

# **McKays Creek Kaniere Forks Hydroelectric Power Scheme**

## **Reconsenting Project**



**Information Pack**

**February 2010**



## 1.0 McKays Creek Kaniere Forks Hydroelectric Power Scheme

- TrustPower Limited ('TrustPower') owns and operates two power stations, McKays Creek and Kaniere Forks, collectively referred to as the McKays Kaniere Hydroelectric Power Scheme ('Scheme' or 'HEPS'). The stations were commissioned in 1931 and 1909 respectively. The water permits for the operation of the Scheme were granted in 1986. The Scheme is located within the jurisdiction of the Westland District and West Coast Regional Councils.
- The Kaniere Forks power station (0.43MW) uses water diverted from Lake Kaniere, while the McKays Creek power station (1.1MW) utilises water via a weir and race from the Kaniere River. Combined, the Scheme has an annual output of 1.51 MW and 11.75 GWhrs, which is enough to supply electricity to approximately 1500 average households per year.
- Figure 1 shows the location of both the Kaniere Forks and McKays Creek power stations, and Figure 2 is a schematic showing the Scheme in greater detail.

## 2.0 Resource Consents for the Scheme

- The tables below list the resource consents which currently authorise the operation and maintenance of the McKays Kaniere HEPS.

**Table 1. Resource Consents for the McKays Kaniere HEPS**

Resource Consent	Permit Type	Details of Activity	Expiry Date
85/6 (Kaniere Forks HEPS)	Water	Authorises the: intake <b>structure</b> at Lake Kaniere, a <b>water race</b> with storm water and dewatering controls that leads to the power station, and a <b>tailrace</b> to the Kaniere River. <b>Divert</b> 1m <sup>3</sup> /s from Lake Kaniere into the water race and <b>Discharge</b> 1m <sup>3</sup> /s from the power station tailrace into the Kaniere River.	May 2011
85/7 (McKays Creek HEPS)	Water	Authorises the operation of the McKay's Creek Power Scheme including: the control <b>weir</b> at Lake Kaniere, an intake <b>structure</b> on the Kaniere River, a <b>water race</b> with storm water and dewatering controls that leads to the power station, and a <b>tailrace</b> to the Kaniere River. The <b>take</b> 5m <sup>3</sup> /s from the Kaniere River and 1m <sup>3</sup> /s from its tributaries (namely Bluebottle Creek); and <b>discharge</b> of 6m <sup>3</sup> /s from the McKay's Creek Power Station into the Kaniere River	May 2011

- Applications to renew the above consents must be lodged at least six months in advance of the consents expiring. As these are due to expire in May 2011, the application to renew these consents will be lodged in October 2010.

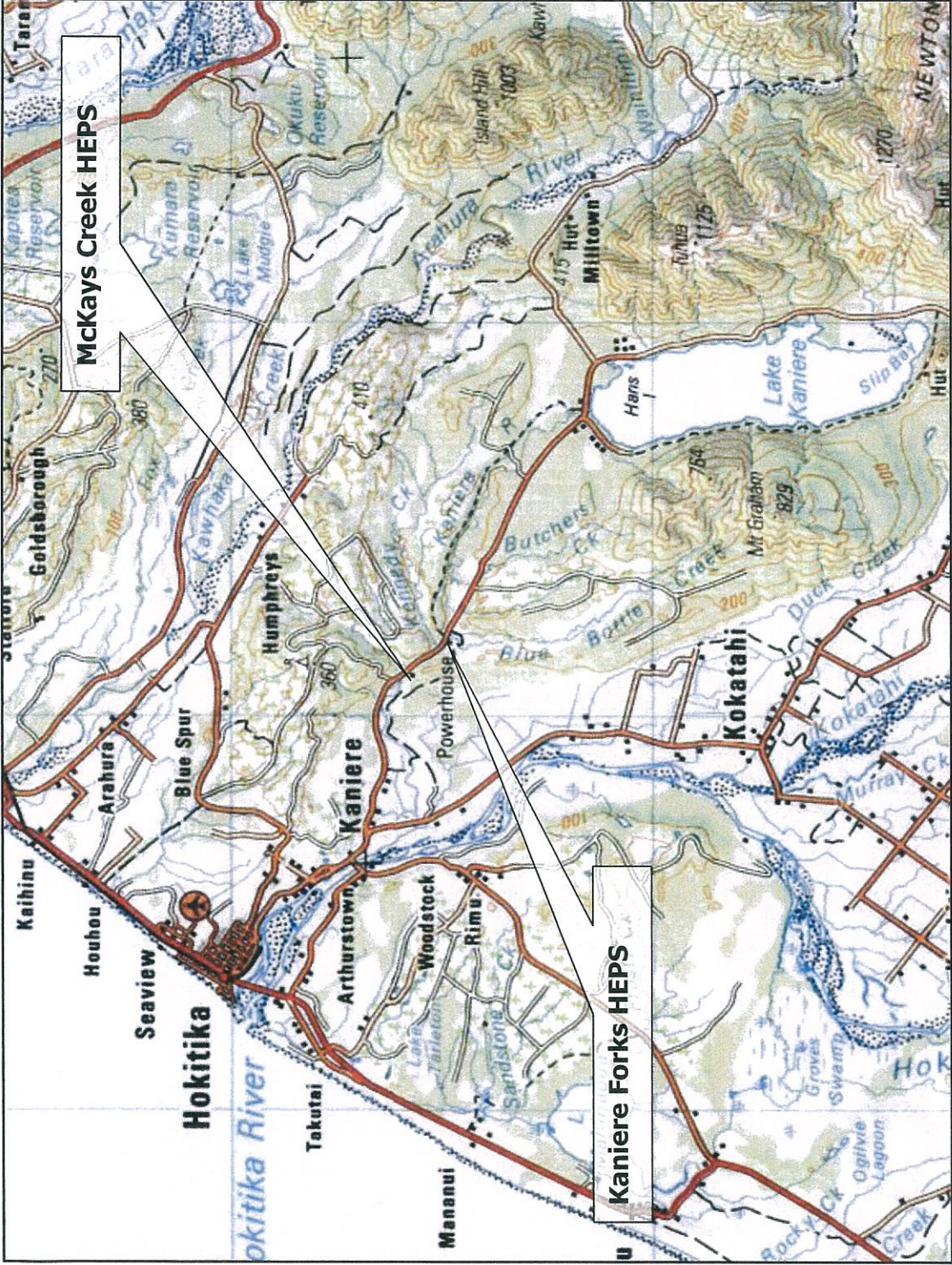


Figure 1: Site Location Plan for the McKays Creek and Kaniere Forks Power Stations

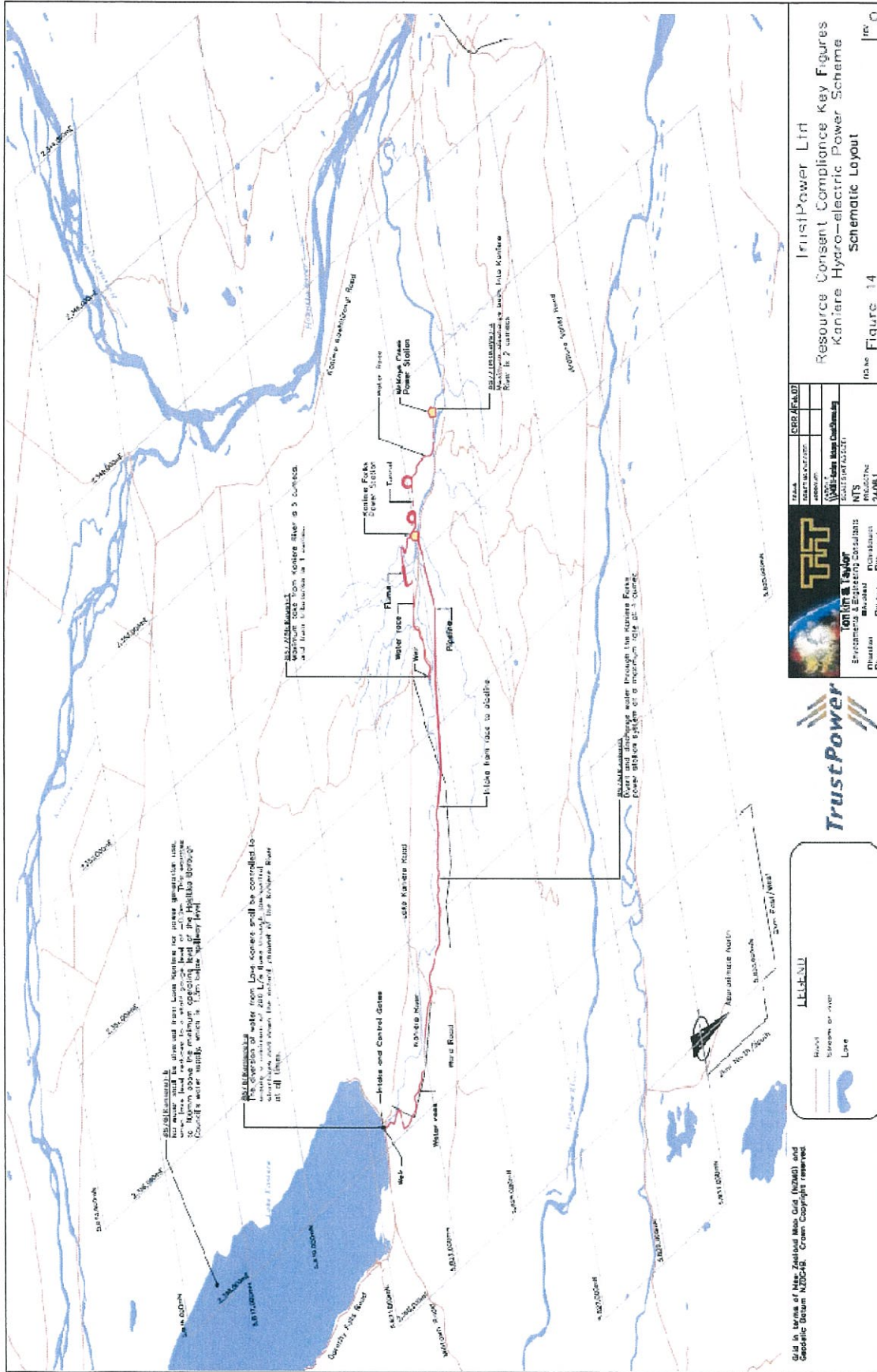


Figure 2: Schematic of the McKays Kanieri Hydroelectric Power Scheme.

### 3.0 Enhancement Options for Reconsenting

- As resource consents for existing HEPS approach expiry, TrustPower investigates the potential for enhancements which may improve the output and efficiency of the stations.
- TrustPower has identified three potential options for enhancing the current McKays Kaniere Scheme. The intention is to undertake assessments on these three scenarios and then make a determination as to which option is pursued closer to lodgement:

- **Option 1:** Reconsent the status quo (outlined in Table 1 above);
- **Option 2:** Increase Kaniere abstraction and race capacity from 1 to 1.5 cumecs and increase abstraction at McKay's weir from 5 to 8 cumecs. Increase Kaniere Forks Station capacity to discharge 1.5 cumecs and McKays Station capacity from 6 cumecs to 9 cumecs (to account for the existing additional 1 cumec from Blue Bottle Creek).

This would involve some improvement to the races through deepening/heightening or widening; and

**Option 3:** Increase abstraction from the lake to Kaniere race from 1 to 6 - 8 cumecs. Increase race capacity to Wards road to take the 6- 8 cumecs and construct a new Power Station at Wards Road, with capacity to pass 6 - 8 cumecs to Kaniere River. This option will result in the alterations to the existing Kaniere Race to accommodate the additional flow.

Improvements would be made to McKay's race and the abstraction increased (at McKays weir) from 5 to 8 cumecs. The existing McKays Creek Power Station capacity would be increased from 6 cumecs to discharge up to 9 cumecs (as with Option 2, this would account for the existing additional 1 cumec from Blue Bottle Creek).

For this option, should the abstraction from Lake Kaniere be increased to 8 cumecs then the station at Wards Road will have a capacity of 8 cumecs and the existing Kaniere Station will be decommissioned.

If the abstraction is increased to 6 cumecs then the Wards Road Station will be built to a capacity of 5 cumecs and the additional 1 cumec will continue down the existing Kaniere Race to the existing Kaniere Station.

#### 4.0 Technical Studies to be completed

- In 2005, TrustPower commissioned experts to undertake preliminary environmental investigations into various aspects of the McKays Kaniere Scheme.
- Each of the consultants undertook a site visit and completed a preliminary work in order to identify information gaps, and to recommend further investigations required to enable a robust Assessment of Environmental Effects (AEE) to be prepared for the consenting of the Schemes. These further assessments are now underway.
- The AEE, once drafted, will provide the technical background for the lodging of the applications for resource consents. The disciplines for which assessments are being undertaken to contribute to the AEE are listed in Table 4 below. The hydrology and civil safety assessments will be completed by internal TrustPower staff, with peer review from external consultants.

**Table 4. Further studies identified for McKays Kaniere HEPS**

Area	Investigation/Monitoring	Consultants
Aquatic Ecology	Electrofsh Butchers Creek and Kaniere River to provide baseline information	Ryder Consulting
	Study on common bullies from Lake Kaniere	
	Electrofsh habitats up and downstream from Blue Bottle Creek to determine effect of abstraction	
	Baseline surveys of periphyton and invertebrates in Kaniere River	
	Estimate population of Longfin females in Kaniere catchment	
	Review screen size in water races	
	Feasibility study to determine cost of modifying Blue Bottle Creek boulder diversion by adding a small deflecting wing upstream	
	Assess trash rack spacing and approach velocities at McKays intake are suitable for preventing entrainment of eels	
	Assess annual flow variability in Kaniere River	
	IFIM / Low flow habitat modelling	
AEE Report		
Avifauna and Terrestrial Ecology	1 <sup>st</sup> year boat based survey on Lake Kaniere (Completed)	Boffa Miskell
	2 <sup>nd</sup> year boat based survey on Lake Kaniere (Completed)	
	Characterisation and mapping of plant communities, as well as gathering of further information on numbers and species of birds at relevant sites.	
	AEE Report	
Hydrology	Refine preliminary assessment of Lake Kaniere and Kaniere River hydrology	TrustPower
	Spot Flow Gaugings	TrustPower
	AEE Report	

Cultural	Cultural Impact Assessment	TBC
Archaeology	Research into relevant archaeological reports and local history, as well as consultation regarding the same.	Clough & Associates
	Site specific assessments.	
	AEE Report	
Landscape	Analysis of landscape characteristics, examination of the sensitivity of the view and site to change, and potential qualitative changes.	Mary Buckland
	AEE Report	

## 5.0 Approximate Timeframes for Consultation

- Relevant consultation timeframes for the McKays Kaniere consenting project are summarised below.

**Table 5. Approximate timeframes for consultation.**

Approximate Timeframes	Tasks
<b>Mid-Late 2009</b>	One-on-one meetings and discussions with key stakeholders.
<b>Early 2010</b>	Information packs to stakeholders, affected parties and identified interest groups providing key details for the consenting project.
	Contact with parties to organise further meetings.
<b>Mid 2010</b>	Circulate draft technical reports to key stakeholders.
	Further letters and meetings with stakeholders, affected parties and identified interest groups.
	Identify and discuss outstanding concerns of those consulted/feedback from parties on draft reports.
	Decision made on enhancement option for consenting and letters and information on this to general community for comments/feedback.
<b>Public Information Day – Mid 2010</b>	Public Information Day (likely to be held in Hokitika), to discuss draft technical reports and any concerns regarding the consenting project.
<b>Late 2010</b>	<b>Resource Consent Application Lodged</b>

## 6.0 Further Information

If further information is sought in respect of the McKays Kaniere reconsenting project or if you wish to discuss any of the above, please contact:

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