
Christchurch West Melton Water Management Zone Committee AGENDA

Notice of Meeting:

A meeting of the Christchurch West Melton Water Management Zone Committee will be held on:

Date: Thursday 26 May 2016

Time: 6.00pm

Venue: Environment Canterbury Office, 200 Tuam Street

Membership

Chairperson	Arapata Reuben Tuahuriri Runanga
Deputy	Suzanne Furkert Community Representative
Chairperson	Councillor Pauline Cotter Christchurch City Council
Members	Councillor Debra Hasson Selwyn District Council
	Commissioner Rex Williams Environment Canterbury
	Herewini Banks Te Hapu o Ngati Wheke/Rapaki
	Les Wanhalla Te Taumutu Runanga
	Andrew Congalton Community Representative
	Chris Kelliher Community Representative
	Robert Wynn-Williams Community Representative
	Kevin Brown Community Representative
	Lance Kenyon Community Representative
	Islay McLeod Community Representative

20 May 2016

Principal Advisor
Diane Shelander
Senior Policy Analyst
Tel: 941 8304
Christchurch City Council

Zone Facilitator
Lesley Woudberg
Tel: 027 706 4273
Environment Canterbury

Committee Advisor
Liz Ryley
Tel: 941 8153
Christchurch City Council

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1. Apologies

At the close of the agenda no apologies had been received.

2. Confirmation of Previous Minutes

That the minutes of the Christchurch West Melton Water Management Zone Committee meeting held on [Thursday, 28 April 2016](#) be confirmed (refer page 5).

3. Matters Arising from the Minutes

4. Deputations by Appointment

There were no deputations by appointment at the time the agenda was prepared.

5. Identification of Urgent Items

6. Identification of General Public Contributions

Christchurch West Melton Water Management Zone Committee OPEN MINUTES

Date: Thursday 28 April 2016
Time: 6.00pm
Venue: Boardroom, Fendalton Service Centre,
Corner Jeffreys and Clyde Roads, Fendalton

Present

Deputy Chair	Suzanne Furkert Community Representative
Members	Pauline Cotter Christchurch City Council
	Debra Hasson Selwyn District Council
	Rex Williams Environment Canterbury
	Herewini Banks Te Hapu o Ngati Wheke/Rapaki
	Les Wanhalla Te Taumutu Runanga
	Andrew Congalton Community Representative
	Kevin Brown Community Representative
	Lance Kenyon Community Representative

27 April 2016

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www.ecan.govt.nz/news-and-notice/minutes/Pages/Default.aspx

The meeting opened with a Karakia from Peter Ramsden.

The agenda was dealt with in the following order.

1. Apologies

Committee Resolved CWZC/2016/00001

It was resolved on the motion of Councillor Cotter, seconded by Member Brown that the apologies from Arapata Reuben, Chris Kelliher, Robert Wynn-Williams and Islay McLeod be accepted.

Councillor Cotter/Member Brown

Carried

2. Confirmation of Previous Minutes

Committee Resolved CWZC/2016/00002

That the minutes of the Christchurch West Melton Water Management Zone Committee meeting held on Wednesday, 23 March 2016 be confirmed.

Member Kenyon/Councillor Cotter

Carried

3. Matters Arising from the Minutes

There were no matters arising.

4. Deputations by Appointment

There were no deputations by appointment.

5. Identification of Urgent Items

Christchurch River Pollution Problems, and Possible Solutions was a document tabled by Suzanne Furkert regarding sources of pollution, such as copper and zinc, and faecal contamination from ducks, with suggested possible solutions to the contamination problems.

6. Identification of General Public Contributions

John Baird, Department of Conservation, raised the issue of a Sediment and Erosion Control Plan for a mountain bike park.

7. Update from Working Groups

Updates were received from each Working Group.

The Committee agreed to consider at its next meeting how it engages with Community Boards.

Mr Congalton arrived at 6.40pm.

Staff Recommendation

That the Christchurch West Melton Water Management Zone Committee:

1. Receives the report.
2. Provides feedback on the activities of each Working Group.
3. Supports the next steps proposed by each Working Group.

Committee Resolved CWZC/2016/00003

Joint Committee Decision

That the Christchurch West Melton Water Management Zone Committee:

1. Receives the reports from the Working Groups:
Addington Brook
Riccarton Paeroa Reserve
Cashmere
Heathcote/Ōpāwaho
Groundwater/Drylands
Communication and Engagement
Regional Committee.
2. Receives the feedback on the activities of each Working Group.
3. Supports the next steps proposed by each Working Group.
4. Agrees the Heathcote Working Group is replaced by two liaison representatives of the Zone Committee, Islay McLeod and Suzanne Furkert, to work with the Heathcote and Avon River Networks.

Commissioner Williams/Member Banks

Carried

8. Immediate Steps Funding Proposals

Staff Recommendation

That the Christchurch West Melton Water Management Zone Committee:

1. Agree to endorse the Immediate Steps Working Group's decision/refer to the Immediate Steps Working Group for further discussion.

Committee Resolved CWZC/2016/00004

Joint Committee Decision

That the Christchurch West Melton Water Management Zone Committee:

1. Agree to endorse the Immediate Steps Working Group's decision.

Councillor Hasson/Member Congalton

Carried

9. 5 Year Outcomes - Environment Canterbury Operational Work

Staff and Committee Resolved CWZC/2016/00005

Joint Committee Decision

That the Christchurch West Melton Water Management Zone Committee recommend:

That the 5 Year Outcomes and Milestones are adopted in Report 1 (below), and the following Zone Committee members are confirmed as sponsors for the 6 Outcomes:

Outcome 1

- Stormwater is treated to a better standard at source and the public stormwater network's ability to treat stormwater has improved – **Zone Committee Sponsor: Pauline Cotter**

Outcome 2

- Community Commitment has increased – **Zone Committee Sponsor: Islay McLeod or Lance Kenyon**

Outcome 3

- Biodiversity has been improved – **Zone Committee Sponsor: Andrew Congalton**

Outcome 4

- Health of priority catchments have improved – **Zone Committee Sponsor: Rex Williams**

Outcome 5

- Groundwater has been safeguarded for multiple uses and water has been used efficiently – **Zone Committee Sponsor: Kevin Brown**

Outcome 6

- Waterways better provide for multiple recreation, relaxation and amenity uses – **Zone Committee Sponsor: Lance Kenyon or Suzanne Furkert**

Member Kenyon/Member Banks

Carried

10. Final Report on the Natural Environment Recovery Programme

Staff Recommendation

That the Christchurch West Melton Water Management Zone Committee:

1. Receive the report.
2. Provide feedback on the NERP progress report.
3. Support the continuation of a natural environment partners' group and regular progress reports.

Committee Resolved CWZC/2016/00006

Joint Committee Decision

That the Christchurch West Melton Water Management Zone Committee:

1. Receive the Natural Environment Recovery Programme report.
2. Support the continuation of a natural environment partners' group and regular progress reports.

Councillor Cotter/Member Brown

Carried

11. Stormwater Management Plans

The Committee received a powerpoint presentation on Stormwater Management from Paul Dickson, Christchurch City Council.

Staff Recommendation

That the Christchurch West Melton Water Management Zone Committee:

1. Receive the update report on Stormwater Management Plans.

Committee Resolved CWZC/2016/00007

Joint Committee Decision

That the Christchurch West Melton Water Management Zone Committee:

1. Receive the update report on Stormwater Management Plans and continue discussion at the next Christchurch West Melton Water Management Zone Committee meeting.

Member Brown/Member Congalton

Carried

12. Environment Canterbury Compliance Report

Councillor Cotter departed at 7.58pm.

Discussion was held about riparian zones and river beds being worked on at the same date. The Committee agreed to ask the Christchurch City Council to consider changing the date from January to June each year.

Staff and Committee Resolved CWZC/2016/00008

Joint Committee Decision

That the Christchurch West Melton Water Management Zone Committee:

1. Receive the information in the report.

Councillor Hasson/Member Kenyon

Carried

13 General Business - On-line Library Portal

Andrew Congalton raised the matter of an on-line portal through Environment Canterbury for a library of all documents received, how they are used and stored.

Committee Resolved CWZC/2016/00009

That the Christchurch West Melton Water Management Zone Committee accept the idea of a library of documents.

Member Furkert/Member Kenyon

Carried

The meeting closed with a Karakia from Peter Ramsden.

Meeting concluded at 8.19pm.

CONFIRMED THIS 26TH DAY OF MAY 2016.

**ARAPATA REUBEN
CHAIRPERSON**

5. Correspondence

- Styx-Purakaunui Living Laboratory Trust
- Kate Sheppard: Mahinga Kai Exemplar

Reference: 16/579075

Contact: Lesley Woudberg lesley.woudberg@ecan.govt.nz

027 7064273

1. Purpose of Report

- 1.1 This report provides the Committee with correspondence received from the Styx-Pūrākaunui Living Laboratory Trust, and from the Chair of Avon Otakaro Incorporated on the Avon-Otakaro Network.

2. Staff Recommendations

That the Christchurch West Melton Water Management Zone Committee:

1. Receives the correspondence from the Styx Living Laboratory Trust Board of Management and nominates (member) to join that Board.
2. Receives the correspondence on the Avon-Otakaro Network and supports the Network by (xxx)

Attachments

No.	Title	Page
A	Styx-Purakaunui Living Laboratory Trust	12
B	Avon Otakaro Network	13

Signatories



29 April 2016

Lesley Woudberg
Christchurch-West Melton Zone Committee Facilitator
Lesley.woudberg@ecan.govt.nz

Dear Lesley

Invitation to nominate a candidate – Styx Living Laboratory Trust (SLLT) Board of Management

The SLLT has a long history of association with the Christchurch-West Melton Zone Committee, and both groups have many goals in common. Up until the recent elections, Hugh Thorpe was the link between the Zone Committee and the SLLT. As Hugh is no longer on the Zone Committee, the Board of Management members wish to extend an invitation to the current committee members to nominate one of their number to join the SLLT Board. The SLLT currently has signed MoU's with the Christchurch City Council, ECan, Landcare Research, NIWA, Willowbank Wildlife Reserve, Lincoln University and Ngai Tahu.

The Board of Management meets every two months and is involved in, amongst other activities, developing and maintaining volunteer programmes that monitor the water quality and birdlife in the Styx River Reserves and supporting summer scholar research projects.

Could you please pass this invitation on to the Zone Committee for consideration?

Thank you.

Yours sincerely



Antony Shadbolt
Acting Chair, Board of Management

c/o Cynthia Cripps, Secretary, 44 Ravensdale Rise, Westmorland, Christchurch 8025



Barbara Nicholas
Facilitator
Christchurch / West Melton Zone Committee

Dear Barbara,

Lake Kate Sheppard: Mahinga Kai Exemplar

The Avon Otakaro Network has been working successfully with students from Geography 309 course at University of Canterbury, UC summer scholarships, and Engineers Without Borders on the hydrology and salinity of Lake Kate Sheppard with regard to the suitability of the lake and its riparian margins as inanga habitat. We have a commitment from the GEOG 309 coordinator Professor Eric Pawson for further groups of students to work on Lake Kate Sheppard next year.

The work to date has focussed on the riparian margins for spawning habitat. The Avon Otakaro Network would like to extend this work to the water quality health of the lake for mahinga kai. The Geography students have been successful at measuring salinity and suspended sediment levels but bacterial contamination of the water column and heavy metals in sediments are beyond their capability. We are aware of the concerns of Community Public Health and Environment Canterbury in relation to the potential effects of bacterial and heavy metal contamination on the risks to public health from eating whitebait from the Avon Otakaro River. Recent water quality reports for the river show elevations in bacterial contamination and heavy metals as a result of the earthquake recovery activities.

The Avon Otakaro Network is seeking support from the Christchurch / West Melton Zone Committee to fund water quality sampling to coincide with the Geography 309 students work on hydrology and salinity in Semester 2 next year. This would enable the water quality results to be placed in the context of the tidal variations and stormwater inputs to Lake Kate Sheppard.

We would like to work with the Zone Committee on developing a suitable programme of work that could benefit the rehabilitation of Lake Kate Sheppard and act as an exemplar for other parts of the catchment as part of the recovery programme for the city.

Yours sincerely

Professor Bryan Jenkins

Chair Avon Otakaro Incorporated

8. Groundwater: Christchurch's Drying Streams: Management Actions

Reference: 16/579458

Contact: Prof Bryan Jenkins

1. Purpose of Report

- 1.1 This report provides the Committee with background on why the spring fed streams to the west of the City are drying up and possible actions that could be taken.

2. Staff Recommendations

That the Christchurch West Melton Water Management Zone Committee:

1. Receives and discusses the report.
2. Identifies what the Zone Committee may wish to do with this information.

Attachments

No.	Title	Page
A	Christchurch's Drying Streams: Management Actions	16

Signatories

There has been concern raised about the drying reaches of the Avon Otakaro tributaries and different reasons have been given for the cause. This paper sets out key aspects of the hydrology to identify possible failure pathways and what can be done to address them.

Source of Avon tributary baseflow

(Source: Cameron 1992)

Artesian spring discharge

Local groundwater seepage

Long term effects of urbanisation on local groundwater table recharge

There has been a long term trend of decline in flows in the tributaries of the Avon as a result of urbanisation. With the introduction of impermeable surfaces such as roads and roofs there is an increase in surface flow (i.e. stormwater) and a reduction in infiltration to groundwater. Baseflow in

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streams decrease while peak flows from storm events increase downstream of stormwater outlets (Cameron 1992).

Short term effects on local groundwater recharge

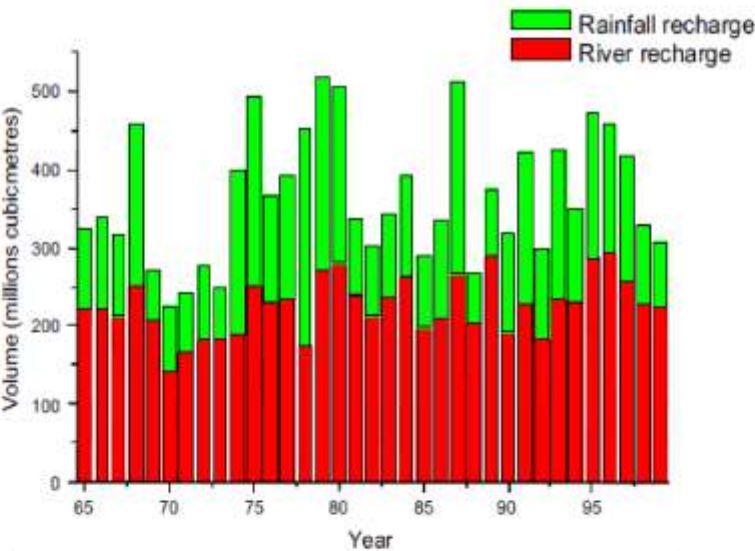
Variations in local rainfall influence the amount of recharge to the local groundwater table. Variations in temperature influence the amount of evapotranspiration: drier soils mean less recharge. We can expect drying reaches to be more pronounced at the end of summer. 2015/6 summer rainfall in Christchurch was below average in February but above average in January (NIWA 2016). However summer temperatures were the highest on record increasing evapotranspiration and thereby reducing groundwater recharge. Dewatering of the groundwater table for infrastructure replacement and the Christchurch rebuild can also lower the local groundwater table.

Artesian Spring Discharge

In looking at the artesian spring contribution to baseflow to Avon tributaries, it is appropriate to consider both the inflows to and outflows from the Christchurch West Melton aquifer system.

Changes to aquifer inflow

About 70-80% of the inflow comes from seepage from the Waimakariri River and about 20-30% comes from rainfall recharge to the unconfined part of the aquifer west of Christchurch (Environment Canterbury 2000).



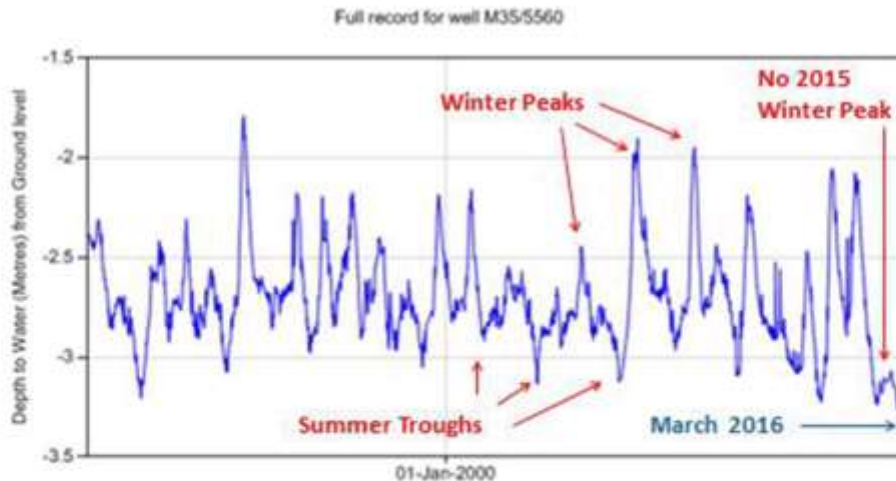
Aquifer Inflow (Source: Environment Canterbury 2000)

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Rainfall recharge occurs primarily in winter months when soils are saturated. There is usually a seasonal pattern in groundwater levels with a peak in winter (from rainfall recharge) and a trough in summer (from groundwater withdrawals and reduced rainfall recharge).

The March 2016 levels in groundwater monitoring bores in the unconfined aquifer west of Christchurch are the lowest on record (Environment Canterbury 2016). The monitoring bore records show an absence of a winter peak in 2015. This suggests reduced rainfall recharge as a potential cause of low groundwater levels. 2015 winter rainfall was below average and May 2015 was well below normal. Winter temperatures were also very high with high evapotranspiration rates (NIWA 2016). Very low May rainfall and elevated winter temperatures would delay soil saturation and therefore delay rainfall recharge.



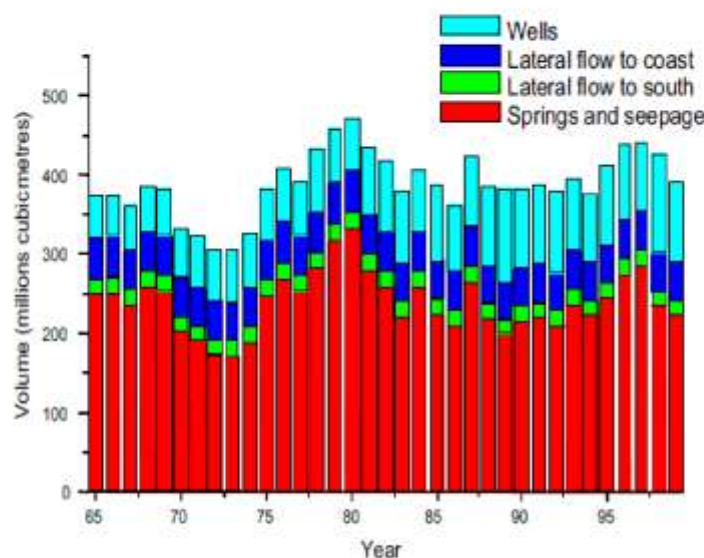
Monitoring Bore near Waimakariri River (Source: Environment Canterbury 2016)

Investigations of seepage from the Waimakariri River indicate a seepage rate of around $11.7 \text{ m}^3/\text{s}$ from the river into the aquifer. The investigations have also found that this seepage rate is maintained at below average flows. Full irrigation take by Waimakariri Irrigation upstream of the seepage zone is estimated to reduce seepage by $0.2 \text{ m}^3/\text{sec}$ (White et al. 2012). This would lower groundwater levels but not significantly.

Changes to aquifer outflow

Aquifer outflow are spring flows, extraction from wells, groundwater flow to the coast and groundwater flow to the south. Flow to the coast and flow to the south are estimated to be relatively small. Spring flows vary primarily in relation to available inflow (increasing spring flow with increasing inflow) and the amount extracted (decreasing spring flow with increasing extraction) and are typically 50-70% of the outflow (Environment Canterbury 2000).

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Aquifer Outflows (Source: Environment Canterbury 2000)

Extraction wells are mainly for drinking water supply, industrial use and agricultural/horticultural use. In terms of consented volume allocated, these represent 45%, 31% and 22% respectively. There is a marked increase in demand in summer for urban use and irrigation. With record summer temperatures in 2015/6 high use for urban and irrigation could be expected.

Water availability in terms of aquifer capacity does not appear to be a sustainability issue. However for the groundwater zone increased overall extraction leads to reduction in flow in groundwater-fed streams affecting stream sustainability. There can also be localised effects on artesian springs when there is abstraction from the upper confined aquifer in close proximity to spring-fed streams, such as the potential for extraction from bores in Burnside Park from the Riccarton aquifer to affect nearby streams like Waimairi and Wai-iti.

Management Issues

With multiple potential failure pathways there are a number of management issues to be addressed if we wish to retain baseflows in Christchurch streams.

Local Scale Actions

At the scale of the Waimairi and Wai-iti streams local actions can be taken to improve groundwater infiltration and artesian spring flow. Increasing stormwater infiltration to groundwater in the stream

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catchments and reducing groundwater extraction from the upper confined aquifer in the vicinity of the streams would assist in increasing baseflow in these streams.

Larger Scale Actions

One key issue is managing the effects of urbanisation. There has been a significant shift in approaches to stormwater management in new subdivisions with greater use of swales and stormwater infiltration basins. This reduces but does not eliminate the impact on groundwater recharge. However this doesn't address past urbanisation or current intensification. The City is developing catchment-based stormwater management plans which are a positive step forward. However maintaining and improving stream baseflow is not one of the principal issues addressed in the Otakaro Avon River Stormwater Management Plan (Christchurch City Council 2015). This needs to be added.

A second key issue is abstraction from the Christchurch West Melton groundwater zone. While there are some constraints on consents in relation to abstraction, there is not in place a management regime for allocation limits for the zone or provisions for adequate flows in groundwater-fed streams. A project team at the regional council was in the process of preparing a statutory plan for the zone but were given other priorities in 2012. A management regime for the Christchurch West Melton groundwater zone is needed.

In contrast to other groundwater zones in Canterbury, management of extraction in the Christchurch/West Melton Zone relates primarily to urban use (residential, commercial and industrial use). Irrigation is a smaller component that also needs to be addressed. Cities like Auckland and Tauranga have put in place universal metering resulting in about a 20% reduction in water consumption. Also, it has enabled deferrals of expensive water supply infrastructure. In addition Auckland has a comprehensive water demand management plan. Auckland's per capita water production is around 273 litres per person per day whereas Christchurch is around 357 litres per person per day – more than 30% higher (Jenkins 2015b). A more comprehensive approach to water demand management is needed in Christchurch.

We also need to be mindful of what is happening to rainfall and temperature. Climate change projections are for increased summer temperatures which will increase urban and agricultural demand, and, for increased temperatures and decreased rainfall in winter which will reduce aquifer recharge (Jenkins 2015a). Climate change adaptation needs to be addressed.

The drying reaches of the Waimairi and Wai-iti streams illustrate the complexity of our water resources and the need for both local and regional approaches to their management.

Professor Bryan Jenkins

Professor, Strategic Water Management, Waterways Centre for Freshwater Management

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24 May 2016



12 May 2016

References

- Cameron S (1992) A Hydrogeological Study of the Interaction Between Avon River Baseflow and Shallow Groundwater, Christchurch New Zealand. University of Canterbury, Christchurch
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<http://ecan.govt.nz/services/online-services/monitoring/groundwater-levels/pages/groundwater-levels-christchurch.aspx>. Accessed 12 March 2016
- Jenkins BR (2015a) Implications of Climate Change for Water Management in Canterbury. Paper presented at the 15th International World Water Congress, Edinburgh, 25-29 May 2015
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- NIWA (2016) Monthly Climate Summaries. <https://www.niwa.co.nz/climate/summaries/monthly>. Accessed 21 March 2016
- White P, Kovacova E, Zemansky G, Jebbour N, Moreau-Fournier M (2012) Groundwater - surface water interaction in the Waimakariri River, New Zealand, and groundwater outflow from the river bed. Journal of Hydrology (NZ) 51 (1):1-24

9. Biodiversity - Immediate Steps Funding Project Proposals

Reference: 16/580115

Contact: Helen Greenep helen.greenep@ecan.govt.nz

027 2256419

1. Purpose of Report

The purpose of this report is to endorse the allocation of Immediate Steps funding for the proposed projects.

2. Staff Recommendations

That the Christchurch West Melton Water Management Zone Committee:

1. Support the two proposed projects
 - Cashmere Stream Enhancement \$16,420
 - Paeroa Reserve Stream Enhancement \$2,930.

Biodiversity Working Group Recommendation

To be advised during the meeting.

3. Key Points

Christchurch West Melton Zone has \$100,000/year Immediate Steps funding for five years. To date the Zone Committee has endorsed the allocation of \$405,000 funding towards 21 projects.

There is currently \$95,000 of Immediate Steps funding yet to be allocated from the total \$500,000 available for projects. Note that funding can be rolled over to subsequent years, and as the Christchurch West Melton zone biodiversity allocation was delayed a year, the original funding has been extended by a year. The end of this funding period is 30 June 2016.

Helen Greenep, Environment Canterbury (Biodiversity Officer) has assessed the proposed projects against Immediate Steps project criteria. The Zone Committee's Immediate Steps Working Group (Arapata Reuben, Lance Kenyon and Les Wanhalla) have been provided with full details of the project assessments.

Table 1: Proposed project for funding consideration

Proposed project*	Project details in brief	Land tenure	Cultural Value**	Ecological score	Funding requested (Total cost in brackets)
Cashmere Stream Enhancement Project	Proposed activities: Remove sediment and re-sculpt the banks, create meanders and plant banks with appropriate native species	Private	High – Led by community Group	19/39	\$16,420 (>\$56,420)

Paeroa Reserve Stream Enhancement Project	Proposed activities: Remove sediment and re-sculpt the banks to improve water flow, create riffles to improve habitat and plant banks with appropriate native species	Public	High – Led by community Group	15/39	\$2,930 (>\$52,930)
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Item 9

- **Total requested funding \$19,350 from available funds 95,000.**
- *Further details of projects may be requested from Environment Canterbury Biodiversity Officer Helen.
- ** Cultural assessment of the project may be presented at meeting.

Cashmere Stream Enhancement Project

Project Details

Applicant	Cashmere Stream Care Group
Project Location	85 Sutherlands Road
Habitat Type	Lowland Stream
Project Aim	To protect and enhance the ecology of Cashmere Stream
Project Outcomes	Improved water quality and stream health
Works	Re-contour the banks and create some meander. Fence and plant

Funding Requested

From ECAN	From Other Sources	Estimated Total (Applicant)
\$16,420.00	\$40,000	\$56,420

Project Description

This project is being led by the Cashmere Stream Care Group who are active in promoting and monitoring stream health in the Cashmere Stream catchment. The group have worked closely with landowners and CCC to bring this stream enhancement project together.

Prior to work beginning the group carried out baseline monitoring of water quality, fish and invertebrates. They also did this upstream and within a downstream tributary. Their intention is to monitor stream health and ecology into the future.

Planting this stretch of the stream now that the earthworks have been completed is important to provide shading and to complete the habitat enhancement.

The earthworks have been funded by the CCC and the Cashmere Stream Care Group have spent many volunteer hours in carrying out the baseline monitoring and liaising with CCC and the landowners.

I recommend that this project be supported.

Overall Assessment Scores

Criteria	Score	Comments
Ecological Assessment Score	19/39	
Cultural	High	Driven by community group and landowners
Other Criteria Overall Rating	Medium	
Immediate Steps Rating	High	Spring heads, priority catchment, led by community group

Project Map





Paeroa Reserve Stream Enhancement Project

Project Details	
Applicant	West Riccarton Neighbourhood Support Group
Project Location	Paeroa Reserve
Habitat Type	Lowland Stream
Project Aim	<ul style="list-style-type: none"> Engage the local community and encourage involvement in the project Improve water quality, stream flow and surrounding habitat Increase biodiversity through increased native planting Raise awareness of the importance of keeping gutters and drains clean
Project Outcomes	Improved habitat conditions within this length of the stream
Works	Remove historic sediment, re-contour the banks to narrow the flow path and increase water flow, and create riffles. Plant banks and surrounding area

Funding Requested		
From ECAN	From Other Sources	Estimated Total (Applicant)
\$2,930	\$50,000	\$52,930

Project Description

This project is being led by the West Riccarton Neighbourhood Support Group. It is within a catchment identified by the zone committee as a priority catchment.

The project is aimed at improving the ecology and biodiversity of the stream whilst engaging the local community.

I recommend that this project be supported.

Overall Assessment Scores

Criteria	Score	Comments
Ecological Assessment Score	15/39	
Cultural	High	This project has a huge community engagement component
Immediate Steps Rating	High	Zone committee priority catchment

Project Map



Attachments

There are no attachments to this report.

Signatories

10. Stormwater Presentation

Reference: 16/579952

Contact: Andrew Congalton

1. Purpose of Report

- 1.1 This report provides the Committee with a stormwater presentation by Andrew Congalton. The report is provided under separate cover.

2. Staff Recommendations

That the Christchurch West Melton Water Management Zone Committee:

1. [Receives the information in the stormwater presentation.](#)

Attachments

There are no attachments for this report.

Signatories

11. Christchurch River Pollution Problems and Possible Solutions

Reference: 16/579825

Contact: Suzanne Ferkert

1. Purpose of Report

This report provides the Committee with some solutions to common contaminants in Christchurch waterways. This report was tabled at the Zone Committee meeting 28 April 2016 but the Committee did not have time to discuss it.

2. Staff Recommendations

That the Christchurch West Melton Water Management Zone Committee:

1. [Receives and discusses the report.](#)
2. [Identifies what the Zone Committee may wish to do with this information.](#)

3. Key Points

Copper (Cu), Zinc (Zn), Lead (Pb) pollution – primary sources: roofing materials and vehicle brake pads
Fecal contamination – primary sources: ducks/geese and dogs

Possible Solutions

Roofing materials

The best solution is to apply coatings to seal the metallic surfaces from the rain. A secondary solution would be to treat the stormwater before it leaves the property to remove the heavy metals.

- **Short term** - Education on the benefits of coating/painting roofs. Primary target residential and commercial building owners.
- **Medium/long term** - A council requirement that all new builds have coated roofs, or install a heavy metal extraction system on the property that must be maintained for the life of the building.
 - Zincalume roofs are relatively simple and cheap to paint.
 - Cu can have ageing patina applied to attain the desired weathered look before a clear coating is applied.
 - Pb should no longer be a problem as it is now only supplied pre coated.
- **Medium term** - Education focused on architects and roofing material suppliers.

Brake pads

The vast majority of brake pads used are semi-metallic ones which incorporate large quantities of Zn and Cu, as far as I can tell the reason for this is tradition. There have been alternative pads made called organic pads that are designed to remove the environmental problems of semi-metallics. These are available in New Zealand, have at least as good performance as common semi-metallics, and are no more expensive than the standard manufacture equivalent brake pads that are generally used. Organic pads are also available for trucks/heavy vehicles.

- **Short term** – Education, focused on installers and sellers of brake pads.
 - Stipulate labeling on pads indicating their environmental impact.
- **Medium term** – An incentive for people to use organic brake pads, I think most people put on the cheapest pads with decent performance, and usually semi metallics are used because that is what has always been used.

I would suggest putting an environmental tax on semi-metallic pads to reflect the true cost the environmental damage that they do. This will add no extra cost to the average householder, as they can use the available organic pads with no extra expense. The tax could be used for water quality improvements. A tax of about 20% or more would probably be needed to significantly affect people's decision making, as at an average cost of \$70 the pad cost is only a small fraction of having your pads changed (average labour cost of just over \$200).

Fecal contamination

The main problem is dog, duck and goose poo. While the dogs are under human control the birds are not. Ducks are fed which encourages them, but a lot of the problem is the geese that primarily feed on grass.

- **Education** – for dog poo a leaflet or online note when dogs are registered to let people know that damage caused to the waterways by their dog would be a possibility.
 - Regarding feeding ducks, this is a problem but it also has many benefits in educating children about ducks/eels/fish/gulls and adding appreciation of our waterways. Perhaps people could be encouraged to feed ducks out of the water, but this would only be effective if there were sufficient plantings to filter the water before it entered the rivers.
- **Plantings** – If the river banks were not shaved but had plant growth on them such as low but dense native grasses/tussocks, then the plants would trap the fecal matter and enable it to be absorbed into the soil rather than washing straight into the rivers in rain events. This would work for dog and avian fecal matter. It would also help with reducing erosional sediment influx during flood events. Native grasses/tussocks are also a lot less appealing to geese, so would help reduce their numbers around rivers. The increased cost of plantings would be offset by the money saved in not having to shave the banks a few times every year.

Attachments

There are no attachments to this report.

Signatories

12. Working Group Updates

Reference: 16/581387

Contact: Lesley Woudberg lesley.woudberg@ecan.govt.nz 027 7064273

1. Purpose of Report

This report updates the Committee on the activities of each working group over the last month and the next steps each group are working on.

2. Staff Recommendations

That the Christchurch West Melton Water Management Zone Committee:

1. Receives the report.
2. Provides feedback on the activities of each Work Group.
3. Supports the next steps proposed by each Working Group.

3. Key Points

Industrial/Business Catchment Working Group – Andrew Congalton

Priority catchments: Addington, Riccarton and Haytons

What are we trying to achieve in 5 years (2020)

- Addington Brook improve catchment health – contact recreation by 2020 and swimmable by 2030 (linking to Zone Implementation Programmes (ZIP's))
 - Meets agreed standards as set out by the 5 year 'living' Integrated Catchment Management Plan to be developed by June 2016
- Riccarton Stream improve catchment health (linking to ZIP's)
 - Completion of physical elements of community project at Paeroa Reserve by June 2016 and planting using the project as a platform to raise awareness of urban stormwater issues in a residential catchment and best practice
 - Meets agreed standards as set out by the 5 year 'living' Integrated Catchment Management Plan to be developed by 2018
- Haytons Brook improve catchment health (linking to ZIP's)
 - Meets agreed standards as set out by the 5 year 'living' Integrated Catchment Management Plan to be developed by 2018

What have we done since we last met?

- Addington Brook – final report on the MEDSA model

- Reported in the Star May (30 tonnes of suspended solids over a year 14 tonnes from car parks, 8.8 tonnes from roads and 7 tonnes from roofs. 340 kg of zinc and 17 kg copper)
- Riccarton Paeroa Reserve - awaiting finalised programme of work from CCCNext steps?
- Addington Brook - Use hot spot area to raise awareness with businesses incorporating drain checks into a regular maintenance programme
- Riccarton - planting dates pencilled in 18, 19 June or 25,26 June (this may change)
- Talk to Community Boards

Rural Catchment Working Group – Arapata Reuben

Priority catchment – Cashmere

What are we trying to achieve in 5 years (2020)?

- Reduce sediment getting into Cashmere Stream (and therefore the Heathcote/Ōpāwaho and Avon-Heathcote Estuary/Ihutai)
- Improve ecosystem health

What have we done since we last met?

- We have met with EOS Ecology to receive the results of the sediment trials on Redmund Spur and a project to develop a relationship between clarity tube data and other sediment parameters.
We recommend the Committee hosts a workshop with EOS Ecology to present the trial results to the whole committee and invite members of the Banks Peninsula and Selwyn Waihora zone committees.
We recommend Environment Canterbury hosts a workshop with practitioners to present results and recommended changes to the Sediment Control Guidelines.
- We discussed the restoration work Cashmere Stream Group and CCC have been doing on a stretch of waterway above Sutherlands Road (stream we visited during fieldtrip 17 December 2015) and current proposed Immediate Steps application. The working group is keen to see planting happen this winter.

Next steps

- Share information from sediment trials and what this means for action on the ground.
- Decide whether more research is needed or determine whether we are ready to take our findings out to landowners.
- Clarify what we expect of landowners.
- Celebrate good stuff – field trip, afternoon tea in and around Sutherlands Road.

Groundwater /Drylands Working Group – Chris Kelliher

What are we trying to achieve in 2 years (2018)?

- Know how much water is available for use.
- Understand the landownership pattern within the protection zone.
- Understand the threats to Christchurch's groundwater system.
- Identify how we can protect this resource for future generations.

What have we done since we last met?

- Met with Christchurch City Council, Environment Canterbury staff and Golder Associates to discuss the draft 3rd report on the groundwater resource of Christchurch.
- Discussed Professor Bryan Jenkins paper on *Christchurch's Drying Streams* - presented to be present presented to the Zone Committee 26 May.

Next steps?

- Provide comments on the draft Golder report – present and discuss the Golder report and possible actions for the Committee at the next meeting
- Committee's actions from Professor Jenkins paper

Communication and Engagement – Arapata

What are we trying to achieve in the next 5 years (2020)?

- Raise awareness
 - State of the waterways, their values and issues
 - Actions individuals and groups can take
 - Individual and groups doing good stuff
- Inspire action

What have we done since we last met?

- Met with;
 - CCC Infrastructure and Environment Committee 5 May
Recommendations:
 - *"That the Infrastructure, Transport and Environment Committee receive the information in the Christchurch-West Melton, Banks Peninsula and Selwyn-Waihora zone committees' annual reports"*

- *“...the Council support the Christchurch West Melton Zone Committee to work with Environment Canterbury and other Territorial Authorities to ask Central Government to develop national measures and industry standards to reduce contaminants from metal roofs and brake pads to improve water quality.”*
- Met with Christchurch City Council 26 May to present the Annual Report
- Star article 12 May 2016 *“Heavy metals flow through to Avon River”* (attached)

Next steps?

- Convene a Working Group meeting and update our communication plan.
- Discuss with Youth engagement teams from both CCC and ECan the programmes they currently teach in schools

Biodiversity – Immediate Steps funding – Arapata Reuben

What are we trying to achieve in the next 5 years (2020)?

- Increase indigenous species diversity, abundance and improved ecological health by providing funding to individuals, landowners and community groups.
- Raise awareness of biodiversity and ecological values of the Christchurch West Melton zone.

What have we done since we last met?

- Reviewed three project proposals
- Recommend funding
 - Cashmere Stream
 - Paeroa Reserve

Next steps?

- Continue to receive and review project applications for Immediate Steps biodiversity funding.
- Review the Immediate Steps application process.

Regional Committee – Les Wanhalla

Last regional committee meeting 12 April.
Next meeting 14 June.

Liaison with community groups – Islay McLeod / Suzanne Furkert

Priority groups:

What are we trying to achieve in 5 years (2020)?

- Ensure we compliment and build on each other's work to improve the health of Christchurch's water resources.

What have we done since we last met?

- Participated in the Mother of all Clean Ups 7 May (as per photograph below).

Next Steps

- Review who are the groups we should liaise with and where we have potential for the greatest effect.



Attachments

There are no attachments to this report.

Signatories

13. Zone Facilitator and Manager Updates

Reference: 16/581559

Contact: Lesley Woudberg lesley.woudberg@ecan.govt.nz

027 7064273

1. Purpose of Report

- 1.1 This report provides the Committee with a verbal update from the Zone Facilitator, Lesley Woudberg and Manager, Paul Hulse.

2. Staff Recommendations

That the Christchurch West Melton Water Management Zone Committee:

1. Notes the updates.

Attachments

No.	Title	Page
A	Article on heavy metal flows to Avon River	40
B	Media Release - Ravensdown	41

Signatories

Star 12 May 2016

Heavy metals flow through to Avon River

■ **By Tom Doudney**

A NEW study has provided a clearer picture of how roads, car parks and roofs in Addington and Riccarton are making a major contribution to pollution in the Avon River.

The Environment Canterbury commissioned study focused on the Addington Brook (pictured) – a storm water-influenced waterway which runs largely underground from sources near Acheron Drive and Hands Rd before emerging in South Hagley Park and joining the Avon River near Christchurch Hospital.

Storm water entering the brook is a key source of sediment and heavy metals such as zinc and copper in the river.

The study found that about 30 tonnes of total suspended solids, a category which includes sediment, twigs and leaves, animal faeces and other matter, was making its way into the brook over the course of a year. Of this, more than 14 tonnes came from car parks, 8.8 tonnes from roads and seven tonnes from roofs.

After total suspended solids, zinc was the next largest con-



PHOTO: GEOFF SLOAN

taminant load with about 340kg a year. 66 per cent of which came from galvanised roofs. About 94 per cent of roofs in the catchment are galvanised.

Copper mainly came from major arterial roads and industrial car parks where heavy vehicles were manoeuvring.

About 17kg of copper was reaching the brook each year.

The study suggests a range of measures to address the issues, including replacing or painting galvanised roofs, using rain gardens and sump filters to minimise run-off and additional street sweeping.

ECan pollution prevention officer Jenny Waters said pilot studies, in partnership with the city council, to test the proposed solutions were in the early stages of development.





MEDIA RELEASE

19th April 2016

Christchurch cooking up storm with water improvements

Stormwater management is an important part of sustainable manufacturing. All of Ravensdown's three production facilities have invested in improvements and Process Manager Mathew Ellen describes the latest upgrades at the farmer-owned co-operative's Christchurch facility.

All stormwater discharged from Ravensdown enters the Hayton's Retention Pond that in turn discharges direct to the upper Heathcote River.

There are set goals to improve the quality of water in the Heathcote so that river life would return and overall river health is improved. Both business and domestic sources contribute to nitrate and phosphate levels, but Ravensdown was determined to do its bit.

A year-long specialist study detailed our stormwater 'footprint' and where we could improve. We attacked the problem of volume and quality of water running off our buildings and vehicles on multiple fronts. Funding came as result of the earthquake rebuild and Ravensdown's capital investment programme which was also targeting systematic asbestos removal.

Targeting dust

The idea was to build stormwater improvements into to all our capital projects. Some of it was obvious like covering operational areas so all fertiliser activity remains on the inside of buildings. Others were more subtle like replacing grooved roofing where fertiliser dust could settle and recladding walls so dust didn't escape in the first place. Enclosed conveyor belts also limit dust

falling
on
roofs.



Old brick buildings have been replaced, a fully enclosed conveyor eliminates dustfall and asbestos roofing was removed. Clearlight panels also reduce power needed for lighting.

Recycling water

We capture and recycle more water for use in the manufacturing process but some of that water is more important to recycle than other water. Specifically, it's more important that the "first flush" after the initial rainfall is captured as any material that has gathered on buildings and roadways tends to be washed away at that point.



Internal piping system minimises leaks, syphonic pumps pull large water volumes from roof and the pond allows water recycling in manufacturing process.

Improving layout

Previously trucks would travel through the site for loading. This led to potential problems with wheel tracking as they exited particularly when it rained. Now the loading area is fully separated from the operational areas so the trucks arrive, load, and exit without having to come inside.



Grass planting reduces surface area for runoff whilst fully-enclosed truck loading keeps despatch separate from operational areas.

ENDS

For further information, high-res photos or site tours please contact:
Gareth Richards, Group Communications Manager: 021 860 659
gareth.richards@ravensdown.co.nz

About Ravensdown:

As a farmer owned co-operative, Ravensdown exists to optimise soil fertility and farm profitability in a sustainable way for farmers who seek to lift their productivity and lower their environmental impact. Beyond fertiliser, we provide nutrient management services, technical advice and essential farm inputs delivered how, where and when they are needed by our customers.