

**Proposed Plan Change 3 (SCCS Area) to the Operative Canterbury Land and Water
Regional Plan**

Summary of Evidence of Brian Neil Ellwood

on behalf of Hunter Down Development Company Limited

SCOPE OF EVIDENCE

- 1 In my evidence I provide an outline of the following:
 - 1.1 the HDI scheme consents held;
 - 1.2 nutrient management as proposed under HDIS;
 - 1.3 the need for OVERSEER® nutrient budget updating;
 - 1.4 HDDCL's concern with the prohibited activity status proposed in Rule 15.5.26;
 - 1.5 HDDCL's views on common expiry consent duration and HDDCL's need for greater than 10 years for significant infrastructure related consents; and
 - 1.6 HDDCL's comments on the advisory note to Table 15(p)

GENERAL DESCRIPTION OF HUNTER DOWNS IRRIGATION SCHEME CONSENTS

- 2 The resource consenting for the development and operation of HDI Scheme has been staged with the water related consents progressed ahead of the construction related consents. The 'water only' resource consents were issued by consent order on 17 November 2011.
- 3 The HDI water take and use consent authorises the taking of up to 20.5 cumecs of water and an annual vole of 252 Mm³ of water for irrigation across the area from Waihao Downs to Otipua, just south of Timaru.
- 4 This provides capacity to irrigate the equivalent of 40,000 hectares within a total command area of 60,000 hectares.

INVOLVEMENT WITH ZONE COMMITTEE

- 5 HDDCL has been involved at the community level in the Zone Committee process since the committee was established.

- 6 HDDCL has provided time and technical information to inform the development of the ZIP addendum and the Nutrient Allocation Reference Group (NARG) agreement.
- 7 The ZIP addendum outcomes and NARG agreement have been written on the basis of Scenario 2b, HDIS scheme being developed with the provision augmentation to Wainono lagoon and water quality in the receiving environment achieving water quality concentrations for nitrogen of 90% toxicity.
- 8 The community discussions in relation to future development scenarios included the HDI Scheme in Scenarios 2 (a and b) and 3 (a and b). Assessments were made of the benefits to the community from the development of the HDI Scheme balanced with the predicted change in environmental effects from further landuse intensification.
- 9 Scenario 2b gained wide support from the community as a package of outcomes which provided for the community's needs for growth (economic, social and cultural) and met desired environmental outcomes (Wainono TLI 6 and instream nitrogen toxicity of 90%). This support was on the basis of both the technical assessments of the effects and benefits and detailed community discussion of the outcomes that the community wanted to see from development.
- 10 Much of the information used in the assessment was derived from the evidence used in the HDI Scheme consent hearing along with earlier technical reports combined with updated research commissioned by the HDI Scheme and the Council especially in relation to the potential augmentation of Wainono Lagoon.

HDI NUTRIENT RESOURCE CONSENT CONDITIONS

- 11 The HDI Scheme has applied for a consent to discharge to land relating to nutrient management. At this time the application is still being progressed.
- 12 The nutrient discharge application is based on the existing nutrient related conditions on the take and use consent (CRC142804) These conditions extend to the requirements for all properties receiving water to produce a nutrient budget. Nitrogen and the leaching of nitrates is specifically managed by condition 20(f).
- 13 The selection of nutrient management strategies will vary over time and the adoption of the latest best practice is managed via the scheme and farm management plans. This ensures that as science develops there is a ready mechanism for this to be applied on farm.
- 14 In simple terms, the application is intended to provide the same amount of nitrogen loss allowance as was assessed in conjunction with the use component of CRC142804 in the original take and use of water application process and assessed in the ZIP addendum scenario's.
- 15 The discharge consent includes a mechanism for updating OVERSEER® parameters relating to scheme load, and maximum caps based on reference farming systems. The

same reference farming systems as reported in the S42A report's appendix 2 by Ned Norton have been used.

IRRIGATION SCHEME RULE 15.5.11

- 16 Rule 15.5.11 condition 2 requires an irrigation scheme to not apply for consent to discharge nutrients over any land which is part of a Nutrient User Group or Farming Enterprise. Failure to meet this condition is a prohibited activity. The HDI Scheme needs a nutrient discharge consent for its users to intensify in place before scheme construction can commence. However, it is expected that it will take several years to reach full uptake as properties join the scheme. Prior to a property joining HDIS it may be practical – and sensible - for that property to be in a Nutrient User Group or Farming Enterprise.
- 20 I do not agree with the S42A report that restricting nutrients being shared across two groups will effects the environmental outcomes anticipated by the plan because both require consent (rule 15.5.6 to 12) and to show that the catchment load limits in Table 15 (p) are not exceeded. The conditions of any consent would inevitably require that such an outcome was met and I consider such a requirement would be easy to implement.
- 21 In this regard, the proposed conditions of the HDI Scheme nutrient discharge consent includes a schedule of properties which have joined the scheme to provide the Council with information for monitoring and compliance.

OVERSEER® BUDGET UPDATING

- 22 The loads in PC3 have been created using OVERSEER® based on a range of assumptions around current and future landuse mix, soil types and rainfall/drainage – HDDCL supports the assumptions used to generate the nutrient loads but is concerned that version changes to the OVERSEER® models predicted nitrogen leaching rates may change the land user's ability to comply with a fixed nutrient loss rate, while the observed effects on the environment remain unchanged.
- 23 Changing the prediction of the loss of nitrogen at the root zone for the same assumed landuse does not change the water quality observed in the receiving environment. What has changed is our understanding of the catchment factor.
- 24 HDDCL is accordingly seeking that the plan include a mechanism which maintains a land user's ability to comply with the catchment load and max caps when there has been no change to the farming system but there has been a change in the way the farming system has been modelled.
- 25 HDDCL has suggested two mechanisms for the plan to incorporate OVERSEER® version changes:
- a. a rule within PC3 that provides that:

[x] When considering compliance with any nitrogen loss limit included in rules 15.5.1 to 15.5.40 (along with supporting tables), version [X] of OVERSEER® shall be used. If OVERSEER® is updated:

(a) the most recent version of OVERSEER® shall be used to calculate an equivalent nitrogen loss limit (the *Equivalent Limit*) using the same input parameters as were used to calculate the nitrogen limit calculated using version [X] of OVERSEER®; and

(b) the Equivalent limit shall be used for the purposes of determining compliance.

or

- b. alternatively, each individual table (m, n and p) could include a footnote (which would form part of the table and therefore the relevant rule) to the effect that:

[x] If OVERSEER is updated, the most recent version shall be used to recalculate the nitrogen loss limit in [Table X] using the same input data (at which point the new loss limit will apply).

- 26 The S42A report at paragraph 10.151 to 10.155 recommends the adoption of a new policy and foot note to table 15 (p) but not Tables (m) or (n).
- 27 I believe that it is important that Table 15(n) in particular is also updateable as compliance with the maximum caps is a matter of discretion for rules 15.5.2, 15.5.3, 15.5.6, and not meeting the maximum caps level causes the activity status to be prohibited.
- 28 HDDCL supports the recommendations in appendix 2 of the section 42A report for the inclusion of a narrative for providing a reference farming system to update the maximum caps, catchment loads and flexibility caps. This will provide certainty for land users and a known way to update the OVERSEER® derived leaching rates.
- 29 HDDCL notes the section 42A report para 10.31 has recommended that the Table 15 (m) and (n) be updated to use version 6.2 of OVERSEER® and in para 10.400 has adopted the updated maximum cap number for Table 15(n) and provided a reference to the use of version of OVERSEER® 6.2. While this is a step in the right direction, the updated numbers using OVERSEER® version 6.2 will only be relevant while version 6.2 is the current version. There will be future changes to OVERSEER® during the life of the plan and the inclusion of the narratives that reference the land use system being assessed is needed.

AUGMENTATION OF WAINONO LAGOON

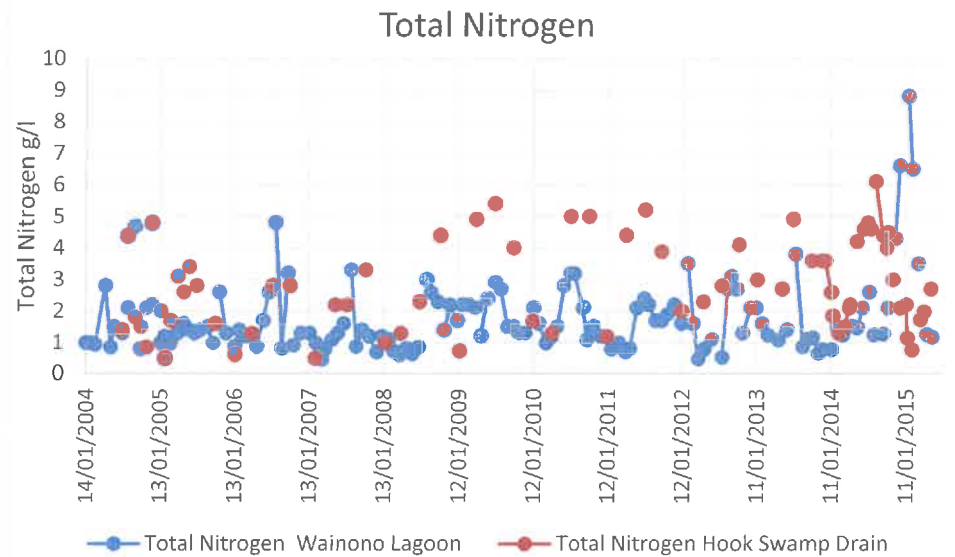
- 30 Condition 5 of Rule 15.5.24 limits the discharge of augmentation water to 1% of the 1 in 5yr annual flood. For the Hook River (one of the likely sites for the discharge of augmentation) the 1 in 5yr annual flood flow is 44 cumecs¹. This has the impact of restricting the maximum discharge of augmentation water to 440 L/s which is less than the proposed flow regime the effects assessment and benefits predicted from PC3 have been based on. The inclusion of condition 5 may affect the ability to gain consent for the augmentation in the form proposed especially the ability to provide flushing flows of up to 4 cumecs.
- 31 HDDCL submitted that condition 5 be deleted. An alternative to deleting the condition is to increase the percentage to 10% of the 1 in 5 yr annual flood.
- 32 I have not been able to find any analysis in the section 32 report or technical support information to support condition 5 of the rule. I believe that the effects which condition 5 relate to is included in matters of discretion. Making the proposed augmentation flow regime which the plan is based on, a full discretionary activity is unnecessarily restrictive.

TAKE AND USE OF WATER RULE 15.5.26

- 33 HDDCL submitted that the Rule 15.5.26 should be changed from prohibited to non-complying status. The basis for this requested amendment is the abstraction of groundwater or surface water in the tributaries near Wainono lagoon for environmental enhancement.
- 34 The prohibited nature of the rule would, for example, exclude the abstraction of water for nitrogen removal treatment and the return of that water to the lagoon. Other innovate practices would also be restricted.
- 35 Water quality in the Hook Swamp Drain is often poorer than that of Wainono lagoon with high concentrations of Nitrate nitrogen **Figure 1**. The Hook Swamp Drain is not included in the water bodies in table 15 (f) to 15(j) and any taking of water from this water body would be a prohibited activity.

¹ The combined data from 2001 – 2006 and 2012 – 2014, the value for the 5 year flood has been estimated to be 44 m³/s. For the site at Hook Beach Road (site number 70703 at map reference J40:62944-13060).

Figure 1 Total Nitrogen concentration in Wainono lagoon and the Hook Swamp Drain.



- 36 A non-complying status is appropriate for abstraction activities which have environmental enhancement opportunities and show alignment with the objectives and policies of the plan. Consent application with a full assessment of effects would still be required.

CONSENT DURATION

- 37 Common expiry and 10 year consents are of particular concern to the HDI Scheme. The take and use consent CRC142804 was granted for a period 35 years and HDDCL considers that is the period that will be required to have sufficient certainty to finance and under take the development of the HDI Scheme.
- 38 I acknowledge that the Officers have recommended that Policy 15.4.35 be narrowed to just the take and use of water but I am not sure that assists the HDI Scheme (where its primary activity is the take and use of water). I do however note that its actual take (but not its use) technically falls under the Waitaki Catchment Water Allocation Regional Plan (which does not include an equivalent policy), but it is unclear as to whether the Council would still require a 10 year duration in relation to the 'use'.
- 39 Although as the Officer suggests it may be possible for the HDI Scheme to make an application seeking a longer consent duration, without any supporting policy HDDCL considers there is no certainty or clarity as to how such an application might be

determined (especially in the face of a policy framework that expects something contrary).

TABLE 15(P) MANAGEMENT OF SCHEME ALLOCATED LOAD

- 40 Table 15 (p) footnote "*" provides advice relating to the top-up load that allows for irrigation schemes members to increase above the nitrogen baseline. The note specifies that the scheme load must be used before any increase up to the flexibility cap.
- 41 From the table, it is not clear what total flexibility load available is, as it is not specified in the table - even if the note does say it allows use of any flexibility load provided it is used after scheme load.
- 42 It also appears that a requirement for an irrigation scheme in policy 15.4.14 is to manage all property loads and not just the addition due to irrigation, to ensure that catchment limits can be managed. HDDCL is able to make this work by ensuring that scheme members have the necessary farm management plans, I believe what is important is that the irrigation scheme member nutrient load in conjunction with other nutrient load does not exceed the catchment limits. Requiring separation of a property's increase in load to either show that it is not using flexibility cap load or requiring the scheme to report what amount of flexibility cap load is being used in addition to scheme load is unnecessary extra complexity.
- 43 This restriction could also be a disadvantage to property's joining a irrigation scheme.