BANKS PENINSULA
WATER MANAGEMENT ZONE COMMITTEE
AGENDA

TUESDAY 15 APRIL 2014

AT 4PM

IN BANKS PENINSULA RUGBY CLUBROOMS, LITTLE RIVER

Committee: Richard Simpson, Community Representative (Chairperson)
Donald Couch, Commissioner Environment Canterbury
Andrew Turner, Christchurch City Council
Steve Lowndes, Community Representative
Pam Richardson, Community Representative
Kevin Simcock, Community Representative
Iaean Cranwell, Te Rūnanga o Wairewa
June Swindells, Te Hapu ō Ngāti Wheke/Rapaki
Riki Lewis, Te Rūnanga o Koukourarata
Pere Tainui, Te Rūnanga o Ōnuku

Principal Adviser
Peter Kingsbury
Tel: 027 599 4615
Christchurch City Council

Zone Facilitator
Lesley Woudberg
Tel: 027 706 4273
Environment Canterbury

Committee Adviser
Tracey Hobson
Tel: 941 5219
Christchurch City Council

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BANKS PENINSULA WATER MANAGEMENT ZONE COMMITTEE 15. 4. 2014

1. APOLOGIES

2. CONFIRMATION OF MINUTES – 18 FEBRUARY AND 20 MARCH 2014

The minutes of the committee's meeting held on 18 February and 20 March 2014 are **attached**.

The Committee is asked to approve these minutes as a true and accurate record of the meeting.

3. MATTERS ARISING

4. DEPUTATIONS BY APPOINTMENT

5. FLOOD EVENT – LITTLE RIVER 3-5 MARCH

The Committee will receive information from Tim Ayers, Christchurch City Council, and Tim Davie, Environment Canterbury, regarding the flood event in Little River which took place 3-5 March 2014 (refer **attachments 1 and 2**). This item relates to Chapter 6 of the Zone Implementation Programme (ZIP).

6. UPDATE COMMUNITY BOARDS

The Committee will receive an update from Pam Richardson, Chair of Akaroa/Wairewa Community Board, and Paula Smith, Chair of Lyttelton/Mt Herbert Community Board (refer **attachment 1**). This item relates to Chapters 2, 3 and 8 of the ZIP.

7. STORMWATER – BANKS PENINSULA CONSENT

The Committee will receive a presentation from Brian Norton and Tim Ayers, Christchurch City Council, regarding stormwater consenting in Banks Peninsula. This item relates to Chapters 2, 3 and 8 of the ZIP.

8. UPDATES

- Regional Committee
- Christchurch City Council Significant Ecological Sites

9. PRONUNCIATION PRACTICE

The Committee will engage in a short practice of Te Reo.

10. WAIREWA TECHNICAL REPORTS

The Committee will receive Wairewa technical reports (refer **attachment 1**).

11. FACILITATORS UPDATE

- Facilitator's update (refer **attachment 1**)
- District Plan Review
- Newsletter Autumn edition
- Quarterly update Immediate Steps Funding (refer **attachment 2**)
- Extension Wairewa letter (refer **attachment 3)**

ATTACHMENT TO CLAUSE 2

BANKS PENINSULA WATER MANAGEMENT ZONE COMMITTEE
18 FEBRUARY 2014

A meeting of the Banks Peninsula Water Management Zone Committee was held in the Akaroa Sports Complex on Tuesday 18 February 2014 at 4pm

PRESENT: Richard Simpson, Community Representative (Chairperson)
Donald Couch, Commissioner Environment Canterbury
Iaean Cranwell, Te Rūnanga o Wairewa
Steve Lowndes, Community Representative
Pam Richardson, Community Representative
Kevin Simcock, Community Representative
June Swindells, Te Hapu O Ngati Wheke
Riki Lewis, Te Rūnanga o Koukourarata

APOLOGIES: An apology for absence was received and accepted for Councillor Andrew Turner and Pere Tainui. An apology for lateness was received and accepted from June Swindells who arrived at 4.15pm.

The meeting was opened with a karakia from Peter Ramsden.

1. CONFIRMATION OF MINUTES – 3 DECEMBER 2013

It was **decided** that the minutes 3 December 2013 be approved as a true and accurate record.

2. MATTERS ARISING

2.1 Water Related Services Bylaw

A letter to Ruth Littlewood from the Committee regarding the Water Related Services Bylaw 2008 was sent on 12 December and outlined the Committee's feedback. Ruth Littlewood gave an update on the Water Related Services Bylaw at the joint Akaroa Waiwera / Lyttelton Mt Herbert Community Board seminar which was held on 12 February 2014.

2.2 Okains Bay Water

Water flow monitoring in Okains Bay has confirmed that flows are low. Results will be presented to the Okains Bay Water Committee for feedback. A sub-committee has been looking at alternative water sources.

2.3 Reserve Management Committee

Pam Richardson reported that the Reserve Management Committee has found E Coli in the water holding tanks at Okains Bay. Environment Canterbury will be following up.

3. DEPUTATIONS BY APPOINTMENT

Nil.

4. IDENTIFICATION OF URGENT ITEMS

4.1 Lesley Woudberg is to investigate the holding of a potential field day on 15 March 2014 as part of the Wairewa Sub-Regional Plan process.

5. IDENTIFICATION OF ANY GENERAL PUBLIC CONTRIBUTIONS

5.1 Pam Richardson reported that there is increasing erosion of the harbour at Wainui.

5.2 Concerns have been raised with community boards about the state of private community water supplies at Tikao Bay and Purau. It is hoped that the experience gained by the zone committee in working with the Okains Bay community may be able to assist these communities.

6. IMMEDIATE STEPS PROJECT PROPOSALS

The Committee received two Immediate Steps project proposals.

6.1 The Committee **decided** to allocate $6,976 in Immediate Steps Funding for the Okana Confluence Restoration project. The Committee requested that the Christchurch City Council and the landowner have a formal written agreement on how the paper road will be dealt with in the future.

6.2 The Committee **decided** to allocate $51,560 in Immediate Steps Funding for the Teddington Stream (Te Rapu) Restoration project.

7. WAIREWA SUB-REGIONAL PLAN

The Committee received documents regarding the Wairewa Sub-Regional chapter of the Canterbury Water Management Strategy including the following:

7.1 Land and Water Regional Plan Assessment

The Committee noted the information and questions for consideration in the Zone Implementation Plan (ZIP) Addendum. The Committee has been asked to considered, in particular, the following questions:

- How should the Wairewa catchment be subdivided?
- What flow allocation regime should be set in the Wairewa catchment?

7.2 Preparation of the Wairewa Catchment Sub-Regional Plan

The Committee discussed the proposed March/April 2014 timetable. Dates tentatively suggested include:

- Workshop Tuesday 4 March 2014 at 5pm in Little River
- Workshop Monday 10 March 2014 at 6pm in Little River
- Meeting Thursday 20 March 2014 at 4pm in Koukourarata
- Hui Wednesday 26 March 2014 at 6pm in Wairewa Marae

Lesley Woudberg is to check the dates above and confirm with the Committee by email.

7.3 Draft Wairewa Rũnanga Cultural Evaluation Report

The Committee **decided** to note the outcomes of the draft Cultural Evaluation Report, and use these to further inform the development of the preferred 'solution package'.

8. SELECTION OF COMMUNITY REPRESENTATIVE

The Committee discussed the selection of a community representative following the resignation of Yvette Couch-Lewis.

8.1 The Committee **decided** to recommend to the Canterbury Water Management Strategy partners that expressions of interest should be called now and a selection process for a new community representative undertaken. This will be followed by Council adoption of the representative in April and the new member starting in May.

8.2 The Committee requested that the appointments committee include the residence location of the applicants in its consideration.

8.3 The Committee **decided** to defer the election of a Deputy Chairperson until the next meeting.

9. PRONUNCIATION PRACTICE

9.1 Iaean Cranwell gave a brief overview of local Maori history in the Akaroa area with emphasis on Maori place names. A booklet on Maori pronunciation will be distributed to the Committee at the next meeting.

10. GENERAL UPDATES

10.1 Regional Committee Update

The Committee received a verbal update from Steve Lowndes regarding the Regional Water Management Committee meetings of 10 December 2013 and 11 February 2014. Steve presented a paper on funding for environmental remediation at the 10 December meeting which led to a proposal to establish a working group.

10.2 Community Update

The Committee received a verbal update from Pam Richardson regarding the issue of loose dogs, particularly at Corsairs and Okains Bay. There are restrictions on the times of day that dogs are allowed along the waterfront.

10.3 Stormwater Consent Update

The Committee received a verbal update from Peter Kingsbury regarding the Interim Global Stormwater Discharge Permit. The Committee requested that Lesley Woudberg meet with Peter Kingsbury to discuss the permit and its application in the Banks Peninsula zone and report back to the Committee.

11. FACILITATOR UPDATE

The Committee received an update from Lesley Woudberg on the following:

- Zone Committee progress report
- Steve Lowndes is to represent the Committee at both the Review of Immediate Steps on 11 March 2014 and the Land Use Water Quality Review on 12 March 2014. These reviews are both being held in Ashburton.

The meeting concluded at 7.15pm.

CONFIRMED THIS 15TH DAY OF APRIL 2014

RICHARD SIMPSON
CHAIRPERSON

ATTACHMENT TO CLAUSE 2 CONT'D

BANKS PENINSULA WATER MANAGEMENT ZONE COMMITTEE
20 MARCH 2014

A meeting of the Banks Peninsula Water Management Zone Committee was held in Tūtehuarewa Marae on Thursday 20 March 2014 at 4.10pm

PRESENT: Richard Simpson, Community Representative
Steve Lowndes, Community Representative
Kevin Simcock, Community Representative
Riki Lewis, Te Rūnanga o Koukourarata

APOLOGIES: An apology for absence was received and accepted from Iaean Cranwell, Andrew Turner, Pam Richardson, Donald Couch, June Swindells and Pere Tanui.

1. ADJOURNMENT OF MEETING

The meeting lapsed by reason of failure of a quorum.

The Committee members present then held a workshop.

CONFIRMED THIS 15TH DAY OF APRIL 2014

RICHARD SIMPSON
CHAIRPERSON

Report on the March 2014 flooding in Wairewa Catchment (Little River)

Dr Tim Davie, Surface Water Resources & Ecosystems Manager
March 26, 2014

I have been asked to provide a short summary of the flooding that occurred in and around Little River in early March 2014.

Between March the 3rd and 5th 2014 a depression off the east coast of the South Island pushed cold south easterly rain onto Banks Peninsula and Christchurch causing significant flooding and land sliding. The road between Little River and Barrys Bay was closed and there was significant surface flooding in the Little River and Cooptown area. The majority of rain fell in a 24 hour period from 10am on March 4th. Rainfall predictions from the MetService were for moderate rainfall up until the evening of March 3rd when it was upgraded to severe.

Rainfall

Rainfall within the Wairewa catchment varied considerably. In the lower Okuti Valley total rainfall was 177mm while in the Okana Valley (at a higher altitude close to Hilltop) a total of 341mm was recorded. An analysis of the Okana rainfall is shown below. The rain gauge has only been in place for less than a year so the statistics have been derived using HIRDS (High Intensity Rainfall Distribution System, NIWA)

Depth – duration – frequency statistics for rain gauge in the Okana catchment (near Hilltop)

Length of time (date and time)	Rainfall total	Estimated average recurrence interval	Time of peak
15 min	7 mm	-	5/3 @ 7am
30 min	13 mm	15 year	5/3 @ 7.15am
1 hour	24 mm	28 year	until 5/3 @ 7.45am
2 hour	50 mm	60 year	until 5/3 @ 7.15am
6 hour	111 mm	> 100 year	until 5/3 @ 8.15am
12 hour)	187 mm	> 100 year	until 5/3 @ 9am
24 hour (	292 mm	> 100 year	until 5/3 @ 10.45am

N.B. These average recurrence intervals are estimated based on statistics for all of New Zealand and cannot be considered 100% accurate

The rainfall in the Okana catchment was extremely intense for rainfall periods between 1 hour and 24 hours which was the primary reason for the flooding to occur. The peak rainfall intensity was at 7am on March the 5th which followed a long period of sustained high intensity rain. The estimated average return period for these intensity rainfalls is over 100 years. It is worth noting that in May 1934 there was a storm where 469mm of rain was recorded in the Okuti rain gauge although it is unclear how long a period that was over.

River flows

The only continuous record of river flow in the catchment is on the Hukahuka Turoa at Lathams Bridge (a tributary of the Okana in the Western valley). There has been a recorder at this site since 1988 and it is run by NIWA as part of the national rivers network. The peak flow recorded at this site was 19.98 m^3/s (7am on 5/3) which is the highest ever recorded. It is always hard to be sure of a peak flow measurement because they occur so infrequently and the measurement methodology

relies on physical gaugings for greater accuracy. There have been no physical gaugings at this high a flow so some uncertainty surrounds the peak flow figures. However, it remains the highest ever flow in the hydrological record.

An estimate of peak flow average recurrence interval statistics is limited by only having 25 years of record but has been attempted and the results shown in the table below, including several recent storms. It should be noted that in the 25 years of record the three highest peak flows have been recorded in the past 3 years. Although this is unusual it is not unprecedented and may be as much a factor of a short hydrological record as an external factor like climate change.

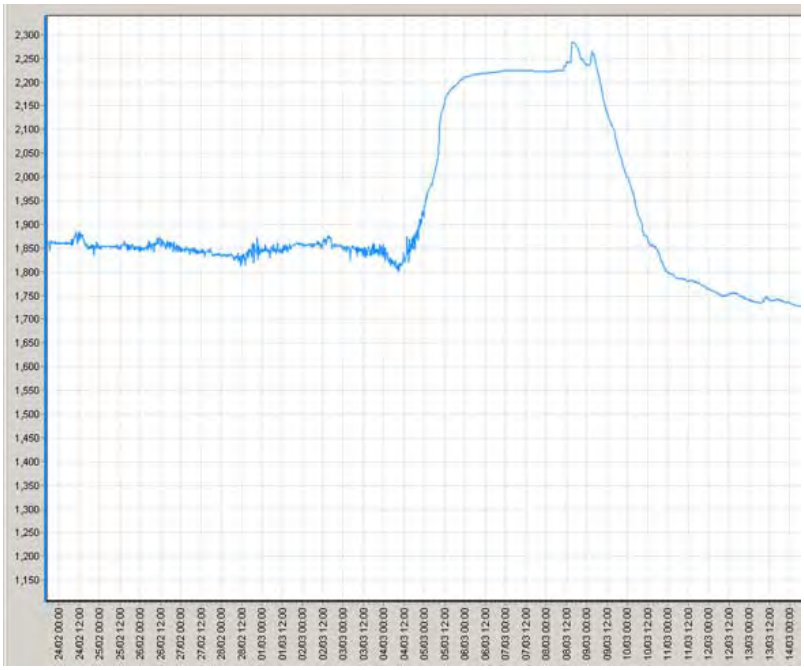
Hukahuka Turoa peak flow statistics

Date of storm	Peak flow (m^3/s)	Estimated average recurrence interval
October 19, 2011	18.54	40 years
August 13, 2012	18.75	44 years
March 5, 2014	19.98	75 years

Lake response

The recorder on Lake Forsyth (Te Roto o Wairewa) experienced technical problems during the storm event. A hole in the recorder developed (probably from storm debris) and debris entered the recorder tower and jammed it at about 2.2m. We know from visual observations during the storm and from debris lines on the staff gauge that the lake level reached as high as 2.8m.

Lake Forsyth recorder trace



The lake was opened on March the 7th (11.30am). The record doesn't show a response until the lake had dropped below 2.2m. As of March 26th the lake is still open and is at a level of around 1.2m. A photograph of the lake taken on March 7th (see end of report) shows a very high lake level but not backing up all the way to Little River.

General comment

The rainfall in the catchment was very intense which generated considerable surface flooding. I understand the Christchurch City Council have engaged a consultant to look at where the main flooding occurred and to what level. This will be useful information in assessing how influential the lake level was in exacerbating the floods in Little River. The lake prior to the storm was sitting at about 1.85m which is not particularly high (about 25% of the recordings since 1994 have been above this level) and the lake would not normally be considered for opening at this level. The predicted rainfall was not particularly high until very close to the actual event (about 12 hours out and at night) so it would have been impossible to open the lake prior to the main rainfall.

It is likely that the main cause of surface flooding in the Little River area (including Cooptown) was the stream channels and drains being unable to cope with the very high flows, rather than the lake backing up and blocking drainage. However the role of the lake in the floods has not been fully investigated. Stream channels like lower Police Creek (below the state highway) have a lot of old willow and poplars blocking channels which will have increased the probability of flooding out of the channels.

Frontispiece. The head of the lake after the 170 mm rainfall event 3-5 March 2014.
[Photo 7 March, Andrew Dakers, ecoEng Ltd]

Opening the lake 2pm Thursday 6th March, the final breach to the sea occurred 11:30 Friday 7th March (Photo, Steve Lowndes, Birdlings Flat)

From: Ken Sitarz
Sent: Tuesday, April 1, 2014 11:13 PM
To: Bob Kirk ; Brian Patrick ; Bryan Morgan ; Charles Redwood ; Claire Mulcock ; Crile Doscher ; David Just ; Derek Todd ; Elizabeth Purves ; Eugenie Sage ; Fiona Nicol ; Graham Harrington ; Iaean Cranwell ; Jane Soons ; Jocelyn Karaitiana ; John & Esme Millward ; Justin Cope ; Karl Sitarz ; Kate Whyte ; Kathy Bisman ; Kevin Blogg ; Liz Maaka ; Llewellyn Beets ; Marc Farge ; Maree Hemmingston ; Maria Bartlett ; Marieke ; Natasha Sitarz ; Pat McNulty ; Ron & Julia Jansen ; Rwdctyree1@Xtra.Co.Nz ; 'Simon Drew' ; Steve Lowndes ; Sue Manson ; Tina Melrose ; Yvonne
Subject: Groyne - March 2014

Hi All,

March began with an extraordinary southerly storm of severe high winds, high seas and heavy rain. On 4 March heavy seas washed over the shingle barrier at the groyne and washed out the vehicle access track at the other end of the channel. As the lake level began to rapidly rise from 1.8m, the high winds apparently damaged the ECAN equipment monitoring the lake level which froze at about 2.3m as the lake continued to rise and probably went well above 2.5m. On 5 March the high lake level was probably pushed higher at the eastern end of Lake Forsyth by the exceptionally strong southerly winds which may have contributed to backing up flood waters around Little River. On 7 March the CCC dug out the blocked channel outlet and the lake level began to drop.

Calm seas allowed the channel to stay open and continued to flow during the storm event on 16 March. The channel was eventually closed by shingle build up on 25 March.

The dilemma now for vehicle access across the channel now appears to rest with the Runanga as the CCC solicitor has stated "**The Council does not have the function of providing accesses across Crown land to private property**". My understanding is that after the original truck deck access was condemned by DOC, the Runanga then constructed the causeway access using two culverts and guaranteed that culvert access will be maintained. The suggestion of putting in culvert access was made at the **`canal access consultation meeting 17 February`** but was viewed as too expensive by the engineer**.**

The recently formed "Kaitorete Connection" group wants to have access open between Birdlings Flat and Bossu Road, and will need to form an action plan to meet their objective.


5 Mar 2014 - Shags sheltering from strong winds by groyne channel.


5 Mar 2014 - Shingle, driftwood and groyne rocks washed into channel by heavy seas.


5 Mar 2014 - Groyne.


5 Mar 2014 - Groyne.


5 Mar 2014 - Little River flood waters resulting from heavy rain, high lake level and lake surge from very strong southerly winds slowed run off.


6 Mar 2014 - Satellite view of flooding in Christchurch and muddy water of Lake Forsyth.


7 Mar 2014 - CCC digger opening channel at groyne.


7 Mar 2014 - CCC digger building channel shingle bank over groyne.


7 Mar 2014 - Eating in channel outflow.


9 Mar 2014 - CCC widened the washed out vechicle access and placed boulders across the closed temporary peninsula access road.

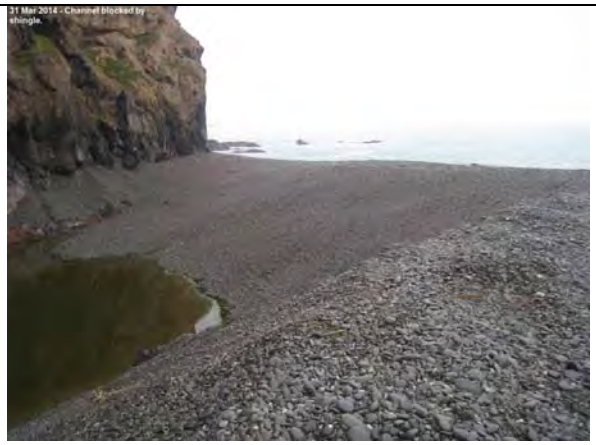

9 Mar 2013 - Channel outflow


9 Mar 2014 - Channel outflow at groyne.


14 Mar 2014 - Closed temporary peninsula access road.


17 Mar 2014 - Channel outflow at groyne.


31 Mar 2014 - Groyne


31 Mar 2014 - Channel blocked by shingle.

From: Paula and Martin [famvanbeynen@snap.net.nz]
Sent: Tuesday, 25 March 2014 10:01 AM
To: Lesley Woudberg
Subject: Fwd: Roads and Water

Attachments: Cameron 24.3.14.docx
Hi Lesley
I am forwarding this letter as a case study for the BPWM Zone Committee because it highlights the kind of problems occurring all around Lyttelton Harbour/Whakaraupo catchment. There are similar, possibly even more serious tales of woe from Lyttelton, where the stormwater system routinely exceeds capacity, but with particularly dire consequenses on Wet Wednesday 5 March. I believe ongoing problems with the stormwater system together with associated erosion and sedimentation need to be addressed in both the Interim Global Stormwater Discharge Consent and in the review of the Water Services Bylaw. It is my view that restoration of the ecological health of the catchment (which includes the harbour itself) should be the long term objective of both documents. Some significant changes are needed to the way stormwater is managed. I know this view is share by many in the harbour communities.
I hope you will share this with the Committee
Kind regards, Paula

-------- Original Message --------
Subject: Roads and Water
Date: Mon, 24 Mar 2014 15:37:27 +1300
From: Bill Studholme <bstudholme@xtra.co.nz>
To: Alan Cameron <alan.cameron@ccc.govt.nz>
CC: Smith, Paula <famvanbeynen@snap.net.nz>, McConnell, Peter <Peter.McConnell@ccc.govt.nz>, Aires, Tim <Tim.Aires@ccc.govt.nz>

Alan
A letter expressing residents concern is attached.
Best wishes
Bill Studholme
Secretary CBRA

AGENDA ITEM NO:	**SUBJECT MATTER:** Wairewa science technical update
REPORT TO: BANKS PENINSULA ZONE COMMITTEE	**DATE OF MEETING:** 15 April 2014
PREPARED BY: Tim Davie	**ACTION:** For Information

PURPOSE

To update the Banks Peninsula Zone Committee on technical reports and other work being carried out with respect to Wairewa.

WAIREWA TECHNICAL REPORTS

Table attached to this paper provides a summary of technical reports.

Reducing sediment input into Te Roto o Wairewa/Lake Forsyth

Dr David Painter (David Painter Consulting Ltd) has produced a report investigating feasibility of a sediment basin at the head of the lake. The report is currently in a draft form awaiting peer review (standard practice for all ECan technical reports). Conclusions and recommendations from the report are given below.

Conclusions

1. *A sedimentation basin at the head of the lake is feasible and would be successful in reducing sediment inputs to the lake. It is difficult to estimate an appropriate size of basin in the absence of measured flows of water and sediment in the head-of-lake tributaries near the lake. With strong cautions about the simplifications involved in doing so, a range of sedimentation basin areas from 9-29 ha is given for some possible values of estimated water inflows and sediment settling behaviour.*
2. *Wetlands at the head of the lake, combined with a sedimentation basin, are feasible, and would have multiple advantages in addition to nutrient stripping. The area of wetlands would be influenced by more than just a 'technical' size based on nutrient inflows and stripping efficiency. An indicative size of 5-10 ha is appropriate, but subject to further consideration of nutrient inflows when these data become available.*
3. *A more accurate estimate of costs of a combined sedimentation and wetlands facility would be possible when sizes are more definite. [See Recommendation 3 below.]* ***Indicative*** *cost of 5 ha of wetlands [design, supervision, construction, plant procurement and planting] would be around M$0.75 to M$1.25. The lower figure would need to be achieved by use of project owner-operated plant and volunteer planting. A 15 ha, 3 m deep sedimentation basin requires approximately 300 000 m^3 of earthmoving and re-compaction. An* ***indicative*** *cost might prove to be [See Recommendation 3 below] in the range M$0.4 to M$0.8.*
4. *The Lake Forsyth catchment areal mean, annual mean rainfall for the nine years from 1 June 1990 to 31 May 1999 was approximately 1043 mm. The lack of a long period of measured rainfall at a high altitude in the catchment more recently makes a more recent estimate difficult, but 1000-1100 mm is likely to be appropriate.*
5. *The total catchment area of 111.54 km^2 receiving 1043 mm of rain results in a gross water volume of 116 Mm^3 [million cubic metres] per year before evapotranspiration*

and non-lake-captured infiltration. Of this, about 33 Mm^3 per year enters the lake via flow in the Takiritawai River. [See Conclusion 7 below.]

6. *The continuously measured water level and ratings to provide discharge at the Hukahuka at Lathams Bridge site [67602, a weir] are a valuable resource. There are no continuous level recordings on the Okana, Okuti or Takiritawai Rivers.*
7. *There are no [or very few] suspended sediment concentration measurements available from the Okana, Okuti or Takiritawai Rivers near the lake.*
8. *There are no [or very few] analytical results for chemical and physical properties, including settling velocities and particle size distributions, of suspended sediment from the Okana, Okuti or Takiritawai Rivers near the lake, nor from the Catons Bay tributary.*
9. *What proportion of the total sediment entry to the lake, including other tributaries, slope processes and wind-borne dust, is represented by the part from the head-of-lake tributaries is unknown.*
10. *Reasonably high inter-site correlations between measured Hukahuka at Lathams Bridge flows and spot gaugings on the Okuti River at Kinloch Road bridge [R^2 = 0.986] and Okana River at Christchurch Akaroa Road bridge [R^2 = 0.877] allow 'correlated hydrographs' for the Okuti, Okana and Takiritawai Rivers to be provided. The estimated mean flows in these rivers for the period July 1992 to July 2013 are: Okuti 0.366 m^3/s; Okana 0.678 m^3/s; Takiritawai 1.044 m^3/s.*
11. *Measured specific sediment yield in 1995 in the Hukahuka at Lathams Bridge catchment [16.30 km^2] was 90 t/(km^2.yr). A well-correlated relationship with mean areal annual rainfall gives 80 t/(km^2.yr) for the 1043 mm estimated for the whole catchment. These suggest about 8900-10 000 tonnes/year of sediment from the whole catchment [111.54 km^2] could be reaching the lake. Of this, the catchments contributing via the Okana and Okuti Rivers [84.66 km^2] comprise 6800-7600 tonnes/year, about three quarters of the total. If deposited sediment had bulk density 1 t/m^3, this would be equivalent to 68-76 mm/year spread evenly over a 10 ha sedimentation area. [Example arithmetic only; not all of this amount would be trapped by a sedimentation basin.]*
12. *The 10 000 t/yr higher estimate of sediment entering the lake from the whole catchment, with deposited sediment bulk density 1 t/m3 and spread over the approximately 5 km^2 area of the main lake, represents about 2 mm sediment depth deposited per year. This is similar to the 2.7 mm/yr calculated from the top 300 mm of a lakebed sediment core dated by pollen and fossil aquatic flora and fauna dating as being laid down between the 110 years 1895-2004.*
13. *Nutrient inflows to the lake via the Okuti and Okana Rivers were measured during July 1994 to June 2002. There are some current measurements by University of Canterbury students. Nitrogen is relatively low; dissolved reactive phosphorus is high, probably sourced from the naturally high levels in catchment soils.*

Recommendations

These recommendations summarise suggestions made in the previous sections:

1. *A review should be carried out by well-qualified experts on the relative significance of contemporary inflowing sediment and nutrients, compared to historic deposits in the lakebed of sediment and nutrients, in controlling water quality in the lake including that due to growth and decay of algae.*
2. *Updated information on likely capital and operating costs of a combined sedimentation and wetlands facility at the head of the lake, including costs of*

hydraulic structures and wetland plantings, should be provided as a follow-up to this report, refined from costs given here as better estimates of basin and wetlands areas become available.

3. *Should a decision be made to proceed with a combined sedimentation and wetlands facility, a review should be carried out by well-qualified experts on the design and likely performance of a sedimentation basin and wetlands, in the light of updated information on sediment and nutrient properties in the inflows.*
4. *Consideration should be given to installing continuous level recorders on the Okana and Okuti Rivers and commencing gathering of rating data.*
5. *Consideration should be given to gather suspended sediment rating data in conjunction with discharge rating of the recommended level recorders on the Okana and Okuti Rivers and to making spot measurements of suspended sediment in the Takiritawai River and the tributary inflow at Catons Bay.*
6. *Suspended sediment samples should be gathered from the Okana and Okuti Rivers and Catons Bay tributary and analysed for chemical and physical properties, including settling velocities and particle size distributions.*
7. *Measurements of nutrient loads flowing in to the lake from the Okana and Okuti Rivers and Catons Bay should be made through a multi-year period.*
8. *Consideration should be given to further investigation of using satellite imagery to study relative contributions of sediment to the lake from various source areas.*
9. *Should a decision be made to proceed with a combined sedimentation and wetlands facility, consideration should be given to installing piezometers to measure groundwater levels under the areas planned for the basin and ponds, well in advance of design and construction.*

Wairewa/Lake Forsyth – wetland bird management issues

Professor Ken Hughey (Lincoln University) has produced a report on the values of Wairewa/Lake Forsyth for birds and the impact of lake management of birds. The report is currently in a draft form awaiting peer review. The discussion section of the report (which includes summaries of various sections is copied below.

For this report I was asked to:

1. *Provide an estimate of the maximum number of wildfowl (particularly geese and swans) on the lake at any one time; and*
2. *Provide a short written report that indicates*
    a. *the value of the lake and it's near surrounds for bird habitat and*
    b. *how that habitat (and inherent value) might change if the lake were to be kept at a more steady level (i.e. remove fluctuations with current openings and closings).*

In response to the first requirement I have reviewed data from 1955 to the present day, except for three years of monthly bird counts which have not been made available to me. Much of that data has been collected in limited time periods, i.e., February for recent waterfowl counts from Fish and Game North Canterbury, and August for earlier counts. General information gained from these data and that reported by Crossland (2008) is shown in Table 4-1. Clearly the lake can at times accommodate large numbers of black swan and Canada geese, but also very large numbers of NZ scaup, NZ shoveler, grey teal and paradise shelduck (see Crossland 2008).

Table** Error! No text of specified style in document.**-1: Summary data from bird surveys of Wairewa/Lake Forsyth for black swan and Canada geese

Season and species	*Lowest number*	*Highest number*	*Mean number*
Winter count (1955-1991) – Fish and Game			
Black swan	*35*	*1262*	*259*
Canada goose	*61*	*1570*	*484*
Summer count – Fish and Game			
Black swan (1996-2013)	*80*	*2030*	*770*
Canada goose (2002-2009)	*420*	*1450*	*781*
Crossland (2008) maximums			
Black swan		*3800+*	
Canada goose		*2000+*	

Regarding the first part of the second question - the lake has very large numbers, at times, of a range of waterfowl species. Partly for these reasons, but also because of the significant presence of some other species, especially southern crested grebe and pied stilt, the lake and its associated wetlands rank highly in terms of their conservation value. Wairewa/Lake Forsyth contains a range of habitat types suitable for wetland birdlife – the diversity and numbers of birds present mean the lake meets a range of criteria regarding its relative local, national and international standing. Equally, the lake is important on a year round basis for a range of the key bird species, especially waterfowl. However, and in relation to the second

part of the second question there are questions about what lake level regime would best suit birdlife, and potentially which regimes would be worse for particular waterfowl; and, there are questions about the desirable number of some waterfowl species on the lake, especially Canada geese and black swans.

Water level appears to be a primary control on bird habitat needs on the lake. Despite not witnessing the lake at very low lake levels, my own experience elsewhere indicates prolonged periods at such levels are not in the long term interest of any of the important bird species using the lake – these are levels below around 1.7 masl. Equally, levels above 2.1masl are not in the long term interest of some of the 'dabbling waterfowl' and of the 'waders, herons and egrets'. Rather, moderate levels (for more time than at present), in the range of 1.7-2.1 would suit most bird species and would seem most likely to maintain:

1. *the northern mudflats*
2. *the wetland vegetation communities around the lake shore.*

Such a regime could be sustained with respectively summer and winter target levels of 2.1 (cf 2.4 currently) and 2.1 masl for opening, so long as there was some way of then ensuring lake levels did not stay below 1.7 masl for extended periods of time, perhaps through a permanent outlet of sorts.

In terms of water quality it is clear that birds contribute a substantial amount of P to the lake and that Canada goose and black swan are the main contributors. Maintaining much lower numbers of Canada geese than are typically present, e.g., 200, would certainly reduce P levels but whether this would be a significant and helpful reduction is not known. Black swan numbers could probably also be reduced to similar effect. Actions to reduce numbers would need to be sustained and are likely to garner some criticism.

Wairewa technical reports (April 2014)

Report	Author	Main findings	Status (07/04/2014)
Assessing unmonitored water use in semi-rural environments: an investigation into the Okana & Okutu river catchments, Little River, Canterbury	Jay Whitehead (Waterways Centre for Freshwater Management)	Average domestic water use in the study was high, at just over 580 l/person/day, compared to the New Zealand average of 160-260 l/person/day. The total amount permitted-activity water usage in the catchments amounts to 4.7 l/s across the two rivers. This amount of flow is small when compared to the river flow statistics.	Completed Available on sub-regional website Summary presented to ZC in Sept 2013
Stream ecology in tributaries of Wairewa/Lake Forsyth	Dr Duncan Gray (Environment Canterbury)	Water quality in the Okuti and Okana can be characterised as having naturally elevated, and increasing Dissolved Reactive Phosphorus (DRP) concentrations The streams of Banks Peninsula generally, and the Wairewa/Lake Forsyth catchment specifically, vary in habitat quality primarily according to riparian vegetation and stock access along their length. Despite some poor and declining values in water quality parameters, the fish and invertebrate communities appear healthy. However, the importance of catchment and riparian vegetation to streams is apparent.	Completed Available on sub-regional website Summary presented to ZC in Sept 2013
Lake Forsyth/Wairewa: a literature review	Dr Marc Schallenberg (University of Otago)	At present, the lake is in a poor (hypertrophic) condition. While the lake has undergone serious degradation, some ecological values persist, such as the moderately diverse fishery, the use of the lake by crested grebes, and the occasional presence of native macrophytes. A study carried out on shallow New Zealand lakes that have undergone rapid regime shifts from clear water to turbid states indicates that the land use intensity of the catchment of Lake Forsyth/Wairewa is consistent with a moderate to high probability of regime shifts.	Completed. Available on sub-regional website Summary presented to ZC in Nov 2013
Summary of catchment and lake	Dr Tim Davie (Environment Canterbury)	Summary of all proposed options for the catchments split	Completed.

options for consideration by community		into four categories (lake inputs; in-lake; water allocation & fish passage). Each option is discussed for feasibility, cost and effectiveness	Available on sub-regional website
Sediment sources and interventions in the Wairewa catchment	Ian Lynn (Landcare Research)	Primary sources of sediment and places for remediation are: stream banks in valley fill deposits; on-slope erosion scars; collapsed tunnel gullies on south-eastern shoreline of lake. Recommends: effective riparian management in valley floors to strengthen channel banks; oversow exposed erosion scars; revegetating south eastern shoreline; restoration of wetland at head of lake to filter sediments & nutrients; better management of stock crossings and table drain runoff for tracks & roads.	Completed Available on sub-regional website Summary presented to ZC in Nov 2013
Bird populations on Lake Forsyth (Te Roto o Wairewa)	Professor Ken Hughey (Lincoln Universiy)	A report to looking at the importance of the lake for bird populations. Concludes that: 1) the lake has a large number of birds and meets national and international importance criteria for wetlands; 2) water level is an important driver of bird populations and maintaining levels between 1.7 and 2.1 masl would suit most bird species; 3) bird species do contribute a significant amount of phosphorus to the lake and therefore control of Canada geese (and possibly) swans could be considered.	Draft completed Undergoing peer review
Feasibility for sediment retention basin and wetland at head of lake	Dr David Painter (DPC Ltd)	A report investigating feasibility of a sediment basin at the head of the lake. The report concludes: 1) a sediment retention basin is technically feasible at the head of the lake; 2) indicative costs of a combined sediment retention basin and wetland being around $1M for a 5 ha wetland and $0.4 – 0.8M for a 15 ha sediment retention basin (not including land purchase); 3) a “back of the envelope” estimate suggests a 10 ha retention basin could receive 60-75mm of sediment per year.	Draft completed Undergoing peer review
An assessment of effectiveness of in-lake interventions for improving Wairewa water quality.	Dr Marc Schallenberg (University of Otago)	Background information suggests that DRP is a key driver of algal blooms in Wairewa. Schallenberg will assess the evidence for the link between DRP and cyanobacterial	Agreed scope, to be completed by mid-April. Particularly

		blooms. He will then recommend research, management and restoration options for reducing DRP availability in the lake, which would aim to bring cyanobacterial blooms under control and achieve the key indicator targets.	concerned with control of TLI pulses
Assessment of current consented water takes in Wairewa catchment and effect of different flow allocation regimes on in-stream ecology.	Dr Tim Davie and Dr Duncan Gray (Environment Canterbury)	Very few consented takes in catchment at present. Both the Okuti and Okana catchments are not fully allocated under either and pNES or LWRP scenario. It is recommended that the pNES flow allocation regime is adopted for the Wairewa catchments.	Completed memo to Nick Regnault. Discussed with zone committee in February 2014.
Assessment of practical options for on-farm sediment control measures for Wairewa catchment	David Hewson (Opus Consulting)	Taking the Lynn report and translating it into a series of practical on-farm measures that could be taken for sediment reduction.	Agreed scoped. To be completed in May 2014

Facilitator's Update
Banks Peninsula Zone Implementation Programme
Date: 20 March 2014

SIGNIFICANT PROGRESS	• **83 recommendations** have been acted on, 24 recommendations need further clarification (ref.end of report) • Youth Hui 18-21 March • ECAN running erosion/sediment control training 10 and 11 April for contractors and consultants
WORK IN PROGRESS	• **Section 6 Wairewa** sub-regional plan – extension requested (due Sept) • **Rec 9.1** Okains Bay – community water supplies • **Rec 2.6** Storm-water – expect global consent notified late 2014 • **Rec 7.10** Freedom camping CCC Strategy and Planning Ctt Mar mtg asked staff to find ways to combat problem • **Review CCC District Plan:** Stage 1 underway – draft ZC comments attached • **Flooding** issues – Community Board workshops Lyttelton, Akaora and Little River • Draft **Autumn newsletter** • CCC and ECAN **Annual Plans**
SIGNIFICANT EVENT	• Spill from Lyttelton tank farm 4-5 March storm event • Release of the IPCC Report on Climate Change http://www.ipcc.ch/
AREAS THAT NEED WORK	• **Wairewa**
UPCOMING EVENTS	• Flooding Seminar Little River - hosted by Akaora-Wairewa Community Board TBC • **Proposed field trip April/May** (TBC) Lyttelton Harbour basin (outline attached)

Don't know Need clarification	*Needs Attention* 	*Scoping/Research* 	*Action Underway* 	*Process in Place* 	*Completed* 
24	*0*	*24*	*35*	*18*	*5*

Banks Peninsula Zone Meetings for 2014

20 May
Governors Bay Hotel
17 June
22 July
19 August

16 September
21 October
18 November
16 December?

Future Topics that have been suggested

- Mahaanui: Iwi Management Plan 2013 (date TBC)
- Land Drainage – Graham Harrington, Senior Surface Water Planner, Tim Ayers, Area Supervisor Land Drainage, Alan Cameron CCC (date TBC)
- Review Regional Pest Management Strategy
    - Canada Geese, Feral Goats
- NERPs and LURPs
- Climate Change – Sea Level rise Tonkin and Taylor Report
- Land and Water Regional Plan

Field Trips

- Lyttelton Harbour Basin – Immediate Steps Projects, Runanga/CC/DoC etc initiatives, Port Company – April
- Joint meeting with Christchurch-West Melton ZC??? – Storm water???

Information requested

- CCC Ecological Report – Liz Garson (CCC)

Possible stories for Autumn newsletter

- Celebrating progress
    - Richard's message
    - Immediate Steps update - fencing, planting (eg. Living Springs, Orton Bradley, Koukourarata) Rapaki, Onuku)
    - Water supplies – Little River
    - Waste water – Akaroa, Wainui
    - Youth hui
    - Research and information – Whakaraupō sediment study, info on Wairewa
- Wairewa workshops
- Flooding – info on Little River/Wairewa and sediment control?
- UNFCCC report and Tonkin and Taylor sea level report

Action List

ZC Mtg	Action	Who	Status
3 Dec	Akaroa School – discuss with ECAN education advisers options for catchment work	Pam	Checking in with Akaroa school
3 Dec	CCC Ecological Study – achievements to date	Peter K	
18 Feb	Assistance for Tikao and Purau private water supplies	Anna	Possible seminar for all private water supplies once know outcome of Okains B process
18 Feb	Distribute Maori pronunciation bklet	Iaean	To be tabled ZC mtg 15 April
20 Mar	Clarify progress on BP storm-water consent and management plan	Peter K	Brian Norton, Tim Ayers CCC provide an updae 15 April
20 Mar	Request for more information on Tikao Bay and performance of waste water treatment	Anna	In progress
20 Mar	Drinking water protection zone – what might they look like, Akaroa, Okains Bay, Little River	Anna	Work underway
20 Mar	Greater effort to involve youth in ZC meetings and activities	Lesley Anna ZC	In progress

Recommendations currently classified as *"Don't know – need clarification"*

ZIP Recommendation	Action
1.8 Access to key mahinga kai sites to be discussed by tangata whenua and land owners and where possible provided for.	
2.4 Water supply catchments to be prioritised for biodiversity enhancements and protection upstream of the takes.	
2.5 All stormwater to be controlled off hazardous sites with oil interceptors or similar technology.	
3.11 The effects of high seasonal numbers of visitors to be taken into account when planning for water usage in Banks Peninsula.	
4.3 All agencies to use the key biodiversity indicators to measure and communicate biodiversity on the Peninsula.	
4.4 One agency to agree to take the responsibility for co-ordinating all of the monitoring information from agencies and community groups, and create a computerised system of documentation including mapping.	

4.11 Barriers to native fish passage to be investigated. A programme to be established to work towards removing these barriers to promote native fish passage.	
4.12 Biodiversity to be highly valued and promoted and highly valued in all infrastructure upgrades.	
4.13 Environment Canterbury and Christchurch City Council plans to be reviewed to ensure rules specifically support biodiversity.	
4.14 Compliance with the Regional Pest Management Strategy (RPMS) to be supported. Pests that are significant risks to biodiversity but not covered by RPMS to be identified and strategies developed to address these.	
4.15 Alternative ways to prevent stock entering waterways other than fencing to be investigated.	
4.17 Salt marsh and estuary research to be carried out to provide advice and information on regeneration.	
4.18 Protection of whitebait spawning, other indigenous fish species and habitats at risk from climate change to be a priority in biodiversity projects.	
4.19 Priority areas for willow tree removal to be set taking into account the crested grebe habitat.	
6.6 A monitoring programme that gives the community confidence in the increasing health of the lake to be set up. This monitoring to include the lake, its surrounds and the immediate coastal environment.	
6.12 Changing sea levels to be part of all modelling of Te Roto O Wairewa.	
7.6 Wastewater capacity to become a priority for the future Christchurch City Council Small Settlement Studies.	
7.11 The Lyttelton wastewater plant to be maintained in a near ready-to-operate state to provide backup if the tunnel pipeline should fail.	
8.6 A database to be set up for Banks Peninsula residents to upload their records of extreme weather events including floods, winds and droughts. This database will help councils to assess Peninsula weather patterns, including possible trends due to climate change.	
8.7 The impact of climate change on the land and biodiversity to be considered when vegetation clearance is planned and undertaken for activities such as roading, forestry, farming or subdivisions.	
8.9 The above climate change recommendations to be reviewed within 12 months of the release of the IPCC prediction data to ensure recommendations are kept current.	
9.3 Enviroschools to be adequately funded so youth are empowered.	
9.6 The existing Peninsula groups and organisations including Rūnunga, Banks Peninsula Conservation Trust and Farm Discussion Group to be used and funded to educate about the issues in recommendation 9.5.	
10.4 A cross-organisation ecological monitoring programme to be developed for the Peninsula along the lines of the healthy estuary/rivers of the city monitoring programme.	

AGENDA ITEM NO:	**SUBJECT MATTER:** IMMEDIATE STEPS PROJECTS
REPORT TO: BANKS PENINSULA ZONE COMMITTEE	**DATE OF MEETING:** 18 FEBRUARY 2014
PREPARED BY: ROBYN RUSS	**ACTION:** FOR INFORMATION

PURPOSE

To provide an update on the status of existing Immediate Steps projects as well as an overview of projects in the development stage.

REPORT

The zone committee has $100,000 of Immediate Steps funding a year for five years. The Immediate Steps Programme is now officially half way through Year Four of the five year programme (commenced June 2010). However as the Banks Peninsula Zone Committee was late in forming (October 2011) due to the earthquakes, the zone is only effectively halfway through Year Three of five currently.

In late 2011 $67,300 was allocated towards four ‘Year 1’ projects. In 2012 and 2013 the zone committee approved over a further $122,000 worth of funding support. Early in 2014 the zone committee allocated another $58,536 towards stream restoration projects. Therefore the total amount committed to projects to date is $248,523, leaving $251,477 of IMS funds yet to allocate out of $500,000 (Tables 1 and 2).

Table 1: Overview of funding allocation and spend to date for Banks Peninsula IMS projects

Project Name	Allocated	Spent*
Round 1 projects		
Haylocks Stream	$11,100	$11,100
Te Wharau Stream, Orton Bradley	$28,000	$14,000
Okana River	$7,900	$7,900
Opuahou Stream	$20,300	$15,730
Sub Total	***$67,300***	***$48,730***
Round 2 projects		
Owhetoro Stream	$8,232	$7,032
Sub Total	***$8,232***	***$7,032***
Round 3 projects		
Allandale Stream Reserve	$41,775	$18,300
Mannys Reserve Covenant	$45,000	$45,000
Sub Total	***$86,775***	***$63,300***
Round 4 projects		
Le Bons Stream Restoration	$5,280	$0
Koukourarata Stream Restoration	$22,400	$22,400
Sub Total	***$27,680***	***$22,400***
Round 5 projects		
Te Rapu Stream Restoration (Teddington)	$51,560	$0
Okana Confluence Restoration	$6,976	$0
Sub Total	***$58,536***	***$0***
Totals:	**$248,523**	**$141,462**
Total remaining to be allocated (5 yr programme)		**$251,477**

*Spent means paid to recipients or contractors. On the ground works may yet to be undertaken (i.e QEII and Banks Peninsula Conservation Trust are paid up-front).

Table 2: Overview of project work status for approved Banks Peninsula IMS projects

Name of Project and Catchment	Brief description	IS funding allocation	Status
Round One Projects (December 2011)			
Haylocks Stream (Outer Bays)	Fencing	$11,100	Project completed. Audit still to be undertaken (struggle to get time that suits landowner).
Te Wharau Stream (Lyttelton/Whakaraupo)	Culverts, fencing and planting	$28,000	Contract signed. Consent obtained. Planting completed. Culvert foundations completed. Drift decks still to be installed (contractor error in measurements).
Okana Stream (Wairewa)	Weed control (willows) and planting	$7,900	Project completed. Audit completed.
Opuahou Stream (Wairewa)	Weed control (willows) fencing and planting	$20,300	Willow control complete. Fences and final planting scheduled to be completed end of May 2014.
Round Two Project (February 2013 approved)			
Owhetoro Stream (Outer Bays)	Fencing, planting and weed control	$8,232	Fences completed. Planting scheduled to be completed end of June 2014. Weed control ongoing.
Round Three Projects (July 2013 approved)			
Allandale Stream Reserve (Lyttelton/Whakaraupo)	Fencing and planting	$41,775	Stage 1 fence completed. Stage 2 being built now. 1st planting scheduled in next month and to be completed by end of Nov 2014.
Mannys Reserve Covenant (Outer Bays)	Fencing and covenant registration	$45,000	Fencing scheduled to be completed by end of 2014.
Round Three Projects (August 2013 approved)			
Koukourarata Stream Restoration (Outer Bays)	Planting	$22,400	Planting scheduled to be completed by end of Nov 2014.
Le Bons Stream Restoration (Outer Bays)	Planting and weed control	$5,280	Planting and weed control scheduled to be completed by end of June 2014.
Round Four Projects (February 2014 approved)			
Te Rapu Stream Restoration (Lyttelton/Whakaraupo)	Fencing and planting	$51,560	Contract details still being worked through with landowners
Okana Confluence Restoration (Wairewa)	Fencing and planting	$6,976	Contract being signed by landowner. Fencing scheduled to be completed by end June 2014. Planting by end Dec 2014.

Potential Projects

Name of Project and Catchment	Details
French Farm Valley (Akaroa)	A lot of catchment already protected. Landowner keen to do some fencing and planting of streams on his property – working on staging the project and finalising figures. Have sent project plan to landowner – need to follow up.
Diamond Harbour (Lyttelton/Whakaraupo)	Community driven project to restore start of Mt Herbert walkway (gully and stream). Project application will be brought to the zone committee in May.
Alymers Stream (Akaroa)	Community led project potential around lower reaches of Alymers Stream involving weed control and stream restoration.
Okuti Valley (Wairewa)	Community led project to combine multiple landowners (perhaps up to 8) to protect and restore Okuti River. Plus also interest in co-ordinating educational workshops for local community on water values, protection and restoration.
Breitmeyers Forest and Stream Covenant (Wairewa)	Covenant application in process to protect bush and streams which flow down into the Okana River. Landowner is still working through costs and finances.
Okuti Valley	Landowner with tributary to Okuti stream interested in fencing spring head off on neighbouring property. Working with neighbouring landowner to see if they are interested. Still very early stages
French Heritage and Etienne's Bush Covenants, Goughs Bay	BPCT application on behalf of landowners for covenanting 5ha of bush and streams on property. Site visit undertaken and project application will be brought to the zone committee in May.
Hikuraki Bay stream fencing/planting	Site visit occurring 4th April to determine whether project fits with Immediate Steps. No details on works yet.

27 March 2014

Dame Margaret Bazley
Chairperson
Environment Canterbury
PO Box 345
CHRISTCHURCH 8140

Dear Dame Margaret

Extension to prepare recommendations for the Wairewa Catchment (Banks Peninsula)

The Banks Peninsula Zone Committee requests an extension to the timeframe to prepare its ZIP addendum on the Wairewa (Little River) catchment. Progress has been made to develop a solutions package that has a high level of acceptability to Ngā Rūnanga, landowners and the community. We have a draft Action Plan that has been shared with the community.

Since the Action Plan was developed, however, a significant flood event occurred 4-5 March. Flood risk is presently upper most in the community's mind. We therefore think it prudent to slow the sub-regional process down so that the issue of flooding can be addressed in partnership with the Akaora-Wairewa Community Board. We are of the view that if we proceed as previously planned then the flooding would crowd out other issues such as the heath of the lake and mahinga kai that we think are important.

Furthermore, the Zone Committee considers voluntary measures and behavioural change will underpin many of its final recommendations. The Committee believes an investment in time now will improve the acceptability and effectiveness of the final recommendations.

Our proposal is to present our final recommendations to Commissioners on 4 September 2014 instead of the current timetable of the 1 May 2014. (proposed timeframe attached).

We recognise this new timeframe will have implications for Environment Canterbury and the work scheduled for other zones. The Banks Peninsula Zone Committee will continue to do everything it can to deliver its recommendations in a timely manner.

Yours sincerely

Richard Simpson
Chairperson
Banks Peninsula Zone Committee

Proposed Timetable for Preparation of Wairewa Addendum

Community members, landowners and rūnanga invited to participate in workshops, and attend Zone Committee meetings

Hard copy of full technical reports provided to Zone Committee	15 April	All reports available on the on the website for other participants
Zone Committee meeting Summary of final technical reports	15 April 4pm – 8pm	Contribution of birds to nutrient and microbiological load– Ken Hughey Sediment/wetland retention basin – Painter Effectiveness of Lake options – Schallenberg Facts - 4-5 March flood event
Akaroa/Wairewa Community Board Workshop # Flooding	TBC	Flooding issues Cooptown and Little River One possible outcome – try again to establish a drainage rating district
Zone Committee Workshop #1: In-lake Solutions	29 April 6pm -	Draft recommendations for in-lake actions
Zone Committee Workshop #2: Sediment sources in catchment	13 May 6pm -	Summary of preliminary work on practical methods of sediment control for landowners Draft recommendations for control of sediment
Zone Committee Meeting	20 May 4pm -8pm	Report progress and draft recommendations
Zone Committee Workshop #3: Limits, flows, developing package	27 May 6pm	Draw together draft solutions package
Rūnanga hui	Held between 16-28 June	Discuss draft solutions package with rūnanga
Field Day for landowners	Held on a Saturday (16-28 June)	Discuss draft solutions package with affected landowners
Zone Committee Meeting	17 June 4pm -8pm	Draft ZIP Addendum
Optional ZC working session	1 July 6pm	
Zone Committee Meeting	22 July 4pm -8pm	Finalise draft
Report back to community	July/August	
Zone Committee Meeting	19 August 4pm -8pm	Adopt ZIP Addendum
EC Commissioner Workshop	TBC	Present recommendations
EC Regional Council	4 Sept	Formally receive recommendations
Christchurch City Council	TBC	Formally receive recommendations
Prepare statutory documents for Council adoption	TBC	Council adopt draft PC
1st Schedule consultation	TBC	
Council meeting #2	TBC	Adopt proposed plan change
Notify plan change	TBC	