is within a controlled dog area.

7.2.2.3 Co-authored conservation management strategies or conservation management plans

Clause 7(1)(a)(vii) of Schedule 6 of the FTAA requires the Panel to take into account any conservation management strategies or conservation management plans that have been co-authored, authored, or approved by a Treaty settlement entity.

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254 Section 17ZE of the Conservation Act.

255 Section 17ZJ of the Conservation Act and Schedule 6 clause 10 of the FTAA. Section 17ZJ does not apply to a decision of a panel under the FTAA.

256 Section 17ZI of the Conservation Act.

257 Section 17ZH of the Conservation Act.

258 Section 17ZF of the Conservation Act.

259 Schedule 6 clause 7(1)(a)(iii).

The relevant CMS has not been co-authored, authored, or approved by a Treaty settlement entity.

As has been discussed above however, in accordance with clause 7(1)(a)(ii) of Schedule 6 of the FTAA section 17W of the Conservation Act is relevant so the Scheme's consistency with the CMS has nonetheless been assessed.

7.2.2.4 Mandatory reasons to decline the approval that are not relevant

Lease of more than 50 years

Clause 7(3)(c) of Schedule 6 of the FTAA requires the Panel to decline the approval if the granting of the proposed concession would involve a lease for a term (including any renewals) that will, or is likely to, be more than 50 years and other criteria are met. Westpower is applying for a concession that would involve a lease for a term of 49 years. Therefore, this provision is not relevant.

7.2.2.5 Requirements in respect of concessions in national parks[260]

The Scheme is not located in a national park. The provisions in the FTAA relating to a concession applied for under section 49 of the National Parks Act 1980 are irrelevant.

7.2.2.6 Requirements in respect of concessions in wildlife sanctuaries, wildlife refuges, and wildlife management reserves[261]

The Scheme is not located in a wildlife sanctuary, wildlife refuge or wildlife management reserve. The provisions in the FTAA relating to a concession in those areas are irrelevant.

7.2.2.7 Requirements in respect of concessions on reserves[262]

The Scheme is not located on any reserves. The provisions in the FTAA relating to a concession on are reserve are irrelevant.

7.3 WILDLIFE ACT 1953

The consideration and granting of an application for concession by the Panel is undertaken pursuant to sections 81–85 and clauses 5 and 6 of Schedule 7 of the FTAA.

An assessment of the applicable decision-making criteria is provided in respect of:

> The purpose of the FTAA;[263]

> The purpose of the Wildlife Act 1953 and the effects of the project on protected wildlife;[264]

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260 Schedule 6 clauses 7(1)(a)(v), (viii) and (2)(b).

261 Schedule 6 clause 7(1)(a)(iv).

262 Schedule 6 clauses 7(1)(a)(vi), (vii), (ix) and (b), (3)(a), (4) and (5).

263 Schedule 7 clause 5(a).

264 Schedule 7 clause 5(b).

> Information and requirements relating to the protected wildlife that is to be covered by the approval (including, as the case may be, in the New Zealand Threat Classification System or any relevant international conservation agreement);[265]

> Conditions.[266]

7.3.1 Purpose of the FTAA

Clause 5(a) of Schedule 7 of the FTAA requires the Panel to take into account the purpose of the FTAA and give that purpose the greatest weight when assessing the application. [267]

Section 2.3 of the application provides an assessment of the Scheme against the purpose of the FTAA. Guidance on how the Panel should provide the greatest weight to the purpose of the FTAA, compared to the purpose of the Wildlife Act, is provided below.

7.3.2 Purpose of the Wildlife Act 1953 and effects of the project on protected wildlife

Clause 5(b) of Schedule 7 of the FTAA requires the Panel to take into account the purpose of the Wildlife Act 1953 and the effects of the project on the protected wildlife that is to be covered by the approval.

7.3.2.1 Scope of the Wildlife Act's protective purpose

The Wildlife Act does not contain a standalone purpose section. The long title states:

> *An Act to consolidate and amend the law relating to the protection and control of wild animals and birds, the regulation of game shooting seasons, and the constitution and powers of acclimatisation societies.*

The Court of Appeal and Supreme Court have confirmed that the Wildlife Act has a protective purpose (although protection of wildlife is not the sole purpose of the Act).[268] What types of activity fall within the 'protective purpose' of the Act for the purposes of section 53 will be fact and circumstance dependent.[269] Protection is a part of the Wildlife Act's overarching purpose of regulating human interactions with wildlife. That protective purpose is not absolute; it requires consistency with protection at a species level, not solely at an individual animal level. Recent legislative amendments have clarified that a section 53 authority may, in certain circumstances, be

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[265] Schedule 7 clause 5(c).

[266] Schedule 7 clause 6.

[267] The requirement to 'take into account' means that the Panel must consider the matter (can be synonymous with "have regard to"). The question of weight is left to the decision-maker (except where the FTAA provides that more weighting must be given to the purpose of the FTAA). See generally *Bleakley v Environmental Risk Management Authority* [2001] 3 NZLR 213 (HC) at [72]; and *New Zealand Transport Agency v Architectural Centre Inc* [2015] NZHC 1991, (2015) 19 ELRNZ 163 at [63].

[268] *PauaMAC5 Inc v Director-General of Conservation* [2018] NZCA 348, [2019] 2 NZLR 1 at [42]–[43], [47], [52] and [58]; and *Shark Experience Ltd v PauaMAC5 Inc* [2019] NZSC 111, [2019] 1 NZLR 791 at [44] and [66].

[269] *PauaMAC5 Inc v Director-General of Conservation* [2018] NZCA 348, [2019] 2 NZLR 1 at [52]–[53].

granted for killing of wildlife that is incidental to carrying out an otherwise lawful activity. Those circumstances are where the overall effect of the authority would be consistent with the protection of populations of wildlife and individual wildlife. The focus is on protecting individual wildlife and the viability of populations of wildlife as far as practicable.[270]

7.3.2.2 Applicability to the FTAA

Under the FTAA, a wildlife approval means a 'lawful authority' for an act or omission that would otherwise be an offence under any various sections of the Wildlife Act, including section 63(1).[271] 'Lawful authority' is not defined in the FTAA or the Wildlife Act.[272]

A wildlife approval under the FTAA has the same effect as if granted under the Wildlife Act.[273] Set out below is an assessment against the purpose of the Wildlife Act.

7.3.2.3 The Scheme's consistency with the Wildlife Act purpose and effects of the Scheme on protected wildlife

Predation by introduced mammalian predators is likely limiting the bird and bat populations in the Waitaha Valley, despite intermittent ground and aerial control of possums carried out by OSPRI (formerly the Animal Health Board).[274] Provided that the resource consent and wildlife approval conditions proposed by Westpower are implemented, including the AMP, BMP and LizMP required by those conditions, the Scheme itself is unlikely to affect the viability of the population of protected wildlife.

The effects of the Scheme on protected wildlife are assessed in section 6.9, 6.10, and 6.12 of the application. In summary, adverse effects from the Scheme on protected wildlife at a population level are extremely unlikely:

> Surveys undertaken in the Scheme area have not identified any lizards to date, but it is possible that three or four species could be present (forest gecko, West Coast green gecko, northern grass skink and potentially Newman's speckled skink). If lizards are present, there is potential for incidental injury or death during vegetation clearance. The lizard salvage and relocation proposed in the LizMP and covered by the wildlife approval will minimise the potential risk of incidental harm or death to a residual less than minor effect.

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[270] Wildlife Act, ss 53A–53C.

[271] Schedule 7 clause 1.

[272] The Court of Appeal in *PauaMAC5 Inc v Director-General of Conservation* [2018] NZCA 348, [2019] 2 NZLR 1 at [21] referred to the lawful authorities the Director-General can grant under sections 53 and 54. Section 71, which would also provide lawful authority; is explicitly disapplied by clause 8 of Schedule 7 of the FTAA.

[273] Section 96.

[274] Terrestrial Fauna Report at 8, 59, 150, 166, 176 and 215. For example, baseline bird surveys have found evidence of relatively low numbers of some threatened or vulnerable species (e.g. kākā, kākāriki, robin) in the Waitaha Valley and evidence of male-biased populations of some species (e.g. weka, robin).

- Potential effects from construction of the scheme on long-tailed bats and bats include incidental death or injury and habitat loss or displacement. Provided that the measures set out in the AMP and BMP are followed, the level of effect (at most) will be minor. The potential risk of incidental harm or death, and adverse effects on whio / blue duck from blasting and helicopter use, will be minimised.

Lizard salvage and relocation, gentle persuasion of whio / blue duck, and if required, capture, handle and relocation of avifauna and long-tailed bats, provide protective benefits to the wildlife and, therefore, are more clearly activities consistent with the protective purpose. However, as noted above, the recent legislative changes illustrate that the protective purpose of the Wildlife Act is not absolute. Westpower is seeking approval to incidentally harm or kill listed protected wildlife if the harm or death is not directly intended but is unavoidable and foreseeable and all reasonable effort has been made to meet the conditions in the approval.

The Scheme would meet the tests articulated in sections 53B and 53C of the Wildlife Act, and therefore can be said to be consistent with the protective purpose of the Wildlife Act:

- The resource consent and wildlife approval conditions that Westpower are proposing, including the management plans required by those conditions, are designed to maintain the viability of wildlife populations and to protect individual animals as far as practicable. They provide reasonable steps that Westpower will take to avoid, minimise, and mitigate any adverse effects on individual wildlife.[275]
- Each individual incidental harm or death (if that was to occur) does not have to be consistent with the protective purpose of the Wildlife Act, provided that the overall effect of the wildlife approval is consistent with the protection of populations of wildlife and individual wildlife.[276]
- The conditions proposed are consistent with the protection of the populations of the protected wildlife.[277] Westpower is proposing to contribute to an ecosystem programme to benefit the regional whio and bat populations for a ten-year period commencing on construction. For example, Zero Invasive Predators program (or a similar program operating within the region), who have been removing possums, ship rats and stoats from an area of 107,000 hectares between the Waiau (Waiho) and Whataroa Rivers, to the south of the Scheme. From year 11, for the remaining life of the consents, Westpower will continue to contribute to an ecosystem programme in the region or locally in the Waitaha Valley to address ongoing less than minor operational effects on whio. ZIP's programme has resulted in increases in the population of vulnerable protected wildlife such as kākāriki. The proposed mitigation measures in the Scheme area and additional offsite compensation will ensure that the viability of population of protected species within the ecological region is supported and maintained.

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[275] As would be required for a section 53 authority for incidental killing, per s 53B(4) of the Wildlife Act.

[276] Wildlife Act, ss 58B(2) and (5)(b).

[277] Wildlife Act, ss 53B(3) and 53C.

The activities sought to be covered by the wildlife approvals are therefore consistent with the 'protective purpose' of the Wildlife Act, although individual acts of incidental harm or killing (if they were to occur) may not be consistent with, or occurring for the purpose of, protection. The management plans and conditions proposed will ensure the careful regulation of human interaction with the species protected under the Wildlife Act.[278] In any case:

> The policy intent under the FTAA is that decisions do not need to be "consistent with" the wildlife protection purpose of the Wildlife Act;[279] and

> The Panel must give the greatest weight to the purpose of the FTAA and facilitate the delivery of the Scheme and achieve its significant regional and national benefits.

7.3.3 Information and requirements relating to the protected wildlife that is to be covered by the approval

Clause 5(c) of Schedule 7 of the FTAA requires the Panel to take into account information and requirements relating to the protected wildlife that is to be covered by the approval (including, as the case may be, in the New Zealand Threat Classification System or any relevant international conservation agreement).

Protected wildlife species known or predicted to be in the area of the Scheme are listed in **Table 15** in section 4.3.2 of the application. There are no species subject to international conservation agreements.

Section 4.3.1 of the application identifies the actions Westpower wishes to carry out involving protected wildlife and where they will be carried out (whether on or off public conservation land). The methods used, including to ensure best practice standards are met, are set out in section [x] of the application.

Eight threatened species (West Coast green gecko; long-tailed bat; kea; blue duck / whio; South Island kākā; long-tailed cuckoo; bush falcon / karearea; grey duck) and eight at risk species (Newman's speckled skink; forest gecko; yellow-crowned parakeet / Kākāriki; South Island pied oystercatcher; South Island robin; South Island fernbird; New Zealand pipit; black shag) have been identified as present or potentially present. The potential impacts on these species from activities authorised under the wildlife approval as part of the Scheme are summarised below in **Table 36** below.

[278] See generally *PauaMAC5 Inc v Director-General of Conservation* [2018] NZCA 348, [2019] 2 NZLR 1 at [58].

[279] Ministry for the Environment *Departmental Report on the Fast-track Approvals Bill Version 2* (21 October 2024) at [1194].

Table 36 : Potential Impacts on Species

Effect	Level of effect for long-tailed bat	Level of effect for threatened and at-risk avifauna	Level of effect for whio	Level of effect for threatened and at-risk lizards
Incidental harm or death during construction	There is a low-moderate risk of a potentially more than minor effect pre-mitigation. Following mitigation the risk is low and the effect will be less than minor.	There is a moderate risk of a potentially more than minor effect pre-mitigation. Following mitigation the risk will be low and the effect will be minor or less than minor.	There is a low risk of harm prior to mitigation, however, mitigations reduce the risk further	Minor prior to effects managements measures. Following effects management, the residual effect will be less than minor.
Noise, lighting or other disturbance affecting breeding, roosting, commuting or foraging activities	There is a moderate risk of a potentially more than minor effect during construction pre-mitigation. Following mitigation the risk will be low-moderate and the effect will be minor or less than minor during construction.	There is a moderate risk of a potentially more than minor effect during construction pre-mitigation. Following mitigation the risk will be low–moderate and the effect will be less than minor during construction.	Significant, more than minor or minor prior to effects management measures, depending on the location. Following effects management, the residual effect will be less than minor.	N/A

7.3.4 Conditions

Clause 6 of Schedule 7 of the FTAA provides the Panel with discretion to set any conditions that it considers necessary to manage the effects of the activity on protected wildlife, provided they are no more onerous than necessary.[280] In setting conditions, the Panel is required to:

> Consider whether the condition would avoid, minimise, or remedy any impacts on protected wildlife that is to be covered by the approval; and

> Where more than minor residual impacts on protected wildlife cannot be avoided, minimised, or remedied, ensure that they are offset or compensated for where possible and appropriate; and

> Take into account, as the case may be, the New Zealand Threat Classification System or any relevant international conservation agreement that may apply in respect of the protected wildlife that is to be covered by the approval.

Conditions for the wildlife approval are proposed in **Appendix 47** including a requirement to comply with the AMP, BMP and LizMP, and relevant conditions.

7.4 FRESHWATER FISHERIES REGULATIONS 1983

The consideration and granting of an application for complex freshwater fisheries approvals by the Panel is undertaken pursuant to sections 81–85 and clauses 5-6 of Schedule 9 of the FTAA.

An assessment of the applicable decision-making criteria is provided in respect of:

> The purpose of the FTAA;[281]

> The alignment of the proposed activity with best practice and the New Zealand Fish Passage Guidelines;[282] and

> How the proposed activity will manage risks to freshwater values or habitat, including prevention of access to or spread of invasive species[283]; and

> The availability and quality of the habitat upstream and downstream of the proposed activity[284]; and

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[280] Sections 81(2)(d) and 83.

[281] Schedule 9 clause 5(a).

[282] Schedule 9 clause 5(b).

[283] Schedule 9 clause 5(c).

[284] Schedule 9 clause 5(d).

- The presence of threatened, data-deficient, or at-risk species under the New Zealand Threat Classification System in the vicinity of the proposed activity[285]; and
- The advantages and disadvantages of providing fish passage upstream or downstream of the proposed activity.[286]

7.4.1 Purpose of the FTAA

Clause 5(a) of Schedule 9 of the FTAA requires the Panel to take into account[287] the purpose of the FTAA and give that the greatest weight when assessing the application. Section 2.3 of the application provides an assessment of the Scheme against the purpose of the FTAA.

7.4.2 The alignment of the proposed activity with best practice and the New Zealand Fish Passage Guidelines

Clause 5(b) of Schedule 9 of the FTAA requires the Panel to take into account the alignment of the Scheme with best practice and the New Zealand Fish Passage Guidelines.

As discussed in section 4.4.3, which details specific complex freshwater fisheries information, all in-stream structures will be designed to provide sufficient fish passage. The design and installation of all in-stream structures will also adhere to best practice and will be informed by the New Zealand Fish Passage Guidelines, with structures inspected after significant floods to address potential scouring that may impede fish access. Further discussion on the in-stream structures is provided below.

7.4.3 Management of risks to freshwater values or habitat, including prevention of access to or spread of invasive species

Clause 5(c) of Schedule 9 of the FTAA requires the Panel to take into account the Scheme's proposed management of risks to freshwater values or habitat, including prevention of access to or spread of invasive species.

The proposed management of risks to freshwater values or habitat is discussed in detail in section 6.15 of the AEE.

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[285] Schedule 9 clause 5(e).

[286] Schedule 9 clause 5(f).

[287] The requirement to 'take into account' means that the Panel must consider the matter (can be synonymous with "have regard to"). The question of weight is left to the decision-maker (except where the FTAA provides that more weighting must be given to the purpose of the FTAA). See generally *Bleakley v Environmental Risk Management Authority* [2001] 3 NZLR 213 (HC) at [72]; and *New Zealand Transport Agency v Architectural Centre Inc* [2015] NZHC 1991, (2015) 19 ELRNZ 163 at [63].

The proposed management measures already proposed for construction include, in summary:

- Measures to minimise sediment release, for example locating infrastructure away from sensitive areas such as the 'Stable Trib';
- Measures to minimise the release of cementitious contaminants. For example, the installation of any in-channel structures should use precast concrete units where possible if the channel they are being installed in has water in it;
- Measures to minimise the release of other construction-derived contaminants such as ensuring that refuelling machinery and equipment / occurs where it cannot enter the waterway if there is a spillage, and that fuels and chemicals are stored well away from waterways;
- Measures to ensure fish passage during in-channel works will maintain current conditions, for example such that only kōaro can access Kiwi Flat;
- Minimise mortality of biota at the site of in-channel works by, for example, at the main river, dewatering sites and, if possible, timing the works to take advantage of low river flows;
- Minimise the impact of gravel extraction from the Waitaha River on freshwater ecology by ensuring a sufficient buffer between the extraction areas and the active wetted channel and flood banks.

The proposed management measures already proposed for operations include, in summary:

- Minimise the impact of the residual flow by, for example, monitoring for periphyton and flushing any excessive accumulations;
- Minimise the impact of the rapid flow changes as a result of planned maintenance and emergency shutdowns by, for example, using ramping procedures;
- Minimise the impact of the altered sediment dynamics within the residual flow section and downstream of the tailrace by monitoring fine sediment accumulation in the lower part of the abstraction reach and if monitoring indicates a buildup, then flushing any excessive accumulations;
- Minimise the impact of the fish attraction to the tailrace by ensuring the detailed design of the tail race incorporates measures to ensure fish are able to safely exit the tailrace, with input from a suitably qualified and experienced freshwater ecologist;
- Ensure fish passage at weir intake structure for kōaro;
- Monitor kōaro population to ensure there continues to be kōaro recruitment into Kiwi Flat by way of the fish passage;

> Ensure fish passage at tributary waterway crossings is provided in general accordance with the New Zealand fish passage guidelines;

> Minimise the impact of the in-channel maintenance works at the intake site by implementing strict contaminant controls and equipment safety measures to prevent spills.

With respect to the spread of freshwater species in particular, as discussed in 6.15 of the AEE, the Waitaha River mainstem and many of its tributaries are not suitable for didymo, periphyton or bryophytes due to the low nutrient conditions and frequent floods. The more stable tributary waterways, such as the 'Stable Trib' are biodiversity hotspots for bryophytes and could be more susceptible to didymo infestation as they are less flood prone and less turbid. However, the Scheme includes:

> Check-clean-dry protocols for the limiting the spread of didymo. Implementation of such protocols is standard operational procedure for site works and should limit the spread during the construction phase;

> Despite the impact of the Scheme on periphyton being low, there will be abstraction reach monitoring for any buildup of periphyton (especially filamentous algae) during prolonged periods (i.e., greater than four weeks) of the minimum residual flow in the abstraction reach, and if this reaches problem levels then flushing will occur to remove any excessive accumulations.

7.4.4 The availability and quality of the habitat upstream and downstream of the proposed activity

Clause 5(d) of Schedule 9 of the FTAA requires the Panel to take into account the availability and quality of the habitat upstream and downstream of the proposed Scheme. Sections 5.18 and 5.21 of the application provides an assessment of the existing freshwater environment upstream and downstream of the proposed Scheme and section 4.4.3 details specific complex freshwater fisheries information. In summary:

> The Waitaha River is a high flowing river with a naturally high natural disturbance regime with frequent large floods and transient deposition and re-working of sediment. Which limits the biological community in the river. The Waitaha River has low-nutrient water that is typical of other West Coast rivers where catchment modification is minimal making it unsuitable for invasive species growth.

> The benthic invertebrate community is comparable to those of other neutral pH, fast-flowing West Coast rivers from unmodified catchments in high rainfall areas, where water quality is high and nutrient levels and algal biomass low. The stable tributaries do support distinct communities and had significantly higher invertebrate diversity and

density that the mainstem. The mainstem and other tributaries had low densities and diversity due to, for example, the high disturbance regime and low nutrients.

> The fish community in the Waitaha Catchment is generally typical of West Coast rivers. Kōaro was the only fish species found upstream of Morgan Gorge; meaning that Morgan Gorge represents a fish passage barrier to all species other than kōaro. Some tributaries in the Douglas Creek Reach (which are downstream of the Scheme and will be unaffected by the Scheme) have greater fish density and diversity compared with the mainstem which has limited density and diversity reflecting the unstable environment and limited food supply available in the mainstem.

7.4.5 The presence of threatened, data-deficient, or at-risk species under the New Zealand Threat Classification System in the vicinity of the proposed activity

Clause 5(e) of Schedule 9 of the FTAA requires the Panel to take into account the presence of threatened, data-deficient, or at-risk species under the New Zealand Threat Classification System in the vicinity of the Scheme. Section 5.18 of the application identifies such species within the vicinity of the Scheme, as does section 4.4.2 which details specific complex freshwater fisheries information. In summary:

A total of eight fish species were recorded in the Waitaha catchment; these were (in order of occurrence from most recorded to least recorded) kōaro (Galaxias brevipinnis), longfin eel (Anguilla dieffenbachii), brown trout (Salmo trutta), torrentfish (Cheimarrichthys fosteri), lamprey (Geotria australis), redfin bully (Gobiomorphus huttoni), common bully (Gobiomorphus cotidianus) and giant kōkopu (Galaxias argenteus).

There was one fish species with a conservation status of 'Threatened – Nationally Vulnerable' (lamprey) and four with a conservation status of 'At Risk – Declining' (kōaro, longfin eel, torrentfish, giant kōkopu).

7.4.6 The advantages and disadvantages of providing fish passage upstream or downstream of the proposed activity

Clause 5(f) of Schedule 9 of the FTAA requires the Panel to take into account the advantages and disadvantages of providing fish passage upstream or downstream of the Scheme. Although fish passage is desirable in most cases, with respect to the diversion weir, excluding fish species other than koaro is the objective. To this extent, this structure does not strictly adhere to the New Zealand Fish Passage Guidelines. Similarly, some culverts located in streams with highly mobile bed materials, the Freshwater Ecology Report confirms that achieving fish passage at all times may not be practicable (as is the case naturally) and that due to the ephemeral nature of some streams, fish passage is not required due to fish not being present.

In summary, all in-stream structures are to be designed and installed in general accordance with the New Zealand Fish Passage Guidelines to provide for adequate fish passage.

The construction of tributary waterway crossings will maintain current fish passage conditions. This will be achieved through the use of bridges (Granite Creek) and is otherwise not required as year-round fish passage access is not available under natural conditions and the system upstream of the crossings would be unlikely to support permanent fish populations.

The operation of tributary waterway crossings will maintain current fish passage conditions. Small watercourses, and some larger tributaries with intermittent or ephemeral flow will use culverts (such as Alpha Creek). Other intermittent or ephemeral flow will use a culverted ford crossing or a drift deck (Macgregor Creek) and larger perennial tributaries (Granite Creek) will be spanned by a bridge. All in-stream structures are sufficient for fish passage and their design and installation will be informed by the New Zealand fish passage guidelines, with structures inspected after significant floods to address potential scouring that may impede fish access.

8. CONCLUSION

Through a combination of smart Scheme design initiatives and Westpower's commitments to adopt specific expert recommendations for managing the Scheme's effects, the environmental effects of the Scheme will be acceptable. In addition, the Application clearly confirms that the Project will result in a wide range of benefits that will contribute significantly and positively to the region and New Zealand more broadly.

The actual and potential effects associated with activities that are the subject of the Approvals applications have been considered in accordance with the matters to be considered under the FTAA as well as sections 5, 6, 7, 104, 105 and 107 of the RMA. The proposed activities have also been assessed to be generally consistent with the relevant objectives and policies of the NPS-REG, NPS-FM, NPS-IB, NPS-UD, RPS, RLWP, RAQP, WDP and the pTTPP. Relevant iwi environmental management documents have also been considered.

Overall, this application satisfies the relevant tests under the FTAA and the Waitaha Hydro Project strongly accords with the purpose of the FTAA.

The Panel can be satisfied that the resource consents can be granted on the conditions proposed.

C

PART C

Appendices