

Tabled at Hearing Tuesday 19 April 2011

Plan Change 6 to the Canterbury Land and Water Regional Plan

Responses to Questions of Hearing Commissioners in Minute 3

Philip Maw (PM), Alastair Picken (AP), Dr Tim Davie (TD)

Commissioner Jane Kitson

Question 1 - How has the council identified and discounted any issues with managing just phosphorus loads and not nitrogen?

Response – TD and AP:

1. The issues in this catchment are related to historic land use and are primarily sediment and phosphorus. We consider that the nutrient management provisions for Red Nutrient Allocation Zones in the LWRP and rules proposed under Plan Change 5 requiring good management practices and good management practice nitrogen loss rates will provide sufficient management of nitrogen.¹
2. Plan Change 6 also contains a limit on nitrate in the streams that is set at a level that is within 20% of current concentrations.² Current concentrations are very low and well within the NPSFM “A” attribute level would protect more than 99% of aquatic species from nitrate (toxicity).
3. Plan Change 6 also sets a total nitrogen concentration target for Lake Forsyth/Te Roto o Wairewa that is at the national bottom line for lakes in the NPSFM. The lake just meets this limit currently (refer also to Question 3). It is important to mention that nitrogen concentrations in the lake are primarily driven by biological processes within the lake as opposed to the nitrogen coming into the lake from the catchment.
4. Policy 4.2 of the LWRP states that “...*the individual and cumulative effects of land uses, discharges and abstractions will meet the water quality limits set in Sections 6 to 15 or Schedule 8...*”
5. Plan Change 6 sets specific water quality limits/targets for the Lake Forsyth/Wairewa catchment. The water quality limits/targets set in Section 10 for the Lake Forsyth/Wairewa catchment prevail over the default limits in Schedule 8 of the LWRP.
6. In particular, Policy 4.7 of the LWRP states:

“Resource consents for new or existing activities will not be granted if the granting would cause a water quality or quantity limit set in Sections 6 to 15 to

¹ Section 32 Report – Plan Change 6 to the Partly Operative Canterbury Land and Water Regional Plan at 4.1.7 (Nutrient Allocation Zones in the LWRP), 5.4 (Improving Water Quality and Ecosystem Health of Rivers in the Lake Forsyth / Wairewa Catchment), 8.3 (Water Quality Limits and Targets).

² See Table 10(d).

be breached or further over allocation (water quality and/or water quantity) to occur...”

7. The policy goes on to state that in the absence of water quality limits set in Sections 6 to 15, resource consents for new or existing activities will not be granted if it causes the limits in Schedule 8 to be breached.

Question 2 - How have the effects of opening on the ecology of the Lake and has this been incorporated into PC6?

Response – TD and AP:

8. The main impact of the lake opening is through fish passage, therefore, it is the timing of the opening that is critical. There are no explicit restrictions (i.e. levels) in PC6 on when the lake must be opened or closed (although it can only be physically opened when there is enough hydraulic head). Fish passage can be, and is, an important consideration for any opening.
9. Another consideration of lake opening is the degree to which the lake salinity changes due to sea water intrusion. Salinity is an influencing factor on cyanobacterial blooms, as much to do with the species blooming as the actual occurrence. For example *nodularia* is saline tolerant while *anabaena* is a purely freshwater cyanobacteria and both bloom in Lake Forsyth/Te Roto o Wairewa.
10. It is possible that salinity is also a driver in releasing dissolved phosphorus from the sediment into the water column. This is an area of uncertain science and Environment Canterbury plans to research this further as to whether a salinity wedge near the mouth is a significant contributor to the lake internal phosphorus load.³
11. The artificial opening and closing of the lake is likely to have positive benefits for fish passage and the ecological health of the lake.
12. Policy 10.4.4 and Rule 10.5.9 provide for the artificial opening and closing of the lake to be assessed as a discretionary activity, which allows for any potential adverse (and beneficial) effects of opening on the ecology of the lake to be assessed through the consent application process.⁴
13. A decision was made on 22 March 2016 to grant consents associated with the opening and closing of Lake Forsyth/Te Roto o Wairewa to Christchurch City Council and Wairewa Rūnanga with a duration of 35 years.

³ Section 32 Report – Plan Change 6 to the Partly Operative Canterbury Land and Water Plan at 4.1.3 (Water Quality of Lake Forsyth / Te Roto o Wairewa), at 5.2 (Accumulated Phosphorus Within the Bed of Lake Forsyth / Te Roto o Wairewa Reducing the Ecosystem Health and Water Quality of the Lake), and 10 (Managing Phosphorus within Lake Forsyth / Te Roto o Wairewa).

⁴ Section 32 Report – Plan Change 6 to the Partly Operative Canterbury Land and Water Regional Plan at 4.1.2.

Question 3 - TLI is an outcome in table 10(b) could the officers please elaborate on the certainty that setting FW Outcome for the Lake of TLI 6 (supertrophic) will meet the bottom lines set for TP & Chla (as set out in Table 10(e)).

To my understanding the bottom line for TN in the Lakes table in appendix 2 (NPSFM 2014) does not apply to ICOLLs. How was the bottom line for Lake Forsyth/Te Roto o Wairewa calculated?

What are the current Nitrogen concentrations in the Lake? And how do they compare to the N target in Table 10 (e)?

Response – TD:

14. TLI is calculated from measurements of total phosphorus and chlorophyll a (in addition to total nitrogen) so that by achieving the limits in table 10(e) it would necessarily achieve a TLI of 6. In fact applying the limits of TN, TP and Chl a in table 10(e) into a TLI calculator gives a TLI of close to 5. The fact that PC6 has a TLI of 6.0 in Table 10(b) is an error. The TLI outcome could and should be 5.0.⁵
15. The way that the NPSFM national bottom line for TN is written is unclear whether it applies to ICOLLs or not. Regardless of whether ICOLLs are included in the NPSFM or not we chose to go ahead with the freshwater limits at the national bottom lines because it was considered that they are achievable in Lake Forsyth by 2030.⁶
16. For the past 3 years (July-June) the median concentrations of TN have been 800, 795 & 795 mg/m³. So they are right at the limits set in table 10(e) and we expect to see continued improvement.

Question 4 - How were the effects of the discharge of the Lake into the CME considered when developing PC6?

Did this include kai moana, the Banks Peninsula is a Marine Mammal Sanctuary, and the coastal Statutory Acknowledgement Te Tai o Mahaanui (Selwyn-Banks Peninsula Coastal Marine Area)?

Response – AP:

17. The provisions in PC6 are intended to improve lake water quality by establishing a long-term reduction in the incidence of algal blooms and the sediment load entering the lake. One would expect this to be reflected in a long-term improvement in the quality of future lake discharges to the Coastal Marine Area.

⁵ Section 32 Report – Plan Change 6 to the Partly Operative Canterbury Land and Water Plan at 4.1.3 (Water Quality of Lake Forsyth / Te Roto o Wairewa), 8.2 (Freshwater Outcomes).

⁶ Section 32 Report – Plan Change 6 to the Partly Operative Canterbury Land and Water Plan at 8.3 (Water Quality Limits and Targets).

18. Two relevant reports assess the effects of lake openings (Te Waihora/Lake Ellesmere and Lake Forsyth/Wairewa) on the coastal environment of Banks Peninsula and were considered by Council staff. In summary, the reports conclude that although the discharge plumes have a visible effect, they are temporary and unlikely to significantly affect marine water quality or ecosystems including the Akaroa rock lobster fishery.^{7 8}
19. It is also worth highlighting that the lake is understood to have been artificially opened since 1866 (primarily for flood management and land drainage purposes) at a beach site at Birdlings Flat and more recently via a canal opening under temporary consents granted to Wairewa Rūnanga in 2008. If not opened mechanically, the lake would open naturally and therefore lake water would naturally discharge into the coastal marine environment.
20. As set out above in response to question 2, Policy 10.4.4 and Rule 10.5.9 provide for the artificial opening and closing of the lake to be assessed as a discretionary activity, which allows for any potential adverse (and beneficial) effects to be assessed through the consent application process. Consent is also required under the Regional Coastal Environment Plan for activities associated with opening and closing the lake within the coastal marine area.
21. At the time Plan Change 6 was being drafted there was a joint consent application by the Christchurch City Council and Wairewa Rūnanga in process to make the canal opening more permanent for flood risk, land drainage and cultural and ecological purposes.
22. The decision of the hearing commissioners was released on 22 March 2016 granting consents for the opening and closing of the lake to the Christchurch City Council and Wairewa Rūnanga includes a Coastal Permit for works within the coastal marine area. Section 5.3 of the decision concerns effects on water quality and habitats in the Coastal Marine Area and concludes that the discharge plume is not having an adverse effect on marine species or marine ecology.⁹

Question 5 - Is there are reason why aquatic plant cover was not considered as an outcome indicator in PC6?

Does recommendation 10.24 in relation to macrophytes define the outcome sought with enough certainty that the desired trophic status has been achieved?

What length of time would a trend need to be calculated and how will it account for variability between seasons/years and the potential effects due to openings?

⁷ Effects of Lake Ellesmere (Te Waihora) openings on the coastal environment of Banks Peninsula (NIWA, 2012). Report prepared for Environment Canterbury.

⁸ Effect of Lakes Ellesmere and Forsyth openings on the Banks Peninsula coastal environment (NIWA 2002). Report prepared for Environment Canterbury and Banks Peninsula District Council.

⁹ Decision of the Hearing Commissioners David W Collins, Brent Cowie and Hoani Langsbury 22 March 2016 - Applications to the Christchurch City Council and Canterbury Regional Council made jointly by the Christchurch City Council and Wairewa Rūnanga Incorporated for consents to carry out activities associated with the artificial opening and closing of Te Roto o Wairewa to the sea. At [123] to [125].

Response – TD:

23. Growth of macrophytes is beneficial to the lake through increased clarity and taking up nutrients, and should therefore lead to an improved TLI score.
24. Consideration was given to setting an aquatic plant cover target but it was felt there was insufficient scientific evidence to say what degree of cover would lead to achieving the TLI sought.¹⁰
25. I consider that an increasing trend in the spatial extent of macrophytes should be evident by 2030. Variability between seasons and years will be considered as part of any trend analysis. The potential effects due to better controlled openings higher lake levels are that the macrophytes species that grow in the lake will be more tolerant of a low salinity environment.

Question 6 - Does the consultation for PC6 constitute what is meant by the Objective D1 (and policies) and does this differs from RMA Schedule 1 consultation?

Response – PM and AP:

26. The Council's obligations in respect of Part D of the NPSFM do differ slightly from its consultation requirements under Schedule 1 of the RMA. However, consultation with iwi can form part of the Council's requirement to give effect to Part D of the NPSFM.
27. An overview of the requirements of Part D of the NPSFM and consultation under Schedule 1 of the RMA are set out below, together with a discussion of how these requirements have been met in the preparation of PC6.

NPSFM

28. Part D of the National Policy Statement for Freshwater Management 2014 ("NPSFM") relates to involvement in the management of freshwater, and in decision-making regarding freshwater planning. Part D requires Councils to involve iwi and to reflect tangata whenua values and interests in the management of freshwater. Part D of the NPSFM provides:

"Objective D1

To provide for the involvement of iwi and hapū, and to ensure that tāngata whenua values and interests are identified and reflected in the management of fresh water including associated ecosystems, and decision-making regarding freshwater planning, including on how all other objectives of this national policy statement are given effect to.

Policy D1

Local authorities shall take reasonable steps to:

¹⁰ Section 32 Report – Plan Change 6 to the Partly Operative Canterbury Land and Water Plan at 8.3.2 (Effectiveness – Objective 3.8), 10.4 (Efficiency).

- a) *involve iwi and hapū in the management of fresh water and freshwater ecosystems in the region;*
 - b) *work with iwi and hapū to identify tāngata whenua values and interests in fresh water and freshwater ecosystems in the region; and*
 - c) *reflect tāngata whenua values and interests in the management of, and decision-making regarding, fresh water and freshwater ecosystems in the region."*
29. Under the RMA, a plan change must "given effect to" the NPSFM. The objectives and policies of the NPSFM should be given effect to in a way that recognises that some provisions are more specific and directive (and therefore impose a more prescriptive obligation) than others.¹¹
30. Involvement under Policy D1(a) may include consultation, but may also include other methods for iwi and hapū to participate in freshwater management. Policy D1(b) and (c) provide that councils should take reasonable steps to work with iwi and hapū to identify tangata whenua values and interests and reflect values and interests in management and decision-making regarding freshwater.
31. In respect of preparing PC6, this involvement included consultation, along with advice and input from iwi to inform the drafting of PC6.
32. The Banks Peninsula Zone Committee membership includes four Rūnanga representatives (one member from each of Te Rūnanga o Wairewa, Te Hapu o Ngāti Wheke, Te Rūnanga o Koukourarata and Te Rūnanga o Ōnuku). The Zone Committee was responsible for developing the Banks Peninsula Zone Implementation Programme and the Wairewa ZIP Addendum. The outcomes of the ZIP Addendum were highly relevant for the management of freshwater in the Lake Forsyth/Wairewa catchment.
33. The Council also obtained a cultural evaluation of proposed options for the Wairewa catchment against Ngāi Tahu desired outcomes. This report was prepared by laean Cranwell and Dyanna Jolly.¹² This was one of the supporting documents in the preparation of PC6.
34. It is also submitted that the values and interests of Ngāi Tahu are reflected in the management of and decision-making regarding the Lake Forsyth/Wairewa catchment, including in PC6.¹³

RMA Schedule 1 consultation

35. The RMA consultation requirements also apply to the planning process.
36. Clause 3 of Schedule 1 of the RMA, provides that during the preparation of a proposed plan change, the local authority must consult (inter alia) the tangata

¹¹ *Environmental Defence Society Inc v New Zealand King Salmon Company Ltd [2014] NZSC 38, [2014] 1 NZLR 593, at [80].*

¹² *Draft Evaluation of proposed options for the Wairewa catchment against Ngāi Tahu desired outcomes* Prepared for Environment Canterbury by laean Cranwell and Dyanna Jolly dated February 2014.

whenua of the area who may be affected by the proposed plan change, through iwi authorities.¹⁴

37. Where there is a duty to consult, the consultation must be undertaken in accordance with the principles established in *Wellington International Airport Limited v Air New Zealand*.¹⁵ These include that the consultation must be allowed sufficient time, with genuine effort made. It cannot merely be an exercise in telling or presenting, nor does it require the local authority to agree. It requires meaningful discussion.
38. Clause 3B provides that a proactive and on-going relationship of a local authority with tangata whenua may take the place of a formal consultation process.¹⁶
39. In addition to those matters identified above, as part of fulfilling its consultation obligations under Schedule 1 of the RMA, the Council provided a draft copy of PC6 to Ngāi Tahu for comment, and subsequent meetings and discussions on the draft provisions took place between the Council and Ngāi Tahu representatives, resulting in amendments to draft PC6 to better recognise the importance of the cultural values held by Ngāi Tahu.¹⁷

¹⁴ Clause 3(1) of Schedule 1 of the RMA.

¹⁵ *Wellington International Airport Limited v Air New Zealand* [1993] 1 NZLR 671 (CA).

¹⁶ Clause 3B of Schedule 1 of the RMA.

¹⁷ See Section 32 Report at p 29-30.