

IN THE MATTER OF

the Resource Management Act
1991

AND

IN THE MATTER OF

various applications by the
Central Plains Water Trust to the
Canterbury Regional Council.

Section 42A Report

Date of Hearing: 12-16 October 2009

SUPPLEMENTARY REPORT OF LEO FIETJE

1. This report deals with a number of matters that the Commissioners have sought further advice on since the Central Plains Water hearing was adjourned in May 2009. This is in addition to the material contained within my original section 42A report and supplementary report.
2. Where appropriate other section 42A report writers have also and separately prepared supplementary reports in response to further information provided by the applicant at the Commissioners request.

SCOPE OF REPORT

3. This report is limited to the matters the Commissioners have sought advice on, as follows:
 - background information on Plan Change 1 of the Waimakariri River Regional Plan;
 - a recommendation on an appropriate take regime from the Waimakariri River in light of Minute 9 and the notified Plan Change 1;
 - a recommendation on an appropriate take regime from the Rakaia River in light of the decision on the Ashburton Community Water Trust (ACWT) decision;
 - the Councils view on the location of the Lower Waimakariri Intake in relation to visual and amenity values;
 - recommended conditions to address the concerns of the Regional Engineer.

WAIMAKARIRI RIVER REGIONAL PLAN (WRRP) PLAN CHANGE 1

4. On 8 August 2009, the Canterbury Regional Council (CRC) notified WRRP Proposed Plan Change 1. The plan change was prepared to address matters related to the allocation of B permit water from the Waimakariri River and any other changes

considered necessary to clarify and improve implementation of plan provisions for the allocation of water.

5. Ms Anna Veltman (Senior Resource Management Planner at the CRC) and Mr Matthew McCallum-Clark jointly prepared the draft plan change and carried out the work required to take the plan change to a notified stage. The work involved ensuring that the technical investigations were completed, consultation was undertaken and Council informed of the options available.
6. Ms Veltman has provided a separate s42a report that provides additional background information about Plan Change 1. Mr McCallum-Clark has also prepared a s42a report advising the Commissioners on matters related to weight recommended be given to Plan Change 1 in considering the CPW applications.

RECOMMENDED TAKE REGIMES

Waimakariri River

7. The Commissioners have sought a recommendation regarding an appropriate take regime from the Waimakariri River in light of Minute 9 and the notified Plan Change 1.
8. Mr Maurice Duncan (NIWA) prepared a supplementary report in response to evidence prepared by the applicant and as a response to Minute 9. Mr Duncan simulated the effects of various take scenarios and found that his results were very similar to those presented by the applicant.
9. Mr Duncan concluded that:
 - 1:1 flow sharing of B permit water will prevent any additional flat-lining of the flow in the river.
 - A gap of 20, 30 and 40 cumecs between the A and B Blocks will increase the time that the flow remains within the preferred flow range for a number of activities above that of 1:1 flow sharing.
 - A gap of 30 cumecs would be optimum, however a gap of 20 cumecs would allow increased volume and reliability of take for abstractors.
10. When preparing Plan Change 1, Council staff explored similar options to those referred to in paragraph 10.17 of Minute 9 (i.e a B Block minimum flow of 80, 90 and 100 cumecs). In her report, Ms Veltman outlines the technical information and analyses used to inform the development of Proposed Plan Change 1.
11. Various flow regime options were presented to Council following which Councillors voted for a 27 cumec gap between an A/B1+block and the B Block and a B Block of 40 cumecs.
12. I note that both Mr Duncan and Council Planning staff conclude that a gap of 30 cumecs is optimum to meet the objectives and policies of the WRRP, and to increase

the number of days that the flow in the Waimakariri River is within the preferred flow ranges for a number of activities.

13. After taking into account the reports of Ms Veltman and Messrs Duncan and McCallum-Clark; and the decision of Council in approving Plan Change 1 for public notification, I recommend that any decision in relation to a take regime should be consistent with Plan Change 1.

Rakaia River

14. The Commissioner~~s~~ have sought a recommendation on the take regime from the Rakaia River in relation to the ACWT decision (decision issued in May 2009).
15. Mr Cliff Tippler addresses the take regime in his supplementary report dated 7 September 2009. In paragraph 11, Mr Tippler states that the maximum rate of take from the Rakaia River *is usually limited to 30m³/s (with the ability to take up to 40m³/s as applied for).*
16. He also states that the abstraction from the Rakaia River will be from
 - on average 2m³/s unallocated water from Bands 2 and 3;
 - 7m³/s of Band 4 water in agreement with Barhill Chertsey Irrigation Limited (BCIL);
 - 1.96m³/s of Band 5 water in agreement with Glenroy Community Irrigation Company Limited (GCICL); and
 - a share of the remaining water with ACWT.
17. I note that Synlait has also applied to take unallocated water from Band 2 and 3, and that matters of priority related to the applications made by both Synlait and CPW were heard by the Court of Appeal in August 2009. It is my understanding that a decision regarding who has priority to the unallocated Band 2 and 3 water will be made before the end of the year.
18. I note that CPW has separate agreements to access water allocated to BCIL and GCICL and the effects of taking that water have already been considered when those consents were granted.
19. In paragraph 26 of his supplementary evidence, Mr Tippler states:
“The effect of the proposed take on the Rakaia River will be the same as for the original scheme...effects remain unchanged”.
20. I agree with Mr Tippler~~s~~ conclusions.

LOCATION OF THE LOWER WAIMAKARIRI INTAKE

21. The Commissioner~~s~~ have sought advice on the location of the Lower Waimakariri Intake in relation to visual and amenity values, and the engineering implications of the recommended location.

22. In the Council's submission on the applications, Ms Di Lucas prepared evidence on the impacts of the intake on visual and amenity values. Ms Lucas describes the intake location in paragraphs 157-159 of her evidence.
23. In paragraphs 180-181, Ms Lucas assesses the effects of the proposed intake on visual and amenity values, stating:
- "the effects of the structures and earthworks in this special Gorge Bridge area would have significant adverse effects."*
24. Mr Walter Lewthwaite has prepared a memorandum outlining three alternative options for the location of the Lower Waimakariri Intake. He advises as follows:
- (a) *The site furthest downstream as shown on Chris Glasson's plans, criticised by Di Lucas as being visible from the bridge, probably best for scheme operations, and OK for safety. I believe this was probably outside the designated area.*
 - (b) *A site about 50m further upstream as shown on my plans, OK for scheme operations, OK for safety, and invisible (or at least less visible) from the bridge. This site is within the designation.*
 - (c) *A site another 150m further upstream that would be invisible from the bridge, outside the designation, and less desirable for scheme operations. I believe boaters thought this might be best for safety."*
25. While Mr Lewthwaite has provided options that may be less visible from the bridge, the proposed locations do not address visibility of the structures from river-bed users.
26. I discussed the three options with Ms Di Lucas. She considered that option (c) is most preferred to reduce effects on landscape values and visual amenity as long as it is well clear of the pinnacles. However, she states that she would need to see plans of the proposed locations to make a recommendation with certainty.
27. Ms Lucas is available to provide further comment if additional plans become available. She states that it would be preferable if the intake was below the gorge bridge and the canal was ten metres lower than proposed. She considers this would likely resolve a number of issues related to the intakes.
28. At the time this report was written, the Regional Engineer was unavailable to comment on the proposed options. I recommend that the applicant provides an assessment of the effects related to the intake at this point, including the river engineering implications.

RECOMMENDED CONDITIONS ADDRESSING ISSUES RAISED BY THE REGIONAL ENGINEER

29. The Regional Engineer and Environment Canterbury's River Engineering section provides an important role in ensuring that the natural processes in the Waimakariri

River do not erode or cause adverse effects on neighbouring landowners and those that reside on the flood plain (including those within Christchurch City). I consider that it is essential that any decision made by the panel takes into consideration the importance of their work, including projects such as the Waimakariri River Protection Scheme and the construction of stopbanks and secondary stopbanks.

30. In his submission on the applications made by CPW, the Regional Engineer raised a number of issues and proposed mitigation that he considers to adequately address the issues.
31. While the conditions proposed by the Regional Engineer address the issues, I consider that in some instances, other options may be available to ensure the integrity of the work undertaken by the Regional Engineer is maintained. I have discussed these options below.

Location of the Sediment Pond

32. The Regional Engineer has concerns regarding the location of the sediment pond and recommended that the applicant re-locate the pond in an area to the south of the original proposal. The Regional Engineer understands that CPW has agreed to locate the sediment pond in the recommended location.

Recommended conditions

33. The location of the pond should be fixed to the agreed location by way of conditions of consent. The following wording may be used to achieve that:

The location of the sediment pond shall be located between map references NZMS 260 M35:xxxx-xxxx and NZMS 260 M35:xxxx-xxxx, below the Gorge Bridge on the south bank of the Waimakariri River, within the area labelled "sediment pond" on attached Plan CRCXXXXXXA"

Notification of works and consultation with River Engineers.

34. The River Engineers undertake flood protection works in the bed and within the banks of the Waimakariri River at all times of the year. The Regional Engineer has requested that they be notified of all works undertaken on the Waimakariri River so that the River Engineers may provide input into and approve any works prior to commencement.
35. The Regional Engineer also requested that the applicant shall give the Regional Engineer notice of any activity that has the potential to affect the Waimakariri River Protection Scheme, seven days prior to the commencement of those activities. The Regional Engineer has also requested that works not commence without his written approval and that CPW pay all costs associated with providing approval.

Recommended conditions.

36. I consider the Regional Engineers' concerns are best addressed via a certification-type condition that avoids issues related to third party approvals. I see no issues with a condition requiring advance notice of planned works to be carried out.

37. If Commissioners agree with the recommended approach then conditions along the following lines may be appropriate:

The works authorised by this consent shall not adversely affect the Waimakariri River Protection Scheme. Except for works carried out in response to an emergency, no works shall be carried out unless The Canterbury Regional Council Regional Engineer has certified that the proposed works will not adversely affect the Waimakariri River Protection Scheme.

The Regional Engineer shall be notified at least seven days before the commencement of any works that are not in response to an emergency. Where the works are discontinued for more than seven consecutive working days the Regional Engineer shall be re-notified.

38. I consider that similar prescriptive conditions are also appropriate to address other concerns held by the Regional Engineer (discussed below).

Landscape planting and spread of pest species

39. CPW has proposed to undertake planting in the bed of the Waimakariri River for landscape purposes.

40. Policy 7.1 of the Waimakariri River Regional Plan (WRRP) states:

“Control in the bed of any river or lake in the Waimakariri River Catchment:

(c) the introduction or planting of any plant or any part of any plant (whether exotic or indigenous) in, on or under the bed; so that (a) to (k) of Objective 7.1 are achieved and in particular:

(i) the flood hazard to adjacent land is not increased;

(v) the braided character of the Waimakariri River where it exists is sustained.”

41. Rule 7.3 of the PNRRP describes the introduction or planting of any plant (exotic or indigenous) in, on or under the bed of any river as a discretionary activity.
42. The Regional Engineer, on behalf of the Canterbury Regional Council as the owner of the river bed, submitted that uncontrolled vegetation can cause flooding and erosion problems, and that it is important that any vegetation introduced does not spread via seeding or any other mechanism.
43. I spoke with the Regional Engineer (Mr Ross Vesey) to discuss his concerns and consider there are at least two options to address the problem.

- the applicant could be asked to compile a schedule of plants and these could be vetted now, before any decision is made; or
- a condition of consent that specifies the preferred outcome, such as:

“Any plants introduced to the bed and banks of the Waimakariri River as part of the Landscape Plan shall not include species with invasive properties, and shall not spread beyond the landscaping zone as shown on Plan CRCXXXXXX”

"Prior to the planting of any vegetation as part of the Landscape Plan, a suitably qualified person shall certify that the plants within the Landscape Plan do not have invasive properties, and shall submit a certification report to the Canterbury Regional Council, Attention: Compliance and Enforcement Manager.

44. I note that Mr Walter Lewthwaite amended the proposed conditions in his supplementary brief of evidence dated 8 July 2008. He proposed the following condition in relation to the introduction of plants in the bed of the Waimakariri River.

"No plant species listed in Schedule BLR1 of Chapter 6 "Beds and margins of lakes and rivers" of the Proposed Canterbury Natural Resources Regional Plan shall be planted."

45. The introduction of any of the plant species listed in Schedule BLR1 is classified as a prohibited activity under Rule BLR10 of Chapter 6 of the PNRRP. I note that the provisions for works in the bed of a river contained in the PNRRP do not apply to the Waimakariri River, however I consider that it provides useful guidance.
46. The WRRP classifies the introduction of vegetation in the bed of the Waimakariri River as a discretionary activity, however the WRRP does not give further guidance on the introduction of plants.
47. Mr Vesey stated that there are other plants that he has concerns with that are not included in Schedule BLR1, for example alders. Mr Vesey stated that they would need to develop a list of plants that are in addition to the schedule. I consider that the applicant would need to develop such a list with the Regional Engineer.

Sediment Flushing

48. CPW have applied for a discharge permit to discharge sediment and water from the settling pond. In his submission, the Regional Engineer outlines his concerns about the proposed sediment flushing, including safety and other effects on the bed of the river.
49. The Regional Engineer states that removing the sediment from the pond mechanically and depositing it out of the river bed would satisfy their concerns. I note that other large irrigation intakes in Canterbury remove sediment using this method.
50. In the event that it is decided that sediment flushing is the preferred option, the Regional Engineer proposed conditions that would address some of his concerns.

Recommended conditions

51. The Regional Engineer has requested that the following conditions form part of any consent granted:

"Any sediment flushing operation shall be carried out and completed between the hours of x.00am/pm and y.00am/pm on Mondays and/or Thursdays except when these days are public holidays."

52. The Regional Engineer also sought to ensure that there is sufficient flow in the braid before discharging to reduce the chance of sediment deposition adjacent to the outfall. Mr Vesey considered that the following condition would address this matter:

“CPW shall flush only when there are adequate receiving channel flows at the overflow channel river outfall to transport sediment removed from the intake system”

53. Mr Walter Leiwthwaite addressed these concerns in his response to the s42a report and in supplementary evidence dated 8 September 2008. In the supplementary evidence, Mr Leiwthwaite states that he believes that Mr Vesey agrees with the conditions proposed by the applicant (and modified in July 2008).
54. The applicant has applied for two consents to discharge water or sediment back to the Waimakariri River (CRC061981 and CRC061920). I note that the description of the activity applied for under CRC061981 only refers to the discharge of water, however the proposed conditions refer to sediment sluicing. If consent is granted, I consider that the proposed conditions should also apply to consent application CRC061920 (to discharge water and contaminants, being principally sediment, to the Waimakariri River).
55. The conditions proposed by the applicant are as follows:
- (a) *The discharge shall not cause significant erosion of the bed or banks of any watercourse.*
 - (b) *Sediment sluicing shall only be undertaken when the unmodified flow in the Waimakariri River exceeds 100 cubic metres per second, except that this limit does not apply during the months January to April inclusive.*
 - (c) *Sediment sluicing shall not occur during night time hours, weekends or public holidays.*
 - (d) *Warning signs shall be erected in the riverbed downstream of the intakes as directed by the Canterbury Regional Council.*
 - (e) *Sediment sluicing shall be undertaken at a time of day determined in consultation with the Canterbury Regional Council.*
56. I have discussed the proposed conditions with the Regional Engineer. He states that he is satisfied that conditions (c), (d) and (e) address his concerns, however does not consider that condition (b) adequately addresses the need for the discharge to be into a channel of adequate receiving flows.
57. I discussed the flow requirements for adequate sediment dispersal with Maurice Duncan. Mr Duncan stated that 100 cumecs as a receiving flow is too low and he does not agree with the exception from January to April.
58. Mr Duncan compared the Rangitata Diversion Race Management Limited (RDRML) discharge requirements with the flows proposed by CPW. He noted the following:
- The mean flow of the Rangitata River is approximately 100 cumecs, and RDRML may discharge at flows over 140 cumecs.

- The mean flow of the Waimakariri River is approximately 125 cumecs, and in using a simple comparative method to RDRML, CPW should discharge at a flow no less than 175 cumecs.
- The proposed condition refers to unmodified flows, and in the event that A permit holders are abstracting water, the actual flow in the river could be much less than 100 cumecs at the time of the discharge. Mr Duncan did not consider these flows to be adequate to move silt and sediment down stream.
- If CPW were to flush right on an unmodified flow of 100 cumecs in the salmon fishing season, the river may become too turbid to be fishable.
- To make an informed assessment of the proposal, additional information would be required regarding the volume of sediment to be flushed, the expected concentration in the outflow and the flow rates in the out flow.

59. Mr Duncan recommended that the river flow should be greater than 175 cumecs, over the entire year before flushing should take place.

Works in the bed of the river and the diversion of water

60. The Regional Engineer has concerns regarding proposed works in the bed of the river and the diversion of water required to facilitate a successful discharge back to a flowing channel. He stated that there was considerable uncertainty in the application related to the works, and how this will affect the river channels, flood flows and subsequent effects on bank stability.

Recommended conditions

61. After discussing the concerns with the Regional Engineer, I consider that conditions that describe a specific outcome should be placed on any consent granted, for example:

“The works shall not cause erosion of the bed and banks of the Waimakariri River”

“The diversion shall not deflect flood waters towards the banks of the Waimakariri River”

62. The Regional Engineer also stated that works could reduce the flow at the WIL intake site.

Access

63. The Regional Engineer considers the construction of the headrace may impact on access to flood protection and river protection works between the proposed control gate and Redmonds Road. The Regional Engineer seeks that access is maintained along the river terrace.

64. The Regional Engineer also noted that it is important to retain access over the diversion and discharge channels for access to the Regional Park and river

maintenance works by construction machinery. He considered that such access should be dry (i.e. a bridge or a culvert) and a ford.

Recommended conditions

65. I consider that these concerns could be adequately addressed by conditions stating that the works shall not impede access to the river.

"The works shall not impede access to and along the Waimakariri River."

"A bridge or culvert, suitable to allow access to the riverbed for construction and four-wheel-drive vehicles, shall be installed across the diversion and discharge channels, and shall be maintained at all times"

"A ford, suitable to allow access to the riverbed for construction and four-wheel-drive vehicles, shall be maintained at all times across the diversion and discharge channels"

Effects on flood protection works

66. The Regional Engineer submitted that the proposed construction of the intake structure, sediment pond and the headrace canal would require the removal of flood protection vegetation and would have the potential to cause instability along the terrace, which could increase erosion along the true right bank of the Waimakariri River.

Recommended conditions

67. Mr Tipler addressed this matter in his proposed condition (5) of the revised set of conditions in his report dated 9 July 2008.

"The works shall not disturb existing river protection works in the Kimberley Cliff to Redmonds Road reach without the prior approval of the Rivers Engineer at Canterbury Regional Council."

68. Although this condition refers to third-party approval it is framed in a manner that is probably not ultra-vires unless approval is necessary for the proper operation of the scheme. If Commissioners disagree then I can provide wording for a certification-type condition.