

**Before the Commissioner appointed by Canterbury  
Regional Council and the Ashburton District Council**

**IN THE MATTER OF** The Resource Management Act  
1991

**AND**

**IN THE MATTER OF** Applications by Ashburton  
Community Water Trust for  
water, discharge and land use  
permits to construct a primary  
intake and canal system to  
enable the taking of water for  
hydro-electricity generation.

Section 42A Officer's Report

Date of Hearing:

**Report of Keri Johnston**

1. My name is Keri Johnston.
2. I hold a Bachelor of Engineering (honours) in Natural Resources Engineering from the University of Canterbury. I am a Professional Member of the Institute of Professional Engineers New Zealand (MIPENZ) and a Chartered Professional Engineer (CPEng).
3. I have 8 years experience in the resource management field, and am currently a director of Irricon Resource Solutions, a resource management and environmental engineering consultancy based in Canterbury.
4. This report is prepared to provide information and advice on the application to the decision maker. This report is prepared under the provisions of Section 42A of the Resource Management Act 1991 (RMA). This section allows a Council officer or consultant to provide a report to the decision-maker on a resource consent application made to the Council, and allows the decision-maker to consider the report at the hearing. Section 41(4) of the RMA allows the decision-maker to request and receive from any person who makes a report under Section 42A "*any information or advice that is relevant and reasonably necessary to determine the application*". This report will provide the decision-maker with information and advice related to:
  - The background to the application;
  - Details of the notification of the application and any submissions received;
  - An outline of the relevant legal and planning provisions;
  - Comments on the assessment of environmental effects provided;
  - Details of Council policy relevant to the application;
  - Comments in relation to the matters specified in Part II of the RMA; and

- Comments on the decision to be made by the decision-maker including comments on whether the application can be granted or should be declined; if the application is to be granted what measures are required to avoid, remedy or mitigate any adverse effects; what monitoring should be undertaken and the duration of consent.
5. It should be emphasised that any conclusions reached or recommendations made in this report are not binding on the decision-maker. It should not be assumed that the decision-maker will reach the same conclusion or decision having considered all the evidence to be brought before it by the Applicant and submitters.

## **INTRODUCTION**

6. Ashburton Community Water Trust (ACWT) have applied for a suite of consents for the use of water from the Rakaia River and to provide for the physical works associated with the construction of an intake, canal and hydro-electric power generation scheme on the south bank of the Rakaia River at Happy Valley.
7. The scheme is known as the Rakaia Terrace Hydro Scheme.
8. The water, discharge and land use consents applied for are intended to be operated in conjunction with a joint application with Central Plains Water (CPW) to take water from the Rakaia River. The applicant wishes to use the water for hydroelectricity generation.
9. The application to take water was lodged in December 2001 by the Selwyn District Council and Christchurch City Council, acting as the Central Plains Water Enhancement Steering Committee, jointly with ACWT.

## **Background**

10. This application for the use of water for hydroelectricity generation was submitted to ECan on 2 March 2007. The following section attempts to provide a summary of the overall context in which the current resource consent applications are made.
11. CPW and ACWT applied for resource consent to take 40 cumecs from the Rakaia River for irrigation and ancillary purposes in 2001 (CRC021091).
12. Notification of the application was deferred under the provisions of section 91 of the RMA following a determination that other consents were required to enable a better understanding of the proposal. These consents related to the use of water for irrigation and any discharge, divert or land-use applications that would be necessary for the construction and operation of the proposed scheme.
13. In April 2003 the Central Plains Water Enhancement Steering Committee was replaced by the Central Plains Water Trust and in December 2005 the applicant requested the applications be transferred to the Central Plains Water Trust and Ashburton Community Water Trust.
14. In November 2005 Central Plains Water Trust lodged a suite of applications to include all activities relating to the construction, operation and maintenance of the irrigation scheme, including water, discharge and landuse applications. All applications for the CPW scheme were publicly notified on 24 June 2006.
15. At the time this report was written, the CPW applications are the subject of a resource consent hearing. It was decided that the applications for the use of water

on the south side of the Rakaia River should also be heard at the same time as the CPW consent applications.

16. On 2 March 2007 ACWT lodged applications for hydro-generation extending from an intake at Happy Valley along a 14 kilometre long canal to a proposed power station approximately 3 kilometres upstream of Barhill. These applications cover the water and land use associated with the combined CPW/ACWT consent application (CRC021091) to take water from the Rakaia River.
17. Applications to use water for hydro-electricity generation and irrigation on the south side of the Rakaia River by Electricity Ashburton (EA)/Barhill Chertsey Irrigation (BCI) scheme were notified on 15 September 2007 and were the subject of a resource consent hearing on the 29-31 January 2008. At the time this report was written, no decision had been issued. The EA/BCI scheme forms the first stage (i.e. upstream of the Highbank tailrace) of the ACWT proposal. Whilst there is common infrastructure between the EA/BCI scheme and ACWT, for the purposes of consenting the two applications are considered to be completely separate.

### **Additional Consent Requirements**

18. ACWT requires resource consents from the Ashburton District Council in relation to the works proposed for within the riparian margin of the Rakaia River, and within the significant nature conservation area of the Rakaia River bed.

### **Notification**

19. The applications were notified on 4 July 2007 in the Christchurch Press and the Ashburton Guardian. ECan also notified a number of individuals and groups considered to be directly affected by these activities. The closing date for submissions was 1 August 2007.
20. A complete list of these applications as they were notified is attached as Appendix A of this report.
21. Due to the complexity of the application, the time for making submissions was doubled to forty working days, the maximum allowable under Section 37(5) of the RMA.
22. All provisions of the RMA related to notification, including timeframes, were complied with and in my opinion the Commissioners have jurisdiction to hear and decide the applications listed in Appendix A.
23. Persons notified directly, in accordance with section 93 of the RMA included the parties as listed in Appendix B.

### **Submissions**

24. A total of 18 submissions were received on some or all of the applications made. Seventeen of the 18 submitters requested to be heard with 17 opposed and 1 neither supporting nor opposing.

### **Submissions in opposition**

*Ngai Tahu-Mamoe Fisher People Inc*

25. Ngai Tahu-Mamoe Fisher People Inc (NTMFP) opposes the resource consent applications on the basis of unresolved Treaty of Waitangi and land ownership issues. The NTMFP claim rights to the natural resources within the jurisdiction of ECan, which has been presented to the Minister of Maori Affairs and the Minister of Treaty of Waitangi Negotiations. The NTMFP do not believe that the consents can be issued until the claim to the ownership of the natural resources has been resolved by way of negotiation with the Crown or by Judicial Review.

*Transpower New Zealand Limited*

26. Transpower New Zealand Limited (Transpower) opposes in part the resource consent applications for the ACWT scheme. In particular, Transpower is concerned with regard to the potential for third party activities to adversely impact on the National Electricity Grid. These impacts may include increased risks to the structural and system integrity of the network as well as limitations on the ongoing operation, maintenance or upgrading of the existing transmission assets. Of particular concern is a section of the Benmore - Haywards -A transmission line that crosses the proposed canal alignment.

*TrustPower Limited*

27. TrustPower Limited (TrustPower) opposes all applications for resource consents associated with the proposed ACWT scheme on the basis that the grant of these consents may derogate or otherwise impose additional costs, limitations or constraints on the exercise of existing resource consents held by TrustPower for the Highbank Power Scheme. TrustPower submits that ACWT will benefit from the use of their infrastructure and on that basis, ACWT should share in the costs and responsibilities of consent compliance.
28. Specific concerns with the proposal include:
- Impacts of additional discharge in the existing formed tailrace on the effectiveness of the existing salmon barrier;
  - The potential for adverse effects on the operation of the Highbank Power Station, including any loss in generation;
  - That should Ecan introduce a water use rating system, TrustPower submits that ACWT should meet a proportion of the costs relevant to the use of the water from the tailrace.
  - The potential for construction activities to affect TrustPower assets and the maintenance and operation of the Highbank Power Station;
  - That vegetation removal within or adjacent to the proposed canal alignment may impact on bank stability; and,
  - That any river protection works be undertaken in consultation and by agreement with TrustPower to ensure appropriate protection of existing assets.

*Department of Conservation*

29. The Department of Conservation (DoC) make the general submission that the proposed activities fail to promote the sustainable management of the natural and physical resources as required by Part II of the RMA. DoC submits that the assessment of effects provided is inadequate as it does not reflect the scale, significance or complexity of the proposed activities.
30. More specific concerns held by DoC include:

- Intake design to address fish passage issues for indigenous fish species;
- Concerns regarding the effects on indigenous vegetation, aquatic biota, important habitats, natural character and recreational access;
- No detail provided of management and treatment of wastewater, stormwater and drainage from construction activities;
- Application will have significant impacts on regionally significant values of the river and landscape

*The Royal Forest and Bird Protection Society of New Zealand Incorporated*

31. The Royal Forest and Bird Protection Society of New Zealand Incorporated (Forest and Bird) make the following points in relation to the application;
- The application fails to adequately consider alternative methods or areas to prevent or reduce adverse effects;
  - Information provided by the applicant does not satisfy requirements of Section 88 or the fourth schedule of the RMA particularly with regard to wetlands and the terrestrial ecology of the affected area, effects on the river by reducing the flow by 40 cumecs, and effects on braided river birds;
  - The potential for adverse effects on native fish and eels and water quality at the point of discharge; and,
  - That the proposal is contrary to provisions of the National Water Conservation (Rakaia River) Order;
32. Forest and Bird request that the application for resource consent be declined. Alternatively, if the consents are granted, it is requested that the term of consent be reduced from the requested 35 years.

*North Canterbury Fish and Game Council*

33. The North Canterbury Fish and Game Council (Fish and Game) opposes the applications in entirety, based on a number of concerns with the proposal, including:
- The effect of discharges on salmon migration and spawning
  - Impacts on water quality and consequential effects on habitat and amenity values;
  - Effects on safety of river users;
  - Effects on natural character and landscape values;
  - Lack of consultation with Fish and Game;
  - Lack of information on fish screen design and bypass, specifically the effectiveness, operation and maintenance of the structures;
  - Creation of gamebird habitat; and
  - Impacts of river control works.

*New Zealand Salmon Anglers Association Incorporated*

34. New Zealand Salmon Anglers Association Incorporated (NZSAA) opposes the applications and request that the applications are declined. The NZSAA submits that the proposal is contrary to the provisions of the National Water Conservation (Rakaia River) Order 1988. Other concerns include:
- The scheme will modify the natural braided river;

- The scheme will have detrimental effects on salmon spawning and the salmon fishery;
- Discharges to the river will affect colour and clarity of the river (affecting salmon angling);
- Safety of anglers, jet boaters and other river users from emergency discharges to the river; and
- Access to the river.

*Synlait Developments Limited*

35. Synlait Developments Limited (Synlait) request that the application for resource consent be declined in full. Specific concerns include:
- The proposed use of water was not referred to in the AEE for the take application, which has different effects particularly with respect to timing and size of the take. The use application is beyond the scope of the use application;
  - Insufficient details were provided in the AEE with regards to the implementation of the scheme, particularly in regards to the interrelationship with the Barhill Chertsey/Electricity Ashburton scheme; and
  - The application is inconsistent with the RRWCO and the purpose of the RMA.

*Mark Davey Limited*

36. Mark Davey Limited is opposed to the applications in their entirety. The proposed intake structure is to be built on the property of Mark Davey Limited. Mark Davey Limited outlined concerns relating to the reduction in farm land, ACWT scheme operation and the effects on farming operations, the increase in traffic, noise and dust during the construction phase and on going interference with stock on the property.
37. Mark Davey Limited also submits that the application is contrary to the objectives and policies of RPS, TRP and PNRRP and contrary to the provisions of the RMA.

*Save the Rivers Mid-Canterbury Inc.*

38. Save the Rivers Mid-Canterbury is opposed to the applications on the basis that the proposal is contrary to planning documents and potential affects on the Rakaia River are unacceptable. Save the Rivers Mid-Canterbury has specific concerns regarding:
- Over-allocation of water from the Rakaia lacks long term goals for water from the river.
  - Power station is unsightly in natural environment – contrary to the RRWCO.
  - Deposit of sediment on river bed could affect natural environment of the river and amenity for anglers.
  - Effects on the salmon fishery due to works in the river bed and inadequate fish screens.

*Ms E Sage*

39. Ms Eugenie Sage opposes all the applications, stating the proposal is an abuse of the RMA and is misleading to the public. In particular, Ms Sage's concerns include:

- The submission of an inadequate assessment of environmental effects;
- The absence of a comprehensive evaluation of natural character, landscape and ecological values of the river, and the effect of the proposal on these values
- Adverse effects on aquatic organisms and birds
- Ms Sage believes the proposal is inconsistent with s5, 6 and 7 of the RMA, and contrary to the relevant planning documents (RPS, NRRP, Ashburton District Plan, Canterbury Conservation Management Strategy, Rakaia WCO).

*Mr C Morris*

40. Mr Colin Morris opposes the applications, as he believes the proposal will destroy natural, ecological and recreational values of the Rakaia River.

*Ms L Weir*

41. Ms Liz Weir opposes the applications, as she believes the applications are contrary to the objectives of the Rakaia River Water Conservation Order. Ms Weir submits that the proposal will destroy the natural, ecological and recreational values of the river.

*Mrs R Snoyink*

42. Mrs Rosalie Snoyink opposes the applications on the basis that the proposal is contrary to the aims of the Water Conservation Order on the Rakaia River, and will destroy the intrinsic natural, ecological and recreation values of the Rakaia River.

*Mr J Snoyink*

43. Mr Jules Snoyink opposes the applications, submitting that the proposal will destroy the natural values of the Rakaia River, and that the outstanding value of the river should be protected for the wellbeing of future generations.

*Malvern Hills Protection Society*

44. The Malvern Hills Protection Society (MHPS) opposes the applications, as they believe that the Rakaia River is an important braided river of international and national significance. The MHPS believes the application is contrary to the aims of the Water Conservation order on the Rakaia River and the proposed take and construction works will have an adverse effect on river flows and the values of the River.

*Mr N Allen*

45. Mr Nicholas Allen opposes the applications, as dewatering of river will induce the reduction of island habitat within the river and increase animal pests. Mr Allen submits that endangered species that depend on safe island habitats to breed will be at risk.

**Submissions neither supporting or opposing the application**

*Rangitata Diversion Race Management Limited*

46. Rangitata Diversion Race Management Limited (RDRML) conditionally supports the applications. RDRML is the owner and operator of the Rangitata Diversion Race and

recognises that the water will be used efficiently and supports the proposal on that basis. RDRML submits that the ACWT scheme will have a direct effect on the consents to divert and discharge water to and from the Rakaia River and associated land use consents. No mitigation has been offered to address these issues.

47. RDRML wishes that the consent authority ensures ACWT does not compromise their RDRML's ability to comply with consent conditions.
48. All submitters, bar Mr N Allen, wish to be heard in support of their submissions.

## **DESCRIPTION OF THE PROPOSED ACTIVITY**

49. The following section contains an overview of the proposed scheme. More detailed information relating to the design and operation of the proposed scheme is contained in Section 2 and Section 7 of the AEE document.
50. The Applicant proposes to take up to 40m<sup>3</sup>/s of water from the Rakaia River through an intake at Happy Valley, and convey this water to up to three low-head power stations within the proposed "Highbank Canal", which will run between the Happy Valley intake to the existing Highbank Power Station tailrace.
51. The scheme will be operated on a "run-of-river" basis.
52. The scheme will use water from two sources – the Rakaia River and the outflow from the RDR. The total take from the Rakaia River is expected to comprise up to 40m<sup>3</sup>/s (CPW/ACWT joint take) and up to 17m<sup>3</sup>/s for which resource consent CRC990088 is already held by BCIC. Water from BCIC will primarily be available outside the irrigation season.
53. The discharge from these power stations will be combined with the discharge from the existing Highbank Power Station and conveyed to the top of the Rakaia Terrace by the "Terrace Canal".
54. From there, the flow will go through a new power station (Barhill Power Station), located at the foot of the Rakaia River terrace approximately 3.2km upstream from Barhill, and discharged back to the river.
55. Construction and maintenance activities will be required to install, use and maintain water intakes on the Rakaia River; to construct, use and maintain a water delivery network; and to construct, use and maintain up to four power houses.

## **KEY ELEMENTS OF THE SCHEME**

56. An intake on the southern side of the Rakaia River at Happy Valley approximately 5km downstream of the Gorge Bridge.
57. A settling pond and fish screening facility.
58. A canal, approximately 14km long that sidles up the river terrace to convey water to power stations. This canal terminates on top of the river terrace approximately 3.2km upstream of Barhill.
59. Up to three power stations located on the canal between the settling pond and the Highbank Power Station.

60. A power station (Barhill Power Station) located at the foot of the river terrace approximately 3.2km upstream from Barhill.
61. A tailrace to discharge water back to the Rakaia River near Barhill.

## LEGAL AND PLANNING MATTERS

62. The activities described in the notification wording under paragraph 19 all require resource consents, pursuant to the following sections of the Act, and the rules in the Transitional Regional Plan and the Proposed Natural Resources Regional Plan that are outlined in the sections below.

### The Resource Management Act 1991 (RMA)

63. Part 3 of the RMA outlines the duties and restrictions under this Act. The sections of the Act relevant to this proposal are outlined below:

64. Section 9(3) of the Act states:

- “(3) No person may use any land in a manner that contravenes a rule in a regional plan or a proposed regional plan unless that activity is –*
- (a) Expressly allowed by a resource consent granted by the regional council responsible for the plan;...”*

65. Therefore, if the land use activities applied for contravene a rule in the regional plan or the proposed regional plan, resource consents are required for the proposal.

66. Section 13(1) of the Act states:

- “(1) No person may, in relation to the bed of any lake or river, —*
- (a) Use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed; or*
- (b) Excavate, drill, tunnel, or otherwise disturb the bed; or*
- (c) Introduce or plant any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed; or*
- (d) Deposit any substance in, on, or under the bed; or*
- (e) Reclaim or drain the bed –*

*Unless expressly allowed by a rule in a regional plan and in any relevant proposed regional plan or a resource consent.”*

67. Therefore, unless a rule in the regional plan the proposed regional plan expressly allows for the works within the bed or banks of any lake or river, resource consents are required for the proposal.

68. Section 14(1) of the Act states:

- (1) No person may take, use, dam or divert any –*
- (a) water (other than open coastal water); or...*
- unless the taking, use or damming or diversion is allowed by subsection (3).*

- (3) *A person is not prohibited by subsection (1) from taking, using, damming or diverting any water, heat or energy if -*
- (a) *The taking, use, damming, or diversion is expressly allowed by a rule in a regional plan and in any relevant proposed regional plan or a resource consent; or*
  - (b) *In the case of fresh water, the water, heat, or energy is required to be taken or used for-*
    - (i) *An individual's reasonable domestic needs; or*
    - (ii) *The reasonable needs of an individual's animals for drinking water, - and the taking or use does not, or is not likely to, have an adverse effect on the environment; or...*
  - (e) *The water is required to be taken for fire-fighting purposes.*

69. Therefore, unless a rule in a regional plan or proposed regional plan expressly allows for the damming, diverting, or use of water, resource consents are required for the proposal.

70. Section 15 of the Act states:

*“(1) No person may discharge any –*

*(a) Contaminant or water into water; or*

*(b) Contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or...*

*Unless the discharge is expressly allowed by a rule in a regional plan and in any relevant proposed regional plan, a resource consent, or regulations.*

*(2) No person may discharge any contaminant into the air, or into or onto land, from –*

*(a) Any place; or*

*(b) Any other source, whether moveable or not, -*

*In a manner that contravenes a rule in a regional plan or proposed regional plan unless the discharge is expressly allowed by a resource consent, or regulations, or allowed by section 20A.”*

71. Therefore unless expressly allowed by a rule in a regional plan or relevant proposed regional plan a resource consent is required.

## **NATIONAL WATER CONSERVATION (RAKAIA RIVER) ORDER 1988**

72. Section 217(2) of the Act provides specific guidance on the effect of a water conservation order, stating:

*“(2) Where a water conservation order is operative, the relevant consent authority-*

*(a) Shall not grant a water permit[, coastal permit,] or discharge permit if the grant of that permit would be contrary to any restriction or prohibition or any other provision of the order:*

*(b) Shall not grant a water permit, [a coastal permit,] or a discharge permit to discharge water or contaminants into water, unless [the grant of any such permit or] the combined effect of the grant of any such permit and of existing water*

*permits and discharge permit and existing lawful discharges into the water or taking, use, damming, or diversion of the water is such that the provisions of the water conservation order can remain without change or variation:*

- (c) *Shall, in granting any water permit[, coastal permit,] or discharge permit to discharge water or contaminants into water, impose such conditions as are necessary to ensure that the provisions of the water conservation order are maintained."*

73. The consent authority must have regard to the National Water Conservation (Rakaia River) Order 1988 under s104(1)(g) of the Act, as a relevant conservation order. The Order declares the river and its tributaries as providing for an outstanding natural characteristic in the form of a braided river, and outstanding wildlife habitat above the Rakaia River Gorge and outstanding fisheries and outstanding recreational, angling and jet boating features below the Gorge.

74. The Order establishes a set of minimum water quality and water quantity standards to protect the outstanding natural characteristics and features of the river. These provisions protect the outstanding features of the river and set the allocation framework within which water permits may be granted. The NWCO protects existing users of river water.

75. The provisions of the NWCO relevant to this proposal are:

76. Clause 3 of the NWCO states that the outstanding characteristics and features of the Rakaia River and its tributaries provide for:

- (a) *an outstanding natural characteristic in the form of a braided river; and*
- (b) *outstanding wildlife habitat above and below the Rakaia Gorge, outstanding fisheries, and outstanding recreational, angling and jet boating features.*

77. Clause 9 refers to water rights and general authorisations, and states in sub-clause (2) that water rights and general authorisations shall not be granted or made for any discharge into the Rakaia River downstream of its confluence with the Wilberforce River, if the effects of the discharge would be to breach the following provisions and standards:

- (a) *any discharge is to be substantially free from suspended solids, grease and oil;*
- (b) *after allowing for reasonable mixing of the discharge with the receiving water –*
  - (i) *the natural water temperature shall not be changed by more than 3°C.*
  - (ii) *the acidity or alkalinity of the water as measured by the pH shall be within the ranges 6.5 to 8.3, except where due to natural causes.*
  - (iii) *the waters shall not be tainted so as to make them unpalatable, nor contain toxic substances to the extent that they are unsafe for consumption by humans or by farm animals, nor shall they emit objectionable odours.*
  - (iv) *there shall be no destruction of natural aquatic life by reason of a concentration of toxic substances.*
  - (v) *the natural colour and clarity of the water shall not be changed to a conspicuous extent.*
  - (vi) *the oxygen content in solution in the water shall not be reduced below 6mg/L.*
  - (vii) *based on not fewer than 5 samples taken over not more than a 30-day period, the median value of the faecal coliform bacteria content of the waters shall not exceed 200 per 100ml.*

78. Clause 9, sub-clause (3) states that water rights under Section 22 of the Act shall not be made, in respect of any part of the Rakaia River or its tributary streams, where

the effect of such rights or authorisations would be that the provisions of the NWCO cannot remain without change or variation.

79. Given that the proposal includes the discharge of water to water, the discharge of natural material to land in a manner that may enter water and the discharge of sediment to water, the proposal must be consistent with the provisions of the NWCO and shall not breach any of the standards listed in Clause 9.

## **Regional Plans**

80. The rules contained within the operative and proposed regional plans apply everywhere in the Canterbury region, except where the activity is already covered by the provisions in a water conservation order.

## **Transitional Regional Plan (TRP)**

### **Diversion, Discharge and Damming of Water and Discharge of Dust Associated with Construction and Operation of the Proposed Scheme**

#### *Diversion and Discharge*

81. As part of the Transitional Regional Plan, The Canterbury Regional Council has adopted section 22 of the Water and Soil Conservation Act 1967. This act authorises the diversion and discharge of natural water except geothermal water associated with minor realignments of, and minor improvements to, watercourse within its region, subject to the condition, "Within any urban area, the catchment area above the point of diversion shall not exceed 40 hectares.
82. As stated in the General Authorisation in Part V of the TRP, the definition of 'minor realignments and minor improvements', is defined as "the diversion of natural water from within a surface flowing river, stream or drain and the return of the flow to the original course of the water body, provided that the points of diversion and return shall be within one property". The TRP contains a GA for the diversion and discharge of natural water.
83. Note (6) of the GA for the diversion and discharge of natural water states:

*Under the Resource Management Act 1991, the diversions and discharges of water specified in this general authorisation are Permitted Activities. Proposed diversions and discharges that do not meet the conditions of this general authorisation are Discretionary activities, and water permits are required.*

84. Given the diversion and return are not within one property, the diversion and discharge activities sought under resource consent applications CRC072636, and CRC072640 do not meet the conditions of the GA are considered discretionary activities, and therefore resource consent is required under sections 14 and 15 of the Act respectively.

#### *Damming*

85. The TRP allows for the damming of water in rivers or streams under a General Authorisation, subject to specific conditions. The proposed activity does not involve the damming of a river or a stream and is therefore not addressed by the TRP.

#### *Discharge of dust to air*

86. The Canterbury Regional Council has adopted the Clean Air Act 1972, as part of the Transitional Regional Plan under s368 of the Act.
87. Given the proposed discharge of dust to air is not from an industrial or trade premises and it is not an Industrial or Trade process, the activity is innominate under the TRP.

## **Land Use Activities Associated with Construction and Maintenance of the Proposed Scheme**

### **Works outside beds and margins of rivers**

#### *Removal of Vegetation*

88. The Canterbury Regional Council has adopted The North Canterbury Catchment Board Bylaw No. 1, 1947 as part of the Transitional Regional Plan under s368 of the Act. This Bylaw includes a number of provisions addressing groundcover, land utilisation and watercourses. However all Bylaws relating to groundcover have been revoked. Therefore the TRP does not address the issue of vegetation removal in the area of the proposal.
89. Therefore if the land use activities applied for contravene a rule in the proposed regional plan, resource consent is required.

#### *Excavation and Deposition of Material*

90. The TRP is silent on the excavation and deposition of material onto land.

#### *Works in beds and margins of rivers*

91. The Canterbury Regional Council has adopted the North Canterbury Catchment Board Bylaw No. 1, 1947 as part of the Transitional Regional Plan under s368 of the Act. Clauses 24 and 28 of this By-law are relevant to this activity, designating it as discretionary. Respectively they read:

*'No person in occupation of land through which a watercourse flows or adjoining a watercourse under the control of the Board shall cause allow or permit a crossing to be constructed over such watercourse'*

*'No person shall widen deepen alter or divert the course of a watercourse under the control of the Board without the written consent of the Board' and No Person shall construct a crossing over a watercourse under the control of the Board'*

*'Except with the precedent consent in writing of the Board, no person shall plant willows or other trees and no per in occupation of any land shall cause or suffer willows of other trees to be planted in any watercourse under the control of the Board or on or within a distance of 24 feet from the banks of such watercourse or in any place where they will obstruct or be likely to obstruct free flow of flood-waters in any existing flood channel.'*

92. Accordingly, the activities applied for under CRC072643, CRC072644, CRC072645, CRC072647 and CRC071648 require resource consents under the TRP for activities associated with disturbance of the riverbed, including removal of material from the riverbed, planting, and deposition of material in the bed of the river. These activities are considered discretionary under the TRP.

### *Use of Water for Hydroelectricity Generation*

93. The TRP is silent on the use of water for hydroelectricity generation.

### **Proposed Natural Resources Regional Plan (PNRRP)**

94. Chapters 1 to 3 of the PNRRP were publicly notified on 1 June 2002, and chapters 4 to 8 were notified on 3 July 2004.
95. Section 104(1)(b)(iv) of the Act states that the consent authority must have regard to relevant provisions of a plan or proposed plan. The following rules from the PNRRP relate to the activities applied for by the applicant.

### **Diversion, Damming and Discharge of Water and Discharge of Dust Associated with Construction and Operation of the Proposed Scheme**

#### *Diversion and Damming of Water*

96. Rule WQN37, of Chapter 5, Water Quantity, states that the damming and/or diverting of water that is not in the bed of a surface water body is a permitted activity, provided that it meets certain conditions.
97. Rule WQN41 states that where the diverting of water within or outside the bed of a surface water body or artificial water course that is not permitted or controlled, it is considered to be a discretionary activity.
98. The proposal to divert water via an intake structure into a settling pond, and into a canal, applied for under CRC072636 and CRC073863 would be a permitted activity under Rule WQN37 other than the area of water to be impounded within the settling pond exceeds the limit of one hectare as defined in condition (3), and the diversion initially occurs from the Rakaia River, within the bed of a surface water body. The proposed settling pond will impound water over an area of approximately 35 hectares. Accordingly the activity is considered to be **discretionary** and resource consent is required under Rule WQN41, pursuant to section 14 of the RMA (1991).

#### *Discharge of Water*

99. Rule WQL56, of Chapter 4, Water Quality, states that the discharge of water or a contaminant into a river, lake or an artificial watercourse is a discretionary activity provided that it complies with the conditions of the rule. The following activities relating to the discharge of water containing contaminants to the Rakaia River and other waterbodies (CRC072638 – CRC072642) are considered to comply with the relevant conditions of this rule. Accordingly these activities are considered to be **discretionary** under Rule WQL56 and resource consent is required pursuant to section 15 of the RMA (1991).
100. The disposal of stormwater onto or into land is a permitted activity if it complies with the conditions of Rule WQL5. Condition (3) of WQL5 refers to Schedule WQL3. Stormwater from sites where the activities listed in Schedule WQL3 occur may not be discharged to ground as a permitted activity. Stormwater will come from sources such as haul roads, temporary and permanent buildings, and hard surfaces associated with the control and generation structures. It is also proposed to discharge construction stormwater (CRC073864) to land, where it may enter water. Accordingly this activity is considered **discretionary** under Rule WQL57 and resource consent is required pursuant to section 15 of the RMA (1991).

101. Rule WQL1, of Chapter 4, Water Quality, permits the point source discharge of water or a contaminant into a surface water body, or onto land which may result in water or contaminant entering a surface water body except where it is:

- (a) a permitted activity under Rules WQL3, WQL6, WQL16, WQL17, WQL20, WQL49, WTL2(a) or WTL2(b) in which case the provisions of those rules apply; or
- (b) a controlled activity under Rules WQL4 or WQL7; or
- (c) a restricted discretionary activity under Rule WQL21
- (d) a discretionary activity under Rule WQL56; or
- (e) a non complying activity under Rules WQL14. pr WQL60; or a
- (f) prohibited activity under Rules WQL15, WQL22, WQL28, or WQL46.

*A discharge which does not comply with;*

- 1. Any one or more of Conditions 1 to 6 and 8 to 11 is a discretionary activity, requiring a resource consent under Rule WQL56; or
- 2. Condition 7 is a non-complying activity, requiring a resource consent under Rule WQL60.”

102. This rule permits a discharge where the rate of flow in the receiving water at the point and time of discharge is at least five times the rate of the discharge (Condition 2). It also deals with short-term discharges only, up to a maximum frequency of three days in any consecutive six month period (Condition 10). Given that the proposed discharge contravenes Conditions 2 and 10 the activity applied for under application CRC073864 is considered **discretionary** and resource consent is required under Rule WQL56, pursuant to section 15 of the RMA.

#### *Discharge of Dust to Air*

103. Rule WQL38 of Chapter 3, Air Quality, permits fugitive dust emissions from unconsolidated surfaces so long as the discharge does not cause an objectionable or offensive effect beyond the boundary of the site.

104. The applicant has advised that due to the scale, physical characteristics and isolation of the site, it is unlikely that the activity will discharge any dust to cause an objectionable effect beyond the site boundary. However, as the riverbed is in close proximity and is a popular recreational resource, the applicant has applied for consent (CRC073862) for a discretionary activity under Rule AQL57 of Chapter 3, Air Quality. Rule AQL57 identifies discharge to air from industrial or trade premises and processes not complying with Rules AQL38 to AQL56 or not otherwise identified as a **discretionary** activity.

### **Land Use Activities Associated with Construction and Maintenance of the Proposed Scheme**

#### **Works outside of the bed**

##### *Vegetation Clearance*

105. Rule WQL32 of Chapter 4, Water Quality, identifies vegetation clearance within a riparian zone as a permitted activity. I note that the activity applied for under

CRC080159 does not meet condition (1) and (6) of this rule, and that information relating to the other conditions has not been provided as part of the assessment. The activity is considered to be restricted discretionary and resource consent is required under Rule WQL34, pursuant to section 9 of the RMA. This activity is also considered **discretionary** under Rule BRL8 of Chapter 6 for the reason that enough information has not been provided to show compliance with the conditions of Rule BRL5, where BLR5 permits the disturbance of vegetation and harvesting practices. The activity applied for under application CRC072643 requires resource consent in accordance with sections 9 and 13 of the RMA.

#### *Excavation of Land and Deposition of Material*

106. Rule WQL40 of Chapter 4, Water Quality, identifies excavation of land in the Coastal Confined Aquifer System, or over an unconfined or semi-confined aquifer as a restricted discretionary activity.
107. Rule WQL41 of Chapter 4, Water Quality, identifies the deposition of more than twenty cubic metres of material into excavated land over an unconfined or semi-confined aquifer as a controlled activity.
108. The river intake structure, each drop structure containing the generation facilities, and the canal embankments, will require the deposition of material including concrete structures into excavated land. As discussed in the above paragraph, the land at the site is understood to be underlain by unconfined or semi-confined aquifers. As no management plan has been prepared in accordance with Condition (5) of Rule WQL41, the activity applied for under CRC072643 and CRC072648 is considered **discretionary** under Rule WQL41 and requires resource consent under Rule WQL59, pursuant to section 9 of the RMA.
109. In summary, the activity applied for under CRC072643 and CRC072648 is **discretionary** and requires resource consent, pursuant to section 9 of the RMA.

#### *Works in Beds and Margins of River*

110. Chapter 6 deals with the beds and margins of lakes and rivers.
111. Rule BRL3 permits the excavation, drilling, tunnelling or disturbance within the bed, subject to certain conditions.
112. Rule BRL5 permits the disturbance, removal, damage or destruction of any plant or part of any plant, in, on, over or under the bed of a lake or river, including any associated disturbance of the bed and deposition of plant material on the bed, subject to certain conditions.
113. Rule BLR8, of Chapter 6, Beds and Margins of Lakes and Rivers, identifies the placement of structures, excavating, disturbance, planting, deposition, reclamation or drainage as discretionary activities.
114. Works include:
  - Works in the bed of a waterbody are required along the canal alignment, at each point the canal crosses over drainage depressions along the route.
  - Works in the Rakaia river bed may be required from time to time to protect the canal and the riverbank integrity along the length of the scheme, particularly that

part of the riverbank adjacent to the canal where the terrace narrows between the Highbank power station and the riverbank. Provision for emergency works to reinstate the riverbank in the event that it is eroded is also required.

115. The works outlined above do not comply with Condition 8 of Rule BRL3 “No part of the activity shall occur within surface water or at or below the water table” and are considered **discretionary** requiring resource consent under Rule BLR8, pursuant to section 13 of the RMA.

#### *Use of Water for Hydroelectricity Generation*

116. Rule WQN30, of Chapter 4, Water Quantity, identifies the using of water for hydro-electricity generation purposes as a **discretionary** activity. Accordingly resource consent is required for the proposed use of water, pursuant to section 14 of the RMA. The matters listed which Environment Canterbury have discretion to includes:
- The effect of the generation activity on the values of the river;
  - The minimum flow regime, allocation regime and reliability of supply;
  - The effect on lakes and reasonably foreseeable needs of future generations;
  - Efficiency of use;
  - Water management strategies;
  - Alternative sources; and
  - Financial contributions.

### **SUMMARY OF CONSENT REQUIREMENTS**

117. All resource consents applied for are considered to be discretionary activities.

#### **CONSULTATION**

118. Section 4 of the main AEE document outlines the public consultation process undertaken by the applicant.
119. I understand the applicant is involved in ongoing consultation with all the parties identified in the AEE.

### **DESCRIPTION OF THE AFFECTED ENVIRONMENT**

120. A description of the environment is provided in Section 5 of the AEE.
121. Information provided in the AEE document provides a detailed description of the physical environment, including the Rakaia River, climate, and geology, ecosystems, amenity and landscape values, and the cultural environment.
122. I consider that the applicant has given a good overview of the affected environment.

### **ASSESSMENT OF PROPOSED ACTIVITIES**

123. The following actual and potential adverse effects were identified and assessed by the applicant in the AEE. I have considered the values and issues identified in the PNRRP, other relevant planning documents, and by submitters. I have also relied

on my own experience, and the experience of ECan staff who have reviewed the application.

124. Assessment of potential adverse effects associated with the proposed activities are largely restricted to those activities associated with the construction and operation of infrastructure required for scheme operation.
125. Potential effects associated with the take of water from the Rakaia River are part of the applications being heard for CPW.
126. The application includes an assessment of both the potential positive effects of the overall proposal as well as potential adverse effects associated with planned construction and operational activities.
127. In order to assess the potential effects of the proposed activities I have grouped the consents sought into the following categories:
  - Land use activities associated with construction and maintenance of the proposed scheme;
  - Diversion, damming and discharge of water and discharge of dust associated with construction and operation of the proposed scheme; and,
  - Use of water for hydroelectricity generation.
128. It is noted that the current suite of applications includes the use of water for hydro-generation but do not include an equivalent application for the use of water for irrigation, and therefore, the use of water for irrigation is outside the scope of the applications and therefore have not been considered.

### **Land Use Activities Associated with Construction and Maintenance of the Proposed Scheme**

129. Resource consent applications for land use activities associated with the proposed works can be summarised as follows:
  - CRC072643 - construction of infrastructure required to divert, and convey water in the proposed scheme;
  - CRC072644 – maintain the intake structure.
  - CRC072645 – maintain a fish barrier.
  - CRC072646 – maintain a canal and drainage structures.
  - CRC072647 - maintenance and reinstatement of riverbank protection measures;
  - CRC072648 – works in the riparian margin of the Rakaia River.
  - CRC072649 – place silt onto the bed of the Rakaia River.
130. The potential effects of the proposed land use activities have been assessed in terms of the following criteria:
  - Positive impacts
  - Adverse effects of the works on recreational and amenity values
  - Adverse effects of the works on visual and landscape values
  - Adverse effects of the works on water quality and ecosystems

- Adverse effects of the works on soil stability
- Adverse effects of the works on terrestrial vegetation
- Adverse effects of the works on bed erosion and flooding
- Adverse effects of the works on other man-made structures
- Adverse effects of the works on Tangata Whenua values

### **Positive Effects**

131. Positive effects associated with development of the proposed scheme identified in the AEE include:
- (a) The efficient use of water from the Rakaia River to provide for hydro-electric generation;
  - (b) It will generate a source of renewable energy before being returned to the Rakaia River.
132. In relation to the potential positive effects of the scheme I consider the following points:
- The proposed scheme will provide economic and social benefits to the local and wider regional community largely during the construction phase of the project. Benefits derived from irrigation are less certain as, although provided for under existing resource consent(s), the nature, scale and timing of irrigation development remains relatively uncertain.
  - The use of water for hydro-generation is consistent with sections 7(b) and 7(j) of the RMA in relation to the efficient use and development of natural and physical resources and the benefits derived from the use and development of renewable energy.

### **Adverse effects of the works on recreational and amenity values**

133. As highlighted by a number of submitters, the Rakaia River and its surrounds have a high level of recreational use. The significance of the natural characteristics, outstanding wildlife habitat and recreational use in the Rakaia catchment is recognised in the National Water Conservation (Rakaia River) Order 1988.
134. In relation to the potential effects of the proposed works on amenity values, the applicant makes the following points:
- (a) Site works including construction of the river intake, settling pond and unformed tailrace may involve earthworks to divert existing channels during construction. Such diversions are likely to be temporary in nature and undertaken in a manner that avoids impacts on water quality, and in the context of what would occur naturally during a flood event is small in comparison.
  - (b) The intake is sited on stable river bed, and sheet piling will be driven down to depths of several metres to prevent undermining of the structure. Therefore, once operational, only minor in river work is anticipated.
  - (c) The proposed land use activities have the potential to affect aspects of cultural heritage on land disturbed by construction. However, a majority of the site has been modified by agricultural activities and does not contain any heritage items

listed in the District Plan or identified through consultation with the New Zealand Historic Places Trust (NZHPT).

135. Issues of safety regarding the intake structure have not been addressed by the applicant, but it is noted that this effect is also being assessed by CPW in respect of CRC021091.
136. However, in respect of the applications by CPW, the safety of the intake structures at the time of writing this report, was still in the process of being addressed, and therefore, the applicant should provide further information on this effect.
137. Given the location of the proposed site, I concur with the applicant's assessment that any short or long term adverse effects of the works in the bed and banks of the river on amenity values will be less than minor. However, further information is required on the issues of safety of the intake structure.

### **Adverse effect of the works on visual and landscape values**

138. Large-scale construction activities have the potential to impact on the existing visual character of the Rakaia River and surrounds. Potential sources of visual impact associated with the proposal include the construction and operation of the intake structure, diversion channel, spoil deposit and borrow areas, settling pond, and fish screening facility.
139. The applicant also notes the following with regard to potential visual and landscape effects:
  - (a) The canal adjacent to the terrace could create a visual impact on the landscape, especially in the period after construction.
  - (b) The proposed activities will take place predominantly on private land, which forms a part of a highly modified but characteristic landscape;
  - (c) The proposal is in character, both in form and scale, with the receiving landscape;
  - (d) The area, while not identified as an Outstanding Natural Landscape or Significant Landscape may be regarded as having a visual amenity of some value;
  - (e) The construction period is noted as having the greatest potential for adverse impacts when borrow and stockpile areas are in active use and areas of bare ground are exposed prior to revegetation. These effects are considered to be of a temporary duration and unlikely to have any long term impacts on visual amenity;
  - (f) Views of the works will be largely screened from recreational river users by existing vegetation along the river margin and consist largely of a grass embankment similar in character to terrace features visible elsewhere in the Rakaia River surrounds;
  - (g) Views of the proposed works from existing residences along the margins of the Rakaia River are assessed as being relatively limited and unlikely to be adversely impacted by the proposed works;
140. The following mitigation measures have been proposed by the applicant to reduce the visual impact of works after construction (Section 6.8 of the AEE):

- Leave any concrete work unpainted to weather naturally;
  - Buildings and any exposed timber and iron works to be painted in recessive colours; and
  - The batter slope of the canal and any cut terrace batter slopes to be grassed and planted with colonising plants similar to those on adjacent natural undisturbed terrace face.
141. However, it is noted that such mitigation is not proposed as conditions of consents in Section 7 of the AEE.

142. I consider the following:

- A majority of the proposed works occur on privately owned land outside of the bed of the Rakaia River. This landscape is largely agricultural in character.
  - The National Water Conservation (Rakaia River) Order 1988 identifies the Rakaia River as having “*An outstanding natural characteristic in the form of a braided river*”. To uphold this characteristic, the NWCO regulates the taking of water from and any discharges to the Rakaia River. Any discharges related to the proposed works within the bed of the Rakaia River involving channel formation and diversion are likely to be relatively minor in comparison with the overall scale of and nature of river morphology. This is discussed further in the following section ‘Adverse effect of the works on water quality and ecosystems’.
  - The most significant impact of the proposed works will occur during the construction phase when borrow and spoil areas are active prior to revegetation of excavated areas.
143. Philip Grove (Land Resources Scientist, Environment Canterbury) was asked to provide comment on the applications by EA. The following condition was recommended:

*“That the consent holder shall ensure that vegetation clearance shall be limited as far as practicable, and that disturbed riparian areas within 20 m of the riverbank not occupied by infrastructure, grassed or required for maintenance access shall be re-planted with appropriate native species at a distance of 1500 millimetres centres within the first planting season following completion of works in that area. The plant mix shall contain but not be limited to Cordyline australis (Cabbage Trees), with the plant mix to be approved by a registered Landscape Architect prior to planting. The approval shall be forwarded to the Regulatory Manager of the Ashburton District Council”.*

144. It is my view that this condition is appropriate for these applications as well.

145. I have no information available to me to disagree with the applicant’s assessment that the potential effects on visual and landscape values will be minor.

### **Adverse effect of the works on water quality and ecosystems**

146. Construction and maintenance of the proposed scheme involves a number of works either in the bed or along the riparian margin of rivers and streams. While such works are being undertaken the potential exists for sediment to be discharged into surface water. Such discharges may adversely affect water quality and aquatic ecosystems. Excavation and placement of material within the beds of rivers and streams may also result in physical habitat loss, adverse effects on fish migration and the navigability of the river for recreational and commercial users.

147. A number of submitters have expressed concern relating to the potential impacts of the proposed activities in or adjacent to the bed of the Rakaia River. Issues raised include the potential impacts of construction activities on fish migration, the safety of river users and a lack of consideration of potential effects on native fish, eels and braided river bird populations.
148. The applicant states the following with regard to the potential for the proposed works to result in adverse effects on water quality and ecosystems:
- (a) The effects of the proposed works on ecosystems will be insignificant, as while the riverbed will be disturbed and sediment released, the scale of changes associated with the works are on a much smaller scale than the changes caused by freshes and floods in the river.
  - (b) The ecosystems are resilient to much larger water and sediment flows, and it is unlikely that there will be adverse effects on the availability or quality of habitat.
  - (c) Ongoing re-instatement of the gravel banks will occur immediately after a flood when the bed will already be in a disturbed state.
  - (d) The proposed works will not inhibit the passage of fish and boats because the scale of the works is minor.
  - (e) A range of mitigation measures has been proposed to reduce the effects on ecosystems such as ensuring a 100m buffer distance between the works and birds breeding or nesting on the riverbed and ensuring machinery is free of plants and plant seeds prior to use.
  - (f) A range of mitigation measures have been proposed to reduce the effects on water quality such as keeping machinery out of water where possible, ensuring that there is no refuelling or storage of machinery in or near the river, and procedures for dealing with any spills.
  - (g) The creation of a stormwater management plan.
149. The proposed mitigation measures are likely to be appropriate for ensuring that chemicals are not spilled into the river and that stormwater is managed, however, I am still not satisfied that works within the bed of the river will not result in discharges of sediment directly to the river.
150. I acknowledge the applicant's view regarding the scale of the sediment discharges in the context of what could occur naturally during a flood event, however, the Rakaia River is significant trout and salmon habitat, and all attempts to minimise the discharge of sediment to the river from this activity should be taken. The applicant has noted that works will be timed to occur during the winter months when the river typically has lower flows and when the works would have the least impact in the environment (i.e. during fish migration and bird nesting season).
151. However, such conditions limiting the timing of works are not proposed in Section 7 of the AEE. Existing conditions on consent CRC000133 for BCI limits construction activities associated with the river intake to the months of June, July and August to avoid impacts on fish migration and the bird nesting season. I recommend this as mitigation for these applications as well.
152. I also recommend that the applicant provide an erosion and sediment control plan in accordance with the Erosion and Sediment Control Guidelines (2007), to be approved by ECan prior to the commencement of works, which clearly sets out the measures that will be undertaken to minimise adverse effects on water quality as a

result of the works in the bed and banks of the river. This condition should also specify the requirement to outline in the Plan the control measures for each stage of the construction phase and maintenance periods, and it should also specify the appropriate monitoring and consequential mitigation to be undertaken.

153. In addition, it is noted that the scale and nature of diversion works in actively flowing channels is relatively small and limited in duration to the diversion of water to provide for construction of the intake and maintenance of temporary diversions following flood events. All other works are proposed to be undertaken outside of actively flowing channels.
154. The applicant has provided limited assessment of the potential effect of the proposed works on water quality and ecosystems. The overall conclusion drawn, that effects will be no more than minor, is heavily reliant on a few mitigation measures and the view that the effects of the works are of a small scale in terms of what can occur during flood events.
155. As additional mitigation, I recommend that appropriate conditions are in place to mitigate the effects of Didymo.
156. As discussed in the previous section 'Adverse effect of the works on water quality and ecosystems', The National Water Conservation (Rakaia River) Order 1988 identifies the Rakaia River as having "An outstanding natural characteristic in the form of a braided river". To uphold this characteristic, the NWCO regulates any discharges of water or sediment into the Rakaia River. Any discharge of water or sediment from the scheme into the Rakaia River must comply, after reasonable mixing with the NWCO's water quality standards.
157. Provided that works are undertaken in accordance with the aforementioned Plans (stormwater and sediment control), and that appropriate conditions mitigating the release of sediment into the River are imposed and, that the mitigation measures proposed by the applicant and those recommended above are adhered to, I would agree with the applicant's assessment that the proposal is consistent with the objectives of the NWCO and consider that effects of works on water quality and ecosystems will be no more than minor.

#### **Adverse effects of the works on the flood-carrying capacity and erosion of the bed and banks of the river**

158. When works are carried out in the bed of a river or adjacent to a waterway, these works may result in adverse effects on the flood-carrying capacity of the river or erosion of the bed or banks of the river. This may occur when flood protection works are compromised or the flow characteristics of the waterway are changed. Conversely, positive effects may occur when any works carried out decrease the potential for flooding and erosion to occur.
159. The applicant has applied for resource consent to place and maintain river protection works at the river intake.
160. The applicant states that the works will not affect flood carrying capacity or erosion and the river bank protection works will not be compromised by the intake structure. The proposed intake will be notched into the riverbank and not protrude out beyond the existing spur groyne.
161. I wish to make the following points:

- (i) Re-vegetation should not preclude the use of willow species for the purposes of bank stabilisation;
- (ii) That a condition requiring all works pertaining to the development of the scheme be maintained by the consent holder be attached to the consent; and,
- (iii) That a condition be placed on the appropriate consent, requiring the removal of existing vegetation (for example for the purposes of widening the tailrace) be replaced with suitable vegetation for erosion control and structure stabilisation.

162. I therefore concur with the applicant's assessment that the potential effects of the works in the bed and banks of Rakaia River on flood-carrying capacity and erosion of the bed and banks of the river will be minor.

### **Adverse effects of the works on terrestrial ecological values**

163. A majority of the proposed works are located within a modified agricultural environment. However, the proposed activities also involve removal of vegetation where components of the scheme cross into the river corridor. Potential effects include the removal and/or damage of vegetation and associated loss of habitat area as well as the potential for the introduction of invasive weeds.

164. The applicant has not considered this effect.

165. I note the following:

- (a) The land affected by the proposed scheme is considered to be of low ecological value due to a predominance of pastoral farmland, and adjacent areas covered in sward grasses, naturalised and planted pine, willow and poplar species;
- (b) The vegetation cover across the bed of the Rakaia River is dominated by naturalised woody species, herbaceous species and sward grasses reflecting significant modification of the natural environment;
- (c) On privately owned land the proposed construction works will largely involve areas of pasture but will require removal of sections of established radiata pine shelter belts to accommodate the settling pond and canal alignment;
- (d) Construction of the river intake, settling pond and fish screening facility involve removal of vegetation across the riparian margin and bed of the Rakaia River. This vegetation mainly involves dense stands of pine, willow, gorse and broom along the outer margin transitioning to more open areas of young willow, wilding pines, gorse, broom and tree lupin interspersed with areas of sward grasses;
- (e) Some areas of standing water are present in lines of old river braids where settlement of silt following flood events acts to pond water. The areas form a favourable substrate for the growth of sedge and rush species;
- (f) Bird and animal species present on the site are considered to be largely exotic although it is noted that that vegetation along the margins of the riverbed are likely to form both the nesting and feeding habitat for a number of native bird species. It is further assumed that riverbed areas will provide habitat for lizard and invertebrate communities;

166. I recommend mitigation to include the restriction of vegetation disturbance beyond a defined construction zone, and ensuring slash material is stored and disposed in an appropriate manner. Conditions attached to existing consent CRC990133 require that a survey of bird breeding or nesting sites in the works area should be conducted prior to any work undertaken during the period September 1 to May 31 to avoid

impacts on bird breeding or nesting sites. I consider a similar condition would be appropriate on consents involving works in the bed and margin of the Rakaia River.

167. Given this, I consider the proposed land use activities will have a minor impact on terrestrial ecological values provided appropriate conditions are adopted for the replanting of disturbed areas.
168. Provided appropriate conditions are attached to the consents covering, the disturbance of bird nesting or feeding sites, replanting of disturbed areas and the management of exotic weeds, I am of the opinion that impacts on terrestrial ecological values resulting from the proposed works are likely to be minor.

#### **Adverse effects of works on other man made structures**

169. Either during, or subsequent to, the construction of large-scale infrastructure to store and convey water, the potential exists for either construction activities or the actual built structure itself to adversely impact the structural integrity or function of existing structures.
170. Consents applied for include the construction of the physical infrastructure to store and convey water.
171. The proposed scheme alignment crosses the river terrace from the river intake to the proposed discharge point and will pass in relatively close proximity to existing farming infrastructure, the Transpower Benmore-Haywards high voltage transmission line and infrastructure associated with the Highbank Power Station.
172. Submissions regarding the potential effects of the proposed works on artificial structures were received from Transpower and TrustPower. The potential impact of the canal alignment on the existing Highbank water supply bore was also noted in the submission from Fish and Game.
173. The submission from Transpower seeks a range of conditions and advice notices to be appended to the relevant consents in order to maintain setbacks between the proposed works and avoid adverse effects on the operation, maintenance and future operational requirements of electricity transmission infrastructure.
174. The submission from TrustPower indicates that ongoing consultation has been undertaken with the applicant but seeks the following:
  - The potential for works undertaken to widen the existing tailrace outside of the normal shutdown period to impact on generation from the Highbank scheme;
  - The potential for excavation for the purpose of widening the existing tailrace to affect the stability of surrounding land;
  - The potential for the proposed works (including maintenance of river protection works) to impact on existing river protection works;
  - The need to replace or reinstate the existing tailrace access road and the Highbank power station water supply bore; and,
  - The ability for the works to be halted should TrustPower notice or suspect adverse effects occurring on existing infrastructure associated with the Highbank power scheme.
175. The applicant states the following with regard to the potential effects of the proposed works on other man made structures:

- Buffer distances have been proposed from any tower or supporting conductor to ensure the effects on these structures is minor.
  - The construction of the canal on the vicinity of Highbank Power Station will be timed to occur during the summer months when the power station is not operating.
  - Any construction works that affected Highbank Power Station's tailrace discharge channel would be timed to occur when the power station is not operating.
176. In regard potential effects of the proposed works on the Transpower high voltage transmission line, I consider potential adverse effects can be avoided. It is more difficult to reach a substantive conclusion with regard potential effects on TrustPower infrastructure. The applicant has advised that there is on-going consultation between the two parties.
177. Therefore, on the basis of information available to me, I am unable to reach a conclusion as to the potential for the proposed construction activities to result in adverse effects on man made structures.

#### **Adverse effects of works on soil stability**

178. Construction of large-scale infrastructure such as that proposed for this project has the potential to adversely effect soil stability due to:
- Increased soil loading resulting from placement of fill and impoundment of large volumes of water within the settling pond and canal alignment;
  - Slope instability along the base of the river terrace due to river erosion; and,
  - Control of sediment on bare ground, borrow areas and temporary soil, loess and fill stockpiles during construction.
179. The applicant states the following in relation to soil stability:
- Analysis of aerial photos indicate the margin of the river terrace has been stable since at least the 1940's indicating river protection works and vegetation of channel margins has been effective in preventing bank erosion over this period. Consent is sought for the placement and maintenance of river control works at the river intake;
180. In relation to potential effects of the works on soil stability I note the following:
- Provided appropriate signoff of the final design proposal is obtained from a suitably qualified and experienced engineer, the proposed works are unlikely to result in soil stability issues resulting from the construction and operation of the proposed scheme infrastructure.
  - Development and implementation of a comprehensive stormwater and sediment control plan (as discussed previously in this report) in line with accepted guidelines should provide adequate mitigation to prevent significant soil loss during construction
181. I therefore conclude that the effects of the proposed works on soil stability can be adequately mitigated.

### **Adverse effects of the works on Tangata Whenua values**

182. The Rakaia River and its environs are within the rohe of Te Runanga o Ngai Tahu, and Te Runanga o Arowhenua.
183. Neither Te Runanga O Ngai Tahu nor Te Runanga O Arowhenua submitted on these applications.
184. Ngai Tahu-Mamoe Fisher People Inc did submit, but in relation to unresolved Treaty of Waitangi issues and land claims, of which I consider are not for this hearing panel to resolve.
185. Given that there are no submissions in relation to this application in relation to Tangata Whenua values, I consider there is basis for concluding that the effects on Tangata Whenua values are minor.

### **Diversion, Damming and Discharge of Water and Discharge of Dust Associated with Construction and Operation of the Proposed Scheme**

186. Resource consent applications for diversion, damming and discharge of water and discharge of dust associated with the construction and operation of the proposed scheme can be summarised as follows:
  - CRC072636 – to divert up to 42m<sup>3</sup>/s from the Rakaia River.
  - CRC072638 – to discharge up to 2m<sup>3</sup>/s of water and sediment to the Rakaia River;
  - CRC072639 - to discharge, in emergency situations, up to 40m<sup>3</sup>/s, of water and sediment to the Rakaia River;
  - CRC072640 - to discharge up to 40m<sup>3</sup>/s, of water and sediment to the Rakaia River;
  - CRC072641 – to discharge cross drainage water and sediment into an unnamed stream;
  - CRC072642 – to discharge material excavated from the settling pond onto the bed of the Rakaia River
  - CRC072863 – to dam water in a settling pond and head pond.
  - CRC073862 – to discharge contaminants, principally dust, to air.
  - CRC073864 – to discharge stormwater onto tor into land, in circumstances where it may enter water.
187. The potential effects of the proposed diversion, damming and discharge activities have been assessed in terms of the following criteria:
  - Adverse effects of the diversion, damming and discharge of water on amenity values;
  - Adverse effects of the discharge of dust to air on amenity values;
  - Adverse effects of the diversion, damming and discharge of water on Tangata Whenua values;
  - Adverse effects of the diversion, damming and discharge of water on water quality and ecosystems;

- Adverse effects of discharges to land on groundwater quality
- Adverse effects of the discharge on bed erosion and flooding;
- Adverse effects of the works on artificial structures; and,
- Adverse effects of system failure on people and property

### **Adverse effects of the diversion, damming and discharge of water on amenity values**

188. When water is diverted or discharged there is the potential to cause adverse effects on those natural or physical qualities and characteristics that contribute to the amenity values attributed to a water resource. Impacts on aesthetic values may occur through the alteration of natural flow patterns affecting access to, or use of the resource, a reduction in aesthetic water quality affecting peoples perception of water quality (particularly relevant in regard to suspended sediment), as well as alterations to recreational use or cultural values associated with the resource.
189. Issues related to the potential impact of the proposal on landscape values are covered in earlier in this report.
190. As highlighted by a number of submitters, the Rakaia River and its surrounds have a high level of recreational use. The significance of the natural characteristics, outstanding wildlife habitat and recreational use in the Rakaia catchment is recognised in the National Water Conservation (Rakaia River) Order 1998.
191. Construction and operation of the proposed scheme will involve the diversion and damming of water within the proposed infrastructure (being the settling pond) as well as the operational discharge of water.
192. The applicant makes the following comments in regard to the potential effects of the diversion, damming and discharge of water on aesthetic values:
- (a) The quality of discharges from the scheme will be substantially similar to natural water and sediment flows;
  - (b) A fish screening and bypass system is proposed for both the scheme intake to reduce impacts on fish migration;
  - (c) In-stream values for recreation values, jet-boating and the like will not be affected by the scheme, as water may only be taken when flow exceeds the minimum outlined in the NWCO;
197. In relation to the potential impact of diverting, damming and discharging water on amenity values I note the following points:
- Due to the limited public access to land adjacent to the river in the vicinity of the scheme, a majority of potential impacts on amenity values relate to landscape values or activities within the bed of the river;
  - The proposed discharge via the Highbank Power Station tailrace is large (40m<sup>3</sup>/s). This is an increase in the discharge currently experienced from this power station, and there is currently no discharge at all (obviously) from the proposed Barhill Power Station. No consideration is given to the potential effect of this change in the flow regime on river users.

- The avoidance of adverse effects on aesthetic water quality will rely heavily on the development and implementation of effective mitigation measures to control stormwater and erosion on the construction site.
193. I have no information available to me to disagree with the applicant's assessment that the potential effects on amenity values resulting from the diversion, damming and discharge of water will be minor, however, I am concerned about the lack of information regarding the discharges from the Highbank and Barhill Power Stations on the change in flow regime of the river and therefore other river users.
194. Should The Committee be of a mind to grant consent, a number of conditions have been proposed which relate either directly or peripherally to aesthetic values. These include conditions on scheme discharges, as well as stormwater and erosion control. However, I am of the opinion that further evidence needs to be provided regarding the change in flow regime on river users.

### **Adverse effects of the discharge of dust to air on amenity values**

195. Due to the nature of the works proposed on site it is anticipated that a degree of dust emission will occur during the construction phase of the project. These discharges have the potential to impact on the amenity values of nearby landowners and in certain circumstances have the potential to result in adverse impacts on electricity transmission.
196. Sources of dust during the proposed construction activities include the removal of topsoil and exposure of underlying gravels, stockpiling of soil, loess and aggregate materials, blending of soil materials, general excavation and fill placement and vehicle movements (particularly along the haul road adjacent to the proposed canal alignment).
197. The applicant states the following with regard to the potential adverse effects of dust discharge from construction activities:
- (a) Due to the nature of the material to be excavated, a degree of dust emission during construction is anticipated as a result of vehicle movements within the construction site, from aggregate and topsoil stockpile and borrow sites, unconsolidated surfaces and excavation works;
  - (b) The size of the site, the surrounding topography of the terrace face and associated vegetation, and the separation distances from the nearest boundary under different ownership is such that it is unlikely that objectionable dust will be discharged beyond the site boundary;
  - (c) Dust control will play an essential role in the management of this project.
  - (d) Any effects on the environment with regard to the creation and release of dust are temporary, lasting only the construction phase.
198. The applicant proposes to prepare a dust management plan to reduce the potential effects.
199. In regard to the potential effects of the discharge of dust on amenity values, I note the following:
- No specific mitigation of dust discharge is proposed for soil and aggregate stockpile areas;

- No quantitative assessment is made of likely dust generation from construction activities compared to those occurring within the bed of the Rakaia River under natural conditions.
200. I am of the opinion that potential adverse effects are probably best addressed by appropriate conditions on construction activities. In this regard a relatively detailed suite of conditions has been developed should The Committee be of a mind to grant consent.
201. I therefore conclude that the potential adverse effects of the discharge of dust to air on amenity values can be adequately mitigated to ensure effects are no more than minor.

**Adverse effect of the diversion, damming and discharge of water on water quality and ecosystems values**

202. Construction and operation of the proposed scheme will involve a number of diversions and discharges that have the potential to impact on water quality and ecosystem values. These include:
- Diversion of water into the scheme intake;
  - Discharge of sediment associated with construction activities within the bed and margins of the Rakaia River;
  - Discharge of stormwater and dewatering flows from construction areas; and,
  - Discharge of water into the Highbank tailrace and ultimately the Rakaia River
- Potential effects of these activities include an increase in stream turbidity, deposition of silt and sediment and adverse effects on in-stream ecosystems.

*Diversion of water*

203. Existing resource consent CRC990088 authorises the take of up to 17 m<sup>3</sup>/s of water, and CPW/ACWT have applied to take 40m<sup>3</sup>/s.
204. The applicant seeks to divert 42m<sup>3</sup>/s into the settling pond, and then 40m<sup>3</sup>/s into the Highbank Canal, and then again from the Highbank Power Station tailrace to the Terrace Canal.
205. No evidence is presented by the applicant regarding the potential effects of the diversion of water through the diversion race and settling pond or the remainder of the proposed scheme.
206. In regard to the potential adverse effects related to the diversion of water, I note the following:
- While impacts of diverting water through the scheme are not explicitly addressed by the applicant, it may be considered that a majority of potential effects have been addressed by the joint application with CPW.
207. I therefore consider that the applicant has not provided an assessment of the potential effects of the diversion of water through the entire scheme. However, should The Committee be of a mind to grant consent, a majority of the potential impacts associated with the diversion of water through the proposed scheme should be included on the joint consent with CPW, or proposed conditions on consents associated with the discharge of water into the Highbank tailrace (CRC072640).

### *Damming of water*

208. Under the Building Act 2004 structures 3 metres deep and greater and holding more than 20,000m<sup>3</sup> of water are classified as dams. I cannot determine whether the settling pond or head pond fall into the classification as this information has not been provided by the applicant.
209. In regards to the damming of water within the proposed scheme the applicant makes the following points:
- (a) The quality of the water will be high and the ponds will be lined to minimise losses;
  - (b) The settling pond maintains an active flow, and does not act as a storage facility; and,
  - (c) The effects of damming water will be minor as the effects generally relate to the structural stability of the storage areas and the ability to mitigate flood risks and risks to ecosystems.
  - (d) A suite of conditions in accordance with NZSOLD Guidelines have been proposed.
210. In regard to the potential effects of damming of water within scheme infrastructure I note the following:
- The applicant has not provided any assessment or details of specific measures to address the potential occurrence of *Diddymosphenia geminate* (Didymo); and,
211. Provided appropriate measures are in place to address the potential occurrence of Didymo and the structures engineered to an appropriate standard, I would agree with the applicant's assessment that the potential effects associated with the damming of water within scheme infrastructure are likely to be minor. A standard condition relating to the avoidance of adverse effects associated with Didymo has therefore been included in the proposed conditions.

### *Discharge of Construction Stormwater*

212. Due to potentially high suspended sediment loadings, the discharge of stormwater or dewatering flows from construction areas has the potential to have a significant impact on surface water quality and associated ecosystem values. These effects include the smothering of stream-bed gravels inhabited by insect communities, abrasion and possible death of stream insects and fish, smothering of aquatic plants, as well as amenity effects on aesthetic and recreational values.
213. Construction of the scheme will involve progressive excavation and disturbance of relatively large areas as well as the use of temporary of stockpiles and borrow areas. Stormwater runoff from these areas has the potential to transport significant contaminant loadings (in the form of suspended sediment) to nearby surface waterways and drainage channels. Some elements of scheme construction will also require dewatering of the gravel aquifer necessitating discharge of dewatering flows potentially containing elevated levels of suspended sediment.
214. In order to mitigate potential effects associated with the discharge of construction stormwater and dewatering flows the applicant proposes to utilise a range of mitigation measures to reduce potential impacts on the environment. Chief among these is the discharge, wherever practicable, of all stormwater runoff and dewatering

flows to land either via soak pits, swales or excavated parts of the scheme thereby avoiding discharges to surface waterways.

215. In regard to the management of construction stormwater and dewatering flows, the applicant provides the following comments:
- (a) A Stormwater Management Plan will be created.
  - (b) Stormwater control measures identified in the plan will be put in place prior to works commencing in each location and will remain until completion of construction;
  - (c) The low relief of the site and the limited catchment area of the river terrace will ensure works are exposed to limited volume and energy of stormwater;
  - (d) While it is intended that most sediment will be discharged to ground, a small percentage may be discharged to surface water following treatment to settle suspended sediments;
  - (e) Stormwater discharging to the river is likely only following high or extended rainfall, and as such the river is likely to be in high flow with high sediment load. The effects therefore of stormwater discharging from the site will be indiscernible from the suspended sediment in the river, and the effect will be minor.
216. In regard to construction stormwater and dewatering flows, I note the following:
- Disposal of construction stormwater to land has the potential to significantly reduce potential adverse effects compared to disposal to surface water;
  - The applicant has not provided information to quantify naturally occurring levels of suspended sediment and/or turbidity in the Rakaia River and how these vary on a temporal basis in relation to river flow;
  - The applicant has advised that the aquatic ecology of the Rakaia River in the vicinity of the proposed discharges, is resilient to variations in suspended sediment and turbidity levels;
  - The applicant has not provided any figures to quantify the magnitude of the proposed discharge; and
  - The assessment provided does not appear to consider the potential for localised rainfall to result in significant stormwater flows on-site while base-flows in the headwaters of the Rakaia catchment remain relatively stable.
217. The applicant has provided limited assessment of the potential effect of the proposed works on water quality and ecosystems. The assessment is heavily reliant on the application of the management plans to ensure effects are no more than minor. However, this report does not offer anything more than general detail of the methods proposed to avoid and mitigate impacts. As a result, it is difficult to reach an overall conclusion as to the potential effects that may result from the discharge of stormwater.
218. Therefore, if The Committee is of a mind to grant consent, I recommend that the proposed conditions by the applicant requiring the preparation of a stormwater and sediment control plan be attached as a general condition of consent. The following should also be included:
- The plans should require sediment and erosion control measures for each stage of construction to be agreed with Environment Canterbury prior to each subsequent phase of work commencing.

- The plans should also clearly define responsibility for implementation of the proposed mitigation options and establish a system for recording implementation of required measures, including a log of regular inspections.
- The Plans should also establish a monitoring and reporting regime to ensure the effects of the proposed works are no more than minor and identify consequential mitigation required to remedy any adverse effects detected.

### *Operational Discharges*

219. Discharge of water from the scheme to the Highbank tailrace has the potential to have an adverse impact on the quality of the existing tailrace discharge and ultimately the Rakaia River itself.
220. In regard to the potential for the operational discharge to the Highbank tailrace to adversely effect water quality the applicant makes the following points:
- (a) Contaminants in the scheme water discharged are expected to be limited to minor amounts of sediment and plant matter such as grass and leaf litter. The discharge is expected to contain fewer contaminants than natural river flow due to the provision of the settling pond intake, and the settling pond itself; and
  - (b) Most sediment is expected to settle out in the diversion race and settling pond before entering the canal, and there will be very little sediment discharged as a result.
221. In regard to the potential effects of the operational discharge on receiving water quality, I note the following points:
- The applicant has not undertaken any assessment to quantify the likely sediment loading in the Rakaia River and the subsequent reduction in suspended sediment concentration resulting from flow through the proposed settling pond and canal system other than in very general terms;
  - The applicant has not provided an assessment of the likely temporal variation in existing flows in the Highbank tailrace as a result of the proposed discharge;
  - The applicant has not provided an assessment of the likely changes to the quality of the existing discharge from the Highbank tailrace resulting from the proposed discharge;
  - The standard of construction proposed (e.g. in accordance with NZSOLD Guidelines) should ensure erosion or similar effects do not alter the quality of water flowing through the system;
  - The limited storage within the system means that there is limited residence time in the system. This will mean water quality in the river and scheme discharge will vary on a similar temporal basis.
  - Given it is an engineered scheme there is potential for change/degradation in water quality from the canal bed structures and from subsequent deposition/re-suspension of sediment in the canals.
222. On the basis of information presented I am not able to reach a substantive conclusion with regard the impacts of the scheme discharge on receiving water

quality. However, I consider that any adverse impacts can be adequately mitigated by conditions requiring the monitoring of comparative changes in water quality.

### *Fish Passage*

223. The diversion and discharge of water can result in adverse impacts on fish passage.
224. In regard to the potential effects of the diversion and discharge on fish passage, I note general concerns expressed by Fish and Game and DOC in regard to the appropriate design and operation of fish screens authorised by existing consent, particularly in regard to increased discharge in the Highbank tailrace.
225. The potential effects on fish passage resulting from discharge to the Highbank tailrace are considered as part of the potential effects on existing structures outlined in the subsequent section of this report 'Adverse effect of the diversion, damming and discharge of water on existing structures'.

### **Adverse effect of the discharge of water to land on groundwater quality**

226. In order to minimise potential impacts on surface water quality and ecosystems it is proposed to utilise land disposal for the management of construction stormwater wherever possible.
227. Where it is not managed in an appropriate manner the discharge of water to ground has the potential to result in adverse impacts on groundwater quality in the unconfined aquifer. Given the high permeability assumed in the alluvial gravels and relative proximity, groundwater may also have the potential to provide a conduit for the transport of contaminants to the Rakaia River.
228. The applicant's assessment of potential effects of the proposed discharges to land includes the following points:
- (a) Any stormwater discharged will comprise only of water sourced from rainfall events and any sediment collected as it moves across the land surface;
  - (b) It is likely that stormwater will pool on the ground surface, percolate into the ground and consequently into groundwater.
  - (c) It is anticipated that any suspended material will be filtered out as it passes through the soil profile resulting in relatively clean stormwater entering the groundwater system.
229. In regard to the potential for discharges to land to adversely impact on groundwater quality I note the following:
- Disposal of stormwater to land poses a significantly lower environmental risk than disposal to surface water;
  - Contaminants contained in stormwater runoff and dewatering flows from construction activities are likely to comprise suspended sediment. Provided appropriate measures are taken to manage the use of fuels and other hazardous substances, the proposed works do not appear to present any significant risk to groundwater quality;
230. I therefore agree with the applicant's assessment that the potential impact of discharge of water to land is likely to be minor provided hazardous substances usage (including refuelling) is undertaken in an appropriate manner.

## **Adverse effect of the diversion, damming and discharge of water on bed erosion and flooding**

231. Alteration of existing drainage patterns and flow characteristics as a result of the proposed diversion and discharge of cross drainage stormwater and scheme outflows to the Highbank tailrace have the potential to create a flood hazard or result in adverse effects due to bank or channel erosion. Similarly, the diversion and impounding of water within the proposed scheme infrastructure has the potential to result in flooding and/or erosion in the event of an emergency discharge.

### *Cross Drainage*

232. The canal alignment and scheme infrastructure will interfere with natural drainage patterns on the river terrace and could potentially result in water ponding against the upslope side of the embankment, localised flooding and potential scour of the embankment from uncontrolled or concentrated discharge of stormwater.

233. In regard to the management of cross drainage water, the applicant makes the following comments:

- (a) The river terrace in the vicinity of the canal is of low gradient, and is crossed by several minor drainage depressions. Stormwater appears to generally soak directly to ground, though may temporarily pond following heavy or prolonged rainfall. The few drainage depressions evident are understood to run only following heavy or prolonged rainfall.
- (b) Most rainfall and runoff from the high terrace naturally infiltrates to ground on the river terrace with runoff or ponding of stormwater only expected following significant rainfall events; and
- (c) Cross drainage water will be managed by providing a swale and soak pit system to collect stormwater with culvert crossings at key locations to convey water beneath the canal alignment.

234. In regard to the management of cross drainage water, I note the following:

- No information is provided to quantify the potential infiltration available from the planned swale or soak pits; and,
- No design criteria are specified for the construction of the culverts beneath the canal alignment.

235. However, I am of the opinion that the management of cross drainage water will have no more than minor effects, provided infrastructure for stormwater management is designed and constructed in an appropriate manner. Therefore, I recommend a condition requiring the design and construction of swales and culverts to be agreed with Environment Canterbury prior to construction commencing, and culverts are sized for at least a 1 in 20 year event.

### *Emergency Discharge*

236. The application seeks consent to discharge water and sediment from the settling pond and canal system in an emergency.

237. Emergency discharge may occur in operational situations where the rate of inflow to the settling pond exceeds storage capacity. For example, this situation could potentially occur if water was unable to be conveyed down the canal system for

operational reasons and the intake gates failed to close. In this situation water would continue to flow into the settling pond until pond capacity was reached at which point water would be discharged via an engineered section of the canal embankment.

238. In regard to the potential adverse effects associated with an emergency discharge from scheme infrastructure the applicant provides the following comments:
- (a) All infrastructure used to divert, impound and convey water will be designed, constructed, commissioned and operated in accordance with the New Zealand Dam Safety Guidelines;
  - (b) Given the water level control on the system including the provision of a bypass channel at the drop structures and an emergency overflow from the settling pond, this failure scenario is considered unlikely;
239. In regard to the potential effects associated with emergency discharge from the settling pond I note the following points:
- Given the combination of circumstances required for emergency discharge to occur such an eventuality will have a low frequency of occurrence;
  - The emergency discharge will effectively be water drawn from the river which has passed through the diversion channel and settling pond which act to reduce suspended sediment loading; and,
  - The discharge point and return canal will be engineered to facilitate such an occurrence and therefore be unlikely to result in significant erosion or mobilisation of suspended sediment
240. Based on the information provided I agree with the applicant's assessment that potential effects associated with emergency discharge from the settling pond are likely to be minor.

#### *Discharge to the Highbank tailrace*

241. Water flowing through the scheme will be discharged to the Highbank tailrace where it will combine with outflow from the Highbank Power Station and ultimately return to the Rakaia River. This discharge will occur at a run-of-the-river rate of up to 40m<sup>3</sup>/s, increasing the maximum potential discharge from the tailrace.
242. The applicant has provided little detail on this effect.
243. I note the following in regard to the potential effects of the proposed discharge on flooding or erosion associated with discharge to the Highbank tailrace:
- The applicant has not provided an assessment of the likely temporal variability of discharges to the Highbank tailrace or the likely combined rate of discharge based on historical operation of the Highbank Power Station.
  - However, for a significant proportion of the year the combined rate of discharge will not be greater than that already occurring when Highbank is operating at full capacity;
  - Provided the planned modifications to the tailrace follow standard hydraulic engineering practice and are signed off by a suitable qualified engineer the proposed discharge is unlikely to result in more than minor effects on flooding or erosion

244. I therefore consider that the proposed discharge to the Highbank tailrace is unlikely to result in adverse effects associated with bed erosion or flooding.

**Adverse effect of the diversion, damming and discharge of water on existing structures**

245. The diversion, damming and discharge of water associated with the proposed scheme has the potential to result in adverse effects on existing structures within or adjacent to the proposed alignment. The most significant potential for adverse effects on existing structures occurs where the proposed canal system enters the existing Highbank tailrace. Potential impacts include adverse effects on the operation of the existing fish barrier on the Highbank tailrace and tail water levels, and the operation efficiency of the Highbank Power Station.

*Highbank tailrace fish barrier*

246. A fish barrier has been installed by TrustPower at the downstream end of the formed section of the Highbank tailrace. This structure acts to prevent migrating salmon from entering the Highbank tailrace where they are effectively lost from the fishery unless manually salvaged.

247. Increasing the rate of discharge in the Highbank tailrace, particularly during the February to April period, has the potential to have an adverse impact on the functioning of the fish screen during the main period of salmon migration.

248. In regard to the potential impacts of the proposed discharge on the operation of the existing Highbank fish screen I note the following:

- No information is presented to quantify the likely volume and seasonality of the proposed discharge to the Highbank tailrace both in terms of the proposed hydro-generation and potential irrigation abstractions;
- Submissions from TrustPower seek that the applications must not affect, limit or otherwise constrain that continued operational of the salmon exclusion system or impose additional costs on TrustPower;

249. It is noted that NIWA, in respect of the EA/BCI resource consent applications recommended that to better understand the issues associated with the additional discharge to the Highbank tailrace, that screen performance be monitored for up to five years under the revised regime and that should this monitoring indicate areas where screen performance could be improved, remedial measures should be investigated including:

- Increasing the width of the screen so as to reduce loading, and the frequency of screen “popping” (i.e., opening in response to unacceptable loading from accumulated debris);
- Replacing the current manual closing system with an automated system, thus reducing the time that “popped” screens remain open;
- Increasing the tangential (i.e., cross-screen) flow towards the bypass channel by reducing the angle between the screen and the tailrace flow;
- Enhancing the volume and location of the bypass flow.

250. Based on the information available to me I am unable to form a conclusion as to the potential effects of the proposed discharge on the existing fish barrier on the Highbank tailrace. However, should The Committee be of a mind to grant the

consent to discharge to the Highbank tailrace a range of conditions have been proposed that may be appropriate to ensure performance of the fish barrier is adequately monitored and appropriate remedial actions undertaken.

#### *Operation of the Highbank Power Station*

251. Alterations to water levels in the Highbank tailrace have the potential to have an adverse effect on the operational efficiency of the Highbank Power Station.
252. In submission, TrustPower indicate that any works undertaken on the tailrace should be carried out during the normal shutdown period and measures are employed to prevent adverse effects on the continued operation of the Highbank Power Station, including any loss in generation, and are also concerned about the potential increase in operational and compliance costs associated with sharing the infrastructure.
253. The applicant has confirmed that works will be undertaken during the normal shut down period.
254. Based on available information I am unable to reach a conclusion as to the potential effects of the proposed discharge on the operation of the Highbank Power Station. However, I understand that ongoing consultation between the applicant and Trustpower is occurring.

#### **Adverse effects of system failure on people and property**

255. Catastrophic failure of portions of the proposed infrastructure design to retain water may result in uncontrolled discharge of water from the system. This situation is most likely to occur in the event of a failure of the diversion channel, settling pond or canal embankment.
256. In regard to the potential for system failure to result in adverse effects on people and property the applicant makes the following points:
  - (a) All infrastructure used to divert, impound and convey water will be designed, constructed, commissioned and operated in accordance with the New Zealand Dam Safety Guidelines;
  - (b) Any breach of the settling pond embankment would direct water towards the Rakaia River. Any such breach would occur on a gradual basis through a section of the embankment designed to accommodate such a discharge with a majority of the water discharged to the Rakaia River.
  - (c) In the case of an embankment failure the discharge is likely to increase in a progressive manner rather than occurring on an instantaneous basis. This would provide sufficient time for river users (and stock) to move to higher ground if necessary;
  - (d) Water released in the event of a failure of the settling pond or canal embankment would be rapidly spread over the surrounding farmland reducing flow velocity and the potential for sediment transport
257. Provided all infrastructure is designed, constructed and operated in accordance with relevant dam safety guidelines I would agree with the applicants assessment that the risk to people and the environment resulting from damming and diverting water through the proposed system will be minor.

## **Affects on the diversion, damming and discharge of water on Tangata Whenua values**

258. The Rakaia River and its environs are within the rohe of Te Runanga o Ngai Tahu, and Te Runanga o Arowhenua.
259. As stated earlier in this report, given that no submissions were made in relation to tangata whenua values, I consider that effects on tangata whenua values can be considered to be minor.

## **Use of Water for Hydroelectricity Generation - CRC080848**

260. In regard to the use of water for hydro-generation the applicant states the following points:
- (a) The proposal is considered consistent with the principles of sustainable management, as by its very nature it utilises an existing consented water take, and is a run-of-the-river hydro-generation scheme. This provides gains in terms of efficient and effective use of water resources while managing resources in a sustainable manner.
261. In regard to the use of water for hydro-generation I note the following:
- The use of water for hydro-generation is consistent with sections 7(b) and 7(j) of the RMA in relation to the efficient use and development of natural and physical resources and the benefits derived from the use and development of renewable energy.
262. I therefore agree with the applicant's assessment that adverse effects associated with the use of water for hydro-generation will be minor

## **CONSIDERATION OF ALTERNATIVES**

263. Section 8 of the AEE document provides consideration of alternatives. In this section the applicant states other sites assessed have similar environmental effects but less economic benefit and are therefore less favourable.
264. However, the AEE does not outline the process involved in reaching such a conclusion and no reference is made to alternative means of conveyance and discharge of the water.

## **POLICY STATEMENTS**

### **Regional Policy Statement (RPS)**

265. The RPS became operative on 26 June 1998. The following chapters and policies of the RPS are relevant to the proposed activities.

#### **Chapter 6**

266. Chapter 6 Policy 3 of the RPS dealing with the provision for relationship of Tangata Whenua with resources.
267. The proposal is in the rohe of Te Runanga o Ngai Tahu, and Te Runanga o Arowhenua. Both parties have provided affected party approval activities following

completion of an archaeological survey of the site. This survey did not indicate any features of archaeological significance in the area affected by the proposed works. The applicant has assessed the proposal against the provisions in Chapter 6 and considers these are met by the proposal. I agree with the applicant's assessment.

268. Conditions are recommended to ensure that the proposal is consistent with this Policy.

## **Chapter 7**

269. Chapter 7 provides direction for the management of soils and land use. Issue 1 relates to existing and potential land degradation, and is supported by Objective 1. This Objective is supported by Policy 2(b) which states: "*Activities that have the potential, regardless of the method adopted, to result in significant soil erosion, or to lead to significant off-site effects, including sedimentation of water bodies or the coastal environment, should be avoided unless these adverse effects can be offset by mitigation measures undertaken elsewhere.*"
270. Issue 4 relates to land use effects on water quantity and quality in catchments, which is supported by policies 8 and 12 of Chapter 9.
271. The applicant has assessed the proposal against these policies and Objectives in Chapter 7. The applicant considers that all necessary measures will be taken to manage and avoid the sedimentation of waterways from the earthworks proposed and that all disturbed faces will be replanted in vegetative cover at the earliest opportunity to stabilise batters and minimise potential for soil erosion, that the proposal is consistent with the relevant matters in Chapter 7. However, on the basis of the information presented I am unable to determine if the effects of the proposed works will be consistent with the policies and objectives outlined in Chapter 7.
272. Overall, given the nature of the site and proposed works, it is my opinion that erosion and sediment control measures could provide adequate mitigation of effects to ensure that the proposal is consistent with the objectives and policies of Chapter 9, provided they are adequately scoped and implemented in conjunction with suitable conditions.

## **Chapter 8**

273. Chapter 8 refers to the significant matters for Canterbury's landscape, ecology and heritage. Objectives 3 and 4 focus on these matters and are relevant to this application. These objectives are supported by Policies 4 and 5.
274. The applicant has assessed the proposal against the relevant objectives. The applicant has concluded that because of the scale and design of the scheme in the context of the physical setting proposal upholds the intent of the above objectives. I note that an archaeological survey of the site has been carried out with no items of significance found. Based on the insufficient information provided in the AEE, I am unable to agree with the applicant's assessment.
275. Conditions are recommended to ensure that the proposal is consistent with this objective.

## **Chapter 9**

276. Chapter Nine of the RPS deals with issues and objectives relating to water quantity and quality and contains a number of policies pertaining to this application. Objective

1 seeks to enable people to use water while protecting a number of specific values. Objective 2 provides for people to use land where it affects the flows and levels of Canterbury's water bodies, and Objective 3 refers to water quality in Canterbury's water bodies and coastal waters. Objective 1 is supported by a number of Policies, of which Policy 3 is relevant to this proposal. Objective 2 is supported by Policy 8, relevant to this proposal and the relevant supporting policies of Objective 3 relevant are Policies 9, 10, 11, 12 and 13.

277. In regards to the quantity of water, the applicant has assessed the proposal against the three objectives and Policies 2 and 3 of Chapter 9. The applicant concludes given that the use of the water to generate hydro electricity prior to its distribution for irrigation constitutes efficiency the proposal is consistent with the Objectives of this Chapter. I agree with this statement. However, in regard to water quality, I consider that I do not have sufficient information available to determine if the proposal is consistent with the relevant policies in Chapter 9.
278. Overall, given the nature of the site and proposed works, it is my opinion that erosion and sediment control measures could provide adequate mitigation of effects to ensure that the proposal is consistent with the objectives and policies of Chapter 9, provided they are adequately scoped and implemented in conjunction with suitable conditions.

## Chapter 10

279. Chapter 10 of the Regional Policy Statement sets out issues, objectives, and policies relating to the sustainable management of the beds of lakes and rivers and their margins.
280. The Objectives and supporting Policies in Chapter 10 relevant to this proposal are; Objective 1, Policies 1 and 2; Objective 2, Policies 4 and 5; Objective 3, Policy 6 and Objective 4, Policy 7.
281. The applicant has assessed the proposal against the Objectives in Chapter 10. The applicant's assessment concludes that the proposal is consistent with the relevant objectives and policies set out in Chapter 10. I note that the applicant has covered all Policies and Objectives mentioned above, apart from Objective 4, Policy 7, however, this I note is addressed by the following comments in the applicant's assessment *"public access is limited as the scheme is contained wholly within private land, though informal public access is provided. This would remain unchanged, other than during construction activities, of where it may occasionally be necessary to maintain public safety."*
282. Provided the recommended conditions are attached to the consents, and are adhered to, I consider the applications to be consistent with these objectives and policies.

## Chapter 13

283. Chapter 13 of the RPS deals with air quality, and outlines objectives and policies to address air quality issues.
284. Objective 2 states:

*"Avoid, remedy or mitigate the adverse effects on people, flora and fauna, and other natural and physical resources resulting from discharges of contaminants into the air."*

285. Chapter 13, Policy 3 of the RPS states:

*“set standard, conditions and terms for discharges of contaminants into the air to avoid, remedy or mitigate adverse effects.”*

286. Chapter 13, Policy 5 of the RPS states:

*“(a) Activities which require resource consents to discharge contaminants into air should be encouraged to locate away from residential dwellings, educational facilities, hospitals, shops and other similar public buildings unless adverse effects can be avoided or mitigated.”*

287. The applicant has not assessed the proposal against the objectives of Chapter 13 of the RPS, however, given the mitigation proposed by the applicant, and the recommended conditions, I consider the proposal to be consistent with the Objectives and Policies of this Chapter.

#### **Chapter 14**

288. Chapter 14 identifies regional issues and objectives associated with enabling energy production for the needs of future generations.

289. Objective 1, seeks to reduce Canterbury’s dependence on non-sustainable energy sources. Supporting Policies 1 and 2 are relevant to this proposal.

290. The applicant has assessed the proposal against the Objectives in Chapter 14. The applicant states that the proposal demonstrates that the generation of hydro-electricity can be achieved in a sustainable and environmentally appropriate manner by appropriate design and operation and therefore considers the proposal consistent with the relevant objectives and policies of this chapter. I agree with the applicant’s assessment.

291. Conditions have been recommended to ensure the proposal is to be consistent with these policies.

#### **Chapter 16**

292. Chapter 16 of the RPS deals with natural hazards and outlines objectives and policies to address natural hazards.

293. Objective 1 states:

*“Avoid or mitigate the actual or potential costs of loss or damage to life, property, or other parts of the environment from natural hazards.”*

294. Chapter 16, Policy 5 contains provisions to establish responsibility for costs associated with management of natural hazards, as well as these can be determined, should fall on those in benefit in proportion to that benefit.

295. The applicant has not assessed the proposal against the objectives of Chapter 16 of the RPS, however, given the recommended conditions relating to dam failure and the emergency discharge, I consider the proposal to be consistent with the Objectives and Policies of this Chapter.

296. From the above analysis, I consider the proposal to be consistent with the Objectives and Policies of the RPS.

## Proposed Natural Resources Regional Plan (PNRRP)

297. Chapters 1 to 3 of the NRRP were publicly notified on 1 June 2002, and chapters 4 to 7 were notified on 3 July 2004.

### Chapter 3 - Air Quality

298. The NRRP (Chapter 3) (Canterbury Regional Council, 2002) contains issues, objectives and policies related to air quality. The following discussion focuses on those matters directly relevant to this application. All of the proposed policies discussed below use resource consents as a method by which the stated aims can be achieved.

299. Issue AQL1 of the Proposed NRRP relates to localised air quality issues, including combustion products, odours, dust, and general industrial discharges. Objective AQL1 has as its primary goal, the outcome that:

*“Localised contaminant discharges into air do not, either on their own or in combination with other discharges, result in significant adverse effects on the environment, including:*

*adverse effects on Tangata Whenua from the loss of air’s taonga; and*

*adverse effects on human health and safety; and*

*offensive or objectionable odours; and*

*diminished visibility, as a consequence of human activities; and*

*corrosion and soiling of structures, not being property owned by those causing the discharge; and*

*adverse effects on health and functioning of ecosystems, plants and animals; and*

*contamination of water.*

300. Policy AQL6 is intended to “Avoid dust nuisance”, and ensure that adverse effects do not occur as a result of deposition of particles beyond the site boundary.

301. The applicant has assessed the proposal against the above Policy and Objective. In the assessment the applicant states that the dust will consist of natural material from the soils underlying the site. With the additional recommended conditions, which include restricting on site vehicle speeds, I consider the proposal will be consistent with the above Policy and Objective.

### Chapter 4 – Water Quality

302. The objectives and supporting policies of Chapter 4 relevant to this proposal are:

Objective WQ1 – Water quality outcomes for rivers and lakes, supported by Policy WQL1, Policy WQL1, Policy WQL2m Policy WQL3, Policy WQL4 and Policy WQL5.

- Objective WQL2 – Water quality outcomes for groundwater and contaminated land, supported by Policy WQL6, Policy WQL7, Policy WQL8 and Policy WQL10.

- Objective WQL3 – Water quality of community drinking water sources, supported by Policy WQL12.
303. The applicant has assessed the proposal against the above Policies and Objectives and considers the proposal to be consistent with them.
304. I have assessed the application against the aforementioned relevant objectives and policies and consider that I do not have sufficient information available to agree with the applicant's assessment.
305. However, given the nature of the site and proposed works, it is my opinion that erosion and sediment control measures could provide mitigation of potential effects if adequately scoped and implemented in conjunction with suitable conditions.

### **Chapter 5 – Water Quantity**

306. Chapter 5 Water Quantity sets out objectives, policies and rules to provide an adequate level of protection to sustain the life-supporting capacity of surface and groundwater systems and sustain Tangata Whenua and other instream values.
307. The objectives and supporting policies of Chapter 5 relevant to this proposal are:
- Objective WQN1 - Enable present and future generations to access the region's surface and groundwater, supported by Policy WQN4.
  - Objective WQN3 – Managing confined/semi-confined and unconfined aquifers, supported by Policy WQN11.
  - Objective WQN5 – Efficient Use of Water, supported by Policy WQN17.
308. The applicant has assessed the proposal against the above Objectives and Policies and considers the proposed activity would be consistent with the Policies for the following reasons:
- Policy WQN3 - as generation activities would only occur when flows in the Rakaia River are adequate to permit flow to be diverted and taken as proposed, in accordance with the provisions of the Rakaia WCO.
  - Policy WQN11 – Dewatering will not adversely affect flow in the Rakaia River and will not affect any wetland and will not result in long term effects of groundwater levels.
  - Policy WQN17 - as the construction of the canal will minimise seepage through the base and will retain water in the canal for irrigation purposes following its use for hydro-generation.
309. I agree with the applicant's assessment against Chapter 5 of the NRRP and, with the additional recommended conditions relating to the use and efficient use of water, I consider the proposal will be consistent with the above Policies and Objectives.

### **Chapter 6 – Beds and margins of lakes and rivers**

310. The objectives and supporting policies of Chapter 6 relevant to this proposal are:
- Objective BLR1 – Activities within the beds and margins, supported by Policy BRL1.

- Objective BLR2 – Land use activities within the bed or margins, supported by Policy BLR2.
  - Chapter 6 sets out Objective BLR1 specifies outcomes for certain values against which the effects of activities can be assessed, including the importance of managing natural and physical resources sustainably, and avoiding or mitigating the effect of natural hazards.
311. The applicant has assessed the proposal against the above Objectives and Policies and considers the proposed activity would be consistent with them for the following reasons:
- Activities in the bed or margins of the river will not adversely impact on the breeding success of river birds.
  - There are no significant areas of indigenous vegetation affected by the scheme and Ngai Tahu values are provided for.
312. I have assessed the proposal against the aforementioned objectives and policies relevant to the application. I note that there is considerable discussion advising that the works will not have adverse effects on the issues addressed by these policies with supporting mitigation provided. In conclusion, provided the recommended conditions are attached to the consents and adhered to, the applications are considered to be consistent with the objectives and policies of the RPS and PNRRP.

## **PART 2 MATTERS**

313. Part 2 of the RMA contains Sections 5 to 8, which define the purpose and principles of the RMA and Part 6 addresses matters related to resource consents in Sections 104-107. The relevant provisions of these sections are outlined below.

### **Purpose of the RMA (s5)**

314. Section 5 states that:

- “(1) *The purpose of this Act is to promote the sustainable management of natural and physical resources.*
- (2) *In this Act, “sustainable management” means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing 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.”*

315. The applications are considered to be consistent with the above matters, provided the recommended conditions are included in any consent that may be granted and that these conditions are adhered to.

## **Matters of National Importance (s6)**

316. Section 6 of the Act states that:

*“In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:*

*(a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*

*(b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:*

*(c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*

*(d) The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:*

*(e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.*

*(f) The protection of historic heritage from inappropriate subdivision, use and development.”*

317. The applications are considered to be consistent with the above matters, provided the recommended conditions are included in any consent that may be granted and that these conditions are adhered to.

## **Other Matters (s7)**

318. Section 7 of the Act sets out those matters that have particular regard attributed to them in achieving the purpose of the Act. Leaving aside for the moment Section 7 (a) dealing with Kaitiakitanga, matters relevant to the proposal under consideration are as follows:

*“(aa) The ethic of stewardship*

*(b) The efficient use and development of natural and physical resources:*

*(ba) The efficiency of the end use of energy*

*(c) The maintenance and enhancement of amenity values:*

*(d) Intrinsic values of ecosystems:*

*(f) Maintenance and enhancement of the quality of the environment:*

*(g) Any finite characteristics of natural and physical resources:*

*(h) The protection of the habitat of trout and salmon.”*

*(j) the benefits to be derived from the use and development of renewable energy.”*

319. The applications are considered to be consistent with the above matters, provided the recommended conditions are included in any consent that may be granted and that these adhered to.

## **Principles of the Treaty of Waitangi (s8)**

320. The RMA states in section 8 that:

*“In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).”*

321. Section 8 of the RMA requires the Council to take into account the principles of the Treaty of Waitangi when making a decision on an application. The Court of Appeal

(New Zealand Maori Council case 54/87), has identified four major principles: partnership; active protection of Maori people in the use of their resources and other guaranteed taonga; Maori to retain chieftainship rangatiratanga over their resources and taonga; and cessation by Maori of sovereignty in exchange by the Crown of Maori rangatiratanga.

322. The Rakaia River and its environs are within the rohe of Te Runanga o Ngai Tahu, and Te Runanga o Arowhenua.
323. Submissions were not made by either Te Runanga o Ngai Tahu, or Te Runanga o Arowhenua in relation to these applications. And, provided the recommended conditions are included in any consent that may be granted and that these conditions are adhered to, I consider the proposal could be considered to be with the above matters.

## **OTHER RELEVANT MATTERS**

324. Section 104 (1) (i) of the Act requires a consent authority, subject to Part II, to have regard to a number of other relevant matters when considering an application for resource consents and submissions received.
325. I am unaware of any other relevant matters that should be considered.

## **RECOMMENDATION**

### Grant or Decline

326. Section 104 of the RMA lists the matters that the consent authority shall have regard to when considering a consent application.
327. Section 104 B outlines options when determining an application for a discretionary or non-complying activity. Section 104 B states:
- 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.”*
328. Based on my audit of the application information, and having considered all relevant matters under s104, I consider that options available to The Committee include:
- grant the application, if the effects are considered acceptable; OR
  - decline the application, if the effects are considered unacceptable.

Based on my audit of the application, it is difficult to form a substantive conclusion, on the basis of the evidence presented to date, that the adverse environmental effects resulting from the proposed activities are minor. For example, it is not clear from the application that the proposed mitigation is sufficient to avoid adverse effects on existing structures, in particular the operation of the Highbank Power Station, in this regard, agreement reached between TrustPower and the applicant may go some ways toward ensuring appropriate measures are in place to avoid potential adverse effects on the power station.

329. However, given the nature of the site and proposed works, it is my opinion that potential effects could be adequately avoided, remedied or mitigated with suitable conditions.
330. Therefore, at present, I am not in a position to recommend that the applications be granted, but do consider that should the issues raised in this report be addressed by the applicant throughout the course of the hearing, the applications could be granted subject to conditions.
331. I would recommend the conditions of consent outlined in the following section.

## RECOMMENDED CONDITIONS

### CRC073862 – To discharge dust to air

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2)
  - (a) The discharge to air shall only be fugitive dust from the construction of the intake structure, settling pond, canals, head pond storage and power stations and any other construction and maintenance activities associated with the Rakaia Terrace Hydro Scheme along the project corridor between map references NZMS 260 K36: 030-400 and L36: 158-280.
  - (b) The fugitive dust shall only be from construction activities, unconsolidated surfaces and stockpiled material.
- 3) The discharge of dust shall not be offensive or objectionable, beyond the boundary of the site on which this consent is exercised.
- 4) The consent holder shall take all practicable measures to minimise dust discharges, including but not limited to the following:
  - (a) Water shall be sprayed on to all potentially dusty surfaces, including unsealed surfaces traversed by vehicles and bulk material stockpiles using water cart and sprays.
  - (b) Water shall be sprayed on to bulk material screening operations.
- 5) The holder of this consent shall maintain a record of surface water abstracted and used for dust suppression purposes and make this record available to the Canterbury Regional Council on request.
- 6) The site shall be maintained in a condition free of litter and other waste material that may be wind blown from the site.
- 7) A record of all complaints relating to fugitive dust shall be maintained, and shall include:
  - (a) The location where the dust was detected by the complainant;
  - (b) The date and time when the dust was detected;
  - (c) A description of the wind speed and wind direction when the dust was detected by the complainant;
  - (d) The most likely cause of the dust detected; and
  - (e) Any corrective action undertaken by the consent holder, to avoid, remedy, or mitigate the dust detected by the complainant.

This record shall be provided to the Canterbury Regional Council Attention: RMA Compliance and Enforcement Manager, on request.
- 8) The discharge of contaminants to air from the site shall not create any dust hazard or nuisance to the Benmore – Haywards A transmission line managed by Transpower New Zealand Limited.

### ADMINISTRATION

- 9) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 10) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 11) The lapsing date for the purposes of section 125 shall be XXXX.

**CRC072643 – to construct and maintain infrastructure to divert, impound, discharge and convey water.**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2) The works shall be limited to:
  - (i) Construction and maintenance of infrastructure to divert, impound, discharge and convey water between map references NZMS 260 K36: 303-400 and NZMS 260 K36: 070-382.
  - (ii) To facilitate the discharge of water and form channels at map references NZMS 260 K36: 079-365, K36: 087-358, and L36: 158-280 being the sites of the emergency discharges.
- 3) All practicable measures shall be undertaken to prevent the discharge of sediment arising from the works, entering flowing water.
- 4) All works and infrastructure shall be maintained in good working order.
- 5) All erosion and sediment control shall be carried out in accordance with the Erosion and Sediment Control Management Plan submitted in compliance under Condition (2) of Schedule 1: General Conditions.
- 6) Works shall not cause erosion of the banks and bed of the Rakaia River
- 7) All practicable steps shall be undertaken to ensure that the works do not deflect floodwaters into the berm of the Rakaia River or any other watercourse.
- 8) Works shall not increase the potential for flooding on surrounding land.
- 9) Works shall not decrease the flood carrying capacity of any watercourse.
- 10) If excavation within the bed of a river is not to occur within seven days following the last working at the site, then the following shall occur:
  - (a) All deposits of gravel, sand and other natural material including reject material shall be leveled to the natural bed level;
  - (b) The excavation area shall be reshaped and formed to a state consistent with the surrounding natural river bed
- 11) Excavation shall not occur within 100 metres of birds, which are nesting or rearing their young in the bed of the river.
- 12) Prior to any mechanical works being carried out in the period 1 September to 1 February the following year, the consent holder shall ensure that:
  - (a) A suitably qualified and independent person inspects the proposed area of works, no earlier than eight working days prior to any works being carried out, and locates any bird breeding sites of birds listed in Appendix A; and
  - (b) The person carrying out the inspection prepares a written report that identifies all the located bird breeding or nesting sites and provides copies of that report to the consent holder and the Canterbury Regional Council; and
  - (c) The name and qualifications of the person carrying out the inspection are provided to the Canterbury Regional Council with the report; and
  - (d) Any person carrying out works authorised by this consent are informed of any bird breeding or nesting sites located.

- 13) Works shall not take place in an active river braid during the period 1 May to 30 September, except in the case that:
  - (a) The river braid bed is dry; or
  - (b) The applicant has prior to the works, undertaken to consult with The Department of Conservation, Fish and Game, and The Canterbury Regional Council, to identify and wherever possible provide for avoidance of any ecologically sensitive areas of the river; and
  - (c) A suitably qualified person has inspected the area of proposed work and has provided a written report stating that any adverse effects of the works on the river's ecology (such as fish passage, redds and spawning sportsfish) shall be minor. A copy of the report shall be forwarded to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and the Regional Engineer, no less than ten working days prior to commencement of the works. Works shall not proceed until the report has been approved by the Canterbury Regional Council.
- 14) Condition 13 is not applicable to re-instatement works carried out within two weeks following floods, or maintenance works other than those involving the movement of heavy machinery across the riverbed
- 15) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not less than 48 hours prior to the commencement of works.
- 16) Any structures forming part of the scheme shall not be located within 12 metres of the closest visible edge of any high voltage transmission line support structure foundation.
- 17) All machinery and mobile plant operated in association with the irrigation scheme shall maintain a minimum clearance distance of four metres from the Benmore-Haywards A transmission line conductors at all times.
- 18) No fences of conductive materials shall be located within 5 metres of the outer edge of the visible foundations of any transmission line tower.
- 19) No person may excavate or otherwise interfere with any land:
  - (a) At a depth greater than 300 millimetres within 6 metres of the outer edge of the visible foundations of any tower supporting any conductor or;
  - (b) At a depth greater than 3 metres, between 6 metres and 12 metres of the outer edge of the visible foundation of any tower supporting any conductor; or
  - (c) In such a way as to create an unstable batter.

#### ADMINISTRATION

- 20) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 21) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 22) The lapsing date for the purposes of section 125 shall be XXXX.

**CRC072647 – to disturb the bed and banks of a river for the purposes of construction and maintenance of riverbank protection measures**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2) Works shall be confined to the area between map reference NZMS 260 K36:068-378 and NZMS 260 K36:096-350.
- 3) The works shall be limited to:
  - (a) maintaining the existing river bank protection;
  - (b) installation and maintenance of new riverbank protection measures.
- 4) All erosion and sediment control shall be carried out in accordance with the Erosion and Sediment Control Management Plan submitted in compliance under condition (2) of Schedule 1: General Conditions.
- 5) Works shall not cause erosion of the banks and bed of the Rakaia River.
- 6) All practicable steps shall be undertaken to ensure that the works do not deflect floodwaters into the berm of the Rakaia River or any other watercourse.
- 7) Works shall not increase the potential for flooding on surrounding land.
- 8) Works shall not decrease the flood carrying capacity of any watercourse.
- 9) The riverbank protection works shall be maintained in good working order.
- 10) Excavation shall not occur within 100 metres of birds, which are nesting or rearing their young in the bed of the river.
- 11) Prior to any mechanical works being carried out in the period 1 September to 1 February, the consent holder shall ensure that:
  - (a) A suitably qualified and independent person inspects the proposed area of works, no earlier than eight working days prior to any works being carried out, and locates any bird breeding sites of birds listed in Appendix A; and
  - (b) The person carrying out the inspection prepares a written report that identifies all the located bird breeding or nesting sites and provides copies of that report to the consent holder and the Canterbury Regional Council; and
  - (c) The name and qualifications of the person carrying out the inspection are provided to the Canterbury Regional Council with the report; and
  - (d) Any person carrying out works authorised by this consent are informed of any bird breeding or nesting sites located.
- 12) The Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, shall be notified not less than 48 hours prior to the commencement of works.

**ADMINISTRATION**

- 13) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 14) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the

exercise of the consent and which it is appropriate to deal with at a later stage.

- 15) The lapsing date for the purposes of section 125 shall be XXXX.

**CRC072649 - To use land to place material excavated from the settling pond onto the bed of the Rakaia River**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2) The works shall be limited to the deposition of material from the construction of the settling pond, between map references NZMS 260 058-396 and NZMS 260 K36:068-387.
- 3) Erosion controls shall be carried out in accordance with the Erosion and Sediment Controls Management Plan submitted for compliance with Condition (2) of Schedule 1: General Conditions.
- 4) The activity shall not decrease the flood carrying capacity of any watercourse.
- 5) The activity shall not increase the potential for flooding on surrounding land.
- 6) No excavated material shall be placed in the bed of a watercourse or in a position such that it may enter flowing surface water.
- 7) No person may excavate or otherwise interfere with any land:
  - (a) At a depth greater than 300 millimetres within 6 metres of the outer edge of the visible foundations of any tower supporting any conductor; or
  - (b) At a depth greater than 3 metres, between 6 metres and 12 metres of the outer edge of the visible foundation of any tower supporting any conductor; or
  - (c) In such a way as to create an unstable batter of any tower supporting any conductor.

**ADMINISTRATION**

- 8) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 9) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 10) The lapsing date for the purposes of section 125 shall be XXXX.

## **CRC072640 – To discharge water and contaminants to water**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2)
  - (a) Water shall only be discharged via the formed Highbank Power Station Tailrace at map reference NZMS 260 K36:087-358, to the Rakaia River and from the Barhill Power Station at map reference NZMS 260 L36: 158-280, to the Rakaia River.
  - (b) Water discharged to the Rakaia River shall be to an active channel of the River, or to a channel connecting directly to an active channel of the Rakaia River.
  - (c) Water may only be discharged at a rate not exceeding 40 cubic metres per second.
- 3) The discharge shall be only water from the Rakaia Terrace Hydro Scheme.
- 4) For the purpose of determining compliance with condition (2)(c) the consent holder shall:
  - (a) Measure and record the rate of the discharge of water from the canal into the TrustPower Highbank Power Station tailrace and the Barhill Power Station tailrace at the point of discharge at no greater than 30 minute intervals while the discharge occurs.
  - (b) In the event that any instantaneous recorded flow rate under Condition (4)(a) exceeds the maximum flow rate in condition (2)(c), the consent holder shall ensure that the subsequent 1 hour average flow rate does comply with the maximum flow rate in Condition (2)(c).
- 5) The discharge shall not cause erosion of the bed or banks of:
  - (i) The Highbank Power Station Tailrace; and or
  - (ii) The active channel, or channel connecting directly to an active channel of the Rakaia River.
- 6) The discharge after reasonable mixing shall not cause a change in the colour or a reduction of the clarity of the receiving water body.
- 7) The consent holder shall ensure that the braid of the Rakaia River diverted to connect with the fish bypass channel from the tailrace fish barrier (under consent CRC011249) is maintained in good working order at all times to ensure migrating fish will be able to move upstream.
- 8) A record shall be kept of the incidence of fish entrapment, and the North Canterbury Fish and Game Council shall be notified. Records of fish entrapment shall be forwarded to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, at the end of each irrigation season, or as requested.
- 9) Fish that have become entrapped in the discharge channel, shall, as far as is practicable, be salvaged by the Consent Holder or persons acting for them, and released into an active channel of the Rakaia River.
- 10) Monitoring shall be undertaken during the three irrigation seasons following the commencement of the scheme to determine whether there is an additional adverse effect on salmon entrainment in the Highbank tailrace as a result of the discharge that is more than minor.
- 11) There shall be no significant adverse effect on aquatic life as a result of the discharge.
- 12) The consent holder shall monitor the performance of the fish barrier on a daily basis between 1 February and 30 April each year when discharging to the Highbank Power Station tailrace. A report detailing the incidents of the fish barrier “popping”, and the manual reinstatement following each incident shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, by 31 May each year.

## **ADMINISTRATION**

- 13) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 14) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the

purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.

- 15) The lapsing date for the purposes of section 125 shall be XXXX.

### **CRC072639– To discharge water and sediment to water**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2) Water may only be discharged at a total combined rate not exceeding 40 cubic metres per second upstream of the Highbank Power Station located at NZMS 260 K36: 079-365.
- 3) The discharge shall only be water from the Rakaia Terrace hydro-generation scheme settling pond and canal system.
- 4) The Consent Holder shall record all occasions where emergency discharges of scheme water occurs, and the circumstances and duration of those discharges. These records shall be made available to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, on request.
- 5) The discharge shall not cause erosion of the bed or banks of the Highbank Power Station Tailrace.
- 6) In the event of any erosion occurring to the bed or banks of the Rakaia River or any other watercourse, as a result of the discharge, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 7) There shall be no significant adverse effect on aquatic life as a result of the discharge.

#### **PUBLIC SAFTEY**

- 8)
  - (a) Warning signs shall be erected at any known fishing spots and river access points within one kilometre downstream of the proposed emergency discharge point.
  - (b) An audible warning shall be given at the commencement of the discharge process.

#### **ADMINISTRATION**

- 9) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 10) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 11) The lapsing date for the purposes of section 125 shall be XXXX.

### **CRC072638– To discharge water and sediment to water**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2) Water may only be discharged at a total combined rate not exceeding 2 cubic metres per second upstream from the fish by-pass. .
- 3) In the event of any erosion occurring to the bed or banks of the Rakaia River or any other watercourse, as a result of the discharge, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 4) There shall be no significant adverse effect on aquatic life as a result of the discharge.

### **ADMINISTRATION**

- 5) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 6) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 7) The lapsing date for the purposes of section 125 shall be XXXX.

### **CRC072641 – To discharge cross drainage water to land**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2)
  - (a) The discharge shall only be stormwater from cross-drainage between map references NZMS 260 K36: 061-386 and L36: 152-280.
  - (b) The discharge of stormwater during construction and maintenance of the scheme shall only be to land and shall be in accordance with the sediment and erosion control plan which forms a part of Schedule 1: general conditions.

### **DEFINITIONS**

- 3) For the purposes of this consent:
  - (a) From hereon in the Erosion and Sediment Control Guidelines are the Environment Canterbury's Erosion and Sediment Control Guidelines for the Canterbury Region, Report No. R06/23, February 2007.
  - (b) Stabilisation: providing adequate measures, vegetative and/or structural that will protect exposed soil to prevent erosion.

### **EROSION AND SEDIMENT CONTROL PLANS**

- 4) All erosion and sediment control shall be carried out in accordance with the Erosion and Sediment Control Management Plan submitted in compliance under Condition (2) of Schedule 1: General Conditions.

### **EROSION AND SEDIMENT CONTROL MEASURES**

- 5) The stormwater system shall be designed and constructed with sufficient capacity to dispose of all stormwater events up to and including a ten year one hour duration rainfall event at this locality.
- 6) All haul road or vehicle track stormwater shall be disposed of to a soak pit preceded by at least 20 metres of grassed swale underlain by at least 150 millimetres of topsoil.

### **STAGING AND STABILISATION**

- 7)
  - (a) All exposed surfaces including the swales shall be stabilised to prevent erosion once earthworks are complete or if the exposed area is not to be earth worked for a period of 14 days or more. Stabilisation shall be achieved in accordance with the Sediment and Erosion Control Guidelines.

### **ADMINISTRATION**

- 8) Prior to the commencement of works, the consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 10) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 11) The lapsing date for the purposes of section 125 shall be XXXX.

## **CRC073684 – To discharge stormwater to land**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2)
  - (c) The discharge shall only be stormwater from the construction areas associated with the Rakaia Terrace Hydro Scheme, between map references NZMS 260 K36: 050-393 and L36: 158-280.
  - (d) The discharge of stormwater during construction and maintenance of the scheme shall only be to land and shall be in accordance with the sediment and erosion control plan which forms a part of Schedule 1: general conditions.

### **DEFINITIONS**

- 3) For the purposes of this consent:
  - (c) From hereon in the Erosion and Sediment Control Guidelines are the Environment Canterbury's Erosion and Sediment Control Guidelines for the Canterbury Region, Report No. R06/23, February 2007.
  - (d) Stabilisation: providing adequate measures, vegetative and/or structural that will protect exposed soil to prevent erosion.

### **EROSION AND SEDIMENT CONTROL PLANS**

- 4) All erosion and sediment control shall be carried out in accordance with the Erosion and Sediment Control Management Plan submitted in compliance under Condition (2) of Schedule 1: General Conditions.

### **EROSION AND SEDIMENT CONTROL MEASURES**

- 5) The stormwater system shall be designed and constructed with sufficient capacity to dispose of all stormwater events up to and including a ten year one hour duration rainfall event at this locality.
- 6) All haul road or vehicle track stormwater shall be disposed of to a soak pit preceded by at least 20 metres of grassed swale underlain by at least 150 millimetres of topsoil.

### **STAGING AND STABILISATION**

- 7)
  - (b) All exposed surfaces including the swales shall be stabilised to prevent erosion once earthworks are complete or if the exposed area is not to be earth worked for a period of 14 days or more. Stabilisation shall be achieved in accordance with the Sediment and Erosion Control Guidelines.

### **ADMINISTRATION**

- 8) Prior to the commencement of works, the consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 9) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the

exercise of the consent and which it is appropriate to deal with at a later stage.

10) The lapsing date for the purposes of section 125 shall be XXXX.

**CRC072642 – To discharge material excavated from the settling pond on the bed of the Rakaia River**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2)
  - (e) The discharge shall only be material excavated from the settling pond.
  - (f) The discharge of material excavated from the settling pond shall only be to the bed of the Rakaia River and shall be in accordance with the sediment and erosion control plan which forms a part of Schedule 1: general conditions.

**DEFINITIONS**

- 3) For the purposes of this consent:
  - (e) From hereon in the Erosion and Sediment Control Guidelines are the Environment Canterbury's Erosion and Sediment Control Guidelines for the Canterbury Region, Report No. R06/23, February 2007.
  - (f) Stabilisation: providing adequate measures, vegetative and/or structural that will protect exposed soil to prevent erosion.

**EROSION AND SEDIMENT CONTROL PLANS**

- 4) All erosion and sediment control shall be carried out in accordance with the Erosion and Sediment Control Management Plan submitted in compliance under Condition (2) of Schedule 1: General Conditions.

**EROSION AND SEDIMENT CONTROL MEASURES**

- 5) The stormwater system shall be designed and constructed with sufficient capacity to dispose of all stormwater events up to and including a ten year one hour duration rainfall event at this locality.
- 6) All haul road or vehicle track stormwater shall be disposed of to a soak pit preceded by at least 20 metres of grassed swale underlain by at least 150 millimetres of topsoil.

**STAGING AND STABILISATION**

- 7)
  - (c) All exposed surfaces including the swales shall be stabilised to prevent erosion once earthworks are complete or if the exposed area is not to be earth worked for a period of 14 days or more. Stabilisation shall be achieved in accordance with the Sediment and Erosion Control Guidelines.

**ADMINISTRATION**

- 8) Prior to the commencement of works, the consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 10) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 11) The lapsing date for the purposes of section 125 shall be XXXX.

**CRC072648 – To excavate and disturb land, deposit material and remove plant vegetation in the riparian margin of the Rakaia River and tributaries**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2) The works shall be limited to those required to excavate and disturb land, deposit material and remove plant vegetation in the riparian margin of the Rakaia River and tributaries.
- 3) All erosion and sediment control shall be carried out in accordance with the Erosion and Sediment Control Management Plan submitted in compliance under Condition (2) of Schedule 1: General Conditions.
- 4) No cut or cleared vegetation, debris, or excavated material shall be placed in a position such that it may enter surface water.
- 5)
  - (a) Any gravel, sand or other natural material excavated during construction of new channels and stored on the riverbed shall not be piled higher than 0.5 metres above the level of the immediately adjacent riverbed.
  - (b) Banks constructed to divert water shall not exceed 0.5 metres in height above the level of flowing water.
- 6) Any rock deposited as a result of works carried out in accordance with Condition (7) shall be, as far as is practicable, free of plants and plant seeds prior to depositing on the bed or banks of any watercourse.
- 7) All practicable steps shall be undertaken to ensure that the works do not deflect floodwaters into the berm of any of the watercourses.
- 8) In the event of any erosion occurring to the bed or banks of any of the watercourses that is directly attributable to the works, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 9) Works shall not increase the potential for flooding on surrounding land.
- 10) Works shall not decrease the flood carrying capacity of the Rakaia River.
- 11) If excavation within the bed of the Rakaia River is not to occur within seven days following the last working at the site, then the following shall occur:
  - (a) All deposits of gravel, sand and other natural material including reject material shall be leveled to the natural bed level;
  - (b) The excavation area shall be reshaped and formed to a state consistent with the surrounding natural river bed
- 12) All practicable measures shall be undertaken to prevent the discharge of sediment arising from the works, entering flowing water.
- 13) Prior to any mechanical works being carried out in the period 1 September to 1 February, the consent holder shall ensure that:
  - (a) A suitably qualified and independent person inspects the proposed area of works, no earlier than eight working days prior to any works being carried out, and locates any bird breeding sites of birds listed in Appendix A; and
  - (b) The person carrying out the inspection prepares a written report that identifies all the located bird breeding or nesting sites and provides copies of that report to the consent holder and the Canterbury Regional Council; and
  - (c) The name and qualifications of the person carrying out the inspection are provided to the Canterbury Regional Council with the report; and

- (d) Any person carrying out works authorised by this consent are informed of any bird breeding or nesting sites located.
- 14) Excavation shall not occur within 100 metres of birds, which are nesting or rearing their young in the bed of the river.
  - 15) Works shall not take place in an active river braid during the period 1 May to 30 September, except in the case that;
    - (a) The river braid is dry; or
    - (b) The applicant has prior to works, undertaken to consult with The Department of Conservation, Fish and Game, and The Canterbury Regional Council, to identify and wherever possible provide for avoidance of any ecologically sensitive areas of the river; and
    - (c) A suitably qualified person has inspected the area of proposed work and has provided a written report stating that any adverse effects of the works on the river's ecology (such as fish passage, redds and spawning sportfish) shall be minor. A copy of the report shall be forwarded to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and the Regional Engineer, no less than ten working days prior to commencement of the works. Works shall not proceed until the report has been approved by the Canterbury Regional Council.
  - 16) Condition 17 is not applicable to re-instatement works carried out within two weeks following floods, or maintenance works other than those involving the movement of heavy machinery across the riverbed
  - 17) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.
  - 18) No person may excavate or otherwise interfere with any land:
    - (a) At a depth greater than 300 millimetres within 6 metres of the outer edge of the visible foundations of any tower supporting any conductor or;
    - (b) At a depth greater than 3 metres, between 6 metres and 12 metres of the outer edge of the visible foundation of any tower supporting any conductor; or
    - (c) In such a way as to create an unstable batter.

#### ADMINISTRATION

- 19) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 20) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 21) The lapsing date for the purposes of section 125 shall be XXXX.

**CRC072644 – To excavate and disturb land, deposit material and remove plant vegetation in placing and maintaining an intakes structure**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2) The works shall be limited to those required to excavate and disturb land, deposit material and remove plant vegetation for placing and maintaining an intake structure, at the location of the intake.
- 3) All erosion and sediment control shall be carried out in accordance with the Erosion and Sediment Control Management Plan submitted in compliance under Condition (2) of Schedule 1: General Conditions.
- 4) No cut or cleared vegetation, debris, or excavated material shall be placed in a position such that it may enter surface water.
- 5)
  - (c) Any gravel, sand or other natural material excavated during construction of new channels and stored on the riverbed shall not be piled higher than 0.5 metres above the level of the immediately adjacent riverbed.
  - (d) Banks constructed to divert water shall not exceed 0.5 metres in height above the level of flowing water.
- 6) Any rock deposited as a result of works carried out in accordance with Condition (7) shall be, as far as is practicable, free of plants and plant seeds prior to depositing on the bed or banks of any watercourse.
- 7) All practicable steps shall be undertaken to ensure that the works do not deflect floodwaters into the berm of any of the watercourses.
- 8) In the event of any erosion occurring to the bed or banks of any of the watercourses that is directly attributable to the works, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 9) Works shall not increase the potential for flooding on surrounding land.
- 10) Works shall not decrease the flood carrying capacity of the Rakaia River.
- 11) If excavation within the bed of the Rakaia River is not to occur within seven days following the last working at the site, then the following shall occur:
  - (a) All deposits of gravel, sand and other natural material including reject material shall be leveled to the natural bed level;
  - (b) The excavation area shall be reshaped and formed to a state consistent with the surrounding natural river bed
- 12) All practicable measures shall be undertaken to prevent the discharge of sediment arising from the works, entering flowing water.
- 13) Prior to any mechanical works being carried out in the period 1 September to 1 February, the consent holder shall ensure that:
  - (a) A suitably qualified and independent person inspects the proposed area of works, no earlier than eight working days prior to any works being carried out, and locates any bird breeding sites of birds listed in Appendix A; and
  - (b) The person carrying out the inspection prepares a written report that identifies all the located bird breeding or nesting sites and provides copies of that report to the consent holder and the Canterbury Regional Council; and
  - (c) The name and qualifications of the person carrying out the inspection are provided to the

Canterbury Regional Council with the report; and

- (d) Any person carrying out works authorised by this consent are informed of any bird breeding or nesting sites located.
- 14) Excavation shall not occur within 100 metres of birds, which are nesting or rearing their young in the bed of the river.
- 15) Works shall not take place in an active river braid during the period 1 May to 30 September, except in the case that;
- (d) The river braid is dry; or
  - (e) The applicant has prior to works, undertaken to consult with The Department of Conservation, Fish and Game, and The Canterbury Regional Council, to identify and wherever possible provide for avoidance of any ecologically sensitive areas of the river; and
  - (f) A suitably qualified person has inspected the area of proposed work and has provided a written report stating that any adverse effects of the works on the river's ecology (such as fish passage, redds and spawning sportfish) shall be minor. A copy of the report shall be forwarded to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and the Regional Engineer, no less than ten working days prior to commencement of the works. Works shall not proceed until the report has been approved by the Canterbury Regional Council.
- 16) Condition 17 is not applicable to re-instatement works carried out within two weeks following floods, or maintenance works other than those involving the movement of heavy machinery across the riverbed
- 17) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.
- 18) No person may excavate or otherwise interfere with any land:
- (a) At a depth greater than 300 millimetres within 6 metres of the outer edge of the visible foundations of any tower supporting any conductor or;
  - (b) At a depth greater than 3 metres, between 6 metres and 12 metres of the outer edge of the visible foundation of any tower supporting any conductor; or
  - (c) In such a way as to create an unstable batter.

#### ADMINISTRATION

- 19) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 20) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 21) The lapsing date for the purposes of section 125 shall be XXXX.

**CRC072645 – To excavate and disturb land, deposit material and remove plant vegetation in placing and maintaining fish barrier structures**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2) The works shall be limited to those required to excavate and disturb land, deposit material and remove plant vegetation for placing and maintaining fish barrier structures, at or about map references NZMS 260 K36: 065-385, K36: 087-358, and L36: 158-280.
- 3) All erosion and sediment control shall be carried out in accordance with the Erosion and Sediment Control Management Plan submitted in compliance under Condition (2) of Schedule 1: General Conditions.
- 4) No cut or cleared vegetation, debris, or excavated material shall be placed in a position such that it may enter surface water.
- 5)
  - (e) Any gravel, sand or other natural material excavated during construction of new channels and stored on the riverbed shall not be piled higher than 0.5 metres above the level of the immediately adjacent riverbed.
  - (f) Banks constructed to divert water shall not exceed 0.5 metres in height above the level of flowing water.
- 6) Any rock deposited as a result of works carried out in accordance with Condition (7) shall be, as far as is practicable, free of plants and plant seeds prior to depositing on the bed or banks of any watercourse.
- 7) All practicable steps shall be undertaken to ensure that the works do not deflect floodwaters into the berm of any of the watercourses.
- 8) In the event of any erosion occurring to the bed or banks of any of the watercourses that is directly attributable to the works, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 9) Works shall not increase the potential for flooding on surrounding land.
- 10) Works shall not decrease the flood carrying capacity of the Rakaia River.
- 11) If excavation within the bed of the Rakaia River is not to occur within seven days following the last working at the site, then the following shall occur:
  - (a) All deposits of gravel, sand and other natural material including reject material shall be leveled to the natural bed level;
  - (b) The excavation area shall be reshaped and formed to a state consistent with the surrounding natural river bed
- 12) All practicable measures shall be undertaken to prevent the discharge of sediment arising from the works, entering flowing water.
- 13) Prior to any mechanical works being carried out in the period 1 September to 1 February, the consent holder shall ensure that:
  - (a) A suitably qualified and independent person inspects the proposed area of works, no earlier than eight working days prior to any works being carried out, and locates any bird breeding sites of birds listed in Appendix A; and
  - (b) The person carrying out the inspection prepares a written report that identifies all the located bird breeding or nesting sites and provides copies of that report to the consent holder and the Canterbury Regional Council; and
  - (c) The name and qualifications of the person carrying out the inspection are provided to the

Canterbury Regional Council with the report; and

- (d) Any person carrying out works authorised by this consent are informed of any bird breeding or nesting sites located.
- 14) Excavation shall not occur within 100 metres of birds, which are nesting or rearing their young in the bed of the river.
- 15) Works shall not take place in an active river braid during the period 1 May to 30 September, except in the case that;
- (g) The river braid is dry; or
  - (h) The applicant has prior to works, undertaken to consult with The Department of Conservation, Fish and Game, and The Canterbury Regional Council, to identify and wherever possible provide for avoidance of any ecologically sensitive areas of the river; and
  - (i) A suitably qualified person has inspected the area of proposed work and has provided a written report stating that any adverse effects of the works on the river's ecology (such as fish passage, redds and spawning sportfish) shall be minor. A copy of the report shall be forwarded to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and the Regional Engineer, no less than ten working days prior to commencement of the works. Works shall not proceed until the report has been approved by the Canterbury Regional Council.
- 16) Condition 17 is not applicable to re-instatement works carried out within two weeks following floods, or maintenance works other than those involving the movement of heavy machinery across the riverbed
- 17) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.
- 18) No person may excavate or otherwise interfere with any land:
- (a) At a depth greater than 300 millimetres within 6 metres of the outer edge of the visible foundations of any tower supporting any conductor or;
  - (b) At a depth greater than 3 metres, between 6 metres and 12 metres of the outer edge of the visible foundation of any tower supporting any conductor; or
  - (c) In such a way as to create an unstable batter.

#### ADMINISTRATION

- 19) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 20) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 21) The lapsing date for the purposes of section 125 shall be XXXX.

## **CRC072646 – To use land**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2) The works shall be limited to the construction and maintenance of a settling pond, the Highbank and Terrace canals, the head pond within the Terrace Canal and drainage structures.
- 3) All erosion and sediment control shall be carried out in accordance with the Erosion and Sediment Control Management Plan submitted in compliance under Condition (2) of Schedule 1: General Conditions.
- 4) No cut or cleared vegetation, debris, or excavated material shall be placed in a position such that it may enter surface water.
- 5)
  - (g) Any gravel, sand or other natural material excavated during construction of new channels and stored on the riverbed shall not be piled higher than 0.5 metres above the level of the immediately adjacent riverbed.
  - (h) Banks constructed to divert water shall not exceed 0.5 metres in height above the level of flowing water.
- 6) Any rock deposited as a result of works carried out in accordance with Condition (7) shall be, as far as is practicable, free of plants and plant seeds prior to depositing on the bed or banks of any watercourse.
- 7) All practicable steps shall be undertaken to ensure that the works do not deflect floodwaters into the berm of any of the watercourses.
- 8) In the event of any erosion occurring to the bed or banks of any of the watercourses that is directly attributable to the works, the consent holder shall be responsible for rectifying the situation as soon as practicable.
- 9) Works shall not increase the potential for flooding on surrounding land.
- 10) Works shall not decrease the flood carrying capacity of the Rakaia River.
- 11) If excavation within the bed of the Rakaia River is not to occur within seven days following the last working at the site, then the following shall occur:
  - (a) All deposits of gravel, sand and other natural material including reject material shall be leveled to the natural bed level;
  - (b) The excavation area shall be reshaped and formed to a state consistent with the surrounding natural river bed
- 12) All practicable measures shall be undertaken to prevent the discharge of sediment arising from the works, entering flowing water.
- 13) Prior to any mechanical works being carried out in the period 1 September to 1 February, the consent holder shall ensure that:
  - (a) A suitably qualified and independent person inspects the proposed area of works, no earlier than eight working days prior to any works being carried out, and locates any bird breeding sites of birds listed in Appendix A; and
  - (b) The person carrying out the inspection prepares a written report that identifies all the located bird breeding or nesting sites and provides copies of that report to the consent holder and the Canterbury Regional Council; and
  - (c) The name and qualifications of the person carrying out the inspection are provided to the Canterbury Regional Council with the report; and
  - (d) Any person carrying out works authorised by this consent are informed of any bird

breeding or nesting sites located.

- 14) Excavation shall not occur within 100 metres of birds, which are nesting or rearing their young in the bed of the river.
- 15) Works shall not take place in an active river braid during the period 1 May to 30 September, except in the case that;
  - (j) The river braid is dry; or
  - (k) The applicant has prior to works, undertaken to consult with The Department of Conservation, Fish and Game, and The Canterbury Regional Council, to identify and wherever possible provide for avoidance of any ecologically sensitive areas of the river; and
  - (l) A suitably qualified person has inspected the area of proposed work and has provided a written report stating that any adverse effects of the works on the river's ecology (such as fish passage, redds and spawning sportsfish) shall be minor. A copy of the report shall be forwarded to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and the Regional Engineer, no less than ten working days prior to commencement of the works. Works shall not proceed until the report has been approved by the Canterbury Regional Council.
- 16) Condition 17 is not applicable to re-instatement works carried out within two weeks following floods, or maintenance works other than those involving the movement of heavy machinery across the riverbed
- 17) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation, and ecological values.
- 18) No person may excavate or otherwise interfere with any land:
  - (a) At a depth greater than 300 millimetres within 6 metres of the outer edge of the visible foundations of any tower supporting any conductor or;
  - (b) At a depth greater than 3 metres, between 6 metres and 12 metres of the outer edge of the visible foundation of any tower supporting any conductor; or
  - (c) In such a way as to create an unstable batter.

#### ADMINISTRATION

- 19) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 20) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 21) The lapsing date for the purposes of section 125 shall be XXXX.

## **CRC072636 – To divert water**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.

### **DIVERT WATER**

- 2) The rate at which water is diverted via an intake structure at map reference NZMS 260 K36:064-382 into:
  - (a) a settling pond shall not exceed 42 cubic metres per second;
  - (b) into a canal, and into the Highbank Tailrace shall not exceed 40 cubic metres per second.
- 3) The diversion shall not prevent the passage of fish.
- 4) Water shall only be diverted into the canal and settling pond when a fish screen is being operated.
- 5) All practicable measures shall be undertaken to minimise adverse effects on property, amenity values, wildlife, vegetation and ecological values.
- 6) The consent holder shall within six months of the first exercise of this consent:
  - (a) Install a water measuring device that has an international accreditation, New Zealand or equivalent calibration endorsement, to continuously measure the rate of water diverted to within an accuracy of plus or minus five percent, at a location that will ensure the total diversion of water is measured;
  - (b) The rate shall be recorded by electronic means, at not greater than fifteen minute intervals, in a tamper-proof recording device such as a data-logger, kept for that purpose. The recorded data shall not be changed or deleted by any person, unless twelve months have passed since the date of recording;
  - (c) The measuring and recording devices shall be available for inspection at all times by the Canterbury Regional Council;
  - (d) All data from the recording device described in clause (a), shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, on request, and shall be accessible and available for downloading at all times by the Canterbury Regional Council.
  - (e) Within one month of the commencement of this consent, or the installation of a new measuring or recording device, and at five-yearly intervals thereafter, and at any other time when requested by Canterbury Regional Council, the consent holder shall provide a certificate to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, signed by a suitably qualified person certifying the accuracy of the measuring and recording devices installed in accordance with clause (a), and also certifying that data from the recording device described in clause (b) can be readily accessed in accordance with clause (d);
  - (f) Ensure that the water meter is installed, maintained and operated throughout the duration of the consent in accordance with the manufacturer's instructions;
  - (g) Take all practicable measures to ensure that the water meter is fully functional at all times;
  - (h) The hours and rate at which water is diverted shall be measured to within an accuracy of plus or minus five percent and recorded daily in a log kept for that purpose, and a copy of the records provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, before 31 July each year or at any other time as requested in writing by the Canterbury Regional Council.

## CRC073863 – to dam water

### DAM WATER - SCOPE

1)

- (b) A settling pond at map reference NZMS 260 K36:057-391;
  - (i) The depth of water in the pond shall not exceed <to be provided by the applicant> metres.
  - (ii) The volume of water dammed shall not exceed 1.5 million cubic metres.
- (c) A head pond at map reference NZMS 260 K36: 152-280:
  - (i) The depth of water in the pond shall not exceed <to be provided by the applicant> metres.
  - (ii) The volume of water dammed shall not exceed <to be provided by the applicant> cubic metres.
  - (iii) The height of the crest shall not exceed eight metres above natural ground level, as measured from the centre of the crest.

### DAM WATER - CONSTRUCTION

- 2) Upon completion of the works, and before first filling, the person responsible for the design and construction of the diversion race, settling pond and canal, shall certify the scheme as safe and ready for operation. A copy of the certification document shall be forwarded to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager.
- 3) A construction report shall be prepared by the person responsible for the design and construction of the diversion race, settling pond and canal, and a copy of which shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of the construction of the diversion race, settling pond and canal.

### OPERATION AND MAINTENANCE

- 4) The consent holder shall ensure that the settling pond and head pond is inspected comprehensively by, or under the supervision of, a chartered professional engineer, yearly for the first three years and then once every five years after that. A copy of the inspection report shall be forwarded to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of the inspection.
- 5)
  - (a) The person responsible for the design and construction of the settling pond and head pond shall be present during first filling and shall record any faults observed.
  - (b) The consent holder shall immediately remedy any faults recorded during first filling.
  - (c) A report shall be prepared detailing any faults observed and the remedial action taken, a copy of which shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of first filing.
- 6)
  - (a) The consent holder shall ensure that a chartered professional engineer inspects the settling pond and head pond within five days of first filling.
  - (b) The chartered professional engineer shall record any faults or findings that could potentially lead to failure of the diversion race, settling pond or canal system, and recommend the appropriate remedial works. A report of these findings and recommended remedial actions shall be prepared and a copy of which shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and

- Enforcement Manager, within one month of the inspection.
- (c) The consent holder shall immediately undertake any remedial works or corrective action recommended by the engineer and notify the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one week of completion.
- 7) The details and findings of any inspections and maintenance works shall be recorded in a logbook kept for that purpose. A copy of the logbook shall be forwarded to Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, once per year.
- 8) In the event of any evidence of erosion, seepage, cracking, settlement, slipping or other embankment deformation the consent holder shall, immediately:
- (a) report the event to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager; and
- (b) consult a chartered professional engineer who shall be requested to take responsibility for:
- (i) The inspection of the diversion race, settling pond and canal system;
- (ii) The identification of remedial action required;
- (iii) The recording of the details of the inspection, reasons for the fault and remedial action required, in a report, a copy of which shall be forwarded to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of the inspection.
- (c) undertake any remedial works or corrective action recommended by the engineer, and notify the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one week of completion.
- 9) In the event of failure of the diversion race, settling pond or canal system, the consent holder shall immediately contact a chartered professional engineer who shall complete a report detailing the cause of failure and the action taken. A copy of this report shall be forwarded to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, within one month of the event.

#### ADMINISTRATION

- 10) The consent holder shall ensure that all personnel working on the site are made aware of and have access to the contents of this consent document and Schedule 1: General Conditions, and all Plans associated with these two documents.
- 11) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 12) The lapsing date for the purposes of section 125 shall be XXXX.

**CRC0072637 – To use water for hydro-electricity generation**

- 1) This consent is subject to the general conditions listed in Schedule 1: General Conditions.
- 2) Water diverted shall be used for hydro-electricity generation purposes only between map references NZMS 260 K36:064-382 and NZMS 260 K36:079-364 and at map reference NZMS 260 L36: 154-281.

**ADMINISTRATION**

- 3) The Canterbury Regional Council may, once per year, on any of the last five working days of May or November, serve notice of its intention to review the conditions of this consent for the purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage.
- 4) The lapsing date for the purposes of section 125 shall be XXXX.



Signed: \_\_\_\_\_

Date: 15 August 2008

Name: *Keri Johnston*  
*Consents Investigating Officer / Consultant*

## **REFERENCES**

Canterbury Regional Council 2004. Proposed Natural Resources Regional Plan – Chapters 3, 4, 5, and 6.

Canterbury Regional Council 1998. Regional Policy Statement. Report No R98/4. ISBN 1-86937-337-5.

Canterbury Regional Council 1991. Transitional Regional Plan. October 1991.

The Resource Management Act 1991. Consolidated version including the Resource Management Amendment Act 1995. August 2005.

## **APPENDICES**

Appendix A -- Bird Survey Condition List

Appendix B – Schedule 1: General Conditions

Appendix C –Schematic overview of proposed Scheme

## **APPENDIX A - LIST OF BIRD SPECIES REFERRED TO IN SCHEDULE 1: GENERAL CONDITIONS**

South Island Pied Oystercatcher  
Black Stilt  
Pied Stilt  
Wrybill  
Banded Dotterel  
Black-fronted Dotterel  
Spur-winged Plover  
Paradise Shelduck  
Grey Duck  
NZ Shoveler  
Grey Teal  
NZ Scaup  
Black-billed Gull  
Red-billed Gull  
Caspian Tern  
White-fronted Tern  
Black-fronted Tern  
White-winged Black Tern  
Australasian Bittern  
Marsh Crake  
Spotless Crake  
Cormorant/shag colonies

## APPENDIX B – SCHEDULE 1: GENERAL CONDITIONS

### SCOPE

1. A chartered professional engineer shall be responsible for the design and construction of the scheme. The chartered professional engineer shall prepare a design report. A copy of the design report shall be forwarded to Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, no less than one month prior to commencement of construction. This design report shall include, but not be limited to the following:
  - (a) Final details of the location and layout of the scheme. This shall include a New Zealand Map Grid Reference with a minimum of four digits, locating the site where each activity related to the construction and maintenance of the scheme shall be undertaken.
  - (b) Final details of the geometry of the scheme and related structures.
  - (c) Final details of the engineering design of the scheme.
  - (d) Final details of the operation of the scheme.
  - (e) Confirmation, signed by the chartered professional engineer, that the scheme has been designed according to engineering standards and practices for a structure of this nature.
  - (f) A schedule of inspections to be undertaken under the supervision of the chartered professional engineer during the construction process. Work may not proceed until these inspections have been carried out and written authorisation provided by the chartered professional engineer.
  - (g) A schedule of routine inspections that shall be undertaken by the consent holder during the operational life of the scheme. Routine inspections shall be undertaken at least annually.
  - (h) A schedule of comprehensive inspections that shall be undertaken by a chartered professional engineer during the operational life of the scheme.
  - (i) Details of routine maintenance work that shall be undertaken by the consent holder during the operational life of the scheme.
  - (j) An emergency action plan in the event of scheme failure.

A copy of the design report shall be forwarded to Canterbury Regional Council, attention RMA Compliance and Enforcement Manager, no less than one month prior to commencement of construction.

Works shall not proceed until the report has been approved by the Canterbury Regional Council.

### MANAGEMENT PLANS

2. Prior to the commencement of works, the consent holder shall prepare and forward to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement

Manager, a Construction Phase Management Plan, to which all works shall be subject. Works shall not proceed until the Plan has been certified by the Regional Council. The plan shall include, but not be limited to, the following:

- (a) The phases in which work shall be undertaken for the purposes of constructing and maintaining the scheme;
  - (b) The timing and duration for each phase, including the working hours in which works shall be undertaken.
  - (c) The disturbed area in square metres, associated with each phase of the construction.
3. (a) The consent holder shall prepare an Erosion and Sediment Control Management Plan in accordance with the Canterbury Regional Council, 2007 "Erosion and Sediment Control Guidelines for the Canterbury Region" Report No. R06/23 ("CRC06/23"), for the purpose of ensuring that the best practicable sedimentation and erosion control measures are implemented during any site disturbance. The Erosion and Sediment Control Management Plan shall comply with all the requirements of Condition (3)(e) below.
- (b) The Erosion and Sediment Control Management Plan shall be submitted to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, no less than 20 working days prior to any earthworks or vegetation removal authorised by this consent commencing, for certification that the Erosion and Sediment Control Management Plan meets all the requirements of Condition (3)(a) of this Schedule.
  - (c) The consent holder may, at any time after receiving this certification, request amendments to The Erosion and Sediment Control Management Plan by submitting the amendments in writing to Canterbury Regional Council: Attention: RMA Compliance and Enforcement Manager, for certification that The Erosion and Sediment Control Management Plan, with those amendments, continues to meet all the requirements of Condition (3)(a) of this Schedule.
  - (d) No earthworks or vegetation clearance shall commence or be undertaken other than in full compliance with the latest version of The Erosion and Sediment Control Management Plan that has been certified by or on behalf of the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, in terms of Condition (3)(b) above as meeting all the requirements of Condition (3)(e) of this consent, for the stage or stages of works to be undertaken.
  - (e) The Erosion and Sediment Control Management Plan shall set out clearly the sediment and erosion control measures that are to be implemented for each phase of the works authorised by this consent. Those measures shall consist of but not be limited to the following:
    - (i) Clean water diversion channels for a 10% Annual Exceedance Probability Event;
    - (ii) Decanting earth bunds or sediment ponds;
    - (iii) Silt fencing;
    - (iv) Soakage pits;
    - (v) Infiltration basins;
    - (vi) Swales.

- (f) The Erosion and Sediment Control Management Plan shall in any event include, but not be limited to:
    - (i) A locality map;
    - (ii) Contour information at suitable intervals;
    - (iii) Detailed drawings showing the type and location of erosion and sediment control measures, on-site catchment boundaries, and off-site sources of run-off;
    - (iv) Drawings and specifications of all designated erosion and sediment control measures with supporting calculations;
    - (v) Location of the works, and cut and fill operations;
    - (vi) Culvert designs and associated erosion protection;
    - (vii) The management of stormwater during and following construction;
    - (viii) The management of stormwater during operation of the scheme;
    - (ix) A programme for managing exposed area including progressive stabilisation considerations;
    - (x) The inspections and maintenance of erosion and sediment control measures;
    - (xi) Details of when the erosion and sediment control measures are to be established and decommissioned; and
    - (xii) Measures to ensure that there is no tracking of mud or earth onto the surrounding road network, including the provision of shaker ramps and/or wheel washes where appropriate.
  - (g) Prior to the commencement of any phase of any of the works authorised by this consent, a certificate signed by the person responsible for designing the system or other person accepted by the Canterbury Regional Council as being competent to provide such certification, shall be submitted to Canterbury Regional Council to certify that the erosion and sediment control systems for that stage are constructed and installed in accordance with Condition (3)(a). No such works shall proceed prior to this certification being provided to and approved by The Canterbury Regional Council.
4. Prior to the commencement of works, the consent holder shall prepare and forward to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and the Ashburton District Council, a Hazardous Substances Spill Contingency Plan, to which all works shall be subject. Works shall not proceed until the Plan has been certified by the Regional Council. The plan shall include, but not be limited to, procedures for the following:
- (a) Weekly inspection of the above ground container, pipework and pump for any leaks or spills;
  - (b) Immediate actions to be taken in the event of a spill or leak;

- (c) Identification of causes of spill or leak;
- (d) Monthly inspections of the oil/water interceptor and immediately following every storm event;
- (e) Cleaning out of the oil/water interceptor not less than four times every year and immediately following any spills;
- (f) The disposal of any spill and material removed from the oil/water interceptor; and
- (g) Notification of the Canterbury Regional Council of any spill or leak within 24 hours of its occurrence.

The plan shall be reviewed at least once every six months and updated as necessary to maintain it as an effective operating tool, and be made available to the Canterbury Regional Council on request.

5. Prior to the commencement of works, the consent holder shall prepare and forward to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and to Transpower New Zealand Limited, a Dust Management Plan, to which all works shall be subject. Works shall not proceed until the Plan has been certified by the Regional Council. The plan shall include, but not be limited to, procedures for the following:
  - (a) A description of site operation in relation to its impact on the environment;
  - (b) Identify the potential sources of dust and contaminants;
  - (c) Define actions to be taken to ensure compliance with all conditions of this consent;
  - (d) Define actions in response to any incident that may impact on the environment;
  - (e) Identification of the staff member responsible for each action;
  - (f) Details of the steps to be taken to correct any element of non-compliance;
  - (g) Provision to amend the plan during the period of this consent as appropriate to improve management and contingency procedures.
6. A copy of the current Dust Management Plan shall be kept in the consent holder's office on site at all times. A copy of any revisions of the Plan shall be provided to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, with a copy to Transpower New Zealand Limited, within ten days of each revision being completed.
7. All construction works shall be carried out in accordance with the design plans submitted for compliance with Condition (1), the Construction Phase Management Plan submitted for compliance with Condition (2) and the Erosion and Sediment Control Management Plan submitted for compliance with Condition (3).

## OPERATION AND MAINTENANCE

8. At least one month prior to the commissioning the scheme, the consent holder shall provide to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, as-built drawings, specifications and other information, signed and approved by a Chartered Professional Engineer, to the satisfaction of the Council, to determine the nature and standard of construction.
9. Upon completion of the scheme, and before first filling, the chartered professional engineer shall certify the scheme as safe and ready for operation. A copy of the certification document shall be forwarded to the Canterbury Regional Council, Attention RMA Compliance and Enforcement Manager, prior to commissioning. The scheme shall not be filled until this certification has been provided to and approved by the Canterbury Regional Council.
10.
  - (a) A schedule of works shall be submitted to the Canterbury Regional Council, to the attention of the River Engineering Section and the RMA Compliance & Enforcement Manager, in January and July each year outlining proposed works to be undertaken in the following 6 months.
  - (b) A schedule of works shall be submitted to the Canterbury Regional Council, to the attention of the River Engineering Section and the RMA Compliance & Enforcement Manager, in January and July each year outlining actual works that have been undertaken in the previous 6 months.
11. The consent holder shall ensure that vegetation clearance shall be limited as far as practicable, and that disturbed riparian areas within 20 metres of the riverbank not occupied by infrastructure, grassed or required for maintenance access, shall be re-planted with appropriate native species at a distance of 1500 millimetres centres within the first planting season following completion of works in that area. The plant mix shall contain but not be limited to *Cordyline australis* (Cabbage Trees), and shall not preclude the use willow species for bank stabilisation. Prior to planting the plant mix shall be approved by a registered Landscape Architect. Approval shall be forwarded to the Canterbury Regional Council, Attention RMA Compliance and Enforcement Manager, at least 10 days prior to planting.
12. The consent holder shall ensure that all vehicles that access or work within the riverbed for the construction of the scheme and access road, and for ongoing maintenance shall be washed down or otherwise cleaned in accordance with the methods in Condition (15) prior to accessing the riverbed such that the distribution and / or establishment of pest plant seeds and species as identified below is avoided:
  - (a) All plants listed in Schedule BLR1 of the Canterbury Regional Council's Proposed Natural Resources Regional Plan, Chapter 6: Beds and margins of Lakes and Rivers.
13. In the event of the pest plants listed in Condition (12(a)) establishing on the riverbed or riparian margins as a result of the construction works or maintenance of the scheme, the consent holder shall be responsible for ensuring the removal or eradication of those species from the affected riverbed.
14. In the event of the pest plants listed in Condition (12(a)) establishing on land under the control or responsibility of the consent holder following the completion of construction works, the consent holder shall be responsible for ensuring the removal or eradication of those species within the affected area.

15. To prevent the spread of Didymo or any other aquatic pest, the consent holder shall ensure that activities authorised by this consent are undertaken in accordance with the Biosecurity New Zealand's hygiene procedures.

Note: You can access the most current version of these procedures from the Biosecurity New Zealand website <http://www.biosecurity.govt.nz> or Environment Canterbury Customer Services.

16. The consent holder shall take all appropriate steps to prevent the distribution both downstream/downwind of the site, of exotic weed species already present at the site.
17. The consent holder shall ensure that:
- (a) All practicable measures shall be undertaken to prevent oil and fuel leaks from vehicles and machinery.
  - (b) There shall be no storage of fuel or refuelling of vehicles and machinery within 20 metres of any water body or stream or river bed.
18. The consent holder shall maintain a current inventory of all hazardous substances stored on the site, and a copy of the inventory shall be made available to the Canterbury Regional Council and Ashburton District Council or emergency services upon request.
19. In the event of a spill of a hazardous substance within the site, the consent holder shall:
- (a) Take all practicable measures to prevent the hazardous substance being further discharged into land or water; and
  - (b) Collect and remove the hazardous substance and any contaminated material immediately.
20. In the event of a spill of a hazardous substance on site, the consent holder or contracted agent shall record and provide to the Canterbury Regional Council, Attention: RMA Compliance and Enforcement Manager, and to the Ashburton District Council within 24 hours of the spill:
- (a) The date, time, location and volume of the spill;
  - (b) The substance spilt;
  - (c) Measures taken to prevent the spilt substance being discharged into land or water; and
  - (d) The cause of the spill and measures that will be taken to prevent a reoccurrence and the timeframes for such measures.
21. Any contaminated material removed from the site under Condition 20 shall be disposed of at an appropriate facility and the consent holder shall provide the Canterbury Regional Council with written confirmation of such disposal within 10 working days of the disposal.
22. The consent holder shall maintain on site at all times, measures to prevent spills entering land or water including:
- (a) Spill kits to contain or absorb any spilled hazardous substance;

- (b) Signs to identify the location of spill kits;
  - (c) Written procedures in a clearly visible location that are to be undertaken to contain, remove and dispose of any spilled hazardous substance.
23. In the event of any disturbance of Koiwi Tangata (human bones) or taonga (treasured artefacts), the consent holder shall immediately:
- (a) Advise the Canterbury Regional Council of the disturbance;
  - (b) Advise the Upoko Runanga of Arowhenua and Ngai Tahu, or their representative, of the disturbance.
  - (c) Cease earthmoving operations in the affected area until the area containing the Koiwi Tangata or taonga has been clearly demarcated, and Kaumatua and archaeologists have certified that it is appropriate for earthmoving to recommence.
24. In the event of accidental discovery of archaeological remains, the following steps shall be taken:
- (a) All activity affecting the immediate area shall cease and the Regional Archaeologist of the New Zealand Historic Places Trust shall be contacted;
  - (b) The site shall be secured to ensure that the remains are not further disturbed;
  - (c) Further works affecting the remains will not commence until either:
    - (i) the Regional Archaeologist of the New Zealand Historic Places Trust has confirmed in writing that the archaeological provisions of the Historic Places Act 1993 do not apply;
    - (ii) Or the requirements of the archaeological provisions of the Historic Places Act 1993 have been met, and if required, and archaeological authority has been granted by the New Zealand Historic Places Trust.
  - iv) If human remains / koiwi tangata are located, in addition to the above steps, the Runanga representative for the area and the New Zealand Police must be contacted.

## BOND

25. Prior to the commencement of any earthworks for each stage of development the consent holder or developer shall enter into an enforceable agreement with the Canterbury Regional Council and bond pursuant to section 108(2)(b) and 108A of the Resource Management Act 1991 for the performance of the Site Construction conditions in relation to that stage of development. The agreement referred to in condition (25) shall provide for:
- (a) a guarantor acceptable to the Canterbury Regional Council to bind itself to pay for the carrying out and completion of the obligations of the consent holder under the bond and conditions of this consent in the event of any breach of conditions or occurrence of any adverse environmental effect requiring remedy; or

- (b) a bank bond acceptable to the Canterbury Regional Council to secure the performance of the obligations of the consent holder under the bond and conditions of this consent in the event of any default by the consent holder or any occurrence of any adverse effect requiring remedy; or
  - (c) a cash bond based on \$15,000.00 per hectare of disturbed land in the stages of development covered by the bond to be delivered up to Canterbury Regional Council for use by the Consent Authority in the event of any breach or failure to perform with the conditions for the 18 consents which refer to the General Conditions or any occurrence of an adverse environmental effect requiring mitigation or remedy, that the consent holder fails to remedy and providing that the liability of the consent holder shall not be limited to the amount of the bond.
26. All costs of, and incidental to, the preparation of documentation to meet Condition (25) shall be met by the consent holder.
27. Any bond provided under Condition (25) may be varied, cancelled or renewed at any time by agreement between the consent holder and the Canterbury Regional Council.
28. Works shall not be carried out on Sundays.

Advice Note:

That all activities associated with the proposal must comply with the New Zealand Code of Practice for Electrical Safety Distances NZECP34 at all times. Specifically the attention of the consent holder and their agents is brought to pages 17 to 19 (Excavations or construction near electrical line supports and approach distances for mobile plant) of this code.

All land use activities, including earthworks associated with the hydro scheme must comply with the New Zealand Code of Practice for Electrical Safe Distances (NZECP 34:2001).

All trees and vegetation planted on site must comply with the Electricity (Hazards from Trees) Regulations 2003.

