

Appendix A: Memo – Landscape Assessment

TO: Janan Dunning

DATE: 07 April 2009

CC:

REF: Z1114701

FROM: David Compton-Moen

MWH New Zealand Ltd

SUBJECT: Ashburton Community Water Trust - Rakaia Hydro Scheme - Landscape and Visual Impact Assessment

COMMENTS ON THE ECOLOGICAL MANAGEMENT PLAN (EMP) DATED 6TH APRIL 2009

My comments are based on the latest Ecological Management Plan prepared by Adam Forbes in April 2009. Throughout the design process, I have been party to the ecological plans and provided comment/advice from a landscape and visual perspective on a number of occasions. I am satisfied that the current EMP accords with the proposed landscape planting plans, and addresses all of my concerns and that the findings contained within my previous statement of evidence prepared for the hearing in September 2008 are still valid.

To provide clarification to some of the recent changes and issues raised by ADC, DOC and Forest & Bird, I provide the following comments:

1. To compliment the ecological planting contained within the EMP, landscape planting is also proposed on the large cut slope and the cutting at CH11500m where the canal transitions from a fill embankment to a cut. The purpose of these plantings is primarily for visual reasons to assist with assimilating the proposed development into the receiving environment as much as possible.
 - a. At the major slope cutting at Area H1 (10.335Ha), it is proposed that a 100mm layer of topsoil and hummus and will be allowed to regenerate naturally. Seed dispersal of Kanuka will occur. It is realised that weed growth will be an issue but the principal purpose of this treatment is for visual mitigation with the bonus of potentially obtaining native plant growth over time by providing a seed bank for when growing conditions become more suitable.
 - b. The treatment at the cutting CH11500 on the inner cut, Area H2 will be the same as Area H1 above. In addition, Area A (3.06Ha) is a Kowhai shrubland mix designed to visually screen the cut when viewed from the river corridor. The management and maintenance of this area will follow that of the ecological plantings identified in the EMP.
2. Forest & Bird, DoC and ADC raised concerns that the invasive nature of *Pinus radiata* would make it unsuitable for planting as visual screening and would prefer to see the use of native species, exclusively. While *Pinus radiata* is a common species in the area, fast growing and

would greatly assist in screening the powerhouse from river corridor users, it is recommended that the species used in the Landscape Management Plan be changed to native species. Given the slower growth rates, larger numbers of native species would be required and wider plant beds established. The proposed species are:

- a. *Plagianthus rgia* (Ribbonwood);
 - b. *Podocarpus totara* (Totara);
 - c. *Dacrycarpus dacrydioides* (Kahikatea);
 - d. *Pittosporum tenuifolium* (Pittosporum); and
 - e. *Prumnopitys taxifolia* (Matai).
3. With regard to planting on the canal batter slopes (Area G), where no ecological plantings are proposed, Forest & Bird commented that they would rather not see exotic grass sown on the canal batter slopes, at fear of it spreading to the wider area. Instead they suggested that kowhai seed or native grasses be established on the canal batter slopes. While this is recognised, there is already a large degree of exotic grass/plant species such as tall fescue, gorse and broom present in the area and which will quickly re-establish following disturbance. The grass cover proposed is to provide initial bank stability quickly and minimise soil runoff. Over time, suitable conditions will develop for native species to re-establish on the embankment, especially given the seed source that will be created by the ecological plantings.
 4. No broad-scale application of kanuka seed along the canal batter slopes is proposed.
 5. In terms of the positioning of the ecological plantings, I worked closely with Mr Forbes on this and do not consider their siting arbitrary. Their siting at Lowe's cutting will provide easy access in terms of maintenance and allow maximum visibility of the restoration work to the public, raising profile and increasing potential educational attributes. The area is a working farm where straight linear fence lines are common elements and the siting of the ecological plantings would not change the impact on landscape character. While minor improvements could be made to the edge treatment, this has to be balanced with the practicalities of a working farm and the low number of visually sensitive receivers who will actually view the site.

David Compton-Moen

Senior Landscape Architect

Appendix B: Amended Conditions of Consent

Terrestrial Ecological Management Plan (commencing at Condition 50, ADC Consent LUC07/0030)

50. All works undertaken by the consent holder or their agents downstream of the Highbank Power Station between chainage 3500 and 11500 shall be subject to and comply with the provisions of the Terrestrial Ecology Management Plan certified by the Ashburton District Council.
51. The Terrestrial Ecology Management Plan shall be prepared to best achieve the following objectives within the areas shown on the Terrestrial Ecology Management Plan maps attached to this consent:
- (a) Avoid the loss of or disturbance to indigenous vegetation and habitats beyond the boundary of the construction zone as defined in the Construction Management Plan;
 - (b) Maintain the abundance of threatened and uncommon plants, in particular *Melicytus* aff. *flexuosus* and *Melicytus alpinus* "Blondin" identified within the canal alignment through propagation from seeds and cuttings and translocation of plants from within the canal alignment and / or construction footprint (whichever is the greater in extent);
 - (c) Mitigate through appropriate methods the loss of indigenous vegetation and habitats destroyed, removed or disturbed, during construction of the Terrace Canal;
 - (d) Mitigate for the loss of indigenous vegetation-landform associations destroyed, removed or disturbed during construction;
 - (e) Ensure the successful establishment and long term viability of proposed mitigation plantings;
 - (f) Minimise the potential for lizards and large ground-dwelling invertebrates to be significantly affected by construction.
52. No construction works downstream of the Highbank Power Station shall commence until the Terrestrial Ecology Management Plan is certified by the Manager of Planning and Regulatory Services, Ashburton District Council as being adequate to:
- (a) achieve the objectives of the Ecological Management Plan in full, as set out in condition (51); and
 - (b) ensure consistency with all other relevant conditions of consent LUC07/0030.
53. The Terrestrial Ecology Management Plan shall be maintained as current at all times by the Consent Holder. The consent holder may, at any time following certification, request amendments to the Terrestrial Ecology Management Plan by submitting the amendments in writing to the Manager of Planning and Regulatory Services, Ashburton District Council no less than 20 working days prior to the changes taking effect, for certification that the proposed amendments achieve the management plan objectives identified in condition (51).
54. The Terrestrial Ecology Management Plan shall be reviewed annually. Each Terrestrial Ecology Management Plan review shall incorporate all monitoring results obtained during that monitoring period as specified within the Terrestrial Ecology Management Plan. A copy of each annual Terrestrial Ecology Management Plan review shall be forwarded to the Regulatory Manager of the Ashburton District Council within one calendar month of its completion.
55. The Terrestrial Ecology Management Plan shall be prepared, implemented and maintained in conjunction with, and in a manner that is consistent with the Landscape Management Plan required under this consent.
56. The consent holder shall be responsible for meeting the reasonable costs incurred by the Ashburton District Council in receiving and certifying the management plans and reviews referred to in this consent.
57. Prior to commencing construction between chainage 3500 and 11500 the consent holder shall provide the Ashburton District Council with legal descriptions and protection mechanisms or covenants to be applied to all ecological re-vegetation areas identified on the Terrestrial Ecology Management Plan Planting Plans, Sheets 1 and 2, attached to this consent.

Discharge of material excavated from the settling pond to the riverbed (CRC072642 and CRC072649)

3. The works carried out in accordance with condition (2) shall be located between map references NZMS 260 K36:058-396 and NZMS 260 K36:068-387, and shall be limited to a total cumulative area no greater than two (2) hectares per year.

Appendix C: Additional Objectives and Policies

Canterbury Regional Policy Statement

Objective 3

Protection or enhancement of:

- (i) Indigenous biodiversity, (including the survival of threatened species, communities and habitats, and species, biological communities and habitats unusual in, or characteristic of Canterbury);
- (ii) Indigenous ecosystem functioning; and
- (iii) Indigenous vegetation and habitats which contribute to the region's natural character.

Policy 4

Areas of indigenous vegetation and habitats of indigenous fauna that meet the relevant criteria of sub-chapter 20.4(1) should be protected from adverse effects of the use, development, or protection of natural and physical resources, and their enhancement should be promoted. In particular, indigenous species, communities and habitats that are threatened, unusual in, or characteristic of Canterbury should be identified, and their survival, and the survival of ecosystems on which they depend, safeguarded as far as practicable. The particular sensitivity of these areas of vegetation or habitats to regionally significant adverse effects in terms of sub-chapter 20.4(2) should be reflected in the provisions of district plans in the region.

Ashburton District Plan

3.1.3.1 NATURE CONSERVATION VALUES

Objective 1

The protection of indigenous biodiversity and ecosystem functioning and the maintenance of indigenous vegetation, communities, and habitats generally within the District.

3.1.3.2 Policies

3. To use the following primary criteria to identify areas with significant nature conservation values:

Intactness – The area is little modified by human activity, comprises a predominantly intact indigenous system and is not affected in a major way by weed or pest species.

Rarity – The area supports an indigenous species, habitat or community of species, which is rare and vulnerable within the ecological district or threatened nationally.

Representatives – The best examples of particular vegetation types, habitats or ecological processes which are typical of their ecological district.

Distinctiveness / Special Ecological Characteristics – The type and range of unusual features of the area itself and the role of the area in relationship to other areas locally, regionally or nationally, including:-

- presence of species at their distribution limit;
- levels of endemism;

- supporting protected indigenous fauna for some part of their life-cycle (e.g. breeding, feeding, moulting, roosting), whether on a regular or infrequent basis;
- playing an important role in the life-cycle of protected migratory indigenous fauna;
- containing an intact sequence, or a substantial part of an intact sequence, of unusual ecological features or gradients.

Diversity and pattern – areas exhibiting a high degree of biological diversity in terms of:

- vegetation;
- habitat types;
- species;
- ecological processes.

To have regard to the following secondary criteria to assist in identifying areas with significant conservation values:

Scientific Value – The area is a type locality or other recognised scientific reference area;

Connectivity – The extent to which the area has ecological value due to its location and functioning in relation to its surroundings. An area may be ecologically significant because of its connections to a neighbouring area, or as part of a network of areas of fauna habitat, or as a buffer;

Size and shape – The degree to which the size and shape of an area is conducive to it being, or becoming, ecologically self-sustaining.

4. To avoid significant adverse effects and remedy or mitigate other adverse effects on the ecological integrity and functioning, habitat values and natural character of areas of significant nature conservation value, recognised in terms of Policy 3.

13. To avoid, remedy, remedy or mitigate adverse effects on, and, where possible, enhance the survival of rare, vulnerable or endangered species in the District by:

working with other agencies to determine the correct management strategies to protect the species or their habitats;

assessing, in conjunction with other agencies, the need to protect any species that are further identified;

encouraging, through the resource consent process, land management activities to locate away from identified sites, where there is a potential to adversely affect these species and/or their habitats;

accessing the traditional knowledge and management of Takata Whenua.

Plant and Animal Communities

14. To maintain and, if possible, enhance the survival and well-being of viable communities of indigenous plants and/or animals that are significant within the District, Region, or nationally, or to Takata Whenua by:

encouraging the retention of any identified corridors and links between areas of habitat and along streams and road verges through incentives and Council's management practices;

working with other agencies to determine the implications of land management practices and their effects to wetlands;

avoiding, remedying or mitigating any adverse effects of activities on these sites, including adverse effects of vegetation clearance, buildings, planting of exotic trees and earthworks.

15. To encourage the retention and protection of remaining areas of indigenous vegetation.

3.1.3.5 LANDSCAPE VALUES - OBJECTIVES 5 AND 6

5. The protection of the character and values of the outstanding and significant landscapes of the District, and the natural character of the coastal environment, lakes, rivers and wetlands and their margins; and the avoiding, remedying or mitigating of adverse effects of activities on the landscape values and character of these areas, including Takata Whenua values.
6. The protection of outstanding natural features.

3.9.3.1 EFFECTS ON THE ENVIRONMENT – OBJECTIVE 1

1. Utilities whose construction, installation, operation and maintenance have minimal adverse effects on amenity and their surrounding environment.

3.9.3.2 POLICIES

1. To avoid, remedy or mitigate the adverse environmental effects arising from the construction, installation, operation and maintenance of utilities on visual amenities and the quality of the environment.
2. To protect areas identified as possessing outstanding and significant landscapes, indigenous vegetation, significant habitats of indigenous fauna and sites of heritage significance or significance to the Takata

3.9.3.7 ENABLING THE ESTABLISHMENT, USE AND MAINTENANCE OF UTILITIES – OBJECTIVE 3

3. The efficient establishment, use and maintenance of utilities, necessary for the well-being of the community.

3.9.3.8 POLICIES

3. To recognise the presence and function of established utilities and their locational and operational requirements when assessing the suitability of new surrounding activities, to ensure the long-term efficient functioning of that utility.

5. To have regard to the function and purpose of a utility and the service it will provide for the community, when assessing the effects of the establishment of a proposed utility.
7. To encourage and provide for utilities to adopt more efficient technology and structures which are compatible with the natural landscape and townscapes.