

**REPORT TO COUNCIL FOR A DECISION UNDER
THE RESOURCE MANAGEMENT ACT 1991**

**WEST COAST REGIONAL COUNCIL
AND
BULLER DISTRICT COUNCIL**

JOINT S42A PLANNING OFFICER REPORT

APPLICATIONS FOR RESOURCE CONSENTS

**HYDRO DEVELOPMENTS LIMITED
RC08149/01-RC08149/42 and RC08/131(A-G)**

**STOCKTON PLATEAU
HYDRO ELECTRIC POWER SCHEME**

IN THE MATTER of the Resource Management
Act 1991 and

Resource Consent Applications:
WCRC RC08149/01-RC08149/42 and
BDC RC08/131(A-G)
By Hydro Developments Ltd

Prepared by: Rachel Clark (WCRC) and Jane Bayley (Staig & Smith Ltd)

For: West Coast Regional Council and Buller District Council

Date: July 2009

Table of Contents

1	BACKGROUND.....	1
	1.1 Purpose of the Report.....	1
	1.2 Consents Sought	2
	1.3 Process.....	3
	1.4 Site and Locality.....	4
2	NOTIFICATION AND SUBMISSIONS.....	6
	2.1 Notification	6
	2.2 Submissions Received.....	6
	2.3 Summary of Issues Raised	7
3	STATUTORY FRAMEWORK.....	9
	3.1 Resource Management Act 1991.....	9
	3.1.1 Assessing resource consents under Part 6.....	9
	3.1.2 Purpose and Principles of the RMA as set out in Part 2.....	11
	3.2 Relevant Plans And Status Of Applications	13
	3.2.1 Regional Council	13
	3.2.2 District Council	13
	3.2.3 Consent status	13
4	ASSESSMENT OF ACTUAL AND POTENTIAL EFFECTS	15
	4.1 Permitted baseline	16
	4.1.1 Regional Plans	16
	4.1.2 Buller District Plan	18
	4.2 Additional consents.....	19
	4.3 Benefits/Positive Effects	19
	4.4 Construction Effects.....	21
	4.5 Social Effects	23
	4.6 Cultural and Heritage Effects	24
	4.7 Effects of Noise.....	28
	4.8 Effects of Ground Borne-vibration.....	29
	4.9 Visual Impacts and Effects on Landscape and natural character.....	30
	4.10 Effects on Terrestrial Ecology	34
	4.11 Traffic Effects	37
	4.12 Geotechnical Aspects	38

	4.13 Effects on Hydrology	40
	4.14 Effects on Freshwater Ecology	42
	4.15 Geochemistry & Water Quality.....	44
	4.16 Hazard Management	46
	4.17 Air Quality Effects	47
	4.18 Hazardous Substances Management.....	48
	4.19 Summary.....	48
5	STATUTORY ASSESSMENT	51
	5.1 National Policy statements.....	51
	5.1.1 National Policy Statement on Electricity Transmission (NPS ET).....	51
	5.1.2 National Policy Statement for Renewable Electricity Generation (NPS REG)	51
	5.1.3 Proposed National Policy Statement for Freshwater Management (NPS FM).....	52
	5.2 New Zealand Coastal Policy Statement 1994 (NZCPS)	52
	5.3 Regional Planning Documents.....	53
	5.3.1 West Coast Regional Policy Statement 2000 (RPS)	53
	5.3.2 Proposed Water Management Plan	57
	5.3.3 Proposed Regional Land and Riverbed Management Plan.....	58
	5.3.4 Regional Plan for Discharges to Land.....	59
	5.3.5 Regional Air Quality Plan.....	59
	5.3.6 Regional Coastal Plan for the West Coast	60
	5.4 Buller District Plan.....	61
	5.5 Other Relevant Matters.....	66
	5.5.1 Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007	66
	5.5.2 Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins, and Other Toxics) Regulations 2004.....	67
	5.5.3 National Biodiversity Strategy.....	67
	5.5.4 Te Runanga o Ngāi Tahu Freshwater Policy.....	68
	5.5.5 Ngāi Tahu (Pounamu Vesting) Act 1997	68
	5.5.6 Conservation Management Strategy	69
	5.5.7 National Energy Policy	69
	5.6 Resource Management Act 1991.....	69
6	PROPOSED CONDITIONS.....	80
	6.1 Management Plans	81
	6.2 Bonds.....	84
	6.3 Financial Contributions	86

6.4	Land Swap	86
6.5	Consent Duration	87
6.6	Lapsing Period	87
6.7	Building Act	87
7	CONCLUSION AND RECOMMENDATION	88
Appendix 1:	Consents Applied For and Compliance Assessment	i
Appendix 2:	Objectives and Policies	iii
	West Coast Regional Policy Statement	iii
	West Coast Regional Plans	xi
	Regional Air Quality Plan	xi
	Regional Plan for Discharges to Land	xi
	Proposed Regional Land and Riverbed Management Plan	xii
	Proposed Water Management Plan	xiii
	Regional Coastal Plan for the West Coast	xviii
	Buller District Council	xxi
Appendix 3:	HDL Proposed Conditions and our Comments	xxxvii
Appendix 4:	Section 92 Request and Information Received from HDL	xcvii
Appendix 5:	Technical Evidence in Support of Planners S42A Report	xcviii
	Dam Works	xcviii
	Freshwater Ecology	xcviii
	Geochemistry & Water Quality Issues	xcviii
	Geotechnical Aspects	xcviii
	Ground-Borne Vibrations	xcviii
	Historic Heritage	xcviii
	Hydrology	xcviii
	Landscape and Visual Effects	xcviii
	Noise	xcviii
	Terrestrial Ecology	xcviii
Appendix 6	Amendments to Submissions	xcix

1 BACKGROUND

1.1 PURPOSE OF THE REPORT

This report has been prepared under Section 42A of the Resource Management Act (RMA). The report reviews the application for resource consents lodged by Hydro Developments Limited (HDL) for its proposed Stockton Plateau Hydro Electric Power Scheme (HEPS) and addresses the relevant information and issues raised in relation to the proposal.

This report has been prepared by Rachel Clark, Senior Consent Officer for the West Coast Regional Council (WCRC) and Jane Bayley (Resource Management Consultant with Staig & Smith Ltd) on behalf of the Buller District Council (BDC). In addition, a consortium of consultants has been employed by the Councils to provide expert technical advice on the consent applications. The technical experts working within the consortium are listed in Appendix 5, along with their respective reports.

Although separate resource consent applications have been made respectively to the WCRC and the BDC, the consent applications will be heard together in a joint hearing. To assist that process, this report has been jointly prepared. Unless otherwise specified, the applications have been assessed and reported upon as one. Throughout the report, the authors express their own professional opinions.

It should be emphasised that any conclusions reached or recommendations made in this report are not binding on the Hearing Committee. It should not be assumed that the Hearing Committee will reach the same conclusion or 'decision' as the authors having considered all the evidence to be brought before it by HDL and submitters.

This report summarises the applications and submissions received. In all instances reference must be made to the original documents for further details.

We have read and understand the Code of Conduct for Expert Witnesses issued by the Environment Court in March 2005. The report presented is within our areas of planning expertise, except where stated, and we have taken into account information provided by other technical experts.

We have had confirmation from each of the technical experts that they too have also read and understand the Code of Conduct for Expert Witnesses issued by the Environment Court in March 2005.

1.2 CONSENTS SOUGHT

Forty nine resource consent applications have been lodged with the WCRC and BDC for the construction, operation and maintenance of a hydro-electric power scheme within the Stockton Plateau.

The Stockton Plateau HEPS will be located on the Stockton Plateau. The scheme will involve the damming of water behind two roller compacted concrete (RCC) dam structures. A number of small tunnels and weirs will be constructed to both capture and divert the source water to the two reservoirs.

Two main tunnels are to be constructed to provide the fall from the reservoirs to the powerstations located at Weka and Granity. The powerstations will be located within the tunnel structures, although an alternative option has been sought for an above ground powerstation at Weka, depending on geological conditions.

Once the water has passed through the Granity powerstation, it will be discharged via an ocean outfall pipeline and diffuser into the Coastal Marine Area (CMA).

The following is a summary of the applications only. A full list of the wording of all consent applications is contained in Appendix 1.

- To undertake geotechnical investigations by drilling core samples around the proposed dams, tunnels and powerstation locations.
- To disturb the beds of St Patrick Stream and Weka Creek to erect and maintain RCC dams and associated structures to create the Mt William and Weka reservoirs.
- To take, use and divert water from St Patrick, Darcy, Plover, Fly and T31 streams to create the Mt William reservoir.
- To take, use and divert water from Weka, Sandy and Upper Mine Creeks and Mangatini and A.J. Streams to create the Weka reservoir.
- To undertake earthworks and vegetation clearance to construct structures such as tunnels, canals, portals, intake structures, penstocks, roads, embankments etc. on the Stockton Plateau and at Granity.
- To disturb the bed of Granity Stream during construction and the ongoing maintenance of an overflow diffuser for discharge of Granity powerstation tailwater in emergency situations.
- To disturb, erect and occupy space in the CMA with an ocean outfall pipeline (micro-tunnel) and diffuser.
- To discharge tailwater to the CMA from the Granity powerstation via the ocean outfall pipeline and diffuser.
- To discharge tailwater from Weka powerstation to Weka reservoir.

- To discharge spill water from Mt William reservoir to T35 Stream and from Weka reservoir to Weka Creek.
- To discharge tailwater from the Granity powerstation into Granity Stream during emergency overflow situations.
- To discharge dust to air associated with the construction, operation and maintenance of the Stockton Plateau HEPS.
- Consents associated with the discharge of groundwater seepage and stormwater.
- Consents to construct and operate tunnels, canals, portals, intake structures, penstocks, roads, embankments etc. on the Stockton Plateau and at Granity.
- To use and store hazardous substances during the construction and operation of the project.
- The realignment of the haul road to Stockton Mine, around the perimeter of Weka reservoir.
- To construct, operate and maintain temporary and permanent powerlines between existing lines and substations located at the two powerstations, and to the erect telecommunication cables.
- To disturb and inundate the historic electric loco line.

There have been no formal changes to the proposal since notification. However, through the response to the Section 92 request, HDL advised that temporary powerlines are required to the construction sites at both Mt William and Weka dams.

1.3 PROCESS

The applications were lodged with WCRC and BDC on 13 November 2008 and were publicly notified on 12 and 13 December 2008, with submissions closing on the 30 January 2009.

The Councils jointly engaged Opus International Consultants Ltd to undertake independent technical audits of the applications. BDC also engaged Staig & Smith Ltd to provide planning evidence. These same experts have reviewed further information that has been supplied and have provided technical input during the preparation of this Section 42A report.

The technical experts have held discussions with HDL's technical experts throughout the process to date, including face to face meetings, on site meetings, email and telephone conversations variously. The planning officers and many of the technical experts undertook at least one site visit prior to preparing their initial technical audits.

Following the completion of the initial technical audits, a request for further information was sent to HDL on 19 March 2009, under Section 92 of the RMA. Further information was provided in response to that request on 9 April 2009. After discussions between the

Councils and HDL, further amendments were made by HDL to the response on 26 May 2009.

Some additional information on bryophytes and hydrology was provided by 3 June 2009. HDL has engaged an expert to undertake further studies on bryophytes in the reservoir footprints. The reporting on the conclusions of those studies was not completed prior to the writing this Section 42A report, and is to be provided by HDL either just prior to or at the hearing. No further information has been considered in this report that was received after 3 June 2009.

It is noted that the timeframe for processing the resource consents has at each stage been extended.

1.4 SITE AND LOCALITY

The majority of the infrastructure associated with the application is situated on the Stockton Plateau, between the Ngakawau Ecological Reserve and Solid Energy New Zealand's (SENZ) Coal Mining Licence (CML 37150), approximately 30km northeast of Westport.

The two dam sites will be located on tributaries of the Ngakawau River, being St Patrick Stream (Mt William Dam) and Weka Creek (Weka Dam).

The Mt William Dam will be located on St Patrick Stream, to the north of Mt William and Fly Creek access road. Four streams being T31, Fly, Plover and St Patrick Streams will flow into the Mt William reservoir. It is also proposed that Darcy Stream will be diverted via a tunnel into the storage reservoir. The reservoir formed by Mt William Dam will inundate an area of approximately 50 hectares. The inundation area will also flood part of the Mt William mine access road, which will be relocated to along the crest of the dam. To aid construction, the existing powerline to the Mt William mine site will be reactivated and a temporary spur line erected to the construction site.

The Weka Dam will be situated near the mouth of Weka Creek Gorge. Weka and Sandy Creeks will flow into the proposed Weka reservoir, along with flows diverted from Upper Mine Creek and Mangatini Stream. The reservoir formed by the Weka Dam will inundate an area of approximately 28 hectares, including part of the main haul road to Stockton Mine, which is proposed to be relocated to skirt the area of inundation. The reservoir will also inundate part of the Repo Basin walking track, and it is proposed to relocate the track along the crest of the dam.

The Mt William reservoir will be linked to the Weka powerstation by means of a tunnel approximately 3,850m long (the Stockton Tunnel) with its outlet discharging into the Weka reservoir. The Weka powerstation will either be located within the tunnel portal, or above ground, depending on the location of the Millerton Fault at the site. A new powerline is to be erected from the Stockton line to the Weka powerstation, from where there will be a temporary line to the Weka construction site.

Access to the sites within the Plateau is via Millerton and Stockton Roads and the SENZ haul road, which is often referred to as Burma Road.

The Weka reservoir will be connected to the Granity powerstation by a tunnel approximately 4,900m long (the Granity Tunnel). The Granity powerstation will be located

within the Granity Tunnel. The outlet/portal of the tunnel will be in the vicinity of the Granity museum, within the escarpment. A construction site for the Granity tunnel, powerstation and micro-tunnel will be located beside the Granity museum. Access to the Granity site will be via the Granity museum's access off Back Road and a new Heavy Commercial Vehicle (HCV) entrance off Torea St (State Highway 67), beside the War Memorial.

Tailwater from the Granity powerstation will be discharged via an ocean outfall pipeline and diffuser located some 600m offshore, in an approximate line with the Lyric Theatre at Granity.

An emergency overflow from the Granity powerstation is to be installed and would discharge to Granity Creek.

2 NOTIFICATION AND SUBMISSIONS

2.1 NOTIFICATION

The applications were notified in the Westport News on Friday 12 December 2008 and The Press and Greymouth Star on Saturday 13 December 2009. Submissions closed on Friday 30 January 2009.

2.2 SUBMISSIONS RECEIVED

A total of 50 separate submitters lodged submissions on the consent applications. Of the 50 submitters, 6 submitted on the applications received by BDC only, 12 submitted on the applications received by WCRC only and 32 submitted on both 'suites' of applications. In total, the WCRC received 44 submissions and BDC received 38 submissions. A summary of submissions is given below:

Status	BDC only	WCRC only	Combined	Total*
Neutral	1	1	4	10
Oppose	2	1	8	19
Support	3	9	20	52
Not Stated	0	1	0	1
Total	6	12	32	82

* When calculating total submissions, those who submitted to both Councils are counted as putting in two submissions.

An affected party approval form from New Zealand Railways Corporation trading as OnTrack was received and submitted with the application. It is noted that OnTrack have subsequently had a name change and are now called Kiwi Rail.

The WCRC also received an affected party approval from Holcim New Zealand during the submission period.

A late submission was received from the Energy Efficiency and Conservation Authority (EECA) on 23 February 2009, three weeks after submissions closed. The Consent Authorities were informed that EECA wished to lodge a submission prior to the close of the submissions, and HDL did not oppose the acceptance of the late submission. The late EECA submission was subsequently accepted by the Councils under Section 37 of the RMA and is included in the table above.

It is noted that there were a number of submitters who lodged identical or similar submissions with both Councils.

As at the 15th of July 2009, twenty-four submitters indicated they wished to be heard. Twenty-four do not wish to be heard and two submitters did not state whether they wished to be heard or not. A number of submitters have withdrawn their wish to be heard, however the content of their submissions remain as stated. Statements from those who have amended their submissions are attached in Appendix 6.

The Department of Conservation have withdrawn their wish to be heard in relation to the proposal, this is of interest given that the application includes a Restricted Coastal Activity and normally they would be present to provide advice to the Minister of Conservation's

representative on the Hearing Committee. The Department do note that they still have concerns about some aspects of the application, however have determined that the best avenue to pursue those issues is through its own internal processes, and in particular during the land swap process.

At the time of writing this report, no submitters had withdrawn their submission.

2.3 SUMMARY OF ISSUES RAISED

Summary of Submissions and Issues

Category	Matters raised
Environment	<ul style="list-style-type: none"> - Removes majority of AMD from Ngakawau River - Reduces need to use fossil fuels - Generally a low impact on the environment - Drilling of vents and access roads in the Millerton Ecological Area - Proposed mitigation measures go some way towards mitigating the effects of the proposal - The dams will not flood any ecologically sensitive areas - Loss of some high quality indigenous forest in dam footprints - Need to avoid introduction of weeds to area
Social	<ul style="list-style-type: none"> - Will create employment in the short term - A good supply of power brings people to the area - Disturbance of lifestyle particularly by construction - Effects of potential dam breach on community and other users - Security of site and storage of potential hazardous substances
Economics	<ul style="list-style-type: none"> - Increase in electricity supply will support growth - Will reduce transmission losses - Will benefit whole of West Coast - Project can be expanded in the future - Buller will be able to produce its own power - No evidence to support the generation quantities specified - Power costs may not be less as a result of scheme going ahead
Landscape/Amenity	<ul style="list-style-type: none"> - Avoids the need for new powerlines - Visual intrusion is low as much of project is underground - Landscape is already highly modified by coal mining - Direct views of tunnel vents and permanent access roads - Impacts from lighting at night - Removal of vegetation/scaring of landscape
Geotechnical	<ul style="list-style-type: none"> - Vulnerability of project to seismic events - Effects of dam breaches
Noise	<ul style="list-style-type: none"> - No noise from generation as all underground - Noise from blasting and construction activities - 24/7 operation of vehicles and drilling and blasting - Construction noise and vibration/liquefaction
Other Entities	<ul style="list-style-type: none"> - Part of scheme located on SENZ land and would require alteration to mining methods at significant cost - Need to formalise access to LINZ land - Ensure safe and efficient use of State Highway system
Water Quality/Ecology	<ul style="list-style-type: none"> - Will reduce the flows but increase quality and resulting increase in biodiversity - Will detrimentally affect the surface flows of Granity, Miller and Mine Creeks - Effects of dam breach - Effects on flows at Mangatini Falls - Need a micro invertebrate/entomological study to be undertaken - Concerned about quantity of surface water to be left in some of

	<ul style="list-style-type: none"> the streams - A saltwater wedge may get driven further upstream in the Ngakawau River due to decrease in freshwater outflow - Baseline data for freshwater ecology not adequate - Not enough information on the AMD aspects - Exclude upper St Patricks and Weka Creeks from proposal
Marine Impacts	<ul style="list-style-type: none"> - Discharge may affect Hector's Dolphins - Potential effects not really known - Discharges effects on marine life - Effects on mussels
Recreation – kayaking/rafting	<ul style="list-style-type: none"> - The improvement in water quality will make the Ngakawau River more enjoyable to paddle - The Ngakawau River is only paddled when in flood so the reduction in inflows will just mean the flood will need to be a little larger before the river can be paddled
Recreation - general	<ul style="list-style-type: none"> - Removal of public access to Repo Basin - Loss of conservation land - Need further details on Charming Creek Walkway realignment - Concern about picnic table located at the end of the Walkway - Will reduce river run for kayaking
Cultural/historic	<ul style="list-style-type: none"> - Will result in the loss of a section of the historic loco line - Disturbance to nationally important historic sites - Impacts on Millerton incline
Policy	<ul style="list-style-type: none"> - Will help to meet Kyoto Protocol and other climate change initiatives - Will contribute to NZES renewable energy target

A high proportion of the submitters support the application (63% of the submissions) noting common reasons, such as: the economic gains possible within the Buller District due to securing an electricity supply; the benefit of a reduction of transmission losses by producing electricity locally and embedding it into the local network; an increase in employment opportunities during the construction phase; the scheme being a renewable energy generation; and the removal of the majority of the contaminated AMD waters from historic coal mining on the Stockton Plateau from the Ngakawau River system.

A balanced evaluation of the submissions has been undertaken to ensure that the issues in the submissions are addressed, rather than the submissions being solely a numbers evaluation. This is important, because many submitters raised common environmental effects that are addressed, as far as possible, in terms of the available information in section 4 of this report and within the technical reports attached in Appendix 5.

3 STATUTORY FRAMEWORK

3.1 RESOURCE MANAGEMENT ACT 1991

3.1.1 Assessing resource consents under Part 6

When considering an application for resource consent and any submissions received, the Consent Authority must have regard to the matters listed in Section 104 of the RMA.

Section 104, Consideration of Applications, states:

- (1) *When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to—*
 - (a) *Any actual and potential effects on the environment of allowing the activity; and*
 - (b) *Any relevant provisions of—*
 - (i) *A national policy statement;*
 - (ii) *A New Zealand coastal policy statement;*
 - (iii) *A regional policy statement or proposed regional policy statement;*
 - (iv) *A plan or proposed plan; and*
 - (c) *Any other matter the consent authority considers relevant and reasonably necessary to determine the application.*

Section 104(2) states that when forming an opinion of the actual and potential effects on the environment, Consent Authorities may disregard an adverse effect of the activity on the environment if a regional or district plan permits an activity with that effect. The permitted baseline evaluation is provided in section 4.1 of this report.

Section 104(3)(b) states that when considering an application, a Consent Authority must disregard any effect on a person who has given their written approval to the application. An affected party approval form, from OnTrack (New Zealand Railways Corporation), was received as part of the application. At the time of writing, the WCRC had received an affected party approval from Holcim New Zealand Ltd. No further written approvals have been received.

Sections 104A to 104D set out information relating to the determination of applications. The status of the activities is set out in Appendix 1 and discussed further in section 3.2 of this report. As can be seen, the application includes a variety of activities that require a mixture of controlled, discretionary, restricted discretionary and non-complying consents.

Under Section 104A, a Consent Authority must after considering an application for resource consent for a controlled activity,-

- (a) *Grant the resource consent, unless it has insufficient information to determine whether or not the activity is a controlled activity; and*
- (b) *May impose conditions on the consent under section 108 for matters over which is has reserved control in its plan or proposed plan.*

After considering an application for a resource consent for a discretionary activity or non-complying activity, under Section 104B, a Consent Authority -

- (a) *May grant or refuse the application; and*
- (b) *If it grants the application, may impose conditions under section 108.*

When considering a restricted discretionary activity under Section 104c, a Consent Authority -

- (a) *Must consider only those matters specified in the plan or proposed plan to which it has restricted the exercise of its discretion; and*
- (b) *May grant or refuse the application; and*
- (c) *If it grants the application, may impose conditions under section 108 only for those matters specified in the plan or proposed plan over which it has restricted the exercise of its discretion.*

Section 104D outlines the process required for making a decision of non-complying activity. Section 104D(1) sets a gateway test for non-complying activities which consent authorities must consider prior to undertaking an assessment under Section 104. The gateway test is an 'either or' test, meaning that if an application passes either gateway, it may proceed to an assessment under Section 104. It does not require both tests to be met.

The first test requires the Hearing Committee to consider whether the effects of the activity are minor. When considering whether the effects are minor, the Committee may take into account proposed mitigation, however this does not allow positive effects or offsetting/compensation benefits to be considered, unless they are part of the direct mitigation.

The second gateway test is to consider whether the application is *not contrary to* (consistent with) the objectives and policies of the relevant plan. The Buller District Plan is the main plan for consideration as this is the plan under which the application is a non-complying activity.

- (1) *Despite any decision made for the purpose of section 93 in relation to minor effects, a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either—*
 - (a) *The adverse effects of the activity on the environment (other than any effect to which section 104(3)(b) applies) will be minor; or*
 - (b) *The application is for an activity that will not be contrary to the objectives and policies of—*
 - (i) *The relevant plan, if there is a plan but no proposed plan in respect of the activity; or*
 - (ii) *The relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or*
 - (iii) *Both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.*
- (2) *To avoid doubt, section 104(2) applies to the determination of an application for a non-complying activity.*

Sections 105 and 107 also require particular attention to specific matters relevant to some applications. For discharge permits, under Section 105(1), the Hearing Committee must also take into account (paraphrased);

- The nature of the discharge and the sensitivity of the receiving environment;
- The applicant's reason for the proposed choice; and
- Possible alternative methods of discharge, including into other receiving environments.

For discharge permits, under Section 107(1) consents cannot be granted if all or any of the following effects are likely to arise (paraphrased);

- Conspicuous oil or grease films, scums or foams or flutable or suspended material;
- A conspicuous change in colour or visual clarity;
- Objectionable odour emissions;
- Water becomes unsuitable for farm animals to consume; or
- Any significant effect on aquatic life.

However under Section 107(2), the above effects may be allowed by consent if the Hearing Committee is satisfied that any of the following circumstances apply (paraphrased);

- There are exceptional circumstances that justify granting the permit;
- The discharge is of a temporary nature;
- The discharge is associated with necessary maintenance work: and
- It is otherwise consistent with the purpose of the RMA to grant consent.

None of the above special circumstances exist in regard to this application.

Section 107(3) provides for conditions to be staged to meet any requirement of Section 107(1).

Section 117(3) of the RMA requires an application for a Restricted Coastal Activity to be notified by the Regional Council in accordance with Sections 93(2) and 95 of the RMA. Under the regional plans, a Restricted Coastal Activity is required for the ocean outfall pipeline and diffuser. This application was notified as required, and the Minister of Conservation was forwarded a copy of the application, therefore the requirements of this section of the RMA have been met.

Section 117(6) requires the Hearing Committee, which is to include one person appointed by the Minister of Conservation and to include a Regional Councillor, to have regard to the restrictions in Section 119(6), to make a recommendation on the application to the Minister of Conservation after exercising any of the powers, duties, rights, and discretions set out in Sections 91, 92, and 99 - 108.

Section 108 of the RMA outlines the circumstances in which conditions of consent can be applied to a consent application. Matters relating to conditions of consent are discussed in section 6 of this report, and draft conditions are set out in Appendix 3.

3.1.2 Purpose and Principles of the RMA as set out in Part 2

Section 104 requires that the applications be considered against the provisions of Part 2 of the RMA, which specifies the purpose and principles of the RMA. The overarching purpose of the RMA is outlined in Section 5 which states:

- (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.*

This section and section 5 of the report identifies and analyses the relevant statutory documents. The report is structured such that national, regional, district and then other relevant matters are discussed, concluding with an analysis of Part 2 of the RMA.

The other sections of Part 2 that require varying levels of consideration are Section 6 Matters of National Importance, Section 7 Other Matters and Section 8 Treaty of Waitangi. These sections are stated below.

In achieving the purpose of the RMA, 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 as set out in Section 6:

- (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:*
- (g) *The protection of recognised customary activities.*

Section 7, Other Matters, is included in Part 2 as follows:

In achieving the purpose of the RMA, all persons exercising functions and powers under it in relation to managing the use, development, and protection of natural and physical resources, shall **have particular regard to—**

- (a) *Kaitiakitanga:*
 - (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:*
 - (e) *Repealed:*
 - (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:*
 - (i) *The effects of climate change:*
 - (j) *The benefits to be derived from the use and development of renewable energy.*

Section 8, Treaty of Waitangi, completes Part 2, and reads:

*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).*[emphasis added]

3.2 RELEVANT PLANS AND STATUS OF APPLICATIONS

3.2.1 Regional Council

There are six relevant regional planning documents being the:

- (i) Regional Policy Statement (RPS)
- (ii) Proposed Water Management Plan (PWMP)
- (iii) Proposed Regional Land and Riverbed Management Plan (PRLRMP)
- (iv) Regional Coastal Plan for the West Coast (RCP)
- (v) Regional Plan for Discharges to Land
- (vi) Regional Air Quality Plan (RAQP)

The Transitional Regional Plan has largely been superseded and is not considered relevant. A list of the consents required and relevant rules of the regional plans is contained in Appendix 1.

The overall status of the proposal is as a **discretionary** activity and in terms of the ocean outfall pipeline is a **Restricted Coastal Activity** under the regional plans. There are no non-complying activities for this application under the Regional Plans.

3.2.2 District Council

At the district level, the Buller District Plan (BDP) is the only planning document. A compliance assessment of the Stockton Plateau HEPS against the rules of the BDP is contained in Appendix 1. Differing elements of the HEPS that have been applied for have different statuses, i.e., the dam and associated construction activities, and destruction of the loco line are **non-complying**; and the powerline is **discretionary**; and all indigenous vegetation clearance is a **restricted discretionary** activity.

3.2.3 Consent status

As noted in section 3.1.1 above, discretionary activities must be decided in accordance with section 104B of the RMA, that is, consent may be granted or refused and, if granted, conditions may be imposed under Section 108.

Restricted discretionary activities must be decided in accordance with Section 104c of the RMA. Only those matters specified in the Plan to which discretion has been restricted can be considered, and may be granted or refused. If granted, conditions can be imposed under Section 108 for only those matters of discretion.

Non-complying activities must be decided in accordance with Sections 104B and 104D of the RMA. In terms of the latter, consent for a non-complying activity may only be granted by the Council if it is satisfied that the adverse effects will be minor or the application will not be contrary to the objectives and policies of the BDP.

Restricted Coastal Activities must be decided in accordance with Section 117 of the RMA, that is, a recommendation shall be made by the Hearing Committee to the Minister of Conservation. The Minister of Conservation has the power to grant or refuse the application and may impose conditions of consent in this instance.

While it could be possible to address each consent individually in terms of their activity status, the proposal relies on the proposed dam structures which are non-complying. Also the proposal cannot be split into stand alone aspects to enable the proposal to proceed. It is therefore considered appropriate practice to 'bundle' the consents together, making the overall status of the applications to the District Council a **non-complying** activity and the applications to the Regional Council a discretionary activity and Restricted Coastal Activity.

It is however noted that there is one aspect of the application which could be unbundled, and that is the geotechnical investigations of the application site, which does not rely on any other aspects of the application, and which is a standalone activity prior to any construction. The geotechnical investigations are a **discretionary** activity.

4 ASSESSMENT OF ACTUAL AND POTENTIAL EFFECTS

Section 88 of the RMA requires the applicant to make an assessment of any actual or potential effects that the proposed activity may have on the environment and the ways in which any adverse effects may be mitigated. Section 88 requires that any such assessment shall be in such detail as corresponds with the scale and significance of the actual and potential effects that the activity may have on the environment.

It is recognised that through the course of processing these applications, HDL has been undertaking additional work in relation to the application, along with consultation with submitters.

The information available to us at the time of writing this report was:

- The initial application, AEE and supporting documents lodged,
- A request for further information under Section 92 of the RMA was served on the applicant on 19 March 2009. Further information was provided in response to that request on 9 April 2009. After discussions between the Councils and HDL, further amendments were made to the S92 response on 26 May 2009. Some final information on bryophytes and hydrology was provided by 3 June 2009. No further information has been considered in this report that was received after that date.

The Section 92 questions and answers are provided in Appendix 4. It is noted however, that some of the information requests made by the Councils have not been adequately addressed.

Under the RMA, decision-makers may decline consent if there is insufficient information to be able to make an assessment of the effects of the activity. The Applicant was advised that it was the reporting officers' preference that all Section 92 responses were provided prior to organising a hearing, so that all effects could be considered. HDL agreed with this process, however after meeting with the WCRC's Consents & Compliance Manager in early May, requested that the Councils proceed through to a hearing, based on the level of information provided to date.

As such, the following assessment of effects identifies a number of aspects which require further assessment to be undertaken. It is expected that HDL will address these aspects at the hearing, so that the Hearing Committee may be able to consider the full complement of effects. Where this information is not provided, an assessment has been made as to the implications of the lack of information.

To enable the reporting officers and the Hearing Committee to consider the effects of the proposal, the Councils have obtained the advice of technical experts. The advice has been recorded in a number of technical review reports, which form part of this report and can be found in Appendix 5. The following technical reports have been prepared:

1. Dam Works
2. Freshwater Ecology
3. Geochemistry & Water Quality Issues
4. Geotechnical Aspects
5. Ground-Borne Vibrations
6. Historic Heritage
7. Hydrology
8. Landscape and Visual Effects

- 9. Noise Assessment
- 10. Terrestrial Ecology

The approach taken by the technical reviewers in their reports, and in this report, is to focus on those matters where there are any unsolved issues, differences of opinion or matters not adequately covered in the AEE. That is, it is not the intention to extensively assess or to present an opinion on the many matters that have been adequately addressed in the AEE and agreed with by the reporting officers, but to concentrate on those matters that warrant further development.

4.1 PERMITTED BASELINE

Section 104(2) of the RMA provides that a Consent Authority may disregard an adverse effect if the statutory plans permit an activity with that effect.

Case law has established that the “permitted baseline” test relates to the effects of non-fanciful, hypothetical activities that could be carried out as of right under the various Plans, as well as any existing lawfully established activity on the site. This represents a useful starting point against which the actual and potential effects of a proposed activity or development should be measured.

The application of Section 104(2) is an optional consideration of the Hearing Committee however we see no reason why this discretion should not be exercised in this case.

In terms of the definitions of the RMA, only rules in operative plans may be taken into account as the permitted baseline considerations. However, Section 19 of the RMA provides that rules can be treated as operative if they have passed beyond the stage of the statutory processes where changes can be made to them.

4.1.1 Regional Plans

The WCRC proposed plans are at a stage under Section 19 of the RMA that the rules are deemed operative. For these applications, the permitted baseline includes the following:

Proposed Water Management Plan (PWMP)

- The mixing zones for discharges of water to water allow for 12 times the width of the receiving water body, or 200 metres (whichever is the lesser), subject to conditions consistent with Section 107(1) conditions within the RMA.
- A certain level of discharge that would comply with Section 107(1) conditions.
- The permitted catchment size upstream of a dam is 50 hectares; the catchment area of the Ngakawau River to be captured by the two proposed dams is over 70 hectares of which over 30 hectares is sourced from sub-catchments. (These rules are applicable for the PRLRMP).
- The permitted water depth at a dam face is 3 metres. The water depth in both dams will be greater than 3m. In addition, the total volume of water stored by each dam will exceed the permitted allowance of 20,000m³.
- Temporary and permanent diversions of water proposed which will not retain the same (permitted) natural course and the duration of diversion will exceed the permitted 2 weeks or will be permanent in nature. These diversions of water will include mostly contaminated water.

- Water takes from the Granite escarpment in order to supply an alternate water supply to the residents should supply be interrupted has been confirmed by HDL to meet the permitted rate of take of up to 2 litres per second up to a maximum volume of 25,000 litres per day.
- Minor water takes in order to supply the concrete batch plants will also meet the permitted rate of take of up to 2 litres per second up to a maximum volume of 25,000 litres per day.

Proposed Regional Land and Riverbed Management Plan (PRLRMP)

- The erection of bridges, fords and culverts exceed all the permitted rules of sizes and levels above riverbed. For example the watercourse in which a culvert is installed cannot exceed a 5 metre width, and the underside of any bridge must be at least 600mm above the level of the river's natural bank level, and no piers within the riverbed itself.
- Earthworks and vegetation clearance do not meet the permitted rules. Clearance of vegetation within riparian margins will exceed limits (varying proximity and slope angle in riparian margins) and potentially impair the visual clarity of the water and there is potential for soil and debris to enter the lake and riverbed. Vegetation will be cleared beyond the river margins that are more susceptible to erosion.

Regional Coastal Plan for the West Coast (RCP)

- The occupation of space in the CMA by the ocean outfall pipeline will exceed the permitted activity rule.
- Other than to erect or place a maimai or a telecommunication or radio-communication facility, the erection or placement of a structure is discretionary activity and in this case, also a restricted coastal activity.
- The removal of material or disturbance of the foreshore and seabed is only permitted in small quantities, for maintenance activities, the burying of dead whales or mining when using a shovel and riffle box. Clearly the activities of constructing the micro-tunnel in the CMA are on a large scale and involve significant disturbance of the foreshore and seabed.
- For the discharge of water to the CMA to be permitted it would have to be free of contaminants and this is clearly not the case with AMD water discharge.

Regional Plan for Discharges to Land (RPDL)

- During the construction phase, stockpiling of road materials and discharge of contaminated stormwater to land will exceed the minimum requirements.

Regional Air Quality Plan (RAQP)

- During the construction phase, stockpiling and earthworks will result in the discharge of contaminants, namely dust, into the air. During construction, gravel aggregate crushing and screening may exceed discharge limits along with the discharge to air from the sub-station tanks i.e. for diesel. There will also likely be discharges to air from the ventilation systems to the tunnels during construction. The location of the works are unlikely to cause objectionable or offensive discharges and the effects associated with the dams and construction sites are likely to be within properties that HDL are occupying, or have authorisation from the landowner to occupy.

As considered above, the proposed Stockton Plateau HEPS does not comply with many of permitted regional activity rules and the overall proposal is outside of the scale and range of activities that the plans 'contemplated' that could be permitted. It is our opinion that, apart from the permitted activities for water takes, the proposal is so different to the expectations of the plans' permitted activities that no regional permitted baseline considerations are relevant.

4.1.2 Buller District Plan

The BDP is an operative planning document. The Plan has undergone a number of amendments recently, which were notified in 2004 and which were made operative on 25 May 2009. When considering the effects of the proposal in relation to the rules of the Plan, it is the most up to date Plan which the activity is being assessed against.

The BDP permits temporary activities incidental to building and construction limited either to the duration of the project or a period of 12 months, whichever is the lesser. The duration of activities occurring within the construction areas at the two dam sites and at Granity therefore do not comply with the permitted rules.

The Plan permits open drains for the conveyance of water. The side drains around the construction areas to direct 'clean' surface water is permitted. In addition, it is permitted for stormwater run-off from buildings to be directed to a watercourse within the property, or to an approved drain for that purpose. Discharge of water must however be considered under the regional plans.

As a general rule for infrastructure, it is permitted to install pipes and culverts for the conveyance of water or sewage and necessary incidental equipment. Therefore the micro-tunnel may be considered to be a permitted activity, although at a diameter of 2m, it is larger than generally installed for water reticulation. Compliance with the permitted rules however requires that the installation of the micro-tunnel has no adverse effects on historical sites.

The larger Stockton and Granity tunnels, although they are being used to convey water, are also being used for extracting material to be used within the RCC dams. These tunnels are considered to be beyond the scope of a conveying tunnel and are considered to be similar to a mining activity, which is a restricted discretionary activity.

Normal maintenance and replacement works on existing formed roads within the legal road reserve, including works related to improvement or realignment of the road are permitted. Therefore works to upgrade the vehicle crossings to cater for HCVs are a permitted activity. Realignment of the SENZ haul road however is not a permitted activity, as this is not located on road reserve. Consent has been sought for this.

Activities on the surface waters of lakes are permitted provided other requirements of the Plan are met. The installation of log booms in the reservoirs will therefore comply with the permitted rules. The structures within the reservoirs, such as intake structures, are considered to be buildings and exceed the height requirements, thus do not fall into this category.

The proposed construction will result in staff and transportation trucks requiring parking. HDL believes there to be adequate room on site at the various construction sites to cater for the number of parks required. Little detail has been provided regarding the layout of construction sites, however, given the number of staff, it is expected that the proposal will meet with permitted parking requirements.

The above BDP permitted activity analysis demonstrates only that some parts of the overall proposal are permitted. Other parts are quite different to the activities and effects that the BDP permits. Thus we consider that the permitted baseline is not particularly relevant to aspects of the proposal where land use consents are required.

4.2 ADDITIONAL CONSENTS

As with any large scale project, in the refinement of design and preparation for construction, additional consents may be required. This has been acknowledged in the Section 92 responses (Appendix 4) by HDL.

While a Section 91 assessment has been undertaken based on the information contained within the application, the potential nature and number of those consents is not anticipated as being particularly large or particularly complex. Thus there is no reason to defer processing the application on the basis of the need for any as yet unidentified applications.

As noted in section 1.2 above, additional consents are now required for temporary powerline spurs to the Mt William and Weka construction areas.

4.3 BENEFITS/POSITIVE EFFECTS

Under Section 5(2) of the RMA, sustainable management includes managing the use, development and protection of natural and physical resources in a way that enables communities to provide for their social, economic, and cultural wellbeing and for their health and safety. The efficient use and development of natural and physical resources is also a relevant consideration under Section 7(b).

HDL considers the proposal has a number of benefits, both at a national level, regional and local level. They consider that the HEPS is consistent with the Government's stated energy strategy of ensuring the utilisation of renewable resources for energy generation at a national level as an alternative to fossil fuels, assisting the government in achieving their climate change objectives as per the Kyoto Protocol.

On a regional basis, the proposal will increase the West Coast region's electricity generation capacity by up to 240GWh per annum. The proposal is also identified as a benefit towards the continued growth of industries and businesses within the region due to securing electricity supply and reducing reliance on the national grid.

By embedding the electricity into the local network, the proposal will minimise transmission losses, thereby reducing costs to consumers.

HDL also notes an economic benefit to the local community. They expect that an estimated 50 jobs will be directly associated with the construction, although it is not certain how many will be locally sourced personnel. HDL also estimates that approximately \$200M will be spent within the Buller District over a 4-5 year construction period.

However, there has been no evidence provided to make an informed assessment of whether the scheme is efficient and an economically viable option for the site. Of concern with the proposal is whether it is efficient or economic to have two of everything, being two dams, two tunnels, two powerstations and two substations. Thus the potential importance of the positive effects claimed in support of the HEPS cannot accurately be determined. We do note that HDL are only likely to proceed with giving effect to the proposal if it is economic viable.

In terms of positive effects on the environment, HDL state that the main benefit of the proposal is that the reservoirs will capture up to 95% of the tributaries of the Ngakawau River affected by AMD contamination from coal mining activities on the Stockton Plateau. This will improve the water quality within the lower Ngakawau River and its effects on the natural character and the life supporting capacity of aquatic ecosystems in the Ngakawau River is discussed below. It is noted however that the AMD waters that come from the Stockton Mine are being progressively cleaned up as required by SENZ's CML and discharge consent conditions. As such, the degree of environmental benefit may be overstated, as these claims by HDL are if SENZ do not comply with their conditions.

HDL also asserts benefits on the Hector and Ngakawau communities by reducing the flood risk for the townships. This is also discussed further below. Again, it is uncertain as to the degree of benefit, as the proposed dams will raise the level of potential risk in the unlikely event of a dam breach.

The proposal will have limited benefits for recreation in the area. The proposal will result in the walkway to Repo Basin being relocated around the Weka reservoir, ensuring access is maintained. HDL is also offering to create a walkway between the two reservoirs. This however is dependent on DoC and SENZ agreeing to the proposal, and there will possibly be a delay in the implementation of any such walkway until after mining ceases. The proposal will also reduce the flow of the Ngakawau River, reducing the number of days that the river may be used for white water activities. Therefore assessing the benefits to recreation is difficult.

The HEPS will assist in improving interpretation of historic interest in the area, and presents an opportunity to recover archaeological information on the mining and industrial life on Stockton Plateau, and the social and domestic life at Granity associated with mining operations that may not otherwise be recovered. Also, it will improve the knowledge and understanding of the historic landscape and interpretation of the history of the Stockton Plateau area.

Part of the proposal includes, as possible mitigation, a land swap with DoC. It is proposed that the area within the Stockton Plateau that is affected by the proposal and is within the Department's estate (being the reservoir areas, tunnel corridors and diversions), shall be swapped for 14ha of lowland coastal indigenous forest between Pines and Smith Corners at Fairdown (Lot 2 DP 361787). HDL have not provided an assessment of the vegetation or habitats within the proposed land swap site, so it is difficult to assess the benefits, however it is recognised that protection of lowland coastal forest is important to the District.

A number of the submitters, noted similar benefits of the proposal as the Applicant. Of note, the common benefits considered by submitters were based on the economic gains possible within the Buller District due to HEPS securing an electricity supply. Similarly, was the benefit of a reduction of transmission losses by producing electricity locally and embedding the electricity into the local network. Submitters noted the benefits of the increase in employment opportunities during the construction phase.

Submitters also supported the proposal in terms of the project being a renewable energy generation project. They also supported the utilisation of the AMD waters from historic coal mining on the Stockton Plateau and the subsequent removal of the majority of the contaminated waters from the Ngakawau River system.

4.4 CONSTRUCTION EFFECTS

The application contained little detail on the effects of construction activities. Instead it is proposed to leave the details of construction to the Construction Management Plan.

Lighting of the construction areas will exceed the levels permitted at the boundary of the construction areas within the reservoirs which will be operated 24 hours a day, albeit that the sites are located away from residential activity. At Granity there will be security lighting around the site and at the various operational sites, such as the Jacking Station. Lighting however would require positioning such that it did not distract road users, in particular along Torea Street. Lighting has the potential of effecting not only the community, but also fauna, and needs to be directed in such a manner so as to reduce the glare from the site.

It is proposed that the extraction of the Stockton and Granity tunnels and the construction of the dams will occur 24 hours a day. Work within the Granity construction site is proposed to be limited to the hours of 7.30am til 6pm, although it is uncertain whether this will include the tunnelling of the micro-tunnel which is dependent on new sections of pipe being inserted at the Jacking Station. Blasting will be limited to between 9am and 5pm. Transportation of material extracted from the Granity tunnel will only occur during the day shift, presumably from 7.30am til 6pm.

Noise of construction will exceed the levels permitted in the BDP at the site boundaries. Due to a lack of information on the receiving environments, and the level of noise anticipated by the various activities during construction, the level of effects are unable to be fully assessed, in particular for the Granity construction area. This is discussed more fully in section 4.7.

Traffic movements during construction will vary. There will be two shifts of workers per day. HDL does not propose putting on transportation for workers, leaving this up to individual staff, however traffic is expected to be light vehicles. Traffic movements associated with the construction also include transportation of goods to the various sites, such as offices, machinery, pipes, hazardous substances and plant. Additional traffic movements are expected at the Granity construction site, being the removal of material from the tunnel, which will be transported to the dam sites.

Issues in relation to construction on the Plateau are in the cumulative effects of heavy vehicles on the Stockton Road, from the Millerton township intersection to the haul road. This road is currently substandard for the types of HCVs using the road. Additional heavy vehicles will exacerbate this. Within the Stockton Plateau, traffic will be required to comply with SENZ's Traffic Management Plan. HDL has not provided a copy of this plan for consideration. It is not certain whether the TMP includes provisions for traffic outside of SENZ's CML.

At Granity, two vehicle crossings are proposed, one from Back Road, and the other from Torea Street. The former is to be used for light vehicles only, and will be permanently retained for the ongoing operation and maintenance of the Granity powerstation, depending on access arrangements. The latter crossing shall be for all HCVs during the construction of the site. The Torea St access is to be decommissioned once the Granity powerstation is commissioned.

Dust from the construction sites will require control. In particular access roads will be required to be maintained to reduce nuisance dust emissions at Granity.

In a response to further information, HDL advised that temporary powerlines will be required during the construction phase. It is proposed for the Mt William construction area, that the existing powerline that served the former Mt William mine will be utilised, with a temporary spur line being erected to the construction area. This will require the line being upgraded by way of replacing poles as required and re-activating the line. HDL has not provided any details as to the location of these lines. For the Weka construction area, a temporary spur line from the Weka powerstation will be required, approximately 1km long. The line will be located within the footprint of the reservoir.

HDL proposes to store and use a number of hazardous substances during construction. These will be located within the construction areas during construction. The applicant has stated that hazardous substances will be transported, stored and used in accordance with the Hazardous Substances and New Organisms Act 1996 (HSNO) requirements.

The Applicant has indicated that they propose to have an explosives magazine on site. Details of the location of such a facility will be required to be provided to Council to consider setbacks, and to update the hazardous substances storage register. It is expected that a magazine will only be required during the construction phase of the project.

The proposed Construction Management Plan condition requires HDL to provide the details of the effects, and what actions will be taken to manage the actual or potential effects of construction. While this is an acceptable practice, the lack of knowledge until the design and construction methodology is finalised makes an assessment of the effects under the RMA more difficult. In addition there may potentially be changes to the Construction Management Plan during the construction period, which would require further certification by Councils. To ensure that the Construction Management Plan is effective, specific conditions setting targeting are required.

4.5 SOCIAL EFFECTS

Social effects are sometimes hard to determine, as they are often based on perceptions. The submissions however identified a number of social effects that affect the local community, some positively and others negatively.

The main social effect expected from the proposal is positive, being the economic benefits of the proposal, in terms of potential reduced electricity costs albeit this is dependent on the reduced costs being forwarded on by Buller Electricity Ltd (BEL), security of supply resulting in growth of industry and employment during construction.

Another important social effect identified by the submitters was the perceived benefits of improving water quality by taking 95% of the AMD contaminated waters from the Ngakawau catchment. Alongside this however was a level of uncertainty as to how this would affect the coastal ecology. It is noted however that SENZ are required to improve water quality under their CML and discharge consents. It is therefore uncertain whether the proposal will have such large environmental benefits as suggested.

Other social effects identified were more negative. The effects to the ecology on the Stockton Plateau, in particular the effect on habitat of flora and fauna on the plateau and the cumulative effects the project would have with the mining activities occurring on the plateau was identified as being an issue. The changing landscapes, both at Granity and on the Plateau, were also identified.

The construction effects, such as noise, vibrations from tunnelling, lighting and traffic on the Granity and Millerton communities were perceived as being negative social effects, along with wanting to ensure access was retained to the Repo Basin. As a result of the latter, HDL have amended the application to include access around the site both during construction and operation of the proposal. In terms of the former, HDL are proposing limiting construction activities to normal working hours.

Social effects not identified by submitters include the remote possibility of dam breach. Should such an event occur, the effects on the communities of Ngakawau and Hector would be greater than current under natural operating regimes. HDL has not addressed this issue in sufficient detail.

The communities of Granity, and to a lesser extent Millerton, Hector and Ngakawau, will experience a range of negative effects during the construction of the HEPS. Given that the impacts are not able to be avoided, ways to create offsetting or compensatory benefits for these communities during the construction phase should be actively pursued by the applicant.

Another social effect is the health risks resulting from exposure to electric and magnetic fields (EMF) from power lines. All alternating electric currents generate electric and magnetic fields. The electric field is proportional to the voltage, which can be considered as the pressure with which electricity is pushed through the wires. The magnetic field is proportional to the current, being the amount of electricity flowing through the wires. The direction of the current, and therefore that of the magnetic field, changes 50 times per second (that is, at 50 Hz).

The International Commission on Non-Ionising Radiation Protection (ICNIRP) establishes guidelines to protect public and occupational health, which have been adopted by the Ministry of Health as suitable for application. The ICNIRP Guidelines are also cited in the National Policy Statement on Electricity Transmission. This guideline should be applied as a condition, if consent is granted for the overhead power line and substation.

As well as EMF, power lines involve a range of potential electrical phenomena. The New Zealand Electrical Code of Practice for Electrical Safe Distances sets minimum safe electrical distance requirements for overhead electric line installations and other works associated with the supply of electricity from generating stations to end users. The minimum safe distances have been set primarily to protect persons, property, vehicles and mobile plant from harm or damage from electrical hazards. The minimum distances are also a guide for the design of electrical works within substations, generating stations or similar areas where electrical equipment and fittings have to be operated and maintained. This code of practice should become a condition of consent.

4.6 CULTURAL AND HERITAGE EFFECTS

Cultural

The RMA requires each application to be considered in terms of the impact (if any) an application will have on the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga, and on the protection of historic heritage from inappropriate subdivision, use, and development. HDL has considered this, and has consulted with the papatipu runanga, Ngati Waewae.

The issues raised by Ngati Waewae, were in terms of the use of the water, and its cultural impact, rather than effects on any heritage sites. The adverse cultural impact is in diverting the water from the Plateau and artificially conveying the water directly to the coast, instead of allowing the waters to flow off the Plateau naturally. The proposal effects the mauri (defined as the life principle, special nature, a material symbol of a life principle, source of emotions) of the place and awa (water).

Ngati Waewae does acknowledge that removal of AMD waters would presumably improve quality of the balance of the waters in the Ngakawau River.

The correspondence from Ngati Waewae included in the attachments to the application, noted that Ngati Waewae were proposing to undertake a Cultural Impact Assessment (CIA) for HDL, which was to accompany the application. This has not been received. As such, it is not possible to consider the effects the proposal will have on cultural values.

HDL has provided a copy of SENZ's CIA that was prepared for the Cypress Mine, in response to a request for further information. This CIA was created for the mining operation, and the recommendations are not easily drawn down for the current proposal.

It is noted that the application was served on five iwi groups associated with the Buller District. No submissions were received from iwi.

Heritage

The Stockton Plateau is a highly modified environment, with evidence of coal mining dating from the late nineteenth century to today. The continuous mining operations on the Plateau portray how mining processes and technologies have evolved over time within New Zealand.

The creation of the two reservoirs and associated tunnels and infrastructure for the generation of electricity will result in additional physical impact on this cultural environment. Some of the proposed works will result in direct damage and destruction of the historic remnants of past mining activities.

At Granity, there are a number of registered historic sites located in the vicinity of the portal and construction site. These include the coke ovens/kilns, the Granity Museum which was formally the Granity Railway Station and the State Mine Store, the Granity Public Library and the war memorial. In addition, old survey plans show a number of structures around the base of the Millerton Incline including the District Manager's house, the remains of which may be uncovered during construction of the access ramp and emergency overflow.

HDL commissioned an assessment on the effects of the proposal on the archaeological heritage of the proposal. The assessment focused on the electric loco line, which was concluded by Ms Watson to be nationally significant, the township of Tintown (also referred to as Darlington), Fly Creek mine and the Granity bins which have been demolished. No assessment has been undertaken on effects on the built heritage and there have been no investigations undertaken at the Granity construction site.

The proposal will have three main effects on heritage within the application area. The proposed construction activities will have the potential of damaging or destroying mining remnants, both on the Plateau and at Granity. HDL has noted in particular that parts of the loco line will be destroyed through the construction of the haul road around the exterior of Weka reservoir.

Another effect is the flooding of heritage sites, both by Mt William and Weka reservoirs. There will be two types of flooding effects. The initial will be where heritage sites are permanently flooded by the reservoir, while another type of flooding will be an intermittent flooding of items, caused by the fluctuation of the reservoir levels. HDL has not provided details about the operating levels, so it is difficult to determine how many of the sites will be permanently or intermittently flooded. The latter has the potential of causing the most damage over a short period of time, as the items and the soils around which they are located are intermittently saturated and dried out. It is of note that the loco line will be affected by intermittent flooding.

As part of the project, HDL is proposing a 2mØ ocean outfall pipe from the Granity powerstation to 600m off shore. The final location of the micro-tunnel is dependent on geotechnical investigations however the application shows that the tunnel will be within close proximity, if not beneath, the registered Category II Granity Library. No assessment has been undertaken as to the structural stability of the library to consider whether the proposal will have any effects on the building. Possible effects may be from vibrations of tunnelling or possible subsidence.

Associated with tunnelling activities, is the possibility of blast discharge and vibrations from construction of the Granity tunnel and powerstation. Within close proximity to the portal are other heritage items, being the Granity museum and the coke ovens/kilns.

HDL has offered as part of their conditions that the buildings/structures will be assessed and monitored in relation to vibration effects from micro-tunnelling. Ms Barr, the heritage expert for the Councils, accepts that a base line inspection of the condition of the structures (the Granity Library, the War Memorial, the State Mine Store and the coke ovens/kilns) should be carried out by an appropriate heritage buildings specialist. In addition, it is important to monitor the buildings throughout construction and at the completion of works to allow for an accurate assessment of the impacts of construction and blasting on these registered historic structures. Concern is that if there are effects, what actions will be undertaken to avoid further damage to the structures, rather than waiting until after the construction has been completed.

HDL have indicated that all operations associated with the project will operate under an Accidental Discovery Protocol (ADP), both on the Plateau and at Granity, to ensure that any historic artefacts that are uncovered in the process of construction can be recorded and collected if appropriate. This process may result in the unintentional loss of items or features if the items are not recognised by contractors. This is particularly the case where features may be associated with the heritage mining activities on the Stockton Plateau that are not necessarily "old".

As noted above, the Plateau contains a continuous progression of mining activities from pre 1900s until today, and there remain several areas within the project area where evidence of historic mining (up to the 1960s) remain that have not been surveyed and recorded by an archaeologist. While these features do not meet the definition of an archaeological site under the provisions of the Historic Places Act 1993, they form part of the overall historic use of this landscape and form part of the history of the West Coast. Ms Barr advises that in this instance, systematic recording of items and features is required in order to develop an overall picture of land use rather than the accidental recording system proposed.

Electric loco Line

Of the sites investigated by HDL's archaeologist, the electric loco line was identified as being the first electric loco line in New Zealand, making the site nationally significant. The loco line was built in a number of sections over a period of 20 years, the first one mile section completed in around 1908. The total length of loco line is approximately eight miles.

The section of loco line around the Weka reservoir is the most important section of the line because it contains a number of features not seen elsewhere on the line, including a siding and a points mechanism. It is also the first section of the line, so contains the most historic significance.

The Weka reservoir will inundate a 460m long section of the loco line embankment at Tintown corner, and the relocated haul road will destroy the loco line as it traverses the line in places as well. The recommendation of HDL's archaeologist is that this section of line should not be disturbed in any way, including by being flooded or by being modified in the course of constructing the haul road.

Statements made by HDL have indicated that plans cannot be amended to avoid flooding this section of the electric loco line, and that "the effects are minor, not major as stated", referring to other sections of the line which are in a more complete state than the area around Weka reservoir. HDL states that the activity will affect only a small section of the overall line (around 3.5%) and that the area will only be inundated around 50% of the time.

Given that the activity will affect the initial section of the line, which was around 1.61km, I consider that the effects will be greater than suggested by HDL. The proposal will result in slightly greater than 25% of this initial section of the loco line being affected. The extent of the effects however is not fully known as an assessment of the effects of intermittent flooding on the loco line has not been addressed.

In respect to mitigation for the adverse effect on the electric loco line, HDL has proposed recording of features and the collection of any portable artefacts within the impact areas and the preparation of these for public display in the vicinity of the Weka powerstation.

In addition, HDL proposes that, with the co-operation of DoC and SENZ, a walking track between the Weka and Mt William reservoirs be developed. The proposed location of the track has not been formalised at this point, so it is not possible to consider the exact location and effects of the track. HDL advised that the track would not be located within the tunnel corridor, but rather that the track would meander following parts of the old loco line and existing tracks and road systems. Clearance of vegetation and maintenance of a walking track are suggested, but there is no clear indication as to which organisation will be responsible for this work, nor whether there is any formal commitment from the other two parties to the development of a walking track.

It is difficult to consider how successful this mitigation proposal would be as it is dependent on parties who are not subject to this consenting process. In addition, given that the walking track would be located within SENZ's CML, it is possible that any formation of such a track would be delayed until such time as SENZ had completed mining activities in the area.

Without evidence of formal commitment to the development of a walking track, or a projected timeframe as to when such work would be undertaken, the offer of such mitigation cannot be appropriately considered. It is recommended that HDL provide at the hearing, evidence of a formal agreement / commitment between HDL, SENZ and the DoC to confirm the offer of a walking track as mitigation is genuine and is acceptable to all parties.

As part of the mitigation package proposed, HDL is proposing a land swap of lowland coastal bush at Fairdown with DoC. HDL have not provided any evidence in the application as to the historic heritage values of the land proposed for exchange, referring mainly to the terrestrial ecological benefits of such a swap. Without an assessment or the inclusion of historic heritage as part of the land swap, Ms Barr questions whether the land swap can be considered as part of the historic heritage mitigation package.

Overall, with appropriate conditions for the recording of historic features on the Stockton Plateau and at Granity before they are lost and monitoring of impacts on structures that may be effected by the construction, the loss of heritage values can be mitigated. However, this is dependent on a statement from a suitably qualified heritage specialist on the impact of the project on the nationally significant electric loco line and the identification of appropriate mitigation for the damage/loss to the line. It is recommended that HDL provide this information for consideration at the hearing.

4.7 EFFECTS OF NOISE

Noise can be a cause of stress and at worst can lead to ill-health. Several submitters have referred to the impacts the proposal will have on the amenity of Granity. At the least, noise during the construction phase is likely to result in a reduction in the quality of life for people in Granity at times.

HDL has identified those parts of the operational and the construction activity that are most likely to cause noise effects. They assert that they will be able to comply with the Council's noise provisions, except for sheet piling which will reach around 82dBA. HDL has identified a range of mitigation options, such as bunds around the sheet piling, hours of operation for construction activities and acoustic/visual fences and acoustic curtains at the portal entrance.

In terms of operating the scheme, while a final design to mitigate all noise emissions may not be possible at the resource consent stage, HDL need to identify the effects of their operation and need to come up with a design that meets these operational limits.

When considering the proposal, I was particularly concerned about the lack of noise assessment at the Granity site given its proximity to residential activities, and the unusual topography of the site. The site also has a number of factors that will affect the background environment such as the railway line, the state highway and the coast, all of which make the site unusual. Given this, an acoustical assessment was requested to identify whether there would be any adverse effects and what mitigating measures would be suitable for inclusion in the noise and vibration management plan. Further, such an assessment would advise whether compliance with the standards can be achieved or not, allowing HDL the opportunity to advance conditions that accommodate a higher than normal noise level for specific activities. The sheet piling is possibly such an activity.

Rather than provide evidential information as requested, HDL continue to assert compliance. The Council's technical expert, Mr Dravitzki, was unable to undertake an assessment of the effects, as there was insufficient information. He postulates that either HDL know the noise levels of the operation, in which case they should supply the information, or HDL are hoping they will be able to comply. The latter does not meet with the provisions of an assessment and if they cannot comply with provisions set down in the conditions, this leads to an enforceability issue with the conditions of consent.

Mr Dravitzki notes concern with some of HDL's responses to information requests. For example, HDL correctly identify that the construction noise should comply with NZS 6803:1999, and identify that they will use the table from that standard, modified for work of long duration as their noise limits. That table has much lower noise limits on Sunday, sufficiently low that usually normal construction activity cannot occur on Sundays. HDL however advise that both sheet piling and blasting will be carried out on Sundays suggesting that they have a poor understanding of the Construction Noise standard or a poor commitment to meeting acceptable noise limits.

A further example is that HDL states the likely noise of sheet piling as being about 82dBA but claim that this will be acceptable because it is only for a short time. Exceeding standards if there is no other way is acceptable but HDL need to show the necessity for this particular noise event and should ensure that they have a condition to permit the higher noise level and the periods for which the exceedances will occur.

It is recommended that HDL provide at the hearing information on an evidential basis of what they understand the noise level of their activities will cause and the effectiveness of the mitigation indicated by providing noise levels, derived either by calculation, or data from equivalent activities or some equivalent means for a selection of key activities at Granity.

4.8 EFFECTS OF GROUND BORNE-VIBRATION

A number of the activities associated with the proposal have the ability to generate vibrations, such as tunnelling and blasting. This is of concern at the Granity site given its proximity to a number of heritage buildings and transportation infrastructure, being the State highway and railway line.

Blasting and micro-tunnelling during the construction phase at Granity dominate HDL's assessment of the vibration effects likely to result from the HEPS. However, experience has shown that vibrations induced by piling operations, earthworks and HCV traffic can also cause disturbance to occupants of nearby buildings depending on the separation distance.

HDL is proposing that mitigation of vibrations come under the provisions of the Noise and Vibration Plan, which is appropriate. It is noted however that this plan is mostly to address the effects of construction of the site rather than the on-going operation of the site.

Mr Cenek has reviewed the application in terms of vibration effects for the Councils. HDL is proposing to meet the requirements of two standards. In terms of the effects on humans, the Australian standard (AS 2187.2-2006) requires blasting to be at a level which is comfortable to humans. However the application site is surrounded by a number of heritage buildings, which due to their fragility require a higher standard to be met. HDL propose to meet the requirements of the current German standard (DIN 4150-3) which focuses on the avoidance of building damage, specifically commercial buildings, dwellings and heritage buildings.

Mr Cenek advises that the use of AS 2187.2-2006 to ensure human comfort is not appropriate as it only applies to short duration blasting operations. The standard commonly adopted in New Zealand for assessing vibrations from a human comfort perspective is the withdrawn standard NZS/ISO 2831-2 (1989) as it addresses both day-time and night-time activity and also vibrations that are either continuous or intermittent, such as the vibrations expected during micro-tunnelling. Mr Cenek recommends that this standard is used.

Mr Cenek accepts two of the mitigation measures being put forward by HDL for the construction phase, being to consult immediate neighbours and any concerned residents to advise when vibration generating construction activity can be expected to take place. The other proposed mitigation is to maintain internal roads, and restrict the speed of HCVs to ensure both noise and vibration effects from cartage operations are kept to acceptable levels. Mr Cenek however has concerns about the other mitigation put forward by HDL.

HDL proposes to monitor vibrations upon request of any property owner who is concerned by vibrations caused to their building during blasting or tunnelling activities. Similar mitigation has not been suggested for sheet piling, which may have a similar effect, and so should therefore be included. This places a requirement on parties outside of the consent process.

A number of buildings that may be affected by the proposal are also public buildings that are not permanently occupied, such as the Gravity Library and the Lyric Theatre, so discovery of any effect may not occur until after damage has occurred. In addition, Mr Cenek identifies that mitigation following receipt of complaint has not been fully addressed, in terms of when monitoring is to occur, whether works are to cease until can be proven to comply, and what remedying actions will be taken.

Sheet piling operations needed for the establishment of the Jacking Station have the potential to generate vibrations that can cause structural damage to buildings and disturb occupants of nearby buildings depending on the characteristics (vibrating weight, amplitude, and frequency) of the vibrating hammers used. As with noise assessments, HDL propose that they will comply with the appropriate standards, however they have not provided any theoretical models or site measurements to identify whether they can meet the vibration levels required at buildings. Information should be provided to identify, or prove otherwise, buildings that will be most likely to be affected by vibrations from sheet piling, micro-tunnelling and heavy traffic operations.

HDL proposes that they will undertake structural surveys of 'at risk buildings' before and after construction. Yet, they have not identified which buildings would be at risk. The assessment criterion for identifying such buildings needs to be provided.

In terms of on-going vibrations from the operation of the scheme, Mr Cenek advises that a well designed and constructed tunnel and surge chamber system which will result in laminar flows are unlikely to generate vibrations of sufficient magnitude to be considered a nuisance.

In order to understand what mitigation and monitoring is proposed within the Noise and Vibration Management Plan, a draft should be provided to the Hearing Committee, in order that its effectiveness at managing ground-borne vibrations, its practicality, and the likelihood that it is achievable can be assessed.

4.9 VISUAL IMPACTS AND EFFECTS ON LANDSCAPE AND NATURAL CHARACTER

The Stockton Plateau is a rolling, dissected tableland lying some 500-1100m above sea level. The predominant landscape feature of the Plateau is the Brunner Coal Measures. Over geological timeframes, the Plateau has been tilted and dissected by earthquake faulting, and is deeply incised by streams and the tributaries of the Ngakawau River. Stunted vegetative growth is located on the exposed coal measures, while larger indigenous vegetation is located within the valleys.

The Plateau has been considerably modified by historic and current mining activities dating from the late 1800s. These modifications include formation of roads, open cast mines and infrastructure. Further modification of the Plateau has been approved by the granting of the SENZ's Cypress Mine within the Upper Waimangaroa area. There remains however large areas on the Plateau of undisturbed coal measures in their natural state.

The HEPS is located over a large area of the upper Plateau, with the works being located mostly in areas of past modification. The reservoirs are proposed to be located close to existing roads, so that it forms part of the mining landscape, and reduces the area that is modified.

The proposal is to form two large reservoirs on the Stockton Plateau. The dams are to be contained by RCC dams with additional shoulder dams, although it is uncertain whether the shoulder dams are earth dams or RCC dams. Associated with the reservoirs are a number of silt traps in some of the tributaries. The penstocks to the two powerstations are tunnels. At this stage, it is proposed that the Weka powerstation, control room and amenities will be located within the Stockton tunnel, however depending on geotechnical investigations, an above ground powerstation may be required.

A new powerline will be constructed on the Plateau to the Weka powerstation, with a temporary spur line erected to the staging area during construction. The existing line to Mt William Mine will be upgraded and reactivated to the reservoir area, again with a temporary spur line erected to the staging area during construction.

Additional tracks are required to provide both pedestrian and vehicular access to the site.

Granity is a small, lineal coastal town, constrained by the coast and the escarpment that forms the Stockton Plateau. The township is divided into three lineal strips by State Highway 67 and Westport-Ngakawau railway line. The application site at Granity is located between the Granity Museum and Granity Creek, within the lee of the escarpment.

The site has been highly modified in the past with various mining and residential activities. The site consists of mostly exotic vegetation on the lower sites, tending towards indigenous vegetation on the escarpment.

The portal to the Granity tunnel and powerstation is to be located part way up the escarpment, while the construction site and access ramp will be located between the escarpment and the railway line. A new vehicle crossing is proposed to the construction site along the southern side of the Granity Library, while the ocean outfall tunnel will be located on the north side of the Granity Library.

The application did not contain a specific assessment on the visual and landscape effects the proposal will have. A review report on the application has been provided by Wendy Hoddinott on behalf of the Councils in regard to the landscape and visual effects of the proposal.

Stockton Plateau

Overall, Ms Hoddinott advises that the landscape and visual effects of the proposal at Stockton Plateau are considered to be minor, considering the modified nature of the existing environment and the distance and visibility of the site from Millerton. In particular, in response to concerns raised in submissions, Ms Hoddinott does not consider that the new spur line to Weka powerstation will be visible from Millerton township, and that the proposed haul road cutting will not be obvious from Millerton in the context of the expansive mountain landscape.

In terms of providing concept designs at this stage for an above ground Weka powerstation, these are not required at this point, as current investigations indicate that the powerstation can be constructed within the Stockton tunnel. It is however accepted that should geotechnical investigations conclude that a powerstation would not be suitable within the tunnel, that information will be required to be provided to Council for approval. Such information would need to include an assessment of the structure within the landscape and should include mitigation measures in terms of design and landscaping.

The proposed construction areas within the Plateau are to be located within the reservoir areas, close to the dam face. All plant and equipment will be removed from the site on completion of construction activities prior to the site being flooded. The proposed measure put forward by HDL to rehabilitate all surfaces disturbed by construction activities outside the reservoir footprints with locally sourced native vegetation, in particular with direct vegetative transfer techniques wherever possible will be suitable mitigation for the site.

In terms of effects of powerlines on the plateau, the issue is in terms of cumulative effects. Currently there is the powerline to Stockton Mine, off which is a smaller line that used to run to the Mt William mine site. This has been decommissioned, although a number of poles and some of the lines are still in position. HDL have, in response to further information, advised that this line is to be upgraded to the Mt William reservoir so it is operational, and that a temporary spur line will be installed to the construction site. Also as a result of the same request, HDL advised that a second temporary powerline from the Weka powerstation to the Weka construction site (around 1km) will be required. Both of these extra lines will require approval under consent RC08/131F and information should be provided at the hearing on their location.

Further information was requested to show the location of Meridian Energy Ltd's proposed powerline associated with the Mokihinui Hydro Proposal, which at the time of writing this report had been heard by the Councils and is awaiting a decision. This information was requested in order to consider the cumulative effects of the various transmission structures on the Plateau. This information has not been provided and it is therefore difficult to assess the cumulative effects on the Plateau that the powerlines will have.

HDL has confirmed that no additional lines will be required to the drop shafts within the Gravity Tunnel. It is uncertain as to whether the intake towers within the reservoirs require electricity, and if so whether it is to be via solar panels, or whether there are to be connections to the spur lines, which have not been applied for.

As part of the Section 92 request, HDL has stated that "No modifications to the existing landscape are intended outside the immediate footprint of the dams and new access tracks. Any disturbance to the landform outside this footprint will be reinstated to as near to the original landform as possible before being rehabilitated with the original cover using vegetative direct transfer techniques".

When asked, HDL advised that any disturbance would be limited to around 2-3m around the development sites. I have concerns about this being an accurate assessment of the level of disturbance, and while I note that rehabilitating land outside of the footprint is suitable, the way that HDL have applied for consent, they do not allow for any disturbance outside the site. While it may not be suitable to allow a percentage of disturbances above that sought, it may be acceptable to allow some disturbance around the perimeter of the dam and shoulder structures. It is recommended that HDL give further consideration to the approximate extent of the area that could potentially be disturbed outside of the immediate dam footprint and access tracks.

The application notes that there will be fluctuations of water levels within the reservoirs, depending on input and generation demands. A request was made for further information to consider the operating levels of the reservoirs to consider both visually and ecologically what will occur as a result of varying water levels. HDL responded that "all existing vegetation will be retained along the margins of the reservoirs, except where embankment/dam structures are required to retain the storage volumes and where access roads are constructed to the silt traps within the reservoirs. Any disturbed margins will be rehabilitated by means of direct vegetative transfer."

This response did not provide any certainty about the operating levels, nor the amount of land that will be affected by the varying levels. As will be discussed elsewhere when addressing effects on terrestrial ecology, it is very difficult to predict the effects of the varying reservoir levels and what will occur in this wetted zone. During high reservoir levels, the area will be under water, however there may be extended periods that the area is dry, allowing vegetation to grow, albeit until such time as the site is re-flooded. It is expected that these areas however will remain predominantly bare rock or exposed substrate, similar to the coal measures. There is little in the way of mitigation available for such effects.

Granity

The landscape and visual effects of the access ramp, Granity portal outlet and apron at Granity are considered to be minor as the area will be either screened with vegetation or at and below ground level.

HDL proposes to plant trees and shrubs around a security fence erected around the Granity construction site which will reduce the visual impact of the fence from the aspect facing Granity village. HDL note that with agreement with the neighbours, mature plants will be recovered from the access construction area and planted using direct vegetative transfer techniques.

While it is accepted that HDL will try to limit the amount of vegetation disturbance to the immediate footprint of the Granity portal outlet and apron and the access ramp, the amount of disturbance will be influenced by the stability of the escarpment in which the works are to be located, which is discussed in section 4.12 below. The more unstable the escarpment the greater the level of disturbance of vegetation above the portal, therefore it is difficult to determine how much of the escarpment will be affected.

All plant and equipment will be removed from the site on completion of construction activities. The Granity construction site will be landscaped with plantings appropriate to the locality and in accordance with the Landscape and Rehabilitation Management Plan. This shall be formulated in consultation with the Granity museum curator, Northern Buller Community Society and any interested community members.

Landscape and Rehabilitation Management Plan

Although Ms Hoddinott accepts the Landscape and Rehabilitation Management Plan which has been offered as mitigation, she considers that further matters need to be considered in the Plan. In particular the Plan needs to be prepared by a suitably qualified and experienced landscape architect in consultation with stakeholders, such as the Council, and the Department of Conservation for work on the Plateau, and the Granity Museum curator, Northern Buller Community Society and any interested community members for work at Granity.

The Plan needs to also include an assessment of existing indigenous vegetation which is, where practicable, to be protected during construction. It needs to include a schedule of species to be planted, including botanical name, average plant size at time of planting and planting density and contain details about planting specifications, the plan should also contain measures to ensure the soil structure is retained during earthworks and rehabilitate the soil profile so as to provide a viable growing medium for plants.

The Plan needs to contain rehabilitation measures for areas of disturbance as a result of exploration drilling activities. This is important in case the project does not continue beyond the geotechnical investigation phase.

The Landscape and Rehabilitation Management Plan also needs to include performance standards to measure the success of rehabilitation, along with the provision of a report by the landscape architect advising the Council on the implementation of the Plan. Ms Hoddinott recommends that the conditions should also identify who it is that should undertake the monitoring.

Overall the landscape and visual effects of the proposal at Stockton Plateau and Granity are considered to be minor, considering the modified nature of the existing environments.

4.10 EFFECTS ON TERRESTRIAL ECOLOGY

Within the Stockton Plateau, the vegetation consists of a number of vegetation types, mostly influenced by their locality on the Plateau, such as the coal measures, the rocky outcrops and the valleys. Mr Turner, Councils technical consultant, accepts that a substantial proportion of the project footprint affects areas that have been modified by human activities.

The use of tunnels as penstocks has significantly reduced potential habitat loss and fragmentation and is a positive feature of the project from the point of view of terrestrial fauna. In addition, the project will be constructed in an area that has, and continues to, experience significant disturbances, as such the project is unlikely to result in marked increases in mammal pest populations.

There will be loss of indigenous vegetation communities, primarily 80ha of coal measure vegetation around the footprints of the Mt William and Weka reservoirs. While the losses of vegetation are relatively small and the area has undergone varying degrees of modification, the losses are, when considered in total and as part of cumulative historical losses, more than minor and therefore require mitigation.

It is asserted in the AEE that the vegetation lost to the proposal is not significant, particularly with regard to the proposed Weka reservoir site which was excluded from the Ngakawau Ecological Area on the basis of the Norton and Roper-Lindsay (1997) report. However, because the area was deemed not significant enough to warrant inclusion in the Ecological Area, does not mean that it has no value at all.

Furthermore, the project will result in permanent losses of indigenous vegetation from a number of locations. While the location of the project is mainly in previously disturbed environments, the flora still retains a significant natural component that has both inherent and functional values.

While no threatened species were recorded within the footprint of Mt William reservoir, two species were noted as uncommon in the Ngakawau Ecological District: *Exocarpus bidwilli* and Cedar *Libocedrus bidwilli*. The Mt William reservoir site also has small areas of red tussock wetland which have values referred to in the supporting documents to the application. Wetlands are a class of habitat that have incurred substantial losses nationally. It should also be recognised that these areas have inherent values as areas of indigenous vegetation and also provide habitat for threatened bird species, notably fernbirds.

There is little evidence as to how well represented the cedar forest association and red tussock wetland are within the Ngakawau Ecological District. Vegetation losses of this kind can be difficult to mitigate, particularly in circumstances where it is difficult to recreate similar habitats and therefore alternatives to habitat re-creation need to be considered.

While the reservoir footprints have been adequately assessed as to their effects on flora and fauna, there are a number of aspects of the project which have not been surveyed, these being; new permanent and temporary access roads, the proposed transmission line routes, and the intake drop shafts and exit portals. While these are relatively minor components of the project and detailed assessment of these areas is unlikely to be material to the decision, further work is required in order to ensure that the effects of the project are minimised on flora and fauna, particularly *Powelliphanta* snails and breeding areas for threatened bird species such as kiwi. It may be possible to do this prior to undertaking physical works.

Most of the necessary access roads will generally follow existing tracks which will require only minor upgrade which are likely to have only minor effects on flora and fauna. However, there will be approximately 2150m of new permanent road, the new haul road, as well as temporary roads. It is recommended that surveys be undertaken to check that there are no threatened plant species and also inform the final design and construction process of plant communities and species features to be avoided, where this is possible.

Mr Turner accepts that in most respects, the effects on fauna are likely to be no more than minor. Low densities of great spotted kiwi and weka mean that local populations are unlikely to be substantially affected by the loss of habitat at the scale that will result from the proposal and it is very unlikely that bats will be substantially affected by the project given habitats present and the lack of observation.

Of the threatened species confirmed as present within the footprint, fernbirds are the species most likely to suffer localised displacement and potentially a corresponding population loss.

The most recent conservation status assessment of New Zealand birds has raised the threat level to South Island Fernbird to "at risk" (declining), estimating the population at between 20,000 and 100,000 individuals. Stockton Plateau is a fernbird stronghold and supports several thousand birds. For birds to relocate from the two reservoir areas, the surrounding habitats need to be below their carrying capacity to avoid a reduction in the breeding population. This is unlikely and it is therefore considered that the HEPS may result in a reduction in population between 0.2% and 1% approximately. Although the loss of population may be relatively small in the context of a strong local population, the loss of habitat will contribute to the reduction in population of what is classified as a declining species. Mr Turner therefore considers that the loss of fernbird habitat, which will be permanent, will be greater than minor and will require mitigation.

Powelliphanta snails are some of the most threatened species on the Stockton Plateau and detailed surveys of the areas in question is merited, given their status and the fact that a number of species are known to be present in the general locality. The Waybacks and Wildlife Surveys Unlimited (2008b) report highlighted that snails can be easily missed on short surveys and that further surveys would be required once project details were finalised.

Surveys have found no populations of *Powelliphanta* snails within the reservoir footprints. While this is not conclusive proof that they are not present, it gives a reasonable level of confidence in these areas. Mr Turner has some residual concerns regarding the potential impacts of the exploration sites, the proposed new access roads and construction activities associated with the transmission lines, as well as the exit portals as these areas have not been surveyed. He recommends surveys of these areas should be undertaken prior to construction.

HDL advises that “all existing vegetation will be retained along the margins of the reservoirs, except where embankment/dam structures are required to retain the storage volumes and where access roads are constructed to the silt traps within the reservoirs. Any disturbed margins will be rehabilitated by means of direct vegetative transfer.”

The difficulty with this is what constitutes the margins, given the fluctuating reservoir levels based on the operating regime. The effect on vegetation within the areas affected by intermittent flooding is difficult to predict. The pH of the water, the duration between flood events, the level of sedimentation build up around the edges all affect the potential for plant growth and which species eventually colonise. It is likely that some growth will occur on exposed areas, however due to the intermittent nature, it is possible that the plant growth would be dominated by weed species which would prove difficult to control.

There has been no assessment as to the effects possible of the creation of reservoirs that contain a high degree of AMD and impacts on birdlife and wildfowl.

Reducing the transportation of weeds to the site during construction, and trying to maintain the level of weeds during the initial years of operation would aid in the reduction of long term weed growth in exposed areas.

HDL have not considered such effects or identified any mitigation. They should consider this prior to the hearing to enable the Committee to consider the effects of the operating regime.

In terms of mitigation for the loss of vegetation on the Plateau, the majority of the project footprint falls within DoC stewardship land. HDL has submitted an application to DoC to swap stewardship land affected by the project footprint for a parcel of lowland coastal forest at Fairdown which is considered to be of greater value to the Conservation Estate. While this is not ‘like for like’ habitat, in my view this would be an acceptable offset to compensate for the loss of indigenous vegetation to the project footprint as lowland forests have been cleared extensively from many parts of New Zealand and the conservation of remaining areas is a priority. However, in the event the swap does not eventuate, an alternative form of mitigation would be required.

Mr Turner does not consider that the proposed mitigation of re-vegetating disturbed areas will mitigate for the loss of fernbird habitat in the reservoir areas. He recommends the creation of a new alternative habitat or enhancement of existing habitat to offset this loss. However, this may prove difficult to achieve depending on the availability of alternative sites, therefore an alternative mitigation option would be to undertake a meaningful study on fernbirds that will provide useful baseline information on the fernbird population on the Stockton Plateau. Obtaining more accurate information on the locations, densities and numbers of territories, as well as identifying areas which may be increasing or declining in value as fernbird habitat will aid future decision making and management with regard to the fernbird population on the Stockton Plateau.

The vegetation around the Granity portal and construction site that will be affected by the proposal has been substantially modified. The loss of this vegetation will be a less than minor effect providing works are confined to the areas described in the AEE.

While it is accepted that HDL will try to limit the amount of vegetation disturbance to the immediate footprint of the Granity portal outlet and apron and the access ramp, the amount of disturbance will be influenced by the stability of the escarpment in which the works are to be located. The more unstable the escarpment face, the greater the level of disturbance of vegetation above the portal.

4.11 TRAFFIC EFFECTS

HDL has not provided a traffic assessment for the project, something expected for such a long-term project which is reliant on the transportation of materials between two remote sites. They did however respond to a further information request with a greater level of detail than contained in the AEE.

Traffic will be generated at and between the three construction sites. At both Granity and on the Stockton Plateau, access is dependent on agreements with other parties, being SENZ and OnTrack, both of whom might have specific arrangements to be met. It is therefore difficult to identify mitigation measures as they will be dependent on parties who are not subject to this consenting process.

Traffic movements will include light vehicles for staff going to and from the construction sites twice daily in relation to the shifts. Throughout the construction phase, HCVs transporting construction materials, such as hazardous substances, cement, machinery and plant to each site, as well as bulk deliveries of products such as bulk cement, cement additives, explosives and fuel will visit each site. These are likely to be truck and trailer units, spread out through the project.

Additional HCV consisting of truck units will transport aggregate and material extracted from the tunnels to the constructions sites for inclusion within the dam structures. HDL proposes to limit these to truck units only.

Access to the various components of the HEPS on the Plateau is through SENZ controlled land beyond the haul road gates at Stockton. As such, HDL will need to comply with the provisions of SENZ's traffic management plan. A copy of which has not been provided. Consideration of this plan is appropriate as it presumably addresses times in which to take oversized vehicles up the Millerton Road, and operating speeds within the Plateau, which are appropriate to be conditioned in the consent.

Traffic to the Stockton Plateau will generate additional heavy traffic flows within the town of Granity and along Millerton Road. According to HDL the flows will “generally be sporadic and within the context of the existing traffic” as such, they do not consider there to be an adverse effect. Of concern is that HDL has not considered the cumulative effects of the proposal in relation to the existing traffic going to the Stockton mine and Millerton. This is a concern as the BDC’s Operations Department have advised that the existing road from the Millerton turnoff to the Stockton gates is a narrow, windy road that is currently under pressure with the number and size of HCV using the road. Additional vehicles on this section of road places more stress on the road formation.

The Granity construction site is proposed to have two accesses. Currently access is via the Granity Museum access from Back Road, over rail reserve and SENZ’s land. This access is proposed to be upgraded and used for light vehicles during the construction period, and will be the permanent access to the Granity powerstation once the scheme is operational. It is proposed that this access be retained as a gravel formation, with HDL maintaining it to reduce pot holes and dust.

A second access is proposed to the south of the War Memorial, utilising a redundant crossing point. This is proposed to be the main access, through which all HCV are to access the site. This requires the formation of a new heavy vehicle crossing over the footpath and a temporary level crossing over the railway line to prevent damage to the infrastructure.

At the Granity construction site, HDL have identified that traffic will have an effect on the surrounding area, as such they have limited the transportation of material extracted from the Granity tunnel to 10 trucks per day and limiting the hours that the trucks may operate on site. It is recommended that to reduce the effects of vibrations from HCV’s that either the access road is to be sealed or the road be well maintained with a smooth surface and vehicles to travel at slow speeds.

Ocean Outfall

During micro-tunnelling, there is a risk of subsidence effecting infrastructure, in particular the railway line and the State highway. Protection of the infrastructure is important for the District, in particular avoiding disturbance to the functionality of the transportation networks.

HDL advises that appropriate limits of settlement can be established once the geotechnical investigations have identified the ground conditions. They offer ground level monitoring along the tunnel alignment until the work is complete. This needs to be continued for a period after completion to allow for settling.

4.12 GEOTECHNICAL ASPECTS

The HDL scheme is different to the majority of hydroelectricity schemes in that much of the water is transported via tunnel systems. The diversion of water into the reservoirs, the penstocks and the discharge of spent water to the CMA, will all happen via a network of tunnels, which in the case of the discharge to the CMA is a micro tunnel. Much of the scheme has been placed underground to help reduce the potential impacts of broken and fractured ground including ground affected by previous and current mining activities. The tunnels will be able to be constructed in solid bedrock and will potentially avoid major fault zones. The fact that much of the scheme is underground will also reduce the visual and ecological impacts of the scheme.

A review report has been provided by Greg Saul of Opus International Consultants Ltd (Opus) in regard to the geotechnical aspects of the proposal. The review agrees that the construction of the tunnels will only have minor geotechnical effects if constructed correctly, and there should be little settlement associated with the tunnelling activities. The location of the tunnels has been designed to avoid major infrastructure and areas of significant faulting. Surface disturbance will also be limited by the construction methods proposed by HDL. There are no major cut slopes or embankments proposed for the site, besides the dams themselves, and therefore there should be no significant stability issues that cannot be adequately designed for. The geotechnical risks associated with the dams can be adequately covered in the building consent process.

The report identified the following outstanding issues in terms of geotechnical effects:

- Stability of the Granity tunnel outlet portal.
- Impact of Granity tunnel on groundwater.
- Granity outfall micro tunnelling-impact on infrastructure.

Mr Saul advised in his report that the Granity portal had the potential to destabilise the steep hillside slope above the portal, given the steepness of the slope and the slippery nature of the site and that HDL did not provide technical advice to indicate otherwise. This instability could potentially adversely impact on the vegetation and any failure material would be highly visible. Because of the potential to destabilise the hillside above, Mr Saul believes that additional investigations are required and should form a part of the design reports submitted prior to construction.

Mr Saul indicates that HDL has not provided any evaluation of the potential effects of tunnelling on groundwater. Tunnelling could lead to reductions in groundwater due to dewatering during excavation and seepage loss from unlined sections of tunnel could increase groundwater levels which could contaminate existing aquifers. Seeps from the escarpment have been dammed and are used as private sources of domestic water for Granity residences, hence there is potential for tunnel drainage and seepage to impact these water supplies. The mitigation measures proposed by HDL including the proposed tunnel outlet detail and the proposal to line the tunnel in fault zones, will go some way to reducing the impacts but there is not sufficient information supplied to be satisfied that the impacts will be minor. Mr Saul has recommended that the potential impacts of groundwater contamination should either be assessed in detail or that HDL should undertake to investigate, monitor and assure alternative potable water is supplied to all affected parties. This further investigation is required because HDL have suggested that they will provide an alternate water supply to residents should the construction works affect the current supply.

Mr Saul has indicated that the micro-tunnel that will form the ocean outfall pipe is relatively large for micro-tunnelling processes and will be excavated in relatively non cohesive materials. The tunnel will pass beneath or close to a number of significant infrastructure assets including the state highway and railway. Mr Saul believes that HDL has not adequately addressed the issue of the potential for the micro-tunnel to collapse and the potential effects of that collapse which are likely to be more than minor. Mr Saul recommends that the issue requires investigation and specific assessment monitoring and development of appropriate contingency plans.

I am of the opinion that sufficient consent conditions can be drafted to incorporate the concerns and recommendations outlined above.

4.13 EFFECTS ON HYDROLOGY

HDL has determined that the project will reduce mean flows entering the Ngakawau River by diverting a significant portion of the sub-catchments. Similarly flows downstream of the reservoirs will be substantially reduced. Modelling has predicted that these flows will be reduced by more than half during very low flow conditions. HDL have indicated that due to the existing poor water quality and lack of habitat, the reduction in flow over short distances will have only minor effects on in-stream values. The damming of the streams will also have an effect on flood flows and peaks which may be beneficial in that the flood peaks affecting Hector and Ngakawau could be less frequent under certain conditions depending on the nature of the storm and the storage capacity of the reservoirs.

A technical review of the hydrological aspects of the application has been undertaken by Dr John McConchie of Opus. Dr McConchie met with Mr John Easter of HDL in an attempt to resolve some outstanding issues which resulted in HDL providing a revised 'context statement'. This helped to resolve some of the issues but here are some outstanding areas that are discussed below. Dr McConchie is in general agreement with HDL over the high quality but short duration of the hydrometric data available and that there is little data available for areas downstream of the project. He agrees that the majority of the hydrological effects upstream will be contained within the reservoirs but that the effects downstream are difficult to quantify and are likely to be greatest immediately below the dams and dissipate downstream with increasing input from inflowing tributaries. The main effects of the proposal will be a significant increase in the frequency, magnitude, duration and severity of periods of low flow. There may also be a reduction in flood flows depending on the effectiveness of the dams in containing flood flows. There is likely to be little change in fluvial dynamics but sediment yields are likely to be reduced. Dr McConchie is of the opinion that although there is a high degree of uncertainty in regard to the potential effects they are not likely to be of a magnitude that would result in significant adverse effects.

Dr McConchie does however still have concerns with some aspects of the proposal including the following:

- The simplistic and general analysis of the potential hydrological effects below the project area.
- The relatively short hydrometric records used in the analyses.
- The emphasis and focus on mean conditions rather than the entire flow regime.
- The use of 2006 as a typical year for analysis.
- The impact of the proposal on the sediment regime and geomorphic processes.
- Little assessment of effects downstream of the project area.
- The focus on water quality as the major effect of the project.

Dr McConchie believes that there is very limited detailed hydrometric analysis to support HDL's conclusions, which is partly due to the lack of high quality data for the area. He believes that a more qualitative analysis could have been undertaken to show that the diverse range of potential effects on hydrology had been considered. The effects of the project over the entire flow regime also need to be considered on the tributary and main channel flows downstream of the dams. It needs to be considered to determine the potential effect on the magnitude, frequency, duration and severity of both high and low flows. The use of mean flows is also not considered appropriate in terms of assessing actual flow regimes and hydrological effects. The median flow is thought to be a much

better statistical method of hydrological assessment. Flow variability is also mostly ignored except as a risk variable in assessing the viability of the scheme. It is the extreme and rare conditions that will be the most likely cause of any problems and these conditions have largely been ignored in the analyses presented. There is also no discussion of flow regimes in the various tributaries and its effects on the hydrology of these catchments.

Dr McConchie also has concerns in relation to the quality of the hydrometric data presented. He believes that much of the data has concentrated on very different aspects than those required for this project. There is very little 'hard' hydrological data to support this proposal, particularly with respect to its likely impacts below the project area. While this may mean that the conclusions reached by HDL are still valid, there is little evidence to support the conclusions reached. There appears to be significant portions of missing data from the records analysed by HDL and there is no indication of which flows are missing. This is likely to bias the data by disproportionately affecting either the low or high flows and could therefore have a significant effect on the statistics produced and conclusions reached. The potential error produced from using synthetic data where no real data is available has also not been recognised. There are also likely to be significantly higher errors in the verification of hydrological data undertaken. There has also been significant substitution occurring in the rainfall data. Dr McConchie is of the opinion that the hydrometric data is sparse, full of gaps and provides poor spatial coverage of the project area and finds it impossible to quantify the potential hydrological effects let alone the environmental effects from this data.

In regard to sediment control both during construction and tunnelling, the AEE contains no discussion on the nature of the sediment load, its character, size and volume. Nor is there any discussion on how this differs from the natural load in the rivers and streams in the area. Given the limited hydrometric data available, it is difficult to assess the appropriateness and effectiveness of any sediment control structures. Similarly, it is difficult to assess the potential impacts should those structures fail. No information has been provided on the conversion of turbidity to suspended solids. Given the high levels of coal within the flow the conversion factor may have a significant and distinctive effect that has not been considered. The potential effects of sediment on downstream catchments in the case of failure of the reservoirs should also be considered. The potential trapping of sediment within the reservoirs also needs to be considered in terms of the potential to cause erosion downstream and effect channel morphology.

In regard to the concentration of analysis of the hydrometric data for the year 2006, it is critical that this year be placed in context that is how typical was that year. If the year was distinctive it may affect the results and hence conclusions reached. Dr McConchie believes that there are significantly larger margins of error than implied by HDL.

HDL has given some weight to the flood mitigating effect of the reservoirs. This effect will reduce with successive floods, unless the storage capacity of the dams is restored between events. The attenuation of floods may be offset by the reduced travel time of any flood wave which has not been considered by HDL. The effectiveness of the reservoirs to mitigate any flood event will depend on its storage capacity at the time which is directly related to the volume of sediment held at any time. Dr McConchie can find no evidence to support HDL's contention that a 1:50 year flood event could be reduced to a 1:100 year flood event.

HDL has focussed on improved water quality as the major benefit of the proposed scheme. Water quality is only one aspect as the improvements in water quality may be offset by reduced flow and reduced flow variability. These effects will migrate downstream and while they will attenuate and mitigate with distance they will not be localised to the project area.

If the ocean outfall cannot be used, the emergency outfall discharge into Granity Creek would occur. The AEE states that an emergency discharge would be up to 9m³/s, smaller than freshes that pass down the creek. Further information was sought relating to effects if the discharge occurred when the creek was already in high flow conditions. To address the issue HDL proposed the following condition, *the consent holder shall ensure that peak flow from an emergency spill will not disturb the natural armouring of Granity stream channel and will be contained within the streambed*. This will ensure that any emergency discharge will not cause disturbance to banks and bed and will be contained within the natural streambed.

HDL believes that the proposal will have no effects on channel processes downstream of the project area. Dr McConchie believes that the channels contain bed material and the banks and valley sides are covered with regolith which may be impacted by the project. The loss of sediment in the reservoirs will mean that streams are likely to become underloaded and as a result may commence to erode what sediment is available which may result in channel down cutting and bank instability. This may lead to the potential to create instability of river terraces and scouring of bridge piers further downstream.

It is not likely that the proposed development will have significant adverse effects with regard to hydrology and hydraulic processes. HDL does however need to undertake additional work into determining the modification of flow regimes, particularly the frequency, duration and severity of periods of low flow and the frequency and magnitude of flood events below the reservoirs.

4.14 EFFECTS ON FRESHWATER ECOLOGY

One of the main offsets for the scheme proposed by HDL is that the diversion of the majority of the acid mine drainage (AMD) impacted flows into the two reservoirs to be discharged to via the ocean outfall will greatly increase the water quality in the Ngakawau River and potentially allow for the re-establishment of macro-invertebrate and fish species in the river. The AEE also indicated that a rare moss has potentially been found in the sub-catchments but its distribution is not known. HDL has commissioned a further study into the potential impacts of the proposal on bryophyte communities within the reservoir footprints. This study had not been completed at the time of the technical review or the writing of this report and has therefore not been considered here.

A technical review of freshwater ecology has been under taken by Alice Bradley of Opus. The review agrees that acid rock drainage and mining activities do have significant adverse effects on freshwater ecology and that the streams on the Stockton Plateau affected by acid drainage and mining generally have reduced ecological values. It is less clear what effects acid drainage and mining activities are having on the lack of ecological values in the lower Ngakawau River.

The technical review has identified the following outstanding issues:

- Effects on Bryophyte taxa.
- The effects of diverting Weka and Sandy Creeks.
- The effects of the altered flow regime.
- Resulting water quality and ecological values in the Ngakawau River.
- Re-suspension of fine sediment and re-mobilisation of metals from the bed substrate.

Ms Bradley was satisfied that the majority of the streams to be affected by the scheme had low biodiversity values but she did indicate that there had been no studies undertaken on some of the smaller tributaries that are not impacted by acid drainage. Some of these tributaries may have higher ecological values that may be adversely affected. Weka and Sandy Creeks are two such streams that have not been adequately studied and have simply been compared to the Mangatini Stream which is different in physical nature and impacted by AMD. Weka and Sandy Creeks may harbour remnant ecological values that may be important sources of colonists for other streams where water quality is improving.

The footprint of the scheme has been found to contain a population of *Blindia lewinskyae* (moss) which is a rare as well as significant assemblage of other bryophyte taxa which may include other rare or endangered species. Part of the footprint of the scheme has been surveyed for bryophytes as part of surveys conducted for SENZ which had specific projects over part of the footprint. The remainder of the area however has not been surveyed so the true extent of bryophyte tax in the footprint of the scheme is not known. As a mitigation measure, HDL has suggested that, advice will be sought from an expert in regard to whether the bryophytes can be removed and re-established outside the project footprint. It is unknown whether bryophytes can successfully be re-established in this manner and there is currently no precedent to demonstrate that it can be done. As no specific survey for bryophytes in the project footprint had been undertaken prior to this technical review being undertaken, Ms Bradley is of the opinion that HDL has not demonstrated that the effects on the proposal on bryophyte communities can be adequately avoided, mitigated or remedied.

The damming and diversion of many of the streams on the Plateau will result in significantly altered flow regimes with some streams all but running dry which may adversely affect the ability of streams to increase their ecological values. A lower flow regime for many of the water bodies will also include reduced flood flows which will result in a reduction in flushing flows. A reduction in flushing flows may result in the accumulation of algae, particularly periphyton, which may alter the habitat values of the streams. The reduction in flood flows may also reduce the flushing of deposits of fine sediment and metal oxides through the system which may also affect ecological values. In addition, reduced flows are likely to increase water temperature and reduce dissolved oxygen content which may place further stresses on aquatic organisms.

The predictions of improved water quality in the Ngakawau River as a result of the removal of the majority of the AMD should be viewed cautiously. The lower Ngakawau River has been shown to include crustaceans in the macro-invertebrate community which shows that ecological values are influenced by the tide rather than acid drainage issues, as crustaceans are intolerant to acid water. A reduction in acidity in the lower Ngakawau River may not therefore result in a significant increase in ecological values. Further upstream however there may be a greater potential for ecological values to respond positively to the reduction in acid water. This may be limited if re-suspension of fine sediment and re-mobilisation of metals from the substrate occurs. HDL have indicated that re-suspension and re-mobilisation will not be a significant issue, and this may well be

the case in low or no flow conditions, but Ms Bradley is of the opinion that deposition on the substrate has been occurring over a long period of time and it is far more likely that re-suspension and re-mobilisation could occur and that further consideration of this matter is required.

In summary, the lower Ngakawau catchment is subject to a complex interaction between the accumulated contaminants and sediment on the bed substrate, ongoing inputs of AMD from other sources, the influence of tidal water and the highly variable flow regime. The information provided by HDL makes it difficult to substantiate the predicted outcome of an improvement in water quality and ecological values but it is likely there will be some improvements. Additional information needs to be supplied in regard to the effects on bryophyte communities and ecological values in streams not affected by AMD.

4.15 GEOCHEMISTRY & WATER QUALITY

During the construction of the scheme, HDL has indicated that sediment released to water bodies will be controlled by the use of appropriate sediment ponds and silt traps as well as diverting flows away from works in the active channels. The major benefit of the scheme that HDL is proposing is the removal of AMD affected water from the majority of the catchment which HDL suggests will result in a significant increase in water quality, particularly in the Ngakawau River. Modelling has been undertaken to determine the changes in water quality after the construction of the project including reduction in AMD and sediment capture. Modelling was also undertaken for the discharge via the ocean outfall pipeline to the sea. In regard to the ocean outfall discharge, it was determined that further field studies would need to be undertaken to determine the dynamics of the discharge and possible plume.

An assessment of issues relating to geochemistry and water quality issues has been undertaken by Dr Jenny Webster-Brown of Geokem for the Council. The effects agreed with HDL include that the water quality of many of the streams on the Stockton Plateau are currently poor and impacted by mining activities. That the diversion of these waters will lead to an improvement in water quality in the Ngakawau River. The measures specified for preventing water quality impacts during construction of tunnels, dams and the outfall have the capacity to be effective. Dr Webster-Brown is also of the opinion that the model (PHREEQC) used by the consultants on behalf of HDL to predict water quality is an appropriate choice in model and has been used appropriately by the consultants. Finally Dr Webster-Brown agrees that the emergency discharge from the Weka Reservoir to Granity Stream is unlikely to have a major water quality effect on the stream.

Areas where Dr Webster-Brown still has concerns include:

- Reliability of Water Quality Modelling.
- Reservoir Water Quality.
- Ngakawau River Water Quality.
- Effects of the Ocean Outfall Discharge.

Although Dr Webster-Brown accepts that the model used to predict water quality is robust she is concerned that the water quality monitoring data for the Stockton area and the Ngakawau River catchment is very incomplete and is not representative of catchment water quality over a range of flow conditions. She believes that representative monitoring data needs to be collected and used in the modelling before any faith can be expressed in the modelled water quality for the project. Instead a number of assumptions have been

made about water quality and chemistry which, in some cases, may lead to significant errors in the modelling. Dr Webster-Brown is of the opinion that the modelling is simply not reliable enough to provide the basis for a consent decision.

In regard to the predicted reservoir water quality, the problem with the modelling is that it is being used to mix the chemistries of the source streams contributing to the reservoir, allowing chemical reactions to take place and remove constituents as precipitates when these are predicted to form. The modelling result is therefore highly dependent on the original water chemistry and this data is not available for many of the waters being diverted into the reservoirs and not representative of others. The water chemistry for the Upper Patrick Stream catchment for example has been compiled from various early data sources with only pH, Al, Fe and electrical conductivity measured routinely in 2007-2008. The model has also assumed water chemistry will remain unchanged under different flow regimes, an assumption which is not realistic but has been made necessary by the fact that flow data and chemical data have not been collected at the same time. This is likely to result in unreliable predictions for water quality. Two further assumptions significantly affect the modelling results. Firstly it has been assumed that the reservoir would remain unstratified. Should stratified conditions occur, Fe and Mn oxides would re-dissolve and absorbed arsenic and trace metals would be re-released into the water column. Secondly the model has assumed that transportation and re-dissolution of metal precipitates can be ignored as can the adsorption/desorption process which normally controls trace metal and metalloid concentrations in natural streams and lakes. When coupled with the decision to allow chemical constituents to be removed from solution whenever the model predicts mineral formation, significant underestimation of dissolved metal concentrations will result. Dr Webster-Brown recommends that accurate and representative water quality data should be collected and used to rerun the modelling for water quality allowing for stratification and the transportation and re-dissolution of metal precipitates or adsorbed metal phases.

HDL have emphasised the improvement in water quality in the Ngakawau River, particularly improvements in fish habitat and water clarity as major benefits of the proposed scheme. Dr Webster-Brown believes that there must be some improvement in water quality as a result of the removal of AMD but that the modelling input data is not sufficient to confirm the desired outcomes. The lower Ngakawau River catchment chemistry will be dominated by the upper catchment chemistry which has had the data assumed or taken from an unknown source for much of the area which will result in unreliable water quality outputs. There is also a lack of data for the lower Ngakawau River to support the "poor quality" status of the lower river. Given the emphasis being placed on anticipated improvements in water quality the lack of existing monitoring data is surprising as this will result in no real baseline data for assessing future improvements. Dr Webster-Brown also notes that the modelling of total suspended solids for the lower Ngakawau River is also very unreliable with no data for high flow events which are likely to re-suspend sediments and mineral precipitates. Dr Webster-Brown has indicated that some improvement in water quality in the Ngakawau River is likely but better quantification is needed before it is known whether the environment will become suitable for fish habitat or water clarity will improve significantly. She recommends that representative monitoring data be collected and remodelling of the water quality in the Ngakawau River be undertaken.

In regard to the water quality from the ocean outfall, Dr Webster-Brown is of the opinion that because the reservoir water will be of a lower density than the seawater it will rise to the surface after discharge, so that mineral precipitation during mixing with seawater is likely to form a visible turbid plume in the relatively shallow seawater. This gives rise to the potential to cause significant degradation of the CMA in terms of aesthetics, amenity and the health of aquatic life. She agrees with HDL that additional modelling is required before the nature of the ocean outfall discharge and potential to produce a plume can be adequately determined. The uncertainties in the modelling results make it difficult to determine how extensive a plume will be and whether trace metal concentrations in the seawater will be low enough to prevent adverse effects on aquatic life. A mixing zone of 300m (in radius from the diffuser) has been proposed by HDL as a condition of consent. The 300m mixing zone is considered reasonable and appropriate to the discharge however a more extensive study needs to be undertaken to ensure the applicant can be compliant within this mixing zone.

In summary, the applicant needs to collect accurate and representative water quality data which should then be used to undertake further modelling of reservoir water quality. This modelling should take into account stratification effects, the transportation and redissolution of metal precipitates or absorbed metal phases and the precipitation of minerals. The resulting data should then be compared to the ANZEC (2000) water quality guidelines. It is likely that once the additional monitoring and modelling is undertaken that the effects of the proposal will be minor.

4.16 HAZARD MANAGEMENT

HDL engaged URS Ltd to undertake some preliminary dam break studies. The study was undertaken assuming a height of 382 to 384 metres for Weka dam and 565 to 570 metres for Mt William dam and assuming the dams would be of an earth construction. This scenario produced certain inundation times and levels for the population areas affected by the proposal should there be a dam failure. The study also identified that the dams would be in the high risk category due to the potential for destruction and death should the dams fail. This classification resulted in HDL determining that roller compacted concrete (RCC) construction for the dams would be the best method of construction to reduce the potential impacts from dam failure.

A review of the hazards associated with dam failure, in particular, concentrating on the dam break scenarios was undertaken by Lambert Anderson of Opus. Mr Anderson generally agrees with the construction and operation methods of the temporary diversions, construction works, Granity emergency outfall, culvert design and sediment traps. He also believes the potential impact category for the dams would be high regardless of the construction method. There remain two outstanding issues identified by Mr Anderson:

- The dam breach studies.
- Dam diversion sluices.

Might be worth noting that further information was sought, discussions occurred but there is still a difference of opinion in that in Mr Anderson's view is that the dam break analysis should have been revised to take into consideration the change in design.

Mr Anderson has indicated that the dam break assessments undertaken by HDL were based on dam levels that are 5 to 10 metres lower than what has been applied for at both dams. The studies were also carried out assuming that earth dams would be built as opposed to RCC dams identified in the application. This means that effects as a result of a dam break are not accurate for the proposed height of both dams and could be greater than identified in the application. The review suggests that because the breach failure characteristics of an earth dam as opposed to an RCC dam are quite different they require different methods of analysis to estimate the peak breach outflow from the dam. It is estimated that the peak flood discharge values affecting Hector and Ngakawau will be much larger than that suggested in the HDL application and hence the extent of flood inundation areas will be somewhat greater. The reviewer has therefore recommended that HDL clearly define the operating levels of both dams then revise the inundation plans taking into account the amended levels and dam type.

The second area of concern identified by Mr Anderson is that the proposed temporary diversion sluices will be sealed upon successful filling of the reservoirs. This raises concerns that the dams cannot be substantially dewatered if a fault develops and the dam needs to be drained for safety reasons. Not having a dewatering sluice also reduces the degree of flexibility in managing maintenance and repairs. This may be particularly significant given the dam will be storing highly acidic water and therefore may require greater maintenance. The dewatering system could be sealed up after it is shown that the dam has been operating safely for a period of time, say 5 to 6 years.

The dam break scenario needs to be redone using the correct heights and methods of construction proposed for the dams. Should this be done and the sluice gates retained for a period as suggested by Mr Anderson then the effects of a potential dam break can be better understood and its effects determined.

4.17 AIR QUALITY EFFECTS

Dust and fumes from construction are the primary effects that can cause an impact on air quality. Those effects will be most sensitive near and through Granity which will experience increased traffic. Existing transport related dust effects along the State highway are currently occurring because of the nature of mining in the region. Dust and fume effects will be felt more acutely in the nearest receiving environments. Dust effects can be mitigated by water suppression methods where required.

The mitigation suggested by HDL is focused on a reactive response to complaints and therefore the relationship between the consent holder and residents needs to be very strong. A proactive use of the suggested mitigation is required to ensure effects are no more than minor.

The Weka powerstation is within a relatively isolated, remote site and water spray or vapour is likely to be in such fine particles that it will become inconspicuous as it evaporates or will be absorbed within the immediate environment. It is expected that as the Granity powerstation is within the Granity tunnel, the effects of spray drift will also be minor, however little assessment has been provided on this.

4.18 HAZARDOUS SUBSTANCES MANAGEMENT

HDL proposes to store and use a number of hazardous substances during the operation of HEPS and the powerstations. HDL have stated that hazardous substances will be transported, stored and used in accordance with the HSNO requirements, with bunding, signage, and emergency plans. Local fire departments should be advised of the materials stored on site and their locations so that they can respond accordingly in the event of a call out.

4.19 SUMMARY

As can be expected, the HEPS involves a wide range and degree of effects. Review of the AEE therefore concludes that we agree with a number of effects the proposal will have on the environment and the local communities. While some effects can be adequately managed, mitigated and/or remedied, others cannot, and other effects we do not have sufficient information in order to be able to make an assessment of the effects and suitable mitigation.

Construction and Social Effects

The proposal will affect the local communities in terms of traffic generation, noise levels, vibrations from blasting and tunnelling and lighting at night. These will generally be able to be mitigated by way of conditions of consent provided specific targets are set, subject to further assessment in terms of noise and vibration.

The proposal will also result in increased levels of EMF, which again should be able to be mitigated by specific conditions.

Cultural and Heritage Effects

An assessment has not been able to be undertaken in relation to the cultural impacts as a CIA has not been provided.

For the most part, the proposed conditions will be able to mitigate the effects on the heritage values. Conditions are required to ensure the structural integrity of the heritage buildings at Granity.

The exception is in relation to the electric loco line, which is nationally significant and which requires further consideration. The proposed mitigation of a walkway between Weka and Mt William reservoirs requires further discussion and acceptance by DoC and SENZ, and more details about timing.

Effects of Noise and Ground Borne-vibration

The effects of the construction in terms of noise and vibration are one of the major areas of disagreement between HDL and the Councils technical reviewers. Although HDL asserts it will be able to comply with the provisions of the plan, no evidence has been provided. Of particular concern are the acceptable noise levels for activities which generally exceed permitted standards, such as the jacking station and the assessment criteria used to identify structures at risk of ground-borne vibrations.

It is recommended that further information in the way of an acoustical report and details of the draft noise and vibration management plan be provided at the hearing to consider what would be suitable mitigation.

Also little consideration has been had as to the long term operating noise of the proposal, in particular at Granity.

Visual Impacts and Effects on Landscape and natural character

Due to the modified environment, the proposal is not considered to have a major effect on the landscape. No consideration has been given to the effects the operating regime will have on the landscape, however it is considered to be similar to that of exposed coal measures. An issue may be the cumulative effects of powerlines on the plateau.

At Granity, the degree of effects on the landscape will depend on the stability of the escarpment around the portal, which if unstable, may result in scarring of the vegetation above the portal.

Effects on Terrestrial Ecology

Cumulatively the loss of vegetation on the Stockton Plateau is considered to be significant, however HDL have offered a land swap of 14ha of lowland coastal indigenous forest with DoC. An assessment of this parcel of land has not been undertaken, but it is accepted that coastal lowland forest is under threat, and therefore protection is suitable. It is noted however, that the parcel should be protected, regardless of whether the land swap is approved.

The proposal will affect a number of significant fauna, including kiwi, lizards, bats, fernbird and *Powelliphanta* snail. Of particular importance is the need to survey and relocate species prior to work being undertaken.

The loss of fernbird habitat will have a more than minor effect and although mitigation of direct transferring of vegetation is proposed, it is not considered likely to be effective. It is therefore considered that the proposal will result in the loss of around 100 pair of fernbird.

Traffic Effects

HDL has provided little weight to the effects of the proposal as part of the cumulative effects of HCV going through Granity and the Plateau. Mitigation of the number of vehicle movements, their speed, and the smoothness of the access roads will mitigate the effects.

An effect given little consideration has been the effect of subsidence from the micro-tunnel on the state highway and railway network, which although a low possibility, has the potential to result in a significant effect.

Geotechnical Aspects

In general, the effects of the tunnelling and dam construction are likely to be minor and geotechnical risks can be adequately investigated and mitigated in the detailed design phase and building consent process. Areas that require further investigation include the instability of the steep slope above the Granity portal, the effects of tunnelling on groundwater and in particular its effects on residential water supplies, and the potential impacts of micro-tunnelling deformation on infrastructure.

Effects on Hydrology

It is likely that HDL's conclusions in regard to the hydrological effects are correct however the methods they have used to reach those conclusions require some modification. Further investigation into flow regimes, in particular low and flood flows, needs to be undertaken.

Effects on Freshwater Ecology

In general, the removal of AMD from the catchment system is likely to result in an improvement in water quality however it is not as certain whether the ecological values will also increase significantly. Based on the information provided by HDL, the Councils reviewer was unable to substantiate the improved ecological values or assess the potential effects on bryophyte communities in the project footprint. Further information is required on the ecological values of catchments not currently affected by AMD and what effects the project may have on those catchments.

HDL has advised that will provide additional information in regard to the effects of the project on bryophytes, which will be presented at the hearing.

Geochemistry & Water Quality

The information supplied by HDL in regard to water geochemistry, while adequate for a preliminary assessment, is not sufficient to make a decision for resource consent. Additional monitoring needs to be undertaken prior to the commencement of works and the modelling needs to be re-run. It is still uncertain if the discharge to the CMA will result in a visible plume and/or affect aquatic life and if the water quality in the lower Ngakawau River will improve enough to sustain fish life.

Hazard Management

It is agreed that the PIC classification in regard to a potential dam break is high, regardless of the type of dam construction i.e. earth or RCC construction. HDL needs to redo the dam break studies using the proposed height and construction methods for both dams and update the inundation maps for downstream settlements. They also need to review the need to retain the diversion sluices until at least the first comprehensive safety review of the dams.

Air Quality Effects

The construction phase of the project has the potential to generate dust and fumes that may impact areas outside the project area. These impacts are not likely to be significant and can be controlled by imposing suitable consent conditions.

Hazardous Substances Management

The proposed use and storage of hazardous substance is considered to be minor as HDL will comply with the requirements under the various legislation.

5 STATUTORY ASSESSMENT

This section of the report identifies and analyses the relevant statutory documents. The section is structured such that national, regional, district and then other relevant matters are discussed, concluding with an analysis of Part 2 of the Act.

Sections 5.1 to 5.6 of this report summarise the most relevant statutory provisions that require consideration against the HEPS. By focussing on the most relevant provisions, rather than all, greater assistance can be provided to the Hearing Committee in understanding the statutory framework. Appendix 2 contains a full evaluation of the relevant plan provisions.

5.1 NATIONAL POLICY STATEMENTS

5.1.1 National Policy Statement on Electricity Transmission (NPS ET)

The NPS ET sets the overall policy framework for electricity transmission and contains policies relating to the need to operate, maintain, develop and upgrade the electricity transmission network. The objective of the NPS ET is to:

Recognise the national significance of renewable electricity generation by promoting the development, upgrading, maintenance and operation of new and existing renewable electricity generation activities, such that 90 per cent of New Zealand's electricity will be generated from renewable sources by 2025 (based on delivered electricity in an average hydrological year).

The policy statement refers to transmission within the national grid rather than the local transmission, therefore while the NPS ET may be referred to, it is under the provisions of 'any other matter' as set out in S104(1)(c) rather than S104(b)(i).

The HEPS is consistent with the objective of the NPS ET in providing new renewable generation.

5.1.2 National Policy Statement for Renewable Electricity Generation (NPS REG)

The proposed NPS REG will establish the national significance of the benefits that are associated with renewable electricity generation. By clarifying the Government's position on the benefits of renewable electricity generation, the proposed NPS REG will help promote a nationally consistent approach to balancing the competing values associated with the development of New Zealand's renewable energy resources, and will provide greater certainty to decision-makers, applicants and the wider community.

As the policy statement is not yet operative, it does not have weight under the RMA as a national policy statement, however it may be considered when making a decision, as set out in S104(1)(c) 'any other matter'.

The objective of the proposed NPS REG is the same as the NPS ET.

It is noted that a number of submitters support the proposal based on the fact that the proposal will provide new electricity generation from renewable sources.

5.1.3 Proposed National Policy Statement for Freshwater Management (NPS FM)

The proposed NPS FM will result in benefits to the environment, in safeguarding New Zealand's green image (of great importance to the economy), maintaining and enhancing cultural, intrinsic, amenity, and other values related to fresh water, and ensure sustainable economic development.

The proposed NPS has been notified, and submissions called for. A hearing is currently being held to consider the submissions.

The proposal meets a number of the objectives of the proposed policy statement, in particular Objective 5. There has not been adequate assessment of whether the proposal will ensure the life supporting capacity and ecological values of the Ngakawau River, there is also concern as to whether the proposal will meet with Objective 8 as the diversion of waters is against the mauri of the awa.

5.2 NEW ZEALAND COASTAL POLICY STATEMENT 1994 (NZCPS)

The relevant NZCPS is that approved by the Minister in 1994. While a proposed NZCPS (2008) has been notified, we consider that this has no status in terms of the definition of a NZCPS as it has not been "issued" in terms of Section 57 until gazetted under Section 52.

The NZCPS sets out provisions for management of the coastal environment, which includes not only the CMA but also land that is affected by coastal processes. Whilst the coastal environment is not defined by a line on a map, the discharge from the ocean outfall and the micro-tunnel itself are clearly located within the coastal environment. The construction site and Gravity portal are also within the coastal environment in so far as they are affected by coastal processes such as salt spray, however there will be no construction activities along the foreshore at Gravity.

The NZCPS outlines general principles to provide for the special context of the coastal environment to which regard must be had.

General Principles

- *Functionally, certain activities can only be located on the coast or in the coastal marine area;*
- *The coastal environment is particularly susceptible to the effects of natural hazards;*
- *Cultural, historical, spiritual, amenity and intrinsic values are the heritage of future generations and damage to these values is often irreversible;*
- *The tangata whenua are the kaitiaki of the coastal environment;*
- *It is important to maintain biological and physical processes in the coastal environment in as natural a condition as possible, and to recognise their dynamic, complex and interdependent nature;*
- *The ability to manage activities in the coastal environment sustainably is hindered by a lack of understanding about coastal processes and the effects of activities. Therefore, an approach which is precautionary but responsive to increased knowledge is required for coastal management;*
- *The potential for adverse effects of activities to spread beyond regional boundaries may be significant in the coastal marine area.*

The area of the application which triggers an assessment under the NZCPS is the Granity site and the proposed discharge of AMD waters into the CMA. The Granity site is already a modified environment, located in the township of Granity with no outstanding areas of landscape or habitat. The main works are located above the township, in front of and within the Granity Tunnel. No works are proposed along the foreshore. The proposed works will however be directly linked to the coastal environment by the micro-tunnel and ocean outfall diffuser. Neither of which will be visible. It is therefore considered that in the long term there will be little visual change to the coastal environment.

All the consents applied for fall under a discretionary status under the Regional Coastal Plan, which allows the Consent Authority to impose conditions that require ongoing monitoring to deal with any potential environmental effects. The construction of the micro-tunnel is a Restricted Coastal Activity under both the Regional Plan and the NZCPS. This means that the Minister of Conservation is the Delegated Authority to grant and impose consent conditions on this consent.

5.3 REGIONAL PLANNING DOCUMENTS

The full text of the objectives and policies can be found in Appendix 2 of this report, or in the regional plans.

5.3.1 West Coast Regional Policy Statement 2000 (RPS)

The RPS became operative on 10 March 2000.

A summary of the relevant objectives and policies in the RPS applicable to this application is provided below:

Section	Objectives	Policies
Poutini Ngai Tahu	5.1, 5.2	5.1.1, 5.2.1, 5.2.2, 5.2.3
Heritage	6	6.1
Soils and Rivers	7.1, 7.2	7
Water	8.1.1, 8.2.1	8.1.1, 8.1.2, 8.2.1, 8.2.2, 8.2.3, 8.2.4
Habitats & Landscape	9.1, 9.2, 9.3, 9.4	9.1, 9.2, 9.3, 9.4, 9.5, 9.7
The Coastal Environment	10.1, , 10.5	10.1.1, 10.1.2, 10.1.3, 10.1.4, 10.5.1, 10.5.4
Natural Hazards	11	11.1, 11.2, 11.3
Air Quality	13.2	13.2
Energy	14	14.1
Network Utilities	15	15.1, 15.2

The Matters of Significance to Poutini Ngāi Tahu

The objectives and policies in this chapter require the principles of the Treaty of Waitangi to be taken into account in sustainable management of natural and physical resources and in doing so, recognise the role of kaitiakitanga and provide for the relationship of Poutini Ngāi Tahu with ancestral lands, waahi tapu, water, sites and other taonga.

As noted in Appendix N, a CIA was to be prepared by Mr Rick Barber of Ngati Waewae. To date this assessment has not been received. Mr Barber did indicate that SENZ's Cypress Coal Mine Project's CIA was for an area close by and had an area of overlap in the St Patricks Stream area and a copy of that report was supplied.

Mr Barber further identified that the mixing of waters from different catchments is culturally sensitive, but this may be offset by the improvements in water quality likely to occur as a result of removing the majority of the AMD from the Ngakawau tributaries.

Heritage

Objective 6 relates to the heritage and archaeological sites and values that contribute to the West Coast's distinctive character and sense of identity and the need to avoid, remedy or mitigate the actual or potential adverse effects on these areas. Policy 6.1 aims to promote the identification and protection of the region's heritage values including archaeological sites. The policy sets out matters to be considered when assessing heritage places or sites. These matters include, but are not limited to: the extent to which the place reflects representative aspects of New Zealand history; the level of technical accomplishment or value, or design of the place including the rarity of technical accomplishment or design; and the extent to which the place forms a key part of the wider historical and cultural landscapes.

The AEE identifies a number of archaeological sites which are recorded in the New Zealand Archaeological Association database along the scheme alignment. It is also probable that there are further unrecorded sites in the area. The New Zealand Historic Places Trust (NZHPT), along with other submitters, lodged submissions in opposition to the proposal concerned about potential effects on heritage and cultural values.

There is only one recorded site (the Granity coal bins) that has been identified as pre-dating 1900 and therefore falling under the Historic Places Act 1993. Such an archaeological site would require an authority to disturb from N, although this site has already been extensively damaged and no real archaeological value remains at the site so it is possible that an authority may not be required in this instance.

An historic loco line will be partly inundated by the proposed footprint of the dams. This area seems to be the main contention point in regard to heritage. There is argument as to the significance of this line and whether it should be inundated or not.

The Historic Places Trust Register also records a number of structures within proximity to the Granity construction site. No assessment has been undertaken as to the effects the proposal will have on these structures.

Due to the potential to destroy an area of historical significance in the form of the historic loco line I am not satisfied that the proposal is consistent with the objectives and policies contained within chapter 6 of the RPS relating to heritage values.

Soils and Rivers

Objective 7.1 seeks to ensure that soil is managed to prevent the long-term degradation of the resource and to maintain or enhance soil quality factors. Objective 7.2 aims to avoid, remedy or mitigate degradation of water resources and aquatic ecosystems resulting from the instability, use, or development of the beds and banks of rivers. Policy 7 requires the sustaining of soil and water resources to meet the reasonably foreseeable needs of future generations and to manage activities so that adverse effects are avoided, remedied or mitigated.

The proposal requires significant earthworks which in some cases will be in close proximity to waterbodies. In addition, works for diversion channels, weirs and intake structures are required within riverbeds. The main method for avoiding, remedying or mitigating their effects, is through the Construction Management Plan and the Sediment Management Plan. This is a standard approach to managing effects from construction related activities.

Water

Objective 8.1.1 requires the region's water resources to be managed such that it meets the needs of a range of users and safeguards the life supporting capacity. Policy 8.1.1 recognises that changing the levels of rivers could impact on natural values. The impacts on natural values are considered in section 4.14. In particular, flows in the Ngakawau River will be less but the water quality will potentially be improved due to the removal of most of the AMD flows and therefore habitats within the river may also be improved. HDL has indicated that the various streams and creeks that will be dammed are so highly impacted by AMD that there is little in-stream habitat that will be impacted. A review of freshwater ecology however has indicated that there are complex interactions occurring within the systems and that, based on the current information supplied, it is difficult to substantiate the predicted improvement in water quality and ecological values. There may also be significant effects on bryophyte communities that have been found to exist within the footprint of the dams.

Objective 8.2.1 relates to the maintenance and enhancement of the quality of the region's surface and ground water where water quality is degraded, while Policy 8.2.1 is to avoid, remedy or mitigate the adverse effects of discharges into surface and ground water. This policy is directly related to Section 107 of the RMA regarding the restriction on the grant of certain discharge permits.

Policy 8.2.2 relates to the maintenance and enhancement of water quality in surface and ground water. Subject to complying with discharge limits during construction and commissioning the existing water quality should be enhanced due to the capture of most of the acid mine drainage issuing from the Stockton Plateau.

Policy 8.2.3 promotes the need for well vegetated riparian margins. As a result of construction there will be disturbance to the riparian margins of a number of waterbodies. HDL proposes to limit vegetation removal to areas that will be inundated as much as possible. Where native vegetation is removed it will be relocated for direct transfer to disturbed areas within the project footprint. A Landscaping and Rehabilitation Management Plan is also proposed by HDL which will outline the way in which HDL proposes to mitigate effects on riparian vegetation.

The policy matters can be addressed through proposed conditions, such that the application proposal should be consistent with the objectives and policies contained within chapter 8 of the RPS relating to water quality.

Habitats and Landscapes

The objectives seek to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna, preserve the natural character of wetlands and rivers and maintain and enhance public access to rivers and their margins. There are no outstanding natural features or landscapes that need to be protected on the Stockton Plateau.

Many of the habitats and landscapes of the Stockton Plateau have been heavily modified by mining activities and the discharge of AMD. In the area of the dams however there is habitat for threatened bryophytes in the affected water bodies. These habitats are also well represented outside the project footprint but it is not certain if these particular bryophyte species are found throughout these habitats. HDL will engage an expert to undertake a study of bryophyte communities on the plateau and if the expert thinks it is viable, they will relocate species of interest outside the project footprint. If the relocation proves to be successful it will be required to be undertaken as a condition of consent.

The Coastal Environment

The objectives and policies of the Coastal Plan relate to the allocation of the right to occupy space in the Coastal Marine Area (CMA) and promoting the sustainable management of natural and physical resources in the CMA. The discharge to the CMA will be via a micro-tunnel and diffuser. Trials will be undertaken prior to the ongoing discharge to ensure that after sufficient mixing the discharge will have no significant adverse impacts on the CMA. HDL proposes to design the outfall and diffuser so that the discharge, outside the mixing zone, meets ANZECC water quality guidelines.

Natural Hazards

One of the outcomes that the objectives and policies seek is that there is a reduction in actual and potential losses to people, property and the environment from natural hazards.

Within the RMA, an effect includes *any potential effect of high probability and any potential effect of low probability which has a high potential impact*. The main hazard to consider from the proposed HEPS is the uncontrolled release of the water impounded by the works. The likelihood of a dam breach is a low scientific probability (loosely, as in plausibility), however the effects of such a breach would have high potential impact. The data used by HDL to undertake the dam break studies included heights for both dams that are lower than given in the application and for an earth dam rather than RCC. If using the correct data, it is likely that there would be a significant increase in the peak outflows and reservoir emptying duration with a subsequent greater impact on the downstream environment. There is a low probability of a dam break occurring but a high risk should such an event occur. Some additional studies in this area are likely to be required before the objectives and policies of this section can be met.

Air Quality

Consent has been sought to discharge contaminants (dust) to air from construction activities. Adverse effects could occur primarily in areas where there are sensitive receiving environments, for example, residential dwellings. The proposed mitigation measures for construction activities, concrete batching plant, haul road operations and potential odour sources will be sufficient to control emission sources and protect the existing air quality.

Energy

Policy 14.1 requires that when considering proposals “...*the importance of an adequate supply of energy resources for the needs of people and communities on the West Coast.*” is recognised “*provided that this is not inconsistent with other policies in this RPS.*”

The scheme is consistent with the majority of policies in the RPS and will therefore provide a valuable source of renewable energy to the West Coast.

Network Utilities

The objective of this section of the RPS is to enable the functioning of network utilities and transport systems, while avoiding, remedying or mitigating adverse environmental effects. This section of the RPS also highlights the importance of network utilities to the region's well being. However, while the importance of network utilities needs to be recognised, this is provided that it is not inconsistent with other policies in the RPS.

5.3.2 Proposed Water Management Plan

The Proposed Water Management Plan (PWMP) was notified in March 2004 and decisions on the Plan were released in March 2006. The purpose of the PWMP is to provide a framework for the integrated and sustainable management of the region's lakes, rivers, groundwater, wetlands and geothermal water.

A summary of the relevant objectives and policies in the PWMP applicable to this application is provided below:

Section	Objectives	Policies
Natural & Human use values	5.3.1, 5.3.2, 5.3.3, 5.3.4	5.4.1, 5.4.1B, 5.4.1C, 5.4.4, 5.4.5
Surface Water Quantity	6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5	6.4.1, 6.4.2, 6.4.3, 6.4.5, 6.4.6, 6.4.7, 6.5.1, 6.5.2, 6.5.3, 4, 6.5.5, 6.5.6, 6.5.7
Surface Water Quality	7.3.1	7.4.1, 7.4.2, 7.4.3, 7.4.5, 7.4.6, 7.4.8
Groundwater	9.3.1, 9.3.2, 9.3.3	9.4.1, 9.4.2, 9.4.3, 9.4.4, 9.4.6
Lake Levels, Damming, Diversion & Augmentation		6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7

The PWMP provides for the sustainable use and development of water resources as long as that use and development does not cause significant adverse effects.

The focus of the **natural and human use values** chapter is on recognising and providing for the values associated with water. Central to determining whether the effects of the proposed HEPS are not inappropriate is a consideration of the natural character (Objective 5.3.2, Policy 5.4.1C, Policy 5.4.4 and Policy 5.4.5), recreational opportunities (Policy 5.4.5) and benefits that can be gained from renewable energy (Policy 5.4.1B).

The **surface water quantity** chapter is separated into sections on the taking of water and the damming, diverting and augmentation of water. Objective 6.3.2 recognises the importance of water to the community's wellbeing, but at the same time it is also critical to ensure that the in-stream values, natural character and life supporting capacity of water bodies is maintained (Objective 6.3.1). Due to the high acidity of the waterbodies that will be modified there is generally little human use or ecological value to be considered. The main exception to this is the discovery of rare bryophyte communities within the footprint of the dams that will be inundated. The ability to mitigate for these effects by relocating the bryophytes is uncertain and additional investigation will be required. The diversion of the various creeks and streams to enable the project will give rise to adverse effects that cannot be avoided, however Policy 6.5.6 requires that priority should be given to avoiding, in preference to remedying or mitigating adverse effects. The Consent Authority has the ability to take a financial contribution to offset, remedy or mitigate any unavoidable adverse effects from taking, damming or diverting water (Policy 6.5.7).

The direction provided in the **surface water quality** chapter is to maintain or enhance water quality (Objective 7.3.1), consider the appropriateness of discharges (Policy 7.4.4 and 7.4.5) and limit the extent of any mixing zones (Policy 7.4.6). The key water quality matters that need to be considered are stormwater discharges, in-stream disturbance activities, runoff from earthworks and the potential effects during commissioning. These activities have been considered in sections 4.13 and 4.15.

The effects on groundwater from the proposed HEPS are not completely known including any specific impacts on hydraulic pressure within groundwater immediately downstream of the dam sites. The site dewatering required to construct the dams will impact on groundwater levels as they will be hydraulically linked to the creeks and streams in the area. The surface waters have high acidity and subsurface rock in the area is highly fractured nature, however there are no known abstractions of groundwater in the area.

Many people in the Granity community also rely on groundwater seeps from the escarpment for their drinking water supply. It is not thought that the tunnelling activities will adversely impact on these sources but HDL has indicated that it will supply an alternate source of drinking water should it be found that adverse effects are occurring.

There are therefore no conflicts with the objectives and policies of this section of the PWMP.

5.3.3 Proposed Regional Land and Riverbed Management Plan

The Proposed Regional Land and Riverbed Management Plan (PLRMP) was notified in March 2004. There are still outstanding appeals relating to the PLRMP and since notification, a variation to the PLRMP concerning wetlands has been notified.

When the applications were lodged there were appeals on rules, although none of these were relevant to these applications. The version of the PLRMP at the time of lodging also included the Wetlands Variation (Variation 1). The rules in the wetland variation are not relevant as those wetlands identified within the HEPS are not included in Schedule 1 of the PLRMP. At the time of preparing this report there are no outstanding appeals that affect this proposal.

A summary of the relevant objectives and policies in the PLRMP applicable to this application is provided below:

Section	Objectives	Policies
Wetland Management	5A.2.1	4.4.1.2, 5A.3.3
Land Management	4.3.1	4.4.1, 4.4.3, 4.4.4, 4.4.10
Lake & Riverbed Management	5.3.1	5.4.1, 5.4.2, 5.4.4

The objectives and policies for **land management** relate to reducing the effects from disturbing land on: property and infrastructure, land stability, soil conservation, water quantity, and bed and bank stability. Land disturbance activities controlled by the PLRMP include earthworks and vegetation clearance both within and outside riparian margins. The PLRMP has adopted three categories based on erosion proneness: land with a dominant slope of less than 12 degrees, land with a dominant slope of 12-25 degrees and land greater than 25 degrees. The scale of the earthworks and vegetation clearance required to construct the scheme are such that resource consent is required.

The key policy is 4.4.1, which covers the range of factors that need to be considered when assessing resource consent applications. This policy is an overarching one that should be applied in conjunction with other policies. The AEE has considered land stability matters, particularly in regard to the tunnelling, potential effects on infrastructure, bed and bank stability and water quality. The review has highlighted several outstanding matters and recommends that a number of management plans be prepared to ensure any potential effects are appropriately managed.

The **lake and river bed management** chapter seeks to ensure that as a result of activities, adverse effects on riverbed and bank stability, natural character, habitat, heritage, amenity or cultural values, the stability of existing structures, water quality and fish passage are reduced. Through appropriate design and construction methods riverbed and bank stability can be addressed, however the need for such structures can adversely impact on the natural character of a river and the habitat. The assessment of impacts on natural character has concluded that there are only minor impacts as much of the area is already highly impacted by mining activities and acid drainage issues.

5.3.4 Regional Plan for Discharges to Land

The Regional Plan for Discharges to Land (RPDL) was made operative in April 2002. It manages the adverse environmental effects of discharges to land including, for example, stormwater discharges (liquid contaminants) and discharges from stockpiles and spoil areas (solid contaminants).

A summary of the relevant objectives and policies in the RPDL applicable to this application is provided below:

Section	Objectives	Policies
Solid Contaminants	5.3.1	5.4.1, 5.4.2
Liquid Contaminants	6.3.1	6.4.1, 6.4.2

The adverse effects on the discharge of solid and liquid contaminants are primarily restricted to the ability of the soil to assimilate the discharge. The discharge of solid contaminants relates to the disposal of silt build up excavated from the dams and tunnels to land. The management of these stockpiles will be outlined in the Construction Management Plan and the Landscape and Rehabilitation Management Plan that will be developed by HDL. The disposal of silt to land is considered to be consistent with Objective 5.3.1 and Policy 5.4.2 which promote the appropriate site location, design and management of solid waste disposal. Discharges of stormwater during and post construction are proposed to be treated on land prior to discharge. It is not considered that the proposed stormwater discharges will have any adverse effects greater than a discharge to another receiving environment. Any treatment or rehabilitation will form part of the management plans to be developed by HDL with the expectation that effects would be mitigated, thereby having the potential to meet objective 6.3.1 and policies 6.4.1 and 6.4.2.

5.3.5 Regional Air Quality Plan

The Regional Air Quality Plan (RAQP) provides a management framework for addressing adverse effects from discharges of contaminants to air. This applies to discharges such as odour, dust, smoke and other particulate matter. The RAQP was made operative in July 2002.

A summary of the relevant objectives and policies in the RAQP applicable to this application is provided below:

Section	Objectives	Policies
Dust	7.3.1	7.4.1, 7.4.2, 7.4.3, 7.4.4

The focus of the dust chapter in the RAQP is on avoiding, remedying or mitigating adverse effects from suspended dust such that it does not cause an offensive or objectionable effect whether it be on property or human health. The assessment of potential dust effects concludes that mitigation measures can be implemented to ensure that the effects are not offensive or objectionable and therefore be consistent with the objectives and policies in the RAQP.

5.3.6 Regional Coastal Plan for the West Coast

The Regional Coastal Plan for the West Coast (RCP) was made operative in June 2000. The purpose of the RCP is to provide a framework to promote the integrated and sustainable management of the CMA. Within the CMA, most activities require a resource consent, unless expressly allowed by a rule in the RCP. The tunnelling works, occupation and discharge to the CMA are not permitted by the RCP and therefore require resource consent.

A summary of the relevant objectives and policies in the RCP applicable to this application is provided below:

Section	Objectives	Policies
Public Access & Occupation of Space	7.3.2	7.4.1, 7.4.2
Structures	8.3.2, 8.3.3, 8.3.4	8.4.1, 8.4.2, 8.4.4, 8.4.5
Alteration of the Foreshore & Seabed	9.3.2, 9.3.3, 9.3.4	9.4.1, 9.4.5, 9.4.7, 8
Discharges	10.3.1, 10.3.2, 10.3.3, 10.3.4, 10.3.5	10.4.1, 10.4.2, 10.4.3, 10.4.5
Noise	12.3.1	12.4.1

The relevant objectives and policies for **coastal management** relate to reducing the effects on public access and from occupation of space, erecting structures, altering the foreshore/seabed, discharges and noise.

Objective 7.3.2 and policy 7.4.1 relate to exclusive occupation of the CMA and in particular land owned by the Crown. Due to potential flooding issues if the discharge water was released back into the Granity Stream it is considered that creating the micro-tunnel and diffuser so that the water is discharged to the ocean is the preferable option, albeit that this requires exclusive occupation of the CMA and Crown land.

Objectives 8.3.2 through 8.3.4 require that structures do not adversely affect the natural character of the CMA or coastal processes. The discharge pipeline will be under the seabed and, once constructed, will have little to no effects on the coastal environment or coastal processes. The diffuser will be the only part of the discharge system located above the seabed and will be designed to not impact on coastal processes.

Although the exact design of the diffuser has not been developed yet, HDL is confident discharge trials can be undertaken that will develop a rate of discharge and a diffuser design that, after suitable mixing has occurred, will not result in significant adverse effects thus meeting the objectives and policies of the discharge chapter.

The vast majority of works will be underground and will therefore not produce any audible noise issues. It is therefore likely that the objectives and policies in regard to noise in the CMA can be met

5.4 BULLER DISTRICT PLAN

The BDP became operative in January 2000. In 2004, 113 minor plan changes were notified. 53 of the minor amendments became operative on 8 October 2004. The balance of the changes have been determined, and those plan changes adopted became operative on 25 May 2009. The proposal is therefore being considered under the BDP as amended at 25 May 2009. It is noted that the application was received prior to the recent amendments.

In Chapter 4 of the District Plan, significant resource management issues have been identified. Objectives and policies that relate to each issue have been incorporated to achieve the intended environmental outcome for each issue.

Chapters 5, 6 and 7 of the District Plan outline the methods of implementation (rules) to give effect to the objectives and policies. Chapter 8 outlines the financial contributions which may be required for certain activities.

An assessment of the application is to be made against the objectives and policies. The full text of the relevant objectives and policies can be found in Appendix 2 of this report. Below is a summary of the relevant and key objectives and policies:

Infrastructure

Infrastructure resources represent a significant financial investment in the District and are highly valued by the community, businesses and industry. While not all of these activities are the Council's responsibility, each can have adverse effects on the environment. The significance and ease of mitigation of effects are part of the criteria used to assess the urgency or priority of works and services.

The provisions in the BDP relate more to small-scale activities with localised effects, and do not easily accommodate large-scale activities like hydro electric dams. However, the objectives and policies relate to the efficient development, operation and maintenance of infrastructure, while avoiding activities that would have adverse effects on the infrastructure.

The application is for consent to construct and operate two powerstations in conjunction with each other, with the generated electricity being embedded into the local transmission lines for distribution within the Buller District. The proposal in overview appears to be consistent with the objectives however there has been little evidence provided to show whether the proposal is efficient in terms of the scale and cost of the works required to generate the amount electricity proposed. Also, the proposal is reliant on the upgrade of the local transmission lines, which is not being considered as part of the project.

Although it may be identified that the proposal is an efficient proposal, without this information, it is difficult to determine whether the proposal is contrary to the infrastructure objectives.

In terms of construction of the proposal, the activities fall more easily under the provisions of the policies. The construction of the scheme will not be contrary to the infrastructure policies of the BDP provided there are appropriate conditions, such as ensuring the integrity of the roading and rail networks, and protecting the communities of Hector and Ngakawau from dam breach.

The Built Environment

Although the application is located within the Rural Zone, the proposal is adjacent to the township of Granity, a small coastal community, defined by its mining history and its geographical position between the coast and the escarpment. Within the Plateau, the proposal is near Millerton, while downstream, the damming of the Ngakawau tributaries affects the communities of Hector and Ngakawau. Therefore the effects on the built environment require consideration.

The proposed Granity portal and construction site is located in close proximity to a nodal point of heritage buildings, including the Granity museum (formally the railway station and the state mine store), the coke ovens/kilns, the Granity library and the war memorial, all of which are registered heritage buildings in the Historic Places Trust register. HDL have not undertaken an assessment of the effects the proposal will have of these structures. During construction, the character of the surrounding area will be altered, however HDL are proposing to erect a fence and plant around the site to reduce the visual effects. The long term character of the area will be altered with the portal on the escarpment however it is not expected to be out of character given the mining history in the area.

The construction effects will be more than is normally anticipated within the built environment of Granity, in particular the duration of the works. HDL are proposing mitigation to reduce the effects such as screening the site, undertaking above ground works and HCV traffic within daylight hours and providing acoustic screening around the Jacking Station. However, they have not assessed the effects of construction at any great length to consider whether the mitigation proposed will ensure that vibration and noise will be able to meet acceptable standards. Nor have they provided an assessment of the on-going effects of the HEPS.

Given the lack of assessment of effects on both the heritage character of the community, and the construction effects it is not easy to identify whether the proposal is contrary to the objectives and policies of the built environment.

Rural land and water resource

The predominant economic activity within the Rural Zone is farming. Development in rural areas can compromise the natural, scenic and amenity values of an area. Activities that are not traditionally rural require extra consideration to ensure that the amenities of neighbours and the rural community in general are not disrupted.

In those areas which are public conservation land, permission is required from DoC to carry out any trade, business or occupation. Such concessions include mechanisms to protect conservation values. HDL will be seeking a concession from the Department for the occupation of the Stockton Plateau.

The first set of objectives and policies within the Rural Zone is the protection of the overall integrity and character of the environment and productivity of the area, while enabling communities to provide for their well-being. The HEPS is located within an area that has been highly modified from historic and current mining within the coal measures. The proposal is not expected to be inconsistent with the character of the area, given its highly modified state. The Plateau is not productive in the farming sense however preserving the coal resource for future use is required. The proposal is therefore not contrary to the objectives and policies.

The BDP also has objectives and policies for the maintenance and improvement of the water resource of the District. The environmental benefit being promoted with the HEPS is the collection of AMD waters from the Plateau within the two reservoirs, being diverted from the Ngakawau River and discharged directly out to sea, the premise being the improvement to the water quality of the Ngakawau River. HDL however has not undertaken an assessment on the effects of reduced water quantity within the tributaries, and whether the combination will improve the life supporting capacity of the waters. There is an assumption that this will occur, however there is no evidence. The proposal is therefore in part consistent with objective to improve quality, however there is no evidence to consider whether the proposal is consistent with the second part of the requirements to not adversely affect water quantity, in particular to the tributaries of the Ngakawau River, and the main branch itself.

Mineral resources

The Buller District is relatively well endowed with a variety of mineral resources. They include substantial reserves of bituminous, sub-bituminous and lignite coal. Access to mineral resources is a significant concern in Buller.

The proposed works within the Plateau include the two reservoirs and the tunnel systems. According to the application, there are no known coal seams within the reservoir sites. HDL proposes to provide access across the Mt William dam to retain access to the Mt William coal resource. The proposal is therefore not considered to be rendering the coal resource unusable.

The proposal includes the utilisation of the material extracted from the Stockton and Granity tunnels for construction of the dams. The two tunnels are therefore considered to be a similar activity as aggregate mining. Being underground, the effects will be minimized. Water from the tunnels will be captured and treated prior to discharge. Use of the material from the tunnels will reduce the need to obtain aggregate for the dams from alternative sources, thus reducing the effects on the community.

It is considered that the proposal will not be contrary to the mineral objectives and policies.

Cultural/historical resources

The Buller District is rich in terms of cultural and historic heritage for both Maori and European settlement. Areas and sites of importance occur largely around the coast, wetlands and rivers and in forested areas. Historic resources dating from the time of European settlement are largely concentrated in the existing settlements although significant areas associated with mining and forestry activities still remain.

The HEPS is located within two such rich areas of mining history, being the Stockton Plateau, and the township of Granity. The proposal will affect a number of historical sites.

The Plateau contains a wealth of heritage sites, showcasing mining technologies and practices over the years, from pre 1900 to today. The proposal will affect Fly Creek and Tintown sites. The mitigation proposed to work under an ADP, recording and relocating items will ensure that knowledge of the working is not lost. In addition this may be used for educational purposes. The proposal will however affect a section of the nationally significant loco line at the Weka shoulder dams and relocated haul road. The effects are considered to be adverse to the line, and HDL has not offered mitigation that would address the effects. It is therefore considered that the proposal will not be consistent with the objectives and policies, unless appropriate mitigation is offered.

In terms of the effects at Granity, HDL have not identified that effects the proposal will have on the built heritage around the site, in particular the effects of micro-tunneling under the registered library. It is expected that mitigation would be possible to ensure that the sites are protected, however further evidence is required.

According to the communication from Ngati Waewae, HDL was commissioning a CIA to assess the effects the proposal had on cultural resources. This has not been provided as part of the application. It is therefore not certain whether the proposal will meet the objective of protect cultural values. Ngati Waewae did note concern about the effects the proposal will have on the mauri of the awa due to diverting the tributary waters from the Ngakawau River, although they noted that the improvements to water quality may balance this.

The coastal environment

The small distance between the sea and mountains in Buller means that the coastal environment exerts a significant influence over the landscape, character and amenities of the District. Activities which could result in significant adverse effects on the coastal environment need to be carefully considered.

The proposal includes a micro-tunnel and ocean outfall for the AMD being discharged from the Granity powerstation. The proposal will not affect access to the coast, although HDL wants exclusive rights to the seabed where the diffuser is located. Given that the diffuser is located 600m off shore, it is not expected to affect access.

There is not enough information provided to be able to assess the discharge of AMD waters into the coastal environment and the effects it will have, both from a visible plume and to determine whether the level of trace elements will be of sufficiently low concentrations to avoid adverse effects on aquatic life.

Ecosystems and natural habitats

The Buller District is particularly well endowed with a range of natural habitats and ecosystems, much of which is managed by the Department of Conservation. The application area is located partially within the conservation estate and land administered by other governmental organisations.

The key considerations of the BDP are: the preservation of the natural character of wetlands and coastal and freshwater ecosystems and habitats; the protection of such ecosystems and natural habitats from inappropriate use and development and the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna contained in those ecosystems.

The proposal will result in the loss of vegetation and habitat within the two reservoirs, consisting of approximately 80ha. The loss of which may be small, but when considered cumulatively on the plateau is more than minor. Of importance are also the loss of two vegetation types, cedar association and red tussock wetland, and the loss of habitat in particular for South Island fernbird. The assessment undertaken indicates a lack of knowledge of the effects on lizards, *Powelliphanta* snails and bats.

HDL proposes to rehabilitate disturbed areas outside of the reservoirs, with direct transfer. Other mitigation includes a compensation package of protecting around 14.7ha of lowland coastal forest. While this is not like for like mitigation, it is proposing to protect a type of vegetation that is a scarce resource. There has been no mitigation proposed for the loss of habitat for fernbird.

The proposal is therefore partially consistent with the objectives and policies in terms of flora. It is expected that conditions would be able to address the effects of *Powelliphanta* snails, to be consistent with the BDP however it is uncertain whether the effects and any mitigation would allow the destruction of fernbird habitat will met with the provisions of the objectives and policies.

Landscapes and natural features

The Buller District has a distinctive character which owes much to the landscape pattern and outstanding natural features. Rugged mountains and plateaus grade to forested foothills, river valleys and terraces, down to the coast, with estuaries, rocky outcrops, cliffs and sandy beaches. The climate, topography and soils of the District mean the effects of inappropriate development may be quite pronounced or lack harmony with the surrounding environment.

The BDP identifies the key issue in relation to landscape as the protection of the outstanding landscape values and natural features of Buller District from the adverse effects of inappropriate use and development.

The Stockton Plateau has been highly modified by past and current mining activities to the extent that it was not considered by the Environment Court in *Solid Energy New Zealand Limited et al v West Coast RC and Buller DC C074/05* (2005) as being an outstanding landscape. The proposed activities are expected to be similar in nature to the mining activities, and will therefore not be contrary to the objectives and policies.

Natural hazards

Significant areas of the District are potentially at risk from natural hazards. Aside from the risk to individual safety, natural hazards can also result in damage to natural and physical resources, including the rural land resource, infrastructure and the built environment. The issue is a matter both the Regional and District Council's must consider.

The proposed reservoirs will influence the natural flood risk associated with the Ngakawau River. Although the reservoirs will capture water and lag the flood risk, if the dams should breach for any reason, the resulting hazard risk will be substantial. HDL assessed dam breach for earth dams at certain heights. Since assessing the level of possible flooding from dam breach, HDL has amended the proposal including the type of dam structure and the height of the dam. The design of the dam structures will need to comply with NZSOLD for a high PIC dam structure. It is uncertain what the degree of flood risk from dam breach is now associated with the proposal, although it could be considerable. As such, I am not able to determine whether the proposal complies with the objective to avoid the establishment of activities which increase the likelihood of natural hazards occurring.

The Plateau is highly fractured and the location of faultlines is not fully known. As such, there is a level of uncertainty as to whether the proposed Weka powerstation will be able to be located within the Stockton Tunnel, or whether it will be required to be an above ground structure. HDL has applied for both situations.

Another hazard associated with the proposal is the stability of the Granity portal site within the escarpment. The stability of which is unknown. The location of the portal will be determined following geotechnical investigations to limit the level of risk.

Due to the lack of information on the level of risk from dam breach, and the suitability of the proposed tunnels in terms of the faulting of the site, it is difficult to determine whether the proposal is consistent with the objectives and policies.

Hazardous Substances

The storage, use and transport of hazardous substances are an integral part of some land use activities in Buller. Control of hazardous substances is undertaken under a number of legislation and by both the Regional Council and the District Council.

The applicant proposes to comply with the standards set regarding the use, storage and transportation of hazardous substances, consistent with the objectives and policies of the BDP.

5.5 OTHER RELEVANT MATTERS

Section 104 of the RMA states that decision-makers shall have regard to *any other matter the consent authority considers relevant and reasonably necessary to determine the application*, which can include any national environmental standards, management plans and strategies prepared under other Acts.

5.5.1 Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007

The purpose of the regulations is to reduce the risk of contamination of drinking-water sources by requiring Regional Councils to consider the effects of certain activities on drinking-water sources, in particular activities which may have a significant adverse effect on a drinking-water source.

5.5.2 Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins, and Other Toxics) Regulations 2004

The purpose of the regulations is to provide a guaranteed level of protection to people in New Zealand from certain contaminants in the air. The regulations prescribe standards and prohibitions for various activities that include discharge of dioxins and other toxics into the air and standards for air quality in relation to certain contaminants.

5.5.3 National Biodiversity Strategy

The purpose of the Strategy is to establish a strategic framework for action, to conserve and sustainably use and manage New Zealand's biodiversity. The primary focus is on indigenous biodiversity. However, because of the value and economic importance of much of the introduced biodiversity, the conservation of the genetic resources of important introduced species is also addressed.

The HEPS will result in the loss of significant vegetation and fernbird habitat. These effects have been considered against themes relating to 'biodiversity on land' and 'freshwater biodiversity,' and the priority to do this through: the four priority plans in the Strategy, which are:

- *Community and individual action, responsibility and benefits* by enhancing understanding about biodiversity and enabling an equitable share in responsibility,
- *Treaty of Waitangi* by protecting iwi and hapu interests in indigenous biodiversity,
- *Halt the decline in New Zealand's indigenous biodiversity* by maintaining and restoring the remaining natural habitats and ecosystems and do what else is necessary to maintain and restore viable populations of all indigenous species and subspecies,
- *Genetic resources of introduced species* by maintaining the genetic resources of introduced species that are important for economic, biological and cultural reasons by conserving their genetic diversity.

The proposed compensation of a land swap of lowland coastal forest, meets the third priority, however if DoC don't except the swap, then the effects of the proposal on the biodiversity will be significant. A possible mitigation would be to require Lot 2 DP 361787 to be covenanted for conservation purposes.

The policy document outlines environmental outcomes sought by Ngāi Tahu and the means by which they are seeking to work with resource management agencies to achieve the outcomes.

Part 2 of the policy sets out the direction for Ngāi Tahu involvement in freshwater management and includes the goals and objectives that Papatipu Runanga and resource management agencies should collectively be striving for. Central to the objectives is the need to protect the wahi tapu value of water. This is extended to:

- Mauri, which includes [paraphrased] 'tangible elements of the river health and ecosystems to include aesthetic qualities, life supporting capacity and ecosystem robustness, depth and velocity of flow, continual flow from the mountains to the sea, fitness for cultural usage and productive capacity'.
- Mahinga kai
- Kaitiakitanga

Matters of mauri, mahinga kai and kaitiakitanga are to be installed in objective (priority) 6.1 which expects “to afford total protection to waters that are of particular spiritual significance to Ngāi Tahu,” whereas Papatipu Runanga are expected to advise Councils if waterbodies are subject to protection and Councils are expected to support that protection through their statutory (planning) framework.

Ngati Waewae identified that diverting waters affects the mauri of the Ngakawau River. They have also acknowledged that the water quality will be improved in the Mangatini catchment in particular. To date, a CIA has not been produced identifying the effects on values of the River. It is therefore difficult to determine whether the proposal will meet with the provisions of the strategy.

5.5.4 Te Runanga o Ngāi Tahu Freshwater Policy

Water is considered to be central to all Maori life. It is considered a taonga left by the ancestors to provide and sustain life. It is a requirement of the present generation to act as caretakers for the resource to ensure that it is available for future generations in as good, if not better, quality.

The policy document outlines environmental outcomes sought by Ngāi Tahu and the means by which they are seeking to work with resource management agencies to achieve the outcomes.

With respect to waterways, mauri can be tangibly represented in terms of elements of the physical health of a river ecosystem. The element of physical health that Ngāi Tahu use to reflect the status of mauri and to identify the enhancements needed include:

- Aesthetic qualities e.g. clarity, natural character and indigenous flora and fauna;
- Life-supporting capacity and ecosystem robustness;
- Depth and velocity of flow
- Continuity of flow from the mountain source of a river to the sea;
- Fitness for cultural usage; and
- Productive capacity.

The proposal to divert the waters will negatively impact on a number of the physical health elements of the Ngakawau River. The only enhancement will be removal of AMD from the waters and the resulting potential enhancement of habitat for freshwater ecology such as fish and macro invertebrates. However a number of streams will be diverted and will therefore have little to no flow which will result in little potential to improve habitats in those streams.

5.5.5 Ngāi Tahu (Pounamu Vesting) Act 1997

Through the Ngāi Tahu (Pounamu Vesting) Act, as part of the overall Ngāi Tahu Claims Settlement, naturally occurring pounamu found within the Ngāi Tahu tribal area is the property of Ngāi Tahu. While HDL clearly does not intend to set out to ‘extract’ pounamu, it could be accidentally discovered during earthworks and tunnelling. If pounamu is extracted, it cannot be removed without consultation with, and the approval of, Te Runanga o Ngāi Tahu and the appropriate Runanga. Conditions relating to accidental discovery are recommended to be included as conditions of consent.

5.5.6 Conservation Management Strategy

DoC has prepared a Conservation Management Strategy for the West Coast (CMS) which is in draft form (West Coast Te Tai o Poutini Conservation Management Strategy 2007). The document implements general policies and establishes objectives for the integrated management of natural and historic resources in the region.

A CMS is a strategy that implements general policies and establishes objectives for the integrated management of natural and historic resources and for recreation, tourism and other conservation purposes. The strategy is reviewed every 10 years.

Although the Department have withdrawn their wish to be heard, they note in their letter dated 6 July 2009 that they do retain concerns in relation to the flora, fauna, freshwater, marine and historical effects. They note however that these will be appropriately considered through their internal processes when processing the access arrangement and or land swap.

5.5.7 National Energy Policy

Over the last seven years the government has put in place a number of energy policies to address the way in which energy is managed and delivered, including:

- Energy Efficiency and Conservation Act 2000
- National Energy Efficiency and Conservation Strategy 2001
- Government Policy Statement on Electricity Governance 2004
- Powering Our Future: Towards a Sustainable Low Emissions Energy System - Draft New Zealand Energy Strategy to 2050

The proposed HEPS, in being a renewable energy project, reflects the recent legislative changes to Section 7 of the RMA and many of the key components of national policy in the documents above.

HDL has noted the relevance of the HEPS in contributing to the policy direction at a national level. We recognise this synergy and the necessity to consider this national policy in relation to other policy at national, regional and local level. The benefits of assisting to achieve this policy must be weighed against policy at all levels relating to natural elements of the environment, and regional and local elements of community wellbeing.

5.6 RESOURCE MANAGEMENT ACT 1991

5.6.1 Part 2 Matters

An analysis of Part 2 is necessary to assess whether the HEPS meets the overarching purpose of the RMA.

Sections 6-8 are commented upon prior to a final evaluation of Section 5 of the RMA. In *Tainui Hapu v Waikato RC A063/2004* at [163]: *because the Act has a single purpose, and S6 to 8 are subordinate and ancillary to (Section 5), we apply the relevant provisions of those sections first, and then come to the overall judgement.*

This approach has been taken in this assessment, beginning with Matters of National Importance (Section 6); other Specific Matters (Section 7); then the Principles of the Treaty of Waitangi (Section 8) and then commenting on section 5.

Although there are tensions inherent in the provisions of Part 2, the provisions broadly indicate the level of weight to be given, effectively establishing a hierarchy by giving priority to the matters of national importance in Section 6 over the matters set out for consideration in Sections 7 and 8. However if there are conflicting values in a proposal, as between a value identified in Section 6 and one identified in Section 7, the “internal ranking” of these sections does not mean that the Section 6 value must prevail, rather all Part 2 factors are subservient to the single purpose of sustainable management.

5.6.2 Matters of National Importance –Section 6

Section 6 covers matters of national importance that shall be recognised and provided for. Section 6 states:

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.

Our interpretation of this is that the matters of national importance need to be considered in the context of the scale and significance of effects, and the degree to which mitigation is likely to be successful. In the case of the HEPS this includes delayed mitigation such as providing a walkway between Weka and Mt William reservoirs, some long term mitigation such as pest and weed control and other proposals which are designed as compensation such as the land swap.

Section 6(a) requires recognition and provision for 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 ... use, and development.* The impacts of the proposed HEPS on natural character are addressed in section 4.9 above.

We note that case law has established that the preservation of natural character is subordinate to the primary purpose of the promotion of sustainable management. Preservation of the natural character is not an end or an objective on its own, but is accessory to the RMA’s principal purposes.

Generally, the words “natural” and “natural character” do not necessarily equate with “pristine”, but may connote a range of qualities and features created by nature as distinct from manmade constructions, including things such as pasture, exotic trees, or wildlife, both feral and domestic. Even where human habitation has modified a landscape, its natural character is not necessarily destroyed; however it will be at a lesser value.

Preservation is subject to the qualification as to protection from inappropriate development. District and Regional Plans may identify what appropriate development is. Within the PWMP, a level of damming and associated taking, use, discharging and diversions for hydro-electricity generation is a controlled activity, subject to a number of conditions. This sets an enabling expectation of these statutory provisions. However the Plan’s objectives and policies lean towards more restrictive preservation and raises questions of whether the proposal is appropriate.

In our opinion, the assessment must therefore be in terms of the degree of natural character, the amount of change being effected and the extent to which the development is appropriate.

The catchments of the Stockton Plateau have been highly modified by mining activities and are heavily impacted by AMD. The area does not have high natural character due to the extensive modifications that have already occurred in the environment.

The Mt William reservoir will result in the loss of wetlands, however it is possible that similar systems may develop around the edge of the reservoirs due to the fluctuating operating levels. Changes will occur within the river systems that have waters diverted, and are dammed. The majority of the hydrological effects of the proposal upstream of the dams are likely to be contained within the reservoirs. The main effects will occur downstream of the dams and before tributaries enter the system. These effects are likely to include increased periods of low or no flow and potentially a reduction in the magnitude and duration of floods downstream of the reservoirs.

The proposal to divert the waters will negatively impact on a number of the physical health elements of the Ngakawau River, affecting the mauri of the River. To some extent this is countered by the potential improvement in water quality and habitat as a result of the removal of much of the AMD impacted waters from the catchments. It must however be noted that SENZ are required to address the matter of AMD from their mine sites, and as such, HDL may have overstated the likely improvement in water quality.

The proposal will result in an alteration of the coastal environment, which includes the CMA and that part of the land which is affected by coastal processes, in this instance the escarpment. Parts of the HEPS within the coastal environment include the Gravity portal and access ramp, as well as the micro-tunnel and ocean outfall. These activities will alter the character of the areas, however the main effects will be located underground so there will be little visual change to the character. Possibly the portal will create the largest change to the area, however this is setback from the coast, behind the existing township, therefore the impact on the character of the coast is reduced.

Overall, we consider the river systems on the Plateau and the coastal environment to be highly modified areas with a reduced natural character. As such, we consider the dam structures and diversion tunnels and associated changes are not inappropriate.

Section 6(b) requires the protection of **outstanding natural features and landscapes** from inappropriate ... use, and development. To fall within Section 6(b), a natural feature or landscape must be both outstanding and natural. Outstanding landscapes should be assessed on a district-wide basis because the sum of the district's landscapes is the only immediate comparison that the territorial authority has.

The BDC initiated a plan change in 2004, identifying outstanding natural features and landscapes. Submissions were called for and a hearing held. The Council however withdraw the plan change. As such, a district wide assessment of outstanding natural features and landscapes has not been completed, and so each application must be considered on its merits.

The Environment Court in *Solid Energy New Zealand Limited et al v West Coast RC and Buller DC C074/05* (2005) concluded that while some sub-units of the landscape have very high values, overall the Stockton mine site was not part of an outstanding natural landscape due to the amount of human interaction from past and present mining activities.

The HEPS is located within this landscape, and the proposed reservoirs are located on areas impacted by previous mining activities, rather than on unmodified land, as such, the naturalness of the site is reduced. The proposal to include tunnels and locate the powerstations underground also reduces the impacts on the natural features and landscape.

The protection of **areas of significant indigenous vegetation** and **significant habitats of indigenous fauna** is addressed in Section 6(c). Significance has a number of criteria used in its determination. The Court in *Mighty River Power Ltd v Waikato RC A146/01*, 7 NZED 117 advises that depletion or rarity value should not “rule”, as that could amount to unreasonable predetermination. The context within which Section 6(c) occurs, and the relative positions of Sections 5 and 6 require that sufficient attention must also be paid to other values as well as to the many factors relating to sustainability in Section 5. The section does not require an assessment as to the appropriateness of the activity.

Although the area being affected by the proposal is relatively small, 80ha, the cumulative effect of the loss of vegetation and habitat raises the level of effects to being more than minor. The proposal will effect a cedar association, of which little is known about its distribution within the Ngakawau Ecological District, so the effects of its loss are unable to be assessed. The proposal will also result in the reduction of red tussock communities associated with wetlands.

The loss of the riparian communities will be significant as each river has its own sequencing based on influences within the catchment, in particular the frequency and depth of flooding. HDL advises that this is likely to be replicated when the reservoirs are inundated, however the degree of flooding, velocity and topography will differ and it may take a long time to mitigate. In addition, the operating regime, with intermittent flooding, may affect the ability of the site to rehabilitate. Transfer of red tussock might be achieved with minimal disruption to the wetland communities, and because of the high rainfall, we doubt that the species are likely to die through dry-out if timing of the transfer is carefully planned.

The application will therefore not protect the vegetation. HDL is however proposing compensation in the form of a land swap with DoC of a parcel of lowland coastal forest at Fairdown. The outcome of this process is unknown at the time of writing this report, and DoC's letter of withdrawal from the hearing indicates that the decision will not be until after the resource consent process is completed. HDL have not proposed that the site at Fairdown be protected by way of covenant should the land swap not be given approval, however this is recommended.

In terms of indigenous fauna, the proposal will result in the disturbance and loss of habitat for a number of endangered or threatened species, being kiwi, fernbird, lizards and *Powelliphanta* snail. A number of which are able to be relocated, either by themselves or by translocation. There was little information provided as to the presence of bats or invertebrates.

The proposal will result in the loss of 80ha of habitat for fernbird, an “at risk” (declining) species. This will be a significant loss with around 100 pairs of fernbird being affected. It is uncertain whether the mitigation of directly transferring vegetation will retain the habitat for the fernbird or whether the proposal will result in the loss of the fernbird population from the application site. Appropriate investigation into the mitigation has not been undertaken.

In terms of the location of the fauna, especially in sites outside of the reservoirs where the geotechnical drill sites, transmission lines and temporary access roads are to be located, HDL have undertaken little assessment. Further study of these sites will be required prior to any activities occurring, and possibly the relocation of fauna.

Work on the escarpment for the Granity portal is not considered likely to affect any significant vegetation or habitats of fauna.

Section 6(d) requires recognition of the maintenance and enhancement of **public access** to and along the coastal marine area, lakes, and rivers.

The proposal includes the application for exclusive rights to part of the CMA for the ocean outfall pipeline and diffuser. The proposal will not however impede access along the coastline.

It in terms of access to rivers, the proposal will result in a number of waterways being affected. At Granity Creek, a stormwater outfall and emergency channel will be installed, which will be located within the road reserve. These pipes however are likely to be buried, thereby not affecting access. Maintenance is proposed of the banks of the creek to ensure stability and access is protected.

At Ngakawau, the proposal will result in a lower flow regime, affecting the period under which the river will be able to be used by white water rafters and kayakers. Submissions from recreational users however tend to be in support of the proposal, as the HEPS will remove the majority of AMD waters, thus improving water quality. HDL also proposes to remove contaminants from the rocks around the Mangatini Falls. The URS dam breach report however noted that should there be a breach, access along the Charming Creek walkway will be adversely affected.

There is little public access along the creeks within the Stockton Plateau, as access is restricted due to SENZ’s mining operations. Public access is however available to Repo Basin. HDL propose to provide a temporary walking track around Weka construction site during construction, then provide permanent access along the Weka dam to the basin once construction is complete.

HDL also proposes a walking track between the Weka and Mt William reservoirs be developed, however this is dependent on the co-operation of DoC and SENZ, and there is no clear indication whether there is any formal commitment from the other two parties to the development of a walking track

On balance, the potential adverse effects of the HEPS on public access to and along rivers are considered to be minor.

In regards to the **relationship of Maori** and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga (Section 6(e)), a CIA was proposed to be prepared and presented as part of the application detailing the relationship of Ngati Waewae with the Ngakawau River and their concerns in regard to the impact of the HEPS on their cultural values and traditions. We note that the CIA has not been presented as part of the application. Consideration has been given to the SENZ Cypress Mine CIA, which adjoins the site, however the policies and outcomes identified in the CIA are not able to be easily extrapolated for this project.

Following along the lines of ensuring a relationship with Maori, the application was served on five iwi whom are affiliated with the Buller District. No submissions were received.

Section 6(f) requires **recognition** and **provision for the protection of historic heritage** from inappropriate ... use, and development.

Historic heritage has a very broad meaning under the RMA. The application area contains historic heritage, in the form of mining activities and associated access routes and settlements.

HDL proposes to investigate the application area prior to inundation and to record information gathered. The applicant proposes to erect interpretative panels explaining the historic heritage of the area. In addition, for any artefacts found, these are proposed to be removed and some used as part of the interpretive displays. There is no information on the possible effects of the construction, in particular the tunnelling and micro-tunnelling on the built heritage at Granity.

There is agreement between the applicant's archaeologist and Councils technical expert that the electric loco line is nationally significant. The Councils technical expert believes that the proposed Weka dam, reservoir and relocated haul road will have significant adverse effects on the line. This differs to the views of the applicant, who consider the site to be in poor condition and therefore retains little value.

Section 6(g) requires **recognition** and **provision for the protection** of recognised customary activities. No customary rights order is known to exist for the Ngakawau River and its tributaries.

5.6.3 Other Matters – Section 7

Section 7 covers other matters to which particular regard must be had. These are listed in section 3.1.2 of this report. The provisions that are relevant to this application are discussed below. To "have particular regard" requires that matters must be considered and given genuine attention and thought; however they may be rejected or accepted only in part when considered in balance with Sections 5 and 6.

Kaitiakitanga creates not just an obligation to hear and understand what iwi have to say in relation to an application but also to bring what is said into the mix of the decision-making. It does not however create the ability for iwi to be part of ensuing compliance with conditions, as this is a function of the local authorities.

HDL consulted with Ngati Waewae prior to lodging the application. According to their letter in Appendix N, HDI and Ngati Waewae were in negotiation for Ngati Waewae to develop a CIA. According to the correspondence, this was to be included as part of the application. It was not.

The application potentially affects five iwi, Ngai Tahu, Ngati Waewae, Ngati Apa Ki Te Waiponamu Trust, Ngāti Rārua and Te Runanga o Toa Rangatira Inc, all of whom were served with the application. No submissions were received from iwi.

Section 7(aa) requires consideration of the **ethic of stewardship**, or environmental care and responsibility. This would normally be addressed within the CIA, which did not accompany the application.

Section 7(b) requires a consideration of whether a proposal is an **efficient use and development of natural and physical resources**. Section 7(b) does not require consideration of the use or development of other resources that might have been used instead. However, it is noted that by default all aspects of efficiency are 'economic' by definition (*Marlborough Ridge v Marlborough DC C111/97*).

A proposal may provide an efficient use of a resource, noting that the creeks, streams and rivers of the Stockton Plateau are a natural resource albeit contaminated with AMD, if it enables people to provide for their social and economic well being but only to the extent that it:

- does not impair the social well being and health of other people and the community;
- avoids, remedies, or mitigates adverse effects on the environment; and
- maintains and enhances amenity values and the quality of the environment.

The level to which effects on the physical and economic environment can be avoided, remedied or mitigated has been considered in the effects assessment section of this report. In summary, there is considered to be insufficient information relating to economic efficiency of the proposed use and development.

In terms of gravel extraction, Sections 7(b) and 7(g) do not extend to Councils requiring having particular regard to the efficient use of minerals. Aspects relating to risk of natural or other hazards can be regarded as inefficiencies. The technical reviewer raises concern over a number of hazard issues which would require assessment, for instance maintenance of sluice gates and dam breach.

The maintenance and enhancement of **amenity values** under the proposed HEPS is discussed in sections 4.5, 4.7 and 4.11 above.

The amenity of the Stockton Plateau includes modification to the landscape from past and current mining activities. The application includes the two reservoirs and powerlines crossing mostly the modified areas, rather than affecting unmodified parts of the Plateau. This will alter the amenity of the plateau. The level of amenity will be dependent on the water quality within the reservoirs and the ability of the riparian margins being rehabilitated.

The main impact on amenity will be during construction, with the increased noise and traffic generated from the development, and the vibrations from the tunnelling activities. HDL are proposing some mitigation measures to reduce the effects on amenity, however it is accepted that the proposal will change the amenity to which residents are currently subject to.

Another change to the amenity of the site will be the emissions of EMFs. While locating the powerstation underground will reduce the potential of EMF emissions, the proposal will result in more than present. As such, it is recommended to comply with the ICNIRP Guidelines to protect public and occupational health.

In having regard to the intrinsic values of ecosystems (Section 7(d)) it is necessary to consider the RMA definition of 'intrinsic values' being *'in relation to ecosystems, means those aspects of ecosystems and their constituent parts which have value in their own right, including—*

- (a) Their biological and genetic diversity; and*
- (b) The essential characteristics that determine an ecosystem's integrity, form, functioning, and resilience.'*

The aquatic ecology of the Ngakawau tributaries is currently adversely affected by mining activities and AMD. The removal of a substantial portion of the AMD will lead to an improvement in water quality which should also lead to an improvement in ecological values. However, based on the information currently available it is difficult to substantiate the predicted outcome of an improvement in water quality and ecological values. There has also been little study of the ecological values of the tributaries that are not impacted by AMD but are impacted by the HEPS. Further study also needs to be undertaken to assess the effects on bryophyte communities in some of the plateau streams. This work on bryophytes is currently being undertaken by the applicant and will be presented at the hearing.

Terrestrial ecosystems have been modified within the plateau environment. The site however does contain plant associations that are reasonably rare which will be affected by the project, being cedar and red tussock. HDL are proposing to use direct transfer for riparian vegetation and these types of vegetation, which depending on the timing and location of the transfer should be able to provide some mitigation.

HDL also proposes a land swap with DoC, to swap the application site for 14ha of lowland coastal forest. It is recommended that this parcel of land be protected by way of covenant, regardless of whether the land swap is approved.

The proposal will result in the loss of habitat for bird species, in particular with the reduction in fernbird habitat and potentially the loss of around 100 pairs of fernbird. No mitigation is proposed.

HDL is proposing to search for and relocate lizards within the reservoir areas prior to inundation. It is noted however that the search should not just be limited to the reservoir areas but to all areas of disturbance, and has the potential to have not only lizards but also *Powelliphanta* snail and invertebrates included in that search. Surveys prior to physical works should be undertaken and either species relocated or areas of disturbance moved.

We consider that the mitigation suggested by the applicant is limited, and note that weed and pest control throughout the life of the operation is also required.

The maintenance and enhancement of the **quality of the environment** (Section 7(f)) requires an all encompassing view of the environment. There will be some significant impacts on the quality of the environment for residents during construction. Post construction the environment would be different, but it is not considered that there would be a significant adverse effect on the quality, with the exception of amenity aspects and the loss of fernbird habitat which would remain outstanding as previously discussed.

Section 7(g) requires decision-makers to have regard to any **finite characteristics of natural and physical resources**. To the extent that aggregate is finite in the local area, the proposal includes using the material extracted from the tunnels and the reservoirs to construct the dams. As noted above, the efficient allocation of rights in respect of Crown-owned minerals is governed by the Crown Minerals Act 1991, not by the RMA, with Sections 7(b) and 7(g) not extending to Councils being required to have particular regard to the efficient use of minerals or to their finite characteristics, *Winter vs. Taranaki RC* A105/98 (1998).

The benefits to be derived from **the use and development of renewable energy** (Section 7(j)) need to be considered along with **the effects of climate change** (Section 7(i)). Linked in with the development of energy is also the efficiency of the end use of energy (Section 7(ba)) however, this proposal is not for the use of the energy (although there may be some relevance in terms of reduced line loss, if the overall system is considered).

In terms of Section 7(j), it is recognised that the national energy and renewable electricity policies intend to result in schemes such as HEPS, because of electricity being a vital resource for New Zealand. One of the benefits of HEPS is increased generation capacity on the West Coast that will lead to greater security of supply, and the embedding of the electricity into the local network.

A local source of generation, if used locally, means that transmission losses are reduced and there may be a reduction in the reliance on the national grid. While it is clear that the proposed HEPS will have positive benefits by making a small contribution to addressing climate change and by the use of a renewable source of energy, these positive effects cannot dominate over all other values if cumulatively the adverse effects of the proposal cannot be adequately mitigated.

In terms of climate change, given the current prediction that there will be a 25% increase in rain fall on the West Coast by 2070, there could be additional benefit from the development of hydro schemes on the West Coast.

5.6.4 Treaty of Waitangi (Section 8 RMA)

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).

The wording “shall take into account” requires decision makers to consider the principles of the Treaty with all other matters, such as the provisions within the RPS, the PWMP, PLRMP and the BDP. There are two core Treaty principles: partnership and active protection (a duty to protect Maori interests). In addition, are any iwi management plans, such as Te Runanga o Ngāi Tahu Freshwater Policy.

Consultation between HDL and Te Runanga o Ngati Waewae has occurred and it is clear that discussions are ongoing. Through correspondence, it appears as though Ngati Waewae were contracted to develop a CIA for the proposal. This has not been received.

The Councils served notice of the application on five iwi who have association within the Buller District. No submissions were received.

5.6.5 Purpose (Section 5 RMA)

The purpose of the Act is to promote the sustainable management of natural and physical resources. Section 5 goes on to elaborate on the definition of sustainable management, noting:

- (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.*

Case law has indicated that making a judgement under Section 5 is not a balancing exercise between positive and negative effects, that adverse effects must under 5(2)(c) be avoided, remedied or mitigated, regardless of positive effects, *NZ Rail Ltd v Marlborough DC* [1994] NZRMA 70 (HC), *Campbell v Southland DC* W114/94 (PT). That is not to say however that adverse effects are not acceptable, rather it is a question of fact and degree of significance.

In this case, we know that positive benefits will accrue in the way of potential security of electricity supply for the West Coast, increased national renewable energy generation and the benefits to the local community that accrue from the construction period, albeit that the economics and viability of the scheme are not known.

There are also adverse effects of significance in relation to a number of matters of national importance, as set out earlier in this report. Health and safety are facilitated by a reliable electricity supply, but the proposal involves a range of natural and man-made hazards which may have a countermanding effect.

The RMA does not require that all effects are avoided, remedied or mitigated. Rather it requires that the effects that will occur are sustainable.

Weight and proportion are critical in reaching an overall broad judgement under section 5 as to whether the purpose of the Act will be achieved and in this instance it has been particularly difficult to apportion relative weight to each issue.

It is acknowledged that both the District and Regional Plans make specific provision for the establishment of utilities and hydro electricity generation, though the RPS directs that this provision should not be inconsistent with other policies of the RPS.

In order to determine whether granting the applications will meet the purpose of the Act, HDL need to further address key issues such the change to the amenity for the Granity community during construction, the effects of reduced water quantity in the life-supporting capacity of the waterbodies, the effects of the electric loco line, significant habitats of fernbirds, and the risk potential of dam breach and EMFs that have been noted above.

As can be expected, given the absence of information in terms of some effects resulting in consequent uncertainties over key issues, and the uncertain success of some of the proposed mitigation, as well as the lack of proposed mitigation for some of the effects, such as the loss of fernbird habitat and the destruction of the loco line, we find we generally cannot reach a conclusion as to whether the proposal will meet the purpose of the RMA, as expressed in Section 5.

6 PROPOSED CONDITIONS

Section 17 of the RMA places a duty on all people to avoid, remedy, or mitigate any adverse effect on the environment arising from an activity carried out by or on behalf of that person whether or not that activity is in accordance with a rule in a plan or resource consent.

Where there are feasible options to avoid adverse environmental effects, this is the primary objective. This does not imply that any activity that may have an adverse effect should be avoided, if the activity can comply with the purpose of the RMA, which is the sustainable management of natural and physical resources. Therefore the RMA is about managing the effects and enabling people and communities to meet their foreseeable needs.

It is common practice for Section 42A reports to provide guidance on conditions so that should a conclusion be reached after hearing all the evidence that the consents should be granted, there is a starting point for consideration. Moreover, draft conditions can form a useful reference point for comment on in evidence presented at hearings.

HDL has provided Councils with a draft set of conditions, which are included in Appendix 3. We have taken the following approach to the draft conditions:

- Reviewing the suggested conditions for the HEPS provided by HDL on 26 May 2009,
- Reviewing the expectations and parameters of the various management plans, and
- Providing some general notes about the need for and type of condition where exact wording is not proposed.

Appendix 3 should be considered 'work in progress' as part of the hearing, as it is possible that as a result of the evidence presented at the hearing by HDL and the submitters that the conditions may need to be amended to better address the effects.

Conditions must aim to avoid, remedy or mitigate the actual or potential adverse effects of the proposal on the environment and be:

- Legally binding on the consent holder,
- For a resource management purpose and address an actual or potential adverse effect,
- Enforceable by the consent authorities,
- Within a council's powers under the RMA,
- Certain, clear and unambiguous,
- Relevant to the subject matter of the consent, and
- Fair, reasonable and practical.

6.1 MANAGEMENT PLANS

It is considered important to make some comment here about the role of management plans. Management plans are an accepted means of addressing effects and are a useful way for the consent holder to show how they intend to comply with the more specific controls or parameters set out by the other conditions of consent. However, because technology and knowledge might change over time, the consent holder should have the ability to update management plans without having to go through the process of seeking a change to the conditions of consent.

While management plans are intended to provide information as to how a consent holder will comply with conditions, *Ravensdown Growing Media v Southland RC C194/00* notes that “*management plan cannot go as far as to provide any arbitrary power to the authority in respect of its contents*”. However, in our view a management plan approach can meet these requirements if coupled with a review of conditions as provided for in Section 128 of the RMA.

The approach taken to the management plan conditions is to specify the matters as a minimum, and where practicable performance measures are also stated in conditions, they must also be included in the plan. This is particularly important for the HEPS because of the likelihood of change to management plans once construction commences.

Reporting on environmental performance will form the basis of compliance.

Appendix 3 includes the conditions suggested by HDL. We view these very much as a work in progress, as they do not reflect the level of performance that would be envisaged if consent were to be granted. In particular we are concerned about the ‘as practicable’ terms used in the draft conditions. We consider that a greater degree of certainty is required in the conditions, so that the effects can be addressed.

The management plans must be produced to comply with the conditions of consent, and will be lodged with the Councils and any other relevant parties (e.g., NZHPT, New Zealand Transport Agency, etc) prior to commencing construction. They build on the requirements set out in any consent conditions and are applied to the specific designs for the project, the staging of its components and the methods of construction, all of which will only be known as the scheme nears construction. These plans, once approved, then become rules for the contractor’s management and operation of the activity. HDL intends to have at least eight management plans managing effects as follows:

1. A Construction Management Plan to identify the construction programme and procedures to following including:
 - a. Details of works required, including geotechnical investigation and construction,
 - b. Methods of vegetation clearance and earthworks,
 - c. Methods to reduce solid waste,
 - d. Health and Safety procedures,
 - e. Management of nuisance dust,
 - f. Sediment treatment and discharge,
 - g. Traffic management plan,
 - h. Communication processes; and
 - i. Archaeological protocols.

The construction activities will be controlled through the use of management plans. This is a tried and tested methodology to deal with activities and effects that cannot be defined fully at the time of resource consent application. Typically these plans identify all the sources of nuisance or hazard from a construction area and stipulate controls to avoid, mitigate or remedy these.

The construction management plan links into the following plans, and as such, it may be appropriate for them to form one document. The following plans however relate to not just the construction of the proposal, but also to the ongoing operation of the project. Of importance is the need to ensure that the following plans ensure ongoing compliance once the scheme is operational.

The traffic management plan will primarily address the management of construction traffic on public and haul roads. The plan will also need to include the requirements within privately controlled areas as well, for instance at the temporary level crossing and within SENZ's CML.

2. An Erosion and Sediment Control Plan to ensure effects of erosion on water quality are minimised, including:
 - a. Methods of vegetation clearance and earthworks, and
 - b. Stormwater runoff controls and sediment control facilities.

This plan will deal with controlling sediment movements within the site, mostly during the construction phase, and will detail the methods of erosion and sediment control that will need to be implemented and maintained to ensure compliance with conditions of consent particularly relating to water quality parameters. The plan will also detail methods of controlling stormwater on site.

3. The Noise and Vibration Management Plan ensures that the practices and procedures meet with appropriate standards, including:
 - a. Details of machinery levels, hours of operation,
 - b. Mitigation structures,
 - c. Compliance standards,
 - d. Monitoring and reporting methods,
 - e. Complaints procedure,
 - f. Communication procedure re notification of blasts, and
 - g. Surveys of structures prior and post tunnelling.

The Noise and Vibration Management Plan will be implemented in tandem with conditions of consent imposing specific noise controls. As such the plan will detail the noise sources associated with the construction and the noise control methods required to achieve compliance with conditions of consent imposing maximum noise levels. The plan will also document contingency plans (in the event that noise limits are exceeded), monitoring procedures, and complaints procedures. Finally, the plan will provide for the monitoring and management of any effects associated with vibrations from not only the tunnelling but also HCVs.

It is important that this plan refers to not only the effects during construction, but also to the ongoing operation of the scheme to ensure that the powerstation and related activities do not create a nuisance.

4. Landscape and Rehabilitation Management Plan to establish an indigenous vegetation cover on all disturbed areas, ensuring stability of the site and preventing invasive weeds and pests, to include:
 - a. Measures to reduce areas of disturbance,
 - b. Rehabilitation strategies for all geotechnical investigation and disturbed areas so that finished landforms and vegetation cover are integrated into the natural landscape,
 - c. Contouring and rehabilitation strategies for the progressive rehabilitation of the two sediment fill sites,
 - d. Details on interpretative display and retention of public access
 - e. Monitoring the success of revegetation, and
 - f. A sub-section entitled "Weed and Pest Management" which includes:
 - i. Details of where control to be undertake
 - ii. Details of targeted exotic plant and/or animal predator species
 - iii. Methods of control and monitoring
 - iv. A programme of *Juncus squarrosus* control on all disturbed areas, and
 - v. Control of predators, particularly stoats and possums in the disturbed areas during construction and during the rehabilitation phase.

The proposed conditions put forward by HDL have a time limit to them. The proposed management plan, as it sets out requires compliance during and post construction. It is important however to note that the proposal to limit rehabilitation to two years post construction will not provide an adequate timeframe in which to ensure that rehabilitation of indigenous vegetation on disturbed areas has been successful, nor will it provide enough time to give effect to the weed and predator control plan.

5. A Terrestrial Ecology Management Plan to manage construction and mitigate the actual or potential effects of construction activities on terrestrial ecology. including:
 - a. Description of terrestrial ecological values,
 - b. Survey methods for the recovery of lizards and Kiwi,
 - c. Identification of the areas which are to be used for direct vegetative transfer,
 - d. Timescale of rehabilitation activities,
 - e. Control of predators in the disturbed areas, and
 - f. A programme of *Juncus squarrosus* control on all disturbed areas.

The concern regarding the proposed plan, is the lack of provision for further survey of areas of disturbance, in particular of geotechnical drill sites and power pole sites, prior to disturbance to ensure that the proposed works will not impact on fauna in the area, in particular lizards and *Powelliphanta* snail.

There is also no mention of the proposed works to be undertaken in relation to mitigation of habitat for fernbird.

6. Sediment Management Plan for all the impacted watercourses and to address ongoing procedures for sediment control once the scheme is commissioned, including:
 - a. Identifying existing processes,
 - b. Control measures to minimise sediment discharges at the ocean outfall, and
 - c. Operational measures to control sediment entering the scheme.

The sediment management plan deals with the operational issues of dealing with sediment movements through the system. In particular it will detail the control of sediment within the reservoirs and the potential to discharge to the CMA via the ocean outfall. The plan will also detail how sediment generated from ongoing mining activities upstream of the reservoirs will be dealt with.

7. Ocean Outfall Management Plan to manage the actual or potential effects of the discharge on the coastal environment, including additional trials required to:
 - a. Model predictions of the actual water quality to aid in determination of the final configuration of the outfall diffuser design, and
 - b. Develop a monitoring regime to ensure the discharge meets ANZECC water quality.

This plan will detail the additional field trials and modelling that will be undertaken to verify the predictions of water quality that will be discharged and to develop the final design for the diffuser. The plan will also link with conditions of consent that will detail the monitoring to be undertaken to ensure the discharge is meeting ANZECC water quality limits and is not having any adverse effects on aquatic ecology in the CMA. The plan will also detail the actions to be taken should the discharge not be complying with discharge limits.

8. Hazardous Substances Management Plan shall address storage and management requirements for hazardous substances, and contingencies and responses in the event that these substances are spilled.

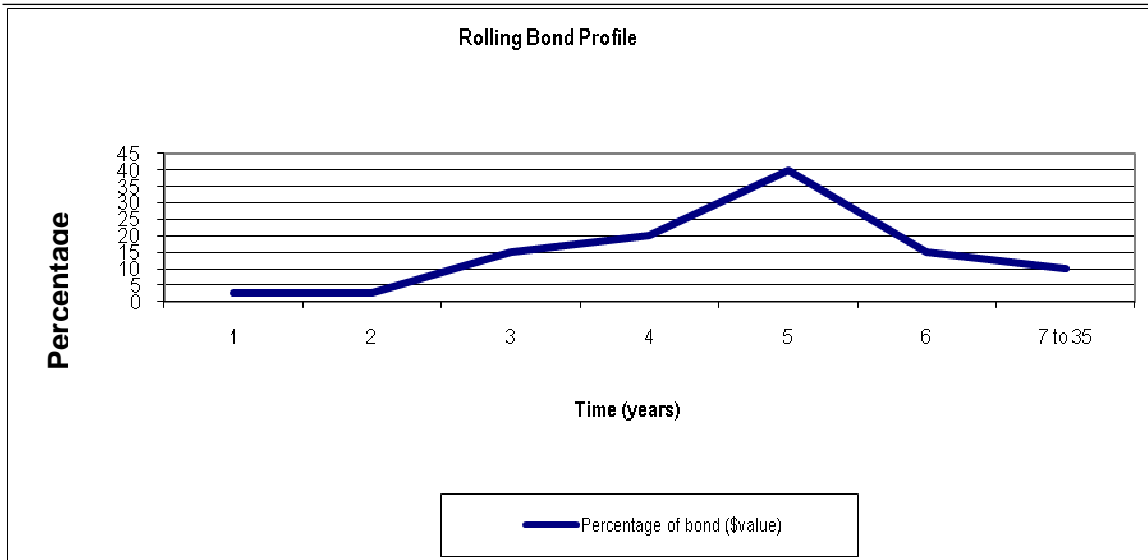
This management plan will be effective during both the construction and operational phases of the project.

6.2 BONDS

Bonds may be imposed under Section 108(2)(b) of the RMA. The general principal behind bonds is to ensure that the consent holder is complying with conditions of consent, with the bond becoming available for use by the Councils if there is non-performance.

There are two ways in which a bond can be held, either by providing security (cash bond) or by a guarantor (insurance bond). The amount of the bond should be set by the BDC and WCRC once the details of the physical works and costs associated with compliance with conditions are known. As a condition of consent, it is important to identify the process, methodology and rationale of the bond.

In terms of guarantee bonds, the common form is a rolling bond. The following diagram provides some assistance to understanding the risk profile and how a rolling bond will be managed. It should be noted that this diagram is for illustrative purposes only.



The approach recommended is to impose a three year rolling bond with an annual review in line with the works proposed in the annual construction programme. This allows a flexible approach to be taken to reflect the fact that during the term of the consents there will be an ongoing process of compliance. As a minimum, the graph suggests from years 7 to 35 (35 years being the term of most consents) a minimum bond be maintained by the Councils to account for the risk from years 7 to 35. Importantly from years 1 to 2 a smaller bond will be held, then as the construction is at its busiest point (greatest risk in years 4 to 6) the greatest level of bond is held. Notably the performance of the design will be tested over the first two years following commissioning, assuming commissioning occurs at the end of year 5. This technique has been used throughout the West Coast for large scale projects.

The value of the bond(s) that need to be set should be agreed at the point of certification of the management plans using the Monte Carlo financial simulation method, which calculates the bond figure, based on the agreed value of bond and percentage proportionate of the bond over any of the three year rolling period.

The bond would be reviewed annually as part of the overall review of the Construction Management Plan each year from year 1 to year 5 and as part of the annual review of the remaining operational management plans from years 5 to 35 (assuming key consents granted were for 35 years). The initial agreement at the certification of the construction stage management plans is intentionally to coincide with dam building consents.

It is recommended that a rolling bond be put in place for the duration of the geotechnical investigations and construction stages of the consents, as well as for a period after construction to ensure the rehabilitation of the remaining disturbed areas (including recontouring of the sites, removing structures and revegetation) are maintained until they have established with a 90% cover. The review of the bond should occur in conjunction with the Annual Work Plan.

This bond does not cover a large scale dam failure, when the issue would become an insurance matter.

6.3 FINANCIAL CONTRIBUTIONS

The BDP provides the ability for BDC to require a financial contribution for works exceeding \$500,000 as outlined in Part 8.3 of the Plan. Financial contributions can be either cash, land, works or services.

Part 8.4.1.16 requires a development contribution of up to 0.5% of the value of the development for projects over \$500,000. The contribution can be used for provision and development of reserves, recreational facilities and community facilities.

HDL has not provided details about the value of the development.

The BDC have an in house policy in terms of calculating the contribution. That is that the contribution is to be fair and reasonable and that the 0.5% is a maximum amount required. The calculation must be considered in terms of:

1. What reserve, recreational and community facilities currently exist at the time of application in regard to the application or in close proximity to the application site?
2. What impact will the proposal have on these facilities?
3. Will the application require new facilities to be created?
4. Will the application require additional maintenance as a result?
5. How many job opportunities will the application generate?
6. Will the increased number of jobs require external skills, ie additional people moving into the District?
7. Will the proposal place any additional strain on existing provisions for parking/services?
8. Will the proposal place any additional requirements on Council resources, except the processing time and effort, ie training?

The proposal will have most impact during the construction phase of the activity, which will place a demand on services and facilities. This will be for a period of up to five years. After which, the demand will reduce significantly as staffing number reduces.

HDL were given a copy of the assessment criteria, however have not put forward a draft condition. It is recommended that a financial contribution be required. HDL might like to put forward a suggestion, otherwise it is recommended a contribution is required for the impact the proposal will have during the construction of the project.

6.4 LAND SWAP

Where it is not possible to avoid an adverse effect, mitigation needs to be considered. Mitigation can be through compensation such as the creation of other areas of natural, environmental or recreational value. In this instance, HDL is proposing a land swap with DoC as the effects of the loss of indigenous vegetation on the Stockton Plateau are not able to be mitigated.

As the land swap has not been signed off by DoC, the Hearing Committee must consider the suitability of requiring a land swap, and what would happen, if the swap did not eventuate. As such it is recommended that the area of lowland coastal indigenous forest at Fairdown have a covenant placed on the computer freehold register as a condition of the consent requiring the protection and enhancement of the indigenous vegetation.

6.5 CONSENT DURATION

It is noted that some of the consents sought, for instance the water takes and discharge consents, have a duration period of 35 years, while the land use consents are unlimited.

All construction activities (if granted consent) should be tied to a similar duration, which should have an expiry date after the project becomes operational rather than allowing the activities to carry on. This allows a degree of certainty for the construction effects, for instance within the construction area at Granity. This may involve additional conditions, or separating construction consents from operating and maintenance consents.

6.6 LAPSING PERIOD

The applicant has sought a lapsing period of 10 years instead of the default period under the RMA of 5 years. For a project of this scale, it is considered reasonable to recommend 10 years given the design, review and planning processes that would need to occur before contractors could be engaged let alone construction commencing.

6.7 BUILDING ACT

As noted in the Engineering Technical Report, many of the aspects of the proposed HEPS will be subject to building consenting processes in terms of the Building Act 2004. At the time of writing this report, the WCRC functions under the Building Act for dams had been contracted to Otago Regional Council and there will need to be coordination between the three Councils, as building consents need to coincide with other management plan approvals.

The amendments to the Building Act have been finalised and introduced the Regulations reflected in the NZSOLD guidelines. Notably the standards expected by the Councils technical reviewers (sections 4.12 and 4.16) outline where the standards need to be greater and need to form conditions of consent.

While RMA conditions will address some major aspects as discussed earlier in this report, we acknowledge that a number of design, construction and review matters will be addressed under Building Act processes.

7 CONCLUSION AND RECOMMENDATION

As the proposal is a non-complying activity, consideration must be had as to whether the proposal passes one or other of the gateway tests in Section 104D. The relevant plan to consider is the BDP.

The first gateway is to consider whether the effects of the proposal are minor. When considering whether effects are minor, the Hearing Committee is able to consider the mitigation being offered. Section 104D however, does not permit positive effects or compensation to be considered. As such, the removing of AMD from the Ngakawau tributaries and the land swap, which is being offered as compensation for the effects on the terrestrial ecology, cannot be considered.

In preparing this report, we have had difficulty in reaching an overall judgement as to whether the effects are minor. The difficulties are largely due to the lack of detail in parts of the application and the potential impacts of the scheme. We recognise that the HEPS has been based on conceptual details, which explains why certain responses from HDL to requests for further information have been “conceptual” or generic to the extent that they provide little additional certainty of effects. In turn, this has required considerably more evaluation and assessment work by the technical staff forming the consortium reviewing the application.

The technical reviewers in their reports, and the planners in this report, have concluded that further information is required to be provided at the hearing to enable a full assessment of the effects and proposed mitigation associated with the project. A summary of what matters should be addressed is:

1. An assessment of the projected electric and magnetic fields and whether HDL will be able to comply with the International Commission on Non-Ionising Radiation Protection Guidelines.
2. Provide a Cultural Impact Assessment on the mauri of diverting the waters from the tributaries of the Ngakawau River.
3. Provide confirmation regarding the buy-in of SENZ and DoC for a walking track between Weka and Mt William Reservoir, as a form of mitigation for the loss of the electric loco line. And provide details about the timing of when such mitigation would be put in place.
4. The effect on the electric loco line, which is nationally significant, requires further consideration by a suitably qualified heritage specialist, in particular to consider whether any mitigation is possible.
5. Provide evidential basis of what HDL understand the noise levels that their activities will cause and the effectiveness of the mitigation indicated by providing noise levels, derived either by calculation, or data from equivalent activities or some equivalent means for a selection of key activities at Granity. These activities could include the sheet piling, the start (first two weeks) of the jacking station and tunnelling operation, and the on-site transport activity.

6. In order to understand what mitigation and monitoring is proposed within the Noise and Vibration Management Plan, a draft should be provided to the Hearing Committee, in order that its effectiveness at managing ground-borne vibrations (particularly in relation to heritage structures and transportation networks), its practicality, and the likelihood that it is achievable can be assessed.
7. HDL gives further consideration to the approximate extent of the area that could potentially be disturbed outside of the immediate reservoir footprints and access tracks, in terms of rehabilitation of the site.
8. It is recommended that further investigation be undertaken as to whether the proposed mitigation of directly transferring vegetation will retain the habitat for the fernbird or whether the proposal will result in the loss of the fernbird population from the application site, or alternatively what other mitigation would be suitable.
9. Further investigation into flow regimes, in particular low and flood flows, needs to be undertaken to validate the hydrological modelling undertaken and conclusions on hydrological effects made by HDL.
10. Further information is required on the operating regimes of the reservoirs to consider the effects on the intermittent flooding on ecology, landscape, and to consider dam engineering.
11. Further information is required on the ecological values of catchments not currently affected by AMD and what effects the project may have on those catchments.
12. HDL has advised that will provide additional information in regard to the effects of the project on bryophytes, which will be presented at the hearing.
13. That HDL produce revised inundation plans taking into account the change in dam type and different reservoir levels so that the potential impact of a dam failure can be properly considered.
14. That HDL collect accurate and representative water quality data and use it to re-run the PHREEQC model allowing for relevant conditions in order to validate the conclusions reached in regard to ecological effects and potential plumes and ecological effects in the CMA

This information will enable the technical reviewers to consider those outstanding matters, which will allow us to complete our assessment of whether the proposal will meet the gateway tests of Section 104D and our Part 2 assessment. It will also allow further consideration of the draft conditions which have been put forward.

With the information provided by HDL to date, we conclude that the effects on terrestrial ecology may be significant, given the cumulative loss of indigenous vegetation on the Stockton Plateau, and the loss of habitat for fernbird. We have also concluded with the information to date that the effects of Weka dam and the relocated haul road will have a significant effect on the historical heritage of the electric loco line. As such, it is considered that the proposal does not pass the first gateway test.

The second gateway test is that the proposal shall not be contrary to the objectives and policies of the relevant plan, being the BDP. Given the lack of evidence provided in terms of some of the effects, it is not clear as to whether the proposal will be contrary to the objectives and policies. Currently, there are a number of objectives and policies, depending on the further information provided, that may or may not be contrary to.

HDL need to be able to show that the proposal will not adversely affect the integrity of the transportation networks or increase the level of hazard risk to communities, they also need to be able to prove that the effects of construction from noise and vibration will not adversely affect the residential area at Granity, or whether the proposal will affect the historical heritage at Granity and the electric loco line.

The lack of evidence on these factors does not allow robust assessment on whether the proposal is contrary or not to the objectives and policies of the BDP

If it is accepted that the proposal passes one or other of the gateway tests, then an assessment under Part 2 of the Act is required. Given the lack of adequate information in terms of some effects resulting in consequent uncertainties over key issues, and the uncertain success of some of the proposed mitigation, as well as the lack of proposed mitigation for some of the effects, such as the loss of fernbird habitat and the destruction of the loco line, we find we generally cannot reach a conclusion as to whether the proposal will meet the purpose of the RMA, as expressed in Section 5. This is not an unusual outcome of assessment, where there is insufficient information to be a robust assessment.

HDL needs to address the outstanding matters at the hearing, for us to be able to make a robust assessment and provide a definitive recommendation to the Hearing Committee.

In regard to the construction of the micro tunnel, ocean outfall pipe and diffuser, which are a Restricted Coastal Activity, the effects are likely to be minor. We therefore advise that the Hearing Committee can recommend the granting of resource consent number RC08149/2 to erect and place an ocean outfall pipeline approximately 600m long and outfall diffuser within the foreshore and seabed to the Minister of Conservation.